FORM NO. 92-0261

TORO®

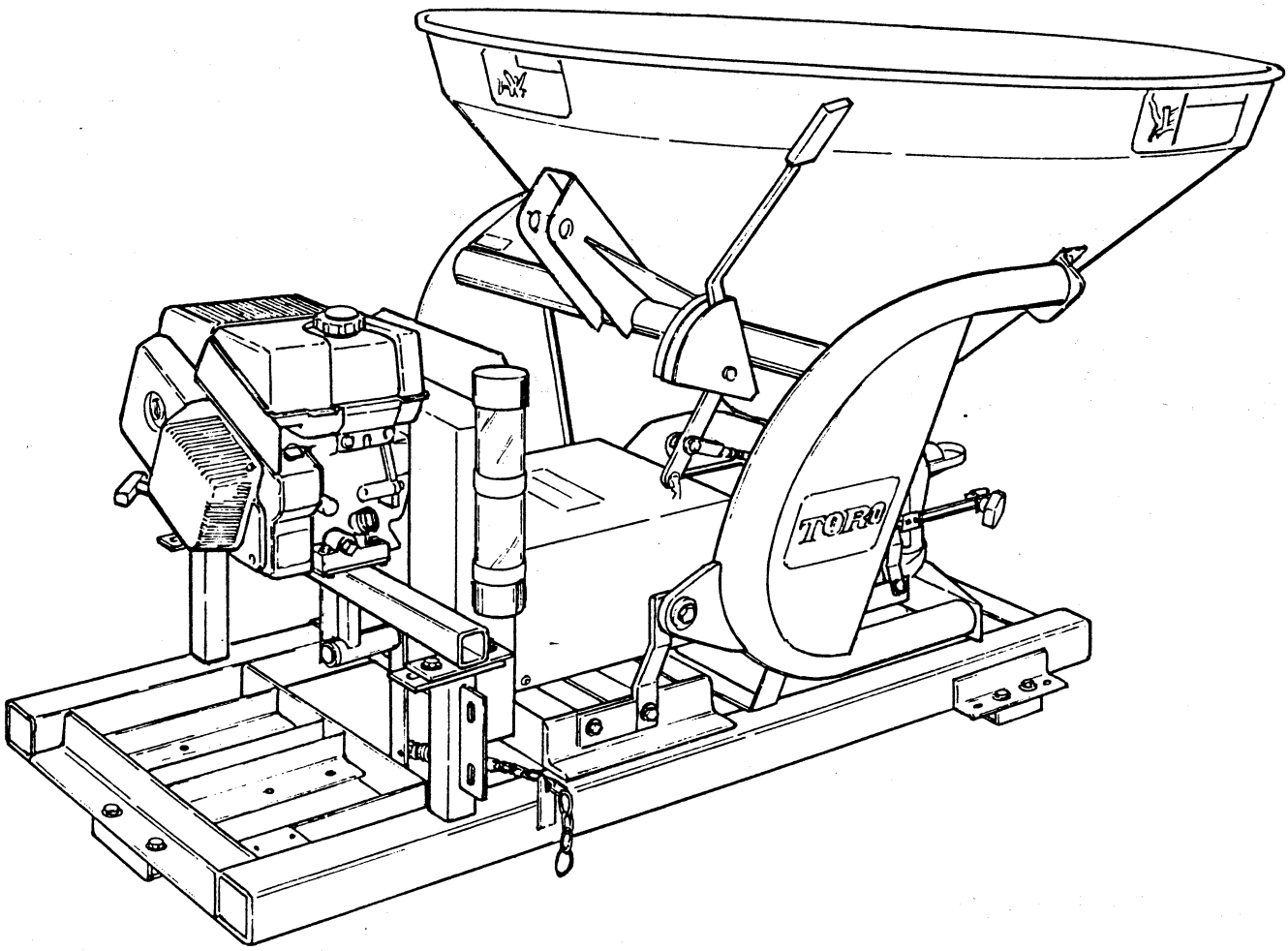
MODEL NO. 41400-30101 & UP
MODEL NO. 41403-30101 & UP
MODEL NO. 41152-30101 & UP
MODEL NO. 41150-30101 & UP

OPERATOR'S MANUAL

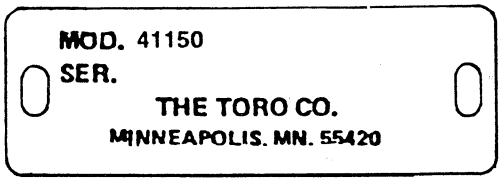
SKID SPREADER

To assure maximum safety, optimum performance, and to gain knowledge of the product, it is essential that you or any other operator of the machine read and understand the contents of this manual before the 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 or death.

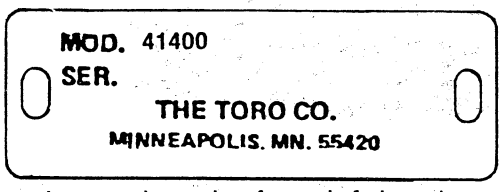


PRODUCT IDENTIFICATION



Located on the front right hand side of the Spreader frame, near the Flow Regulator.

Located on the left hand engine shroud.



Located on the front left hand corner of the Skid Frame.

PA-17 Spreader
Model No. 41150
Serial No. _____

Kohler Engine
Model No. CH6T
Serial No. _____

Skid Spreader
Model No. 41400
Serial No. _____

Record these serial numbers in the space above as soon as possible, as it is necessary to include this information when ordering service parts or requesting information. Please fill out the Product Registration Card and return it to:

The TORO Company
8111 Lyndale Ave. South
Minneapolis, MN 55420

Date Purchased _____

SPARK ARRESTOR

When the machine is used or operated on any California forest, brush or grass covered land, a properly operating spark arrestor must be attached to the muffler. The operator is violating state law, Section 442 Public Resources Code if a spark arrestor is not used.

SAFETY INSTRUCTIONS

Keep these Operator's Instructions and the Engine Manual in the plastic tube on the side of the Belt Guard.

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. The installment of accessories on the TORO Skid Frame, other than those designed and sold for that express purpose by TORO, may adversely affect the performance and safety characteristics of this equipment.

RECOGNIZE SAFETY INFORMATION

This safety-alert symbol is used to call 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 triangle safety appears, it is followed by a safety message that must be read and understood. For more details concerning safety, read the Safety Instructions on pages 3 and 4. **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. A replacement manual is available by sending complete model and serial number to: The Toro Company, 8111 Lyndale Ave. South, Minneapolis, Minnesota 55420.

2. Learn how to operate the 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.

4. Since gasoline is highly flammable, handle it carefully.

A. Use an approved gasoline container.

B. Do not remove cap from fuel tank when engine is hot or running.

C. Do not smoke while handling gasoline.

D. Fill fuel tank outdoors and to about one inch below top of tank, (bottom of filler neck). Do not overfill.

E. Wipe up any spilled gasoline.

WHILE OPERATING:

5. Drive and transport vehicle safely.

A. Always SLOW the vehicle when approaching and while making a turn.

B. Always SLOW the vehicle when driving in unfamiliar areas or over rough terrain.

C. Always SLOW the vehicle when changing the direction of travel or preparing to stop.

D. When turning or driving on slopes, always SLOW the vehicle, then turn the vehicle to prevent loss of control and possible upset.

E. DO NOT make sudden or sharp turns. DO NOT suddenly change direction of travel on an incline, ramp, grade, slope or similar surface.

F. Always adjust the vehicle speed to allow for existing conditions such as wet, slick surfaces, low visibility, etc.

G. Be especially careful when driving a heavily loaded vehicle down an incline or slope. Drive the vehicle UP and DOWN the face of slopes, inclines or grades whenever possible. DO NOT DRIVE ACROSS the face if at all possible. There is a risk of upsetting the vehicle, which can result in serious injury or death.

SAFETY INSTRUCTIONS

6. 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.

7. Make certain everyone is clear of the machine before starting the engine to move the transport vehicle or to engage the Spreader drive.

8. Before backing up, look to the rear and assure no one is behind. Back up slowly.

9. Watch out for traffic when near or crossing roads. Always yield the right of way to pedestrians and other vehicles.

10. 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.

11. If equipment begins to vibrate abnormally, stop **immediately.** Shut off the Skid Spreader engine and disengage all power. Repair all damage before commencing operation.

MAINTENANCE:

WARNING: Engine exhaust contains carbon monoxide which is an odorless, deadly poison. Carbon monoxide is also known to the State of California to cause birth defects. Do not run engine indoors or in an enclosed area.

12. Before servicing or making any adjustments to the Skid Spreader:

A. Stop the transport vehicle and set the parking brake.

B. Shut off the Skid Spreader's engine and pull wire off the spark plug. Make sure wire can not contact plug accidentally.

C. Disengage all power and wait until all moving parts have stopped.

D. Keep hands, feet and clothing away from all power driven parts.

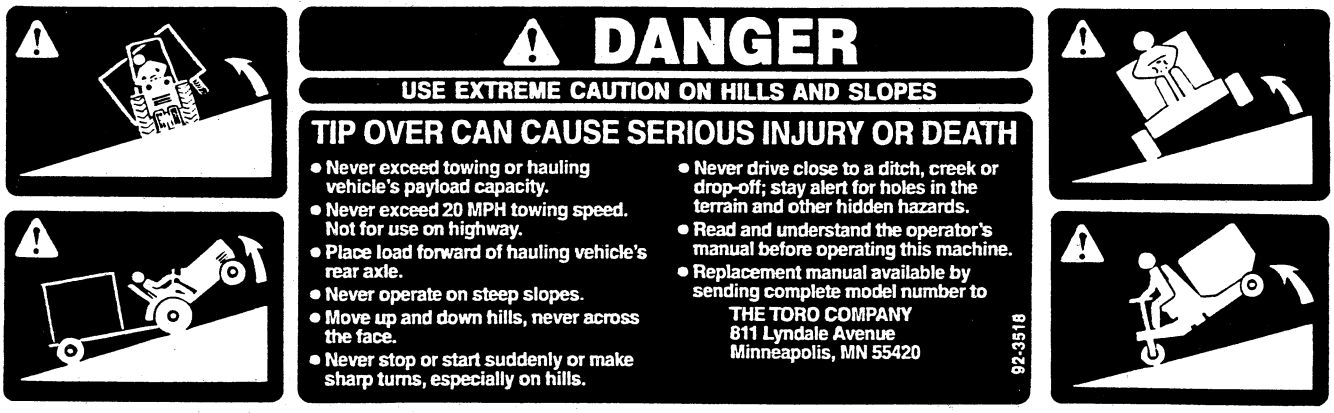
13. Keep all nuts, bolts and other fasteners tightened securely. Replace any shields removed during servicing or adjustments.

14. To reduce potential fire hazard, keep the engine area free of excessive grass, leaves and accumulation of dirt.

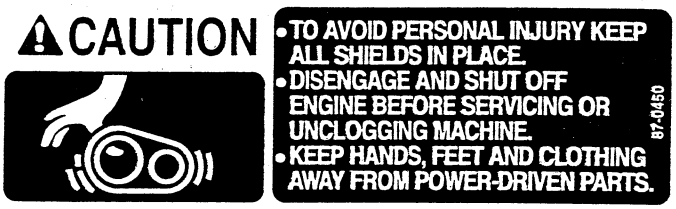
15. To be sure of optimum performance and safety, always purchase genuine TORO replacement parts and accessories. Replacement parts and accessories made by other manufacturers could be dangerous. Altering this equipment in any manner may affect the machine's operation, performance, durability or its use may result in injury or death. Such use could void the product warranty of the TORO Company.

SAFETY AND INSTRUCTION DECALS

The following decals are installed on the machine. If any become damaged or illegible, replace it. The decal part number is listed below and in your parts catalog. Replacement can be ordered from your Authorized Toro Distributor.



Part No. 92-3518 Located on Belt Shield



Part No. 65-3090 Located on top of Belt Guard.

Part No. 87-0450 Located on top of Drive Shaft Cover.

Part No. 92–0313 Located on top of Optional Control Box.

BEFORE OPERATING

FILL ENGINE CRANKCASE WITH OIL:

IMPORTANT! The Skid Spreader is shipped from the factory **without oil** in the engine's crankcase.

1. Position Skid Spreader on a level surface.

2. Clean the area around the oil fill/check plug and remove it.

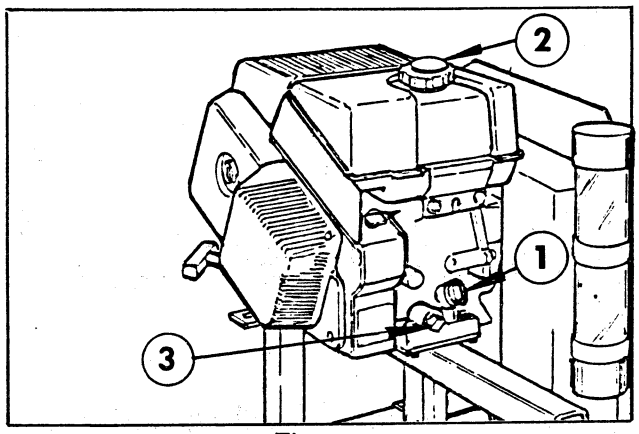


Figure 1

1. Oil Fill/Check Plug 2. Fuel Tank Cap 3. Oil Drain

3. Insert a funnel into the oil fill tube and slowly pour engine oil into the crankcase. The engine uses any high-quality oil having the American Petroleum Institute-API-"service classification" SF or SG. See viscosity chart for recommended weight to use. The capacity of the crankcase is approximately 23 ounces (.66L).

4. The level should be up to, but not over, the point of overflowing the filler neck.

5. Reinstall the oil fill/check plug and tighten securely. Make sure it is tightened to 13 ft. lbs. (17.6 N m) torque.

IMPORTANT! Check the oil level every five (5) operating hours or each time the engine is started. For a new engine, drain the oil and replace it after the first five (5) hours of operation: thereafter, under normal conditions, change oil after every 100 hours of operation. Change the oil more frequently when the engine is operated in dusty or dirty conditions.

CHECK GEAR MULTIPLIER OIL:

1. Position the Spreader on a level surface.

2. Remove the plug and check to see that there is oil visible in the Gear Multiplier unit. (Fig. 2)

3. If oil is low, clean area around plug and add Lubriplate #5555.

FILL FUEL TANK WITH GASOLINE:

Fuel tank capacity is approximately 3 U.S. quarts. (3.18 L)

DANGER

Because gasoline is flammable, caution must be used when storing or handling it. Do not fill fuel tank while engine is running, hot or when machine is in an enclosed area. Vapors may build up and be ignited by a spark or flame source many feet away. DO NOT SMOKE while filling the fuel tank to prevent the possibility of an explosion. Always fill fuel tank outside and wipe up any spilled gasoline before starting engine. Use a funnel or spout to prevent spilling gasoline, and fill tank to about 1/2 inch (13 mm) below the filler neck. Store gasoline in a cool, well-ventilated place; never in an enclosed area such as a hot storage shed. To ensure volatility, do not buy more than a 30 day supply of gasoline. Gasoline is a fuel for internal combustion engines; therefore, do not use it for any other purpose. Since many children like the smell of gas, keep it out of their reach because the fumes are explosive and dangerous to inhale.

1. Clean area around fuel tank cap so foreign matter cannot enter tank when cap is removed. (Fig. 1)

2. Remove cap from fuel tank and fill tank with unleaded gasoline to within 1/2" (13 mm) from top of tank. Then reinstall fuel tank cap.

3. Wipe up any gasoline that may have spilled.

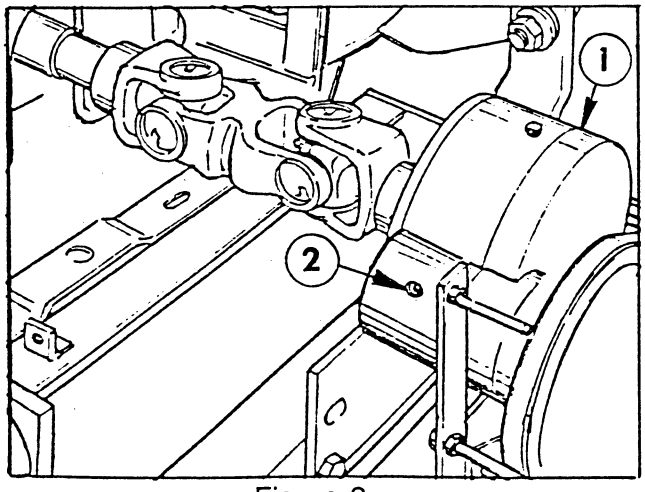


Figure 2

1. Gear Multiplier 2. Oil Check

CONTROLS

IDLER ENGAGEMENT CHAIN: Used as ON/OFF control for Spreader drive. Pulling the Chain, to bring the Idler Pully into contact with the Drive Belt, engages the Spreader's Agitator and Spout mechanisms. Releasing the Chain, disengages the mechanisms to stop the Spreader's Agitator and Spout action.

IMPORTANT! For the sake of clarity, the safety shields have been removed in this illustration. **NEVER** operate the Spreader with the Drive Shaft Cover, Belt Cover or Belt Shield removed!

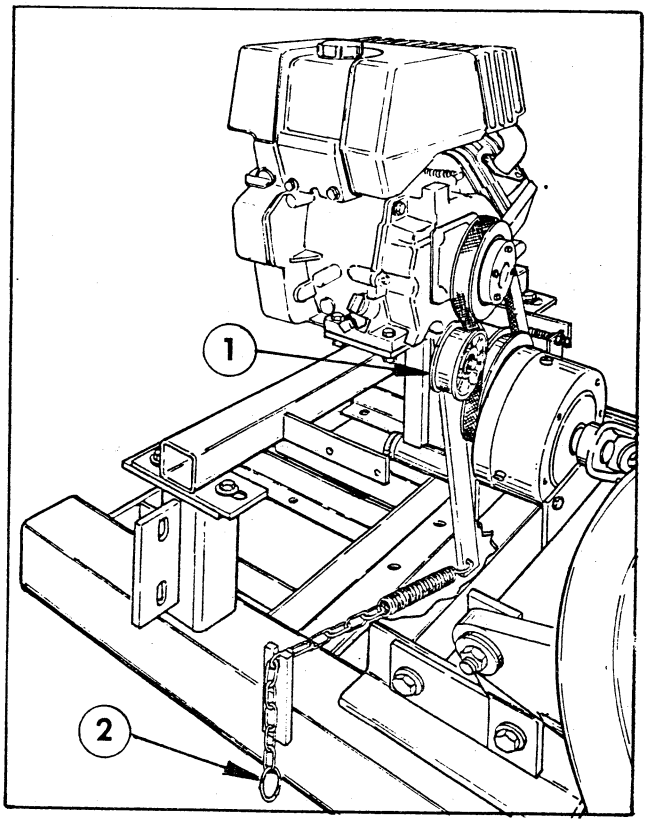


Figure 3

1. Idler Pulley **2. Idler Engagement Chain**

OPTIONAL 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. (Fig. 4)

NOTE: After positioning the Limit Switches for a full "CLOSE" disc opening, as described on page 10, the Front Limit Switch should not need to be adjusted again. However, the Rear Limit Switch must be re-adjusted whenever the "rate of flow" setting on the Regulator Scale is changed. See the chart on page 9 for some guidelines to determine the appropriate setting.

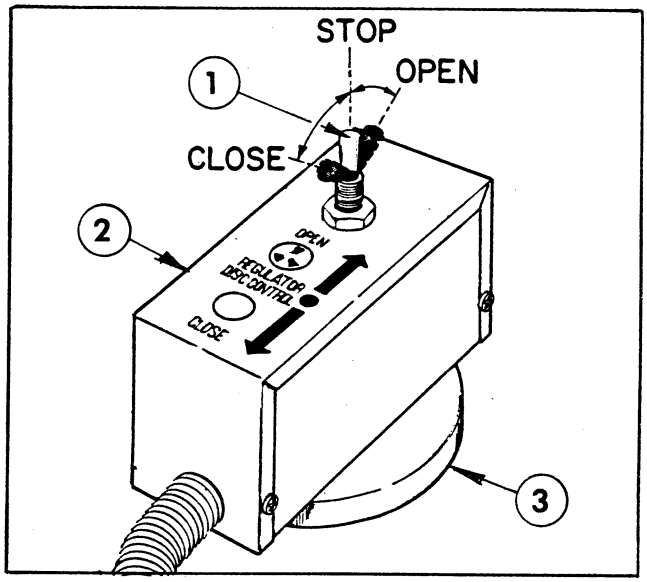


Figure 4

1. Toggle Switch **2. Control Box** **3. Magnet**

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.

IMPORTANT! The Stop Pin, which is chained to the Flow Regulator, is not to be used in the operation of this unit. Using this Pin as a "stop" for the Regulator Handle will damage the Spreader.

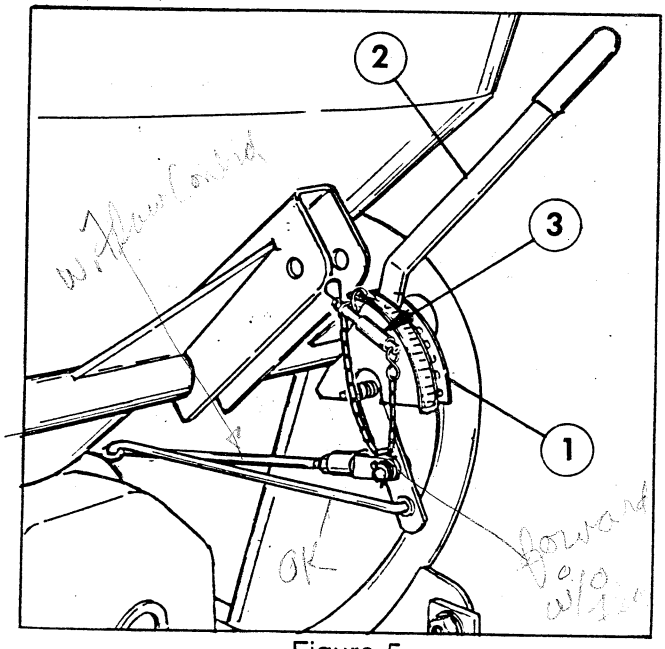


Figure 5

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

CONTROLS

DANGER!

ROTATING MEMBERS CAN CAUSE SERIOUS INJURY!

Before making any adjustments or repairs on the Skid Spreader:

- Stop the transport vehicle and set the parking brake.
- Shut off the Skid Spreader's engine and pull wire off the spark plug.
- Release the Idler Engagement Chain, to disengage the Spreader drive.

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 Sprocket by hand, until the arc adjuster appears in the opening in the Spreader, as shown in Figure 6

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.

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

IMPORTANT! When spreading sand, the spout arc must be at the "–" or **MIN.** setting.

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)

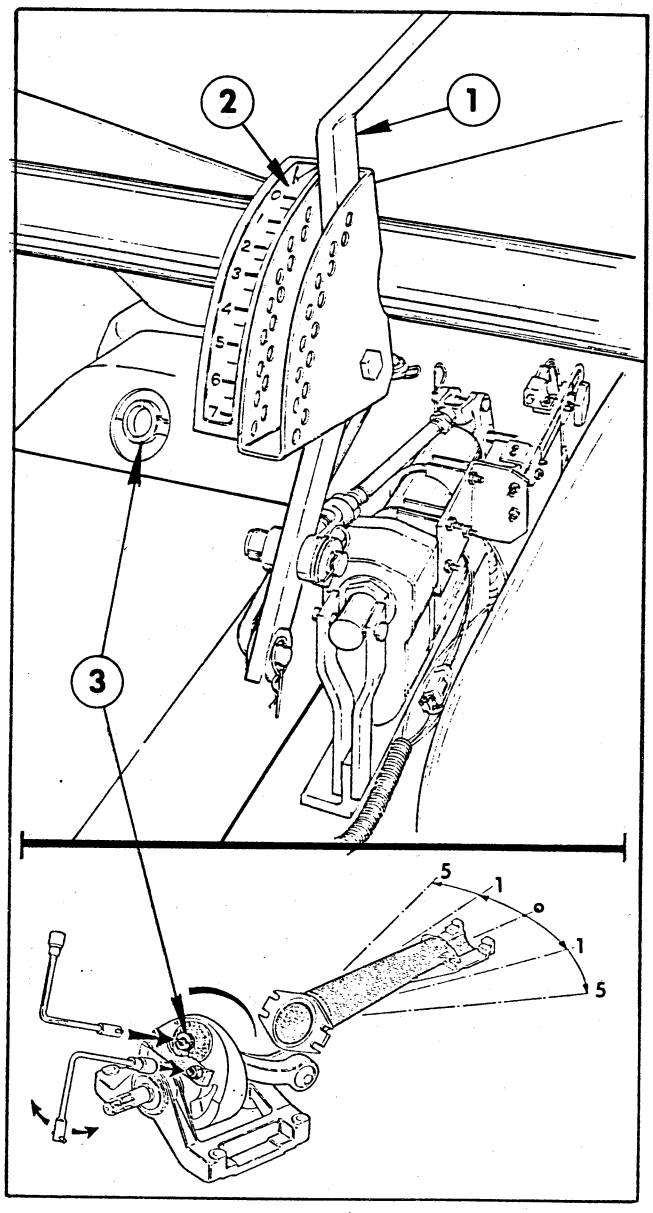


Figure 6

1. **Flow Regulator Handle**
2. **Flow Regulator Scale**
3. **Spout Arc Adjustment**

CONTROLS

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:

■ 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.

■ 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.

■ The desired working speed of the transport vehicle, in miles per hour.

⚠ WARNING!

Tipping or rolling the vehicle can cause serious personal injury or death. Driving too fast for the conditions can cause you to lose control and result in an accident.

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

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.

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.

IMPORTANT! The Limit Switches must be set to prevent the Actuator's action from exceeding the range of the Flow Regulator Handle (as indicated by a "ratcheting" sound). To exceed that range will cause serious damage to the Regulator.

NOTE: In order to achieve a slow, gradual action of the Actuator during the positioning of the two Limit Switches, move the toggle switch intermittently, away from the center, toward the "OPEN" or "CLOSE" position.

This intermittent movement of the toggle switch should ONLY be used during the positioning of the Limit Switches...NOT during normal operation of the Spreader Control.

ADJUSTING THE REAR LIMIT SWITCH:

1. Move the toggle switch on the Control Box toward "OPEN", to SLOWLY extend the Actuator, until the front edge of the Flow Regulator Handle is at the "7" position on the Regulator's scale.

2. Loosen the jam nuts on the Switch Guide and slide it forward until the button on the rear Limit Switch is depressed approximately 1/8" by the Actuator Pin. Re-tighten the jam nuts.

ADJUSTING THE FRONT LIMIT SWITCH:

1. Move the toggle switch toward "CLOSE", to SLOWLY retract the Actuator, until the front edge of the Flow Regulator Handle is at the "0" position on the Regulator's scale.

2. Loosen the nut on the front Limit Switch Plate and slide the Switch and Plate toward the rear until the button on the Switch is depressed approximately 1/8" by the Actuator Pin. Re-tighten the nut to secure the Limit Switch on the Switch Guide.

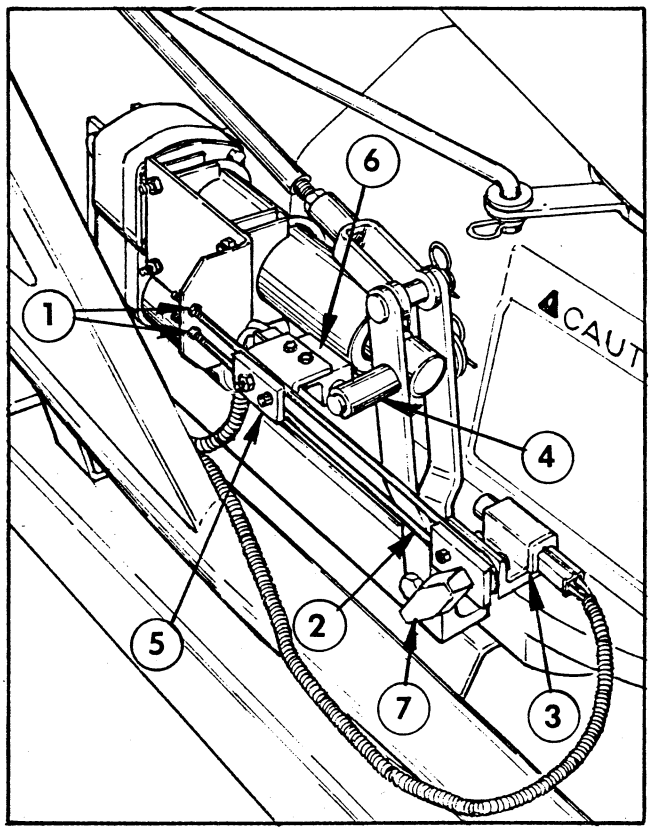


Figure 7

1. **Jam Nut**
2. **Switch Guide**
3. **Rear Limit Switch**
4. **Actuator Pin**
5. **Limit Switch Plate**
6. **Front Limit Switch**
7. **Knob**

NOTE: After positioning the Limit Switches for a full "OPEN" and a full "CLOSE" disc opening, as described above, the front Limit Switch should not need to be adjusted again However, the rear Limit Switch must be re-adjusted to achieve any of the other "rate of flow" settings indicated on the Regulator Scale, as follows:

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 approx. 1/8" by the Actuator Pin. Re-tighten the Knob and check the operation.

OPERATING INSTRUCTIONS

BEFORE STARTING THE ENGINE TO BEGIN THE DAYS SPREADER APPLICATION:

- Check the engine crankcase oil
- Check the Air Cleaner
- Check cooling air intake areas
- Check the fuel tank

TAKE MACHINE TO WORK SITE:

1. Position the Flow Regulator Handle at the setting previously determined.

2. Position the arc adjuster as needed for the Spout arc setting indicated.

3. CLOSE the regulator disc, using the toggle switch on the Control Box.

4. Just prior to the actual spreading operation... fill the Hopper.

DANGER!

NEVER OVERLOAD THE HOPPER!
The height and weight of the load in the Hopper has a significant influence on tip over. The higher a load is stacked, the more likely the possibility of tip over. You may find that 1000 pounds stacks too high for safe operation. Reducing the total weight is one way to reduce the risk of tip over. Distributing the load as low as possible is another way to reduce the risk of tip over. As a general rule, position the weight of the load evenly from front to rear and evenly from side to side.

START THE SPREADER SKID'S ENGINE:

1. Open the fuel shut-off valve.

2. **For a Cold Engine:** Place the throttle control midway between the "slow" and "fast" positions. Place the choke control into the "on" position. Gradually return the choke control to the "off" position after the engine starts and warms up.

For a Warm Engine: (normal operating temperatures) Place the throttle control midway between the "slow" and "fast" positions. Place the choke control into the "off" position.

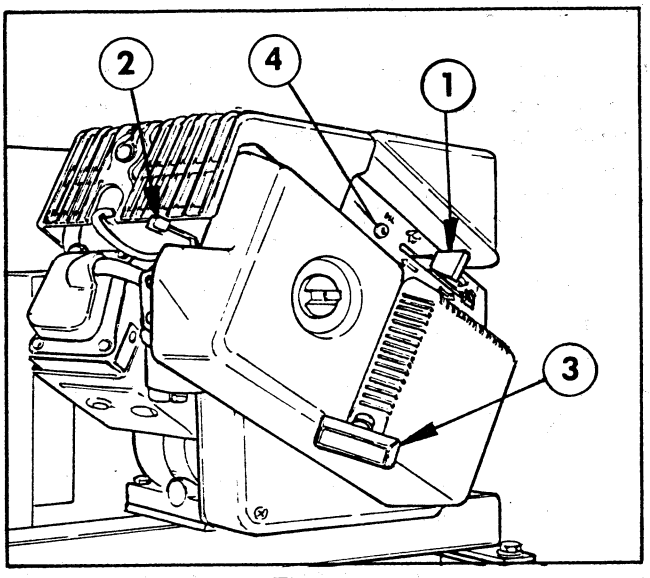


Figure 8

1. **Throttle Control**
2. **Choke Control**
3. **Starter Handle**
4. **Oil Sentry**

3. Pull the starter handle with a smooth, steady motion. Pull the handle straight out to avoid excess rope wear.

NOTE: The TORO Skid Spreader is designed to operate most effectively with the engine at full or nearly full 3600 RPM.

4. Pull the Idler Engagement Chain to engage the Spreader drive. At the point of resistance by the Drive Belt, pull the Chain the distance of another two links and insert that link into the lug on the Skid Frame.

5. When ready to begin application, use the toggle switch on the Control Box 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.

6. Maintain the forward speed of the transport vehicle and the working width used in the calibration of the Spreader.

STOPPING THE ENGINE:

1. Move the throttle control to the "off" position.

2. Close the fuel shut-off valve.

OPERATING INSTRUCTIONS

WHEN JOB IS COMPLETED:

IMPORTANT! 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 toggle switch on the Control Box.

2. Operate the Spreader drive slowly, while spraying water inside the Hopper.

3. OPEN the regulator disc, using the toggle switch, and spray the agitator and regulating plate.

4. Spray all of the outside surfaces of the. Spreader.

MAINTENANCE SCHEDULE

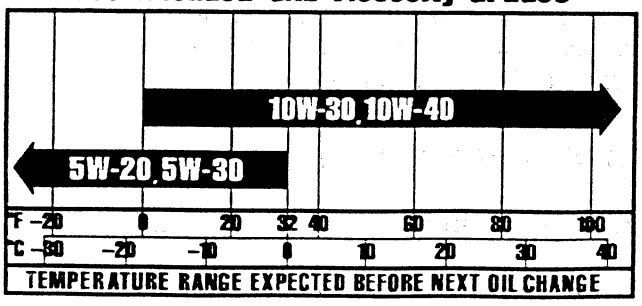
These required maintenance procedures should be performed at the frequency stated in the table. They should also be included as part of any seasonal tune-up.

FREQUENCY	MAINTENANCE REQUIRED
Daily Or Before Starting Engine	• Fill fuel tank. • Check oil level. • Check air cleaner for dirty[1], loose, or damaged parts. • Check air intake and cooling areas, clean as necessary[1].
Every 25 Hours	• Service precleaner element[1].
Every 100 Hours	• Service air cleaner element[1]. • Change oil. • Check spark plug condition and gap. • Remove cooling shrouds and clean cooling areas[1].
Annually Or Every 500 Hours	• Have valve to rocker arm clearance checked[2]. • Have Oil Sentry™ float switch checked[2].

[1]Perform these maintenance procedures more frequently under extremely dusty, dirty conditions.

[2]Have a Kohler Engine Service Dealer perform these services.

Recommended SAE Viscosity Grades



IMPORTANT! To prevent extensive engine wear or damage, always maintain the proper oil level in the crankcase. NEVER operate the engine with the oil level below the point of over–flowing the filler neck.

MAINTENANCE

DANGER!

Before servicing or making adjustments to the Skid Spreader, stop the transport vehicle and set the parking brake. Shut off the Skid Spreader engine and pull wire off the spark plug to prevent the engine from starting accidentally.

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

1. Change the oil in the engine's crankcase as described on page 14.

2. Grease the two (2) fittings in the "U"-Joint Assembly. Grease after every 250 hours thereafter.

3. 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.

AFTER EVERY 10 HOURS OF OPERATION:

1. Use a hand gun with a good grade of general purpose grease to lubricate through the five (5) fittings on the Spreader unit.

CHECK OIL LEVEL:

1. Make sure the engine is stopped, level, and is cool so the oil has had time to drain into the sump.

2. Clean the area around the oil/fill check plug and remove it.

3. The level should be up to but not over, the point of overflowing the filler neck.

4. If the level is low, add API "service classification" SF or SG. See viscosity chart on page 12 for the recommended weight.

5. Reinstall the oil fill/check plug and tighten securely. Make sure it is tightened to 13 ft. lbs. (17.6 N m) torque.

IMPORTANT! The Oil Sentry light will turn red when the engine oil is low, but the oil level should be checked BEFORE EACH USE.

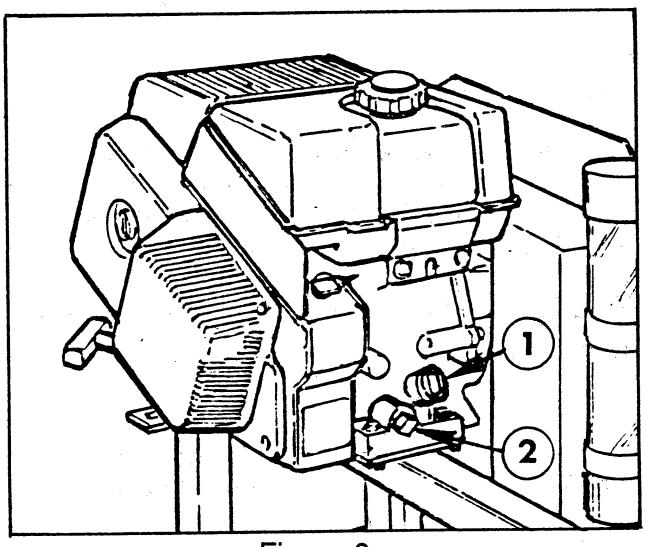


Figure 9

1. Oil Fill/Check Plug 2. Oil Drain

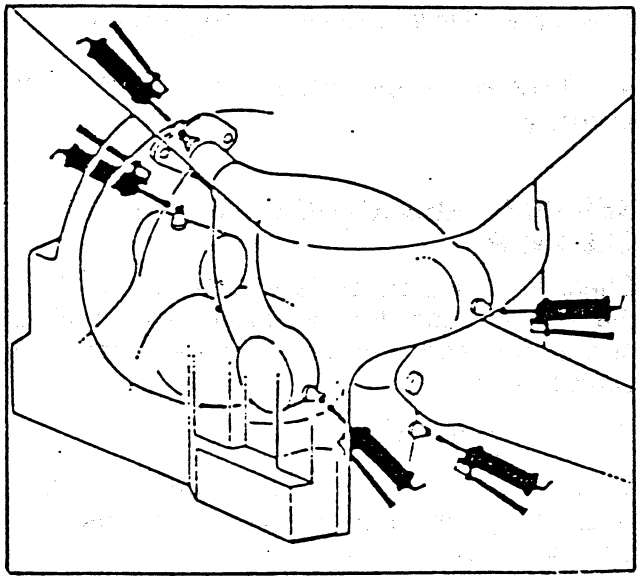


Figure 10

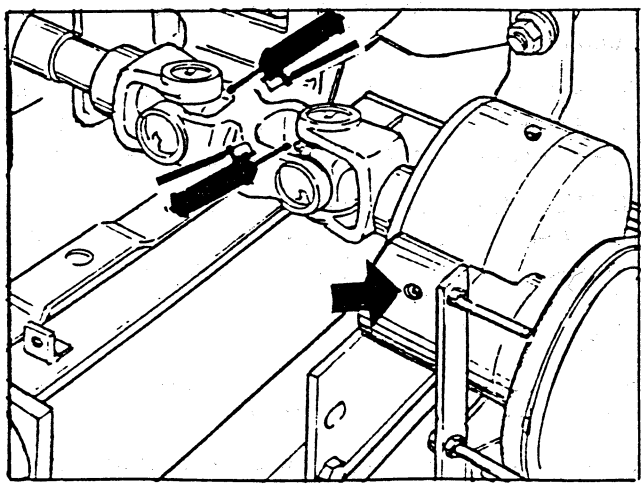


Figure 11

MAINTENANCE

AFTER EVERY 100 HOURS OF OPERATION:

CHANGE OIL:

Change the oil while the engine is still warm. The oil will flow freely and carry away more impurities. Make sure the engine is level when filling, checking and changing the oil.

1. Remove the oil drain plug and the oil fill/ check plug. Be sure to allow ample time for complete drainage.

2. Reinstall the drain plug. Make sure it is tightened to 13 ft. lbs. (17.6 N m) torque.

3. Fill the crankcase with new oil of the proper type, up to the point of overflowing the filler neck. Refer to "Oil Type" on page 12. Always check the oil level before adding more oil.

4. Reinstall the oil fill/check plug and tighten securely.

SERVICE PRECLEANER AND AIR CLEANER:

Check the Air Cleaner daily or before starting the engine. Check for and correct heavy buildup of dirt and debris, as well as loose or damaged components.

Service Precleaner:

Wash and reoil the precleaner after every 25 hours of operation (more often under dusty or dirty conditions).

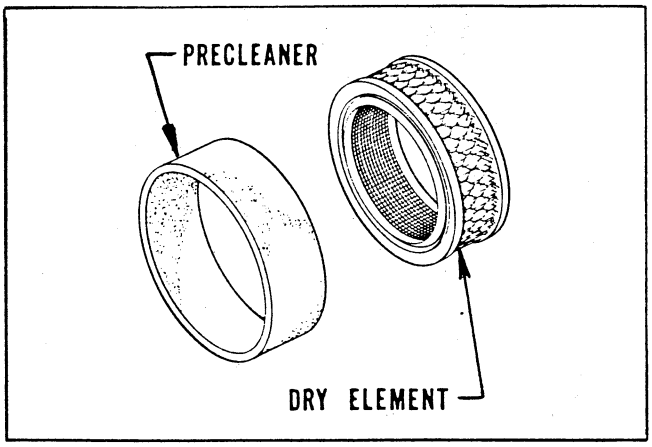
1. Loosen air cleaner cover retaining knob. NOTE: Choke control must be in the "OFF" position.

2. Slide the air cleaner cover off of the air cleaner base (away from the starter handle.) and remove the precleaner from the air cleaner element.

3. Wash the precleaner in warm water with detergent. Rinse the precleaner thoroughly until all traces of detergent are eliminated. Squeeze out excess water (do not wring). Allow the pre-cleaner to air dry.

4. Saturate the precleaner with new engine oil. Squeeze out all excess oil.

5. Reinstall the precleaner over the element. Reinstall the air cleaner cover and tighten the retaining knob.



Service Paper Element:

Every 100 hours of operation (more often under dusty or dirty conditions), check the paper element. Replace the paper element as necessary.

1. Remove the air cleaner cover and the pre-cleaner from the air cleaner element as described above (steps 1 and 2).

2. Remove the air cleaner cover ring, element cover w/grommet, washer and wing nut. Pull the element cover w/grommet off. Remove the paper element.

3. Replace a dirty, bent or damaged element. Do not wash the paper element or use pressurized air as this will damage the element. Handle new elements carefully; do not use if the sealing surfaces are bent or damaged.

4. When servicing the air cleaner, check the air cleaner base. Make sure it is secured and not bent or damaged. Also check the air cleaner element cover for damage or improper fit. Replace all bent or damaged air cleaner components.

5. Install new or serviced paper elements and components as follows:

   A. Position paper element on base.

   B. Slide element cover w/grommet, then washer, onto stud. Secure with wing nut.

   C. Reinstall the precleaner over the paper element.

   D. Reinstall air cleaner cover ring into element cover.

   E. Reinstall air cleaner cover and secure with retaining knob.

MAINTENANCE

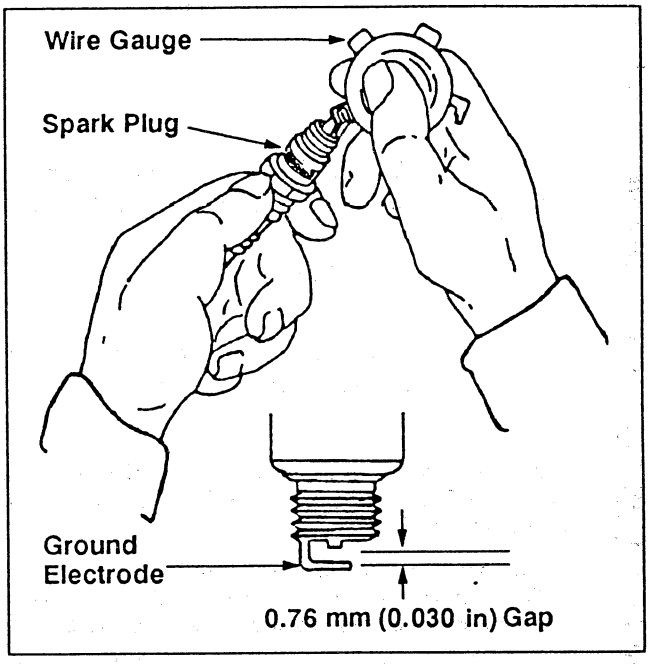
CLEAN AIR INTAKE/COOLING AREAS:

To insure proper cooling, make sure the screen, cooling fins and other external surfaces of the engine are kept clean at all times. **NOTE:** Operating the engine with a blocked screen, dirty or plugged cooling fins, and/or cooling shrouds removed, will cause engine damage due to overheating.

Every 100 hours of operation (more often under dusty, dirty conditions), remove the blower housing and other cooling shrouds. Clean the cooling fins and external surfaces as necessary. Make sure the cooling shrouds are reinstalled.

CHECK SPARK PLUG:

Every 100 hours of operation, clean the area around the base of the plug and check its condition. Reset the gap to .030 in. (0.76 mm) or replace with a new plug as necessary. Use a Champion type RC12YC or equivalent. Torque to 18-22 ft lb (24.4 - 29.8 Nm).



The Toro Promise

A ONE YEAR LIMITED WARRANTY

The Toro Company promises to repair your TORO Product if defective in materials or workmanship. The following time periods from the date of purchase apply:

Commercial Products . . . . . 1 Year

The costs of parts and labor are included, but the customer pays the transportation costs on walk rotary mowers with cutting unit widths of less than 25".

If you feel your TORO product is defective and wish to rely on The Toro Promise, the following procedure is recommended:

1. Contact your Authorized TORO Distributor or Commercial Dealer (the Yellow Pages of your telephone directory is a good reference source).
2. The TORO Distributor or Commercial Dealer will advise you on the arrangements that can be made to inspect and repair your product.
3. The TORO Distributor or Commercial Dealer will inspect the product and advise you whether the product is defective and, if so, make all repairs necessary to correct the defect without an extra charge to you.

If for any reason you are dissatisfied with the distributor's analysis of the defect or the service performed, you may contact us.

Write:

TORO Commercial Products Service Department
8111 Lyndale Avenue South
Minneapolis, Minnesota 55420

The above remedy of product defects through repair by an Authorized TORO Distributor or Commercial Dealer is the purchaser's sole remedy for any defect.

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 limitation may not apply to you.

This Warranty applies only to parts or components which are defective and does not cover repairs necessary due to normal wear, misuse, accidents, or lack of proper maintenance. Regular, routine maintenance of the unit to keep it in proper condition is the responsibility of the owner.

All warranty repairs reimbursable under the Toro Promise must be performed by an Authorized TORO Commercial Dealer or Distributor using Toro approved replacement parts.

Repairs or attempted repairs by anyone other than an Authorized TORO Distributor or Commercial Dealer are not reimbursable under the Toro Promise. In addition, these unauthorized repair attempts may result in additional malfunctions, the correction of which is not covered by warranty.

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 EQUIPMENT OR SERVICE DURING PERIODS OF MALFUNCTION OR NON-USE.

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

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

COUNTRIES OTHER THAN THE UNITED STATES OR CANADA

Customers who have purchased TORO products exported from the United States or Canada should contact their TORO Distributor (Dealer) to obtain guarantee policies for your country, province or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact the TORO importer. If all other remedies fail, you may contact us at The Toro Company.

Compliance with Radio Interference Regulations Certified.
Certifie Conforme au Reglement sur le Brouillage Radioelectrique.

Litho in U.S.A.