



OPERATOR'S MANUAL

2500X



DISCLAIMER: Swivel model shown above with optional steel hopper.

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Scag Power Equipment
Division of Metalcraft of Mayville, Inc.

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Congratulations on owning a Scag Tracked Power Buggy! This manual contains the operating instructions, safety information, and illustrated parts list for your machine. Reading this manual can provide you with assistance in maintenance and adjustment procedures to keep your machine performing at maximum efficiency. Please read all the information enclosed in this manual before operating your machine.

The QR code on the front cover of this manual can be scanned with your mobile device to access manuals, parts lists, and other product information on the official Scag website.

WARNING

YOUR TRACKED POWER BUGGY IS ONLY AS SAFE AS THE OPERATOR. HAZARD CONTROL AND ACCIDENT PREVENTION ARE DEPENDENT UPON THE AWARENESS, CONCERN, PRUDENCE, AND PROPER TRAINING OF THE PERSONNEL INVOLVED IN THE OPERATION, TRANSPORT, MAINTENANCE, AND STORAGE OF THE EQUIPMENT.

- Carefully read and understand the safety and operating instructions described in this manual. Always keep a copy of this manual with the machine.
- Ensure every operator is properly trained and thoroughly familiar with all controls and procedures before operating the machine.
- Under no circumstances should the machine be operated on slopes greater than 10 degrees. Always follow OSHA-approved operating procedures.
- Keep hands, feet, and clothing away from moving parts at all times.
- Do not carry passengers on the machine.
- Do not operate the machine when children or bystanders are present.
- Before performing any maintenance or service, stop the machine and remove the ignition key.

This manual covers the operating instructions and illustrated parts list for:		
SCB-2500X-23BV-S	with a serial number of	181D00001 to 181D00025
Always use the entire serial number listed on the serial number tag when referring to this product.		

Model Number:	Serial Number:

INTRODUCTION

1.1 GENERAL INFORMATION

Your 2500X Tracked Power Buggy was built to the highest standards in the industry. However, the prolonged life and maximum efficiency of your machine depend on you following the operating, maintenance, and adjustment instructions in this manual.

Carefully read the safety and operating instructions in this manual before attempting to operate your machine. You are responsible for the safe and proper operation of your machine.

IMPORTANT

For illustrative clarity, some illustrations in this manual may show shields, guards, or plates open and removed from the machine. Under no circumstances should your machine be operated without these devices in place.

All information in this manual is based on product information available at the time of approval for printing. Scag Power Equipment reserves the right to make changes to this manual at any time without notice and without incurring any obligation. **Please visit the official Scag Power Equipment website (www.scag.com) for updated manual releases.**

A replacement manual is available from the following sources: your Authorized Scag Dealer, Scag Power Equipment Service Department (PO Box 152; Mayville, WI 53050), and on the official Scag Power Equipment website. When requesting replacement manuals, please indicate the complete model number and serial number of your Scag product.

If additional information or service is needed for your machine, please contact your Authorized Scag Dealer.

1.2 MANUAL CONVENTIONS

DIRECTIONAL REFERENCES

Directional references are used throughout this manual to locate the components of the machine. The "Right," "Left," "Front," and "Rear" of the machine are referenced from the perspective of the operator while standing in the normal operating position of the machine and facing the forward travel direction.

SAFETY ALERTS



The symbol above means, **"Attention! Become Alert! Your Safety is Involved!"** This symbol is used with the following safety alerts to identify the safety messages located throughout this manual and found on the decals located on your machine. The message that follows the safety alert contains important information about safe operating practices, hazards, and safety precautions.

Your safety and the safety of others depends on your knowledge and understanding of all correct operating practices and safety precautions of this machine. To avoid injury and possible death, carefully read all safety alerts associated with your machine. Be sure to understand all potential hazards and possible causes of injury or death before operating your machine.

DANGER

The "DANGER" safety alert denotes an extremely hazardous situation that exists on or near the machine. This hazard results in a high probability of death or irreparable injury if proper precautions are not taken.

WARNING

The "WARNING" safety alert denotes a hazard that exists on or near the machine that can result in injury or death if proper precautions are not taken.

CAUTION

The "CAUTION" safety alert serves as a reminder to follow safety practices while on or near the machine. If safety precautions are not taken, personal injury can occur.

1.4 SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	Read Operator's Manual		CE Mark
	Tie Down		Lift Point
	Parking Brake		Continuously Variable - Linear
	Hour Meter / Elapsed Operating Hours		Choke
	ON / START		OFF / STOP
	Hydraulic Oil		Oil
	Fast		Slow
	Pinch Point		Fan Warning
	High Temperature		Hot Surfaces
	Falling Hazard		Keep Bystanders Away

SAFETY INFORMATION

2.1 INTRODUCTION

Your 2500X Tracked Power Buggy is only as safe as the operator. Hazard control and accident prevention are dependent upon the awareness, prudence, and proper training of the personnel involved in the operation, transport, maintenance, and storage of the machine. Ensure every operator is properly trained and thoroughly familiar with all controls, operating practices, and safety precautions before operating this machine.

Carefully read the safety and operating instructions in this manual before attempting to operate this machine. The owner and operator can prevent, and will be responsible for, accidents or injuries occurring to themselves, other people, or property.

NOTE

Ensure all personnel know where the manual for this machine is located. Keep a record of each employee that has read the manual.

2.2 BEFORE OPERATION SAFETY

GENERAL CONSIDERATIONS

1. Clear the operating area of all objects that could interfere with the operation of the machine. These objects can cause the machine to become unstable.
2. Ensure all operators and mechanics working with the machine are appropriately trained and understand the procedures outlined in this manual. The owner of the machine is responsible for training all operators working with the machine.
3. Do not operate the machine when children or bystanders are present. Keep children out of the operating area and in the care of a responsible adult. Turn off the machine if any children or bystanders enter the operating area.
4. Never allow children or untrained personnel to operate the machine.
5. Do not carry passengers on the machine.

6. Wear adequate protective equipment while operating the machine. Avoid loose clothing, jewelry, or long hair that could get tangled in moving parts. Wearing safety glasses, safety shoes, and a helmet is advisable and required by some local ordinances and insurance regulations.

WARNING

Always wear hearing protection while operating the machine. Prolonged periods of exposure while operating this machine may cause hearing loss.

7. Keep the machine in a good operating condition. Keep all shields, safety devices, and decals in place. If a shield, safety device, or decal is defective or damaged, repair or replace the component before operating the machine.
8. Before operating the machine with an attachment or accessory, ensure that the component is properly installed and approved by Scag Power Equipment.
9. All equipment must comply with state and local ordinances as well as the latest SAE J137 and/or ANSI/SAE S279 requirements if the machine is driven on public roads. Contact your local authorities for regulations and equipment requirements.

FUEL & FLUID SAFETY

1. Fuel is flammable; handle it with extreme care.
2. Keep all flammable ignition sources (cigarettes, matches, etc.) away from the machine and any fuel containers. Never store fuel near open flames, heat sources, or sparks.
3. Only use approved containers to store fuel. Always use a funnel or spout to prevent spillage. Never fuel indoors or inside enclosed spaces, and clean any spillage before starting the machine.

CAUTION

If fuel is spilled on clothing, change clothing immediately and wash affected skin. Affected areas may suffer from irritation, chemical burns, and contact dermatitis.

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4. Do not fill containers on a truck or trailer bed with a plastic liner. Always place containers on the ground and away from your vehicle before filling.
5. Never remove the fuel tank cap or add fuel while the machine is running. Allow for the engine to fully cool before adding fuel.
6. Do not operate the machine without the exhaust system installed and working properly.

DANGER

Exhaust fumes are hazardous and contain carbon monoxide, which can cause brain injury and death. Do not run the machine indoors or inside confined areas without proper ventilation.

7. Ensure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before starting the machine.

SAFETY INTERLOCK SYSTEM

WARNING

This machine is equipped with a safety interlock system intended to protect the operator and others from injury.

This is accomplished by preventing the engine from starting unless the operator is standing on the operator platform.

The safety interlock system will shut off the engine if the operator leaves the operator platform without returning the steering control levers to the neutral position.

Never operate the machine with the interlock system disconnected, bypassed, or malfunctioning.

The safety interlock system should be tested before every use of the machine. If the safety interlock system does not operate as described below, contact your local

Authorized Scag Dealer immediately to have the safety interlock system repaired. Do not operate the machine until the safety interlock system has been repaired.

1. Stand on the operator platform and place the steering control levers in the neutral position. With the engine running, step backwards off of the operator platform. The engine should stay running.
2. Stand on the operator platform and place the steering control levers in the forward position. With the engine running, step backwards off of the operator platform. The engine should shut off.

2.3 DURING OPERATION SAFETY

GENERAL CONSIDERATIONS

1. Understand the function of all controls and how to stop the machine quickly before use.
2. Do not exceed the operating capacity of the machine. Exceeding the operating capacity of the machine may cause the machine to become unstable, which can result in a loss of control.
3. Avoid all distractions while operating the machine. Do not operate the machine while sick, tired, or under the influence of alcohol or drugs.
4. Only operate the machine in daylight, artificial light, and appropriate weather conditions. Do not operate the machine during thunderstorms.
5. Before attempting to start the engine, place the steering control levers in the neutral position and engage the parking brake.
6. Start the engine with the operator in the operating position, the parking brake engaged, and both the steering control levers and the hopper control levers in the neutral position.
7. Operate the machine using steady motions. Do not turn sharply. Be aware of your surroundings while backing up. Always yield the right-of-way when crossing roads and sidewalks.
8. Be aware of obstacles in your work area. Keep away from any trees, walls, and drop-offs. Beware of overhead obstructions (low branches, electrical wires, etc.) and underground obstructions (holes, rocks, roots, pipes, sprinklers, etc.). Stay alert for hidden hazards, and cautiously enter new areas.

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9. Use caution when operating the machine near blind corners, shrubs, trees, or other objects that may obscure vision.
10. Never leave the machine unattended while running. Always lower the hopper, set the parking brake, stop the engine, and remove the key.
11. Keep hands, feet, and clothing away from moving parts of the machine while it is running. Do not make adjustments to the machine while it is running.

CAUTION

Do not touch the engine or the muffler while the engine is running or immediately after stopping the machine. These areas are hot enough to cause burns.

12. Always look behind you while moving the machine in reverse.
13. If you are uneasy while operating the machine due to uncertainty of the terrain, stop immediately.

HOPPER SAFETY

1. Ensure that the hopper on the machine is properly installed. Test operation before beginning work.
2. Confirm the operating capacity of the hopper before loading materials. Exceeding the operating capacity may cause the machine to become unstable.
3. Evenly distribute loads to improve stability and control over the machine.
4. Ensure that your load cannot escape the hopper during movement and operation of the machine.
5. Be aware of the physical characteristics and the associated risks of your load. Liquid loads will shift, which may cause the machine to become unstable.
6. Ensure that your load can shift freely within the hopper. Blocked materials may cause the machine to become unstable if suddenly dislodged.
7. Never direct the discharge of material towards bystanders or allow anyone near the machine while in operation.
8. Lower the hopper when not in use or while transporting the machine.

SLOPE OPERATION

Slopes are a major cause of instability, loss-of-control, and tip-over accidents, which may result in severe injury or death. Before operating the machine on any slope, review the safety guidelines and instructions listed in this manual. The owner and operator will be responsible for the safe operation of this machine on slopes.

WARNING

Never operate the machine on slopes greater than 10 degrees (see Section 2.9). When operating the machine on a slope, only travel up and down the slope. Traveling across a slope may cause the machine to become unstable and overturn.

1. Use extreme caution while operating the machine on any slope or uneven surface.
2. Be aware of obstacles at the base of and on the slope. Do not operate the machine near drop-offs, ditches, embankments, or bodies of water. Remove any hazards before operation, or keep a safe distance between the machine and the hazard.
3. Mark uneven terrain (holes, bumps, roots, rocks, ruts, soft turf, etc.) before operation. Uneven terrain may cause instability and overturn the machine.
4. Always operate on slopes with the heavy end of the machine facing uphill. Weight distribution of the machine will change depending on load distribution.
5. Reduce speed and use extreme caution on slopes and in sharp turns to prevent instability, loss of control, and tipping. Be especially cautious when changing directions on slopes.
6. Avoid starting and stopping on slopes. Keep all movements on slopes slow and gradual. If the machine loses traction, proceed slowly down the slope.
7. Do not operate the machine in conditions with questionable traction, steering, or stability. Use caution when operating on wet surfaces as the reduced traction may cause sliding and a loss of braking and steering.

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8. Do not raise the hopper while operating the machine on slopes. Raising the hopper will change the load distribution of the machine and affect stability.
9. Never park the machine on slopes or uneven terrain.
10. If you lose control of the machine, step off and away from the direction of travel of the machine.

2.4 AFTER OPERATION SAFETY

GENERAL CONSIDERATIONS

1. Return the steering control levers to the neutral position, engage the parking brake, lower the hopper, stop the engine, and remove the key before cleaning, adjusting, or repairing the machine. Wait for all movement to stop before proceeding.
2. Never make adjustments to the machine while the engine is running unless specifically instructed to do so. Keep hands, feet, and clothing away from the moving parts of the machine.
3. Do not touch parts that may be hot from operating the machine. Allow for all hot parts to cool before maintaining, adjusting, or servicing the machine.
4. Clean dirt and debris from drives, muffler, and the engine after use. Prevent fires by cleaning all oil and fuel spills before and after operating the machine.

CLEANING THE MACHINE

1. Clean the inside of the hopper using water.
2. Clean any dirt or debris from under the hopper.
3. Clean any dirt or debris buildup on the engine and drivetrain with a brush or air blower.

IMPORTANT

Do not use a pressure washer to clean the machine. High-pressure washing can damage the electrical system and hydraulic valves, or deplete grease.

4. Wipe away any dirt or debris from the air cleaner.

MAINTENANCE SAFETY

1. Always park the machine on a level surface and engage the parking brake.
2. Never allow untrained personnel to service the machine. Ensure all mechanics working with the machine are appropriately trained and understand the procedures outlined in this manual.
3. Keep all nuts, bolts, and screws tight to ensure the machine is in a safe working condition.
4. Keep all parts in a good working condition. Replace all worn, damaged, or defective decals.
5. Disconnect the battery before repairing the machine. Disconnect the negative terminal first and the positive terminal last. Reconnect the positive terminal first and the negative terminal last when reinstalling the battery.
6. Use jack stands rated for the weight of the machine to support components when required.
7. Do not adjust the engine governor settings or overspeed the engine. See the engine manual for more information on engine settings.
8. Never use hands to check for hydraulic leaks.

WARNING

Keep body and hands away from pinholes or nozzles that eject high-pressure hydraulic fluid. If hydraulic fluid is injected into the skin, it must be surgically removed by a doctor within a few hours, or gangrene may result. If your machine hydraulic system needs service, please see your Authorized Scag Dealer.

9. Carefully release pressure from any components with stored energy.
10. When performing service that requires the hopper to be raised, ensure the cylinder lock is engaged and secure. See Figure 2-1 and Section 6.3.

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ENGAGED CYLINDER LOCK

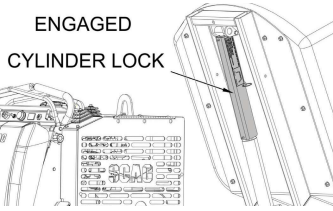


Figure 2-1. Engaged Cylinder Lock

STORAGE & TRANSPORTATION SAFETY

1. Allow the engine to cool before storing the machine.
2. Shut off the fuel system while storing or transporting the machine.
3. Store the machine in a clean garage or storage area. Do not store the machine near open flames, sparks, fuel containers, or other hazards.
4. Service the machine before storing over long periods of time. Check all nuts, bolts, and screws to ensure the machine is in a safe working condition. Change the air cleaner, engine oil, and apply grease.
5. Cover the machine to protect it while storing over long periods of time.
6. Charge the battery in an open, well-ventilated area. Keep away from sparks and open flames. Unplug the charger before connecting or disconnecting from the battery. Always wear protective clothing and use insulated tools while working with the battery.
7. Transport the machine using a heavy-duty trailer or truck with a load rating greater than the weight of the machine. Ensure the trailer or truck complies with all legal requirements for lighting and markings. Refer to local ordinances for specific trailer and tie-down requirements before use.
8. Only use a full-width ramp to transport the machine. The ramp angle should be no more than 10 degrees. See Section 2.9.
9. Always load and unload the machine with the heavy end of the machine facing up the ramp.

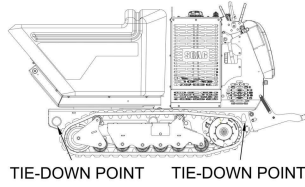
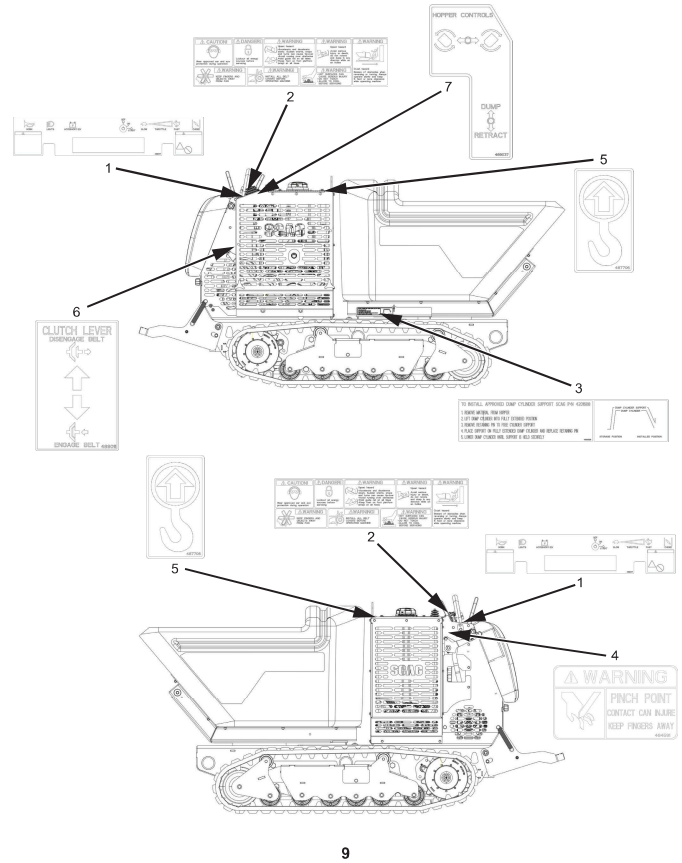


Figure 2-2. Main Tie-Down Points

2.5 SAFETY AND INSTRUCTIONAL DECAL LOCATIONS



2.6 SAFETY AND INSTRUCTIONAL DECAL DETAILS



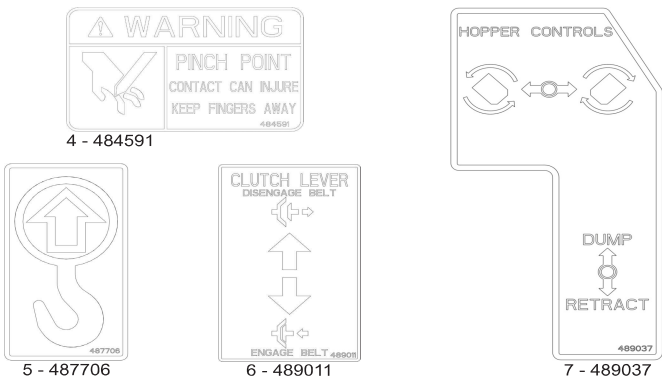
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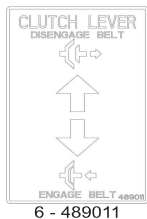
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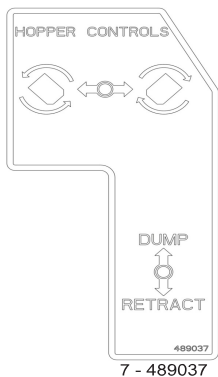
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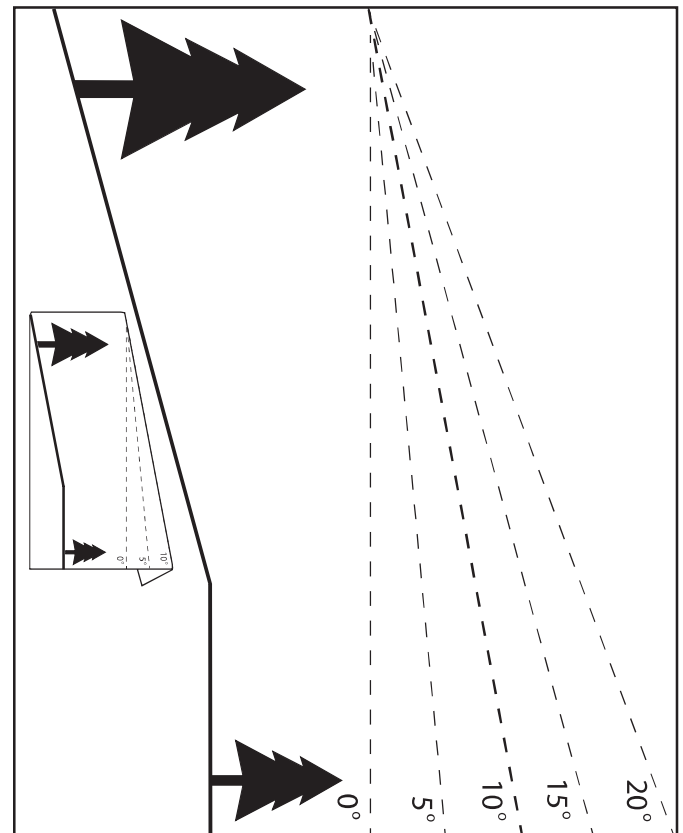


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2.7 SLOPE ANGLE GRAPH



SPECIFICATIONS

3.1 ENGINE

General Type	Heavy Duty Commercial Gas
Engine Model:	
Briggs & Stratton Vanguard 23BH	Briggs & Stratton Model # N/A
Horsepower:	
Briggs & Stratton Vanguard 23BH	23 HP
Displacement:	
Briggs & Stratton Vanguard 23BH	627cc
Idle Speed:	
Briggs & Stratton Vanguard 23BH	1750 RPM (±100 RPM)
Full Speed:	
Briggs & Stratton Vanguard 23BH	3600 RPM (±100 RPM)
Fuel Pump:	
Briggs & Stratton Vanguard 23BH	Mechanical Fuel Pump
Fuel:	Non-Leaded Gasoline with a Minimum Octane Rating of 87
Belts:	Kevlar Cord, Self-Adjusting, Self-Tightening

3.2 ELECTRICAL

Battery	12V
Charging Output	12V, 20 Amp
System Polarity	Negative Ground
Instrument Panel	Inductive Hour Meter, Throttle Lever, Choke Control, Ignition Key Switch, Light Switch, Horn Button, 12V Power Plug
Fuses	Two (2) 20 Amp

3.3 DRIVE SYSTEM

Drive System	Track
Hydraulic Pumps	Hydro-Gear™ Tandem 16cc Piston Pump
Hydraulic Drive Motors	Two (2) Parker TKG Series Torqmotor™ Motors
Steering/Travel Control	Twin Lever Steering Control with Individual Track Control
Parking Brake	Mechanical Sprocket Lock
Fuel Tank Capacity	9.25 Gallon
Travel Speed:	
Forward	6 MPH
Reverse	4 MPH

3.4 HYDRAULIC SYSTEM

Hydraulic Oil Filter	500 Hours
Hydraulic Reservoir	N/A

3.5 WEIGHTS AND DIMENSIONS

Machine Width	35.5 in
Machine Length	96 in
Machine Height	50 in
Track Width	7 in
Assembled Weight:	
Plastic Hopper	1700 lbs.
Steel Hopper	2000 lbs.
Operating Capacity	2500 lbs.

3.6 PRODUCTIVITY

Hopper Capacity	13.5 ft³ / 0.5 yd³
Discharge Height	17.5 in
Dump Angle	90°
Pivot Angle	90°

OPERATING INSTRUCTIONS

CAUTION

Do not attempt to operate this machine before reading this manual. Become familiar with the location and purpose of all controls, instruments, operating practices, and safety decals before operating this machine.

4.1 CONTROLS AND INSTRUMENTS

Before operating the 2500X Tracked Power Buggy, familiarize yourself with all buggy controls and engine controls. Knowing the location, function, and operation of these controls is crucial for the safe and efficient operation of the machine.

- Ignition Switch (Figure 4-2):** The ignition switch is used to start the engine and has three positions: OFF, ON, and START.
- Engine Choke Control (Figure 4-2):** Controls the air pressure in the intake manifold. Only use when starting a cold engine.
- Engine Throttle Control (Figure 4-2):** Controls the engine speed. Pushing the lever forward increases the engine speed. Pulling the lever back decreases the engine speed. The furthest back position of the lever is the IDLE position.
- Inductive Hour Meter (Figure 4-2):** Indicates the number of hours the machine has been operated for.
- Light Switch (Figure 4-2):** Controls the working lights on the machine.
- Horn Button (Figure 4-2):** Controls the horn on the machine.
- 12V Power Plug (Figure 4-2):** An additional power supply for all your worksite needs.
- Left Steering Control (Figure 4-2):** Controls power to the left track. See Section 4.4 for further information regarding ground travel and steering.
- Right Steering Control (Figure 4-2):** Controls power to the right track. See Section 4.4 for further information regarding ground travel and steering.

- Parking Brake Lever (Figure 4-2):** Engages and disengages the parking brakes. Move the lever back and lock to engage the parking brakes. Unlock the lever and move forward to disengage the parking brakes.
- Hopper Lift Control Lever (Figure 4-2):** Controls the dump and lift action of the hopper.
- Hopper Pivot Control Lever (Figure 4-2):** Controls the turning pivot action of the hopper.
- Fuse Holders (Figure 4-2):** Two 20-amp fuses protect the electrical system of the machine. Pull a fuse out of the socket to replace.
- Fuel Gauge (Figure 4-2):** Indicates the amount of fuel in the fuel tank.
- Fuel Shut-Off Valve (Figure 4-2):** Controls the fuel supply to the engine. Located on top of the fuel tank and accessible on top of the machine.
- Dump Valve Controls (Figure 4-2):** Located on the hydraulic pumps and used to "free-wheel" the buggy. Rotating clockwise until closed allows the machine to move under hydraulic power. The levers must be in this position and torqued 7 to 10 ft-lb during the operation of the machine. Rotating counter-clockwise allows the machine to be moved by hand (free-wheeling). See Figure 4-1.
- Declutch Lever (Figure 4-2):** Detent control for the pump drive idler arm. Pull the lever out to lock the idler arm. Push the lever in to release the idler arm and allow motion.

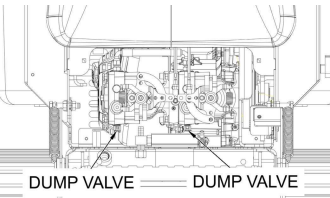


Figure 4-1. Dump Valve Location

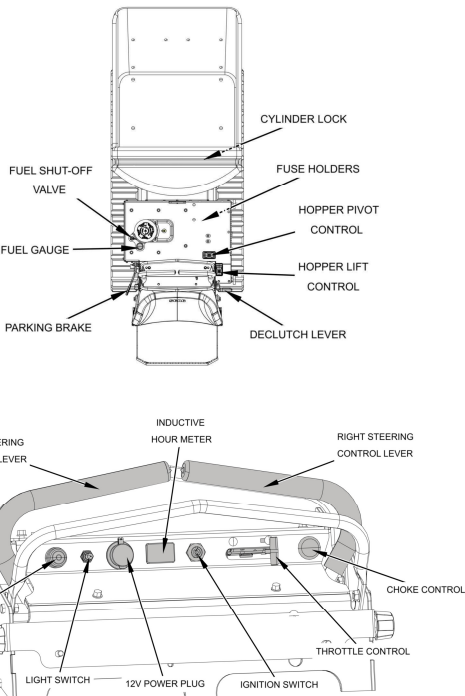


Figure 4-2. Controls and Instruments

4.2 INITIAL RUN-IN PROCEDURES

FIRST DAY OR 20 HOURS OF USE

1. Inspect the machine before each use for missing or damaged safety shields, guards, and decals. Repair or replace as needed.
2. Change the engine oil and oil filter after the first 20 hours of operation. See Section 6.6.
3. Check the hydraulic oil level in the hydraulic system reservoir. See Section 6.5.
4. Check all belts for proper alignment and wear at two, four, and eight hours of operation.
5. Check track tension and adjust as necessary. See Section 5.3.
6. Check for loose hardware and tighten as necessary.

4.3 STARTING THE ENGINE

CAUTION

Never use starting fluids with this machine. The use of starting fluids in the air intake system may cause explosions or a "runaway" engine condition, which can result in engine damage and personal injury.

1. Ensure the fuel shut-off valve, located on top of the fuel tank, is completely open. See Figure 4-3.

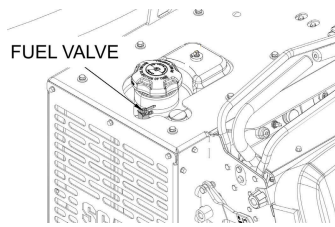


Figure 4-3. Fuel Valve Location

2. Stand in the operating position before attempting to start the machine.
3. Ensure that the steering control levers are in the neutral position.
4. Ensure that the hopper control levers are in the neutral position.
5. If the engine is cold, choke the engine as needed using the engine choke control.
6. Move the engine throttle control to the slow position.
7. Turn the ignition key to the START position to start the engine.

IMPORTANT

Do not engage the starter for longer than five seconds. If the engine fails to start, wait for at least ten seconds between attempts. Excessive attempts to start the engine may burn out the starter on the machine.

8. Allow the engine to warm up before operating the machine.

COLD WEATHER START

If outdoor temperatures are below 32° Fahrenheit, store the machine indoors to keep the unit warmer and allow for the ease of starting.

1. Pull the declutch lever out to lock the pump drive idler arm in a detent.
2. Follow the starting procedure outlined in Section 4.3: "Starting the Engine."
3. Allow the machine to warm up before proceeding.
4. Push the declutch lever in to disengage the detent.

IMPORTANT

Running the engine at high speeds when the hydraulic system is cold may cause damage to the hydraulic system.

4.4 GROUND TRAVEL AND STEERING

IMPORTANT

If you are not familiar with the operation of a machine with lever steering or hydrostatic transmissions, the steering and ground speed controls of this machine should be learned and practiced in an open area away from buildings, fences, or obstructions. Practice these controls until you are comfortable with the handling of the machine before beginning work.

Do not operate this machine on slopes until you are comfortable operating on flat surfaces.

IMPORTANT

Always practice with a slow engine speed and slow rate of forward travel.

Obtain a smooth operating action by learning to feather the steering controls.

Practice operating this machine until you are thoroughly familiar and comfortable with the controls before beginning work.

FORWARD TRAVEL

To travel forward with the machine, disengage the parking brake, use the front reference bar as an anchor point for your hands, and slowly pull both steering control levers forward an equal distance. The further forward the steering control levers are pulled, the greater the forward speed of the machine will be. See Figure 4-4.

To increase the forward speed of the machine, pull both steering control levers forward. To decrease the forward speed of the machine, allow both steering control levers to return toward the neutral position.

NOTE

Smooth operation of the steering control levers will result in a smooth operation. Maintain a low and consistent travel speed while learning the operation of the steering controls.

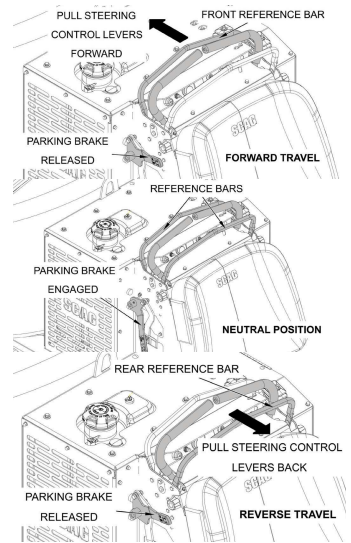


Figure 4-4. Travel Controls

To steer the machine to the left while traveling forward, allow the left steering control lever to move back toward the neutral position. The further the steering control lever is allowed to move back, the quicker the machine will turn left.

To steer the machine to the right while traveling forward, allow the right steering control lever to move back toward the neutral position. The further the steering control lever is allowed to move back, the quicker the machine will turn right.

To stop the forward travel of the machine, allow both steering control levers to return to the neutral position. Engage the parking brake if the machine is to be parked.

REVERSE TRAVEL

CAUTION

Be aware of obstacles and obstructions before traveling in reverse. Clear the area of bystanders before operating this machine. Possible injury or property damage may occur if proper precautions are not taken before traveling in reverse.

To travel in reverse with the machine, use the rear reference bar as an anchor point for your hands and slowly pull both steering control levers back an equal distance. The further back the steering control levers are pulled, the greater the reverse speed of the machine will be. Keep the travel speed low at all times when traveling in reverse. See Figure 4-4.

To steer the machine to the left while traveling in reverse, allow the left steering control lever to move forward toward the neutral position. The further the steering control lever is allowed to move forward, the quicker the machine will turn left.

To steer the machine to the right while traveling in reverse, allow the right steering control lever to move forward toward the neutral position. The further the steering control lever is allowed to move forward, the quicker the machine will turn right.

To stop the reverse travel of the machine, allow both steering control levers to return to the neutral position. Engage the parking brake if the machine is to be parked.

SLOPE OPERATION

WARNING

Never operate the machine on slopes greater than 10 degrees. See Section 2.9 or download a slope indicator app on your mobile device to determine approximate slope angles. Always follow OSHA-approved operation.

The 2500X Tracked Power Buggy has been designed for good traction and stability under normal working conditions. However, the operator must use caution when traveling on slopes or poor ground conditions, such as loose soil, sand, gravel, wet surfaces, and uneven surfaces. See Section 2.3 for additional information.

1. To prevent tipping and loss of control, avoid starting and stopping on slopes. Keep all movements on slopes slow and gradual. Avoid all unnecessary turns and maintain a reduced travel speed. If the machine loses traction, proceed slowly down the slope.
2. Always operate on slopes with the heavy end of the machine facing uphill. Weight distribution of the machine will change depending on load distribution.
3. Do not raise the hopper while operating the machine on slopes. Raising the hopper will change the load distribution of the machine and affect stability.
4. If you lose control of the machine, step off and away from the direction of travel of the machine.

4.5 HOPPER CONTROLS

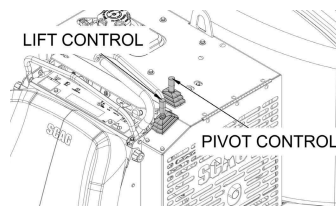


Figure 4-5. Lift & Pivot Control Levers

Use the lift control lever and pivot control lever to control the hopper attachment on the machine. See Figure 4-5.

Before beginning work, confirm the operating capacity of the hopper. Be aware of the physical characteristics and associated risks of your load. Do not exceed the hopper operating capacity, and evenly distribute your load. See Section 2.3 and Section 3 for additional information.

1. Lift the hopper by moving the lift control lever forward.

2. Lower the hopper by moving the lift control lever backward.
3. Pivot the hopper to the left by moving the pivot control lever to the left.
4. Pivot the hopper to the right by moving the pivot control lever to the right.

4.6 PARKING THE MACHINE

1. Park the machine only on flat and level surfaces. Do not park the machine on an incline.
2. Place the steering control levers in the neutral position.
3. Slow the engine to the IDLE speed.
4. Engage the parking brake.
5. Turn the ignition key to the OFF position to shut off the engine. Remove the key.

4.7 POST-OPERATION PROCEDURES

ANGER

Avoid serious injury from burns by allowing the machine to cool before performing any post-operation procedures. Do not remove the fuel tank cap and refuel while the machine is running or immediately after stopping. Do not touch the engine or muffler while the machine is running or immediately after stopping.

1. Wash the machine after each use. Do not use a high-pressure washer or spray directly onto electrical components.

IMPORTANT

Do not wash a running or hot engine. Cold water will damage the engine. Use compressed air to clean the engine.

2. Clean dirt and debris from drives, mufflers, and the engine after each use. Prevent fires by cleaning all oil and fuel spills.
3. Ensure the entire machine is clean to inhibit serious heat damage to the engine or hydraulic oil circuit.

4. After the machine has cooled down, fill the fuel tank with fresh, clean fuel. See the Engine Owner's Manual for proper octane requirements.
5. Check all belts for proper alignment and signs of wear. Adjust and replace as necessary.
6. Check track tension and adjust as necessary. See Section 5.3.

4.8 MOVING AN INOPERABLE OR STUCK TRACKED POWER BUGGY

If the tracked power buggy becomes stuck, pull the machine back into a stable position using both front tie-down points or both rear tie-down points simultaneously. See Figures 4-7 and 4-8.

WARNING

Never use the lift point to pull a machine that is inoperable or stuck. This may cause the machine to tip over.

IMPORTANT

Do not pull the machine without loosening the dump valves into bypass, otherwise damage to the hydraulic drive or track system will occur.

1. Park the machine on a level surface, engage the parking brake, and lower the hopper.
2. Shut off the engine, remove the key, and allow for the engine to cool.
3. Remove the foot guard from the machine.
4. Loosen the dump valves on the hydraulic pump. See Figure 4-1. Do not loosen more than two full turns.
5. Disengage the parking brake.
6. Only use tow chains, ropes, or straps that are rated at least 1.5 times the weight of the machine.
7. Pull the machine from the front tie-down points or the rear tie-down points at a speed of 1-2 MPH. High-speed towing will damage the machine.
8. Tighten the dump valves on the hydraulic pump after repairs on the machine have been completed.

4.9 TRANSPORTING THE MACHINE

1. Transport the machine using a heavy-duty trailer or truck with a load rating greater than the weight of the machine. Ensure the trailer or truck complies with all legal requirements for lighting and markings. Refer to local ordinances for specific trailer and tie-down requirements before use.
2. Only use a full-width ramp to transport the machine. The ramp angle should be no more than 10 degrees. See Section 2.9.
3. Always load and unload the machine with the heavy end of the machine facing up the ramp. See Figure 4-6 and Section 2.4 for more information.

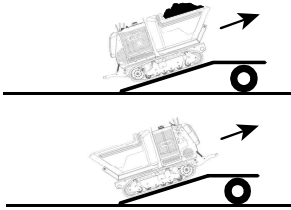


Figure 4-6. Loading Trailer

4. When transporting the machine, ensure the steering control levers are in the neutral position, the parking brake is engaged, and the engine is off with the key removed. Block the tracks before transporting.
5. Do not transport the machine with the hopper raised.
6. Use metal tie-down loops to secure the machine to the trailer or truck. Tie the machine down securely using straps, chains, or cables. Both the front and rear straps must be directed down and outward from the machine. Refer to local ordinances for tie-down requirements before use. See Figure 4-7 and 4-8.

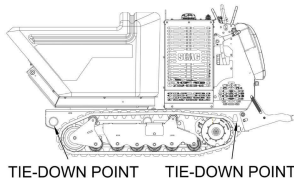


Figure 4-7. Main Tie-Down Points

4.10 LIFTING THE MACHINE

The 2500X Tracked Power Buggy has been designed with a lift point that can be used to lift the machine. Please read the following instructions and safety points before attempting to lift the machine.

⚠ DANGER

Do not lift the machine with material in the hopper. The weight of the load will change the weight and center of gravity of the machine, which may result in unsafe lifting conditions.

1. Secure chains or lifting straps rated for the weight and size of the machine to the lift point. See Figure 4-8.

LIFT POINT

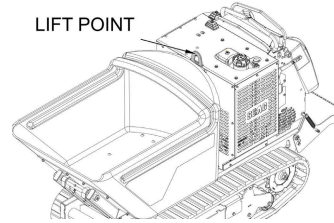


Figure 4-8. Lift Point

2. Attach the chains or lifting straps to an overhead hoist. Inspect all attaching hardware for wear and damage. Replace as necessary.
3. Remove slack from the chains or lifting straps using the hoist before attempting to lift the machine.
4. Slowly lift the machine only as high as required to reach the desired location.
5. Slowly move the machine to the desired location.

⚠ DANGER

- Do not lift the machine if it exceeds the maximum rated capacity of the hoist and attaching hardware.
- Read the specifications for attaching hardware and choose hardware suitable for the weight, size, and configuration of the machine.
- Inspect the attaching hardware (chains, hooks, straps, and master links) before every use. Do not use any worn or damaged attaching hardware.
- Ensure the attaching hardware (chains, hooks, straps, and master links) are fully strong enough to withstand the load being lifted.
- Do not use attaching hardware (chains, hooks, straps, and master links) in extreme temperatures or other environmental conditions that exceed the manufacturer's specifications.
- Assess the center of gravity of the machine. Lift the machine so that it remains horizontal.
- Ensure all hooks or other master link devices use safety latches.
- Machine disengagement can cause severe injury or death. The use of a hook or other master link device does not preclude inadvertent detachment of a slack sling load from the hook or master link. Visual verification of proper hook or shackle engagement is always required.
- Comply with Federal, State, and Local regulations, ordinances, and safety standards when lifting the machine.
- Assess the center of gravity of the machine. Lift the machine so that it remains horizontal.
- Do not allow bystanders to enter the working area near the suspended machine. Never walk under or move the suspended machine above people.

Section 6

6.3 CYLINDER LOCK SUPPORT

⚠ DANGER

The machine lift cylinder may lower when in the raised position, crushing anyone under the hopper. Install the cylinder lock support before performing maintenance that requires the hopper to be raised to avoid severe injury or death.

Some maintenance procedures will require the hopper to be raised. Never perform these maintenance procedures without the cylinder lock installed in the machine.

INSTALLING THE CYLINDER LOCK

1. Park the machine on a level surface and engage the parking brake.
2. Raise the hopper to the maximum height.
3. Shut off the engine and remove the key.
4. Remove the pin securing the cylinder lock to the storage location. See Figure 6-2.

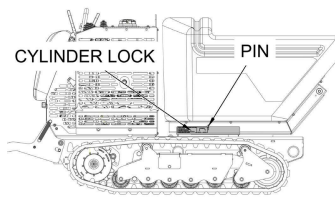


Figure 6-2. Cylinder Lock Location

5. Install the cylinder lock over the lift cylinder rod and secure in place using the pin. See Figure 6-3.

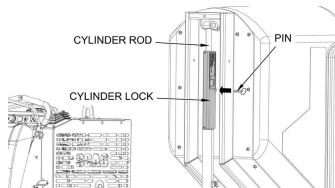


Figure 6-3. Positioning the Cylinder Lock

6. Lower the hopper until the cylinder lock is secure between the hopper and the cylinder. See Figure 6-4.

IMPORTANT

When lowering the hopper from the maximum height with the engine off, the oil reservoir may become overfilled. This results in oil escaping from the breather.

Whenever possible, lower the hopper with the engine running and the operator in the operating position. If lowering the hopper with the engine off, lower the hopper slowly to prevent oil from purging out of the breather.

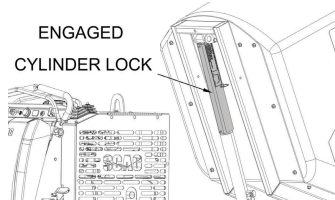


Figure 6-4. Securing the Cylinder Lock

REMOVING AND STORING THE CYLINDER LOCK

1. Ensure all maintenance procedures are complete and tools have been removed from the machine.
2. Start the engine.

3. Raise the hopper to the maximum height.
4. Shut off the engine and remove the key.
5. Remove the pin securing the cylinder lock to the lift cylinder rod. Stay clear of the hopper.
6. Place the cylinder lock in the storage location and secure in place using the pin.
7. Lower the hopper.

IMPORTANT

Ensure the cylinder lock has been uninstalled from the lift cylinder rod and secured in the storage location before operating the machine.

6.4 ACCESSING INTERNAL COMPONENTS

⚠ WARNING

Shut off the engine and remove the ignition key before removing any covers, hoods, shields, guards, plates, or screens. Wait for all movement to stop and allow for the engine to cool to avoid personal injury.

Under no circumstances should the machine be operated without these devices in place.

OPENING SIDE ENGINE GUARD

1. Remove the two knobs securing the engine guard to the machine. See Figure 6-5.
2. Lift upward to open the engine guard.

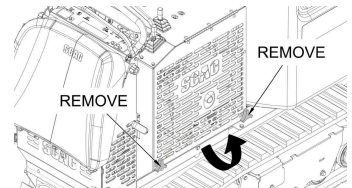


Figure 6-5. Engine Guard Removal

REMOVING THE CUSHION BRACKET

1. Remove the two knobs securing the cushion bracket to the machine. See Figure 6-6.
2. Lift the cushion bracket off the machine.

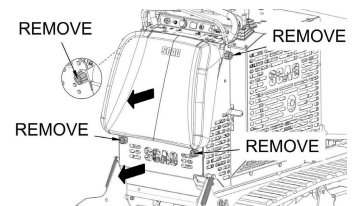


Figure 6-6. Cushion Bracket & Foot Guard

REMOVING THE FOOT GUARD

1. Remove the two knobs securing the foot guard to the cushion bracket. See Figure 6-6.
2. Lift the foot guard off the machine.

6.5 HYDRAULIC SYSTEM

WARNING

Before performing maintenance on the hydraulic system, relieve residual pressure by repeatedly engaging and disengaging the lift and pivot levers while the machine is not running.

A. CHECKING THE HYDRAULIC OIL LEVEL

The hydraulic oil level should be checked after the first ten hours of operation. Thereafter, the hydraulic oil level should be checked after every ten hours of operation.

IMPORTANT

If the hydraulic oil level is consistently low, check for leaks and correct immediately.

1. Park the machine on a level surface, engage the parking brake, and lower the hopper.
2. Shut off the engine and remove the key.
3. Remove the cushion bracket from the machine.
4. Check the hydraulic oil level shown in the reservoir sight gauge. See Figure 6-7.

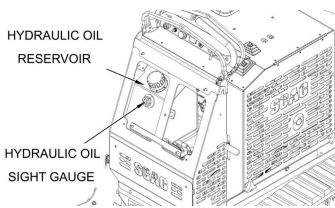


Figure 6-7. Hydraulic Oil Reservoir

5. The reservoir sight gauge must show hydraulic oil. If the oil is too low, fill to the center of the sight gauge. Remove dust and debris from the reservoir and the reservoir fill cap before proceeding.

IMPORTANT

Do not overfill the hydraulic oil reservoir with oil. Overfilling the reservoir may cause oil seepage near the reservoir cap or breather.

6. Clean the hydraulic reservoir fill cap and reinstall it onto the reservoir.
7. Clean all remaining oil residue from the machine.
8. Reinstall the cushion bracket to the machine.

B. CHANGING THE HYDRAULIC OIL

The hydraulic oil should be changed after every 500 hours of operation or annually, whichever occurs first. If the color of the oil becomes black or milky, change immediately. A black color or rancid odor indicates a possible overheating of the oil. A milky color indicates that water has mixed with the oil.

1. Park the machine on a level surface, engage the parking brake, and lower the hopper.
2. Shut off the engine, remove the key, and allow for the engine to cool.
3. Remove the cushion bracket from the machine.
4. Place a suitable container under the reservoir drain plug and remove the reservoir fill cap. Remove the drain plug and allow for all of the used oil to drain into the container. See Figure 6-8.

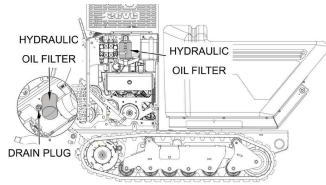


Figure 6-8. Hydraulic Oil Filters & Drain Plug

5. Properly discard of all used oil and reinstall the drain plug until tight.