



Operator's Manual



**Curved Shaft,
2-Cycle Trimmer
Model
41AD-280G000**



IMPORTANT: Read safety rules and instructions carefully before operating equipment.

Warning: This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester is installed on this unit. A replacement spark arrester for the muffler is available through your nearest engine authorized service dealer or contact the service department, 550 N. 54th Street, Chandler, Arizona 85226-2434.

MTD SOUTHWEST INC 550 N. 54TH STREET, CHANDLER, ARIZONA 85226-2434

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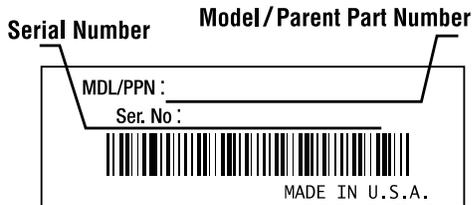
FINDING MODEL NUMBER

This Operator's Manual is an important part of your new trimmer. It will help you assemble, prepare and maintain the unit for best performance. Please read and understand what it says.



Before you start assembling your new equipment, please locate the model plate on the unit and copy the information from it to the space provided below. The information on the model plate is very important if you need help from our Customer Support Department or an authorized dealer.

- You can locate the model number by looking on the bottom side of the shaft housing next to the shaft grip. A sample model plate is explained below. For future reference, please copy the model number and the serial number of the equipment in the space below.



Copy the model / parent part number here: _____

Copy the serial number here: _____

CALLING CUSTOMER SUPPORT

If you have difficulty assembling this product or have any questions regarding the controls, operation or maintenance of this unit, please call the Customer Support Department.



Call 1- (800)-345-8746, or in Canada 1- (800)-668-1238, to reach a Customer Support representative. Please have your unit's model number and serial number ready when you call. See previous section to locate this information. You will be asked to enter the serial number in order to process your call.

SECTION 1: IMPORTANT SAFE OPERATION PRACTICES



This Symbol Points Out Important Safety Information Which, If Not Followed, Could Endanger The Personal Safety And/or Property Of Yourself And Others. Read And Follow All Instructions In This Manual Before Attempting To Operate Your Trimmer. Failure To Comply With These Instructions May Result In Personal Injury. When You See This Symbol—Heed Its Warning.



DANGER: Your unit was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious personal injury. This trimmer is capable of amputating hands and feet. Failure to observe the following instructions could result in serious injury or death.



WARNING: Engine Exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to State of California to cause cancer and birth defects or other reproductive harm.

READ ALL INSTRUCTIONS BEFORE OPERATING

- Read the instructions carefully. Be familiar with the controls and proper use of the unit.
- Do not operate this unit when tired, ill, or under the influence of alcohol, drugs, or medication.
- Children and teens under the age of 15 must not use the unit, except for teens guided by an adult.
- Inspect the unit before use. Replace damaged parts. Check for fuel leaks. Make sure all fasteners are in place and secure. Replace cutting attachment parts that are cracked, chipped, or damaged in any way. Make sure the cutting attachment is properly installed and securely fastened. Be sure the cutting attachment shield is properly attached, and positioned as recommended. Failure to do so can result in personal injury to the operator and bystanders, as well as damage to the unit.
- Use only 0.080 inch (2.03 mm) diameter genuine manufacturer's replacement line. Never use metal-reinforced line, wire, chain, or rope, etc. These can break off and become a dangerous projectile.
- Be aware of the risk of injury to the head, hands and feet.
- Clear the area to be cut before each use. Remove all objects such as rocks, broken glass, nails, wire, or string which can be thrown or become entangled in the cutting attachment. Clear the area of children, bystanders, and pets. At a minimum, keep all children, bystanders and pets outside a 50 feet (15 m) radius; there still may be a risk to bystanders from thrown objects. Bystanders should wear eye protection. If you are approached, stop the engine and cutting attachment immediately.
- Squeeze the throttle control and check that it returns automatically to the idle position. Make all adjustments or repairs before using unit.
- This unit was not designed to be used as a brushcutter. Do not attach or operate this unit with any type of brushcutting blade or brushcutting attachment.

SAFETY WARNINGS FOR GAS TRIMMERS

WARNING: Gasoline is highly flammable, and its vapors can explode if ignited. Take the following precautions:

- Store fuel only in containers specifically designed and approved for the storage of such materials.
- Always stop the engine and allow it to cool before filling the fuel tank. Never remove the cap of the fuel tank, or add fuel, when the engine is hot. Never operate the unit without the fuel cap securely in place. Loosen the fuel tank cap slowly to relieve any pressure in the tank.
- Add fuel in a clean, well-ventilated area outdoors where there are no sparks or flames. Slowly remove the fuel cap only after stopping engine. Do not smoke while fueling or mixing fuel. Wipe up any spilled fuel from the unit immediately.
- Avoid creating a source of ignition for spilled fuel. Do not start the engine until fuel vapors dissipate.
- Move the unit at least 30 feet (9.1 m) from the fueling source and site before starting the engine. Do not smoke, keep sparks and open flames from the area while adding fuel or operating the unit.

WHILE OPERATING

- Never start or run the unit inside a closed room or building. Breathing exhaust fumes can kill. Operate this unit only in a well ventilated area outdoors.
- Wear safety glasses or goggles that are marked as meeting ANSI Z87.1 standards, and ear/hearing protection when operating this unit. Wear a face or dust mask if the operation is dusty.
- Wear heavy, long pants, boots, gloves and a long sleeve shirt. Do not wear loose clothing, jewelry, short pants, sandals or go barefoot. Secure hair above shoulder level.
- The cutting attachment shield must always be in place while operating the unit. Do not operate unit without both trimming lines extended, and the proper line installed. Do not extend the trimming line beyond the length of the shield.

- This unit does not have a clutch. The cutting attachment continues to rotate when the engine is idling. To prevent injury, have the unit adjusted by an authorized service technician.
- Adjust the D-Handle to your size to provide the best grip.
- Be sure the cutting attachment is not in contact with anything before starting the unit.
- Use the unit only in daylight or good artificial light.
- Avoid accidental starting. Be in the starting position whenever pulling the starter rope. The operator and unit must be in a stable position while starting. See Starting/Stopping Instructions.
- Use the right tool. Only use this tool for the purpose intended.
- Do not overreach. Always keep proper footing and balance.
- Always hold the unit with both hands when operating. Keep a firm grip on both the front and rear handle or grips.
- Keep hands, face, and feet at a distance from all moving parts. Do not touch or try to stop the cutting attachment when it is rotating.
- Do not touch the engine, gear housing or muffler. These parts get extremely hot from operation. When turned off they remain hot for a short time.
- Do not operate the engine faster than the speed needed to cut, trim or edge. Do not run the engine at high speed when not cutting.
- Always stop the engine when cutting is delayed or when walking from one cutting location to another.
- If you strike or become entangled with a foreign object, stop the engine immediately and check for damage. Do not operate before repairing damage. Do not operate the unit with loose or damaged parts.
- Stop and switch the engine to off for maintenance, repair, or for changing the cutting attachment or other attachments.
- Use only replacement parts and accessories approved by the manufacturer for this unit. These are available from your authorized service dealer. Use of any non approved parts or accessories could lead to serious injury to the user, or damage to the unit, and void your warranty.
- Keep unit clean of vegetation and other materials. They may become lodged between the cutting attachment and shield.
- To reduce fire hazard, replace faulty muffler and spark arrestor, keep the engine and muffler free from grass, leaves, excessive grease or carbon build up.

OTHER SAFETY WARNINGS

- Never store the unit, with fuel in the tank, inside a building where fumes may reach an open flame or spark.
- Allow the engine to cool before storing or transporting. Be sure to secure the unit while transporting.
- Store the unit in a dry area, locked up or up high to prevent unauthorized use or damage, out of the reach of children.
- Never douse or squirt the unit with water or any other liquid. Keep handles dry, clean and free from debris. Clean after each use, see Cleaning and Storage instructions.
- Keep these instructions. Refer to them often and use them to instruct other users. If you loan someone this unit, also loan them these instructions.

SAVE THESE INSTRUCTIONS



WARNING – YOUR RESPONSIBILITY: Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine.



- **WARNING - READ OPERATOR'S MANUAL**

Read the Operator's Manual(s) and follow all warnings and safety instructions. Failure to do so can result in serious injury to the operator and/or bystanders.



- **WEAR EYE AND HEARING PROTECTION**

Thrown objects and loud noise can cause severe eye injury and hearing loss. Wear eye protection meeting ANSI Z87.1 standards and ear protection when operating this unit.



- **KEEP BYSTANDERS AWAY**

Keep all bystanders, especially children and pets, at least 50 feet (15 m) from the operating area.

5-7x



- **PRIMER BULB**

Push primer bulb, fully and slowly, 5 to 7 times.



- **UNLEADED FUEL**

Always use clean, fresh unleaded fuel.



- **OIL**

Refer to operator's manual for the proper type of oil.



- **THROWN OBJECTS CAN CAUSE SEVERE INJURY**

Do not operate unit without proper attachments and guards in place.



- **ON/OFF STOP CONTROL**

ON / START / RUN



- **ON/OFF STOP CONTROL**

OFF OR STOP



- **HOT SURFACE WARNING**

Do not touch a hot muffler, cylinder or gearbox. You may get burned. These parts get extremely hot from operation. When turned off they remain hot for a short time.



- **SHARP BLADE**

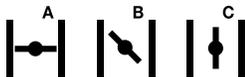
WARNING: Sharp blade on cutting attachment shield. To prevent serious injury, do not touch line cutting blade.



- **DO NOT USE BLADES**

WARNING: To prevent serious injury, do not attach or operate the unit with any type of blade.

- **CHOKE CONTROL**



A • FULL choke position.

B • PARTIAL choke position.

C • RUN position.



WARNING: The operation of any power tool can cause foreign objects to be thrown into your eyes. This can lead to severe eye damage. Before commencing power tool operation, always wear safety glasses or goggles that are marked as meeting ANSI Z87.1 standards, and a full face shield when needed.

SECTION 2: ASSEMBLING YOUR TRIMMER

Installing and Adjusting the D-Handle

NOTE: The bolt, washer and wing nut need to be removed from the D-handle before installing.

1. Push the D-handle down onto the shaft housing so that the handle slants towards the shaft grip. The squared bolt hole in the handle is to the right. See Figure 1.
2. Insert the shoulder bolt into the squared hole in the handle. Place the washer on the bolt, and screw the wing nut onto the bolt. Do not tighten until you make the handle adjustment.
3. Rotate the D-handle to place the grip above the top of the shaft housing. Place it a minimum of 6 inches (15.24 cm) from the end of the shaft grip.
4. While holding the unit in the operating position, position the D-handle to the location that provides you the best grip. See Figure 2.
5. Tighten the wing nut until the D-handle is secure.

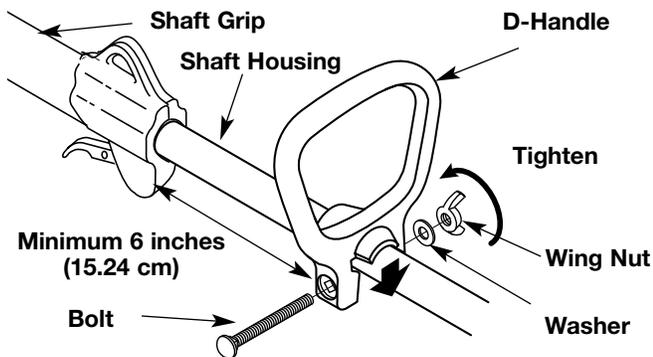


Figure 1



Figure 2

Installing the Cutting Attachment Shield

Use the following instructions if the cutting attachment shield on your unit is not installed.



WARNING: Never operate the trimmer without the cutting attachment shield in place to prevent serious personal injury.

1. Place the cutting attachment shield onto the shaft housing above the clamp assembly, See Figure 3.
2. Push the cutting attachment shield down to the top of the cutting attachment assembly and then rotate the cutting attachment shield until the screw holes align and the guard fits into the recessed pocket. See Figure 3.
3. Install the four (4) screws with a Phillips screwdriver. Tighten securely. See Figure 4.

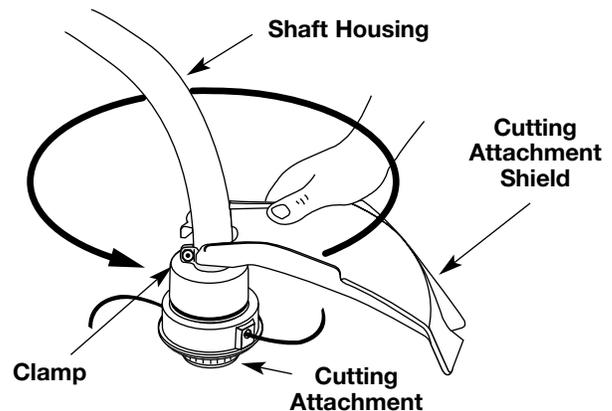


Figure 3

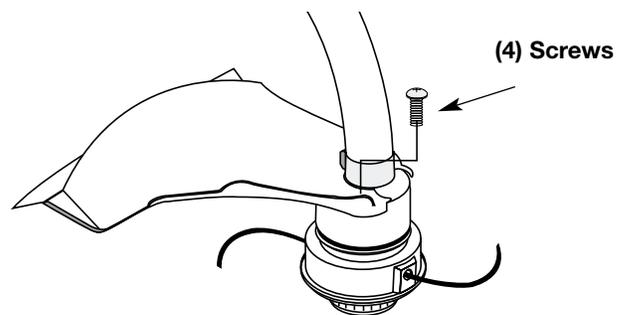


Figure 4

SECTION 3: KNOW YOUR TRIMMER

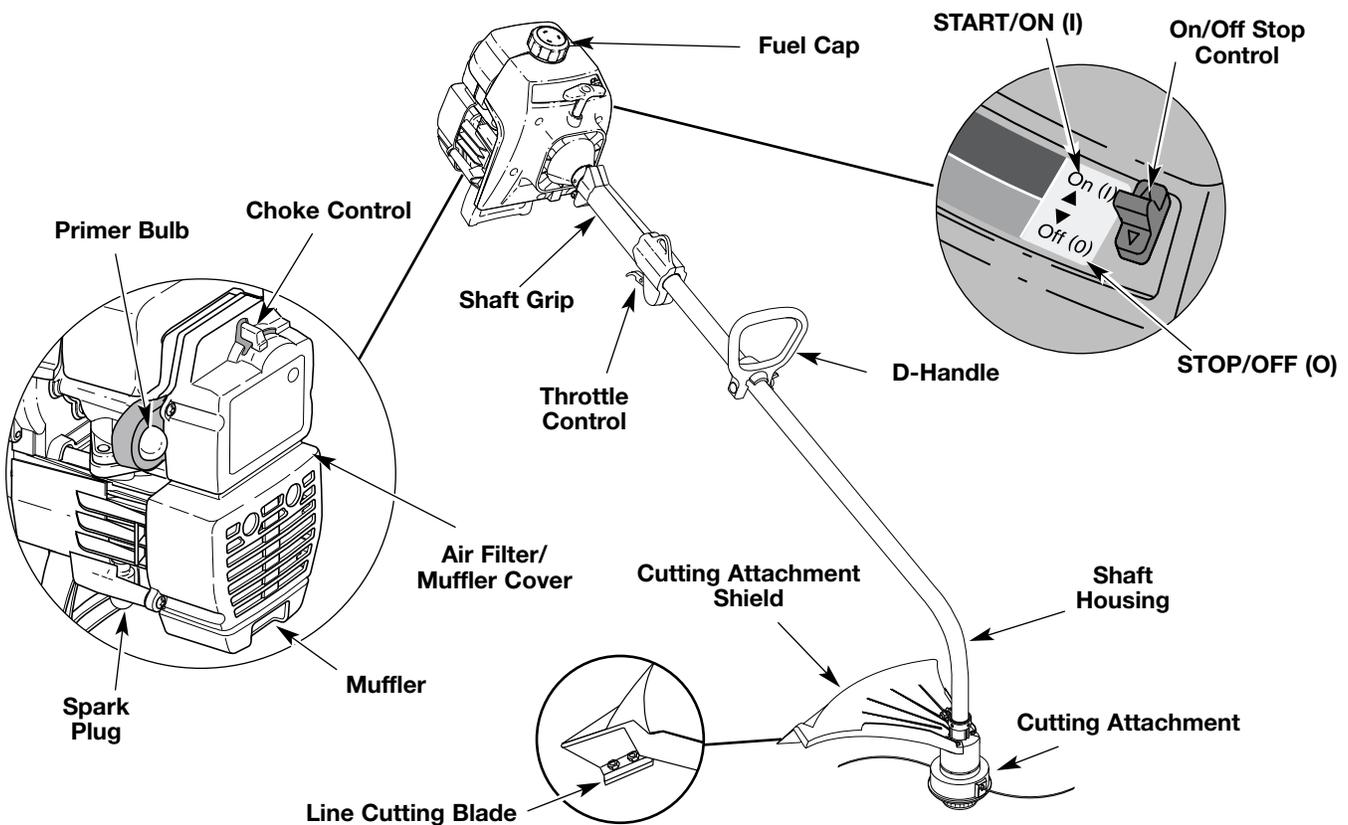


Figure 5

Read this operator's manual and safety rules before operating your trimmer. Compare illustrations in Figure 5 with your trimmer to familiarize yourself with the location of various controls and adjustments. Save this manual for future reference.

Application

Use this unit for cutting grass and light weeds. Also for edging and decorative trimming around trees, fences, etc.

Throttle Control

The throttle control trigger is located below shaft grip. It controls the engine speed. See Figure 5.

On/Off Stop Control

The On/Off Stop control switch is located on the left side mounting bracket. It is used to turn the unit on and off. The switch must be in the START position to start the unit. See Figure 5.

Choke Control

The choke control is located above the air filter/muffler cover. It is used to enrich the fuel mixture when starting a cold engine. See Figure 5.

Primer Bulb

The primer bulb is located to the left of the air filter/muffler cover. It is used to draw fuel into the carburetor when starting a cold engine or after refueling the unit. See Figure 5.

Shaft Grip and D-Handle

Used to grip the unit during operation. See Figure 5.

Cutting Attachment Shield

Protects operator from thrown debris. Contains line cut-off blade to make sure the line is not extended beyond its proper length. Cutting attachment shield must be installed at all times when using the cutting attachment. See Figure 5.

Cutting Attachment

Consists of a reel housing, reel, spring, Bump Knob, and cutting line. See Figure 5.

SECTION 4: OPERATING YOUR TRIMMER

Oil and Gas Mixing Instructions

Old and/or improperly mixed fuel are the main reasons for the unit not running properly. Be sure to use fresh, clean unleaded fuel. Follow the instructions carefully for the proper fuel/oil mixture.

Definition of Blended Fuels

Today's fuels are often a blend of gasoline and oxygenates such as ethanol, methanol or MTBE (ether). Alcohol-blended fuel absorbs water. As little as 1% water in the fuel can make fuel and oil separate. It forms acids when stored. When using alcohol-blended fuel, use fresh fuel (less than 60 days old).

Using Blended Fuels

If you choose to use a blended fuel, or its use is unavoidable, follow recommended precautions.

- Always use fresh fuel mix per your operator's manual.
- Use the fuel additive STA-BIL® or an equivalent.
- Always agitate the fuel mix before fueling the unit.
- Drain the tank and run the engine dry before storing the unit.

Using Fuel Additives

The use of fuel additive, such as STA-BIL® Gas Stabilizer or an equivalent, will inhibit corrosion and minimize the formation of gum deposits. Using a fuel additive can keep fuel from forming harmful deposits in the carburetor for up to six (6) months. Add 0.8 oz. (23 ml) of fuel additive per gallon of fuel according to the instructions on the container. NEVER add fuel additives directly to the unit's fuel tank.



CAUTION: For proper engine operation and maximum reliability, pay strict attention to the oil and fuel mixing instructions on the 2-cycle oil container. Using improperly mixed fuel can severely damage the engine.

Thoroughly mix the proper ratio of 2-cycle engine oil with unleaded gasoline in a separate fuel can. Use a 32:1 fuel/oil ratio. Do not mix them directly in the engine fuel tank. See Figure 6 for specific gas and oil mixing ratios.

NOTE: Two gallons (7.6 liters) of unleaded gasoline mixed with one 8 oz. (236 ml) bottle of Arnold 2 Cycle Oil makes a 32:1 fuel/oil ratio OR one gallon (3.8 liters) of unleaded gasoline mixed with one 4 oz. (120 ml) bottle of Arnold 2 Cycle Oil makes a 32:1 fuel/oil ratio.



+



UNLEADED GAS

ARNOLD 2 CYCLE OIL

2 US. GALLONS
(7.6 LITERS)

+ 8.0 FL. OZ.
(236 ml)

OR

1 US. GALLON
(3.8 LITERS)

+ 4.0 FL. OZ.
(120 ml)

MIXING RATIO - 32:1

Figure 6



WARNING: Gasoline is extremely flammable. Ignited Vapors may explode. Always stop the engine and allow it to cool before filling the fuel tank. Do not smoke while filling the tank. Keep sparks and open flames at a distance from the area.



WARNING: Remove fuel cap slowly to avoid injury from fuel spray. Never operate the unit without the fuel cap securely in place.



WARNING: Add fuel in a clean, well ventilated area outdoors. Wipe up any spilled fuel immediately. Avoid creating a source of ignition for spilt fuel. Do not start the engine until fuel vapors dissipate.

NOTE: Dispose of the old fuel/oil mix in accordance to Federal, State, and Local regulations.

Starting Engine



WARNING: Avoid accidental starting. Be in the starting position when pulling the starter rope. See Figure 9. The operator and unit must be in a stable position while starting to avoid serious personal injury.



WARNING: Operate this unit only in a well ventilated area outdoors. Carbon monoxide exhaust fumes can be lethal in a confined area.

1. Mix gas with oil. Fill fuel tank with fuel/oil mixture. See Oil and Gas Mixing Instructions.
2. Put the On/Off Stop Control in the START (I) position. See Figure 7.
3. Fully press and release primer bulb slowly 5 to 7 times. Fuel should be visible in the bulb. If fuel is not visible, press three (3) more times, or until it is. See Figure 8.
4. Place the choke lever in the FULL choke position (A |←|). See Figure 8.
5. With the unit on the ground, squeeze the throttle control and pull starter rope briskly. See Figure 9. Continue pulling until the engine sounds as though it wants to run (normally 2 to 5 pulls).

NOTE: Squeeze the throttle control until the engine has started and warmed up.

6. Place the choke lever in the PARTIAL choke position (B |↘|). See Figure 8.

NOTE: The unit will not run in the FULL choke position (A |←|).

7. Pull starter rope briskly 1 to 3 times to start the engine. See Figure 9.
8. If the engine does not start, repeat steps 4 through 7.

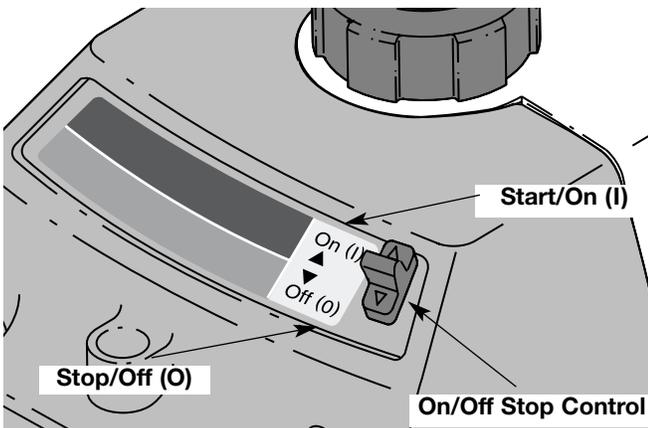


Figure 7

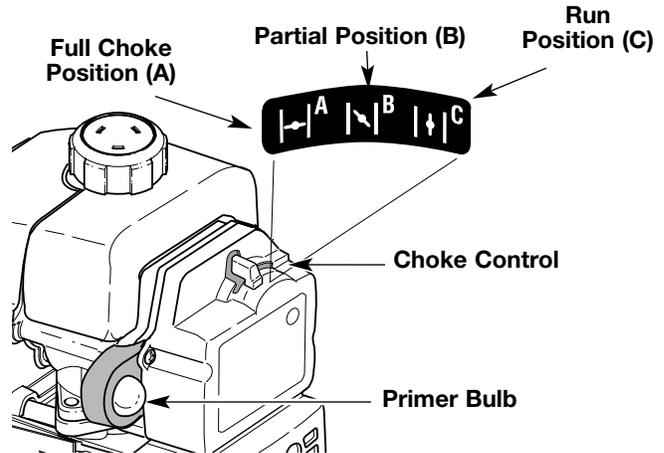


Figure 8

NOTE: If the engine floods while trying to start, place the choke lever in the RUN position (C |→|). Squeeze the throttle control. Pull the starter rope briskly. The engine should start within three (3) to eight (8) pulls.

9. Squeeze the throttle control to warm up engine for 5 to 10 seconds. Place the choke lever in the RUN position (C |→|). See Figure 8.

NOTE: Choking is unnecessary when starting a warm engine. Put the On/Off Stop Control in the START (I) position and start in PARTIAL Choke position (B |↘|). See Figures 7 and 8.

To Stop Engine

1. Release your hand from the throttle control. See Figure 9. Allow the engine to cool down by idling.
2. Put the On/Off Stop Control in the STOP (O) position. See Figure 8.

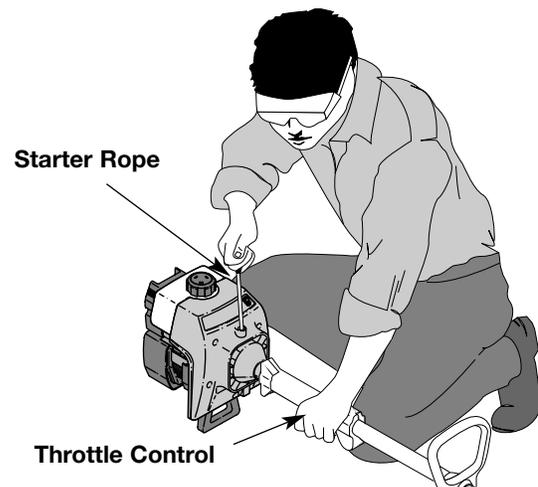


Figure 9

Using Your Trimmer



WARNING: Dress properly to reduce the risk of injury when operating this unit. Do not wear loose clothing or jewelry. Wear eye and ear/hearing protection. Wear heavy, long pants, boots and gloves. Do not wear short pants, sandals or go barefoot.

Before operating the unit, stand in the operating position. See Figure 10. Check for the following:

- The operator is wearing eye protection and proper clothing.
- The right arm is slightly bent, and the hand is holding the shaft grip.
- The left arm is straight, and the hand is holding the D-Handle.
- The unit is at waist level.
- The cutting attachment is parallel to the ground and easily contacts the vegetation to be cut without the operator having to bend over.



Figure 10

Adjusting Trimming Line Length

The Bump Head™ cutting attachment allows you to release trimming line without stopping the engine. To release more line, lightly tap the cutting attachment on the ground while operating the trimmer at high speed. See Figure 11.

NOTE: Always keep the trimming line fully extended. Line release becomes more difficult as cutting line becomes shorter

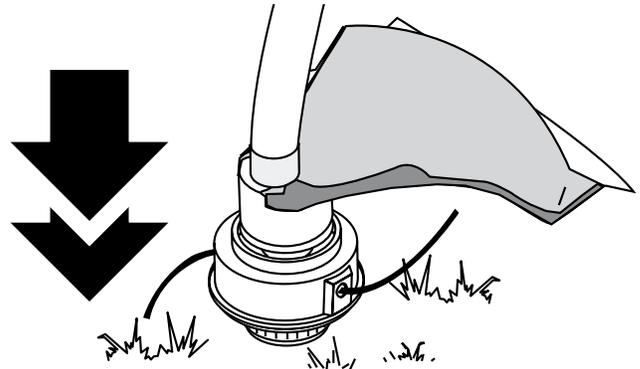


Figure 11

Each time the head is bumped, about 1 inch (25.4 mm) of trimming line is released. A blade in the cutting attachment shield will cut the line to the proper length if excess line is released.

For best results, tap the Bump Head™ on bare ground or hard soil. If line release is attempted in tall grass, the engine may stall. Always keep the trimming line fully extended. Line release becomes more difficult as the cutting line becomes shorter.

NOTE: Do not rest the Bump Head™ on the ground while the unit is running .



CAUTION: Do not remove or alter the line cutting blade assembly. Excessive line length will make the unit overheat. This may lead to serious personal injury or damage to the unit.

Some line breakage will occur from:

- Entanglement with foreign matter
- Normal line fatigue
- Attempting to cut thick, stalky weeds
- Forcing the line into objects such as walls or fence posts

Tips for Best Trimming Results

- Keep the cutting attachment parallel to the ground.
- Do not force the cutting attachment. Allow the tip of the line to do the cutting, especially along walls. Cutting with more than the tip will reduce cutting efficiency and may overload the engine.
- Cut grass over 8 inches (200 mm) by working from top to bottom in small increments to avoid premature line wear or engine drag.
- Cut from left to right whenever possible. Cutting to the right improves the unit's cutting efficiency. Clippings are thrown away from the operator.
- Slowly move the trimmer into and out of the cutting area at the desired height. Move either in a forward-backward or side-to-side motion. Cutting shorter lengths produces the best results.
- Trim only when grass and weeds are dry.
- The life of your cutting line is dependent upon;
 - Following the previous trimming techniques
 - What vegetation is being cut
 - Where it's being cut

For example, the line will wear faster when trimming against a foundation wall as opposed to trimming around a tree.

Decorative Trimming

Decorative trimming is accomplished by removing all vegetation around trees, posts, fences, etc.

Rotate the whole unit so that the cutting attachment is at a 30° angle to the ground. See Figure 12.

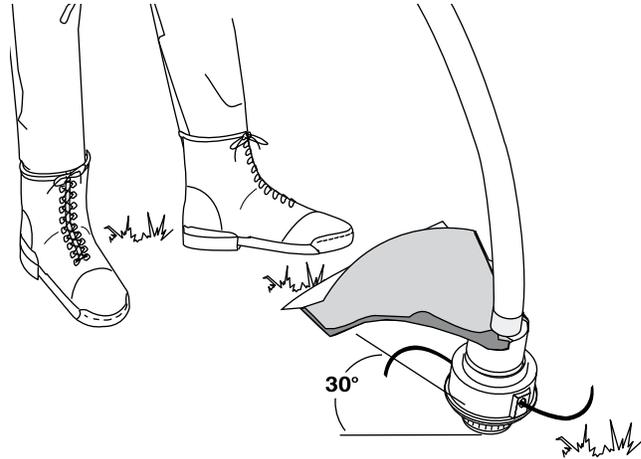


Figure 12

SECTION 5: MAKING ADJUSTMENTS

Carburetor Adjustments



WARNING: If any adjustments are made to the engine while the engine is running (e.g. carburetor), keep clear of all moving parts. Be careful of heated surfaces and muffler.

The idle speed adjuster of the engine is adjustable through the air filter/muffler cover. See Figure 13.

NOTE: Careless adjustments can seriously damage your unit. An authorized service dealer should make carburetor adjustments.

Check Fuel Mixture

Old and/or improperly mixed fuel is usually the reason for the unit not running properly. Drain and refill the tank with fresh, properly mixed fuel prior to making any adjustments. Refer to OPERATING YOUR TRIMMER in Section 4.

Clean Air Filter

The condition of the air filter is important to the operation of the unit. A dirty air filter will restrict air flow and change the air/fuel mixture. This is often mistaken for an out of adjustment carburetor. Check the condition of the air filter before adjusting the idle speed adjuster. Refer to MAINTAINING YOUR TRIMMER in Section 6.

Adjusting Idle Speed



WARNING: This unit will need to be running during idle speed adjustment. Wear protective clothing and observe all safety instructions to prevent serious personal injury.

If after checking the fuel mixture and cleaning the air filter the engine still will not idle, adjust the idle speed screw as follows.

1. Start the engine and let it run about 2-3 minutes at a high idle to warm up. Refer to OPERATING YOUR TRIMMER in Section 4.
2. Release the throttle control and let the engine idle. If the engine stops, insert a small phillips or flat blade screwdriver into the hole in the air filter/muffler cover. Turn the idle speed screw in, clockwise, 1/8 of a turn at a time (as needed) until the engine idles smoothly. See Figure 13.

3. If the unit appears to be idling too fast, turn the idle speed adjuster counterclockwise 1/8 of a turn at a time (as needed), to reduce idle speed.

NOTE: If a tachometer is available, set idle speed to RPM specifications.

Checking the fuel mixture, cleaning the air filter, and adjusting the idle speed screw should solve most engine problems.

If not and:

- The engine will not idle,
- The engine hesitates or stalls on acceleration,
- There is a loss of engine power,

have the carburetor adjusted by an authorized service dealer.



WARNING: When the unit is turned off make sure the cutting attachment has stopped before the unit is set down to prevent serious personal injury.

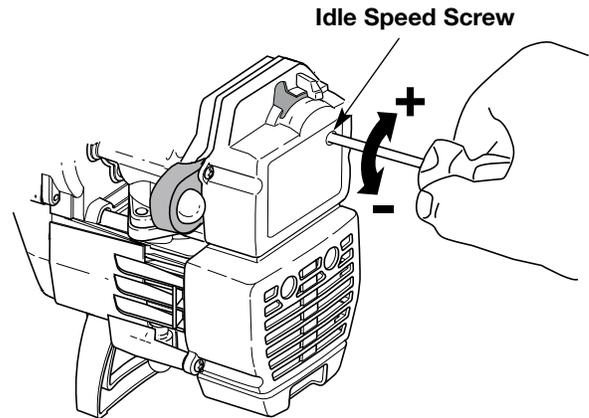


Figure 13

Engine Specifications

Engine TypeAir-Cooled, 2-Cycle
Displacement 31cc
Idle Speed R.P.M. 3,400-4,400 rpm
Operating R.P.M. 6,600-8,000 rpm
Fuel/Oil Mixture Ratio. 32:1

Unit Weight

(No fuel, with cutting attachment, cutting attachment shield and D-handle) ... 9.5 lbs. (4.31 kg)

SECTION 6: MAINTAINING YOUR TRIMMER

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

Before Starting Engine

Every 10 Hours

Every 50 Hours or Seasonal

MAINTENANCE REQUIRED

Fill fuel tank with correct oil and fuel mixture.

Clean and re-oil air filter.

Check spark plug condition and gap.



WARNING: To avoid serious personal injury, always turn the unit off, allow it to cool and disconnect the spark plug before you clean or perform any maintenance on it.

Trouble Shooting

Refer to the trouble shooting chart for more information.

Engine

IMPORTANT: Never run your engine without air cleaner completely assembled.

Air Filter Maintenance

1. Place the choke control in the PARTIAL choke position (B).

NOTE: The choke control must be in the PARTIAL choke position (B) to remove the air filter/muffler cover. See Figure 14.

2. Remove the four (4) screws securing the air filter/muffler cover. See Figure 14. Use a flat blade or # T20 Torx bit screwdriver.
3. Pull the cover from the engine. Do not force.
4. Remove the air filter from behind the air filter/muffler cover. See Figure 15.
4. Wash the filter in detergent and water. Rinse the filter thoroughly. Squeeze out excess water. Allow it to dry completely.
5. Apply enough clean SAE 30 oil to lightly coat the filter. See Figure 16.
6. Squeeze the filter to spread and remove excess oil. See Figure 16.
7. Replace the air filter inside the air filter/muffler cover. See Figure 15.

NOTE: Operating the unit without the air filter and air filter/muffler cover assembly, will VOID the warranty.

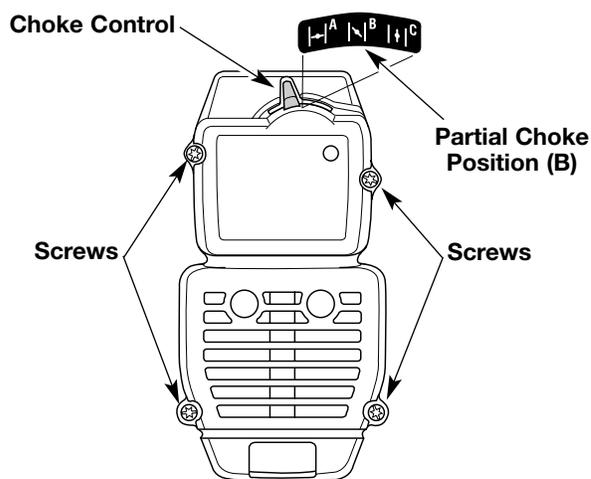


Figure 14

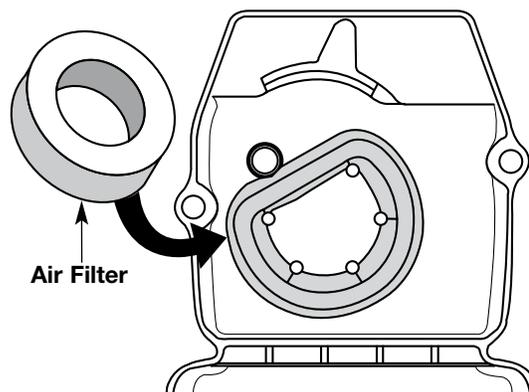


Figure 15

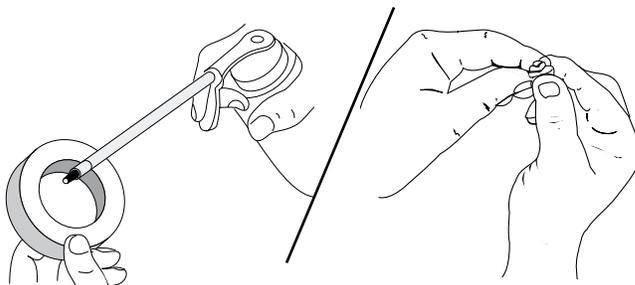


Figure 16

- Place the air filter/muffler cover over the back of the carburetor and muffler.

NOTE: The choke control must be in the *PARTIAL choke position (B)* to install the air filter/muffler cover. See Figure 14.

- Insert the four (4) screws into the holes in the air filter/muffler cover and tighten. See Figure 14. Use a flat blade or # T20 Torx bit screwdriver. Do not over tighten. Do not force.

Replacing The Spark Plug

Use a Champion RDJ7Y spark plug (or equivalent). The correct air gap is 0.020 inch (0.5 mm). Remove the plug after every 50 hours of operation to check its condition.

- Stop the engine and allow it to cool. Grasp the plug wire firmly and pull the cap from the spark plug.
- Clean dirt from around the spark plug. Remove the spark plug from the cylinder head by turning a 5/8 in. socket counterclockwise.

NOTE: Replace cracked, fouled or dirty spark plug.

- Set the air gap at 0.020 inch (0.5 mm) using a feeler gauge. See Figure 17.



CAUTION: Do not sand blast, scrape, or clean electrodes. Grit in the engine could damage the cylinder.

- Install a correctly gapped spark plug in the cylinder head. Tighten by turning the 5/8 inch socket clockwise until snug.

If using a torque wrench torque to;

110-120 in.·lb. (12.3-13.5 N·m).

Do not over tighten.

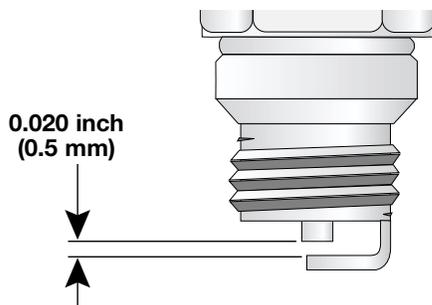


Figure 17

Line Installation

This section covers both SplitLine™ and standard single line installation.

Always use manufacturer's 0.080 inch (2.03 mm) replacement line. Line other than specified may make the engine overheat or fail.



WARNING: Never use metal-reinforced line, wire, chain, or rope, etc. These can break off and become a dangerous projectile.

There are two methods to replace the trimming line.

- Wind the inner reel with new line
- Install a rewound inner reel

Winding the Existing Inner Reel

- Hold the outer spool with one hand and unscrew the Bump Knob counterclockwise. Inspect the bolt inside the Bump Knob to make sure it moves freely. Replace the Bump Knob if damaged. See Figure 18.
- Remove the inner reel from the outer spool. See Figure 19.
- Remove spring from the inner reel. See Figure 19.
- Use a clean cloth to clean the the inner reel, spring, shaft, and inner surface of the outer spool.
- Check the indexing teeth on the inner reel and outer spool for wear. If necessary, remove burrs or replace the reel and spool. See Figure 20.

NOTE: SplitLine™ can only be used with the inner reel with the slotted holes. Single line can be used on either type of inner reel. Use figure 21 to identify the inner reel you have.

NOTE: Always use the correct line length when installing trimming line on the unit. The line may not release properly if the line is too long.

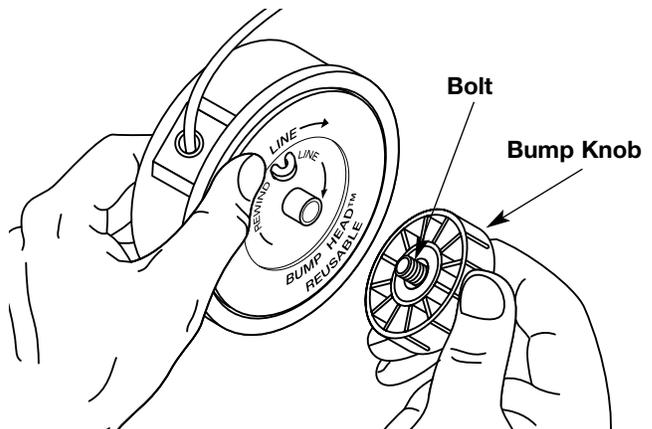


Figure 18

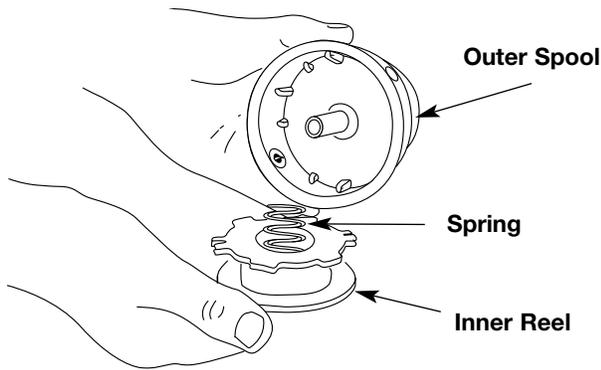


Figure 19

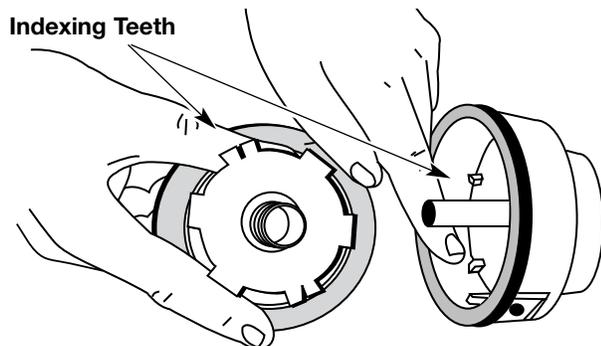


Figure 20

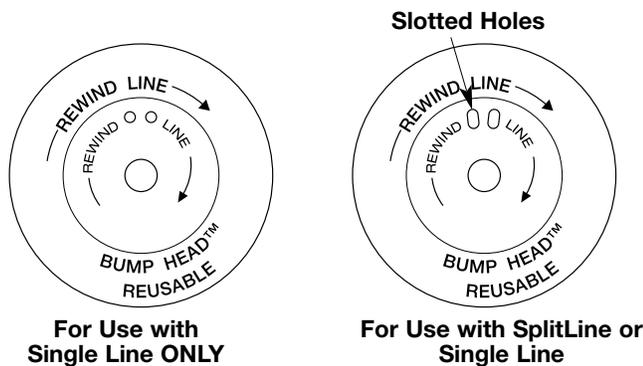


Figure 21

Single Line Installation

Go To Step 8 for SplitLine™ Installation

- Take approximately 25 feet (7.6 m) of new trimming line, loop it into two equal lengths. Insert each end of the line through one of the two holes in the inner reel. Pull the line through the inner reel so that the loop is as small as possible. See Figure 22.
- Wind the lines in tight even layers, onto the reel. Wind the line in the direction indicated on the inner reel. Place your index finger between the two lines to stop the lines from overlapping. Do not overlap the ends of the line. See Figure 23. Proceed to step 11.

SplitLine™ Installation

- Take approximately 12 feet (3.65 m) of new trimming line. Insert one end of the line through one of the two holes in the inner reel. Pull the line through the inner reel until only about 4 inches is left out. See Figure 24.
- Insert the end of the line into the open hole in the inner reel and pull the line tight to make the loop as small as possible, See Figure 24.
- Before winding, split the line back about 6 inches.
- Wind the line in tight even layers in the direction indicated on the inner reel.

NOTE: Failure to wind the line in the direction indicated will cause the cutting attachment to operate incorrectly.

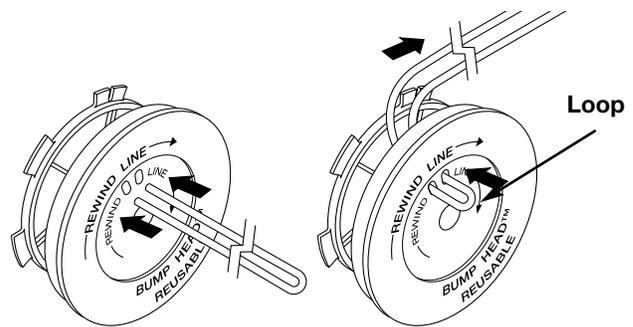


Figure 22

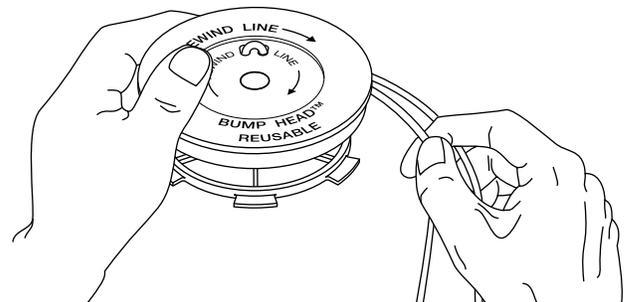


Figure 23

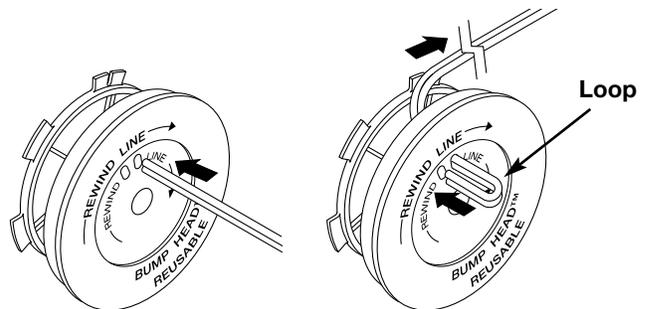


Figure 24

12. Insert the ends of the line into the two holding slots. See Figure 25.
13. Insert the ends of the line through the eyelets in the outer spool and place inner reel with spring inside the outer spool. See Figure 26. Push the inner reel and outer spool together. While holding the inner reel and outer spool together, grasp the ends and pull firmly to release the line from the holding slots in the spool.

NOTE: *The spring must be assembled on the inner reel before reassembling the cutting attachment.*

14. Hold the inner reel in place and install the Bump Knob by turning clockwise. Tighten securely.

Installing a Rewound Reel

1. Hold the outer spool with one hand and unscrew the Bump Knob counterclockwise. Inspect the bolt inside the Bump Knob to make sure it moves freely. Replace the Bump Knob if damaged. See Figure 18.
2. Remove the old inner reel from the outer spool. See Figure 19.
3. Remove the spring from the old inner reel. See Figure 19.
4. Place the spring in the new inner reel.

NOTE: *The spring must be assembled on the inner reel before reassembling the cutting attachment.*

5. Insert the ends of the line through the eyelets in the outer spool. See Figure 26.

6. Place the new inner reel inside the outer spool. Push the inner reel and outer spool together. While holding the inner reel and outer spool, grasp the ends and pull firmly to release the line from the holding slots in the spool.
7. Hold the inner reel in place and install the Bump Knob by turning clockwise. Tighten securely.

Replacement Parts:

Refer to PARTS LIST in Section 9.

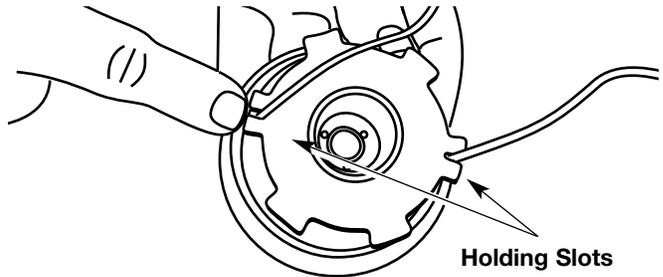


Figure 25

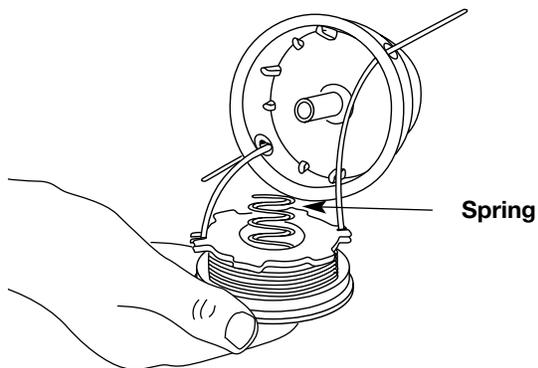


Figure 26

SECTION 7: OFF SEASON STORAGE

If the unit will be stored for an extended time,

1. Drain all fuel from the fuel tank into a container. Do not use fuel that has been stored for more than 60 days. Dispose of the old fuel in accordance to local regulations.
2. Start the engine and allow it to run until it stalls. This ensures that all fuel has been drained from the carburetor.
3. Allow the engine to cool. Remove the spark plug and put 1 oz. (30 ml) of high quality motor oil into the cylinder. Pull the starter rope slowly to distribute the oil. Reinstall the spark plug.

NOTE: *Remove the spark plug and drain all of the oil from the cylinder before attempting to start the unit after storage.*

4. Thoroughly clean the unit and inspect for any loose or damaged parts. Repair or replace damaged parts and tighten loose screws, nuts or bolts.

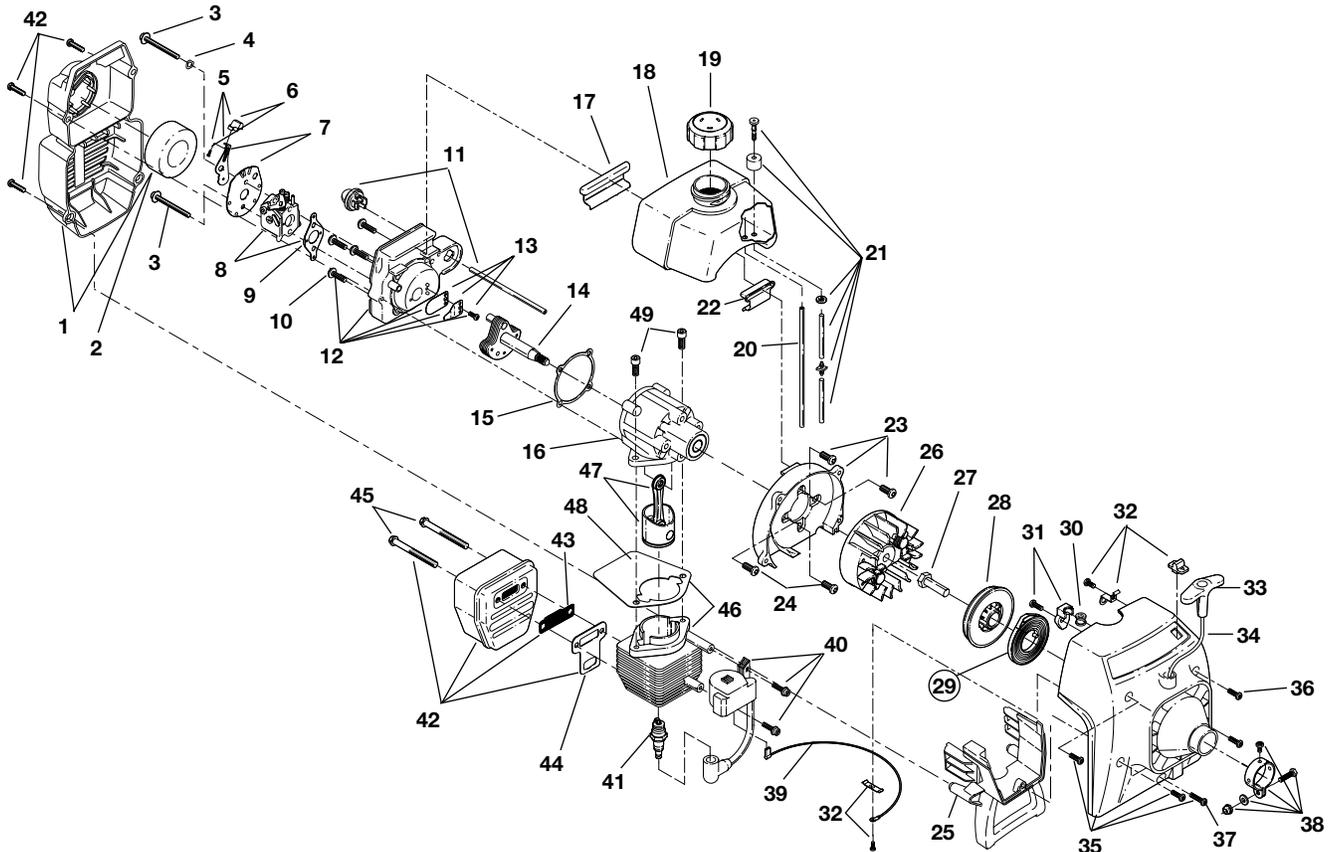
The unit is ready for storage.

- Never store the unit with fuel in the tank where fumes may reach an open flame or spark.
- Allow the engine to cool before storing.
- Store the unit in a locked up area to prevent unauthorized use or damage.
- Store the unit in a dry, well ventilated area. Do not store next to corrosive materials, such a fertilizer.
- Store the unit out of the reach of children.

SECTION 8: TROUBLE SHOOTING GUIDE

Trouble	Possible Cause(s)	Corrective Action
ENGINE WILL NOT START	On/Off Stop Control in the STOP position Empty fuel tank Primer bulb wasn't pressed enough Engine flooded Old or improperly mixed fuel Fouled spark plug	Turn the On/Off Stop Control to START Fill fuel tank Press primer bulb fully and slowly 5-7 times Use starting procedure with choke control in the RUN position Drain fuel tank / Add fresh fuel mixture Replace or clean the spark plug
ENGINE WILL NOT IDLE	Air Filter is Plugged Old or improperly mixed fuel Improper carburetor adjustment	Replace or clean the air filter Drain fuel tank / Add fresh fuel mixture Refer to MAKING ADJUSTMENTS, Section 5.
ENGINE WILL NOT ACCELERATE	Old or improperly mixed fuel Improper carburetor adjustment	Drain fuel tank / Add fresh fuel mixture Refer to MAKING ADJUSTMENTS, Section 5.
ENGINE LACKS POWER OR STALLS WHEN UNDER LOAD	Old or improperly mixed fuel Improper carburetor adjustment	Drain fuel tank / Add fresh fuel mixture Refer to MAKING ADJUSTMENTS, Section 5.
CUTTING ATTACHMENT WILL NOT ADVANCE LINE	Cutting attachment bound with grass Cutting attachment out of line Inner reel bound up Cutting head dirty Line welded Line twisted when refilled Not enough line is exposed	Stop the engine and clean cutting attachment Refill with new line Replace the inner reel Clean inner reel and outer spool Disassemble, remove the welded section and rewind the line Disassemble and rewind the line Push the Bump Knob and pull out line until 4 inches (102 mm) of line is outside of the cutting attachment

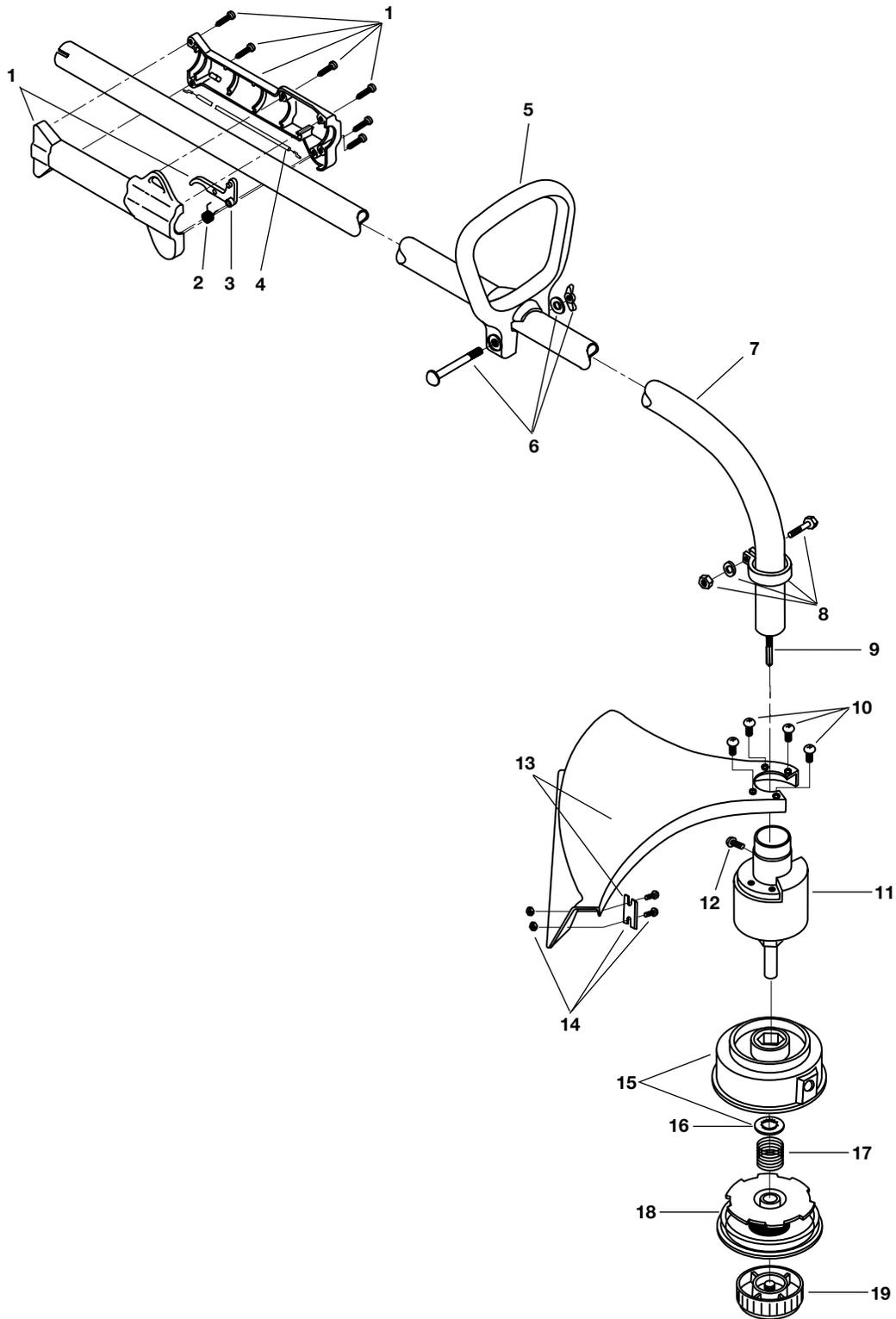
SECTION 9: PARTS LIST FOR MODEL 41AD-280G000



MODEL 41AD-280G000

Ref. No.	Part No.	Part Description	Ref. No.	Part No.	Part Description
1	182059	Air Cleaner/Muffler Cover Assembly (includes 2 & 42)	31	181889	Pulley Retainer Assembly
2	180350	Air Cleaner Filter	32	182827	Switch Assembly (includes 39)
3	181345	Carburetor Mounting Screw Assembly	33	181079	Pull Handle
4	180226	Wavey Washer	34	613103	Rope
5	182160	Choke Lever Assembly (includes 6)	35	182828	Starter Housing Assembly (includes 28-34 & 39)
6	182161	Choke Knob and Screw	36	181862	Housing Screw
7	182162	Choke Lever and Plate (includes 5)	37	181345	Cover Screw
8	182062	Carburetor Assembly W/Limiter Caps (includes 9 & 21)	38	153597	Upper Clamp Assembly
9	610675	Carburetor Gasket	39	180036	Wire Lead
10	181860	Carb Mount Screw	40	181937	Module Assembly
11	182616	Primer and Hose Assembly	41	610311	Spark Plug
12	182063	Carb Mount Assembly (includes 10 & 15)	42	182066	Muffler Assembly (includes 43-45)
13	684451	Reed Assembly	43	182747	Spark Arrestor
14	181866	Power Shaft Assembly	44	182065	Exhaust Gasket
15	612115	Carburetor Mount Gasket	45	147575	Muffler Mounting Bolt Assembly
16	181865	Crank Case Service Assembly (includes 10, 14 & 24)	46	181622	Cylinder Assembly (includes 48 & 49)
17	612134	Rear Mounting Pad	47	684449	Piston and Rod Assembly
18	181152	Fuel Tank Assembly (includes 19-21)	48	610674	Cylinder Gasket
19	180000	Fuel Cap Assembly	49	182505	Cylinder Bolt
20	181168	Fuel Return Line	*	182067	Engine Gasket Kit
21	682039	Fuel Line Assembly	*	180602	O.E.M. Carburetor Repair Kit (Walbro)
22	145308	Front Mounting Pad	*	180090	O.E.M. Carburetor Repair Kit (Zama)
23	153520	Shroud Assembly	*	181069	Gasket Diaphragm Repair Kit (Walbro)
24	181861	Shroud Screw	*	180091	Gasket Diaphragm Repair Kit (Zama)
25	182064	Shroud Extension and Stand	*	180530	Piston Ring
26	181867	Flywheel Assembly	*	182792	Short Block Assembly (includes 10, 14, 16, 24, 41, 46-49)
27	610303	Square Nut Drive	*	181501	Starter Housing Screw Set
28	181597	Recoil Pulley Assembly	*	610309	Crankcase Seal
29	613102	Recoil Spring			
30	611061	Rope Guide	*	Not Shown	

MODEL 41AD-280G000



MODEL 41AD-280G000

Optional Accessories

Ref. No.	Part No.	Part Description	Ref. No.	Part No.	Part Description
1	182093	Throttle Housing and Trigger Assembly (includes 2 & 3)	*	610375	Replacement Line, 0.80 Diameter
2	610314	Throttle Trigger Spring	*	153577	Reel and Line Assembly
3	180975	Throttle Trigger	*	180897	Bump Head Assembly (includes 15-19)
4	182068	Throttle Cable Assembly	*	682075	Shoulder Strap Assembly
5	145819	D-Handle Assembly	*	182780	Arnold 2-Cycle Oil
6	181587	D-Handle Hardware	*	not shown	
7	181893	Drive Shaft Housing Assembly			
8	153597	Lower Clamp Assembly			
9	682064	Flexible Drive Shaft			
10	180531	Shield Mounting Screw			
11	181784	Bushing Housing Assembly with Spool Shaft			
12	145569	Anti-Rotation Screw			
13	683274	Shield and Blade Assembly (includes 14)			
14	682061	Blade Assembly			
15	153619	Outer Spool and Eyelet Assembly (includes 16)			
16	610660	Retainer			
17	610317	Spring			
18	610318	Inner Reel			
19	153066	Bump Head Knob Assembly			

MANUFACTURER'S LIMITED WARRANTY FOR:



The limited warranty set forth below is given by MTD SOUTHWEST INC ("MTD") with respect with new merchandise purchased and used in the United States, its possessions and territories.

MTD warrants this product against defects in material and workmanship for a period of two (2) years commencing on the date of original purchase and will, at its option, repair or replace, free of charge, any part found to be defective in material or workmanship. This limited warranty shall only apply if this product has been operated and maintained in accordance with the Operator's Manual furnished with the product, and has not been subject to misuse, abuse, commercial use, neglect, accident, improper maintenance, alteration, vandalism, theft, fire, water or damage because of other peril or natural disaster. Damage resulting from the installation or use of any accessory or attachment not approved by MTD for use with the product(s) covered by this manual will void your warranty as to any resulting damage. This warranty is limited to ninety (90) days from the date of original retail purchase for any MTD product that is used for rental or commercial purposes, or any other income-producing purpose.

HOW TO OBTAIN SERVICE: Warranty service is available, WITH PROOF OF PURCHASE THROUGH YOUR LOCAL AUTHORIZED SERVICE DEALER. To locate the dealer in your area, please check for a listing in the Yellow Pages or contact the Customer Service Department of MTD SOUTHWEST INC by calling 1-800-345-8746 or writing to 550 N. 54th Street, Chandler, Arizona 85226 or if in Canada call 1-800-668-1238. No product returned directly to the factory will be accepted unless prior written permission has been extended by the Customer Service Department of MTD SOUTHWEST INC.

This limited warranty does not provide coverage in the following cases:

- A. Tune-ups - Spark Plugs, Carburetor Adjustments, Filters.
- B. Wear items - Bump Knobs, Outer Spools, Cutting Line, Inner Reels, Starter Pulley, Starter Ropes, Drive Belts.
- C. MTD does not extend any warranty for products sold or exported outside of the United States of America, its possessions and territories, except those sold through MTD's authorized channels of export distribution.

MTD reserves the right to change or improve the design of any MTD Product without assuming any obligation to modify any product previously manufactured.

No implied warranty, including any implied warranty of merchantability or fitness for a particular purpose, applies after the applicable period of express written warranty above as to the parts as identified. No other express warranty or guaranty, whether written or oral, except as mentioned above, given by any person or entity, including a dealer or retailer, with respect to any product shall bind MTD. During the period of the Warranty, the exclusive remedy is repair or replacement of the product as set forth above. (Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.)

The provisions as set forth in this Warranty provide the sole and exclusive remedy arising from the sales. MTD shall not be liable for incidental or consequential loss or damages including, without limitation, expenses incurred for substitute or replacement lawn care services, for transportation or for related expenses, or for rental expenses to temporarily replace a warranted product. (Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.)

In no event shall recovery of any kind be greater than the amount of the purchase price of the product sold. Alteration of the safety features of the product shall void this Warranty. You assume the risk and liability for loss, damage, or injury to you and your property and/or to others and their property arising out of the use or misuse or inability to use the product.

This limited warranty shall not extend to anyone other than the original purchaser, original lessee or the person for whom it was purchased as a gift.

How State Law Relates to this Warranty: This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

To locate your nearest service dealer dial 1-800-345-8746 in the United States or 1-800-668-1238 in Canada.

MTD Southwest Inc

550 N. 54th Street
Chandler, AZ 85226 U.S.A.