

# GROUND FORCE

## WORLDWIDE

WORLD'S FINEST MINE SUPPORT EQUIPMENT

## *QUICK START GUIDE*

# ROCK SPREADER

### **Ground Force Worldwide**

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### 1. ROCK SPREADER BODY OPERATIONS

These supplemental operating instructions are intended to be used as a guideline for operations of the Rock Spreader body. These instructions describe the use of the hydraulic and control systems. It is expected that the end user will generate site-specific Standard Operating Procedures that incorporate any site-specific safety and operational requirements before the unit is placed into service.

### 2. OVERVIEW

The hydraulic system installed on this Rock Spreader body is driven by the chassis' hoist system. A diverter valve and other components have been installed between the hoist pump discharge and the hoist control valve inlet. Refer to the hydraulic schematic provided in the **Parts & Service Manual** for more information.

When the hydraulic system is engaged, the diverter valve shifts to direct the hoist pump discharge through the body's hydraulic system. The hydraulic oil is directed through the

diverter valve assembly to the inlet of a hydraulic motor. Return oil from this motor is directed through a return oil filter and back through the diverter valve assembly to the hoist control valve inlet.

#### NOTE

Refer to the manufacturers' manuals for inspection and maintenance requirements for non-Ground Force items such as the hydraulic motor, return oil filter, and other components.

The hydraulic motor is used to drive a pressure and flow compensated, load sensing, piston-type hydraulic pump. This hydraulic pump is supplied with hydraulic oil from a dedicated hydraulic tank mounted on the Rock Spreader body. The variable discharge from this piston pump is supplied to the hydraulic control valve manifold. All hydraulic controls are remotely operated from the in-cab control panel. The return oil from the control valve manifold is routed through a return oil filter before reentering the hydraulic tank.

## 3. HYDRAULIC SYSTEM CONTROL

The hydraulic system is controlled by a switch on the 8-button keypad. Press this switch to ON to start the hydraulic pump. The hydraulic pump will continue to run and respond to the changes in hydraulic system demand until the rocker switch is shifted to the OFF position.

## 4. MATERIAL REQUIREMENTS

Use material that does not exceed 3 inches in diameter and is free from fines under 3/8 inch in diameter. Use two-inch minus, screened and washed gravel.

When temperatures drop to 42° F (6° C), it is critical to keep the gravel dry. If gravel cannot be covered, it is important to remove any wet gravel from the surface of the pile in order to gather the drier gravel below.

When temperatures drop down below 42° F (6° C), it is best practice to not allow material to remain in the Rock Spreader when not in use.

When temperatures drop below freezing and the gravel is wet and frozen it can still be used effectively, as long as the gravel is broken up to 3 inches or less, loose and not allowed to thaw.

When temperatures drop down below 42° F (6° C), extra care must be taken not to load clumps of gravel larger than 3 inches in diameter into the bin. This may require rescreening material before it is loaded.

Snow must not be allowed to accumulate in the bin.

Vibrators are meant to be used to keep material from sticking to the walls of the bin and chutes and to break up minor bridging. Vibrators are not meant to break up frozen or compacted material. Operate the vibrators only when the chute doors are open and gravel is being spread. Running the vibrators with the chute doors closed may cause the gravel to pack and bind in the chutes.

A non-corrosive ice melt can be mixed with the material to help prevent material from freezing during operation. Even when using an ice melt mixture, do not leave the material in the truck when the truck is not in use.

If a chute becomes plugged, empty the bin, either by continuing to operate the Rock Spreader with the opposite chute, or by dumping the load. Once the bins are empty lower the body back down, turn the spinner percentage to zero, open the chute door, and then turn the truck off with the chute door open.

## 5. MATERIAL LOADING

The Rock Spreader body is designed to deliver 2”-minus material. It is recommended that only screened, dried material be loaded into the hopper.

Verify that the feed gates are shut prior to filling the hopper.

The grizzlies (if equipped) **MUST** be in their fully lowered positions during material loading.

Once filling is complete, engage the hydraulic system and (for those units so equipped) fully raise the grizzlies to dislodge any loose material resting on top of them. Return the grizzlies to their fully lowered position before moving the machine.

### CAUTION

- Depending on the loading technique, it is very likely that some material will fall to the outside of the machine during the filling process. Be sure that all personnel are clear of the area around the machine during filling.
- **DO NOT OVERFILL THE MACHINE.** These bodies are designed for the chassis they are mounted on. Material should be loaded to the top of the side walls.

**RECOMMENDED MATERIAL SIZE ►**



# 5 | ROCK SPREADER CAB GUIDE

THIS GUIDE MUST REMAIN IN THE CAB AT ALL TIMES.  
REFER TO THE OPERATION MANUAL FOR MORE INFORMATION.

## 6. IN-CAB CONTROLS

All hydraulic functions on the Rock Spreader body are controlled remotely from the cab. The in-cab controls consist of heater controls (if equipped), one or more eight-button keypads, an electronic display, and a five-button keypad with dial. All controls are labeled as to function.

## 7. DISPLAY/CONTROL MODULE

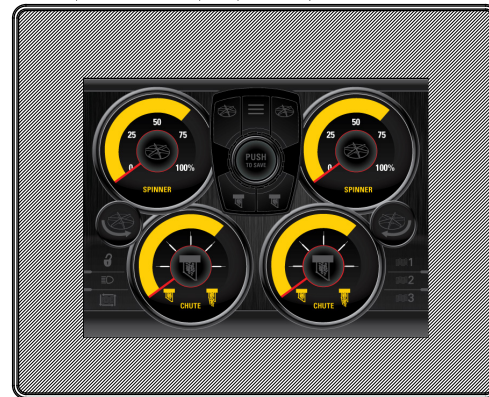
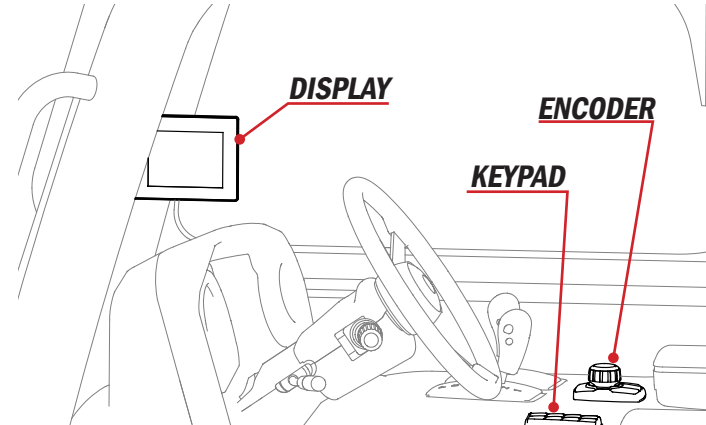
This LED display provides indication of feed gate position and spinner (spreader) speeds, as well as other controls and operational settings. The display/control module automatically starts whenever the ignition key is turned on.

Once the start-up process is complete, the feed gate position and spinner speed will be displayed. The feed gate position is shown as a percentage. 0% indicates that the feed gates are shut.

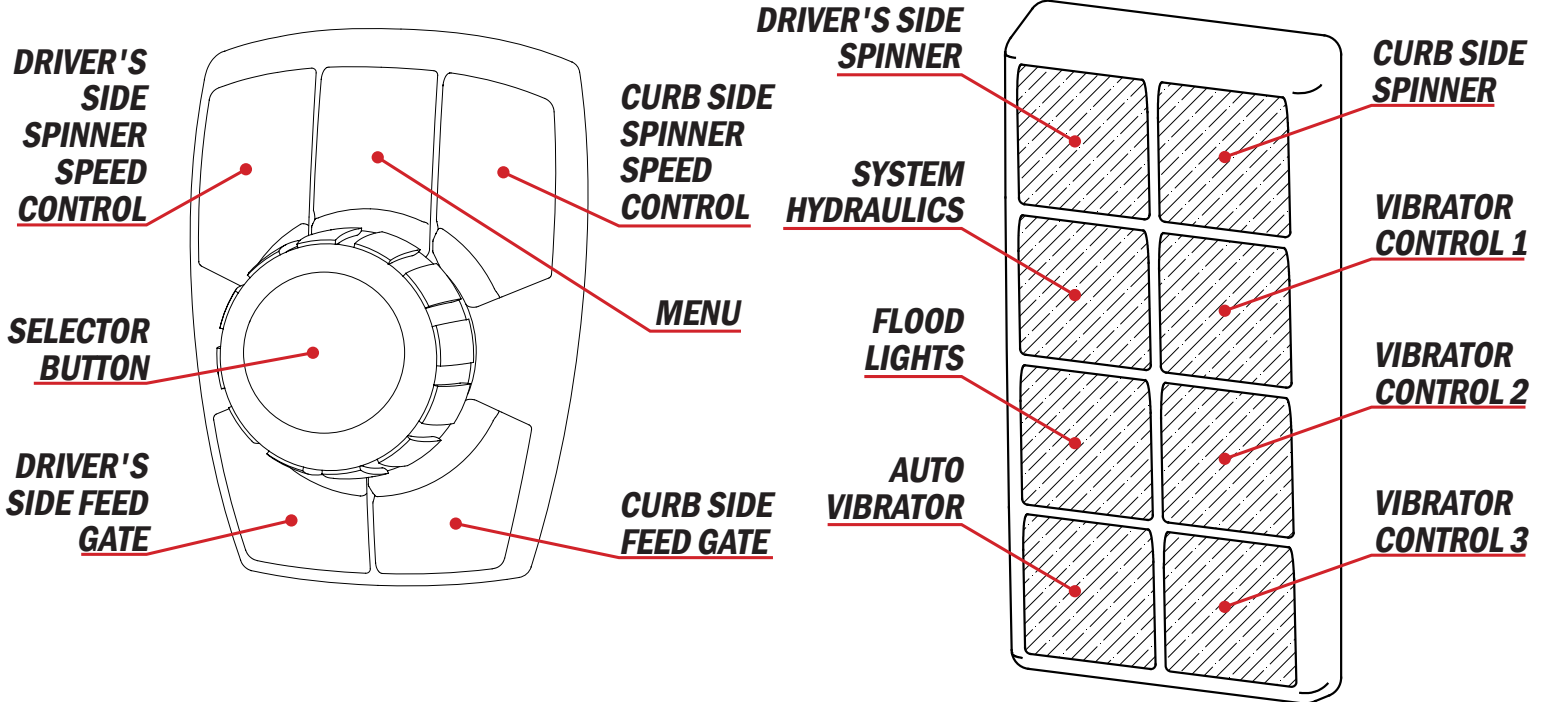
Pressing a button on the keypad will highlight the activated function.

Rotating the knob will adjust the set point for that function. You can then watch as the machine responds to the new set point.

Once the desired setting is achieved press the selector button again to deactivate the function. If there are no changes made for one minute, then the function is automatically deactivated.



## 8. KEYPAD AND ENCODER BUTTON FUNCTIONS



## 9. MATERIAL DELIVERY

1. Ensure the spreader motor ON/OFF switches are in the OFF position before engaging the hydraulic system.
2. Engage the hydraulic system by pushing the SYSTEM HYDRAULICS button; the backlight will stay on, indicating that the system is active.
3. Start the desired spreader by pushing its button on the eight-button keypad. The warning strobes will flash for five seconds before the spreader motor will begin to rotate.
4. Operator experience will determine the optimum setting for the spreader speed control.
5. If the optimum setting is unknown, position the speed control knob in the middle of its range (approximately 50% speed).
6. After the spreader is rotating, select the appropriate feed gate on the five-button keypad. Begin rotating the knob clockwise to open the feed gate to the desired setting.
7. Use the feed gate opening in conjunction with spreader speed until the optimum material delivery rate and coverage are established.
8. Once delivery operations are complete (or the hopper empties) shut the feed gates and allow the spreader to free itself of material before stopping the spreader.

### NOTE

The preferred method to stop the spreading of material is by shutting the feed gates. Stopping the spreader motors with the feed gates open will result in excessive material build-up on the spreader.

Empty the machine of all material if it is to be parked for more than six hours to prevent freeze-up of the material.

Always disengage the hydraulic system by pushing the SYSTEM HYDRAULICS button. The indicator will turn off, indicating that the system is no longer active. Failure to do so will cause damage to body's hydraulic pump due to overheating.

### CAUTION

Be sure to comply with all local regulations, procedures and guidelines at the while performing this procedure.

## 10. SPINNER CONTROLS

A spinner (spreader) is installed on each side of the machine. The spreaders consist of vaned spinners driven by hydraulic motors. The spinners are engaged and disengaged using buttons on the eight-button keypad. Warning lights (strobes) are installed on each corner of the spinner body. These warning lights indicate whether or not the spinner on that side of the body is engaged. The warning lights will flash for a period of five seconds before the spinner motor will start to rotate.

### DRIVER'S SIDE SPINNER SPEED INDICATOR

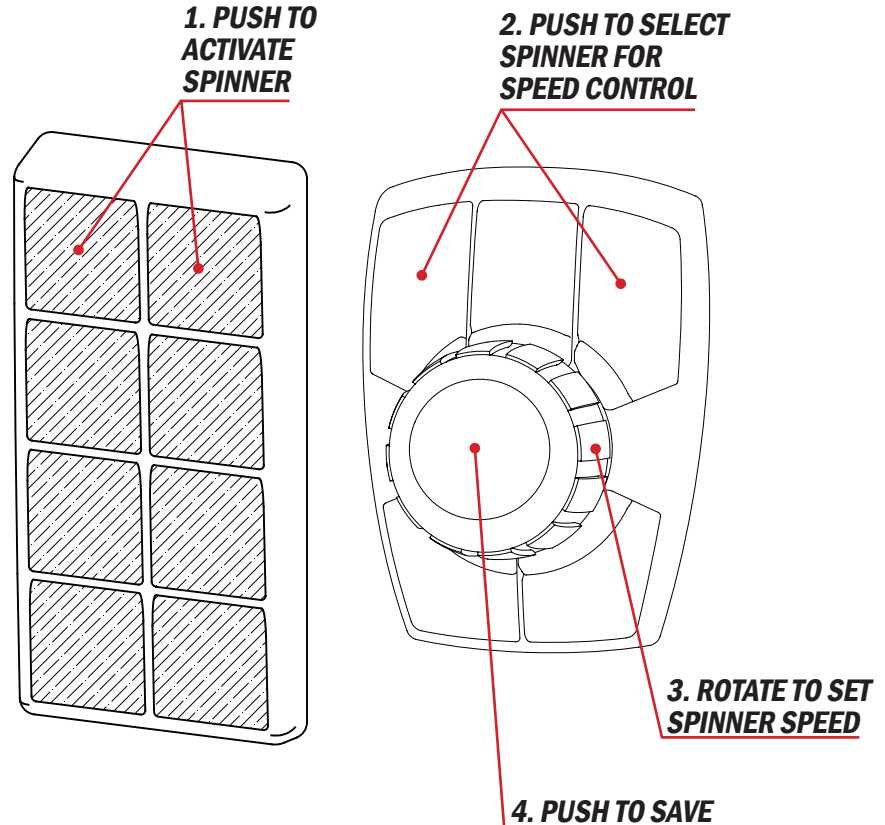


### DRIVER'S SIDE SPINNER ACTIVE



## 11. SPINNER SPEED CONTROLS

The speed of the spinner motors is controlled using the speed control knob. Begin by selecting the desired spinner with the five-button keypad. Rotating the speed control knob clockwise will cause the spinner motors to rotate at their maximum speed. Slow the spinner motors by rotating the speed control knob counterclockwise.



## 12. FEED GATE CONTROLS

Each spinner is supplied with material through a chute. The flow of material through these chutes is controlled by a feed gate. With the hydraulic system engaged, select the desired feed gate on the five-button keypad. Rotate the dial in the center of the keypad to increase or decrease the flow of material. Rotating the center knob clockwise will open the feed gate, while rotating the knob counter clockwise will close the feed gate.

**CURB SIDE  
FEED GATE  
FLOW SPEED**

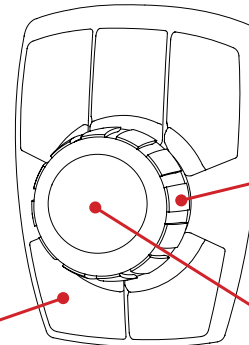


**CURB SIDE  
FEED GATE  
ACTIVE**

### **! NOTE**

It is good practice to engage the spreader before opening a feed gate. This is to prevent material build-up on the spreader at start-up.

**1. PUSH TO  
ACTIVATE  
FEED GATE**



**2. ROTATE  
TO CONTROL  
FLOW OF  
MATERIAL**

**3. PUSH  
TO SAVE**

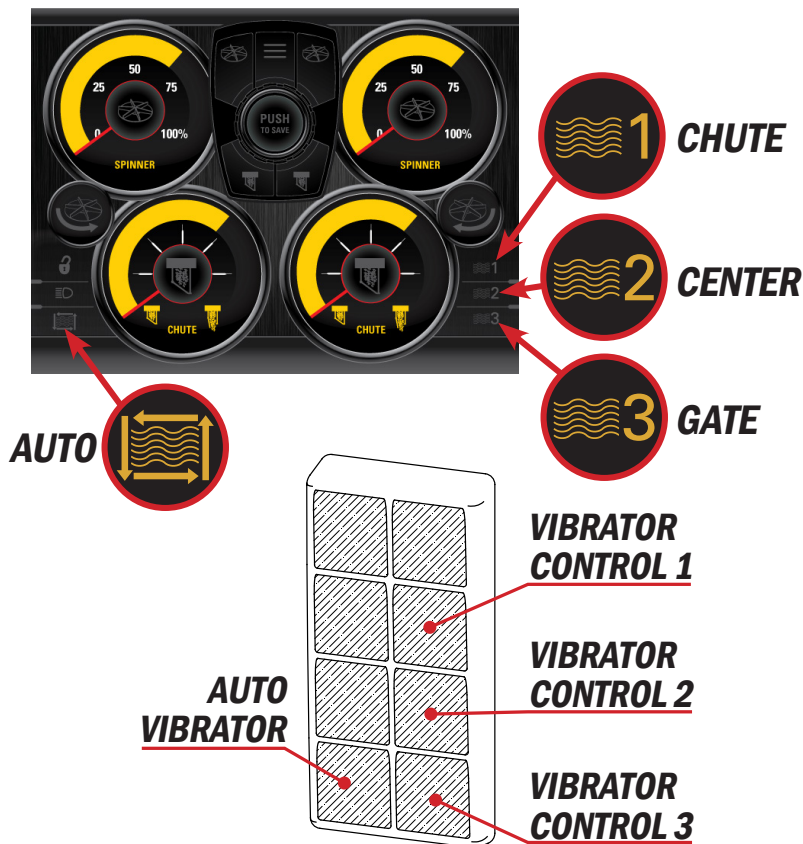
## 13. VIBRATOR CONTROL

The vibrators are controlled by buttons on the eight-button keypad. With the hydraulic system engaged, pressing and releasing a vibrator control switch will engage the selected vibrator set for five seconds. The switch backlight will flash, indicating that the vibrator is engaged. The vibrator controls are “paired” on the keypad and also on the hydraulic control valves. When a set of vibrators is activated, it will remain on for five seconds. When a set of vibrators is active, the backlight for that button will stay illuminated.

The vibrators are equipped with an AUTO function. With the hydraulic system engaged, pressing the AUTO button will cause the vibrators to engage sequentially for five seconds each. The individual button backlights will flash to indicate the active vibrator. Press any vibrator control switch to stop the AUTO function at any time. The AUTO function will stop automatically after four cycles.

Press the AUTO button again to re-start the cycle.

To operate a specific set of vibrators, select the button that corresponds to the location of the vibrators needed.



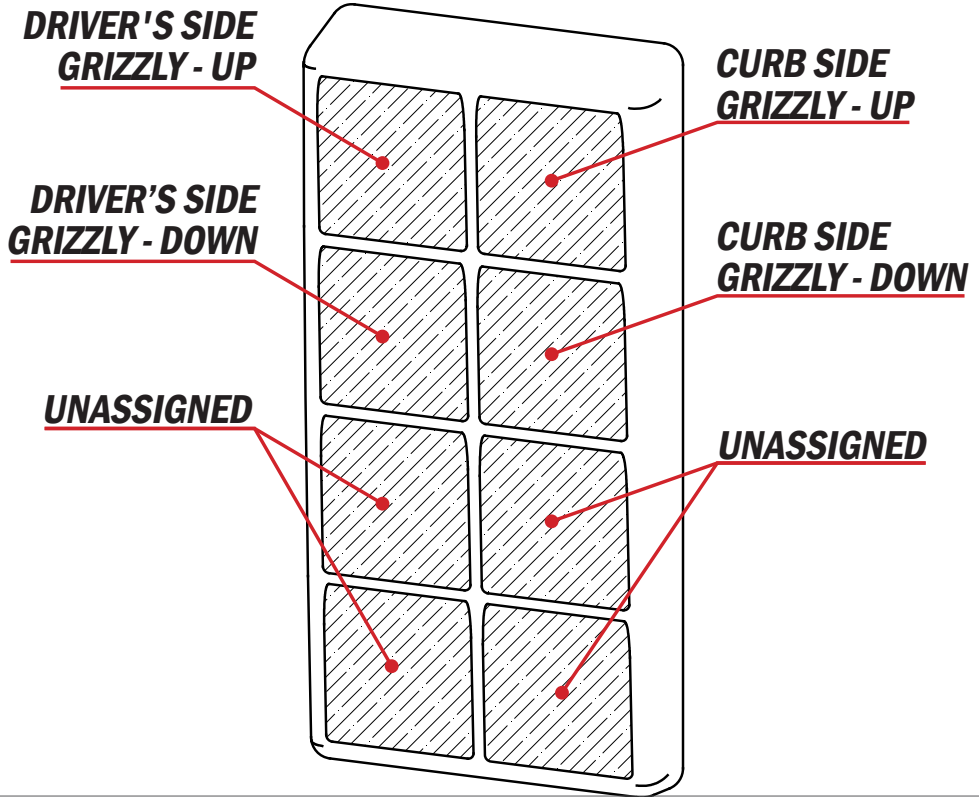
## 14. GRIZZLY CONTROLS

The Rock Spreader body is equipped with screens (grizzlies). These grizzlies are intended to screen the material being loaded into the hopper. On most bodies, these grizzlies are designed to tilt for material removal and hopper access.

For those so equipped, the tilt function is controlled by a button on the second 8-button keypad. With the hydraulic system engaged, depress and hold the desired grizzly control switch to move the grizzly in the desired direction. Raise the grizzlies to clear them of any material that might be caught in the screen and for access to the inside of the hopper.

### NOTE

The grizzlies **MUST** be fully lowered for ALL Rock Spreader body operations. Some grizzlies are installed flat due to height restrictions. Use the chassis hoist system to tilt the body to clear loose material from a flat grizzly.



✓	<b>15. PRE-SHIFT INSPECTION</b>
<input type="checkbox"/>	1. Check that the system hydraulic tank isolation valve(s) are open (if installed).
<input type="checkbox"/>	2. Check the level in the in the system hydraulic tank. The tank level should be visible in the lower sight glass as a minimum. Fill hydraulic tank as required.
<input type="checkbox"/>	3. Check hydraulic pump drive shaft set screws to insure that vibration has not loosened them.
<input type="checkbox"/>	4. Check for and tighten any hydraulic fittings that may loosen. Fittings will frequently loosen and drip the first few weeks of operation.
<input type="checkbox"/>	5. Visually inspect the area around the truck for leakage. Repair any leaks identified during inspection. This inspection should include the interior of all compartments.
<input type="checkbox"/>	6. Check for loose hoses and/or wiring harnesses which may become entangled during operations. Secure any loose items before operating the vehicle.
<input type="checkbox"/>	7. Perform any other pre-operation inspections as required by the chassis manufacturer or local procedures.
<input type="checkbox"/>	8. Visually inspect all body pins. Verify the retaining bolt is in place and tight.

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