




## Mini Brush Mower

For

## Mini Skid Steer Loaders And Mini Track Loaders

## Operator's Manual Maintenance and Parts Information

Do not use or operate this machine until this manual has been read and understood.

 Read the Operation & Maintenance Manual entirely. When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!

### IMPORTANT

If this machine is used by an employee or is loaned or rented to others, make certain that the operator(s) prior to operating:

- Is instructed in safe and proper use.
- Reviews and understands the operation and maintenance manual(s) pertaining to the machine.

Remember, the operator is responsible for the safe operation and maintenance of the machine. Most accidents can be prevented. Good safety practices not only protect you, but also the people around you.

**NOTE:** Spartan Equipment reserves the right to make improvements in design or changes in specifications at any time without notice and without incurring any obligations to install them on units previously sold.

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### FOREWORD

#### To The Owner/Operator:

**DO NOT use or operate this machine until this manual has been read and understood. If you require additional information, contact your Dealer or Spartan Equipment LLC.**

Operation and Maintenance Manuals are written to give the owner/operator instructions on the safe operation and maintenance of the product. For your safety and the safety of other persons, you must not operate, service, inspect or otherwise handle this equipment before you have reviewed and understood the Operation and Maintenance Manual(s) pertaining to the Spartan Equipment™ Mini Brush Mower (also referred to as "attachment") and the mini skid steer loader/mini track loader (hereafter referred to as "loader").

Throughout this manual reference may be made to the left hand (LH) or right hand (RH) side. These terms are used as viewed from the operator's station facing front.

In order to get the optimum performance and efficiency that has been designed into the attachment, read this manual thoroughly before setting-up, operating, or performing maintenance procedures on the machine.

It is the responsibility of the user to read the part's manual and comply with the safety instructions, operating instructions and maintenance guidelines set forth in this manual.

The user is responsible for inspecting the loader and attachment daily, and for having parts repaired or replaced when continued use would cause damage, excessive wear to other parts or make continued operation unsafe.

The signal words **CAUTION**, **WARNING**, or **DANGER** are used to indicate degree of hazards and to warn against unsafe practices that may cause personal injury and are used with appropriate safety instructions. These signal words are not to be ignored your safety is involved.



**CAUTION:** denotes a general reminder of good safety practices or directs attention to unsafe practices.



**WARNING:** denotes a hazard intermediate between DANGER and CAUTION.



**DANGER:** denotes the most serious hazard.

The word **NOTE** is used to convey information that is out of context with the manual text; special information such as specifications, techniques, reference information, and other information of a supplementary nature.

The word **IMPORTANT**, is used in the text when immediate damage will occur to the machine due to improper technique or operation. **IMPORTANT** will apply to the same information specified by **NOTE**, only of an immediate and urgent nature.

Spartan Equipment cannot anticipate every possible circumstance that might involve potential hazard. The safety messages found in this manual and on the machine are therefore not all inclusive. If an operating procedure, tool device, maintenance or work method not specifically recommended is used; you must satisfy yourself that it is safe for you and others. You must also ensure that the machine will not be damaged or made unsafe by the procedures you choose.

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### SAFETY



**Whenever you see this symbol, it means Attention! Become Alert! Your Safety is involved. Failure to obey warnings or instructions can cause personal injury or death.**

Operating instructions must be given to everyone before operating this machine and at least once a year thereafter in accordance with OSHA regulations.

#### General Safety Instructions

- Read the operators manual for the loader to become totally familiar with the controls and instruments. Know how to stop all equipment operation in case of emergency.
- Avoid the possibility of personal injury and/or machine damage. NEVER exceed the maximum recommended input power or speed specifications for the attachment.
- Check and be sure all operating controls are in neutral before starting the engine.
- Disengage hydraulic drive, lower the attachment to rest flat on the skid shoes, stop engine, set park brake, and wait for all motion to stop before leaving the operator's station for any reason.



**WARNING: Before adjusting, or servicing the unit, stop the engine and relieve all hydraulic pressure by opening the control valve.**

- Keep all shields, guards, and covers in place.
- Stay clear of the attachment when unit is running.
- NEVER make adjustments, lubricate, or perform any service on the machine while it is running.
- NEVER operate this attachment within 200 feet (60m) of people, pets, structures or other property.
- NEVER operate near embankments or terrain that is so steep that rollover could occur.
- NEVER allow children or untrained persons to operate.
- DO NOT permit riders on equipment.
- Use adequate safety warning lights and devices as required by local regulations.
- Obey all local laws and regulations regarding machine operation on public property.

- The machine is designed for cutting grass and small brush only. NEVER use this attachment for other purposes.
- Do not modify equipment or add attachments that are not approved by Spartan Equipment.

- Remember, **YOU** are responsible for the safe operation and maintenance of the equipment. Most accidents can be prevented. Good safety practices not only protect you, but also the people around you.



#### Wear Protective Equipment

- Protective clothing and equipment should be worn.
- Wear clothing and equipment appropriate for the job. Avoid loose fitting clothing.
- Prolonged exposure to loud noise can cause hearing impairment or hearing loss. Wear suitable hearing protection such as earmuffs or earplugs.
- Operating equipment safely requires the full attention of the operator. Avoid wearing radio headphones while operating equipment.



#### Avoid High Pressure Fluids Hazard

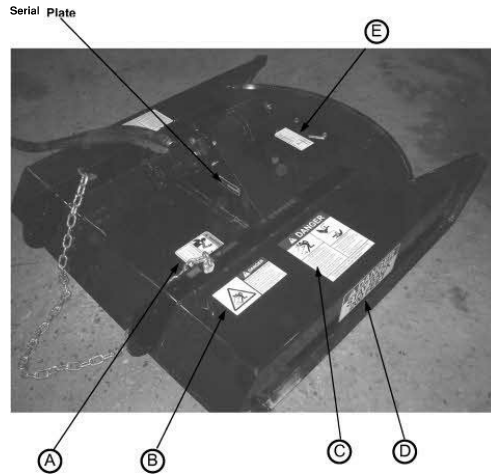
- Escaping fluid under pressure can penetrate the skin causing serious injury.
- Avoid the hazard by relieving the pressure before disconnecting hydraulic lines.
- Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks. Wear protective gloves and safety glasses or goggles when working with hydraulic systems.
- If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

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## SERIAL NUMBER AND SAFETY DECAL LOCATIONS

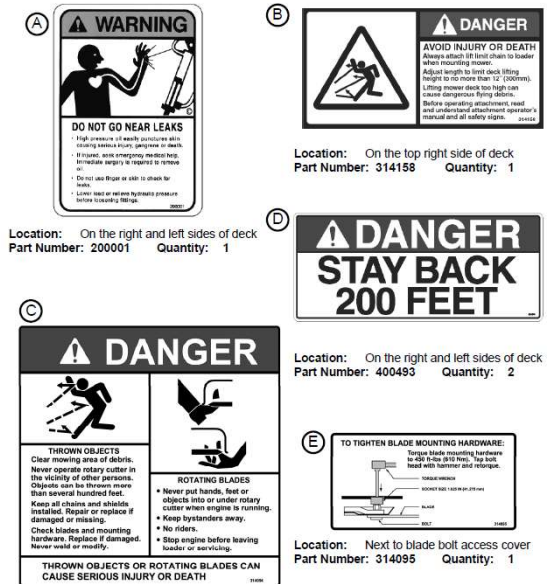
### Serial Number Location:

It is important to refer to the serial number of the attachment when making repairs or ordering parts. Early or later models (identification made by serial number) may use different parts, or it may be necessary to use different procedures in doing a specific operation.



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## SERIAL NUMBER AND SAFETY DECAL LOCATIONS



Location: On the top right side of deck  
Part Number: 314158 Quantity: 1

Location: On the right and left sides of deck  
Part Number: 200001 Quantity: 1

Location: On the right and left sides of deck  
Part Number: 400493 Quantity: 2

Location: Next to blade bolt access cover  
Part Number: 314095 Quantity: 1

Location: On top of deck (right and left)  
Part Number: 314094 Quantity: 2

Safety Decals Locations:  
The locations of the safety decals are shown. If these decals are missing, damaged, or painted over they must be replaced.

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## USERS INSTRUCTIONS FOR MOUNTING THE MINI BRUSH MOWER

After the initial set-up assembly is completed use the following procedure to mount the attachment to the loader.

### Instructions for mounting to a ride-on mini skid loader:

1. Use the step, safety treads, and grab handles to get on and off the loader.
2. Sitting in the operator's seat, lower seat bar, fasten the seat belt and with the controls in a neutral position, start the engine.
3. Drive the loader to the rear of the attachment. Put the loader quick attach coupler into the attachment mounting bracket.
4. Tilt the loader coupler backward a small amount until it is fully engaged in the attachment mounting bracket.
5. Stop the engine and engage the parking brake.
6. Exit the loader and secure the coupler locking mechanism that locks the attachment to the loader.
7. Route the lift limit chain over the boom cross-member and down through a hole in the front frame. Then latch the end of the chain back to itself allowing for some slack.

### Instructions for mounting to a walk-behind mini skid loader:

1. Standing at the operator's station with the controls in a neutral position, start the engine.
2. Drive the loader to the rear of the attachment. Put the loader quick attach coupler into the attachment mounting bracket.
3. Tilt the loader coupler backward a small amount until it is fully engaged in the attachment mounting bracket.
4. Stop the engine and engage the parking brake.
5. Walk to the front of the loader and secure the coupler locking mechanism that locks the attachment to the loader.
6. Route the lift limit chain over the boom cross-member and down through a hole in the front frame. Then latch the end of the chain back to itself allowing for some slack.



**WARNING:** Coupler wedges or pins must extend through the holes in the attachment mounting plate. Levers must be fully down and locked. Failure to secure wedges or pins can allow attachment to come off and cause injury or death.



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## USERS INSTRUCTIONS FOR MOUNTING THE MINI BRUSH MOWER

**NOTE:** Attachment is shipped with BFJX (3/4" Female JIG Swivel) fittings on the ends of the lead hoses.

8. Connect the hydraulic quick couplers from the Mini Brush Mower to the loader. Be sure to thread the hoses through the hose holder on the loader. Bungee straps can be used as an alternate method of securing the hoses.

**NOTE:** Make sure the quick couplers are fully engaged. If the quick couplers do not fully engage, check to see that the couplers are the same size and brand. Do not force the quick couplers together.

If the quick couplers will not connect together due to thermal expansion of the fluid in the hoses, stop the engine and activate the auxiliary hydraulic control to relieve the pressure.

**NOTE:** See the loader operation and maintenance manual.

9. Mounting is now complete and you are ready to use the Mini Brush Mower. Use reverse order of above instructions to dismount the attachment from the loader.

**NOTE:** Make sure the hoses are properly routed to fit your specific loader. If the hoses are not routed correctly, hoses may get pinched or rub on tires. Be sure to check the hose routing through the full range of intended motion of the attachment before operating it.

More than one routing may be acceptable depending on the loader. Pick the routing that best suits your loader.

**PROPER HOSE ROUTING IS THE RESPONSIBILITY OF THE OWNER AND/OR OPERATOR. PINCHED OR STRETCHED HOSES ARE NOT COVERED UNDER WARRANTY.**



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## OPERATING THE MINI BRUSH MOWER

The type of brush being cut and the ground conditions will determine the best ground speed and cutting procedure. The Mini Brush Mower is designed to cut short or tall grass and brush.

The Mini Brush Mower is not designed to be used on loaders with a Rated Operating Capacity (ROC) of more than 1000 pounds.

Remove obstructions from the cutting area that might be picked up and thrown.



**DANGER: AVOID INJURY OR DEATH.** Keep bystanders away when Mini Brush Mower is operating. Objects can be thrown several hundred feet. Stop the attachment when bystanders are in the vicinity.



**WARNING: AVOID INJURY OR DEATH.** Loader must have polycarbonate or similar strength door and door must be closed in order to operate the Mini Brush Mower.



**WARNING: AVOID INJURY OR DEATH.** Make sure the lift limit chain is installed and adjusted to prevent the loader from lifting the mower more than 12" (30cm) off the ground.



**WARNING: AVOID INJURY OR DEATH.** Never allow riders on the Mini Brush Mower.

With the operator at the operator's station, (the seat belt fastened and the seat bar lowered if equipped) start the engine.

Carry the attachment low to the ground while driving.

**IMPORTANT:** Before operating the attachment, perform the service schedule for routine maintenance and inspect the cutting area for obstructions such as stumps, wire, rocks, electrical lines, debris, drop offs, holes, etc.

### Operating Suggestions

With the engine at low RPM, lower the loader lift arms fully and position the Mini Brush Mower flat on the ground.

Engage the auxiliary hydraulics, increase the engine speed to full RPM, and drive the loader forward into the work area.

Raising the front of the Mini Brush Mower a few inches may help while driving forward into thick brush and when turning.

**IMPORTANT: DO NOT operate Mini Brush Mower when excessive vibration is present. Serious damage can occur. Check blades and gearbox.**



**WARNING: AVOID INJURY OR DEATH.** Never put hands, feet, or objects under Mini Brush Mower when engine is running.



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## ROUTINE MINI BRUSH MOWER MAINTENANCE

It is the operator's responsibility to make daily inspections of the loader and attachment for damage, loose bolts, fluid leaks, or anything else that could cause a potential service or safety problem. Preventive maintenance is the easiest and least expensive type of maintenance.

**IMPORTANT:** Bolts and set screws can loosen after initial usage. After the first hour of operation check all bolts and set screws. This must also be done daily before operation. If nuts or bolts are missing or damaged, replace immediately.



**WARNING:** Lower the attachment to rest on the ground, shut down the engine, relieve the hydraulic pressure to the attachment, wait for all motion to stop, and set park brake before leaving the operator's station to perform service of any kind.

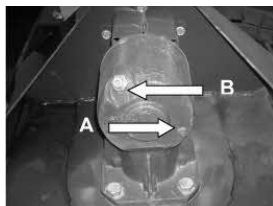
## DAILY INSPECTION

Check the following items at least **ONCE A DAY** before operating the mower:

1. Check lift limit chain and shackle for damage.
2. Check blades for cracks or damage. Replace if necessary.
3. Check blade mounting hardware for proper torque 450ft. lbs. (609Nm). Tap bolt head with hammer and retorque. Check mounting plate hardware.
4. Check hub retaining bolt. Retorque to 600ft. lbs if removed.
5. Check deck and shields. Repair if damaged or replace if necessary.
6. Check for damaged or missing decals. Replace if necessary.
7. Check for damaged or leaking hydraulic hoses or fittings. Replace if necessary.
8. Clean debris, leaves, grass, and flammable material from deck area and under covers.
9. Check lubrication level in gearbox (EP80W-90 or EP85W-140 gear lube). Approximately 23 oz.

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## ROUTINE MINI BRUSH MOWER MAINTENANCE



### Gearbox Fluid Check and Fill

Position the Mini Brush Mower on a flat, level surface.

Remove the level check plug [A] to check the fluid level in the gearbox. Fluid must be level with the check plug hole.

**NOTE:** This gearbox holds about 230z of oil. Do not overfill the gearbox.

To add EP80W-90 or EP85W-140 gear lube, remove the fill plug [B] and add lube until it is level with the check plug hole.

**IMPORTANT:** Fluids such as gear lube and hydraulic fluid must be disposed of in an environmentally safe manner. Some regulations require that certain spills and leaks be cleaned in a specific manner. Check local, state, and federal regulations for the correct disposal.

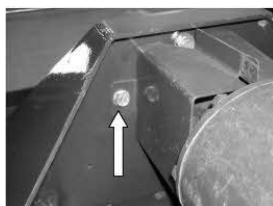
### Inspecting the Motor Coupler

Remove the two bolts holding the two halves of the coupler shield and remove the shields.

Check the condition and tightness of the nut and bolt. Replace as needed.



**WARNING: AVOID INJURY OR DEATH.** Do not operate without coupler shields in place.



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## ROUTINE MINI BRUSH MOWER MAINTENANCE

### Cleaning the Brush Mower

Position the Mini Brush Mower on a flat, level surface.



**WARNING: AVOID INJURY OR DEATH.** Before servicing under the Mini Brush Mower, be sure to disconnect the auxiliary hydraulic hoses. Raise the lift arms and tilt the Mini Brush Mower down fully. Install an approved lift arm support [A] and stop the engine.

To clean under the deck, position the Mini Brush Mower by raising the lift arms and tilting the attachment down. Keep the front edge of the Mini Brush Mower within one foot of the ground for debris clean out or blade service.



**WARNING: AVOID INJURY OR DEATH.** Always use the manufacturers recommended lift arm locking device when leaving the loader unattended with the arms raised. Have an assistant help with this if using a "ride-on" type loader.

Exit the Loader.



**CAUTION:** Wear safety glasses to prevent eye injury when:  
a) Tools are being used,  
b) Engine is running,  
c) Fluids are under pressure, or  
d) Flying debris or loose material is present.

Use water or air pressure to clean debris from the areas between the deck stiffeners and around the gearbox.

Use caution when removing any debris that is wrapped around the blades, stump jumper, or gearbox shaft.

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ROUTINE MINI BRUSH MOWER MAINTENANCE



Blade Removal and Installation

**NOTE:** Refer to Daily Inspection on page 11 for daily maintenance check. Check that the blades can swing freely. Also check blades, mounting hardware, and stump jumper for wear, cracking, or breakage, which can cause excessive vibrations. Replace if damaged.

Only service the blades when Mini Brush Mower is attached to the loader.



**WARNING: AVOID INJURY OR DEATH. Before servicing under the Mini Brush Mower, be sure to disconnect the auxiliary hydraulic hoses. Raise the lift arms and tilt the Mini Brush Mower down fully. Install an approved lift arm support and stop the engine.**

Remove the two bolts securing the blade nut access cover, and remove the cover.

Rotate the stump jumper until the bolt is aligned with the access hole.

Remove the locknut from the blade bolt.

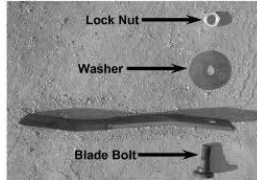
**NOTE:** Blade bolt and blade may fall from the stump jumper when removing the blade locknut. Always support the blade bolt and blade while removing the locknut.

**IMPORTANT:** Always use a NEW locknut and bolt during assembly. Tighten the locknut to 450 ft. lbs. (609 Nm) torque. Tap bolt head with a hammer and retorquer. Repeat procedure until the locknut will not turn when torqued.

Repeat the procedure for the other blade.

The blade bolt fits only one way into the stump jumper. Install the washer between the blade and the stump jumper.

**NOTE:** If the blade carrier bar is removed for any reason, be sure to torque the slotted nut to 600 ft. lbs when reinstalling and install cotter pin.



ROUTINE MINI BRUSH MOWER MAINTENANCE

Reversing Blade Rotation

The blades of the Mini Brush Mower are double-sided and can be used in either direction. When the first side becomes dull, you can reverse the direction of rotation by switching the hydraulic quick couplers on the ends of the lead hoses. This will reverse the motor rotation.

When both edges of the blade are excessively worn, replace both blades at the same time to keep the assembly properly balanced.



**WARNING: AVOID INJURY OR DEATH. DO NOT SHARPEN OR WELD ON THE BLADES!**

Always use genuine Spartan Equipment™ replacement blades.

Torque-Tension Relationships for SAE J429 Grade Bolts

Nominal Thread Size	SAE J429 Grade 2		SAE J429 Grade 5		SAE J429 Grade 8	
	Clamp Load (lbf)	Tightening Torque (ft-lbf)	Clamp Load (lbf)	Tightening Torque (ft-lbf)	Clamp Load (lbf)	Tightening Torque (ft-lbf)
Unified Coarse Thread Series						
1/4-20	1,300	49 in-lbf	65 in-lbf	2,000	75 in-lbf	100 in-lbf
5/16-18	2,150	101	134	3,350	157	210
3/8-16	3,200	15 ft-lbf	20 ft-lbf	4,950	23 ft-lbf	31 ft-lbf
7/16-14	4,400	24	30	6,800	37	50
1/2-13	5,850	36.5	49	9,050	57	75
9/16-12	7,500	53	70	11,600	82	109
5/8-11	9,300	73	97	14,500	113	151
3/4-10	13,800	125	173	21,300	200	266
7/8-9	11,425	125	166	29,435	321	430
1-8	15,000	167.5	250	38,600	482.5	640
Unified Fine Thread Series						
1/4-28	1,500	55 in-lbf	75 in-lbf	2,300	85 in-lbf	115 in-lbf
5/16-24	2,400	112	150	3,700	173	230
3/8-24	3,500	17 ft-lbf	22.5 ft-lbf	5,300	26 ft-lbf	35 ft-lbf
7/16-20	4,900	27	36	7,550	42	55
1/2-20	6,800	41	55	10,200	64	85
9/16-18	8,400	59	79	13,000	92	122
5/8-18	10,000	83	110	16,300	128	170
3/4-16	15,400	144	193	23,800	223	298
7/8-14	12,610	138	184	32,480	355	473
1-12	18,410	205	273	42,270	528	704

Clamp load estimated as 75% of proof load for specified bolts.  
Torque values for 1/4 and 5/16 inch series are in inch-pounds. All other torque values are in foot-pounds. Torque values calculated from formula  $T = KDF$   
where:  $K = 0.15$  for "lubricated" conditions  $K = 0.20$  for "dry" conditions

MINI BRUSH MOWER GENERAL SPECIFICATIONS

Model	Mini Brush Mower
Mounting Plate	Customer Specific
Hydraulic Pump Capacity Requirements	7-13 GPM
Operating Weight	420 pounds
Cutting Diameter	43.75"
Cutter Capacity	Brush Material up to 2" diameter
Overall Height	19.75"
Overall Length	62"
Overall Width	48.25"

All dimensions are in INCHES.

