



MODEL NO. 41150—40001 & UP

**OPERATOR'S
MANUAL****PA-17 Spreader**

To assure maximum safety, optimum performance, and to gain knowledge of the product, it is essential that you or any other operator of this equipment read and understand the contents of this manual before the vehicle engine is ever started. Pay particular attention to the **SAFETY INSTRUCTIONS** highlighted by this symbol—



The safety alert symbol means **CAUTION**, **WARNING**, or **DANGER**—personal safety instruction. Failure to comply with the instruction may result in personal injury.

SAFETY INSTRUCTIONS

Keep this Operator's Manual in the plastic tube behind the passenger seat.

It is important that all persons operating this equipment have easy access to these instructions at all times.

Carefully read and follow the set-up instructions that are provided with this equipment and the safety instructions in the Workman® Operator's Manual.

RECOGNIZE SAFETY INFORMATION

This safety-alert symbol calls attention to a dangerous situation, which could result in serious injury or death to the operator or a bystander.

Safety, mechanical and some general information in this manual are emphasized. **DANGER**, **WARNING** and **CAUTION** identify safety messages. Whenever the triangular safety symbol appears, it is followed by a safety message that must be read and understood. For more details concerning safety, read the safety instructions that follow. **IMPORTANT** identifies special mechanical

information and **NOTE** identifies general information worthy of special attention.

These instructions are provided as a guide for the safe operation and maintenance of this equipment. However, the operator's personal safety, as well as those persons in the work area, will depend on the careful actions and good judgment of the operator. To reduce the potential for injury or death, comply with the following safety instructions.

BEFORE OPERATING

1. Operate this machine only after reading and understanding the contents of this manual and the Workman® Operator's Manual. A replacement manual is available by sending complete model and serial number to: Hahn, Inc., 1525 N. Garvin, Evansville, IN 47711.
2. Learn how to operate the Toro spreader and how to use the controls properly. Do NOT let anyone operate this equipment without first receiving thorough instructions.
3. Keep all shields, safety devices and decals in place. If a shield, safety device or decal is malfunctioning, illegible or damaged, repair or replace it before operating the machine.

WHILE OPERATING

4. **DO NOT OVERLOAD THE SPREADER.** Maximum load limits are shown on the decals...do not exceed these limits. Failure to position loads carefully can result in their shifting or tipping over. Distribute loads evenly, keeping them low as possible to prevent the spreader from becoming top-heavy.

5. Make certain everyone is clear of the machine before starting the engine to move the Workman~ vehicle or to engage the Spreader drive.
6. If equipment begins to vibrate abnormally, stop immediately. Disengage all power and wait until all moving parts have stopped. Repair all damage before commencing operation.

MAINTENANCE

7. Before servicing or making any adjustments to the Toro Spreader:
 - A. Stop the Workman® vehicle and set the parking brake.
 - B. Shut off the vehicle's engine and remove the key from the ignition.
 - C. Disengage all power and wait until all moving parts have stopped.
 - D. Do not touch the engine, muffler or muffler shield while the engine is running or soon after it has stopped, because these areas may be hot enough to cause burns.
 - E. Keep hands, feet and clothing away from all power-driven parts.
8. Keep all nuts, bolts and other fasteners tightened securely. Replace any shields removed during servicing or adjustments.
9. To be sure of optimum performance and safety, always purchase genuine TORO replacement parts and accessories. Replacement parts and accessories made by other manufacturer could be dangerous. Altering this equipment in any manner may affect the machine's operation, performance, durability or its use may result in injury or death. Such use could void the product warranty of the TORO Company.

CONTROLS

The PA-17 spreader is operational either with or without the optional flow control kit (Model #41 403)

The controls listed below apply in either situation.

ELECTRIC CLUTCH SWITCH: is the ON/OFF control for the spreader drive. Put the toggle switch at "ON" to engage the spreader's agitator and spout mechanisms. Put the toggle switch at "OFF" to disengage the mechanism and stop the Agitator and Spout action.

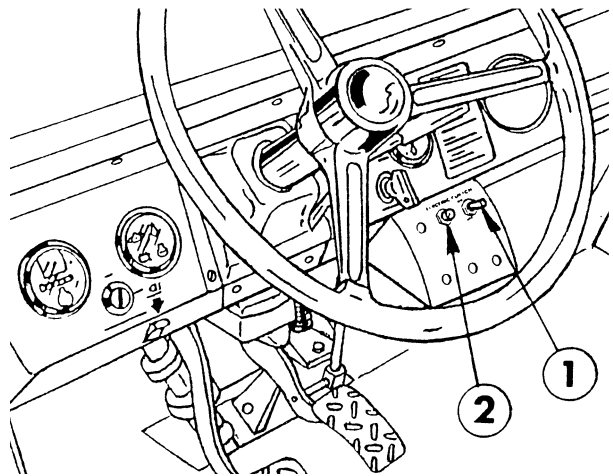


Figure 1

1. Electric clutch switch
2. Indicator light

FLOW REGULATOR HANDLE: Is used as an indicator on the regulator scale of the rate of material flow. See Fig. 2.

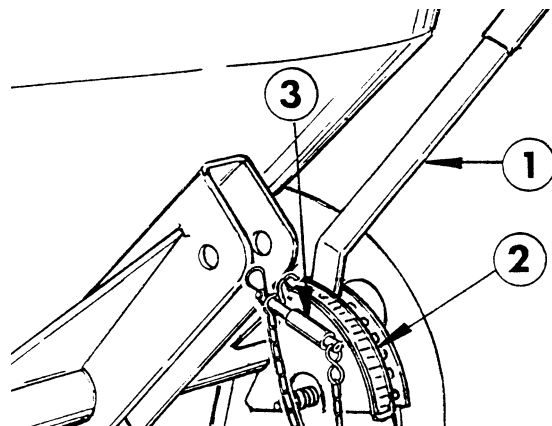


Fig. 2

1. Flow regulator handle
2. Regulator scale
3. Stop pin

FLOW REGULATOR: Determines the rate at which the material flows from the hopper. The highest number setting (7) on the regulator scale indicates the largest opening, for maximum flow of material. The lowest number setting (1) indicates the smallest opening, for a minimum flow of material. At (0) the disc is closed. Note the stop pin which is chained to the flow regulator:

- a. If the spreader is not equipped with the flow control kit, the stop pin is used to stop the flow regulator handle in the setting of the desired rate of material flow.
- b. If the spreader is equipped with the flow control kit, the stop pin is NOT USED. The rate of material flow is controlled by the limit switches.

IF THE SPREADER IS NOT EQUIPPED WITH THE FLOW CONTROL KIT, THE FLOW CONTROL HANDLE SHOWN IN FIG. 3 IS USED AS DESCRIBED BELOW.

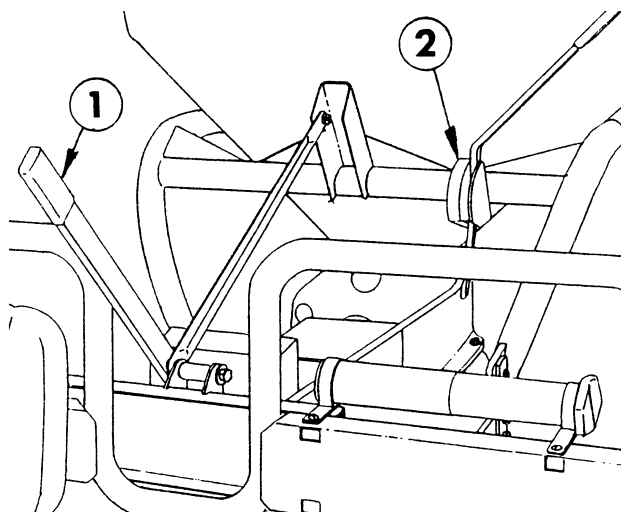


Fig. 3

1. Flow Control Handle 2. Flow Regulator

FLOW CONTROL HANDLE: Opens and closes the regulator disc in the hopper opening to start or stop the flow of material. Pull the handle forward (toward the operator) to open the regulator disc. Push the handle back (away from the operator) to close the regulator disc.

IF THE SPREADER IS EQUIPPED WITH THE FLOW

CONTROL KIT, THE FLOW OF MATERIAL IS CONTROLLED BY THE ELECTRIC CONTROL SWITCH INCLUDED WITH THAT KIT.

ELECTRIC CONTROL SWITCH: Opens and closes the regulator disc in the hopper opening, to start or stop the flow of material. Position the toggle switch at the “OPEN” or “CLOSE” position as indicated by the decal on the control box. See Fig. 4.

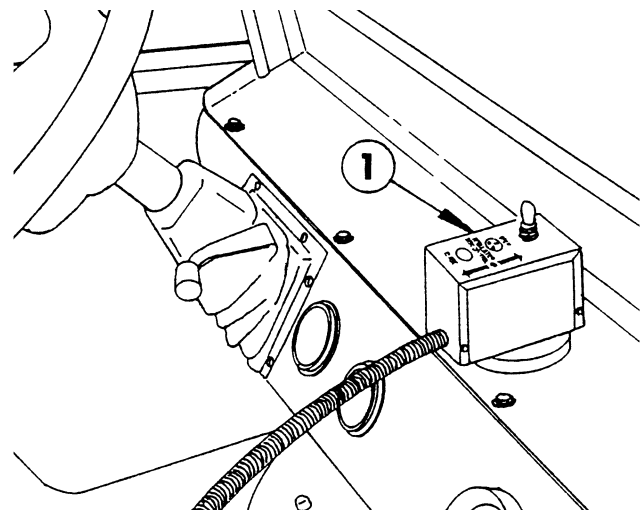


Fig. 4

1. Electric control switch



DANGER

**ROTATING MEMBERS CAN CAUSE
SERIOUS INJURY!**

Before making any adjustments or repairs on the spreader:

- Stop the Workman® vehicle and set the parking brake.
- Shut off the Workman®'s engine and remove the key from the ignition.
- Disengage all power and wait until all moving parts have stopped.

SPOUT ARC SETTING:

The embossed plus “+” and minus “-” signs on the

spreader housing, indicate the operating arc of the spreader spout.

(-) or MIN = A spout arc of 38 degrees

(+) or MAX = A spout arc of 58 degrees

Adjust the arc of the spout action as follows:

1. Turn the spreader drive pulley by hand, until the arc adjuster appears in the opening in the spreader, as shown in Fig. 5.

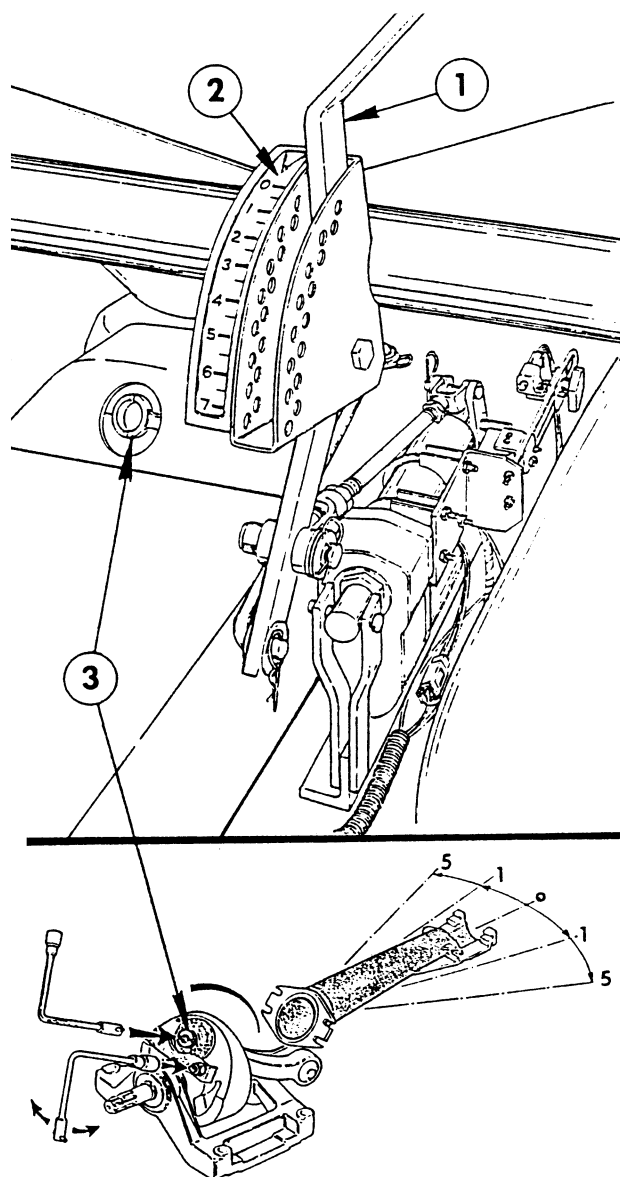


Fig. 5

1. Flow control handle
2. Flow regulator scale
3. Spout arc adjustment

2. Using the wrench furnished, loosen the two locking nuts on each side of the arc adjuster.
3. Insert the opposite end of the wrench into the opening and turn the adjuster to the desired spreading width.
4. Re-tighten the locking nuts.

IMPORTANT: When spreading sand, the spout arc must be at the "-" or MIN. setting.

The table below gives some suggested spread widths and spout arc settings for a variety of materials.

MATERIAL	SPREAD WIDTH	SPOUT ARC
Granulated	40 ft. (12m)	- (Min)
Prilled	40 ft. (12m)	+ (Max)
Powdered	20 ft. (6m)	(Midway)
Urea	32 ft. (10m)	+ (Max)

The spreader unit can be fitted with two different spouts. The smaller metal spout (packed with the spreader mounting kit) is recommended for spreading sand. The longer nylon spout is recommended for spreading fertilizer.

SPREADER CALIBRATION

To calibrate the TORO spreader you must determine the desired rate of flow for the material being applied (in pounds per acre), as specified by the material's manufacturer.

To achieve this application rate, first establish the following:

1. The spread width, for the material being applied.

NOTE: This width will vary depending on the density of the material and the spout arc setting.

2. The flow rate of material from the hopper, in Kg. per acre. This will depend on the particle size of the material and the position of the flow regulator setting.

- The desired working speed of the Workman® vehicle, in miles per hour.

DANGER

**TIPPING OR ROLLING THE VEHICLE
CAN CAUSE SERIOUS INJURY OR DEATH.**

Do not drive vehicle at speeds that can cause loss of vehicle control.

OPTIONAL FLOW CONTROL (MODEL NO. 41403)

The two limit switches control the length of the actuator's extension or retraction and must be adjusted to match the actuator's action to the flow regulator.

NOTE: After positioning the limit switches for a full “OPEN” and a full “CLOSE” disc opening as described in the flow control set-up instructions, the front limit switch should not need further adjustment. However, the rear limit switch must be readjusted to achieve any of the

other rate of flow settings indicated on the regulator scale, as follows:

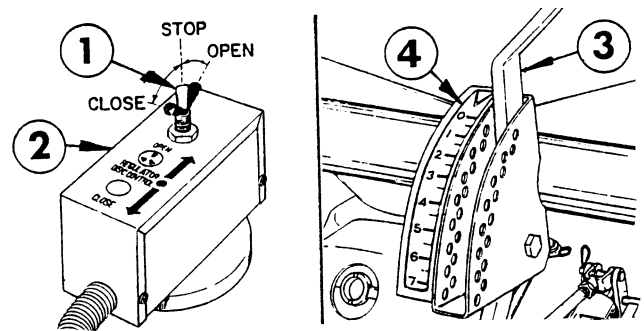


Fig. 6

- Toggle switch
- Control box
- Flow regulator handle
- Flow regulator scale

- Use the toggle switch on the control box to extend or retract the actuator until the front edge of the flow regulator handle is at the selected number on the regulator scale.

USE THE FOLLOWING CHART AS A GUIDELINE TO DETERMINE A FLOW REGULATOR SETTING. Flow rates will not always be the same as those shown because of weather conditions and variances in density, moisture content and particle size.

Fertilizer Type	PTO Speed RPM	Spread Width	Kmh	Application Rate in kg/acre per Flow Regulator Setting						
				1	2	3	4	5	6	7
Coarse Grain	540	18.3 m	4.0	39.5	180.1	451.9	804.3	1232.3	1639.8	1999.5
			5.6	26.4	119.8	300.7	536.0	819.9	1092.9	1333.6
			8.0	19.3	89.5	201.1	402.0	616.0	819.9	999.8
			9.7	15.6	71.9	180.9	322.0	491.2	654.8	798.6
			12.1	12.8	59.1	154.9	267.4	410.4	546.1	666.9
Medium Grain	540	15.2 m	4.0	44.2	209.3	525.8	915.0	1345.7	1806.8	2302.0
			5.6	29.4	140.1	349.6	610.6	896.5	1204.6	1534.7
			8.0	22.2	104.3	261.9	457.4	672.4	903.9	1150.0
			9.7	17.5	84.0	207.6	357.8	537.7	722.3	920.4
			12.1	14.8	72.6	174.2	304.4	448.2	546.1	666.9
Fine Grain	540	12.2 m	4.0	52.6	309.9	677.8	1116.9	1609.4	2101.8	2525.4
			5.6	35.1	205.6	451.9	744.3	1073.6	1401.1	1683.2
			8.0	26.7	154.9	337.0	554.2	804.3	1051.4	1262.7
			9.7	20.3	123.6	271.1	455.2	642.7	841.1	1010.9
			12.1	17.5	105.8	225.8	371.6	536.0	700.0	842.1

2. Loosen the knob on the rear limit switch and slide the switch along the switch guide until the button on the rear limit switch is depressed approximately 3 mm by the actuator pin. Retighten the knob and check the operation.

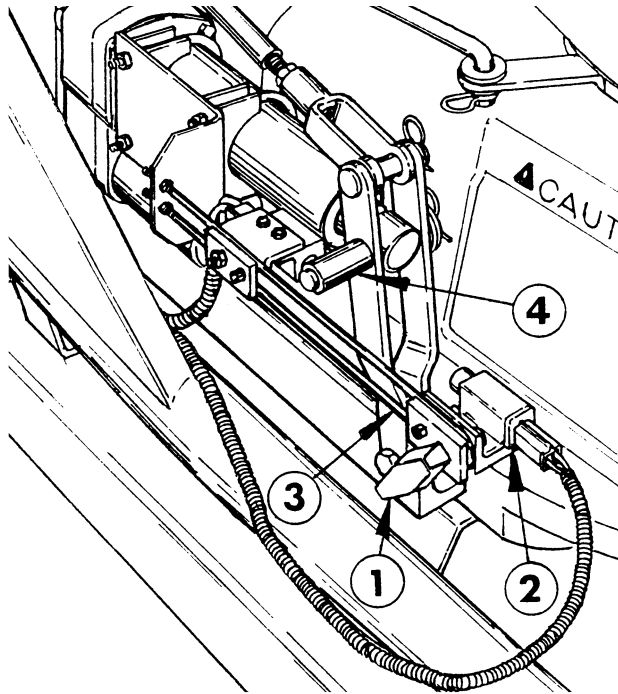


Fig. 7

1. Knob
2. Rear unit switch
3. Switch guide
4. Actuator pin

OPERATING INSTRUCTIONS

Refer to the charts on the previous page to determine the spout arc and flow regulator settings to achieve the desired rate of application for the material.

IF THE SPREADER IS EQUIPPED WITH THE OPTIONAL FLOW CONTROL KIT:

Adjust the rear limit switch to position the flow regulator handle at the desired setting on the regulator scale.

IF THE SPREADER IS NOT EQUIPPED WITH THE OPTIONAL FLOW CONTROL KIT:

Position the stop pin to stop the flow regulator handle at

the desired setting on the regulator scale.

1. Choose the appropriate spreader spout and position the arc adjuster as needed for the application rate required.
2. Close the regulator disc, using the toggle switch on the control box or the flow control handle.
3. Take the machine to the work site
4. Just prior to the actual spreading operation, fill the hopper.



DANGER

AN OVERLOADED SPREADER CAN CAUSE A TIPOVER RESULTING IN SERIOUS INJURY OR DEATH.

- Do not exceed the load capacity of 700 lbs. shown on the decal at the rear of hopper.
- Do not exceed the load level shown on the decal at rear of hopper.
- Distribute the weight of the load evenly from front to rear and from side to side.

5. Start the Workman®'s engine.

NOTE: The TORO spreader is designed to operate most effectively with the engine at full or nearly full RPM.

6. Put the electric clutch switch at "ON".
7. When ready to begin application, use the toggle switch on the control box or the flow control handle to open the regulator disc.

IMPORTANT: Always close the regulator disc when the transport vehicle is stopped. Disengage the agitator and spreader spout mechanism when the disc is to be closed for any length of time, to prevent the pulverizing of the material in the hopper.

8. Maintain the forward speed of the Workman® vehicle and the working width used in the calibration of the spreader.

WHEN THE JOB IS COMPLETED:

IMPORTANT: On the spreaders equipped with the optional flow control kit, cover or otherwise protect the electric actuator and limit switches, while using a high pressure washer hose to clean the spreader unit. Water entering the actuator, or the limit switches, will cause serious damage and premature failure of those parts.

1. Close the regulator disc, using the flow control handle or the toggle switch on the control box.
2. Operate the spreader drive slowly, while spraying water inside the hopper.
3. Open the regulator disc and spray the agitator and regulating plate.
4. Spray all of the outside surfaces of the spreader.

MAINTENANCE

AFTER THE INITIAL RUN-IN PERIOD (APPROXIMATELY 5 HOURS):

1. Remove the drive cover.
2. Grease the two (2) fittings in the U-joint assembly. Grease after every 250 hours thereafter.
3. Grease the zerk fitting in the underside of input shaft hub.
4. Remove the plug and check to see that there is oil visible in the gear multiplier unit. If oil is needed, add lubricant #5555 or equivalent.
5. Replace the drive cover.

NOTE: Two access doors are provided in the frame's engine cover, on each side of the drive cover, to allow servicing of the Workman®. Remove the plug under the drive cover for access to the engine's oil fill cap.

