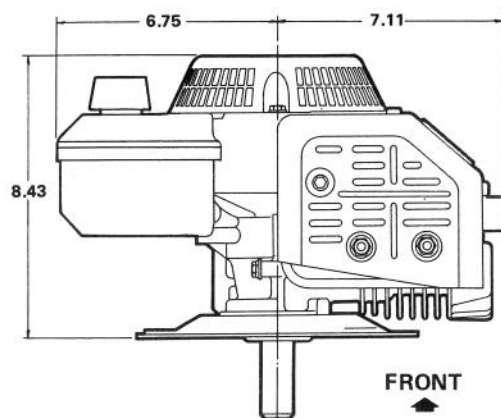




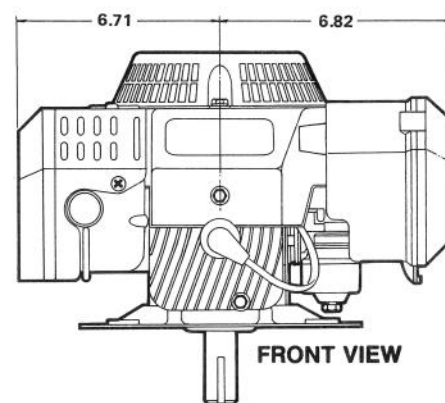
PART NO. 51-0413

**OPERATOR'S
MANUAL****121 cc 2-CYCLE VERTICAL SHAFT ENGINE****TECHNICAL DATA**

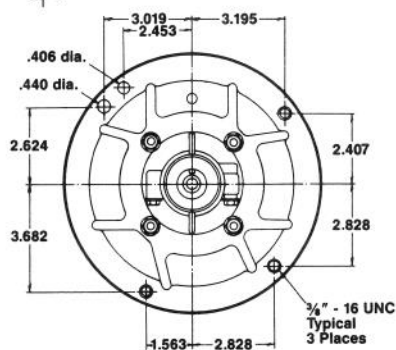
(Dimensions in inches)



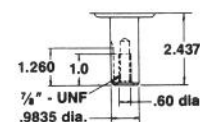
FRONT



FRONT VIEW



MOUNTING HOLE VIEW



CRANKSHAFT

SPECIFICATIONS*

Engine Type . . . Air Cooled, 2-Cycle, 3rd Port Induction, Vertical Shaft
 Displacement 121 cc
 Bore x Stroke 2.283 x 1.811 in. (58 mm x 46 mm)
 Ignition System Solid State
 Spark Plug NGK BPMR4A, 0.032" gap
 Governor Mechanical Flyweight
 No Load Governor Setting . . . 3000 rpm \pm 150
 Main Bearings Ball
 Rod Bearings Caged Needle

*Specifications subject to change without notice.

Lubrication System Pre-Mixed With Fuel
 Air Cleaner Semi-dry, Urethane Foam
 Fuel Tank Capacity 1.8 qt
 Throttle Travel 1.50 in.
 P.T.O. Diameter 1 in. (25 mm)
 P.T.O. Length 2.437 in.
 Mounting Bolt Size375 in.
 Direction of Rotation CCW
 Dry Weight 20 lb
 Dimensions: Length 13 3/4 in. (349 mm)
 Width 13 1/2 in. (343 mm)
 Height 8 1/2 in. (216 mm)

CAUTION

Before operating engine, read operating and safety instructions in this manual and those provided with equipment on which this engine is used. Failure to comply with the instructions could result in personal injury.

LOCATION OF ENGINE FEATURES

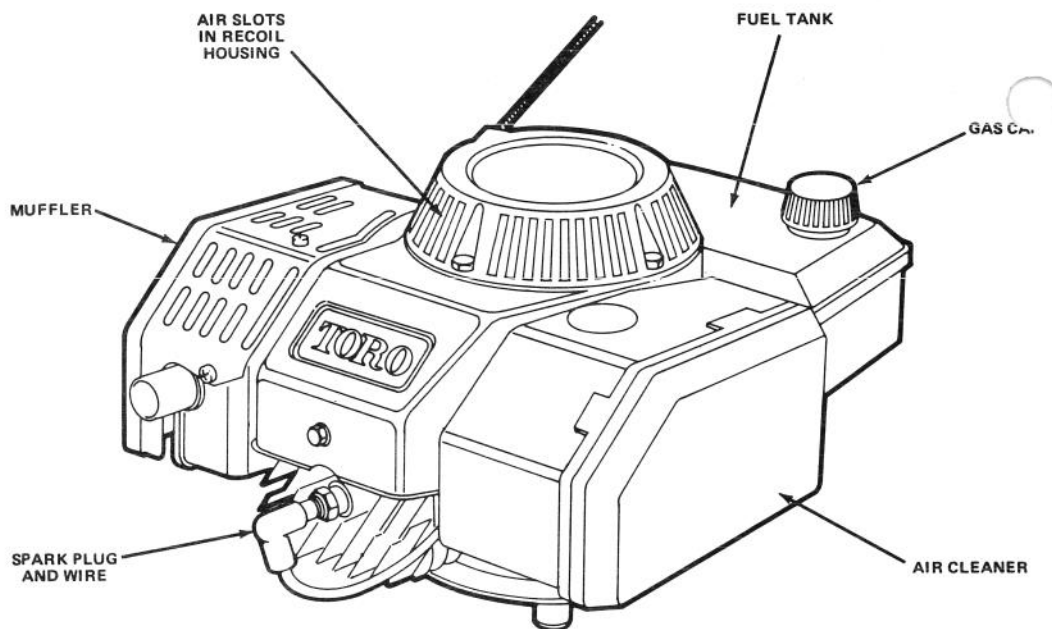


Figure 1

BEFORE OPERATING



DANGER

Gasoline is extremely flammable and explosive under certain conditions. Do not smoke when handling fuel and keep fuel far away from open flames and sparks. Never buy more than a 30 day supply of gasoline. Store gasoline in an approved container and keep it out of the reach of children.

Refuel outdoors, only when engine is cold. Fill tank to within 1/4" to 1/2" (6 to 13 mm) from its top. This is space for expansion of fuel. Use funnel or spout to prevent spilling. Wipe up any spilled gas.

MIX GASOLINE AND OIL (Fig. 2)

1. **APPROVED OIL** — This engine requires a mixture of unleaded gas and two-cycle oil. Toro two-cycle oil has been thoroughly tested and approved for use in the engine at a 50:1 ratio. Failure to use proper fuel mixture will cause serious engine damage. Since Toro oil is specially formulated, it has superior lubrication qualities, burns cleaner, promotes easy starts and prolongs engine life.

IMPORTANT: IN AN EMERGENCY, B.I.A. TC-W CERTIFIED OILS MAY BE SUBSTITUTED. NON B.I.A. APPROVED OILS HAVE NOT BEEN APPROVED FOR USE IN TORO PRODUCTS AND MAY VOID THE WARRANTY.

NEVER USE FOUR-CYCLE AUTOMOTIVE OILS, SUCH AS SAE 30 OR 10 W 30 BECAUSE ENGINE DAMAGE MAY OCCUR.

2. **GASOLINE** — THE TORO COMPANY STRONGLY RECOMMENDS THE USE OF CLEAN, FRESH UNLEADED REGULAR GASOLINE IN TORO GASOLINE POWERED PRODUCTS. UNLEADED GASOLINE BURNS CLEANER, EXTENDS ENGINE LIFE, AND PROMOTES GOOD STARTING BY REDUCING THE BUILD-UP OF COMBUSTION CHAMBER DEPOSITS. LEADED GASOLINE CAN BE USED IF UNLEADED IS NOT AVAILABLE.

BEFORE OPERATING

NOTE: NEVER USE METHANOL, GASOLINE CONTAINING METHANOL, GASOHOL CONTAINING MORE THAN 10% ETHANOL, GASOLINE ADDITIVES, PREMIUM GASOLINE, OR ETC. GAS BECAUSE ENGINE FUEL SYSTEM DAMAGE COULD RESULT.

3. MIXING — In an approved gasoline container, thoroughly mix prescribed amount of

gasoline and two-cycle oil (refer to Fuel Mixing Chart). DO NOT MIX FUEL IN ENGINE FUEL TANK. FOR BETTER MIXING, OIL SHOULD BE AT ROOM TEMPERATURE.

4. Fill mower fuel tank to within 1/4" to 1/2" (6 to 13mm) from top of tank, not the filler neck. Install fuel tank cap securely.

50:1

Fuel Mixing Chart

Toro two-cycle oil is available in easy mix four ounce pouches and eight ounce cans.

U.S. GALLON		IMPERIAL GALLON	
Gasoline	Oil	Gasoline	Oil
1 gallon	2.6 oz.	1 gallon	3 oz.
1½ gallons	4 oz. pouch	1½ gallons	4.5 oz.
2 gallons	5.2 oz.	2 gallons	6 oz.
2½ gallons	6.5 oz.	2½ gallons	7.5 oz.
3 gallons	8 oz. can	3 gallons	9 oz.

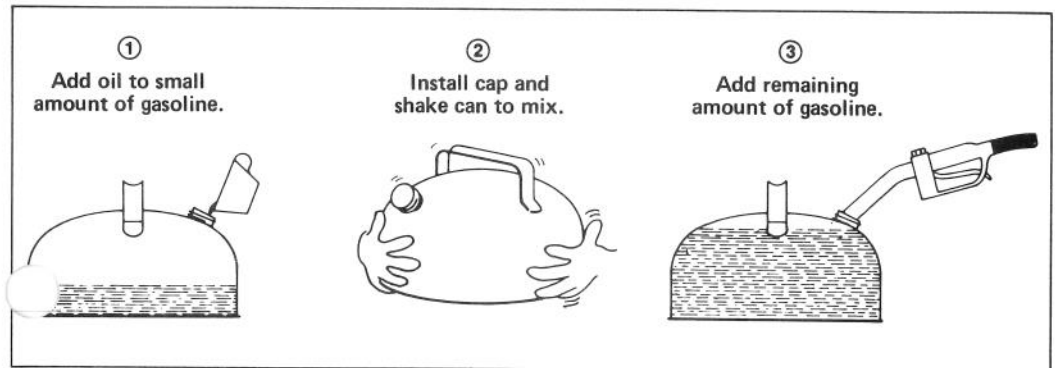


Figure 2

STARTING

1. If engine is remotely controlled, refer to equipment manufacturer's starting and operating instructions for control positions which correspond to the Toro engine's starting and operating positions.

2. Attach high tension wire to spark plug (Fig. 1).

3. Cover hole in center of Primer with thumb and push once (Fig. 3).

4. Pull recoil starter and regulate throttle as required.

5. To stop engine, move remote control on equipment to setting specified by manufacturer of equipment.



CAUTION

Assure equipment is in neutral and disengage clutches, belts and chains. Stay away from moving parts on engine and equipment.

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:

Residential Product 1 Year
Residential Products Used Commercially . . . 45 Days

The costs of parts and labor are included, but the customer pays the transportation costs. Just return any residential product to an Authorized TORO Service Dealer or TORO Distributor.

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

1. Contact any Authorized TORO Service Dealer, TORO Master Service Dealer, or TORO Distributor (the Yellow Pages of your telephone directory is a good reference source).
2. He will either instruct you to return the product to him or recommend another Authorized TORO Service outlet which might be more convenient.
3. Bring the product along with your original sales slip, or other evidence of purchase date, to the service dealer.
4. The servicing dealer will inspect the unit, advise you whether the product is defective and, if so, make all repairs necessary to correct the defect without extra charge to you.

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

Write:

TORO Consumer Service Department
8111 Lyndale Avenue South
Minneapolis, Minnesota 55420

The above remedy of product defects through repair by an Authorized TORO Service 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 operating condition is the responsibility of the owner.

All warranty repairs reimbursable under The Toro Promise must be performed by an Authorized TORO Service Dealer using Toro approved replacement parts.

Repairs or attempted repairs by anyone other than an Authorized TORO Service Account 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.

MAINTENANCE



CAUTION

Pull wire off spark plug before performing adjustments or maintenance. After engine has been run, stay away from muffler and nearby engine areas because they could be hot enough to cause burns.

SERVICING AIR CLEANING

Normally, clean air cleaner after every 50 operating hours. More frequent cleaning is required when mower is operated in dusty or dirty conditions.

1. Stop engine. Pull wire off spark plug (Fig. 3).

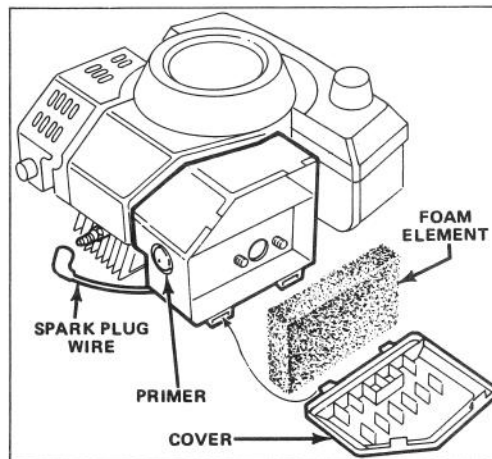


Figure 3

2. Lift tabs at top of air cleaner cover and pivot cover down. Clean cover thoroughly (Fig. 3).
3. If outside of foam element is dirty, remove it from air cleaner body (Fig. 3). Clean thoroughly.
 - A. WASH foam element in a solution of liquid soap and warm water. Squeeze to remove dirt. Do not twist because foam may tear.
 - B. DRY by wrapping in a clean rag. Squeeze rag and foam element to dry.
 - C. SATURATE element with 5 teaspoons (25 ml) of SAE 30 engine oil. Squeeze element to remove excess oil and to distri-

bute oil thoroughly. A damp element is desirable.

4. Install foam element and air cleaner cover.

IMPORTANT: Do not operate engine without air cleaner element because extreme engine wear and damage will likely result.

REPLACING SPARK PLUG

Use an NGKBP4MR4A spark plug or equivalent. Correct air gap is 0.032" (0.81 mm). Remove plug after every 25 operating hours and check its condition.

1. Stop engine and pull wire off spark plug.
2. Clean around spark plug and remove plug from cylinder head.

IMPORTANT: Replace a cracked, fouled or dirty spark plug. Do not sand blast, scrape or clean electrodes because engine damage could result from grit entering cylinder.

3. Set air gap (Fig. 4). Install correctly gapped spark plug and gasket seal. Tighten plug firmly to 10 ft-lb (13.6 N·m).

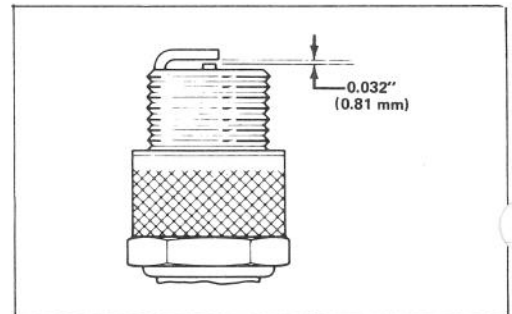


Figure 4

DRAINING FUEL

1. Stop engine and pull wire off spark plug.
2. Remove cap from fuel tank and use pump-type syphon to drain fuel into clean gas can.

Note: This is the only procedure recommended for draining fuel.

CLEANING COOLING SYSTEM

Clean dirt and chaff from cylinder, cylinder head fins and from around carburetor and linkage. Also

MAINTENANCE

remove debris from air intake slots on recoil housing. This will assure proper cooling and optimum engine performance.

CLEANING MUFFLER AND EXHAUST PORT

Clean end of muffler pipe and exhaust port after every 75 hours of operation.



CAUTION

Clean muffler and exhaust port only after engine and muffler are cool. A hot engine and muffler can cause burns.

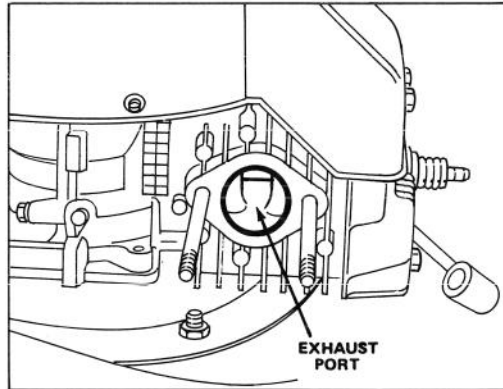


Figure 6

1. Use hard wood scraper and remove carbon from end of muffler pipe (Fig. 5).

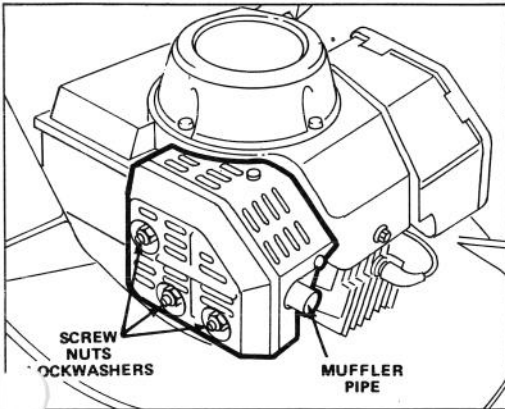


Figure 5

2. Remove screw and two nuts and lockwashers (Fig. 5). Slide muffler off mounting pins.
3. Pull wire off spark plug. Slowly pull recoil starter until piston covers exhaust port (Fig. 6).

4. Clean carbon from exhaust port (Fig. 6) with flat, hard wood scraper.

IMPORTANT: Do not use a metal scraper or similar object to clean exhaust port because accidental damage to the piston or cylinder could easily occur.

5. Install muffler with screw, two nuts and lockwashers (Fig. 5). After cleaning exhaust port make sure muffler gasket is still useable.

ENGINE STORAGE

1. Drain fuel: refer to Draining Fuel, page 4. Then run engine until all fuel is consumed. If fuel is not drained, gum-like varnish deposits will form and cause poor engine operation, even severe starting problems.

2. Remove spark plug and pour two teaspoons of Toro two-cycle oil into hole in cylinder. Pull starter rope slowly to coat inside of cylinder. Install spark plug, but do not tighten to specified setting. **DO NOT INSTALL WIRE ON SPARK PLUG.**