



MODEL NO. 41252-40001 & UP

OPERATOR'S
MANUAL

PA-17 WM FRAME KIT FOR THE WORKMAN® VEHICLE

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 very 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 judgement 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® 3000 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.

SAFETY INSTRUCTIONS

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 key from ignition.
- C. Disengage all power and wait until all moving parts have stopped.
- D. Do not touch engine, muffler or muffler shield while 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.

SAFETY AND INSTRUCTION DECALS

The following safety and instruction decals are installed on or included with, the PA-17 WM Frame Kit. If any become damaged or illegible, replace them. Decals and part numbers are listed below and in the parts catalog. Order replacements from your Authorized Toro Distributor.



Part No. 92-2741: Located on rear of Spreader Hopper.



Part No. 92-2742: Located on Hopper below Decal No. 92-2741



Part No. 88-8950: 1 - Located on Frame under Belt Cover.
1 - Located under PTO.



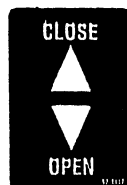
Part No. 75-5190: 1 - Located on Rear Cover,
2 - Located on sides of Rear Support Tube
2 - Located on Radiator Cover.



Part No. 36-3400: Located on Radiator Cover.



Part No. 80-8040: 2 - Located on Radiator Cover.
1 - Located on Belt Cover.



Part No. 92-4447:
Located on Seat Bar on next to Spreader Lever.



Part No. 65-3090: Located on top of Front Tube Crossmember.



Part No. 87-0450: Located on top of Front Tube Crossmember.



Part No. 92-4366: Located on R.H. and L.H. side of Frame.

CONTROLS

The PA-17 Spreader is operational either with or without the optional Flow Control Kit (Model #41403).

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.

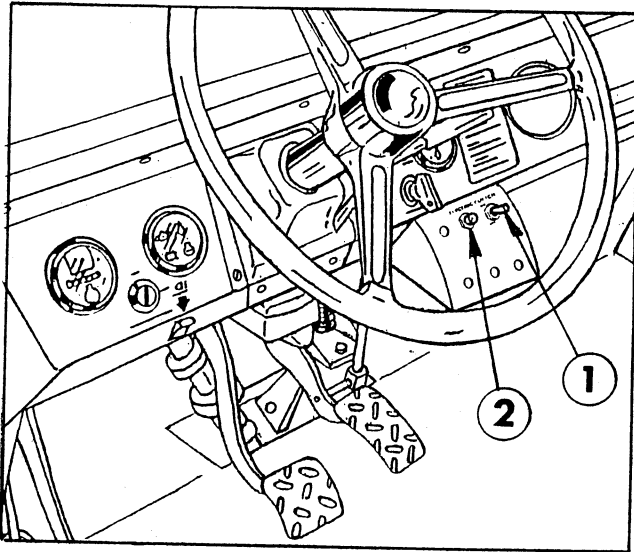


Fig. 1

1. Electric Clutch Switch 2. Indicator Light

FLOW REGULATOR HANDLE: Is used as an indicator on the Regulator Scale to denote the rate of material flow. See FIG. 2.

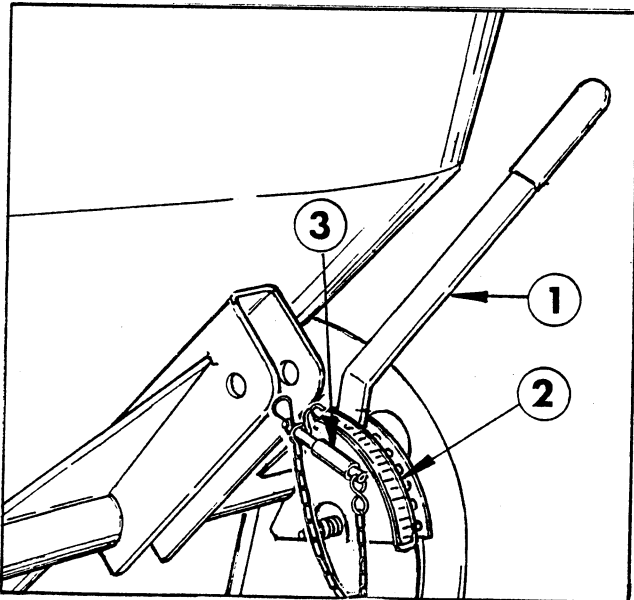


Fig. 2

1. Flow Regulator Handle 3. Stop Pin
2. Regulator Scale

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 selected to achieve 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.

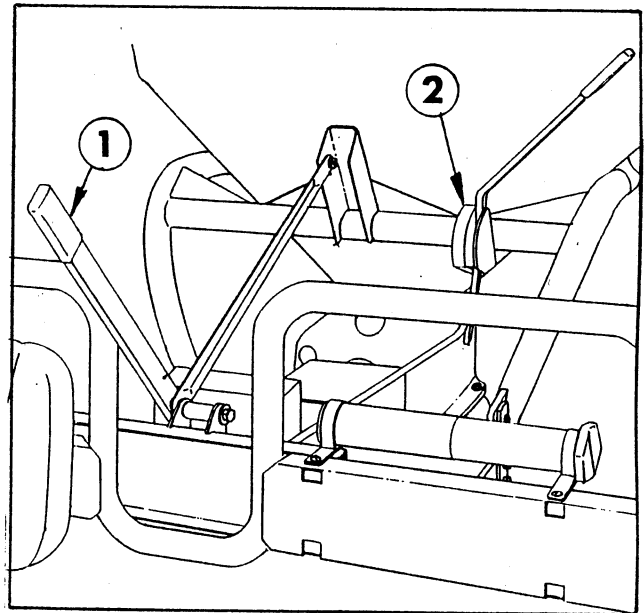


Fig. 3

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.

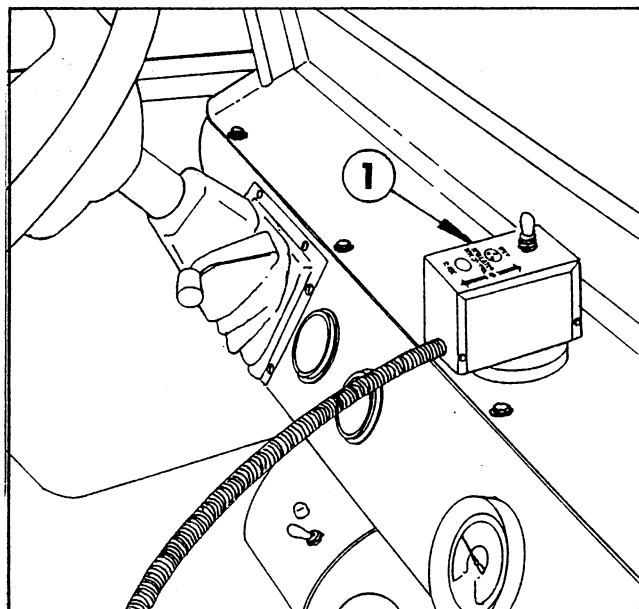


Fig. 4

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 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.

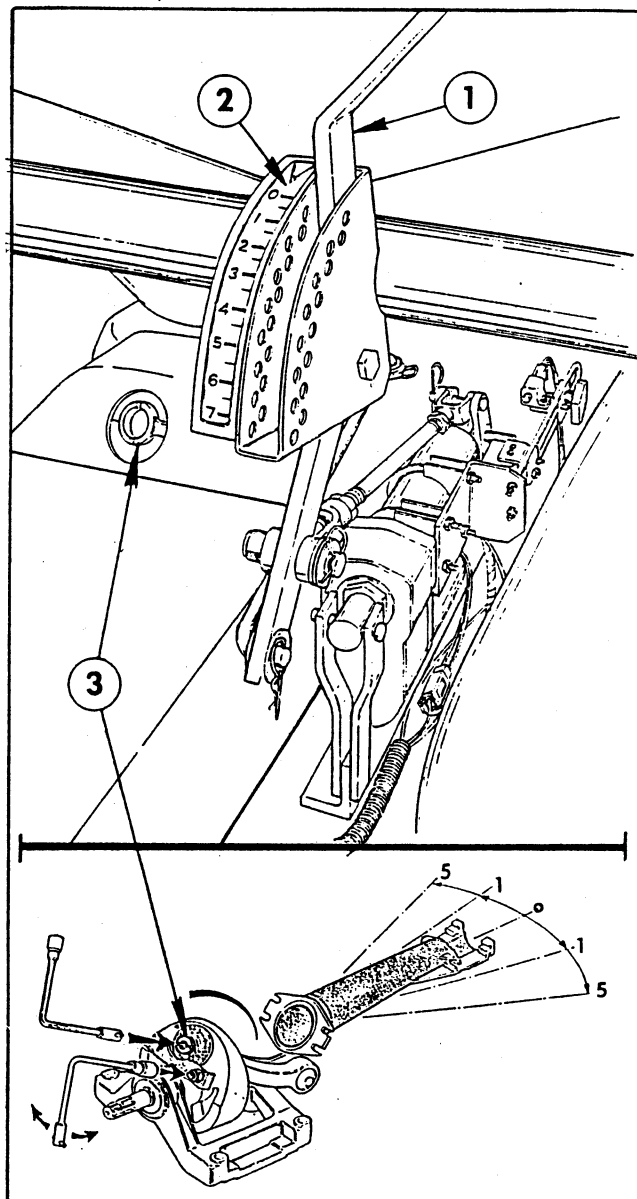


Fig. 5

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)
Powder	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 the spreading of sand. The longer nylon Spout is recommended for the spreading of 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 in feet, for the material being applied. **NOTE:** This width will vary depending on the density of the material and the Spout arc setting.

2. Flow rate of material from the Hopper, in pounds per acre. This will depend on the particle size of the material and the position of the Flow Regulator setting.

3. 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.

After determining the factors listed above, use the following formula to calculate the application rate for the Flow Regulator setting being used.

$$\frac{\text{lbs/min} \times 495}{\text{spread width (ft)} \times \text{mph}} = \text{lbs/acre}$$

EXAMPLE: With a flow rate of 106 lbs/min, a spread width of 50 feet and a ground speed of 3.5 mph... the Spreader application is:

$$\frac{106 \text{ lbs/min} \times 495}{50 \text{ feet} \times 3.5 \text{ mph}} = 300 \text{ lbs/acre}$$

See the Flow Regulator Setting Chart

USE THE FOLLOWING CHART AS A GUIDELINE ONLY, TO DETERMINE A FLOW REGULATOR SETTING TO APPROXIMATE THE APPLICATION RATE DESIRED. Due to weather conditions and variances in density, moisture content and particle size . . . flow rates will not always be the same as those shown. Use the chart to establish a Flow Regulator setting to use as a starting point for actual calibration.

FERTILIZER TYPE	PTO SPEED (RPM)	SPREADING WIDTH (IN FEET)	MPH	APPROXIMATE APPLICATION RATE IN LBS. PER ACRE						
				FLOW REGULATOR SETTING						
				1	2	3	4	5	6	7
COARSE GRAIN	540	60	2.5	43	195	490	872	1336	1778	2168
			3.5	29	130	326	581	889	1185	1446
			5.0	21	97	245	436	668	889	1084
			6.0	17	78	196	349	533	710	866
			7.5	14	64	162	290	445	592	723
MEDIUM GRAIN	540	50	2.5	48	227	570	992	1459	1959	2496
			3.5	32	152	379	662	972	1306	1664
			5.0	24	113	284	496	729	980	1247
			6.0	19	91	227	388	583	783	998
			7.5	16	76	189	330	486	592	723
FINE GRAIN	540	40	2.5	57	336	735	1211	1745	2279	2738
			3.5	38	223	490	807	1164	1519	1825
			5.0	29	168	368	601	872	1140	1369
			6.0	22	134	294	483	697	912	1096
			7.5	19	112	245	403	581	759	913

OPTIONAL FLOW CONTROL (MODEL NO. 41403)

The two Limit Switches control the length of the Actuator's extension or retraction and will have to 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 to be adjusted again. 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:

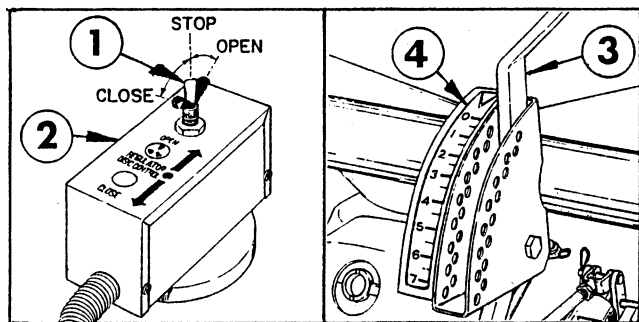


Fig. 6

- | | |
|------------------|--------------------------|
| 1. Toggle Switch | 3. Flow Regulator Handle |
| 2. Control Box | 4. Flow Regulator Scale |

1. 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.

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 1/8" by the Actuator Pin. Retighten the Knob and check the operation.

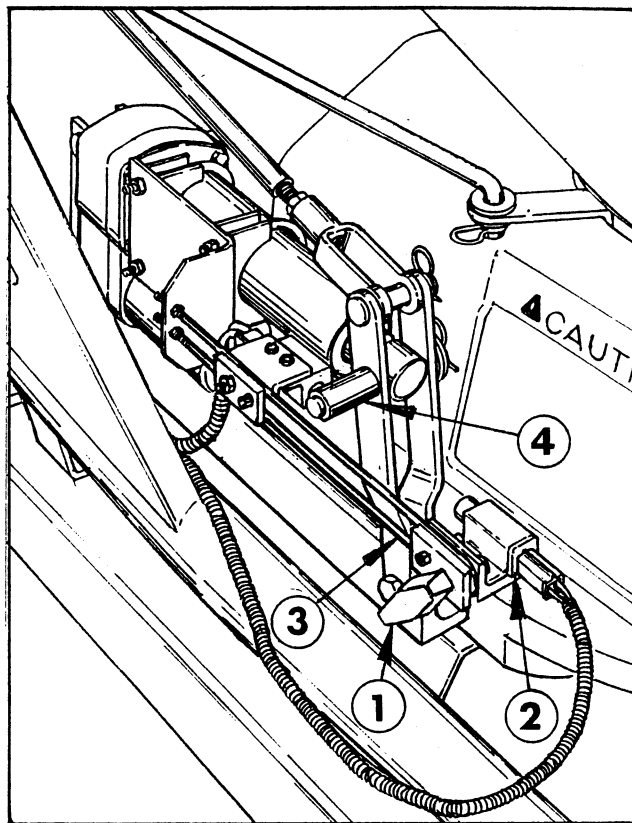


FIG. 3

- | | |
|----------------------|-----------------|
| 1. Knob | 3. Switch Guide |
| 2. Rear Limit Switch | 4. Actuator Pin |

OPERATING INSTRUCTIONS

Refer to the charts on page 5 as guide lines to determine the Spout Arc and Flow Regulator settings to achieve the desired rate of application for the material being used.

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, as described on page 6.

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, as described on page 3.

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 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, and/or the Limit Switches, will cause serious damage and premature failure of those parts.

1. **CLOSE** 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. See the PA-17 Operator's Manual.
4. Remove the plug and check to see that there is oil visible in the Gear Multiplier unit. If oil is needed, add Lubriplate #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 Diesel engine's oil fill cap. See the Workman's Operator's Manual.

The Toro Commercial Products Two Year Limited Warranty

The Toro Company warrants your 1996 or newer Toro Commercial Product ("Product") purchased after January 1, 1997, to be free from defects in materials or workmanship for the period of time listed below. Where a warrantable condition exists, Toro will repair the Product at no cost to you including diagnosis, labor, parts, and transportation. This warranty begins on the date the Product is delivered to the original retail purchaser.

Warranty Duration: Two years or 1500 operational hours*, whichever occurs first.

***Product equipped with hour meter**

Owner Responsibilities:

As the Product owner, you are responsible for required maintenance and adjustments stated in your Owner's Manual. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim.

Instructions for Obtaining Warranty Service:

You are responsible for notifying the Commercial Products Distributor or Authorized Commercial Products Dealer from whom you purchased the Product as soon as you believe a warrantable condition exists.

If you need help locating a Commercial Products Distributor or Authorized Dealer, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

TORO Commercial Products Service Department
8111 Lyndale Avenue South
Minneapolis, MN 55420-1196
Telephone: (612) 888-8801
Facsimile: (612) 887-8258
E-Mail: Commercial.Service@Toro.Com

Maintenance Parts:

Parts scheduled for replacement as required maintenance ("Maintenance Parts"), are warranted for the period of time up to the scheduled replacement time for that part.

Items/Conditions Not Covered:

Not all product failures or malfunctions that occur during the warranty period are defects in material or workmanship. The items / conditions listed below are not covered by this warranty:

- Product failures which result from the use of non-Toro replacement parts, or from installation and use of add-on, modified, or unapproved accessories are not covered.
- Product failures which result from failure to perform required maintenance and/or adjustments are not covered.
- Product failures which result from operating the Product in an abusive, negligent, or reckless manner are not covered.

- This warranty does not apply to parts subject to consumption through use unless found to be defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to, blades, reels, bedknives, tines, spark plugs, castor wheels, tires, filters, belts, etc.
- This warranty does not apply to failures caused by outside influence. Items considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved coolants, lubricants, additives, or chemicals, etc.
- This warranty does not apply to normal "wear and tear" items. Normal "Wear and Tear" includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows, etc.

Other Legal Disclaimers:

The above remedy of product defects through repair by an authorized distributor or dealer is the purchaser's sole remedy for any defect. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Except for the Emissions warranty referenced below, if applicable, there is no other express warranty. All implied warranties of merchantability and fitness for use are limited to the duration of the express warranty.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

The Toro Company is not liable for indirect, incidental or consequential damages in connection with the use of the Product, including any cost or expense of providing substitute Product or service during periods of malfunction or non-use.

Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you.

Note to California residents: The Emissions Control System on your Product may be covered by a separate warranty meeting requirements established by the U.S. Environmental Protection Agency (EPA), or the California Air Resources Board (CARB). The hour limitations set forth above do not apply to the Emissions Control System Warranty. Refer to the California Emission Control Warranty Statement printed in your Owner's Manual or contained in the engine manufacturer's documentation for details.