

SCHULTE®

FX-520 *Fighter Series*

ROTARY CUTTER

Published 03/06

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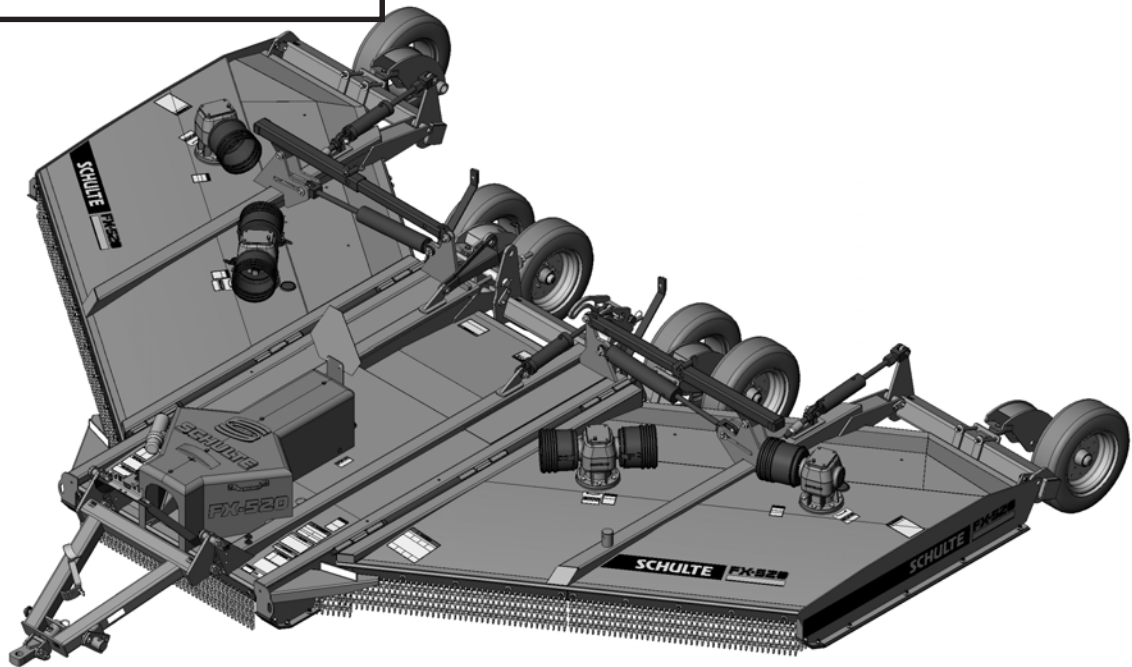
Part No. C520CE010C

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.

Year of Construction:



EUROPE

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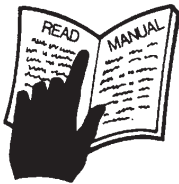



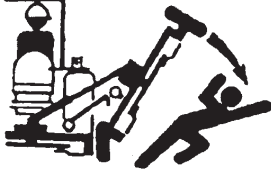
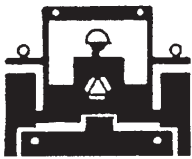
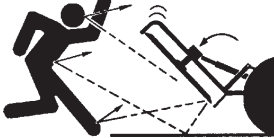



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TO THE OWNER/OPERATOR/DEALER

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!

 <h1 style="font-size: 4em; margin: 0;">DANGER</h1>			
FAILING TO FOLLOW SAFETY MESSAGES AND OPERATING INSTRUCTIONS CAN CAUSE SERIOUS BODILY INJURY OR EVEN DEATH TO OPERATOR AND OTHERS IN THE AREA.			
1. 	2. NO RIDERS. NO CHILDREN OPERATORS. 	3. USE SAFETY SHOES, HARD HAT, SAFETY GLASSES, SEAT BELTS, & ROPS. 	4. BLOCK UP SECURELY BEFORE WORKING UNDER. 
<ol style="list-style-type: none">1. Study and understand Operator's Manuals, Safety Signs, and Instructional Decals for tractor and implement to prevent misuse, abuse and accidents.<ul style="list-style-type: none">● Learn how to stop engine suddenly in an emergency. Be alert for passersby and especially children.2. Allow no children on or near implement or tractor. Allow no riders on tractor or implement. Falling off may cause serious injury or death from being run over by tractor or cutter or contact with rotating blades.3. Operate only with tractor having Roll-Over Protective Structure (ROPS) and with seatbelt fastened securely and snugly to prevent injury and possible death from falling off or tractor overturn. Personal Protective Equipment such as Hard Hat, Safety Glasses, Safety shoes, and Ear Plugs are recommended.4. Block up or support raised machine and all lifted components securely before putting hands or feet under or working underneath any lifted components to prevent crushing injury or death from sudden dropping or inadvertent operation of controls. Make certain area is clear before lowering or folding.5. Before transporting, put Lift Lever in detent or full-lift position. Secure the implement for transport by installing Cylinder Stops or Transport Pin on pull-type implement center axle and Wing Transport Locks on folding implements.<ul style="list-style-type: none">● Attach Safety Chain to cutter and towing unit securely. See Operator's Manual.6. Make certain that SMV sign, Warning Lights, and Reflectors are clearly visible. Follow local traffic codes.7. Never operate with Cutting Head raised if passersby, bystanders, or traffic are in the area to reduce possibility of injury or death from objects thrown by Blades under Guards or cutter structure.8. Before dismounting, secure implement in transport position or lower to ground.<ul style="list-style-type: none">● Put tractor in park or set brake, disengage PTO, stop engine, and remove key, and wait until noise of rotation has ceased to prevent entanglement in rotating parts which can cause injury or death.● Never mount or dismount a moving vehicle. Crushing from runover may cause injury or death.			
5. TRANSPORT SAFELY, LOCK UP. 	6. USE SMV, LIGHTS, & REFLECTORS. 	7. DO NOT OPERATE WITH CUTTER OR WING RAISED. 	8. DO NOT MOUNT OR DISMOUNT WHILE MOVING. 

226-316

WARRANTY INFORMATION:

Read and understand the complete Warranty Statement found in this Manual. Fill out the Warranty Registration Form in full and return it to Schulte within 30 Days. Make certain the Serial Number of the Machine is recorded on the Warranty Card and on the Warranty Form that you retain.

DEALER'S PREDELIVERY SERVICE GUIDE for the SCHULTE FX520

DETAILS OF ITEMS LISTED BELOW ARE COVERED IN THIS OPERATOR'S MANUAL

- _____ Shipping damage corrected
 - _____ Set up machine as outlined in the assembly section and/or attached instructions.
 - _____ Check that all safety decals are in good condition, replace if necessary.
 - _____ Check that gearboxes have been filled with oil.
 - _____ Check that all grease fittings have been lubricated.
 - _____ Check all items on Warranty Card
-

DEALER'S DELIVERY GUIDE for the SCHULTE FX520

- _____ Mounting and removal from tractor
 - _____ Operation
 - _____ Adjustments
 - _____ Lubrication
 - _____ Maintenance
 - _____ Operator's safety precautions
 - _____ User's responsibility and warranty
 - _____ Operator's manual delivered to owner
 - _____ Operator instructed on contents of operator's manual
-

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SAFETY SECTION

SAFETY

SAFETY

A safe and 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 safely and 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 serious injury or death from unsafe practices.

CAUTION!



The lowest level of Safety Message; warns of possible injury. Decals located on the Equipment with this Signal Word are Black and Yellow.

WARNING!



Serious injury or possible death! Decals are Black and Orange.

DANGER!



Imminent death/critical injury. Decals are Red and White. (SG-1)

SAFETY

SAFETY

READ, UNDERSTAND, and FOLLOW the following Safety Messages. Serious injury or death 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.

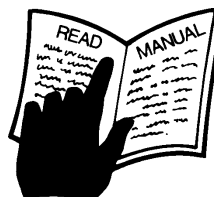
(SG-2)



PELIGRO!



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

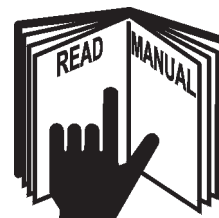


¡LEA EL INSTRUCTIVO!

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 too operate the Tractor and Implement without supervision. Make sure the operator has fully read and understood the manuals prior to operation. (SG-4)



WARNING!

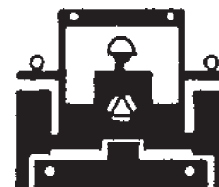


Always maintain the safety decals in good readable condition. If the decals are missing, damaged, or unreadable, obtain and install replacement decals immediately. (SG-5)

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)



WARNING!



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



WARNING!



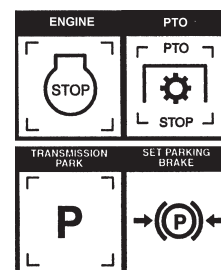
Do not modify or alter this Implement. Do not permit anyone to modify or alter this Implement, any of its components or any Implement function. (SG-8)

DANGER!



BEFORE leaving the tractor seat, always engage the 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)



SAFETY

SAFETY

DANGER!



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



DANGER!



Never allow children to operate or ride on the Tractor or Implement. (SGM-11)



WARNING!



Do not mount the Tractor while the tractor is moving. Mount the Tractor only when the Tractor and all moving parts are completely stopped. (SG-12)



DANGER!



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



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 serious injury or even death. (SG-14)



DANGER!



Do not operate this Equipment with hydraulic oil leaking. Oil is expensive and its presence could present a hazard. Do not check for leaks with your hand! Use a piece of heavy paper or cardboard. High-pressure oil streams from breaks in the line could penetrate the skin and cause tissue damage including gangrene. If oil does penetrate the skin, have the injury treated immediately by a physician knowledgeable and skilled in this procedure. (SG-15)

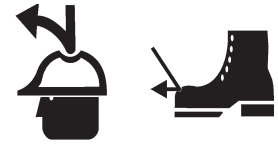


SAFETY

WARNING!



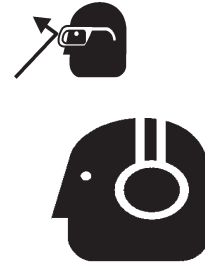
The operator and all support personnel should wear hard hats, safety shoes, safety glasses, and proper hearing protection at all times for protection from injury including injury from items thrown by the equipment. (SG-16)



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)



WARNING!



Transport only at safe speeds. Serious accidents and injuries can result from operating this equipment at unsafe 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 safe transport speeds for you and the equipment. **Make sure you abide by the following rules:**

1. 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 safe transport speed for you and this Equipment.
2. Test the equipment at a slow speed in turns. Increase the speed through the turn only after you determine that it is safe to operate 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 safe turning speed for you and this equipment before operating on roads or uneven ground.
3. Only transport the Tractor and Implement at the speeds that you have determined are safe and which allow you to properly control the equipment.

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. 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)



SAFETY

SAFETY

SAFETY

WARNING!



Never attempt to lubricate, adjust, or remove material from the Implement while it is in motion or while tractor engine is running. Make sure the tractor engine is off before working on the Implement! (SG-20)

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)



WARNING!



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



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)

DANGER!



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



DANGER!



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

WARNING!



Do not exceed the rated PTO speed for the Implement. Excessive PTO speeds can cause Implement driveline or blade failures resulting in serious injury or death. (SG-26)

DANGER!



NEVER 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)



SAFETY

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 serious injury or death. (SG-29)

WARNING!



Engine Exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the state of California to cause cancer and birth defects or other reproductive harm. (SG-30)

WARNING!



Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer and birth defects or other reproductive harm. Wash Hands after handling. (SG-31)

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)

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)

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-34)

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-35)

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)

WARNING!



Do not mow with two machines in the same area except with Cab tractors with the windows closed. (SGM-11)

SAFETY

SAFETY

WARNING!



Never leave the Mower and Power Unit unattended while the Mower is in the raised position. Accidental operation of a lifting lever or a hydraulic failure may cause the mower to suddenly fall causing serious injury or possible death to anyone who might inadvertently be under the mower. (SPU-3)

DANGER!



Do not operate the implement while wearing loose fitting clothing. Entanglement of the clothing with the rotating elements can result in serious injury or even death. Stay clear of all rotating elements at all times. (SSP-3)

WARNING!



Mow only in conditions where you have clear visibility in daylight or with adequate artificial lighting. Never mow in darkness or foggy conditions where you cannot clearly see at least 100 yards in front and to the sides of the tractor and mower. 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 this type of items discontinue mowing. (SGM-1)

DANGER!



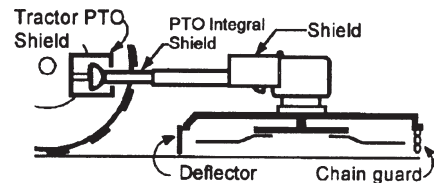
There are obvious and hidden potential hazards in the operation of this Mower. REMEMBER! This machine is often operated in heavy brush and in heavy weeds. The Blades of this Mower can throw objects if shields are not properly installed and maintained. Serious injury or even death may occur unless care is taken to insure the safety of the operator, bystanders, or passersby in the area. Do not operate this machine with anyone in the immediate area. Stop mowing if anyone is within 100 yards of mower. (SGM-2)



DANGER!



All Safety Shields, Guards and Safety devices including (but not limited to) - the Deflectors, Chain Guards, Steel Guards, Gearbox Shields, PTO integral shields, and Retractable Door Shields should be used and maintained in good working condition. All safety devices should be inspected carefully at least daily for missing or broken components. Missing, broken, or worn items must be replaced at once to reduce the possibility of injury or death from thrown objects, entanglement, or blade contact. (SGM-3)



DANGER!



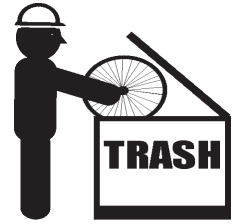
The rotating parts of this machine have been designed and tested for rugged use. However, the blades could fail upon impact with heavy, solid objects such as metal guard rails and concrete structures. Such impact could cause the broken objects to be thrown outward at very high velocities. To reduce the possibility of property damage, serious injury, or even death, never allow the cutting blades to contact such obstacles. (SGM-4)

SAFETY

WARNING!



Extreme care should be taken when operating near loose objects such as gravel, rocks, wire, and other debris. Inspect the area before mowing. 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 mowing immediately if blades strike a foreign object. Repair all damage and make certain rotor or blade carrier is balanced before resuming mowing. (SGM-5)



WARNING!



Many varied objects, such as wire, cable, rope, or chains, can become entangled in the operating parts of the mower head. These items could then swing outside the housing at greater velocities than the blades. Such a situation is extremely hazardous and could result in serious injury or even death. Inspect the cutting area for such objects before mowing. Remove any like object from the site. Never allow the cutting blades to contact such items. (SGM-6)

WARNING!



Mow at the speed that you can safely operate and control the tractor and mower. Safe mowing speed depends on terrain condition and grass type, density, and height of cut. Normal ground speed range is from 0 to 5 mph. Use slow mowing speeds when operating on or near steep slopes, ditches, drop-offs, overhead obstructions, power lines, or when debris and foreign objects are to be avoided. (SGM-7)

WARNING!



Avoid mowing in reverse direction when possible. Check to make sure there are no persons behind the mower and use extreme care when mowing in reverse. Mow only at a slow ground speed where you can safely operate and control the tractor and mower. Never mow an area that you have not inspected and removed debris or foreign material. (SGM-8)

WARNING!



Do not put hands or feet under mower decks. Blade Contact can result serious injury or even death. Stay away until all motion has stopped and the decks are securely blocked up. (SGM-9)



DANGER!



Replace bent or broken blade with new blades. NEVER ATTEMPT TO STRAIGHTEN OR WELD ON BLADES SINCE THIS WILL LIKELY CRACK OR OTHERWISE DAMAGE THE BLADE WITH SUBSEQUENT FAILURE AND POSSIBLE SERIOUS INJURY FROM THROWN BLADES. (SGM-10)

WARNING!



Mow at the speed that you can safely operate and control the Tractor and Mower. Safe mowing speed depends on terrain condition and grass type, density, and height of cut. Normal ground speed range is from 0 to 5 mph. Use slow mowing speeds when operating on or near steep slopes, ditches, drop-offs, overhead obstructions, power lines, gas lines or when debris, and foreign objects are to be avoided. (SGM-7)

WARNING!



Avoid mowing in the reverse direction when possible. Check to make sure there are no persons behind the mower and use extreme care when mowing in reverse. Mow only at a slow ground speed where you can safely operate and control the Tractor and Mower. Never mow an area in the reverse direction that you have not inspected and removed debris or foreign material. (SGM-13)

SAFETY

DANGER!



Rotary Mowers are capable under adverse conditions of throwing objects for great distances (100 yards or more) and causing serious injury or death. Follow safety messages carefully



STOP MOWING IF PASSERSBY ARE WITHIN 100 YARDS UNLESS:

- Front and Rear Deflectors, Chain Guards, or Bands are installed and in good, workable condition;
- Mower sections or Wings are running close to and parallel to the ground without exposed Blades;
- Passersby are outside the existing thrown-object zone;
- All areas have been thoroughly inspected and all foreign material such as rocks, cans, glass, and general debris has been removed.

NOTE: Where there are grass and weeds high enough to hide debris that could be struck by the blades, the area should be: inspected and large debris removed, mowed at an intermediate height, inspected, closely with any remaining debris being removed, and mowed again at desired final height. (This will also reduce power required to mow, reduce wear and tear on the Mower drivetrain, spread cut material better, eliminate streaking, and make the final cut more uniform.)

(SRM-1)

DANGER!



Always disconnect the main PTO Driveline from the Tractor before performing service on the Mower. Never work on the Mower with the tractor PTO driveline connected and running. Blades or Drivelines could turn without warning and cause immediate entanglement, injury or death.

(SRM-3)

DANGER!



Do not turn so sharp or lift mower so high to produce a severe "knocking" of the Driveline which will cause accelerated wear and breakage of drive train components and could result in possible injury from the separated Driveline sections. (SRM-4)

WARNING!



Do not let the Blades turn when the Mower Deck is raised for any reason, including clearance or for turning. Raising the Mower deck exposes the Cutting Blades which creates a potentially serious hazard and could cause serious injury or even death from objects thrown from the Blades. (SRM-7)



WARNING!



Be particularly careful when transporting the Implement with the Tractor. Turn curves or go up hills only at a low speed and using a gradual steering angle. Rear mounted implements move the center of gravity to the rear and remove weight from the front wheels. Make certain, by adding front ballast, that at least 20% of the tractor's weight is on the front wheels to prevent rearing up, loss of steering control or Tractor tip-over. Slow down on rough or uneven surfaces to prevent loss of steering control which could result in property damage or possible injury. Do not transport unless 3-Point lift lever is fully raised and in the latched transport position. Dropping implement in transport can cause serious damage to the tractor and/or Implement and possibly cause the operator or others to be injured or killed. (S3PT-2)

SAFETY

WARNING!



Use extreme care when lowering or unfolding the implement's wings. Make sure no bystanders are close by or underneath the wings. Allow ample clearance around the implement when folding or unfolding the wings. Use extreme caution around buildings or overhead power lines.

(S3PT-5)

DANGER!



There are obvious and hidden potential hazards in the operation of this Implement as in all power-driven or pulled equipment. **REMEMBER!** This machine is often operated in rough terrain conditions that include tall grass, weeds, gullies, holes, slopes, hidden obstructions and the like. Serious injury or even death may occur unless care is taken to assure the safety of the operator and bystanders in the area. Do not operate this machine with anyone in the immediate area. (S3PT-7)

DANGER!



Make sure the PTO shield, integral driveline shields, and input shields are installed when using PTO-driven equipment. Always replace any shield if it is damaged or missing. (S3PT-8)



WARNING!



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 prior to starting any maintenance or repair work. (S3PT-9)



WARNING!



The rotating parts of this machine continue to rotate even after the PTO has been turned off. The operator should remain in his seat for 60 seconds after the brake has been set, the PTO disengaged, the tractor turned off, and all evidence of rotation has ceased. (SPT-10)

“Wait a minute...Save a life!”

DANGER!



Always disconnect the main PTO Driveline from the Tractor before performing service on the Implement. Never work on the Implement with the tractor PTO driveline connected and running. Rotating Parts, Blades or Drivelines could turn without warning and cause immediate entanglement, injury or death. (S3PT-11)

DANGER!



This Implement is wider than the Tractor. Be careful when operating or transporting this equipment to prevent the Implement from running into or striking sign posts, guard rails, concrete abutments or other solid objects. Such an impact could cause the Implement and Tractor to pivot violently resulting in loss of steering control, serious injury, or even death. Never allow the Implement to contact obstacles. (S3PT-12)

WARNING!



DO NOT use a PTO adapter to attach a non-matching Implement driveline to a Tractor PTO. Use of an adapter can double the operating speed of the Mower resulting in excessive vibration, thrown objects, and blade and mower failure. Adapter use will also change the working length of the driveline exposing unshielded driveline areas. Serious bodily injury and/or equipment failure can result from using a PTO adapter. Consult an authorized dealer for assistance if the Implement driveline does not match the Tractor PTO. (S3PT-14)

DANGER!



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)

SAFETY

SAFETY

WARNING!



Never operate the Tractor and Mower if the Implement input driveline is directly connected to the Tractor transmission. Tractor braking distances can be substantially increased by the momentum of the rotating Mower blades driving the Tractor transmission even though the Tractor clutch has been disengaged. Install an over running clutch between the Tractor PTO and the Mower driveline to prevent this potentially dangerous situation.

(S3PT-16)

WARNING!



When attaching the Implement input driveline to the Tractor PTO, it is important that the connecting yoke spring activated locking collar slides freely and the locking balls are seated securely in the groove on the Tractor PTO shaft. A driveline not attached correctly to the Tractor PTO shaft could come loose and result in personal injury and damage to the Implement.

(S3PT-17)

WARNING!



Before operating the Mower, check to make sure the Implement input driveline will not bottom out or become disengaged. Bottoming out occurs when the inner shaft penetrates the outer housing until the assembly becomes solid-it can shorten no more. Bottoming out can cause serious damage to the Tractor PTO by pushing the PTO into the Tractor and through the support bearings or downward onto the PTO shaft, breaking it off. A broken drive line can cause personal injury.

(S3PT-18)

DANGER!



Never crawl under a raised Implement supported solely by the Tractor 3-Point hitch. Release of the control lever or mechanical failure will result in the Implement falling and possible injury or death. Always securely block up the Implement before crawling underneath to perform repairs and service.

(S3PT-19)

DANGER!



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-1)

DANGER!



When the Wings are folded for transport, the center of gravity is raised and the possibility of overturn is increased. Drive slowly and use extreme caution when turning on hillsides. Overturning the Implement could cause the Implement to overturn the Tractor and vice versa resulting in serious injury or even death. Never fold wings on a hillside...the Implement may overturn.

(STI-2)

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-3)



SAFETY

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 mower only**. Overloading the Tongue Jack can cause failure with possible **serious bodily injury or even death.** (STI-4)

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-6)

WARNING!



Follow these guidelines to reduce the risk of equipment and grass fires while operating, servicing, and repairing the Mower and Tractor:

- Equip the Tractor with a fire extinguisher in an accessible location.
- Do Not operate the Mower on a Tractor with an underframe exhaust.
- Do Not smoke or have an open flame near the Mower and Tractor.
- Do Not drive into burning debris or freshly burnt areas.
- Ensure slip clutches are properly adjusted to prevent excessive slippage and plate heating.
- Never allow clippings or debris to collect near drivelines, slip clutches, and gearboxes. Periodically shut down the Tractor and Mower and clean clippings and collected debris from the mower deck. (SGM-12)



PARTS INFORMATION

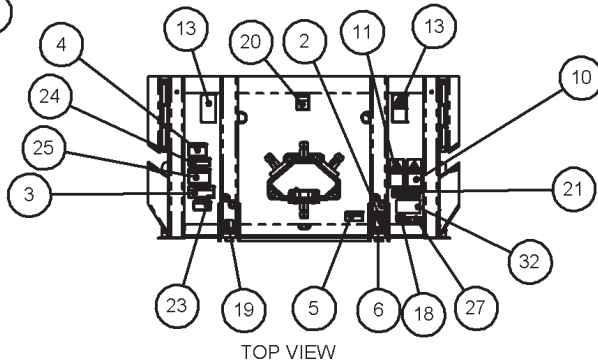
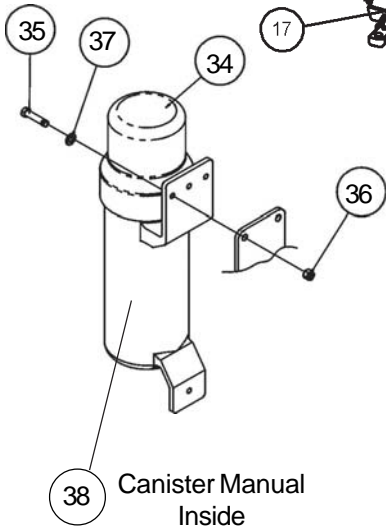
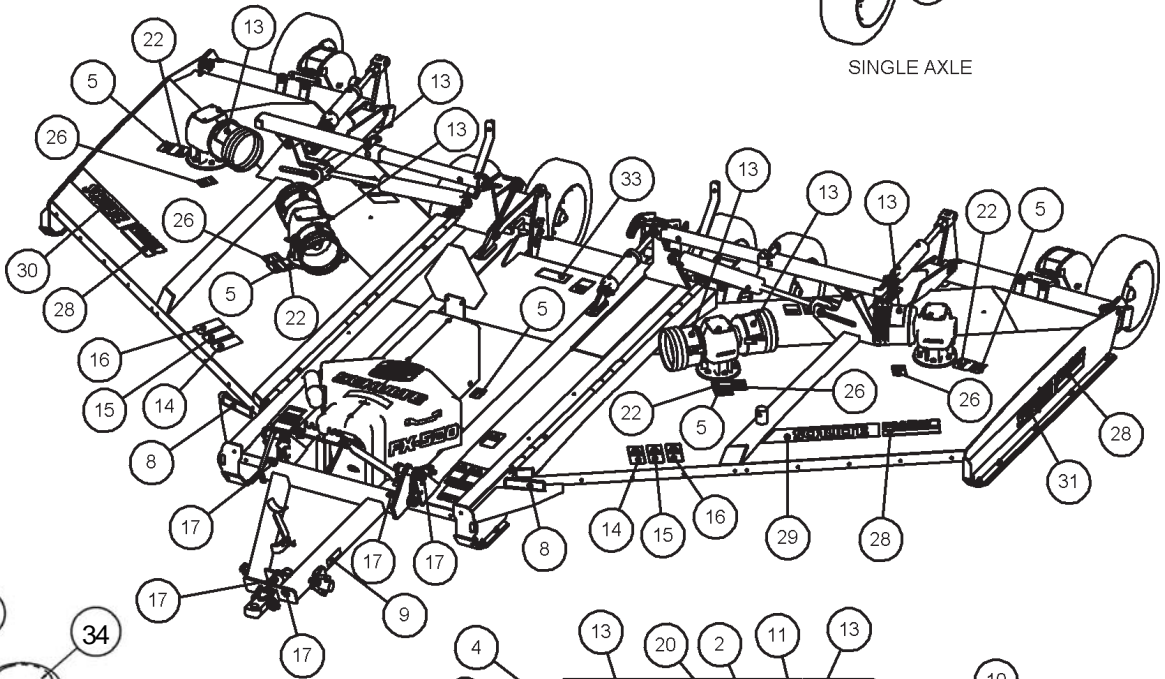
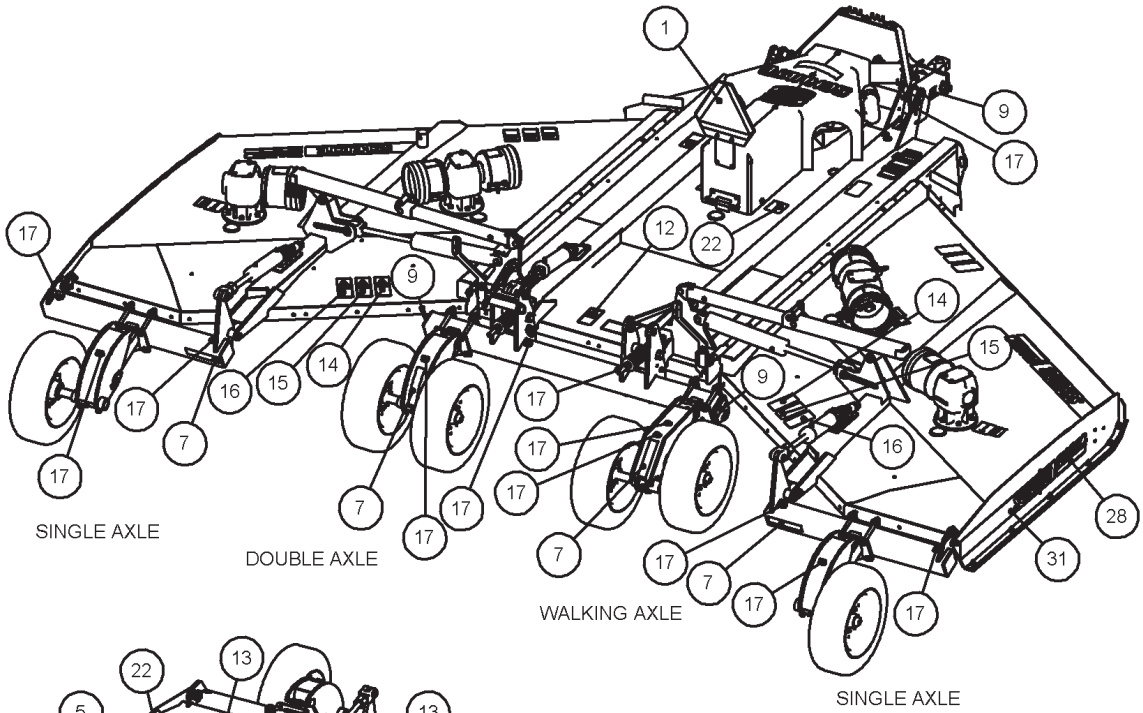
Schulte mowers use balanced and matched system components for blade carriers, blades, cuttershafts, knives, knife hangers, rollers, drivetrain components, and bearings. These parts are made and tested to Schulte specifications. Non-genuine "will fit" parts do not consistently meet these specifications.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

SEE YOUR SCHULTE DEALER

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)

SAFETY

SAFETY



38 Canister Manual Inside

SAFETY

Ref.	Part No.	Qty.	Description
1	226-013	1	SMV Sign
2	226-004	1	FEMA Member
3	226-049	1	Use Genuine Schulte Parts
4	226-070	1	Shear Bolt Breakage
5	226-081	6	Check Oil Level
6	_____	1	Serial Plate
7	226-153	4	Red Reflector
8	226-154	2	Amber Reflector, 2" x 9"
9	226-1541	4	Amber Reflector, 2" x 4.5"
10	226-167	1	ISO Read Manual
11	226-168	1	ISO Shut Off Engine
12	226-169	1	ISO Hydraulic Fluid
13	226-170	8	ISO Rotating Driveline
14	226-172	4	ISO Blade Hazard
15	226-173	4	ISO Flying Object
16	226-175	4	ISO Falling Wing Hazard
17	226-181	17	8 HR Greasing
18	226-185	1	ISO 1000 RPM
19	_____	1	CE Plate
20	226-193	1	DANGER Guard Missing
21	226-310	1	WARNING Fire Hazard
22	226-311	5	Multi Language Blade Rotation
23	226-318	1	Notice to Owner
24	226-319	1	Slip Clutches Frozen
25	226-323	1	Drawbar Adjustment
26	226-328	4	DANGER If Guard Missing
27	226-337	1	Color Coded Hoses
28	226-345	4	FX520 Logo
29	226-346	1	SCHULTE Logo, Angle Left
30	226-347	1	SCHULTE Logo, Angle Right
31	226-349	2	SCHULTE Logo, Long Profile
32	226-355	1	Weasler Driveline Greasing
33	226-361	1	Transport Lock Up Instructions
34	280-201	1	Manual Canister
35	250-002	2	1/4" Bolt
36	270-025	2	1/4" Locknut
37	256-018	4	1/4" Washer
38	C520CE010C	1	FX520 Operators Manual

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.

SAFETY

SAFETY

Item 1: Slow Moving Vehical Decal. Keep SMV reflector clean and visible. DO NOT transport or operate without the SMV.



P/N 226-013

Item 2: FEMA MEMBER DECAL



P/N 226-004

Item 3: For safety and to guarantee optimum product reliability always use genuine SCHULTE replacement parts.



P/N 226-049

Item 4: IMPORTANT; Shear bolt breakage indicates that the slip clutch has seized.



P/N 226-070

SAFETY

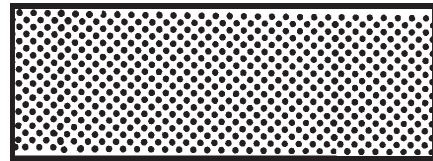
SAFETY

Item 5: IMPORTANT; Check oil level in all gearboxes before operation.



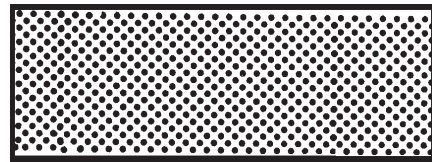
P/N 226-081

Item 7: Red Reflector. Keep reflectors clean and visible.



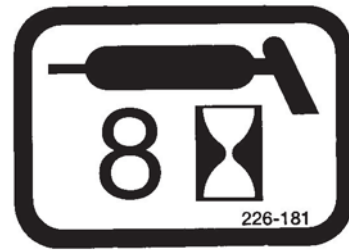
P/N 226-153

Item 8&9: Amber Reflector. Keep reflectors clean and visible.



P/N 226-154

Item 17: Grease Every 8hrs.



P/N 226-181

SAFETY

SAFETY

Item 20: DANGER! If guard missing or damaged DO NOT Operate.



P/N 226-193

Item 21: Keep mower deck clear of debris. There is a risk of fire when material is dry and contacts heat from rotating components.

WARNING

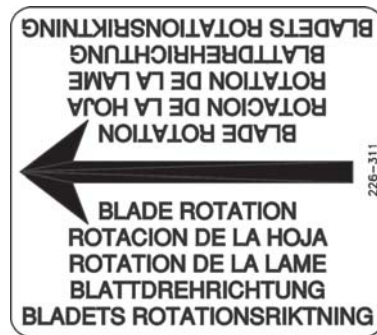
Keep Mower Deck Clear of Debris

There is a risk of Fire when dry material accumulates and contacts heat generated from rotating components. See Operator's Manual for fire prevention.

226-310

P/N 226-310

Item 22: INSTRUCT: Direction of Blade Rotation



P/N 226-311

Item 23: Operator's Manual (with repair parts) and warranty was attached to this implement during final inspection.

NOTICE TO OWNER

An OPERATOR'S MANUAL (with Repair Parts Listing) and a WARRANTY REGISTRATION CARD were attached to this implement during final inspection at the factory. If they were not attached at the time of purchase, please contact your selling dealer at once.

1. Read and understand Manual before operating the implement.
2. Complete, sign, and mail the Warranty Registration Card in Today.

226-318

P/N 226-318

SAFETY

SAFETY

Item 24: Attention! Do not operate until all slip clutches are properly adjusted and are not frozen.

ATTENTION

Do not operate PTO until ALL Slip Clutches are properly adjusted and checked to make certain that NONE ARE FROZEN and ALL WILL SLIP under excessive load. See Operator's Manual for complete Instructions.

226-319

P/N 226-319

Item 25: IMPORTANT! Drawbar Length Required For Pull Type Unit.

IMPORTANT

REQUIRED FOR STANDARD PULL TYPE UNIT

Attach Safety Chain securely as per ASAE S338

226-323

P/N 226-323

Item 26: DANGER! Do not operate if guard is missing or damaged.

⚠ DANGER

IF GUARD MISSING OR DAMAGED DO NOT OPERATE

226-328

P/N 226-328

Item 27: INSTRUCT! Color coded hoses.

226-337

P/N 226-337

SAFETY

SAFETY

Item 28: LOGO FX-520 Fighter Series

The logo for the FX-520 Fighter Series. It features the text "FX-520" in a large, bold, sans-serif font. Below it, the words "Fighter Series" are written in a smaller, italicized, sans-serif font. The entire logo is set against a dark grey rectangular background.

P/N 226-345

Item 29: LOGO Schulte Logo Angle Left

The Schulte logo, angled to the left. It consists of the word "SCHULTE" in a bold, sans-serif font, set within a dark grey trapezoidal shape that tapers to the left.

P/N 226-346

Item 30: LOGO Schulte Short Profile

The Schulte logo in a short profile. It features the word "SCHULTE" in a bold, sans-serif font, set within a dark grey trapezoidal shape that tapers to the left.

P/N 226-347

Item 31: LOGO Schulte Long Profile

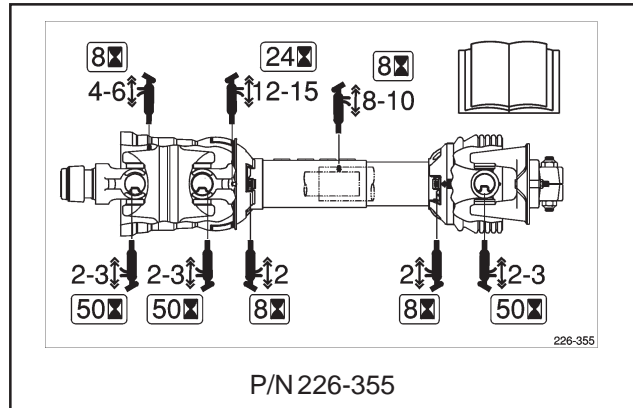
The Schulte logo in a long profile. It features the word "SCHULTE" in a bold, sans-serif font, set within a dark grey rectangular shape.

P/N 226-349

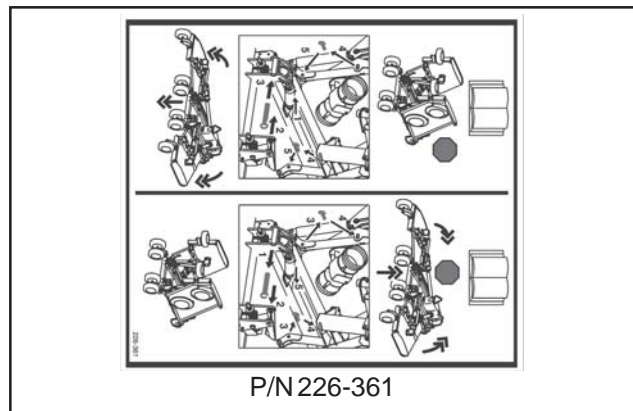
SAFETY

SAFETY

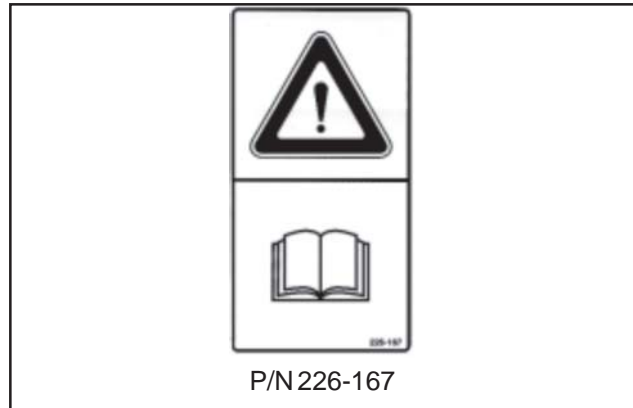
Item 32: Weasler Driveline Greasing



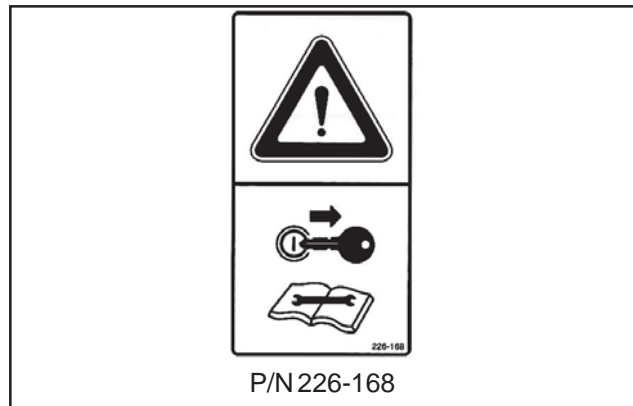
Item 33: Transport Lock Up Instructions



Item 10: Carefully read operator's manual before handling the machine. Observe instructions and safety rules when operating.



Item 11: Shut off engine and remove key before performing maintenance or repair work.



SAFETY

SAFETY

Item 12: Avoid fluid escaping under pressure. Consult technical manual for service procedures.



P/N 226-169

Item 13: Stay clear of rotating driveline to avoid personal injury. Do not open or remove safety shields while engine is running.



P/N 226-170

Item 14: Stay clear of mower blades as long as engine is running. Do not open or remove safety shields while engine is running.



P/N 226-172

Item 15: Danger - Thrown objects; keep a safe distance from the machine while it is in operation



P/N 226-173

SAFETY

Item 16: Wings may fall rapidly. Stay clear of raised wings. Always install wing lock up pins.



P/N 226-175

Item 18: 1000 RPM



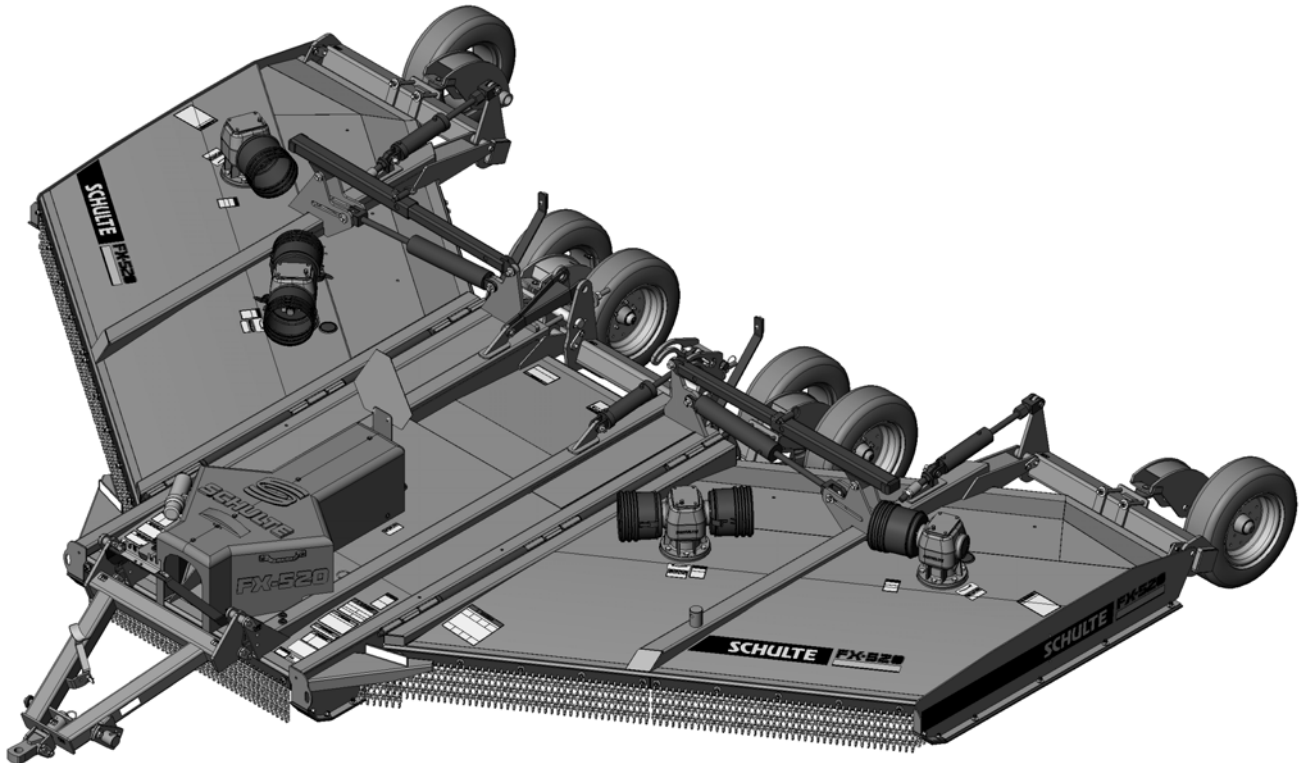
P/N 226-185

SAFETY

INTRODUCTION SECTION

INTRODUCTION

INTRODUCTION



The FX520 Rotary Cutter is the premier 20-foot (6 metre) rotary cutter in the market. It features five rotors instead of the traditional three. This allows for a better cut, better shredding and better distribution. It incorporates a 7 gauge (5mm) Domed Deck to eliminate corrosion due to moisture and to make it very easy to clean. The driveline has extremely strong spline and tri-lobe profile tubing, extended lube cross kits, and slip clutches at every down box to give your driveline the ultimate protection. Each down box is 190 hp (142 kW). The front hitch is equipped with a lift assist suspension to help your cutter ride over obstacles easier and smoother thus helping to ensure long life. The FX520 comes standard with deck protection rings to keep the blades from damaging the domed deck. The wheel standards on this machine are adjustable to meet all your spacing needs and the back of the cutter is sloped to help distribute material evenly and reduce clumping.

The FX520 offers optional single or double chain, half front belting and full front belting. The FX520 boasts four blade options: pans with updraft blades, pans with shredder blades, fixed knives with updraft blades or fixed knives with flat blades. There are three hitches to choose from: clevis, solid tongue or precision hitch, as well as nine tire options to meet any requirement.

The FX520 Rotary Cutter is designed for cutting right of way, pasture maintenance, shredding crop residue such as cotton and corn stalks, wheat stubble and sweet clover for incorporation as green manure and brush up to 2" (51mm) in diameter. By following the maintenance schedule outlined within this manual, your FX520 should provide you with years of dependable service.

It is required that all operators of this rotary cutter must read this manual or be instructed of its contents as to safety, proper operation and maintenance before using the machine.

INTRODUCTION

Standard Features

5 Rotor Design
7 gauge (5mm) Domed Deck
Front Hitch Lift Assist
Adjustable Rear Wheel Standards
1000 rpm Driveline
Heavy Duty Slip Clutches at each Down Box
80° Constant Velocity Universal Joint to Tractor
Heavy Duty Pans
Replaceable Skid Shoes
Deck Protection Rings
Hydraulic Lift Phasing System
Independent Suspension
Sloped back for better distribution
Extended Lube Driveline
Replaceable Tension Bushings at all Vital Pivot Points
Safety Tow Chain

Optional Equipment

340-5510	1-3/8 x 21 Spline CV
340-5511	1-3/4 x 20 Spline CV
C000-300	Precision Hitch
C502-107	Clevis Hitch
C502-113	Solid Tongue Hitch
C520-250	Pans with Updraft Blades and Shrouds
C520-260	Pans with Shredder Blades and Shrouds
C520-270	Grass Seed Shredder Kit with Updraft Blades and Shrouds
C520-280	Grass Seed Shredder Kit with Flat Blades and Shrouds
C520-290	Cotton Kit with Updraft Blades and Shrouds
C520-295	Cotton Kit with Flat Blades and Shrouds
C520-500	Single Chains, Front and Rear
C520-550	Double Chains, Front and Rear
C520-580	Front Deck Protection Belting (to be ordered with chains)
C520-590	Full Length Front Belting (to be ordered with chains)
C520-610	Single Wheel Tire Kit, four 11L tires, 618 hubs
C520-620	6 Tire Kit with Center Duals, Aircraft Tires, 517 hubs
C520-625	6 Tire Kit with Center Duals, Light Truck Tires, 517 hubs
C520-630	6 Tire Kit with Center Walking Axles, Aircraft Tires, 517 hubs
C520-635	6 Tire Kit with Center Walking Axles, Light Truck Tires, 517 hubs
C520-640	8 Tire Kit with Duals, Aircraft Tires, 517 hubs
C520-645	8 Tire Kit with Duals, Light Truck Tires, 517 hubs
C520-650	8 Tire Kit with Walking Axles, Aircraft Tires, 517 hubs
C520-655	8 Tire Kit with Walking Axles, Light Truck Tires, 517 hubs
S000-080	Safety Light Kit

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 cutter.
2. Fill out the Warranty Card in full. Be sure to answer all questions, including the Serial Number of the Mower. Mail within 30 days of delivery date of this cutter.

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

3. Record the 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 cutter. The Serial # is located on the left deck tube near the front of the machine.

IMPORTANT

For your safety and to guarantee optimum product reliability, always use Genuine SCHULTE replacement parts. The use of inferior "will-fit" parts will void Warranty of your SCHULTE implement and may cause premature or catastrophic failure which can result in serious injury or death. If you have any questions concerning the repair parts you are using, contact Schulte Industries Ltd, Englefeld SK Canada S0K 1N0 1-800-404-6044

SCHULTE

225-049

**ASSEMBLY
SECTION**

ASSEMBLY

1. GENERAL

The FX520 Mower can only be used with tractors that have 1000 RPM PTO.

IMPORTANT: Check oil level in all gearboxes before operation. Refer to the Lubrication section of this manual for recommended oil type and viscosity.

Lubricate all grease fittings. Refer to the grease schedule in this manual.

Check that all nuts and bolts are in place and are properly tightened. Refer to the Maintenance section of this manual for required bolt grades and torques

If chain guards are not already assembled to the machine, refer to the parts manual for details of their general arrangement and the fasteners to install them.

Check that all tires are inflated to proper specifications. Refer to Maintenance section of this manual for required tire pressures.

ASSEMBLY

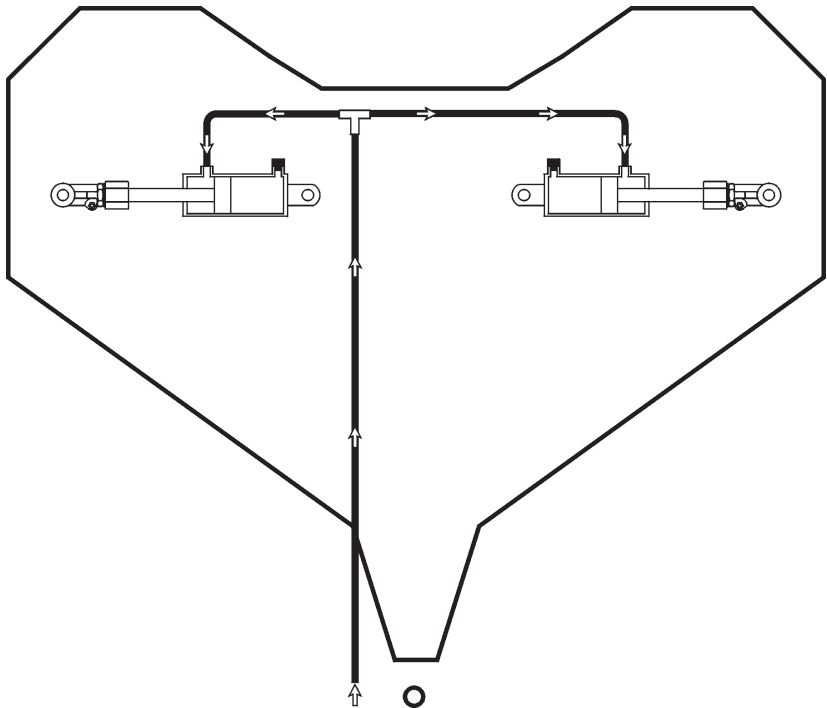
2. HYDRAULIC CIRCUITS

2.1 Wing System

IMPORTANT: If the rotary cutter has been supplied to you already assembled it is possible that the wing lift hydraulic cylinders are not completely filled with oil. An indication of this will be that the wing lift lock up pins cannot be removed freely.

The winglift system is marked in blue at the tractor connection.

First fully retract the hydraulic wing lift cylinders then remove the wing lock up pins.



DANGER!



NEVER FORCE THE WING LIFT LOCK PINS OUT OF THEIR LOCK POSITION AS THE WINGS MAY SUDDENLY DROP CAUSING INJURY OR DEATH.

ASSEMBLY

2. 2 Phasing System

The hydraulic phasing cylinder kit requires one double acting hydraulic circuit for operation. The system is comprised of three hydraulic cylinders with depth stop collars, and allows all wheels to be raised and lowered simultaneously.

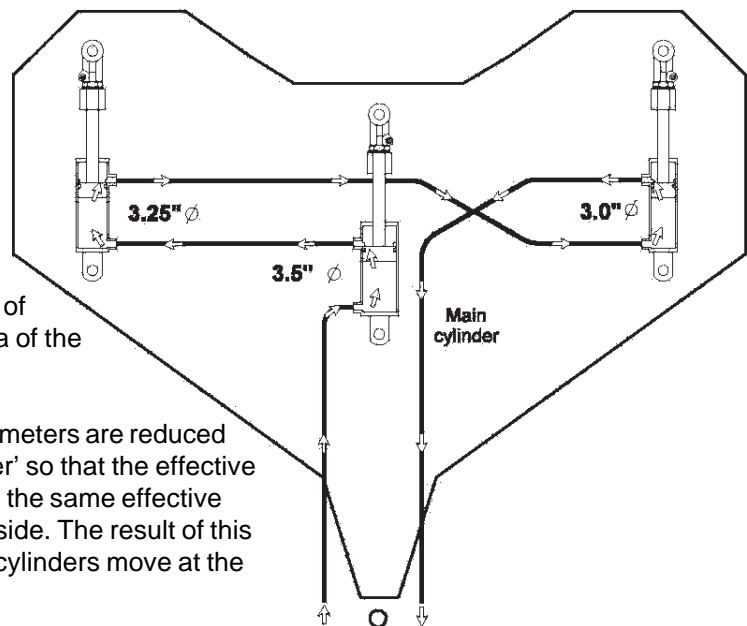
Before operation all air must be purged from the hydraulic lift circuit. Fully raise the cutter and hold the tractor's hydraulic control lever forward for 5 minutes to allow oil to fully circulate through the phasing cylinder circuit.

During operation the phasing cylinders should periodically be phased. The hydraulic lever should only have to be held for 10-15 seconds to ensure system is phased.

Hydraulic Phasing Cylinders

A hydraulic phasing cylinder system works by synchronizing the operation of a number of hydraulic cylinders so that they extend and retract at exactly the same rate. This allows a multi-section machine such as a rotary cutter to be raised and lowered evenly across its width. Because a hydraulic cylinder has a 'cylinder rod' attached to the 'piston' the effective area on the rod side of the cylinder is less than the basic effective area of the cylinder.

In order to achieve synchronization cylinder diameters are reduced as cylinders are connected to the 'main cylinder' so that the effective area of the upstream cylinder on the rod side is the same effective area of the downstream cylinder on the piston side. The result of this stepping down of cylinder diameters is that all cylinders move at the same rate resulting in a 'level lift'.

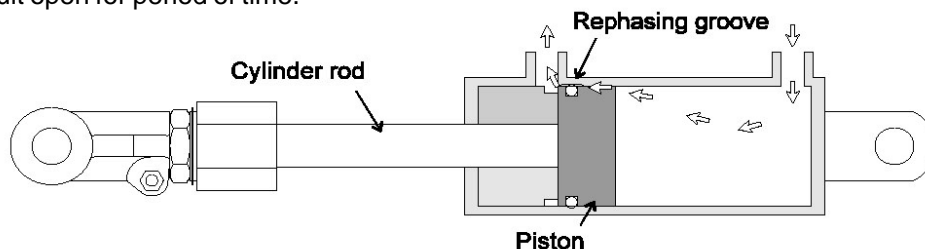


The phasing system hoses are marked in yellow at the tractor connection.

Rephasing Groove

Hydraulic oil moves from one cylinder to the next through an indentation in the cylinder wall known as a 'rephasing groove'. When the cylinder is fully extended this groove creates a bypass over the piston main seal, allowing oil to flow to the next cylinder in the set. Since these grooves are quite small it will often take a number of minutes for oil to completely circulate through the set of cylinders.

On initial startup of a phasing cylinder system it may take a number of minutes to force oil through the system and purge out any air in the hydraulic lines. During normal operation small amounts of oil may leak past piston seals causing cylinders to fall out of synchronization. Synchronization can be restored by fully extending cylinders and holding the circuit open for period of time.



ASSEMBLY

3. DRIVELINE SHIELDS CHAINS

Attach CV shield chain to tractor or cutter hitch allowing sufficient slack for turning.

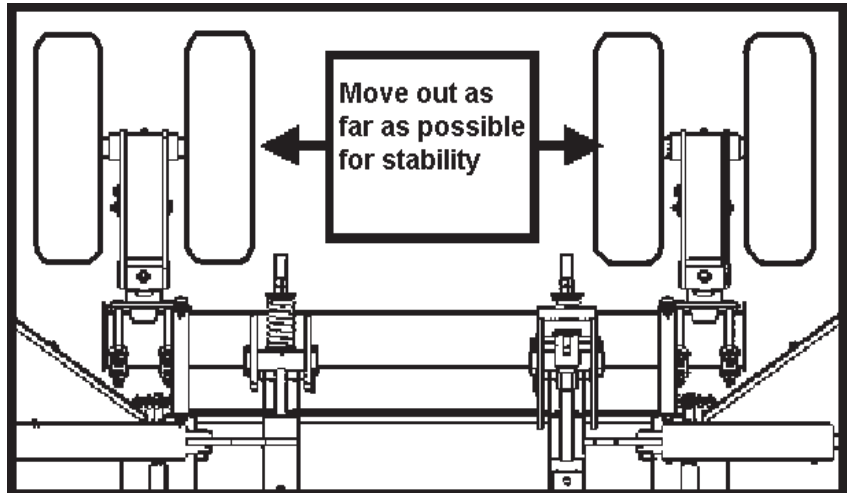
IMPORTANT: OSHA, ASAE, and SAE standards require that all rotating shafts be guarded against contact. The unchained plastic shields can rotate with the driveline but must stop when they contact another object, (Note: these shields may also be chained.)

The shields **must** be regularly greased and checked that they rotate freely on the driveline. Refer to the Lubrication section for greasing intervals.

4. WHEEL STANDARDS

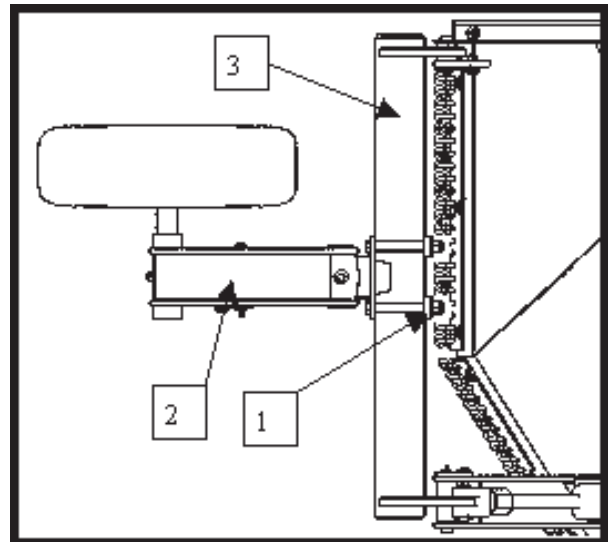
4.1 Center Section Stability

For transport stability the center section wheel standards should be moved outwards as far as possible.



4.2 Tire Spacing For Row Crop

The FX520 has adjustable wheel standards so it can accommodate a variety of row spacing. Before adjusting any wheel arms ensure the cutter is safely blocked up so that the weight is off the wheel arm you intend to adjust. To adjust the wheel arm (2) along the wheel standards (3), loosen the retaining tabs (1) then slide the wheel arm to its required position. Retighten the retaining tab.



ASSEMBLY

5. TRANSPORT LIGHT KIT

WARNING! Use **FLASHING WARNING LIGHTS** when traveling on public roads day or night, unless prohibited by law.



If the rotary cutter obscures the tractor warning lights or taillights, the rotary cutter **MUST** be equipped with a transport light kit.

Check local highway regulations concerning moving machinery on highways.

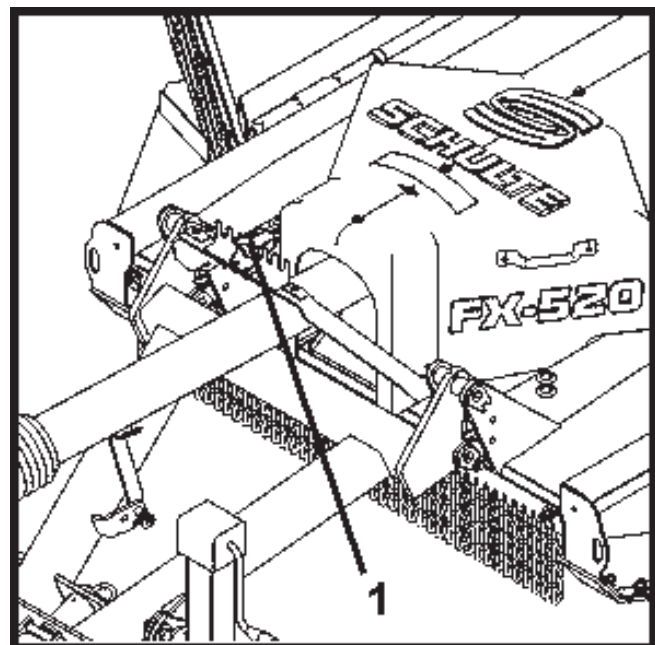
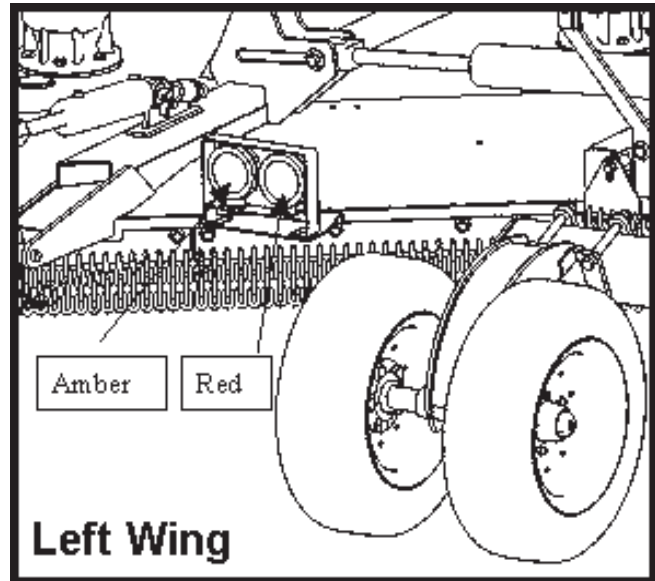
Ensure the safety pins are installed before working on the cutter. Install the safety light mounting brackets in the position shown in the figure below using the existing bolts that fasten the rear chain guard to the wing. The light assemblies are installed onto the mounting brackets with the 5/16" bolts and locknuts. Install the lights with the red and amber lenses facing to the rear, and the amber is the outer most light.

The seven-pin plug and wiring harness is pre-wired with the 80" (2m) leg to attach the right hand light assembly and the 120" (3m) leg to attach to the left hand light assembly. The wiring harness is fed into the right tube along side the tension rod and exits the rear of the tube. Using the cable ties, secure the wiring harness to the rear hydraulic hoses to properly route the harness to the left and right light assemblies. Ensure there is enough slack in the harness that it does not pull when the wing goes thru it's full range of motion. There should be approximately 4 to 5 feet (1.5m) of harness extending past the hitch point for connection to the tractor.

When not in use, the safety light harness should be stored using the Stor-Away plug provided. The Stor-Away plug (1) is installed in the position indicated in the figure below using the 1/4" bolts and lock nuts provided.

The cutter's lights should operate in unison with the tractor lights.

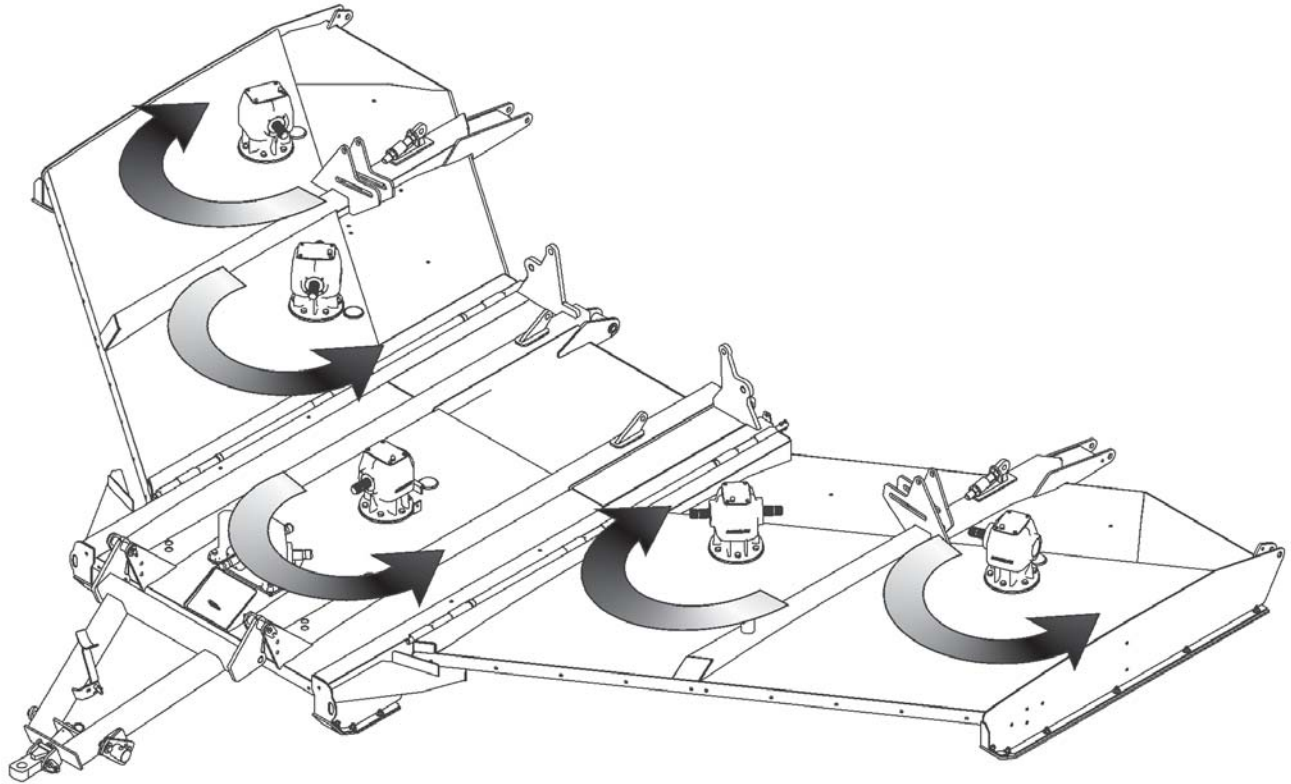
- Terminal 1 – Ground
- Terminal 3 – LH Turn & Flash
- Terminal 5 – RH Turn & Flash
- Terminal 6 – Tail Lamps



ASSEMBLY

ASSEMBLY

6. STANDARD BLADE ROTATION



ASSEMBLY

OPERATION SECTION

OPERATION

SCHULTE FX520 ROTARY CUTTER OPERATION INSTRUCTIONS

Schulte mowers are manufactured with quality material by skilled workers. This cutter is designed for cutting right of way, pasture maintenance, shredding crop residue such as cotton and corn stalks, wheat stubble and sweet clover for incorporation as green manure, and brush up to 2" [51mm] in diameter. The cutter is equipped with protective deflectors and/or chain guards to prevent objects being thrown from the cutter by the blades, however, no shielding is 100% effective. All shields, guards, deflectors, and chains equipped on the unit must be maintained on the cutter in good operational condition.

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 cutter, tractor, or a thrown object. Do not operate the cutter if passersby, pets, livestock, or property are within 300 feet(100 m) of the unit.

This section of the Operator's Manual is designed to familiarize, instruct, and educate safe and proper cutter 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 rotary cutter and are not necessarily of a FX520 cutter. Some pictures may show shields removed for purposes of clarity. NEVER OPERATE this cutter without all shields in place and in good operational condition. The operator must be familiar with the cutter and tractor operation and all associated safety practices before operating the cutter and tractor. Proper operation of the cutter, as detailed in this manual, will help ensure years of safe and satisfactory use of the cutter.

IMPORTANT: To avoid cutter damage, retorque all bolts after the first 10 hours of operation. Retighten blade carrier retaining nut on gearbox lower shafts to 600 ft. lbs.

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READ AND UNDERSTAND THE ENTIRE OPERATING INSTRUCTIONS AND SAFETY SECTION OF THIS MANUAL AND THE TRACTOR MANUAL BEFORE ATTEMPTING TO USE THE TRACTOR AND CUTTER. 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 cutter and tractor.

DANGER!



READ, UNDERSTAND, and FOLLOW the following Safety Messages. Serious injury or death 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-2)



PELIGRO!



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

¡LEA EL INSTRUCTIVO!



OPERATION

STANDARD EQUIPMENT AND SPECIFICATIONS

Cutting Width	240"	(6.10 m)
Overall Width	247"	(6.27 m)
Transport Width	91"	(2.31 m)
Overall Length	243"	(6.17 m)
Ground Clearance	17"	(438 mm)
Approximate Weight	3185 lbs	(1445 kg)
Hitch Load	2300 lbs	(1043 kg)
Cutting Height	2"-12"	(51-305 mm)
Cutting Capacity	2"	(51 mm)
Blade Tip Speed	16,000 ft/min	(4877 m/min)
Blade Overlap	6"	(152 mm)
Splitter Box Rating	260 HP	(153 kW)
Down Box Rating	190 HP	(142 kW)
Deck Thickness	.180"	(7 ga.)
Minimum Tractor HP	100 HP	(75 kW)
Tractor PTO Speed	1000 RPM	
Tractor Hydraulics	2 double acting circuits @2000 psi (13.8 MPa)	
Working Range of Wings	20° down to 40° up	

Single Chains are Standard Equipment. Schulte recommends cutters be equipped and maintained with chains.

FX520 Rotary Cutter, No Load, Part No. C520

**DECLARED DUAL-NUMBER NOISE EMISSION VALUES
in accordance with ISO 4871**

	Operating Mode 1
Measured A-weighted sound power level, L_{WA} (ref. 1 pW), in decibels	111.5
Uncertainty, K_{WA} , in decibels	2.5
Measured A-weighted emission sound pressure level, L_{PA} (ref. 20 μ Pa) at the operator's position, in decibels	92.5
Uncertainty, K_{PA} , in decibels	2.5

Values determined according to noise test code given in ISO 3744 and ISO 11201 .

NOTE - The sum of a measured noise emission value and its associated uncertainty represents an upper boundary of the range of values which is likely to occur in measurements.

OPERATION

DANGER!



The Mower is designed for certain mowing applications and is rated to cut up to a specific size vegetation (see Mower Standard Equipment and Specifications). **DO NOT** use this Mower to cut vegetation above the Mower's rated capacity or to cut any type of non-vegetative material. Only operate this Mower on a properly sized and equipped Tractor. Operating this Mower in an application for which it is not designed and/or operating the Mower with the wrong size Tractor can cause Mower component damage and equipment failure resulting in possible serious injury or death. (SGM-14)

OPERATION

1. OPERATOR REQUIREMENTS

Safe operation of the cutter is the responsibility of a qualified operator. A qualified operator has read and understands both the cutter and tractor Operator Manuals and is experienced in tractor and cutter operations and all associated safety practices. In addition to the safety messages contained in this manual, safety message decals are affixed to the cutter and tractor. If any part of the operation and safe use of the cutter and tractor is not completely understood, consult an authorized dealer for a full explanation.

Safe cutter operation requires that the operator wear approved Personal Protective Equipment (PPE) for the job conditions while connecting, operating, servicing and repairing the cutter and tractor. PPE is designed to provide operator protection from bodily injury and includes the following:

Personal Protective Equipment (PPE)

- Protective eye glasses, goggles, or face shield
- Hard hat
- Steel toed safety footwear
- Gloves
- Hearing protection
- Close fitting clothing
- Respirator or filter mask



OPERATION

DANGER!



NEVER 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)



OPERATION

2. TRACTOR REQUIREMENTS

The tractor used to operate the cutter must have the power capacity to lift, pull, and operate the Power Take Off (PTO) at the cutter's rated speed while traveling at a ground speed between 2 and 5 MPH (3 and 8 km/h). Operating the cutter 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 passersby.

Tractor Requirement 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 -Minimum 100 HP (75 kW)
- Drawbar..... 16" and 20" (406 and 508 mm) length for 1000 RPM unit, rated to carry weight of mower, safety chain attachment point
- Hydraulics..... 2 Double acting circuits @ 2000 psi (13.8 MPa)
- Front End Weights..... As needed to maintain 20% weight on front axle
- Power Take Off..... 1000 RPM (21-spline 1-3/8" diameter output shaft)
1000 RPM (20-spline 1-3/4" diameter output shaft)

OPERATION

2.1 ROPS and SeatBelt

A Roll-Over-Protective-Structure (ROPS) and seat belt are essential to protect the operator from falling off the tractor, especially during a roll over where the driver could be crushed and killed. The ROPS and seat belt must be used in conjunction with one another. 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 tractor dealer.

WARNING!



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



2.2 Tractor Safety Devices

If transporting or operating the tractor and cutter 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 cutter. Never operate the tractor PTO with the PTO master shield missing or in the raised position.

OPERATION

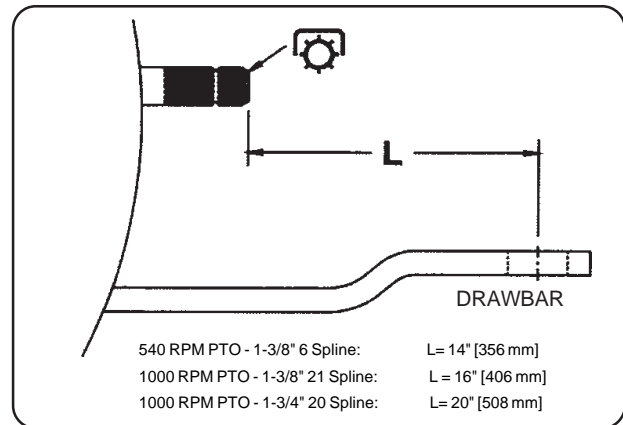
2.3 Tractor Horsepower

The horsepower required to operate the cutter depends on several factors including the vegetation to be cut, terrain condition, operator experience and condition of the cutter and tractor. For most applications the cutter requires a tractor with a minimum of 100 HP(75 kw). Operating the cutter with a tractor that does not have adequate power may damage the tractor engine.

2.4 Drawbar

Position the length of the drawbar from the end of the tractor PTO shaft to the drawbar hitch hole according to the operating speed of the cutter. If the cutter is a 540 RPM unit, position the drawbar length from shaft end to hitch hole at 14". For 1000 RPM cutters, set the drawbar length at 16" for 21 spline 1-3/8" cutters and at 20" for 1-3/4" 20 spline cutters.

Incorrect drawbar length will change angle of driveline causing possible damage to constant velocity joint. Do not use PTO adaptors. PTO adaptors will invalidate your warranty. See your tractors operator's manual for drawbar adjustment procedures.



WARNING! BE SURE THAT THE TRACTOR PTO SPEED (540 or 1000 RPM) MATCHES THE ROTARY CUTTER GEARBOX SPEED.



2.5 Tractor Hydraulics

The tractor operating the cutter must have two double acting hydraulic circuits operating at 2000 psi (13.8 MPa). One circuit for the operation of the phasing system and one for the wing lift system.

OPERATION

2.6 Front End Weight

A minimum of 20% total tractor weight must be maintained on the tractor front end at all times. Front end weight is critical to maintain steering control and to prevent the tractor from rearing up while driving. If the front end is too light, add weight until a minimum of 20% total tractor weight is positioned on the front tires. Front weights and weight carriers can be purchased through an authorized tractor dealership.

2.7 Power Take Off (PTO)

The cutter is designed to operate at 1000 rpm PTO speed. Most tractors operate at either 540, or a combination of 540 and 1000 rpm PTO speeds. The speed of the tractor PTO can be determined by the number of splines on the PTO output shaft. Those operating at 540 rpm will have a 6-spline 1-3/8" diameter shaft and those operating at 1000 rpm will have a 21-spline, 1-3/8" diameter or 20-spline, 1-3/4" diameter shaft. Refer to the tractor owner's manual for instructions to change PTO speeds on models that operate at more than one speed.

If operating an older model tractor where the tractor's transmission and PTO utilize one master clutch, an over-running clutch must be used between the PTO output shaft and the driveline of the implement. An authorized tractor dealer can provide the over-running clutch and its installation if needed.

OPERATION

WARNING!



DO NOT use a PTO adapter to attach a non-matching Implement driveline to a Tractor PTO. Use of an adapter can double the operating speed of the Mower resulting in excessive vibration, thrown objects, and blade and mower failure. Adapter use will also change the working length of the driveline exposing unshielded driveline areas. Serious bodily injury and/or equipment failure can result from using a PTO adapter. Consult an authorized dealer for assistance if the Implement driveline does not match the Tractor PTO.

(S3PT-14)

WARNING!



Never operate the Tractor and Mower if the Mower main driveline is directly connected to the Tractor transmission. Tractor braking distances can be substantially increased by the momentum of the rotating Mower blades driving the Tractor transmission even though the Tractor clutch has been engaged. Install an over running clutch between the Tractor PTO and the Mower driveline to prevent this potentially dangerous situation.

OPERATION

3. GETTING ON AND OFF THE TRACTOR

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

WARNING!



Do not mount the Tractor while the tractor is moving. Mount the Tractor only when the Tractor and all moving parts are completely stopped. (SG-12)



3.1 Boarding the Tractor

Use both hands and equipped handrails and steps for support when getting on the tractor. Never use tractor control levers for support when mounting the tractor. Always seat yourself in the operator's seat and fasten the seatbelt. Only operate the tractor and cutter with the ROPS in the raised position.

Never allow passengers to ride on the tractor or cutter. Riders can easily fall off and be seriously injured or killed from being ran over by both the tractor and cutter. It is the operator's responsibility to forbid riders.

DANGER!



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



DANGER!



Never allow children to operate or ride on the Tractor or Implement. (SG-11)



3.2 Dismounting the Tractor

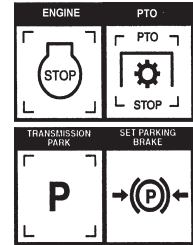
Before dismounting, park the tractor and cutter on a reasonably level surface, apply the parking brake, idle the engine down, disengage the PTO, and lower the cutter to the ground. Shut down the tractor engine according to the operator's manual, remove the key, and wait for all motion to completely stop.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

OPERATION

DANGER!



BEFORE leaving the Tractor seat, always engage the 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 while it is moving or while the engine is running. Operate the Tractor controls from the Tractor seat only. (SG-9)



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.

4. 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 lever
- 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.

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)

DANGER!



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



OPERATION

5. CONNECTING THE CUTTER TO THE TRACTOR

Use extreme caution when connecting the cutter to the tractor. The cutter should be securely resting at ground level or on blocks. Place a block in front of and behind the center section wheels to prevent the cutter from moving. Keep hands and feet out from under the cutter and clear of pinch points between the tractor and cutter.

DANGER!

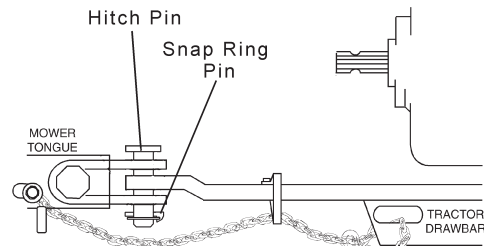


Always shut the Tractor completely down, place the transmission in park, and set the parking brake before you or anyone else attempts to connect or disconnect the Implement and Tractor hitches. (S3PT-15)

5.1 Connecting the Implement Tongue to the Tractor

1. Ensure the tractor is equipped with the correct PTO shaft and the drawbar is set at the correct length.
2. Using the parking jack, position the tongue clevis to the height of the tractor drawbar. A screw driver may be inserted into the hole in the side of the swivel hitch to keep the hitch clevis level while connecting to the tractor drawbar.
3. Board the tractor and start the engine. Back the tractor to the cutter aligning the drawbar hitch hole with the cutter tongue clevis. Turn off the tractor engine, place the tractor in park, and set the parking brake before dismounting.
4. To attach the Cutter insert the hitch pin through the drawbar and tongue clevis. Once the pin is inserted, attach the snap ring pin through the hole on the hitch pin and snap in place.
5. Securely attach the cutter safety chain to the tractor drawbar or drawbar support frame.
6. Lower the jack until the tongue is completely supported by the drawbar. Remove jack from the tongue and place on storage bracket of cutter.

Tongue Connection



Attach Safety Chain Securely



WARNING! NEVER STAND BETWEEN THE TRACTOR AND THE ROTARY CUTTER WHILE THE TRACTOR IS BEING BACKED TO THE HITCH



Safety Tow Chain

If the cutter is towed on a public roadway, a safety chain with tensile strength equal to or greater than the gross weight of the cutter must be connected between the tractor and cutter. This will help control the implement in the event the tongue becomes disconnected from the drawbar. After connecting both ends of the safety chain, drive the tractor to the right and left to check for proper chain length. Adjust length as necessary and allow only enough slack in the chain to make a maximum turn in both directions.

OPERATION

5.2 Slip Clutches - Initial Use

CAUTION! Failure to comply with the following procedure will result in slip clutch and possible implement damage!



This machine has a Weasler self-adjusting clutch. At the beginning of a season or after long periods of inactivity (60 days), loosen all slip clutch bolts on the outside diameter of the clutch until they are just loose, then tighten one half turn.

With the cutter in the fully raised position, and the tractor engine at an idle, engage the PTO for 2-3 seconds to make the clutch slip. Retighten slip clutch bolts to 30 ft-lbs (41 Nm).

WARNING! Do not allow the clutch to slip for more than 2-3 seconds at a time to prevent damage to the clutch lining.



If the clutch does not slip repeat this procedure 2 or 3 times. If the clutch does not slip after 2 or 3 attempts, disassemble the clutch, clean all contact surfaces and replace any damaged components.

5.3 Connecting Cutter Hydraulic Lines to the Tractor

With the tractor shut down and secured in position, relieve hydraulic pressure from the tractor by moving the control levers back and forth several times or placing the levers in the float position.

When connecting the hydraulic lines, keep hoses, quick couplers, and swivels free of contamination. Never leave a disconnected hose end open and cap the tractor hydraulic outlet ports when not in use. If the tractor ports or cutter hydraulic hose ends become contaminated, wipe clean with a rag before connecting.

Hydraulic Line Support

After connecting the hydraulic lines to the tractor, adjust the hoses in the hose organizers to allow sufficient slack for turning. Ensure that hoses do not contact the driveline, do not bind while turning, and do not become pinched or kinked.

Hydraulic Cylinder Priming

Hydraulic Cylinders must be filled with hydraulic oil before removing the wing transport pins to lower the cutter wings. Hydraulic cylinders and lines are filled by holding the valve control levers in the raised position until the cylinders are fully extended. Place control levers in the float position and repeat process a second time. Ensure wings are entirely supported by the cylinder before removing the transport pins. NEVER drive out pins or remove pins that have tension on them.

DANGER! NEVER FORCE THE WING LIFT LOCK PINS OUT OF THEIR LOCK POSITION AS THE WINGS MAY SUDDENLY DROP CAUSING INJURY OR DEATH.

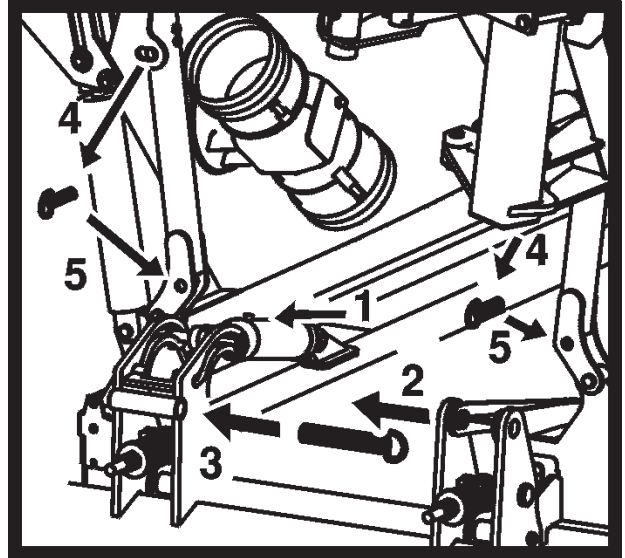


OPERATION

5.4 Lowering the Cutter

Transport lock pins are provided for the main lift and wing lift hydraulic cylinders. When these pins are inserted in their respective holes, they prevent the wings or center frame from dropping due to a hydraulic cylinder or hose failure.

1. FULLY extend the center cylinder to the end of the slot until there is no weight on the center transport lock pin.
2. Remove the lock pin from the lock bar. NEVER force the lock pin from its position. If the lock pin does not move freely, the center cylinder is not fully extended or filled with oil.
3. Place the lock pin in its storage location and secure with the lynch pin.
4. Remove the lock pins from the wing lock tubes. NEVER force the lock pins from their positions. If the lock pins do not move freely, the wing lift cylinders are not fully retracted or properly filled with oil.
5. Place the lock pins in their storage location and secure the lynch pins.



WARNING!



Use extreme care when lowering or unfolding the implement's wings. Make sure no bystanders are close by or underneath the wings. Allow ample clearance around the implement when folding or unfolding the wings. Use extreme caution around buildings or overhead power lines.

(S3PT-5)

6. SETTING THE CUTTER

Properly setting the cutting height is essential for efficient and safe operation. A properly set cutter will make a more uniform cut, distribute clippings more evenly, require minimal tractor work, and follow the contour of uneven terrain. **Note:** Avoid very low cutting heights, striking the ground with the blades gives the most damaging shock loads and will cause damage to the cutter and drive. Blades contacting the ground may cause objects to be thrown out from under the cutter deck. Always avoid operating the cutter at a height which causes the blades to contact the ground.

DANGER!



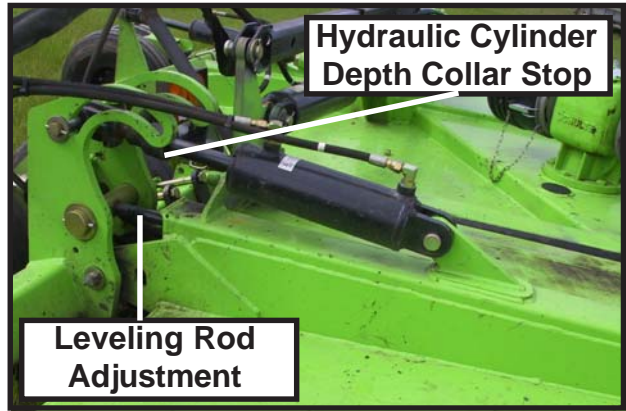
Never work under the Implement, the framework, or any lifted component unless the Implement is securely supported or blocked up to prevent sudden or inadvertent falling which could cause serious injury or even death. (SG-14)



OPERATION

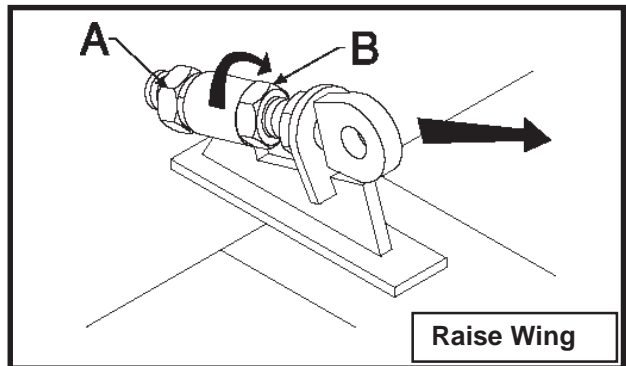
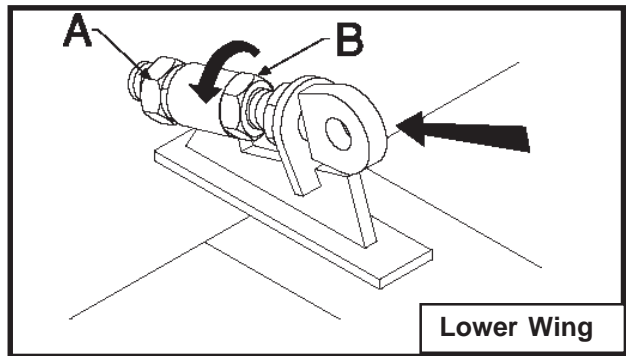
6.1 SETTING DECK HEIGHT

1. Place the tractor and cutter on a level surface and lower wing sections.
2. Extend or retract the center section main hydraulic lift cylinder to the desired cutting height. A depth stop collar, provided on the cylinder, will be used to maintain a set cutting height.
3. Shut down the tractor, place the transmission in park, and set the parking brake before dismounting.
4. Adjust the center section hydraulic cylinder depth stop collar to set the cutting height so that the cylinder returns to the preset cutting height each time the mower is lowered. It may be necessary to use spacer rings (not provided) with the depth stop collars in order to preset the cutter for higher cutting heights.



6.2 Leveling Wing

1. The center section deck height should be set before adjusting the wing sections. Make sure the tractor is completely shut down, the cutter is completely lowered, and the cutter and tractor are secured in position.
2. To set the wing section height, adjust the 1-1/4" threaded rod on the wing adjustment assembly to level the wings of the cutter with the center section.
3. To raise or lower wing, back off nut "A" first then adjust nut "B". Retighten nut "A" and lock washer after adjustment. To lower the wing, retract the threaded rod. To raise the wing, extend the threaded rod.
4. After the wings are set at the desired position, retighten nut "A" to maintain height settings.



OPERATION

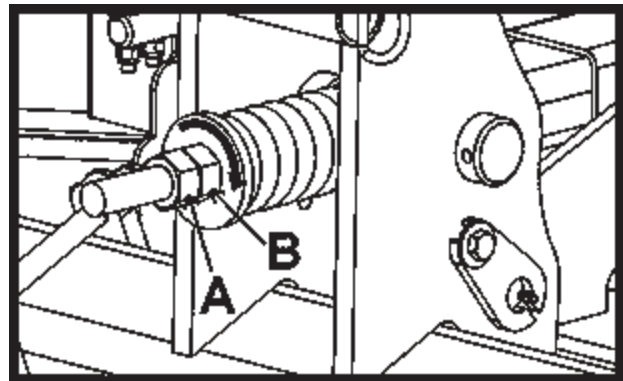
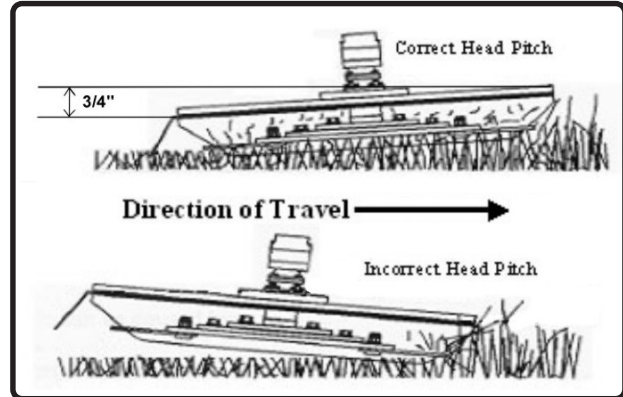
6.3 Setting Deck Pitch

To facilitate safe and efficient operation, the mower should be operated with the deck approximately 3/4" LOWER IN THE REAR THAN THE FRONT.

Operating the mower with the rear of the deck slightly lower than the front provides better suction, lifting the grass and creating a clean cut with less windrowing. For heavier applications, the front of the mower may need to be raised an additional 1/2" - 1".

Adjust the leveling rod nuts until the cutter is at least 3/4" lower in the rear. To raise the front end, back off nut "A". Tighten nut "B" until the correct deck pitch is achieved. Retighten nut "A".

IMPORTANT: Ensure that both leveling rods are adjusted evenly to maintain equal load in both rods. Failure to do so can cause high stress in one rod and may lead to failure.



7. DRIVELINE ATTACHMENT

Pivot the divider gearbox shield back, and out of the way. Remove any tape from the gearbox shafts, and any booklets from the driveline. Slide the clamp end of the tractor driveline onto the divider input shaft. Insert the clamp bolts supplied with the tractor driveline and push the yoke until the grooves line up and the bolts fall into place. Ensure bolts are tightened with lock washers and nuts.

Connect the CV assembly to the tractor PTO. Pull the driveline collar back and align the grooves between the cutter driveline and Tractor PTO. Push the driveline onto the Tractor PTO, release locking collar and position the yoke until the locking collar balls are seated onto the Tractor PTO shaft groove.

Swing the PTO support down, and out of the way so it does not interfere with the driveline during operation. Failing to do so could cause severe damage to your driveline.

IMPORTANT: Pull and push the quick disconnect yoke several times to ensure that the yoke is connected to the PTO shaft.



OPERATION

WARNING!



When attaching the PTO yoke to the Tractor PTO shaft, it is important that the clamping cone is securely seated into the groove of the PTO shaft and properly tightened. A driveline not attached correctly to the Tractor PTO shaft could slip off and result in personal injury and damage to the cutter.

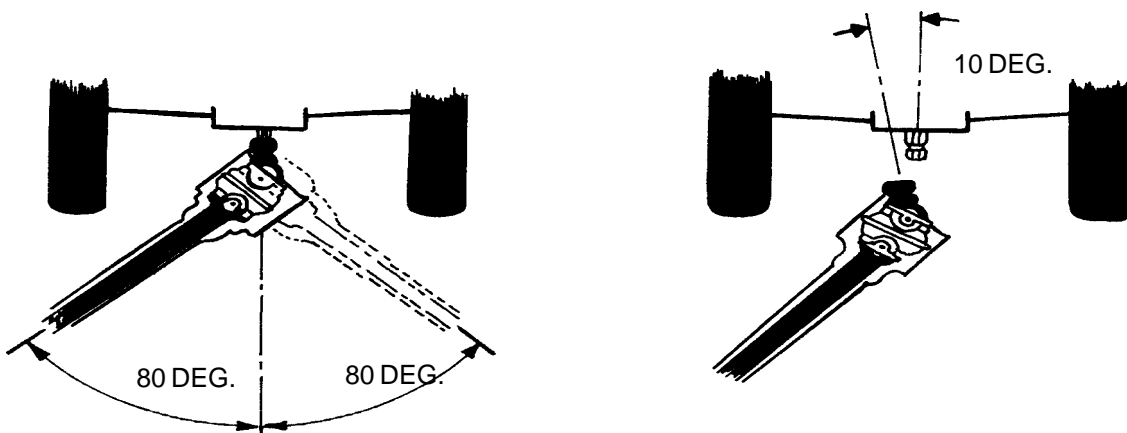
7.1 Constant Velocity (CV) Driveline

For mowers equipped with a Constant Velocity (CV) driveline, the maximum turning angle between the tractor and mower must be determined to ensure the joint angle does not over-extend which can cause CV joint damage. Constant Velocity joints enable the driveline to operate smoothly with no vibrations and clattering at angles up to 70°. Angles greater than 80° can result in mechanical damage to the CV joint and mower driveline.

The Constant Velocity joint must be lubricated every 8 hours of operation as specified in the Maintenance Section. Failure to properly lubricate the joint will result in accelerated wear and joint component failure.

CV Driveline Maximum Angle Check Procedure

1. With the **mower attached** to the tractor and the **driveline disconnected** from the tractor PTO stub make a hard left turn until there is approximately a 1" clearance between the left rear tractor tire and mower frame or tongue.
2. Stop and completely shut down the tractor. Place the tractor in Park and apply the Parking Brake before dismounting.
3. Check the CV joint at this maximum turning radius by holding the driveline yoke above the PTO shaft and then angle the CV joint to its maximum angle. A minimum difference of 10 degrees between the center line of the yoke and the PTO shaft must be maintained to ensure the joint will not be over angled. If the joint cannot be angled at least 10°, there is a potential problem of over-angling the joint while making sharp turns.
4. Solutions: To ensure the joint is not damaged, check the following:
 - Check the drawbar length to ensure that it is at the proper length for the RPM speed of the mower.
 - Move the tractor rear tires wider apart to limit the tractor turning radius.
 - Position the mower at multiple angles and perform the above procedure. Determine the sharpest turning radius that maintains a safe operating angle and note this position to the operator.



CONSTANT VELOCITY JOINT-MAXIMUM ANGLE CHECK

OPERATION

DANGER!



Do not turn so sharp or lift mower so high to produce a severe "knocking" of the Driveline which will cause accelerated wear and breakage of drive train components and could result in possible injury from the separated Driveline sections. (SRM-4)

8. PRE-OPERATION INSPECTION AND SERVICE

Before each use, a pre-operation inspection and service of the cutter 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 cutter and tractor 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.

DANGER!



Always disconnect the main PTO Driveline from the Tractor before performing service on the Mower. Never work on the Mower with the Tractor PTO driveline connected and running. Blades or Drivelines could turn without warning and cause immediate entanglement, injury or death. (SRM-3)

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-3)



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 leaking or loose fittings. Make sure all pins have cotter pins and washers. Serious injury may occur from not maintaining this Implement in good working order. (SG-21)



OPERATION

OPERATION

8.1 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 manufacturer recommendations. The following is a partial list of items requiring 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
- Tractor cab or ROPS 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



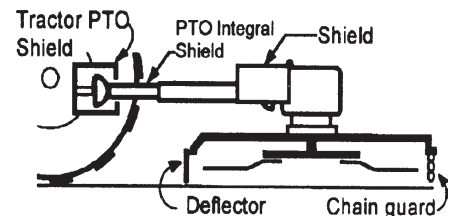
8.2 Cutter Pre-Operation Inspection/Service

Before each 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 cutter is ready for operation, conduct the following.

DANGER!



All Safety Shields, Guards and Safety devices including (but not limited to) - the Deflectors, Chain Guards, Steel Guards, Gearbox Shields, PTO integral shields, and the Retractable Door Shields should be used and maintained in good working condition. All safety devices should be inspected carefully at least daily for missing or broken components. Missing, broken, or worn items must be replaced at once to reduce the possibility of injury or death from thrown objects, entanglement, or blade contact. (SGM-3)



DANGER!

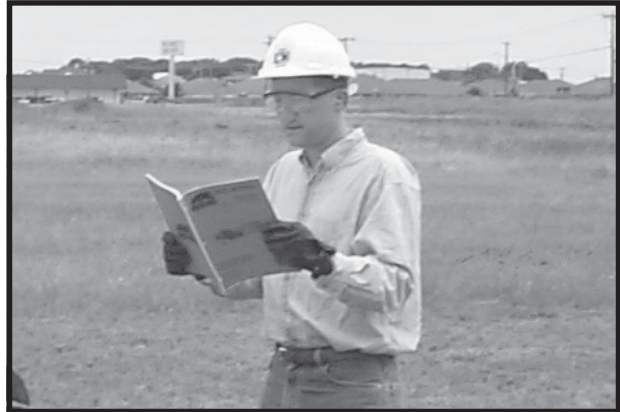


Replace bent or broken blades with new blades. NEVER ATTEMPT TO STRAIGHTEN OR WELD ON BLADES SINCE THIS WILL LIKELY CRACK OR OTHERWISE DAMAGE THE BLADE WITH SUBSEQUENT FAILURE AND POSSIBLE SERIOUS INJURY FROM THROWN BLADES. (SGM-10)

OPERATION

- Ensure the Manual Canister is secured to the cutter with the Operator's Manual inside.
- Ensure all decals are in place and legible. Replace missing, worn, and unlegible decals.

NOTE: The cutter Operator's Manual and affixed Decals contain important instructions on the safe and proper use of the cutter. Maintain these important safety features on the cutter in good condition to ensure the information is available to the operator at all times.



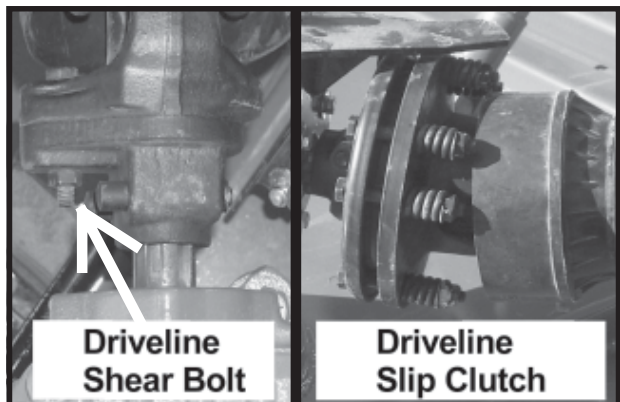
- Ensure the cutter hitch is securely attached to the tractor drawbar with a proper size pin and secured lynch pin.
- Ensure that a properly rated safety tow chain is equipped securing the cutter to the tractor.
- Check that the main driveline is securely attached to the tractor and the clamping cone is seated in the groove of the PTO shaft.
- Ensure the divider drivelines are secure at both ends



- Ensure chain guards are in position and not damaged. Replace worn, broken, and missing sections immediately.
- Ensure the driveline integral shields are in good condition and rotate freely.
- Inspect that all bolts and screws are in position and are properly torqued.



- Ensure the tractor PTO master shield is in place, lowered and in good condition.
- Ensure each slip clutch shield is secured in place and in good condition.
- Ensure the driveline slip clutches are properly adjusted and the friction plates are not frozen together. Reference the Maintenance Section for proper slip clutch maintenance.
- Inspect the condition of driveline shear bolts. A sheared bolt may indicate that the driveline slip clutch is frozen or damaged. Only use the rated size and grade shear bolts indicated in the maintenance section.

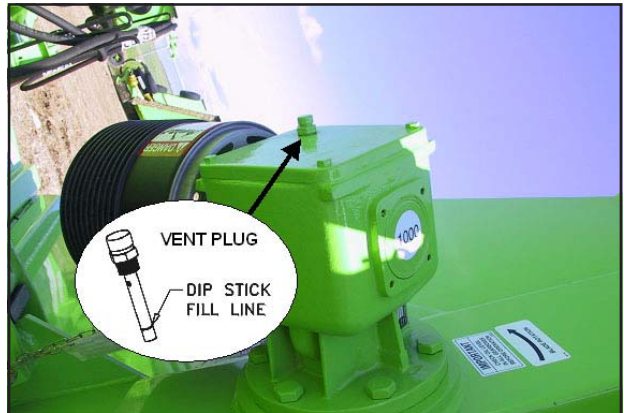


OPERATION

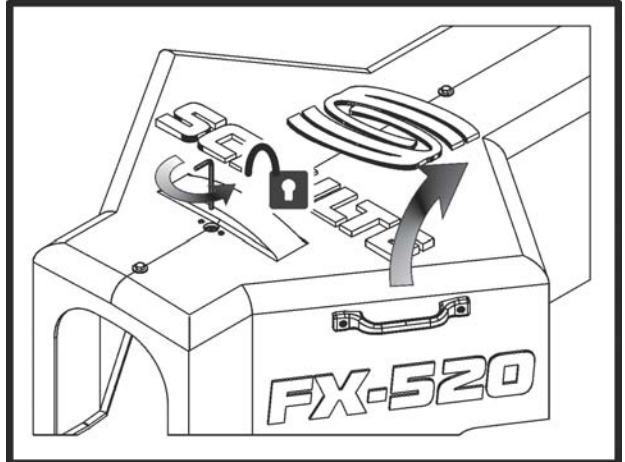
OPERATION

OPERATION

- Perform scheduled lubrication as specified in the maintenance section.
- Inspect each gearbox oil level and replenish if needed. A low oil level is a warning sign that the gearbox may be cracked or its seal is damaged and needs to be replaced.
- Ensure all gearbox vents are in place and free from clogs.



- To open the main shield use the 6 mm allen key to turn the lock counter-clockwise to release the latch.
- The 6 mm allen key is stored in the canister with the Operator's Manual.
- Firmly close the main shield to engage the automatic lock.



- Inspect blades and blade bolts for looseness and excessive wear. Make sure the cutter is securely blocked up before crawling beneath. Replace damaged, worn, and missing blades as complete sets to maintain rotary balance.
- Ensure carrier hub nuts are tightened with the cotter pin inserted and spread.
- Inspect the condition of the deck skid shoes and the skid shoe attaching hardware.



- Ensure each hydraulic cylinder is installed and retained correctly. Ensure the proper size pins are used to retain the cylinders in place and are secured with pins.
- Check for hydraulic oil leaks on the cylinders, along the hydraulic lines, and at tractor hydraulic ports.
IMPORTANT: DO NOT use your hands to check for oil leaks. Use a piece of heavy paper or cardboard to check for hydraulic oil leaks.



OPERATION

- Ensure that the cutter is equipped and secured with transport pins.
- Check the condition of the wing hinge pins.
- Check the condition of the cutter axle suspension.
- Inspect cutter tire condition, wheel bearings, and lug nut torque.



9. 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.

DANGER!



This Implement is wider than the Tractor. Be careful when operating or transporting this equipment to prevent the Implement from running into or striking sign posts, guard rails, concrete abutments or other solid objects. Such an impact could cause the Implement and Tractor to pivot violently resulting in loss of steering control, serious injury, or even death. Never allow the Implement to contact obstacles. (S3PT-12)

WARNING!



Transport only at safe speeds. Serious accidents and injuries can result from operating equipment at unsafe speeds. Understand the Tractor and Mower 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 Mower, determine the safe transport speeds for you and the equipment. Make sure you abide by the following rules:

1. **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 Mower. As you increase the speed of the Tractor the stopping distance increases. Determine the maximum safe transport speed for you and this Equipment.**
2. **Test the equipment at a slow speed in turns. Increase the speed through the turn only after you determine that it is safe to operate at a higher speed. Use extreme care and reduce your speed when turning sharply to prevent the Tractor and Mower from turning over. Determine the maximum safe turning speed for you and this equipment before operating on roads or uneven ground.**
3. **Only transport the Tractor and Mower at the speeds that you have determined are safe and which allow proper control of the equipment.**

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. (SG-19)

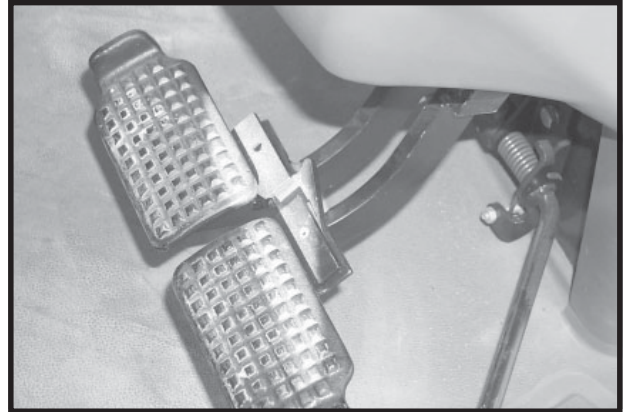
OPERATION

9.1 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.

9.2 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 MOWING CONDITIONS, THE BRAKE PEDALS SHOULD BE LOCKED TOGETHER TO PROVIDE THE MOST EFFECTIVE BRAKING ACTION.**



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.

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

OPERATION

9.3 Operating the Cutter Wings

Each wing is raised and lowered by a single hydraulic cylinder. Ensure the hydraulic cylinder and hydraulic lines are filled with oil by holding the valve control levers in the raised position until the cylinder fully retracts. Only operate the cutter with both wings fully lowered, NEVER operate the cutter with a raised wing. Wait until the blades are at a complete stop before raising wings.

DANGER!



When the Wings are folded for transport, the center of gravity is raised and the possibility of overturn is increased. Drive slowly and use extreme caution when turning on hillsides. Overturning the Implement could cause the Implement to overturn the Tractor and vice versa resulting in serious injury or even death. Never fold wings on a hillside...the Implement may overturn. (STI-2)

The valves operating wing cylinders should be placed in the float position while mowing to allow the cutter to follow the contour of uneven terrain and to prevent the wings from creeping up.



WARNING!



Use extreme care when lowering or unfolding the implement's wings. Make sure no bystanders are close by or underneath the wings. Allow ample clearance around the implement when folding or unfolding the wings. Use extreme caution around buildings or overhead power lines. (S3PT-5)

OPERATION

9.4 Driving the Tractor and Cutter

Start off driving at a slow speed and gradually increase your speed while maintaining complete control of the tractor and cutter. 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.

Drive the tractor with the 3-Point lift arms in the raised position and lock the control lever in the transport detent position to prevent damage to the cutter driveline and tongue when turning.

Perform turns with the tractor and cutter at slow speeds to determine how the tractor with an attached cutter handles a turn. Determine the safe speed to maintain proper control of the tractor when making turns. When turning with a towed implement, the overall working length of the unit is increased. Allow additional clearance for the cutter when turning, especially if the wings are lowered.

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.

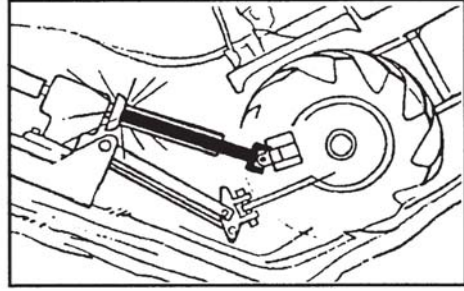
Be sure to never operate the cutter with the PTO storage support in its upright position. Swing the support down, and out of the way before beginning.



OPERATION

9.5 Crossing Ditches and Steep Inclines

When crossing ditches with steep banks or going up sharp inclines, it is possible that the main driveline inner profile will penetrate into the outer housing to its maximum depth until the assembly becomes solid (driveline is at its extreme shortest length). This type of abusive operation can cause serious damage to the tractor and cutter drive by pushing the PTO into the tractor and through the support bearings or downward onto the PTO shaft, breaking it off.



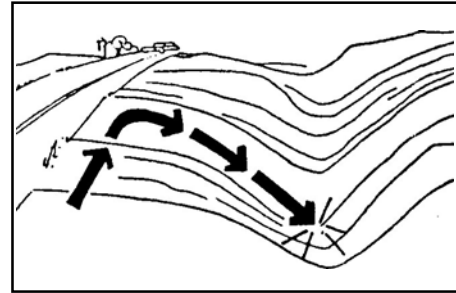
WARNING!



Damage resulting from over-collapse of the driveline's inner profile and its outer housing may allow the driveline to come loose from the Tractor which could cause bodily injury to the operator or bystanders and/or extensive damage to the Tractor or Implement

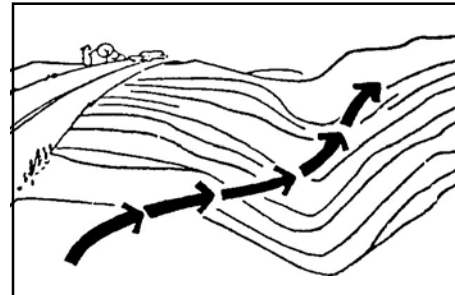
When confronted with an incline or ditch, do not approach from an angle which is perpendicular or straight on as damage to over collapse of the driveline may occur.

When crossing such terrain, the wings should be fully lowered for a lower center of gravity and added stability.



INCORRECT: DO NOT approach ditch straight on.

Inclines and ditches should be approached along a line which is at an angle as shown. This type of path will reduce the possibility of over-collapse of the driveline and resulting damage. If the gradient is so steep that such as approach increases the possibility of a tractor roll-over, select an alternate crossing path.



CORRECT: Approach ditch at an angle

When operating the tractor and mower across slopes and inclines, through ditches, and other uneven terrain conditions, it is important to maintain sufficient deck to ground clearance. Blade contact with the ground may cause soil, rocks and other debris to be thrown out from under the mower resulting in possible injury and/or property damage. Ground contact also produces a severe shock load on the mower drive and to the mower blades resulting in possible damage and premature wear.

OPERATION

10. OPERATING THE TRACTOR AND CUTTER

THE OPERATOR MUST COMPLETELY UNDERSTAND HOW TO OPERATE THE TRACTOR AND CUTTER AND ALL CONTROLS BEFORE ATTEMPTING TO MOW. The operator must read and understand the Safety and Operation Sections of the cutter and tractor operator's manuals. These manuals must be read and explained to any operator who cannot read. Never allow someone to operate the cutter and tractor without complete operating instructions.

Before starting any mowing operation, the operator must become familiar with the area to be mowed 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.

DANGER!



Extreme care should be taken when operating near loose objects such as gravel, rocks, wire, and other debris. Inspect the area before mowing. 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 mowing immediately if blades strike a foreign object. Repair all damage and make certain the blade carrier is balanced before resuming mowing. (SGM-5)



DANGER!



Many varied objects, such as wire, cable, rope, or chains, can become entangled in the operating parts of the Mower head. These items could then swing outside the housing at greater velocities than the blades. Such a situation is extremely hazardous and could result in serious injury or even death. Inspect the cutting area for such objects before mowing. Remove any like object from the site. Never allow the cutting blades to contact such items. (SGM-6)

OPERATION

10.1 Foreign Debris Hazards

Before mowing, inspect the area to make sure there are no foreign objects that the cutter blades could hit or become entangled with. Remove all foreign objects and debris. If objects are too big to remove, mark them clearly and be sure to prevent the cutter blades from contacting them.



OPERATION

If you hit a solid object or foreign debris, stop the cutter and tractor at once. Immediately idle the engine speed and disengage the PTO. Wait for all cutter rotating motion to stop, then raise the cutter and move the tractor and cutter off the object. Inspect the area and remove, or mark the location of the debris. Inspect the condition of the cutter and make any needed repairs immediately. Make sure the blades are not damaged and the carrier is balanced before resuming operation.

Always wear your seat belt securely fastened and only operate the tractor and cutter with the ROPS in the raised position. If the tractor or cutter hits a tree stump, rock, or bump, a sudden movement could throw you off of the seat and under the tractor and/or cutter. The seat belt is your best protection from falling off the tractor and the ROPS provides protection from being crushed during a tractor roll-over.

10.2 Bystander/Passersby Precautions

If a bystander comes within 100 yards (100 meters) of the tractor while the cutter is being operated, stop the tractor at once, idle the engine and disengage the PTO. Do not engage the PTO again until all bystanders are well past the 100 yard(100 meters) distance.

DANGER!



Rotary Mowers are capable under adverse conditions of throwing objects for great distances (100 yards or more) and causing serious injury or death. Follow safety messages carefully.



STOP MOWING IF PASSERSBY ARE WITHIN 100 YARDS(100 METERS) UNLESS:

- Front and Rear Deflectors, Chain Guards, or Bands are installed and in good, workable condition;
- Cutter sections or Wings are running close to and parallel to the ground without exposed Blades;
- Passersby are outside the existing thrown-object zone;
- All areas have been thoroughly inspected and all foreign material such as rocks, cans, glass, and general debris has been removed.

NOTE: Where there are grass and weeds high enough to hide debris that could be struck by the blades, the area should be: inspected and large debris removed, mowed at an intermediate height, inspected closely with any remaining debris being removed, and mowed again at the desired final height. (This will also reduce power required to mow, reduce wear and tear on the Mower drivetrain, spread cut material better, eliminate streaking, and make the final cut more uniform.) (SRM-1)

OPERATION

OPERATION

10.3 Engaging the Power Take Off (PTO)

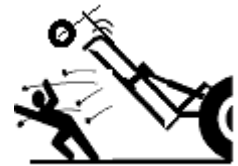
Before engaging the PTO, make certain that the area is clear of bystanders and passersby. The mower wings must be completely lowered and the deck positioned at a safe mowing height. NEVER engage the PTO with the mower wings in the raised position.

Set the tractor engine speed at approximately 1,000 RPM before engaging the PTO. Shift the PTO control to the on position, and slowly increase the engine speed until the PTO is operating at the rated speed. If you hear unusual noises or see or feel abnormal vibrations, disengage the PTO immediately. Inspect the implement to determine the cause of the noise or vibration and repair the abnormality.

DANGER!



Do not let the Blades turn when the Mower deck is raised for any reason, including clearance or for turning. Raising the Mower deck exposes the cutting blades which creates a potentially serious hazard and could cause serious injury or even death from objects thrown from the blades. (SRM-7)



DANGER!



Do not put hands or feet under Mower decks. Blade contact can result in serious injury or even death. (SGM-9)



10.4 PTO RPM and Ground Speed

Ground speed for mowing will depend upon the height, type, and density of vegetation to be cut. Recommended speed for efficient mower performance is between 2 and 5 mph (3 and 8 km/h). Operate the mower at its full rated PTO speed to maintain blade speed for a clean cut. Refer to the tractor operator's manual or the tractor instrument panel for the engine speed and gear to provide the required PTO and desired ground speed. Make sure that the mower is operating at its full rated speed before entering the vegetation to be cut. If it becomes necessary to temporarily regulate engine speed, increase or decrease the throttle gradually.

Ground speed is achieved by transmission gear selection and not by the engine operating speed. The operator may be required to experiment with several gear range combinations to determine the best gear and range which provides the most ideal performance from the cutter and most efficient tractor operation. As the severity of cutting conditions increase, the ground speed should be decreased by selecting a lower gear to maintain the proper operating PTO speed.

WARNING!



Do not exceed the rated PTO speed for the Implement. Excessive PTO speeds can cause Implement driveline or blade failures resulting in serious injury or death. (SG-26)

WARNING!



Mow at the speed that you can safely operate and control the Tractor and Mower. Safe mowing speed depends on terrain condition and grass type, density, and height of cut. Normal ground speed range is from 2 to 5 mph. Use slow mowing speeds when operating on or near steep slopes, ditches, drop-offs, overhead obstructions, power lines, or when debris and foreign objects are to be avoided. (SGM-7)

OPERATION

10.5 Operating the Cutter

Only operate the cutter from the tractor operator's seat with the seatbelt securely fastened. The tractor must be equipped with a ROPS in the raised position or a ROPS cab.

The cutter is designed to cut vegetation up to 2" in (51mm) diameter. Sharp blades will produce a cleaner cut and require less power. Travel at a speed that allows the cutter sufficient time to cut through the vegetation and maintain the PTO operating speed to prevent overloading the cutter and tractor. Choose a driving pattern that provides the maximum pass length and minimizes turning.

Under certain conditions, tractor tires may roll some grasses down preventing them from being cut at the same height as the surrounding area. When this occurs, reduce the tractor ground speed while maintaining the operating speed of the cutter. A slower ground speed will permit grasses to at least partially rebound and be cut. Taking a partial cut and/or reversing the direction of travel may also help produce a cleaner cut.

Avoid mowing in the reverse direction when possible. In situations where the cutter must be backed to access areas to be cut, make sure there are no persons or other foreign debris behind the cutter before mowing in reverse. When mowing in reverse, operate the tractor and cutter at a reduced ground speed to ensure tractor and cutter control is maintained.

WARNING!



Do not mow with two machines in the same area except with Cab tractors with the windows closed. (SGM-11)

DANGER!



Mow only in conditions where you have clear visibility in daylight or with adequate artificial lighting. Never mow in darkness or foggy conditions where you cannot clearly see at least 100 yards in front and to the sides of the Tractor and Mower. 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 this type of item discontinue mowing. (SGM-1)

DANGER!



Avoid mowing in reverse direction when possible. Check to make sure there are no persons behind the Mower and use extreme care when mowing in reverse. Mow only at a slow ground speed where you can safely operate and control the Tractor and Mower. Never mow an area in the reverse direction that you have not inspected and removed debris or foreign material. (SGM-8)

WARNING!



Follow these guidelines to reduce the risk of equipment and grass fires while operating, servicing, and repairing the Mower and Tractor:

- Equip the Tractor with a fire extinguisher in an accessible location.
- Do Not operate the Mower on a Tractor with an under frame exhaust.
- Do Not smoke or have an open flame near the Mower and Tractor.
- Do Not drive into burning debris or freshly burnt areas.
- Ensure slip clutches are properly adjusted to prevent excessive slippage and plate heating.
- Never allow clippings or debris to collect near drivelines, slip clutches, and gearboxes. Periodically shut down the Tractor and Mower and clean clippings and collected debris from the mower deck.

(SGM-12)



OPERATION

When you get to the end of a pass, slightly raise the cutter 2-4" (50-100 mm) before turning. Never raise the cutter entirely while the blades are turning. If the cutter must be raised higher than 12" (305 mm) from ground level, disengage the tractor PTO and wait for all cutter rotation to come to a complete stop before proceeding to raise the cutter. NEVER raise the cutter wings while the blades are turning.

When turning, the angle between the tractor and cutter should not be so great that a clattering of the U-joints occurs. Sharp turns can cause premature failure of the joints and place pressure on the tractor PTO shaft and could cause extensive mechanical damage to the cutter and tractor.

If the cutter is operated in conditions that require frequent sharp turning, the cutter should be equipped with a Constant Velocity driveline. CV joints enable the tractor PTO shaft and cutter driveline to be angled safely up to 80 degrees with no damage to the cutter or driveline.

Constant Velocity joints may be operated at angles up to 80°, but only for brief periods of time (during turns) and never continuously.

WARNING!



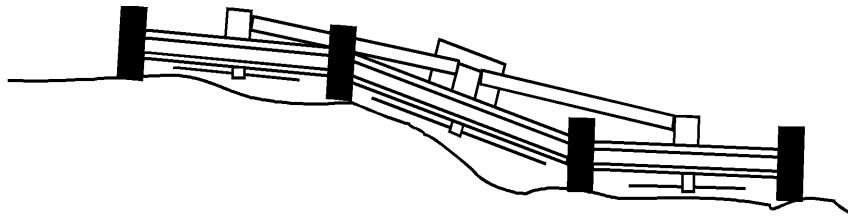
Do not let the Blades turn when the Mower Deck is raised for any reason, including clearance or for turning. Raising the Mower deck exposes the Cutting Blades which creates a potentially serious hazard and could cause serious injury or even death from objects thrown from the Blades. (SRM-7)



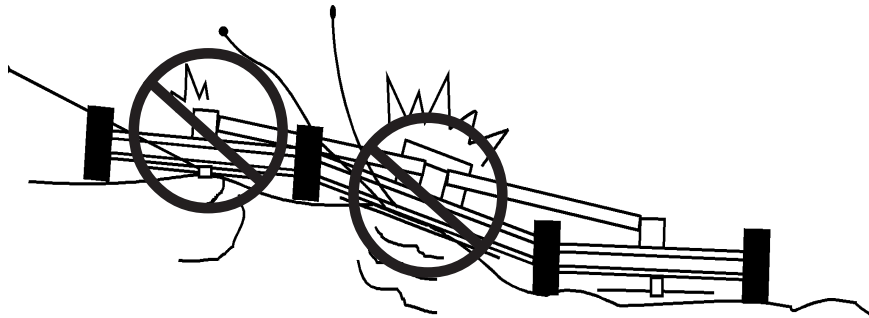
OPERATION

When mowing across uneven areas such as road shoulders, ditch edges, and other uneven terrain, position cutter so that one support wheel is near the highest point to prevent blades from cutting into gravel or dirt which can cause rapid blade wear and extremely severe shock loads on the drivetrain resulting in rapid wear or damage to these components. Blades contacting the ground may cause objects to be thrown out from under the cutter deck. Always avoid operating the cutter at a height or position which may cause the blades to contact the ground. Cutting into the berm or edge of the ditch will cause abnormal and accelerated blade wear and possible blade component failure. Refer to Image on Page 4-31.

OPERATION



Correct Mower Deck Positioning



Wrong Mower Deck Positioning

10.6 Shutting Down the Cutter

To shut down the cutter, first bring the tractor to a complete stop. Then slow down the cutter by reducing the engine speed before disengaging the PTO. Wait for all rotating motion to stop before proceeding to drive or shut down the tractor.



Park the tractor on a level surface, place the transmission in park or neutral and apply the parking brake, lower the attached cutter to the ground, shut down the engine, remove the key, and wait for all motion to come to a complete stop before exiting the tractor.



OPERATION

11. DISCONNECTING THE CUTTER FROM THE TRACTOR

DANGER!



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)

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. (STL-4)

Before disconnecting the cutter, the PTO must be disengaged and blade rotation at a complete stop. Move the cutter to a level storage location and lower the center section and both wings to the ground. If the cutter will be stored with the wings in the raised position, install both wing transport lock pins. If the cutter is not resting securely on the ground, block the cutter up securely before attempting to disconnect it from the tractor.

Use extreme care to keep feet and hands from under the cutter and clear of any pinch points.

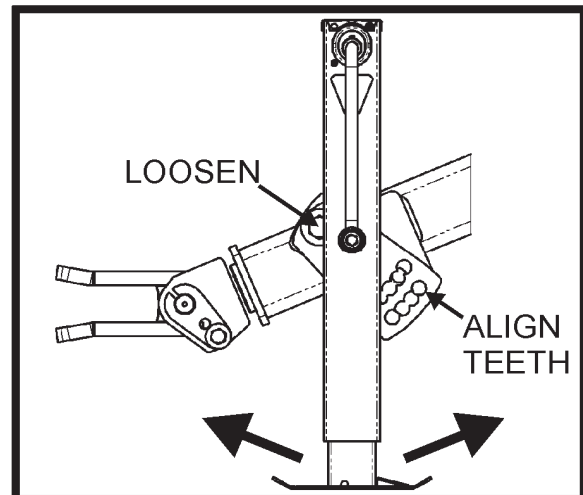
OPERATION

1. When disconnecting the cutter the tractor should be completely shut down and secured in position. Relieve hydraulic pressure by moving the control levers back and forth several times. Pivot the jack to near vertical by rotating the jack mount. Loosen the top $\frac{3}{4}$ " bolt and remove the bottom one. Reinsert the bolt when the one of the rows of teeth line up with a hole on the hitch frame. Tighten both bolts. Lower the parking jack and raise the mower until the tongue clevis is no longer resting on the tractor drawbar and is supported solely by the jack. Also make sure that the jack foot is securely resting at ground level or securely supported by a block before raising the cutter. Once the implement tongue is being supported entirely by the jack, remove the pin.

2. Remove the hydraulic hoses from the tractor and secure to the cutter in the provided hose holder to prevent contact with dirt.

3. Remove the cutter driveline from the tractor PTO shaft. Place the driveline in its storage bracket to prevent it from contacting mud or dirt which can contaminate the universal joint bearings and shorten the life of the driveline.

4. After the driveline has been removed from the tractor, place the PTO master shield back in the operating position.



OPERATION

12. CUTTER STORAGE

It is recommended that the Cutter be stored with the center section and both wings fully lowered to ground level. If the cutter is stored with the wings in the raised position, select a level area and install wing transport pins to prevent the wings from falling BEFORE disconnecting the cutter hitch from the tractor.

Properly preparing and storing the cutter 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:

1. Clean any dirt or debris off the mower deck.
2. Scrape any accumulated cuttings off the under side of the deck. Coat the deck underside and any other exposed metal surfaces with oil to prevent rusting.
3. If the cutter is left unused for an extended period of time, install the transport pins. Retract the center cylinder completely. Retracting the cylinder rods will prevent rusting, ensure that the cylinders are full of oil and relieve pressure in the hydraulic circuit. If the cylinder rods are not retracted, smear grease over exposed rods.
4. Apply grease to exposed threaded adjustment screws. These include the cylinder depth stop collar and the frame leveling rod.
5. Install the hitch jack on the jack mount located on the outer hitch frame.
6. Lubricate all cutter grease points and fill gearbox oil levels as detailed in the maintenance section.
7. Store the tractor shaft in the holder keep the driveline yoke from sitting in water, dirt and other contaminants.
8. Use spray touch-up enamel where necessary to prevent rust and maintain the appearance of the cutter.
9. Tighten all bolts and pins to the recommended torque.



When disconnecting from the tractor for short period of time, swing the PTO support upright and lay the PTO driveline into the cradle. When storing the cutter for an extended period of time, it is recommended the driveline be removed from the machine and stored inside.

IMPORTANT: When connecting the cutter to the tractor, ensure the PTO support is swung down, and out of the way.

DANGER!



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

It is critical that driveline clutches slip when an obstacle or heavy load is encountered to avoid cutter and/or tractor damage. If the cutter sits outside for an extended period of time or is exposed to rain and/or humid air, the clutch lining plates must be inspected to ensure they are not frozen together from rust or corrosion. If the cutter has been exposed to such conditions, at the start of each season, and any time it is suspected that the slip clutch plates may be frozen together, readjust the slip clutch as detailed in Slip Clutch Maintenance of the maintenance section in this manual.

OPERATION

13. TRANSPORTING THE TRACTOR AND CUTTER

Inherent dangers of operating the tractor and cutter and the possibility of accidents are not left behind when you finish mowing an area. Therefore, the operator must employ good judgement and safe operation practices when transporting the tractor and cutter between locations. By using good judgement and following safe transport procedures, the possibility of accidents while moving between locations can be substantially minimized.

DANGER!



Never allow children or other persons to ride on the Tractor or Implement. Falling off can result in serious injury or death.

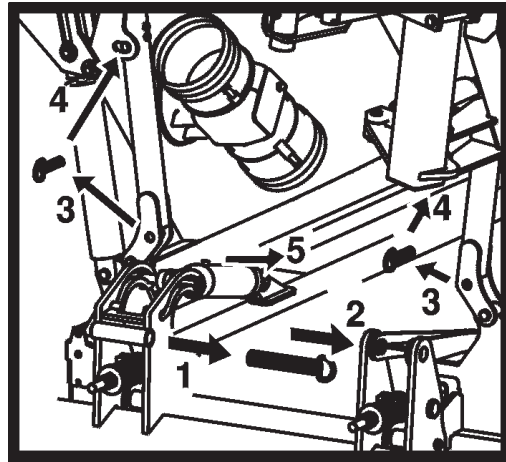
(SG-10)



Before transporting the tractor and cutter, idle the tractor engine, disengage the PTO and wait for all moving parts to come to a complete stop. Fully extend the main lift cylinders to raise the deck, and retract the wing lift cylinders to pull the wings into transport position.

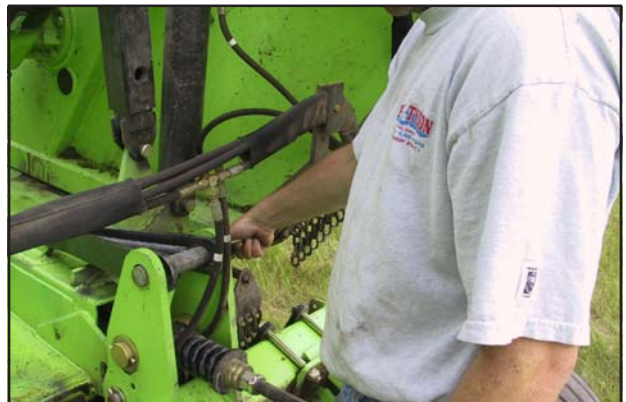
Transport lock pins are provided for the main lift and wing lift hydraulic cylinders. When these pins are inserted in their respective holes, they prevent the wings or center frame from dropping due to a hydraulic cylinder or hose failure.

1. Remove the center lock pin from its storage location.
2. Insert the lock pin into the lock up hole on the wheel standard and secure with lynch pin. If the lock bar holes do not line up with the wheel standard, the main lift cylinder is not fully extended.
3. Remove the wing lock pins from their storage locations.
4. Insert the lock pins into the lock up holes in lock tubes and secure with lynch pin. If the holes do not line up, the cylinders are not fully retracted.
5. Retract the main lift cylinders to bring wing tires within 3-meter transport width. The slot on the center section allows the wing cylinders to retract, pulling the tires inward.



NOTE: Depending on the cut height, the depth stop on the center section may have to be adjusted to bring the wing tires within the required 3-meters.

Secure the center section at a safe transport height by inserting the transport lock pin. Secure the cutter wings in the raised position with the transport lock pins.



OPERATION

If the tractor's hydraulic pump is not independent of the tractor PTO, or if the tractor PTO has to be run to have hydraulic power, disconnect the cutter driveline from the tractor PTO output shaft. Secure the driveline to the cutter to prevent driveline damage or loss during transport. The PTO storage support is not suitable to hold the driveline while the cutter is in motion.

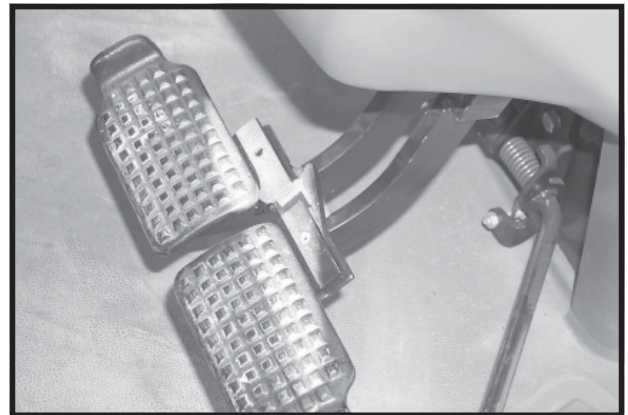


DANGER!



When the Wings are folded for transport, the center of gravity is raised and the possibility of overturn is increased. Drive slowly and use extreme caution when turning on hillsides. Overturning the Implement could cause the Implement to overturn the Tractor and vice versa resulting in serious injury or even death. Never fold wings on a hillside...the Implement may overturn. (STI-2)

Before transporting the tractor on a public roadway or boarding a trailer for transport, the tractor brake pedals should be locked together. Locking the pedals ensures that both wheels brake simultaneously while stopping, especially when making an emergency stop.



Use extreme caution and avoid hard applications of the tractor brakes when towing heavy loads at road speeds. Never tow the mower at speeds greater than the local regulations permit.

Tires and Wheels

Foam Filled used Airplane Tires are ideal for conditions where a puncture proof tire is needed and the mower is frequently transported between locations.

Pneumatic Tires (used airplane or cutter tires) are ideal for frequent long distance towing, however, they are not puncture proof and are not recommended for mowing brushy areas or other conditions that could damage the tires. Recommended tire pressure for Aircraft tires is 42 psi. Cutter tires should be inflated to 50 psi

OPERATION

13.1 Transporting on Public Roads

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-6)

DANGER!



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



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)



OPERATION

Extreme caution should be used when transporting the tractor and cutter 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 cutter before entering a public road. Secure the center section at a safe transport height by inserting the transport lock pin. Secure the cutter wings in the raised position with the transport lock pins.

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.



OPERATION

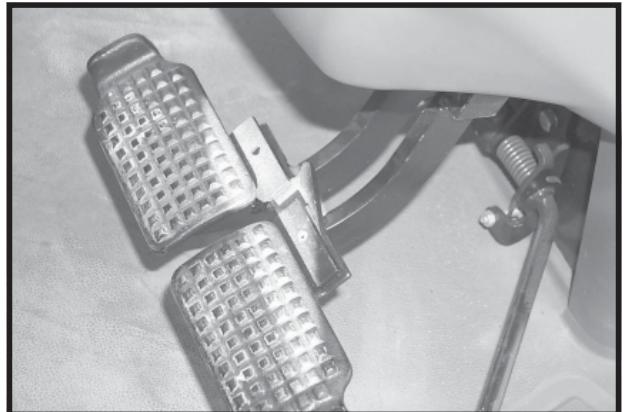
Make sure that all tractor flashing warning lights, headlights, and brake/taillights are functioning properly before proceeding onto public roads. While newer model tractors have plenty of lighting to provide warning signals and operating lighting, most older models were only equipped with operating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

If the cutter obscures the tractor warning or tail lights, the cutter **MUST** be equipped with a transport light kit. Consult your SCHULTE dealer for available light kits.



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 area for agricultural tractors. Always stay alert when transporting the tractor and cutter on public roads. Use caution and reduce speed if other vehicles or pedestrians are in the area. Keep on the look out for low overhead structures or power lines. Also keep in mind that the unit is larger than normal cutters and your speed should be reduced to keep the cutter from swaying from side to side. Damage to the cutter and serious injury or death can occur.

Reduce speed before turning or applying the brakes. Ensure that both brake pedals are locked together when operating on public roads.



OPERATION

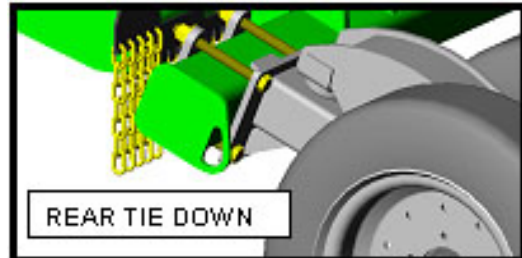
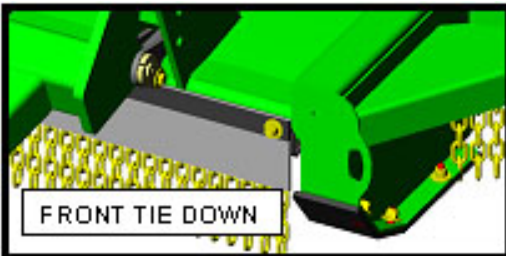
13.2 Hauling the Tractor and Cutter

Before transporting a loaded tractor and cutter, measure the height and width dimensions and gross weight of the complete loaded unit. Ensure that the load will be in compliance with the legal limits set for the areas that will be traveled through. When transporting the cutter on a trailer the height may exceed legal limits. Contact with overhead structures or powerlines can cause property damage or serious injury or death. Ensure the route taken does not have any of these obstructions.

Use adequately sized and rated trailers and equipment to transport the tractor and cutter. Consult an authorized dealer to determine the proper equipment required. Using adequately sized chains, heavy duty straps, cables and/or binders, securely tie down both the front and rear of the tractor utilizing the proper tie down locations as specified by the tractor manufacturer.

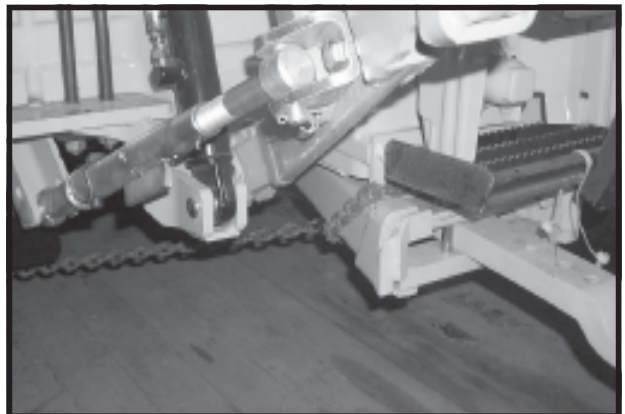


Using adequately sized chains, heavy duty straps, cables and/or binders, securely tie down both the front and rear of the cutter utilizing the proper tie down locations. Tie downs are located on both sides of the cutter



Arrange the chains so that when tightened, the chains are pulling downward and against themselves. Carefully tighten the securing chains or other fasteners used as much as possible using boomers or binders to apply maximum tension. Use extreme care when attaching and removing the securing devices as the extreme tension involved when released has the potential to inflict serious injury.

While hauling the tractor and cutter, make occasional stops to check that the tractor and cutter have not moved or shifted and that the securing chains have maintained tension. If during transport a hard braking, sharp turning, or swerving action was performed, stop at the next safe location to inspect the security of the load.



OPERATION

14. TROUBLE SHOOTING GUIDE

TROUBLE	POSSIBLE CAUSE	POSSIBLE REMEDY
Excessive Vibrations	1. Check gear box bolts.	Tighten if loose.
	2. Check for loose nuts on bladeholder and blades.	Tighten if loose.
	3. Check for bent output shaft. If shaft is bent, oil will normally leak from bottom seal.	Replace shaft if bent.
	4. Check to see if blades are swinging.	Free blades so they swing.
	5. Check for even wear on each blade tip. Were both blades changed at the same time?	Weigh blades. Weight should be within 1 oz. Always replace both blades.
	6. Blade broken.	Replace blades, in sets.
	7. Blade carrier bent.	Replace carrier.
	8. Blade hub not properly seated on shaft.	Remove hub, check tapered spline shaft, clean and replace.
	9. New blade or bolts matched with worn blade or bolts.	Replace blades or bolts in sets.
	10. Drivelines not phased correctly. Cutter & Tractor yokes must be in line.	Replace driveline.
Gearbox Overheating	1. Low on lubricant.	Fill to level plug.
	2. Improper type lubricant.	Replace with proper lubricant. See Maintenance Section
	3. Excessive debris build-up around gear box.	Remove debris.
	4. Bearing or gears set up improperly.	Consult your Dealer.

OPERATION

TROUBLE SHOOTING

TROUBLE	POSSIBLE CAUSE	POSSIBLE REMEDY
Gearbox Noisy	1. Rough gears.	Run in or change gears.
	2. Worn bearing.	Replace bearing.
Gearbox Leaking	1. Damaged oil seal.	Replace seal.
	2. Bent shaft.	Replace oil seal and shaft.
	3. Shaft rough in oil seal area.	Replace or repair shaft.
	4. Oil seal installed wrong.	Replace seal.
	5. Oil seal not sealing in the housing.	Replace seal or use a sealant on OD of seal.
	6. Oil level too high.	Drain oil to proper level.
	7. Gasket damaged.	Replace gasket.
	8. Bolts loose.	Tighten bolts.
Clutch Slips Excessively	1. Clutch linings badly worn or plates warped.	Repair clutch per maintenance section of manuals.
	2. Too much power for clutch.	Reduce ground speed and material intake.
	3. Oil on facings.	Replace facings.
	4. Friction facings glazed.	Clean with emery cloth.
	5. Excessive load.	Machine is overloaded, reduce ground speed and material intake.
	6. Friction Plates worn.	Replace plates.
	7. Oil on Friction Plates.	Replace plates.
Blade Wears Too Fast	1. Cutting in sandy conditions.	Increase cutting height.
	2. Cutting in rocky conditions.	Increase cutting height.
	3. Soft "will fit" blades.	Use genuine Schulte blades.
Hydraulic Cylinder Will Not Operate	1. Not enough pressure.	Check pressure.
	2. Valve not connected properly.	Re-plumb valve.
	3. Quick coupler not completely connected.	Complete connection.

OPERATION

TROUBLE SHOOTING

TROUBLE	POSSIBLE CAUSE	POSSIBLE REMEDY
Not Cutting Clean	1. Blades dull.	Replace blades.
	2. Blade rotation incorrect.	Use correct blade for carrier rotation.
	3. Carrier RPM too low.	Use correct PTO speed and check for correct gear box ratio.
	4. Deck pitch incorrect	Adjust machine.
	5. Tires mashing down grass.	Move tires out of cutter overlap area. Minimum 60" inside tires.
	6. Ground speed too fast.	Reduce ground speed.
	7. Blades locked back.	Free blades.
	8. Blades riding up due to blade bolt wear.	Replace blade bolts.
Streaking Conditions In Swath	1. Conditions too wet for cutting. Blades unable to cut that part of grass pressed down by path of tractor tires.	Allow grass to dry before cutting. Slow ground speed of tractor but keep engine running at full PTO rpm. Move rear tires as wide as possible so wing blades will pick up grass.
	2. Dull Blades.	Replace blades.
	3. Height of cutter lower at front.	See Cutting Height Instructions.
Tongue bending or binding on turns	Improper Drawbar	Add Attaching Plate to all 3-point drawbars.

OPERATION

TROUBLE SHOOTING

TROUBLE	POSSIBLE CAUSE	POSSIBLE REMEDY
Universal Joint Yokes or Telescoping Members deformed	1. Excessive torque peaks shock loads.	Reset or repair slip clutch.
Universal Joint Cross broken	1. Excessive torque peaks shock loads.	Reset or repair slip clutch.
Accelerated wear of Universal Joint Cross	1. Inadequate greasing.	Carefully follow greasing instructions.
Accelerated wear of Universal Joint Sliding Members	1. Inadequate greasing.	Carefully follow greasing instructions.
Shear Bolts on Driveline break	1. Slip Clutches have seized. 2. Shear bolts are worn	Free-up slip clutches. Install new liners if old ones are damaged. Install new shear bolt.

MAINTENANCE SECTION

MAINTENANCE

1. MAINTENANCE

Before operation of your rotary cutter ensure that it has been properly serviced. A minimum of time is required to service this machine so that it provides you with long life and trouble free operation.

Ensure the cutter's safety pins are in place before doing any servicing of the cutter. Always disengage the PTO before transporting, making adjustments or doing any servicing.

DANGER! INSTALL TRANSPORT PINS FOR WINGS AND CENTER FRAMES BEFORE DOING ANY SERVICE OR REPAIR WORK ON THE CUTTER.



Failure of a hydraulic hose or cylinder seal could cause the wings or center section to drop rapidly causing injury or death. Refer to the "Operation - Transportation" section of this manual for transport pin locations.

1.1 Nuts And Bolts

Check all nuts and bolts for tightness after the first 8 hours of operation then weekly. Check then condition of cotter pins, roll pins and other fasteners weekly and replace if necessary.

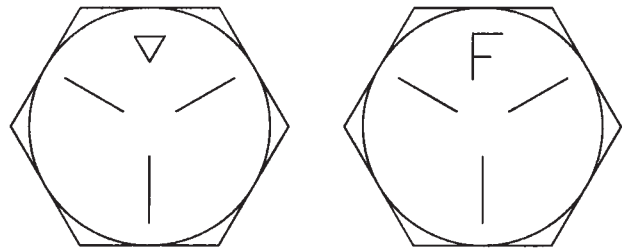
Bolt Grades and Torque

When replacing damaged bolts use only plated Grade 5 bolts unless otherwise specified. Use only bolts of the correct length [Refer to the "Parts Manual"]. Do not replace lock nuts with nuts and lock washers. Use only original equipment lock nuts.

Recommended Torques in foot pounds for SAE Grade 5 bolts, based on dry assembly:

Bolt Size	UNC		UNF	
	Ft-lbs	Nm	Ft-lbs	Nm
1/4"	8	11	10	14
5/16"	17	23	19	26
3/8"	31	42	35	47
7/16"	49	66	55	75
1/2"	75	102	85	115
5/8"	150	203	170	230
3/4"	269	365	297	403
1"	644	873	704	954
1-1/4"	1255	1700	1380	1870

GRADE (5) Bolt Head



MAINTENANCE

Shear Bolts

A shear bolt on the cutter end of the tractor drive shaft protects the tractor PTO from severe shock loads. If this shear bolt should break, only replace it with the specified size and grade of bolt.

1-3/8 z21
1-3/4 z20
341-5598 Bolt & nut, 7/16"-14 x 2.25 lg grade 5

1-3/8 z6 with Over-Running Clutch
341-5576 Bolt & nut, 3/8"-16 x 2.25" lg grade 8

IMPORTANT: The shear bolt is not designed to protect the cutter from severe shock loads. Always keep the slip clutches properly maintained.

MAINTENANCE

1.2 Blade Servicing

Inspect blades daily. Blades should be free of deep chips, cracks or abnormal bends.

DANGER!



Blades should always be replaced in pairs. Blades of different weights may cause serious imbalance which can result in damage to the gearbox. Damage caused by unbalanced blades can make the machine dangerous to operate, increasing the risk of a broken gearbox lower shaft. Never weld or modify blades. Welding and other modifications such as straightening the blade after it has been bent can severely reduce the strength of the blade, increasing the likelihood that a piece breaks and can be thrown from the machine.

DANGER!



DO NOT SHARPEN BLADES. Sharpening blades can reduce the strength of the blade, increasing the likelihood that a piece breaks and can be thrown from the machine. Should the blades become dull, replace them. Blades should always be replaced in pairs.

WARNING!



AVOID PERSONAL INJURY. Blade and/or blade carrier removal should be done only with the tractor engine shut off, key removed, in neutral, parking brake on, PTO disengaged, PTO input shaft removed, and the cutter blocked in the raised position.

1.3 Blade Installation

When installing blades, use new blade bolts and blade nuts. Always replace blades in matched sets. A 1-5/8" socket can be used to torque blade bolts to 600 foot pounds dry assembly. You will need at least 3 feet of leverage to be able to do this. Check blade bolt torque after the first 10 hours of operation.

WARNING!



Use only original equipment blades on this cutter. They are made of special heat treated alloy steel. Substitute blades may not meet specifications and may be dangerous.

Retighten blade bolts daily. Access caps are provided on the deck of the cutter to facilitate this.

After installing new blades or blade bolts ensure that blades are free swinging and that there is 1" to 1-1/2" of free up and down motion at the tip of the blade.

MAINTENANCE

Blade Carrier Removal

Remove cotter pin and loosen slotted nut on gearbox shaft. Loosen but do not remove the nut until the blade carrier is loosened. Use a suitable two-jaw gear puller to pull carrier off tapered gearbox shaft. If gear puller is not available use a long bar inserted through the bolt access hole, striking the long bar with a sledge hammer. Rotate blade carrier 180° and repeat process until the blade carrier is loosened.

Blade Carrier Installation

Clean the taper and splines on both the blade carrier and output shaft. Castle nuts and cotter pins are used to tighten the cutter pans to the splined shaft on the cutter gearboxes. A cone washer is used between the nut and the gearbox main shaft. The washer must cone down towards the nut.

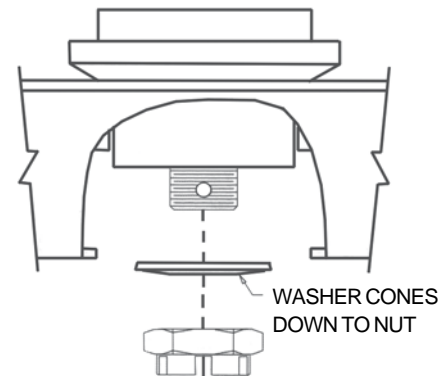
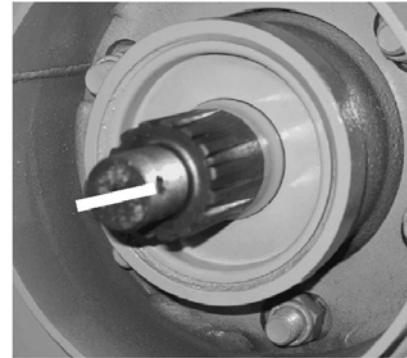
The slots on the underside of the blade carrier must line up with the hole on the gearbox shaft so the cotter key can be inserted. To aid in alignment, mark a line on the bottom of the gearbox shaft, parallel with the cotter key hole.

Rotate the blade carrier until the slots are parallel to the mark. The pan may need to be spun 180° so the splines match.

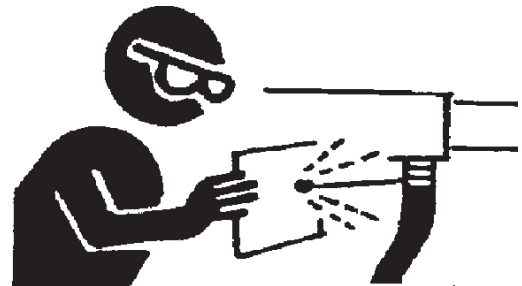
A 1-13/16" socket can be used to torque the M30 nut to 600 ft-lbs dry assembly. Strike the carrier on the hub several times with a heavy hammer to seat the hub. Use a suitable spacer over the nut to prevent damage to the nut and threads. Retighten the nut to 600 ft-lbs dry assembly. Install new cotter pins when retightening these nuts.

It is important that the retaining nut be checked after a few hours of operation then periodically. Retightened if necessary.

WARNING! AVOID PERSONAL INJURY. DO NOT work under cutter without support blocks to keep the frame from falling.



MAINTENANCE



DANGER!



Do not operate this Equipment with hydraulic oil leaking. Oil is expensive and its presence could present a hazard. Do not check for leaks with your hand! Use a piece of heavy paper or cardboard. High-pressure oil streams from breaks in the line could penetrate the skin and cause tissue damage including gangrene. If oil does penetrate the skin, have the injury treated immediately by a physician knowledgeable and skilled in this procedure. (SG-15)



MAINTENANCE

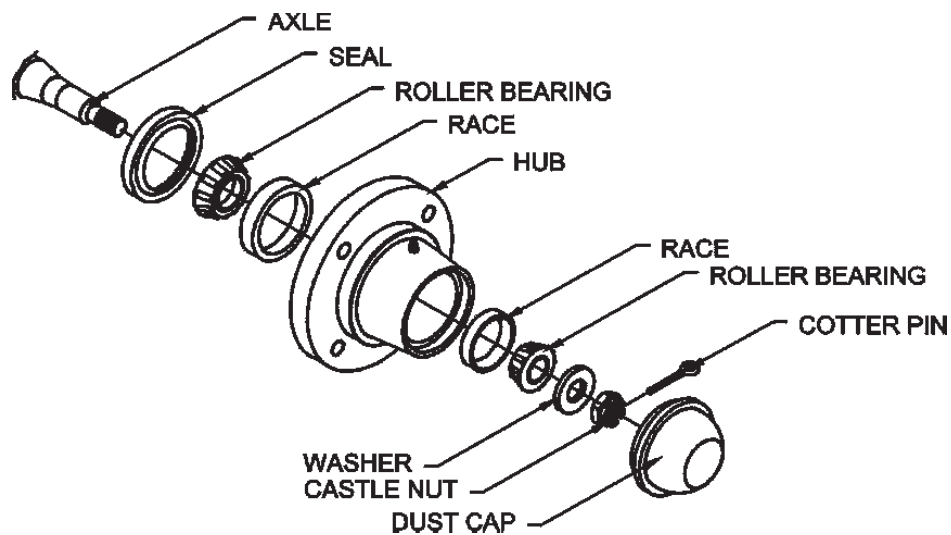
1.4 Hubs And Spindles

Check hubs weekly for bearing play and condition of seal.

Greasing and Installation

It is recommended that hubs are dismantled, cleaned and repacked every year. Use the diagram and following instructions for maintaining the wheel hubs. Whenever a worn or damaged seal is replaced the bearing assembly should be cleaned and repacked with a good grade of wheel grease.

WARNING! Always wear protective gloves when handling grease.



1. Using a grease packer, pack both roller bearings with a good grade of wheel grease. The bearings should be thoroughly coated with grease. Spread grease on the outside of the bearing with your gloved finger. Ensure that no dirt or filings contact the grease or the bearings.
2. Pack the inside of the hub with grease. Grease needs to cover complete surface area inside hub but does not need to fill cavity.
3. Smear grease on both races.
4. Install the large bearing into the back of the hub and rotate the bearing several times.
5. Install the dust/grease seal using the right size seal driver. Spread a film of grease on the dust seal rubber and on the axle where the seal fits.
6. Position the hub on the axle and firmly push into place then pull hub towards you about 1". Slowly rotate hub while gently pushing the hub back onto the axle.
7. Check dust seal to ensure seal rubber is positioned correctly.
8. Install the small or outer bearing.
9. Install the axle washer and castle nut on the axle.

MAINTENANCE

Tightening Instructions for 517 & 511 Hubs

Proper setting for the tapered roller bearings is described in the following procedure. Always use a new cotter pin when making adjustments to the hubs.

1. Tighten the castle nut to 20 foot pounds(27 Nm) while turning hub. Then back the nut off 1/2 of a turn. Spin the hub 2 or 3 times. While slowly turning hub clockwise, finger tighten the castle nut until castle nut notch lines up with hole in axle. If notch will not line up, back off nut to next notch.
2. Put the cotter pin in the axle hole. Before bending the cotter pin, spin the hub. The hub should free wheel from 1 to 2 full turns.
3. If the hub spins the right amount, finish installing the cotter pin by bending the ends.
4. Coat the inside of the dust cap with a thin coat of grease by using your gloved finger. Then install on hub using the right dust cap driver.
5. Wipe off all excess grease from hub and axle.

IMPORTANT: There should not be any drag noticed when spinning a tire installed on a hub. If the axle nut is too tight, the rollers of the wheel bearings will remove the grease from the bearing races, decreasing the life of the bearings.

Tightening Instructions for 618 Hubs

Proper setting for the tapered roller bearings is described in the following procedure. Always use a new cotter pin when making adjustments to the hubs.

1. Tighten the castle nut to 35 ft-lbs (47 Nm) while turning hub. Then back the nut off 1/2 of a turn. Spin the hub 2 or 3 times. While slowly turning hub clockwise, finger tighten the castle nut until castle nut notch lines up with hole in axle. If notch will not line up, back off nut to next notch.
2. Put the cotter pin in the axle hole. Before bending the cotter pin, spin the hub. The hub should free wheel from 1 to 2 full turns.
3. If the hub spins the right amount, finish installing the cotter pin by bending the ends.
4. Coat the inside of the dust cap with a thin coat of grease by using your gloved finger. Then install on hub using the right dust cap driver.
5. Wipe off all excess grease from hub and axle.

IMPORTANT: There should not be any drag noticed when spinning a tire installed on a hub. If the axle nut is too tight, the rollers of the wheel bearings will remove the grease from the bearing races, decreasing the life of the bearings.

1.5 Tires

Periodically check tire pressure. Tires should be inflated to manufacturer's suggested specifications. Higher pressures may cause excessive bouncing over rough ground. Lower pressures may cause excessive wear. Recommended pressures are shown below:

To remove tires for repair or replacement, lower the wings to the ground and install the center transport lock pin. Relieve hydraulic pressure Shut off tractor, apply parking brake and disengage PTO. Loosen the wheel bolts with wrench. DO NOT remove them. Use a hydraulic jack to lift the back end of the cutter frame near the wheel standard. Securely block the wheel standard so the tire can spin freely before removing the wheel bolts.

Tire Size	Min. Pressure		Max. Pressure	
	PSI	kPa	PSI	kPa
11L x 15 D-Load	32	221	38	262
7 x 15 Light Truck	30	207	50	345
30 x 9.5 x 14 Aircraft Tire	42	290	42	290

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1.6 Slip Clutches

This machine has a Weasler self-adjusting clutch. At the beginning of a season or after long periods of inactivity (60 days), loosen all slip clutch bolts on the outside diameter until they are just loose, then tighten one half turn. With the cutter in the fully raised position, and the tractor engine at an idle, engage the PTO for 2-3 seconds to make the clutch slip. Retighten slip clutch bolts.

If the clutch does not slip repeat this procedure 2 or 3 times. If the clutch does not slip after 2 or 3 attempts, disassemble the clutch, clean all contact surfaces and replace any damaged components.

Disassembling the Clutch

Remove all six bolts that hold the clutch together. Loosen the bolts evenly and progressively to uniformly reduce the spring load.



Take notice of how the bevel washer is assembled. It needs to be assembled the same way or your slip clutch will lose its torque setting. The inside diameter edge of the bevel washer needs to sit on the clutch's cooling fins.



Disassemble the clutch completely.

Check the condition of all components. Inspect for wear, warpage or cracking and replace if necessary. Clean the metal contact surfaces with brake cleaner and a wire brush, if necessary.

New clutch linings are 3.2 mm thick. Replacement is recommended when linings wear below a thickness of 2.5 mm.



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Rebuilding the Clutch

Place a friction disc inside the housing.

Insert the separator plate.

Place the second friction disc on top.



Add the pressure plate so that the flat surface rests on the friction disc. The tangs of the plate must fall into the reliefs in the housing.



Add the bevel washer so that the inside diameter contacts the fins of the pressure plate.



Assemble the compression plate and all long bolts, making sure the nuts are in their pockets.

Tighten all long bolts to 30 ft-lbs.



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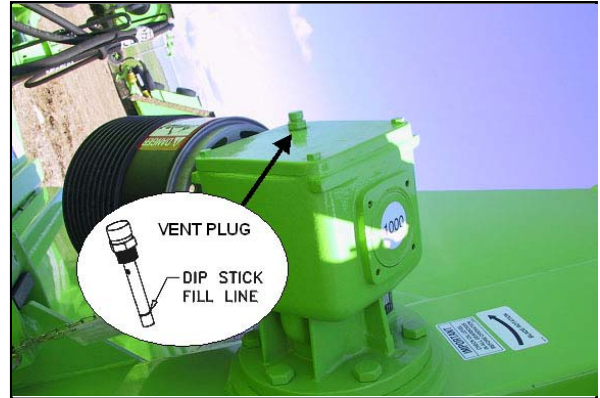
MAINTENANCE

2. LUBRICATION

2.1 Gearboxes

Procedure for refilling right angle gearboxes:

1. Park unit on a level surface and lower the wings. Install the center lock pin and block the unit to prevent falling or rolling.
2. From under the cutter, remove the blade carrier to access the drain plug.
3. Remove the drain plug and drain out oil.
4. Reinstall the drain plug and blade carrier.
5. Remove the vent plug/ dipstick.
6. Fill gearbox until oil level reaches the fill line on dipstick. Do not screw in dipstick when checking oil level.
7. Reinstall vent plug/ dipstick. Dispose of old oil in accordance with the local regulations.



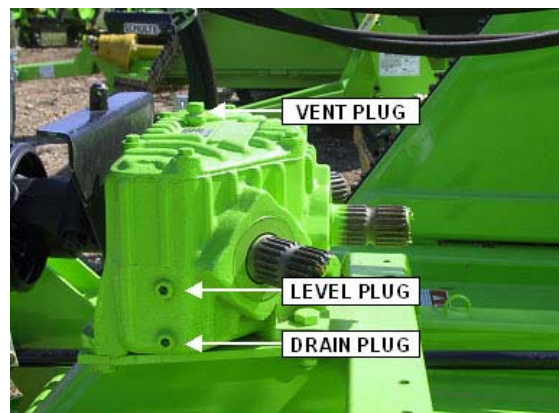
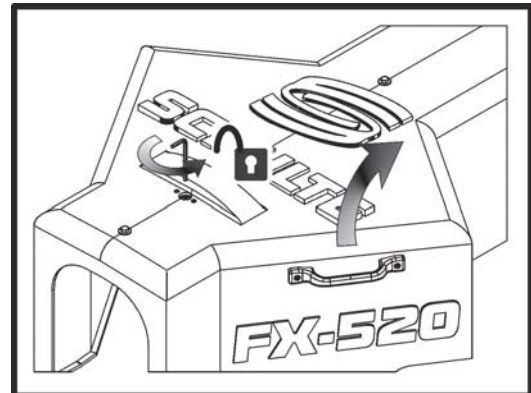
Replace oil in gearboxes after the first 50 hours of operation then yearly.

Check gearbox oil level frequently. Steady loss of oil will indicate damaged seals, which should be replaced immediately to prevent ruining the gearbox.



Procedure for refilling the splitter gearbox:

1. To open the main shield use the 6 mm allen key to turn the lock counter-clockwise to release the latch.
2. The 6 mm allen key is stored in the canister with the Operator's Manual.
3. Firmly close the main shield to engage the automatic lock.
4. Park unit on a level surface
5. Remove drain plug and drain out oil
6. Reinstall drain plug
7. Remove vent plug and level plug
8. Fill gearbox until oil runs out the level plug hole
9. Reinstall vent plug and level plug
10. Dispose of old oil in accordance with the local regulations



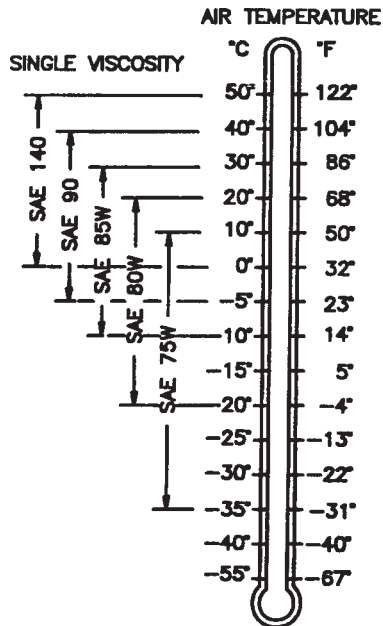
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Gearbox oil should meet the following specifications:

- API Service Classifications GL-5
- Military Specification MIL-L-2105C

Consult the following chart for the oil viscosity recommendations:



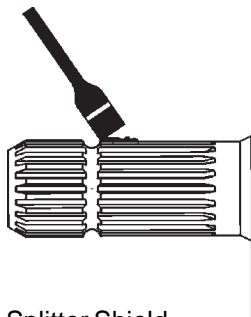
NOTE: Use SAE 80-90 Gear Oil

2.2 Grease Schedule

Grease should meet the following recommendations:

- SAE Multi-purpose grease
- SAE Multi-purpose grease containing 3 to 5 per cent molybdenum disulfide

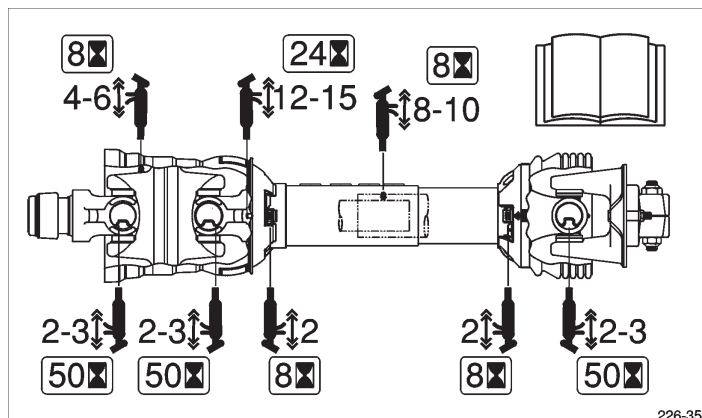
MAINTENANCE



Use SAE (NLGI) #2

IMPORTANT: Before attaching the driveline, clean and grease the tractor PTO and the Implement shaft.

Splitter Shield



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2.3 Universal Joint Assemblies.

-Type of Grease: A good quality NLGI #2 EP grease, lithium soap base should be used to grease the needle bearings in cross journals, shield bearings, telescoping members and CV centering mechanism. For heavy duty applications a compatible grease with 3 to 5% molybdenum disulfide additive may be used.

-Cross Journals: Every 8 hours.

Lubricate until grease purges from underneath all four needle bearing caps.

-Shield Retaining Bearings: Every 8 hours.

The shield bearings are greased by a fitting molded into the shielding bell. Three pumps are required.

IMPORTANT: Check that the driveline shielding is not damaged and rotates freely on the driveline.

-Constant Velocity Body: Every 4 hours.

The housing for the CV body serves as a reservoir for the lubrication of the centering mechanism. Approximately 30 pumps are required every 4 hours.

-Telescoping Tubes: Every 4 hours. Apply grease to the collar located at the middle of the shaft. The grease fitting on this collar will come exposed when the cutter wings are laying flat. Occasionally (monthly) pull the universal joint halves apart and apply grease to all sides of the slip shaft. At least once per year (more often in dusty or dirty conditions) the shielding should be removed and the old grease removed with a solvent. A fresh coat of grease should then be applied to the entire surface of the inner tube.

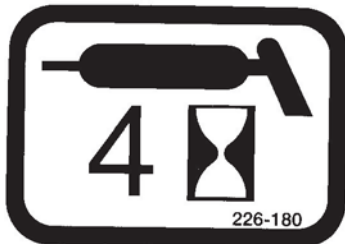
IMPORTANT: If the universal joint sliding members are allowed to dry out to the point where two halves cannot slip freely, damage to the rotary cutter or tractor may occur.

-Rapid Fit Yoke: Every 2 days.

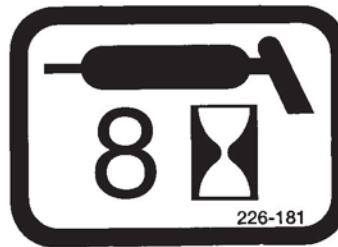
2.4 Cutter Frame

Grease points around the cutter will be identified by one of the following greasing decals. In some cases, multiple grease points may be identified by a single decal if they are close together and they require the same greasing schedule.

Grease every 4 hours



Grease every 8 hours



Grease every 50 hours



Grease points on the cutter need to be greased at the following intervals:

Location	Hours
Rear Wheel Standards	8
Suspension Pivot Pin & Walking Axle Pin	8
Hitch Mounts	8
Wheel Hubs	50
Hitch Clevis & Pivot	8

MAINTENANCE

SCHULTE[®]

SCHULTE INDUSTRIES LIMITED
WARRANTY POLICY FOR THE FX520

Schulte Industries Limited (“the manufacturer”) warrants to the original purchaser only, that in the event of any defect in material or workmanship in the Schulte FX520, the subject of this warranty (“the goods”) during the warranty period mentioned below the manufacturer will provide the cover 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.

CONDITIONS

1. This warranty does not extend to:
 - (A) Damage or deterioration after delivery from the manufacturer’s works not attributable to defective material or workmanship.
 - (B) Any goods after they have been altered or repaired other than by the manufacturer’s employees or its’ agents in each case authorized in writing by the manufacturer to effect that specific alteration or repair to those specific goods.
 - (C) Any equipment or machinery of any kind furnished by the buyer, or belonging to, or acquired from third parties at the buyer’s request, or supplied, or made to the buyer’s specifications.
 - (D) Any goods which have sustained damage or deterioration attributable to damage from foreign objects (e.g. stones, iron, material other than grass and brush), inadequate or faulty assembly, improper or inadequate maintenance, or neglect, or abuse.
 - (E) Normally wearing parts (e.g. tires , blades,)

2. This warranty is conditional upon:
 - (A) Care maintenance and operation in accordance with the manufacturer’s specifications and recommendations (as set out, or referred to in the ‘manual’) supplied for the goods.
 - (B) Filling out the manufacturer’s Warranty Validation form, and returning it to the manufacturer within thirty (30) days of receipt of goods by the buyer.
 - (C) Filling out the manufacturer’s Warranty Claim form and returning it to the manufacturer within thirty (30) days of the repair.
 - (D) Examination of the goods by the manufacturer or one of its agents to verify that the goods are defective in material or workmanship.

COVER

1. In respect of claims notified:

Commercial use - During the first six (6) months, parts and labour on repair.

Non-commercial, governmental, municipal or farm use - During the first twelve (12) months, parts and labour on repair. Extended limited gearbox warranty - Extending to thirty six (36) months, replacement gearbox parts only.

Rental use - During the first thirty (30) days, parts and labour on repair.

2. The buyer is responsible for any labour charges exceeding a reasonable amount as determined by the manufacturer and for returning the goods to the dealer, whether or not the claim is approved. The buyer is responsible for the transportation costs of the goods or part(s) from the dealer to the designated factory.

WARRANTY PERIOD

3. Commercial use - The warranty period shall be the period of six (6) months from the date that the goods are received by the buyer.

Non-commercial, governmental, municipal or farm use - The warranty period shall be the period of twelve (12) months from the date that the goods are received by the buyer. Extended limited gearbox warranty - For gearboxes, the warranty period shall extend to thirty six (36) months from the date the goods are received by the buyer.

Rental use - The warranty period shall be the period of thirty (30) days from the date that the goods are received by the buyer.

4. All notices and correspondence to the manufacturer shall be confirmed by letter addressed to:

Attention: Warranty Compliance
Schulte Industries Limited
P.O. Box 70
Englefeld, Saskatchewan
S0K 1N0, CANADA

SCHULTE®