

Rotary Tiller

Model 3032B

Cat. No. 811-0843

Owner's Handbook

Dear Penney Customer:

The product you purchased has been carefully engineered and manufactured to give you dependable operation. However, like all mechanical products, your machine will occasionally require adjustment and maintenance. This handbook should be read before operating or performing any adjustments on your machine. Should you require technical assistance, please contact the nearest JCPenney retail store, product service center, or catalog center.

Full One Year Warranty

Within one year of purchase, we will provide home service to repair this JCPenney Riding Lawn Mower, Tractor or Garden Tiller if it is defective in material or workmanship. Parts and labor are included. Just contact the nearest JCPenney Product Service Center or store for service.

If this Lawn and Garden Equipment is used for commercial purposes, this warranty coverage applies for 30 days from the date of purchase.

It is your responsibility to provide for routine maintenance as detailed in the Owner's Manual.

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

JCPenney Co., Inc., Product Service Department, Warranty Division, 1301 Avenue of the Americas, New York, NY 10019.

Customer Responsibilities

- Routine maintenance as detailed in this owners handbook is the customers responsibility.
- Sharpening blades, servicing air cleaners, changing oil or spark plugs and making adjustments to the carburetor are not covered by the warranty. JCPenney can provide or make arrangements for these services.
- Bent or broken crank shafts resulting from the striking of foreign objects are not covered by the warranty.

8HP Model 3032A

JCPenney Catalog No. 811-0843

Engine: B & S, 8 H.P., 319 cc, 4-cycle with an easy spin recoil starter power protection.

Tines: 16 hardened slasher tines mounted on a 1 1/4" tine shaft with a tilling width of 26".

Drive: Two step chain reduction in a sealed case. Four speed forward drive with power reverse.

Control: The drive control and throttle are located on the handle panel.

Wheels: 10 x 2.75 inches semi-pneumatic tires with steel rims. Adjustable wheel height.



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Safety Rules

IMPORTANT

It is suggested that this manual be read in its entirety before attempting to assemble or operate. Keep this manual in a safe place for future reference and for ordering replacement parts.

This unit is shipped WITHOUT GASOLINE or OIL. After assembly, see

operating section of this manual for proper fuel and amount.

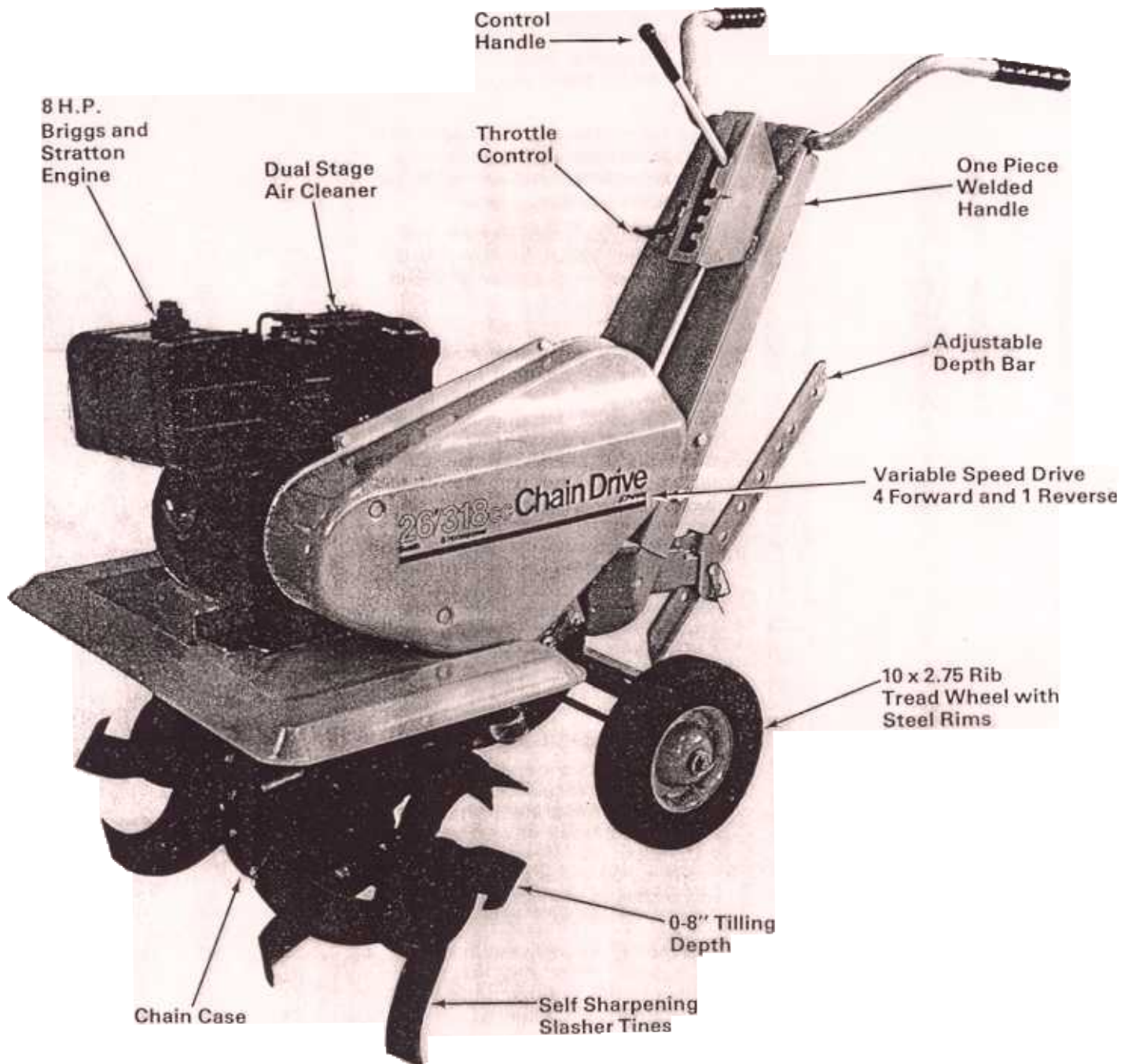
Your tiller is a precision piece of power equipment, not a play thing. Therefore, exercise extreme caution at all times.

SAFE OPERATION PRACTICES FOR TILLERS

- 1 Read the Operating and Service Owner's Manual carefully. Be thoroughly familiar with the controls and the proper use of the equipment.
- 2 Never allow children to operate a power tiller. Only persons well acquainted with these rules of safe operation should be allowed to use your tiller.
- 3 Keep the area of operation clear of all persons, particularly small children and pets.
- 4 Do not operate equipment when barefoot or wearing open sandals. Always wear substantial footwear.
- 5 Do not wear loose fitting clothing that could get caught on the tiller.
- 6 Do not start the engine unless the shift lever is in the neutral (N) position.
- 7 Do not stand in front of the tiller while starting the engine.
- 8 Do not place feet and hands on or near the tines when starting the engine or while the engine is running.
- 9 Do not leave the tiller unattended with the engine running.
- 10 Do not walk in front of the tiller while the engine is running.
- 11 Do not fill gasoline tank while engine is running. Spilling gasoline on hot engine may cause a fire or explosion.
- 12 Do not run the engine while indoors. Exhaust gases are deadly poisonous.
- 13 Be careful not to touch the muffler after the engine has been running, it is hot.
- 14 Before any maintenance work is performed or adjustments are made, remove the spark plug wire and ground it on the engine block for added safety.
- 15 Use caution when tilling near buildings and fences, rotating tines can cause damage or injury.
- 16 Before attempting to remove rocks, bricks and other objects from tines, stop the engine and be sure the tines have stopped completely. Disconnect the spark plug wire and ground to prevent accidental starting.
- 17 Check the tine and engine mounting bolts at frequent intervals for proper tightness.
- 18 Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.
- 19 Never store the equipment with gasoline in the tank inside of a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.

Warning: To purchasers of internal combustion engine equipped machinery or devices in the state of California. The equipment which you have just purchased does not have a spark arrester. If this equipment is used on any forest-covered land, brush-covered land, or grass-covered unimproved land in the State of California, before using on such land, the California law requires that a spark arrester be provided. In addition, spark arrester is required by law to be in effective working order. The spark arrester must be attached to the exhaust system and comply with Section 4442 of the California Public Resources Code.

Rotary Tiller Features



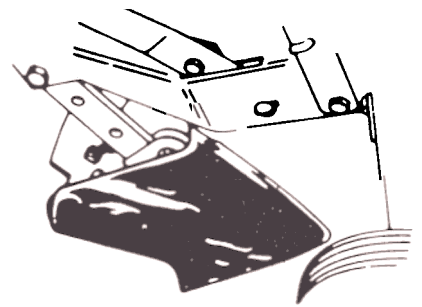
Optional Equipment

Furrow Opener

Model 3004

Catalog No. 931-2950

A furrow opener can be attached to the depth bar to lay open a furrow for planting. It also can be used as a hiller for planting potatoes.



Hints for Best Performance

Your power drive train is comprised of a variable speed pulley with four forward speeds, reverse, and a two step, double chain, reduction to the tines.

The 1 ¼ inch tine shaft is supported by two self-lubricating bronze bearings. The 16 hardened tines will handle the toughest of gardening tasks.

Ten inch by 2.75 inch rib tread tires support the back of the tiller. The rear wheel height is adjustable for greater versatility.

The forward and penetrating action of the tiller is obtained from the rotating action of the tines in the soil. The depth bar acts as a brake for the tiller and controls the depth and forward speed. By lowering the setting of the depth bar, the forward speed of the tiller is reduced and the working depth of the tines is increased. Raising the setting of the depth bar increases the forward speed and reduces the working depth. When soil conditions are severe and several passes must be made over a certain area the depth bar setting should be lowered each time a pass is made.

Further control of tilling depth and travel speed can be obtained by variation of pressure on the handle. A downward pressure on the handles will increase the working depth and reduce the forward speed. An upward pressure on the handles will reduce the working depth and increase the forward speed.

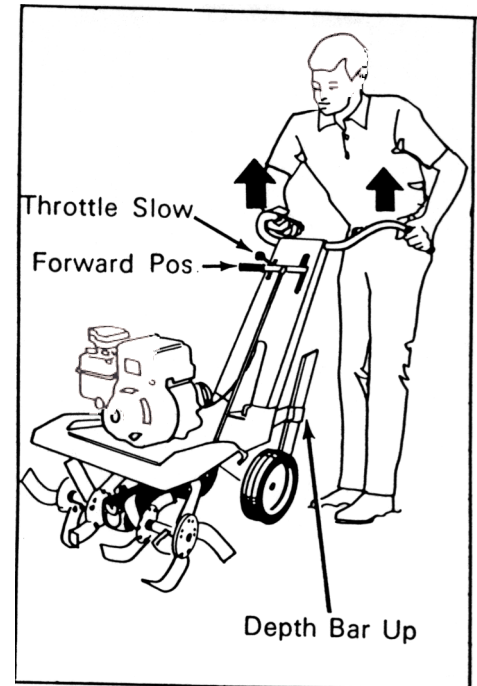
The type of soil and working conditions will determine the actual setting of the depth bar and the handle pressure required.

When tilling ground that has not been tilled before, do not try to till to maximum depth in one pass. Set the depth bar for half the depth you desire, then reset the depth bar to full depth and go over the tilled area the second time. Till only when the soil is relatively dry and crumbles easily. If the soil is too wet when you till it will leave large clods of soil rather than a good seed bed.



Hints for Best Performance

First "walk" the tiller over to the work area. To do this, lock the depth bar out of the way, set the throttle in the slow position, place the control lever in the forward position and maintain a light upward pressure on the handles. Your tiller will "walk" over the top of the ground without the tines entering the soil.

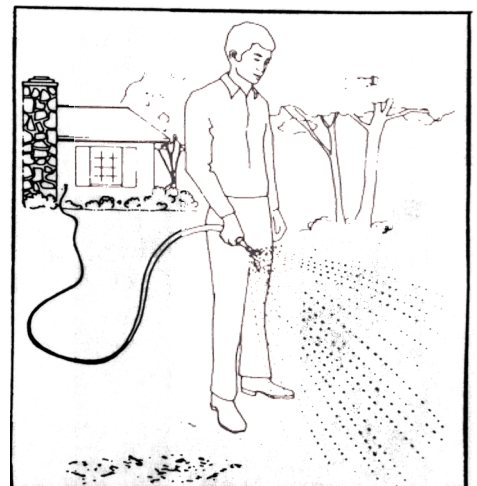


If the garden is turned over in the Fall, the soil should be finely pulverized in the Spring. A finely pulverized seed bed is essential for germination. Spring is the time to work in humus. Six bushels per hundred square feet and a complete garden fertilizer at the rate of four pounds per hundred square feet is recommended.

Just before planting the seeds, finely pulverize the soil and make a smooth bed.

Plant your seeds as instructed on the seed packet then cover them lightly with fine soil. You normally cover the seed with 3 times the width of the seed. On flower seeds, the soil can be sifted through an old window screen. Tamp the soil gently. You must have contact between the soil and the seed.

The seeds must have water to germinate. Use a fine spray to prevent washing out the seeds. The larger the plants you are planting, the deeper you should till.

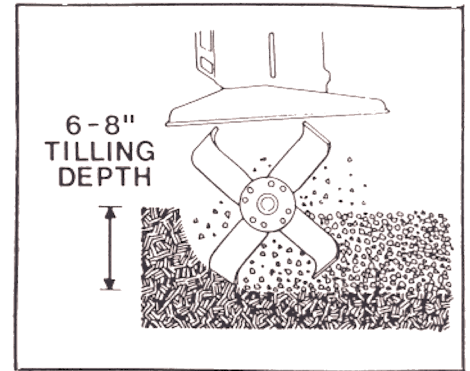


Hints for Best Performance

Plants such as grass, with shallow roots, need only two to four inches tilled soil whereas plants with a deep root system should have a deeply tilled bed. Till the soil as soon as it is workable in the Spring. You can till to a maximum depth of six to eight inches.

When preparing a yard for a lawn, the soil should be leveled so it is well drained and free from high spots. If you do not level out the irregularities in the soil first, you will not be able to do this once the lawn is established.

Extra care in leveling your yard before you sow your seed will be well worth it. Just before planting the seeds the particles of soil should be no larger than a quarter inch. Water the soil to settle the dirt. This will also show you low spots that should be filled in before sowing. Use a fine spray to prevent disturbing the soil. Frequent watering is a must.



Assembly

The tiller, except the handle, throttle control, wheels, tine assemblies and controls, is fully assembled, packed and shipped in one container.

List of Assembly Hardware:

- 2 Handle Grips
- 1 Control Lever Grip
- 2 Hex Head Cap Screws 7/16-20 x 2 1/4" Long
- 2 Hex Locknut 7/16-20
- 4 Hex Head Cap Screws 3/8-16 x 1" Long
- 4 Lockwashers 3/8"

- 4 Hex Locknuts 3/8-16
- 1 Hex Head Cap Screw 5/16-18 x 1 1/4" Long
- 2 Flat Washers 5/16" I.D.
- 1 Rubber Washer
- 1 Hex Locknut 5/16-18
- 2 Hex Head Self Tapping Screws #8 x .38" Long
- 1 Cotter Hairpin
- 1 Spring Pin
- 1 Clevis Pin

Depth Bar

- 1 Remove the tiller and all parts from the carton. Make certain that all loose parts and literature have been removed before the carton is discarded.
- 2 Attach the depth bar to the tailpiece with the clevis pin and spring pin. (See figure 1.)

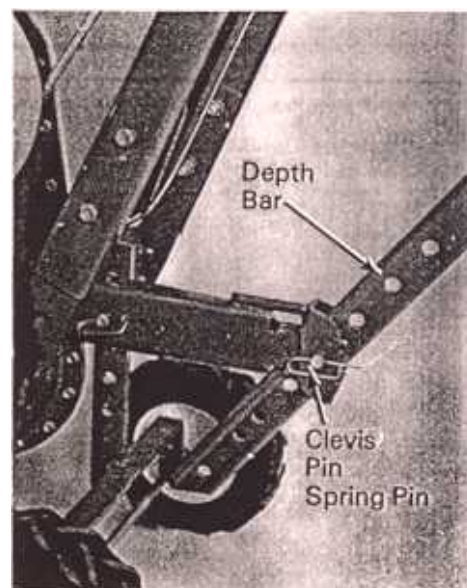


Figure 1

Tine Assembly

- 1 Place the first outer tine assembly on the tine shaft and fasten with the two hex head cap screws 7/16-20 x 2 1/4" long and two hex locknuts 7/16-20. Repeat for the second tine assembly. (See figure 2.)

Note: Be sure the tines are assembled so the sharpened edge enters the soil first.

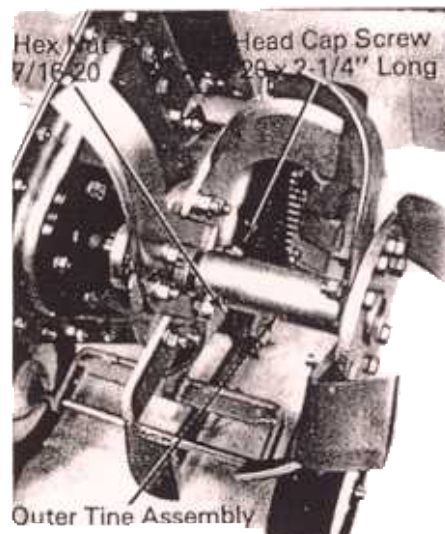


Figure 2

Assembly

Handle Assembly

- 1 Assemble the handle to the handle brackets with the four hex head cap screws 3/8-16 x 1" long, lockwashers 3/8" and hex locknuts 3/8-16. (See figure 3.)
- 2 Assemble the grips to the handle. (Soaking the grips in hot water will aid assembly.)



Figure 3

Controls

- 1 Place the control rod through the control panel on the upper handle and screw the threaded end of the control rod into the ferrule on the "L" bracket on the left side of the chain case.

Note: Screw the control rod through the ferrule until it extends approximately 7/8". (See figure 4.)

- 2 Place the control lever through the box on the upper handle assembly.
 - 3 Attach the control lever to the control panel with hex head cap screw 5/16 x 1 1/4" long, steel washer 5/16", rubber washer, 5/16" steel washer and hex nut 5/16". Do not over tighten. Make sure handle moves freely. (See figure 5.)
- Warning:** Be sure the attachment holes on the control lever face the rear. If the handle is assembled wrong you will not have a neutral. (See figure 6.)
- 4 Place the control rod through the attachment holes on the control lever and secure with a cotter pin.
 - 5 Place the control lever in the Neutral position and pull the recoil start handle several times. The tines should not rotate. If they do, adjust by screwing the control rod in or out of the ferrule.
 - 6 Assemble the control lever grip to the control lever. (Soaking in hot water will aid assembly.)

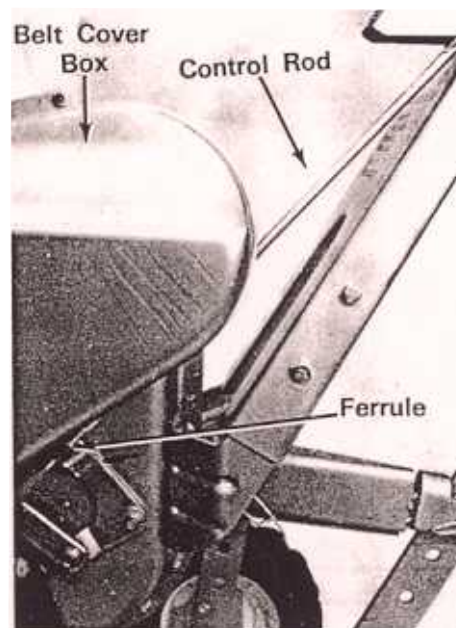


Figure 4

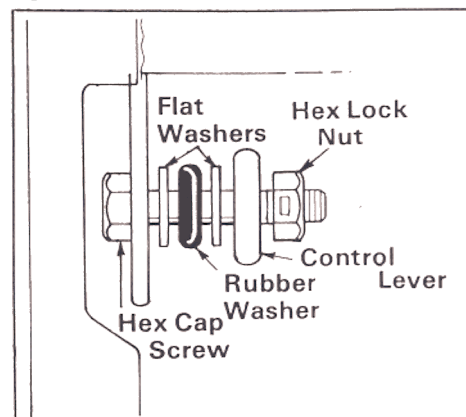


Figure 5

Assembly

Controls

Caution: If the belt cover (see page 3) is removed, you will not have any neutral. This belt cover contains the belt trapout around the engine pulley. The control rod must be assembled exactly as shown in the assembly instructions or you will not have a neutral.

Note: For ease of assembly place the control lever in the number one position when installing the belt cover. (See figure 7.)

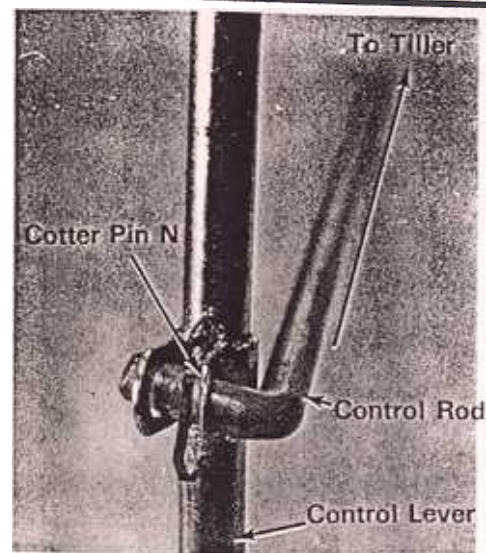


Figure 6

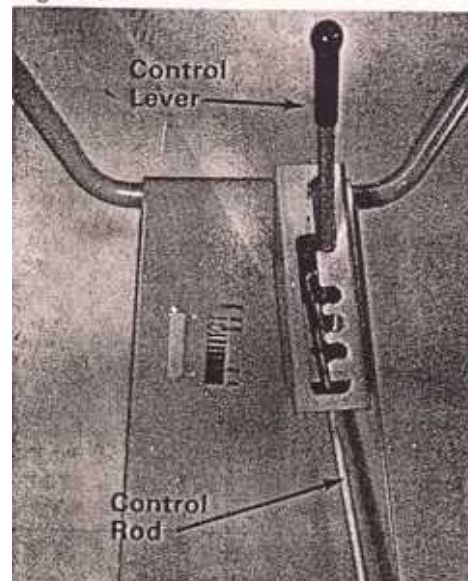


Figure 7

Throttle Control

Place the throttle control through the handle panel and fasten with two #8 self-tapping screws. (See figure 8.)



Figure 8

Operation



Read and Heed Safety Rules on page 2.

See Engine operating section for specific engine instructions.

Throttle Control

The throttle control is located on the handle panel. This regulates the engine speed and shuts off the engine. Move the lever forward to increase the engine speed. Move the lever back to slow down and stop the engine. The tiller should be operated with the throttle in the fast position. (See figure 9.) Refer to the Engine Operating and Maintenance instructions for detail of the operation of the throttle and choke.

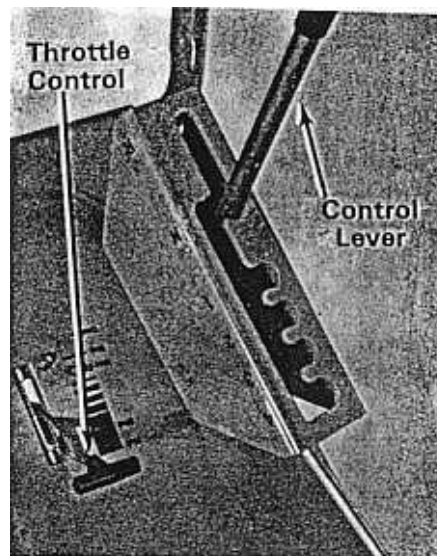


Figure 9

Control Lever

The control lever engages the tines in either the forward or reverse direction. Normal operation is with the control lever in one of the four forward positions.

Reverse is used to back away from an obstruction or to free a rock that may lock up the tines and prevent them from rotating. Reverse is spring loaded for safer operation. Number 1 position is the slowest tine rotation speed and number 4 is the fastest.

Caution: The control lever should not be moved into any operating position unless the engine is running. (See figure 9.)

Choke Control

The choke control is located on the engine and is operated manually. Push the lever down when starting a cold engine. After the engine starts, slowly move it to the open position. (See figure 10.)



Figure 10

Operation

Depth Bar

The depth bar is used to retard the forward speed of the tiller across the ground and set the tilling depth. The farther the depth bar goes into the ground the deeper you will till. (See figure 11.)

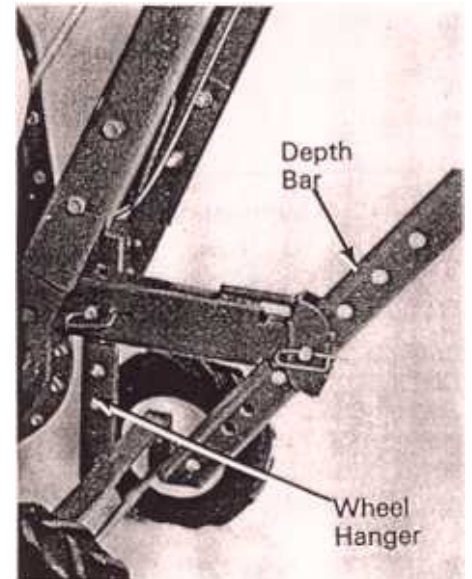


Figure 11

Wheel Adjustment

The wheel height can be adjusted by removing the long clevis pin on the wheel hanger and raising or lowering the position of the wheel hanger. The higher the setting the deeper the tilling depth. (See figure 11.)

Maintenance

Warning: If any adjustments are made to the engine while the engine is running (e.g. carburetor) disengage the clutch. Keep clear of all moving parts and be careful of heated surfaces and the muffler.

Routine maintenance includes lubrication, tine sharpening, belt

adjustments, changing of engine oil, servicing the air cleaner, cleaning the cooling system, spark plug changing and maintenance, and carburetor and throttle control adjustments as detailed in this Engine Operating and Maintenance Instructions section of your Owner's Handbook.

Chain Case Lubrication

The chain is permanently lubricated and requires no further lubrication unless the case is disassembled for repair.

If the case is disassembled, clean the chain with kerosene, allow it to dry and work a high temperature grease, such as Lubriplate No. 310, into the chain.

Chain Adjustment

No chain adjustment is necessary.

Belt Adjustment

Caution: With the belt cover removed your tiller will not have a neutral. The tines will always turn. You must hold the tines off the ground either by having someone else holding the handle down or by placing the handles under something solid such as a work bench while you start the engine.

- 1 Remove the three bolts holding the belt cover.
- 2 Tip the tiller back on its wheels until the tines clear the ground.
- 3 Start the engine.
- 4 Move the control lever into number 4 position.

Note: The inside belt towards the engine should move to the outside edge of the variable speed pulley so the top of the belt is almost flush with the pulley. (See figure 12.)

- 5 If adjustment is necessary, adjust the control rod by screwing it in or out of the ferrule as necessary. (See figure 4.)

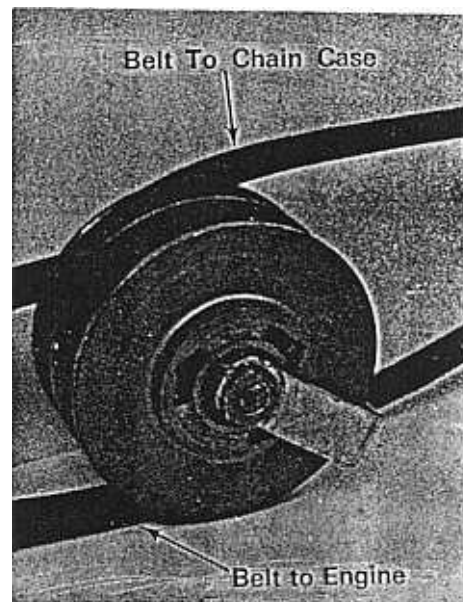


Figure 12

Replacing the Belt

WARNING: Be careful not to pinch your fingers between the pulley and the belt.

- 1 Remove the belt cover so the belts are exposed.
- 2 Pull back on the control lever and unhook the front belt from the engine pulley. (See figure 13.)
- 3 Roll the belt off the rear pulley as shown in figure 14.

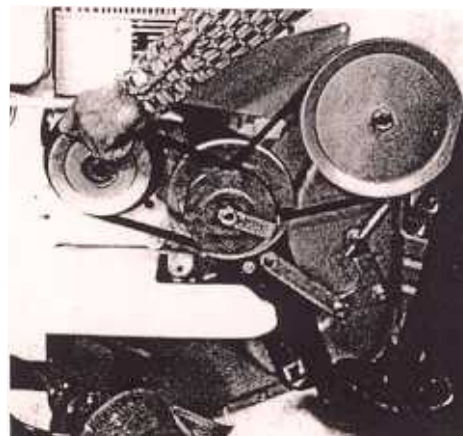


Figure 13

Maintenance

Replacing the Belt

- 4 Remove the belts from the variable speed pulley. It is not necessary to remove the belt guard on the variable speed pulley. (See figure 15.)
- 5 Reassemble with the new belts.
- 6 Replace the belt cover.

Caution: You do not have a neutral in your tiller if the belt cover is removed. Install the belt cover before testing.

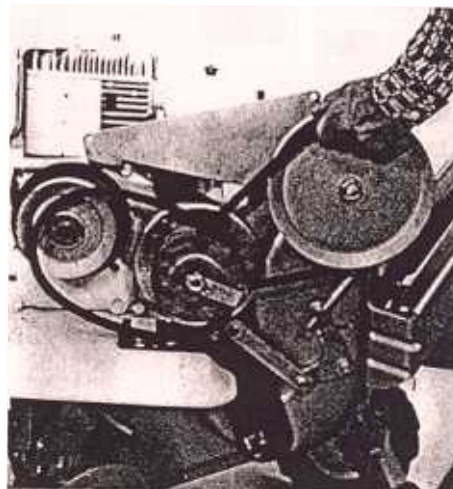


Figure 14

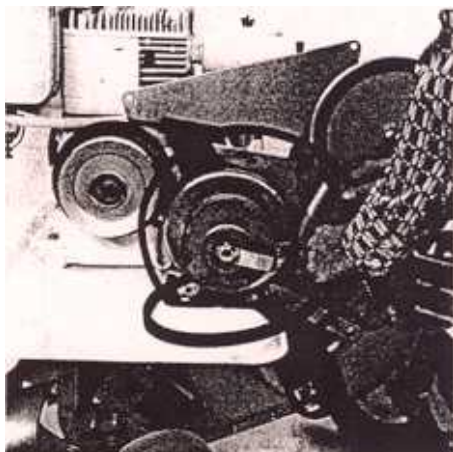


Figure 15

Troubleshooting

Refer to the chart on page 14.

Off-season Storage

If the machine is to be inoperative for a period longer than 30 days, the following procedures are recommended:

- 1 Working outdoors, drain all fuel from the fuel tank. Use a clean dry cloth to absorb the small amount of fuel remaining in the tank, then run the engine until all fuel in the carburetor is exhausted.

WARNING: Do not drain fuel while smoking, or if near an open fire.

- 2 Drain all the oil from the crankcase (this should be done after the engine has been operated and is still warm) and refill the crankcase with clean new oil.

- 3 Disconnect the spark plug wire and remove the spark plug from the cylinder. Pour about 2 or 3 tablespoons of engine oil into the cylinder, and then turn the engine over several times to spread out the oil. Replace the spark plug, but do not connect the wire.
- 4 Clean the engine and the entire tiller thoroughly.
- 5 Wipe the entire tiller including the tines with an oily rag to protect the surfaces.

Trouble Shooting Chart

Problem	Cause	Remedy
1 Engine fails to start	A Check fuel tank for gas	A Fill tank if empty
	B Spark plug lead wire disconnected	B Connect lead wire
	C Throttle control lever not in the starting position	C Move throttle lever to start position.
	D Faulty spark plug	D Spark should jump gap between control electrode and side electrode. If spark does not jump, replace the spark plug.
	E Carburetor improperly adjusted Engine flooded	E Remove spark plug, dry the plug, crank engine with plug removed, and throttle in off position. Replace spark plug and lead wire and resume starting procedures.
	F Stale gasoline	F Drain tank and refill with fresh gasoline.
2 Hard starting or loss of power	A Spark plug wire loose	A Connect and tighten spark plug wire.
	B Carburetor improperly adjusted	B Adjust carburetor. See engine section of this manual.
	C Dirty air cleaner	C Clean air cleaner as described in the Engine section of this manual.
3 Operation erratic	A Dirt in gas tank	A Remove the dirt and fill tank with fresh gas
	B Dirty air cleaner	B Clean air cleaner as described in the engine section of this manual
	C Water in fuel supply	C Drain contaminated fuel and fill tank with fresh gas.
	D Vent in gas cap plugged	D Clear vent or replace gas cap
	E Carburetor improperly adjusted	E Adjust carburetor. See engine section of this manual.
4 Occasional skip (hesitates) at high speed	A Carburetor idle speed too slow	A Adjust carburetor. See engine section of this manual.
	B Spark plug gap too close	B Adjust to .030"
	C Carburetor idle mixture adjustment improperly set	C Adjust carburetor. See engine section of this manual.
5 Idles poorly	A Spark plug fouled, faulty, or gap too wide.	A Reset gap to .030" or replace spark plug
	B Carburetor improperly adjusted	B Adjust carburetor. See engine section of this manual.
	C Dirty air cleaner	C Clean air cleaner as described in the engine section of this manual.
6 Engine overheats	A Carburetor not adjusted properly	A Adjust carburetor. See engine section of this manual.
	B Air flow restricted	B Remove blower housing and clean as described in the engine section of this manual.
	C Engine oil level low	C Fill crankcase with the proper oil

Engine Operating and Maintenance Instructions

8 H.P. Model 190402-1835-02

In the interest of Safety, Do Not run Engine at excessive speeds.

Operating an engine at excessive speeds increases the hazard of personal injury. **Do not tamper with parts which may increase the governed speed.**

Dirt and other debris in cooling fins or governor parts can effect engine speed. See cleaning instructions, page 18.

Warning

To prevent accidental starting always remove the spark plug before working on the engine or equipment driven by the engine or remove cable from spark plug and insert terminal in V-notch in cylinder head cover.

Do not run the engine in an enclosed area. Exhaust gases contain carbon monoxide, an odorless and deadly poison.

Do not fill gasoline tank while engine is running. Spilling gasoline on a hot engine may cause a fire or explosion.

Routine Maintenance

Routine maintenance includes lubrication, tine sharpening, belt adjustments, changing the engine oil, servicing the air cleaner, cleaning the cooling system, spark plug changing and maintenance, and carburetor and throttle control adjustments as detailed in this Engine Operating and Maintenance Instructions section of your Owner's Handbook.

Before Starting Engine

Read the Operating Instructions of the Equipment this Engine Powers

1 Fill Crankcase with Oil (Approximately 2 $\frac{3}{4}$ pints)

Use a high quality detergent engine oil, meeting A.P.I. (American Petroleum Institute) service classification SC, SD, or SE. Nothing should be added to the recommended oil.

Above Freezing Temperature

Use oil with viscosity grade SAE 30 or SAE 10W-30 or SAE 10W-40.

Below Freezing Temperature

Use oil with viscosity grade SAE 5W-20, or SAE 5W-30 or SAE 10W.

Note: Inquire at your local store about the availability of JCPenney oil meeting the above listed specifications.

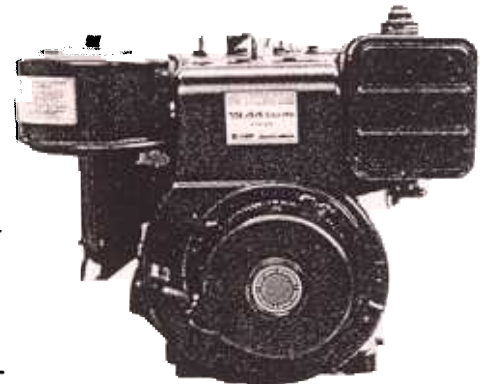
Directions

Remove oil dip stick and add oil until it reaches the FULL mark.

2 Fill Fuel Tank

Use clean, fresh, lead-free automotive grade gasoline. Fill the tank completely. Regular gasoline is an acceptable substitute.

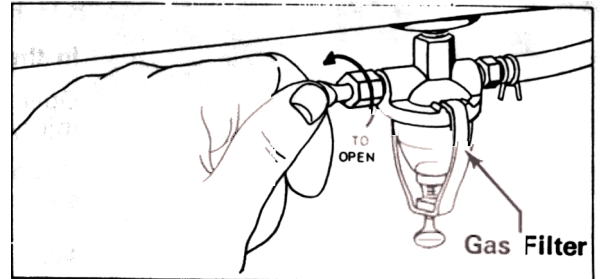
Do not mix oil with gasoline.



Engine Operating and Maintenance Instructions

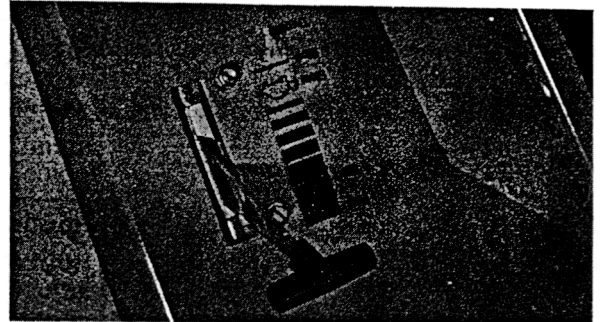
Starting The Engine

- 1 Open Fuel Valve.** The fuel valve is located under the gasoline tank and should be turned counter-clockwise to open. To clean the fuel filter, loosen thumb screw below filter bowl. Remove and clean filter bowl and screen. Open shut-off valve to see if fuel flows freely from the tank. If you find a gummy, varnish-like substance use alcohol or acetone to dissolve it.



- 2 Set the Throttle**

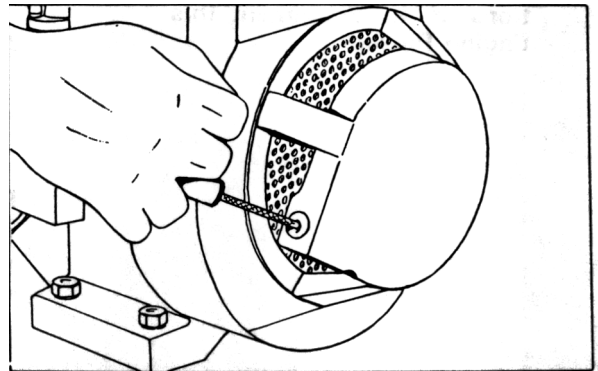
Move the throttle control located on the upper handle into the START position.



- 3 Choke the Carburetor.** Move the choke lever on the engine in the direction of the arrow to the fully closed position. A warm engine requires less choking than a cold engine.



- 4 Start Engine.** Grasp the starter grip as illustrated and pull out the cord rapidly two or three feet. Repeat if necessary with choke open slightly. When engine starts open choke gradually.



- 5 Stop Engine**

Move the throttle control to the stop position.

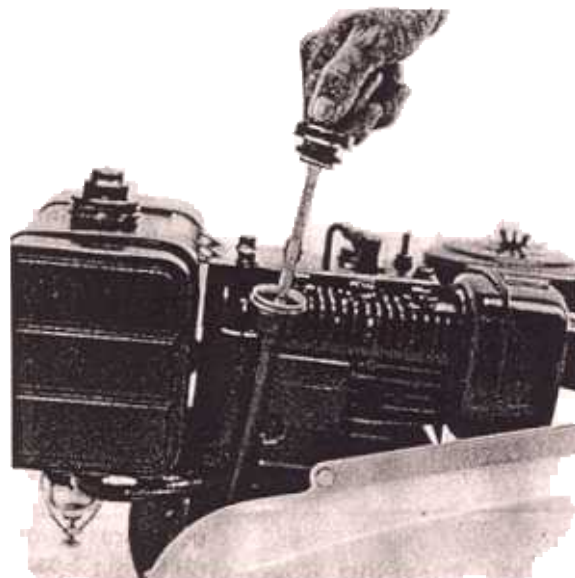


Engine Operating and Maintenance Instructions

Engine Maintenance

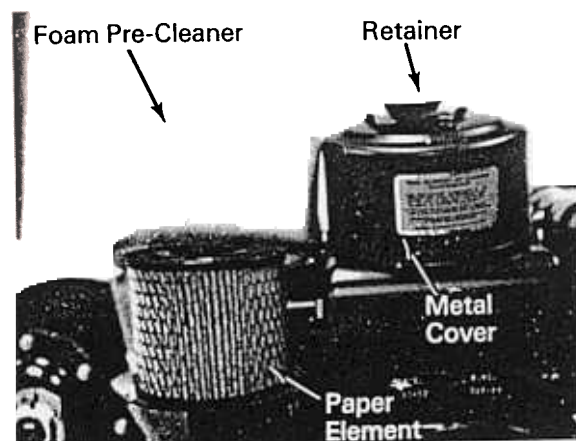
- 1 Check Oil Level Regularly** — at least after every 5 hours of operation. Check the dip stick and maintain the oil between the ADD and FULL marks.

- 2** Change oil after first 5 hours of operation. Thereafter change oil every 25 hours of operation. Remove the drain plug and drain the oil while the engine is warm. Refill with new oil of proper grade (approximately 2 $\frac{3}{4}$ pints). Replace oil minder.



- 3 Air Filter.** Under normal conditions, the air filter, located on top of the carburetor must be serviced after every 25 hours of use. Under extremely dusty conditions, the air filter must be serviced daily.

- 1** Remove the wing nut and metal cover.
- 2** Slide off the foam pre-cleaner.
- 3** Wash the foam pre-cleaner in detergent and water. Dry thoroughly.
- 4** Re-oil with engine oil and squeeze to distribute oil evenly. Remove excess oil.
- 5** After every 100 hours of operation, unscrew the second wing nut and retainer and remove the paper element.
- 6** To clean, tap the element gently on a flat surface or replace.



Engine Maintenance

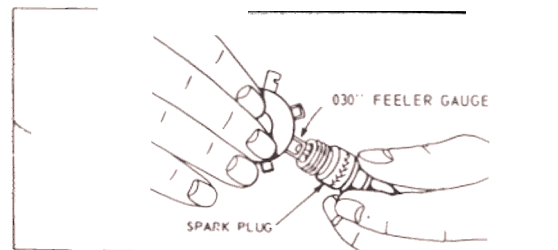
- 4 Clean Cooling System** Grass or chaff may clog cooling system after prolonged service. Continued operation with a clogged cooling system causes severe overheating and possible engine damage. Remove blower housing and clean regularly.



- 5 Spark Plug** Clean and reset gap at .030" every 100 hours of operation.

Caution: Blast cleaning of spark plugs in machines that use abrasive grit is not recommended. Spark plugs should be cleaned by scraping or wire brushing and washing with a commercial solvent or gasoline.

Refer to chart on page 19 for replacement spark plugs.



Refer to chart on page 19 for replacement spark plugs.

- 6 Remove Carbon Deposits**

Clean combustion chamber, top of piston and around both valves every 100-300 hours of operation.

The use of unleaded gasoline is recommended because of less build-up of deposits in the combustion chamber.

Adjustments

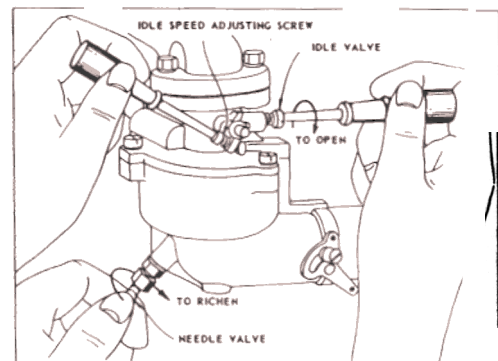
- 7 Carburetor Adjustment.** Minor carburetor adjustment may be required to compensate for differences in fuel, temperature, altitude and load.

To adjust the carburetor, turn the needle valve clockwise until it just closes.

Caution: Valve may be damaged by turning it in too far.

Now open the needle valve $1\frac{1}{8}$ turns counter clockwise. Close the idle valve in the same manner and open $1\frac{1}{8}$ turns. This initial adjustment will permit the engine to be started and warmed up prior to final adjustment.

Final Adjustment: Turn the needle valve in until the engine misses (lean mixture) then turn it out past smooth operating point until the engine runs unevenly (rich mixture); now turn the needle valve to the mid-point between rich and lean so the engine runs smoothly.



Engine Operating and Maintenance Instructions

General Information

This engine is a single-cylinder, L-head, air-cooled type.

Model Series 190402-1835-02

Bore 3
Stroke $2\frac{3}{4}$
Displacement 19.44 cu. in. 319 cc
Horsepower 8 max. @ 3600 RPM
Torque (Ft. Lbs.) 12.7 @ 2500 RPM

The horsepower ratings listed above are established in accordance with the Society of Automotive Engineers Test Code-J607. For practical operation, the horsepower loading should not exceed 85% of these ratings.

Engine power will decrease $3\frac{1}{2}\%$ for each 1,000 feet above sea level and 1% for each 10° above 60°F .

Major engine repairs should not be attempted unless you have the proper tools and a thorough knowledge of internal combustion engines.

Storage Instructions

Engines to be stored over 30 days should be completely drained of fuel to prevent gum deposits forming on essential carburetor parts, fuel filter, fuel lines and tank.

- a All fuel should be removed from the tank. Run the engine until it stops from lack of fuel. The small amount of fuel that remains in the sump of the tank should then be removed by absorbing it with a clean dry cloth.

- b While engine is still warm, drain oil from crankcase. Refill with fresh oil.

- c Remove spark plug, pour one ounce (2 or 3 tablespoons) of engine oil into cylinder and crank slowly to distribute oil. Replace spark plug.

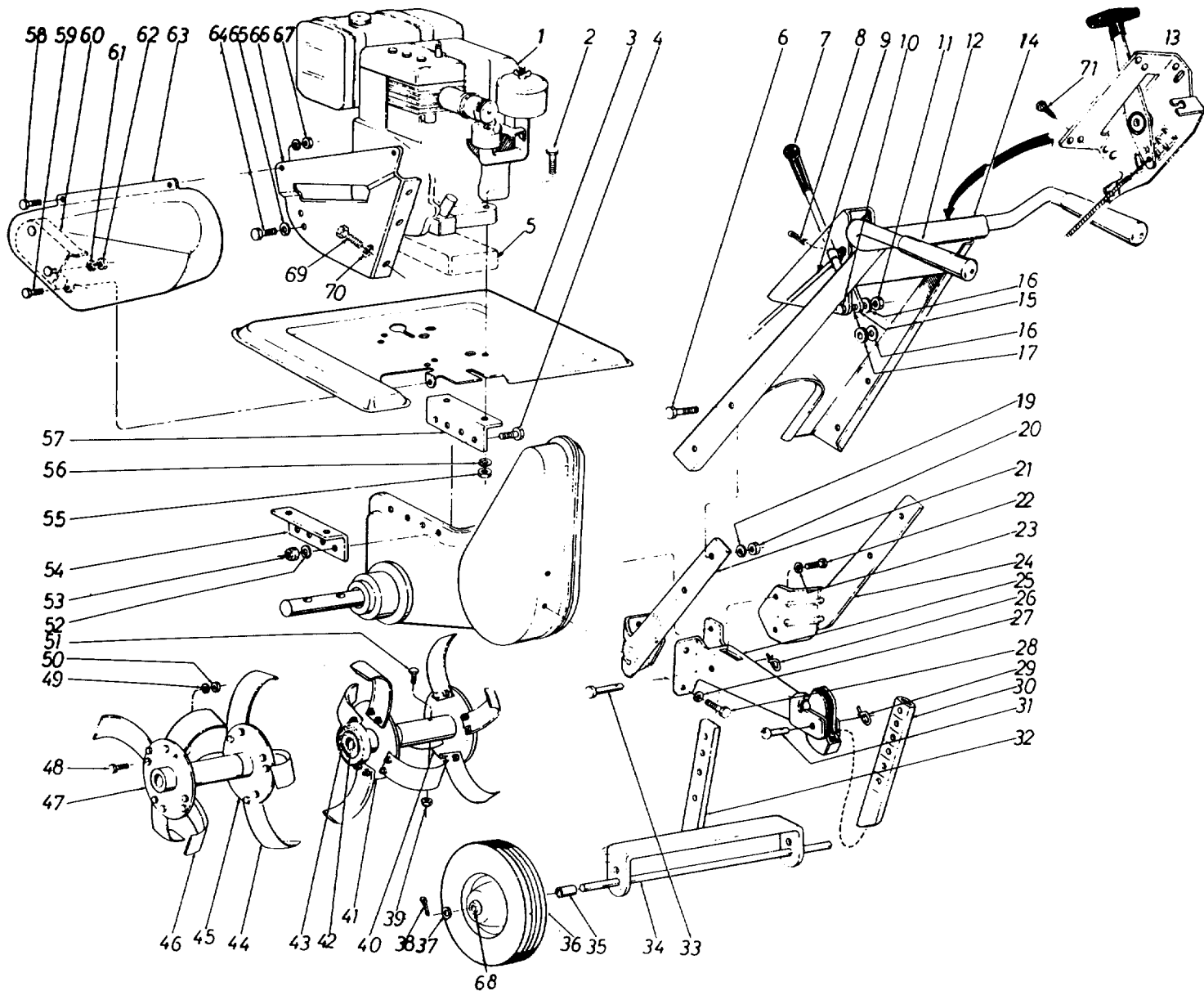
- d Clean dirt and chaff from cylinder, cylinder head fins and blower housing.

Tune-Up Specifications

Spark Plug Type	A.C.	Autolite	Champion
Short Plug	CS-45	A7N	CJ-8
Long Plug	GC-46	A71	J-8
Spark Plug Gap			.030"
Ignition Point Gap			.020"
Intake Valve Clearance			.005"-.007"
Exhaust Valve Clearance			.009"-.011"

Rotary Tiller Parts Illustration

Model 3032B



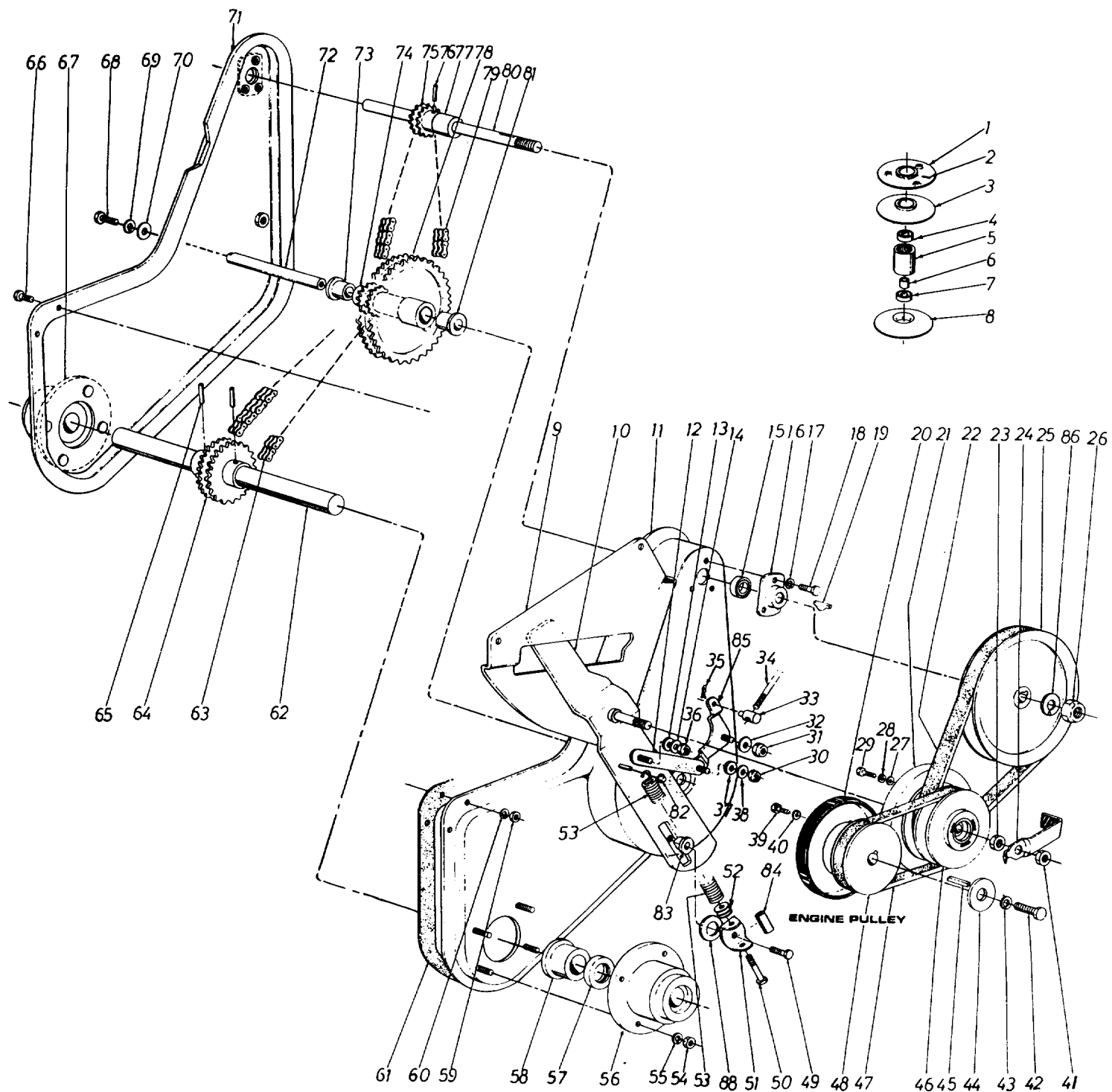
Rotary Tiller Parts List

Order parts from JCPenney by specifying Model and Part Number.

Ref. No.	JCPenney Part No.	Supplier Part No.	Description	Ref. No.	JCPenney Part No.	Supplier Part No.	Description
1			Engine	37		736-0108	Flat Washer*
2		710-0380	Hex Head Cap Screw 5/16-18 x 1 3/4" Long (215-395A)	38		714-0115	Cotter Pin 1/8 Diameter x 1" Long*
		710-0176	Hex Head Cap Screw 5/16-18 x 2 3/4" Long (215-390A)	39		712-0236	Hex Elastic Stop Nut 7/16-20 Thread
3		04524-436	Tine Shield	40		04474-452	Outer Tine Adapter
4		710-0376	Hex Head Cap Screw 5/16-18 x 1" Long*	41		04511-452	Inner Tine Adapter
6		710-0253	Hex Head Cap Screw 3/8-16 x 1.00" Long*	42		721-0124	Dust Pad
7		720-0143	Grip	43		721-0125	Dust Pad
8		714-0507	Cotter Pin 3/32 x 3/4" Long*	44		742-0113	Tine-L.H.
9		711-0422	Control Rod	45		04511-452	Inner Tine Adapter
10		710-0528	Hex Head Cap Screw 5/16-18 x 1 1/4" Long*	46		742-0110	Tine-R.H.
11		712-0158	Hex Centerlock Nut 5/16-18 Thread*	47		04474-452	Outer Tine Adapter
12		01166	Grip	48		710-0191	Hex Head Cap Screw 3/8-24 x 1.25"
13		746-0242	Throttle Control Assembly Complete	49		736-0217	Lockwasher for 3/8 Screw*
14		04625-436	Handle Assembly	50		712-0241	Hex Nut 3/8-24 Thread*
15		04525	Control Lever Assembly	51		710-0483	Hex Head Cap Screw 7/16-20 x 2 1/4" Long*
16		736-0264	Flat Washer*	52		736-0119	Lockwasher 5/16 Screw*
17		735-0126	Rubber Washer*	53		712-0158	Hex Center Locknut 5/16-18 Thread
18		736-0264	Flat Washer*	54		04519-452	Engine Mounting Bracket
19		736-0217	Lock-Washer 3/8 Screw*	55		712-0158	Hex Center Locknut
20		712-0798	Hex Nut 3/8-16 Thread*	56		736-0119	Lockwasher 5/16 Screw*
21		04506-452	Handle Mounting Bracket-L.H.	57		04519-452	Engine Mounting Bracket
22		710-0152	Hex Head Cap Screw 3/8-24 x 1" Long*	58		710-0258	Hex Head Cap Screw 1/4-20 x 5/8" Long*
23		736-0217	Lockwasher 3/8 Screw*	59		710-0252	Hex Head Cap Screw 1/4-20 x 3/4" Long*
24		04505-452	Handle Mounting Bracket-R.H.	60		04516	Belt Guard
25		04507-1-452	Tail Piece	61		736-0329	Lockwasher 1/4" Screw*
26		732-0194	Spring Pin	62		712-0287	Hex Nut 1/4-20 Thread*
27		736-0217	Lockwasher 3/8" Screw H.D.	63		04537-436	Belt Trap Assembly
28		710-0152	Hex Head Cap Screw 3/8-24 x 1" Long*	64		710-0121	Hex Head Cap Screw 1/2-20 x 3/4" Long*
29		732-0194	Spring Pin	65		736-0921	Lockwasher 1/2" Screw*
30		04668-452	Depth Bar	66		04523	Variable Speed Guiding Bracket
31		711-0231	Clevis Pin	67		712-0287	Hex Nut 1/4-20 Thread*
32		04527-1-452	Wheel Hanger Bracket Assembly	68		748-0147	Bushing
33		711-0510	Clevis Pin	69		710-0180	Hex Screw 3/8-24 x .75" Long*
34		04451	Rear Axle	70		736-0217	Lockwasher 3/8" Screw H.D.
35		711-0313	Spacer	71		710-0227	Hex Washer Head AB-Tapp Screw #8 x .38" Long*
36		734-0768	Wheel Assembly Complete				

Rotary Tiller Parts Illustration

Model 3032B



Rotary Tiller Parts List

Order parts from JCPenney by
specifying Model and Part Number.

Ref. No.	JCPenney Part No.	Supplier Part No.	Description	Ref. No.	JCPenney Part No.	Supplier Part No.	Description
1		+ +	Sheave Half with 3 Holes	31		712-0116	Hex Elastic Stop Nut 3/8-24 Thread
2		715-0124	Spring Pin Spiral 5/32 Diameter x .62" Long	32		736-0300	Flat Washer
3		748-0181	Movable Sheave	33		711-0392	Ferrule
4		741-0139	Ball Bearing .50 I.D. x 1.38 O.D.	34		711-0422	Control Rod
5		+ +	Steel Tubing	35		714-0115	Cotter Pin 1/8 Diameter x 1" Long*
6		750-0146	Spacer .520 I.D. x .692 O.D.	36		712-0116	Hex Elastic Stop Nut 3/8-24 Thread
7		741-0139	Ball Bearing .50 I.D. x 1.38 O.D.	37		735-0127	Rubber Washer
8		+ +	Sheave Half	38		736-0300	Flat Washer
9		04523	Variable Speed Guiding Bracket	39		710-0118	Hex Head Cap Screw 5/16-18 x 3/4" Long
10		04517	Variable Speed Bracket Assembly	40		736-0119	Lockwasher 5/16 Screw*
11		04501	Housing Assembly— L.H. Side	41		712-0461	Hex Jam Nut 1/2-13 Thread
12		11021	Eccentric Link	42		710-0152	Hex Head Cap Screw 3/8-24 x 1" Long H.T.
13		735-0127	Rubber Washer	43		736-0217	Spring Lockwasher 3/8 Screw H.D.
14		736-0300	Flat Washer	44		07386	Flat Washer
15		741-0155	Ball Bearing 5/8 I.D. x 1-3/8 O.D.	45		714-0118	Square Key 1/4 x 1 1/2" Long*
16		05034	Bearing Housing 1-3/8 Diameter	46		10843	Variable Speed Pulley Assembly
17		736-0329	Lockwasher 1/4" Screw*	47		754-0157	"V"-Belt 21/32 x 28" Long Special
18		710-0258	Hex Head Cap Screw 1/4-20 x 5/8" Long*	48		04531	Engine Pulley Assembly
19		714-0136	Hi Pro Key #505	49		738-0138	Shoulder Bolt— Special
20		05080	Friction Wheel Assembly	50		710-0380	Hex Head Cap Screw 5/16-18 x 1 1/4" Long*
21		04515	Friction Disc	51		11022	Spring Bracket
22		754-0158	"V"-Belt 21/32 x 35" Long Special	52		711-0509	Spring Insert
23		712-0461	Hex Jam Nut 1/2-13 Thread	53		732-0232	Variable Drive Spring
24		04520	Variable Speed Belt Guard	54		712-0158	Hex Center Locknut 5/16-18 Thread*
25		756-0167	8" O.D. x 5/8 Split Pulley	55		736-0119	Lockwasher 5/16 Screw*
26		712-0221	Hex Elastic Stop Nut 5/8-18 Thread	56		04530	Cast Bearing Housing Assembly
27		736-0204	Flat Washer	57		721-0117	Oil Seal 1 1/4" I.D. x 1 3/4" O.D.
28		736-0329	Lockwasher 1/4" Screw*	58		748-0194	Flange Bearing 1 1/4" I.D. x 1 3/4" O.D.
29		710-0230	Hex Head Cap Screw 1/4-28 x 1/2" Long	59		712-0287	Hex Center Locknut 1/4-20 Thread*
30		712-0116	Hex Elastic Stop Nut 3/8-24 Thread	60		736-0329	Lockwasher 1/4" Screw*

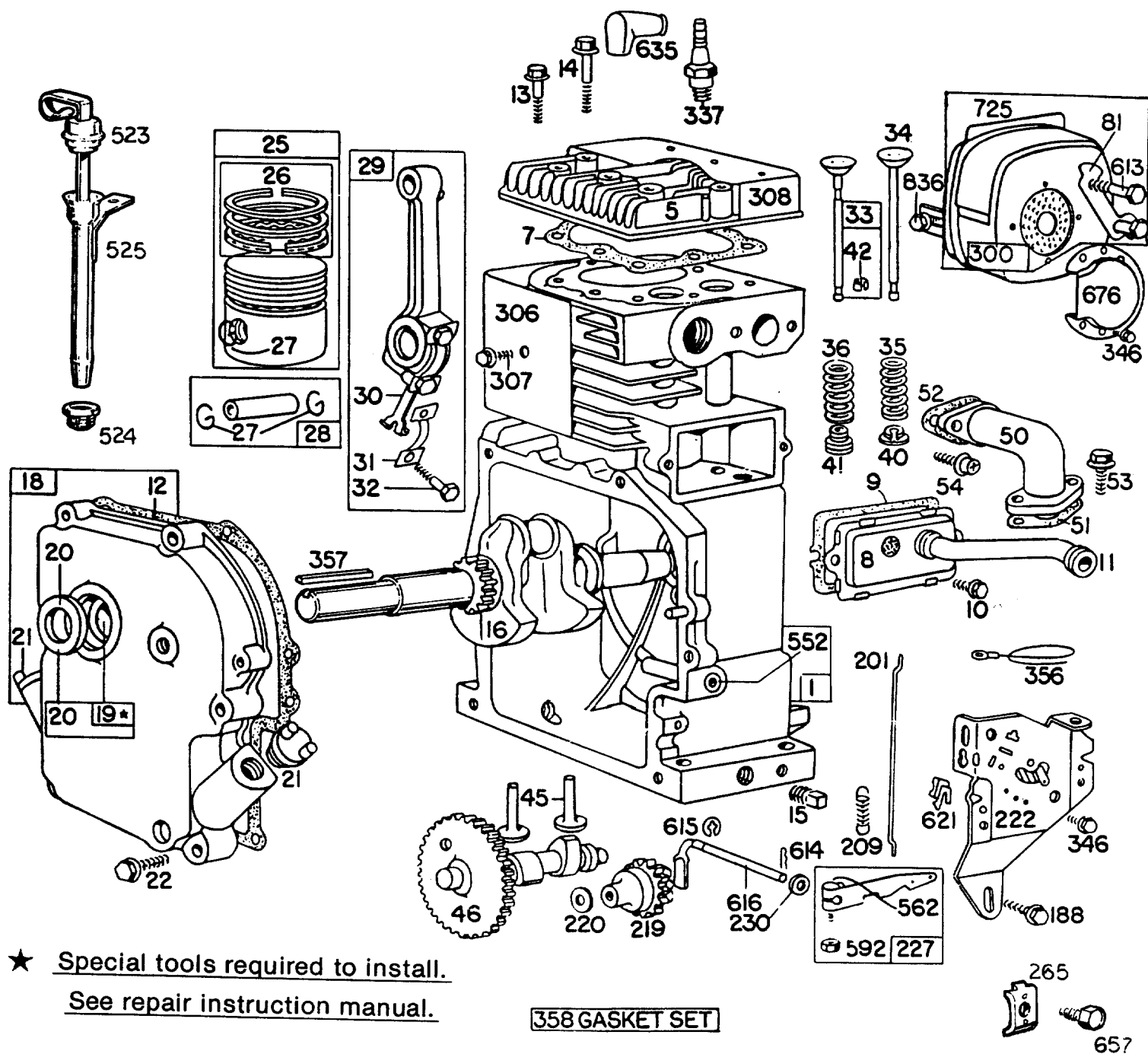
Rotary Tiller Parts List

Order parts from JCPenney by
specifying Model and Part Number.

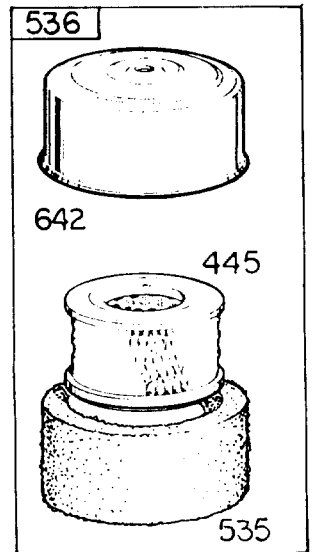
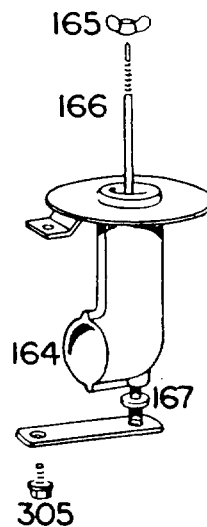
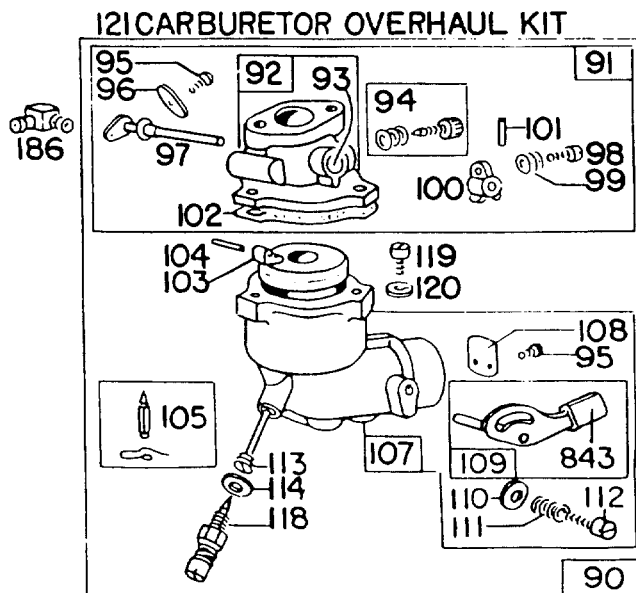
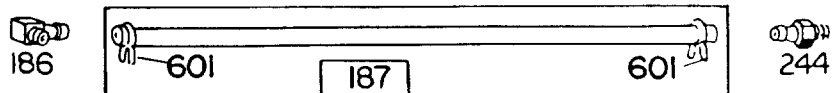
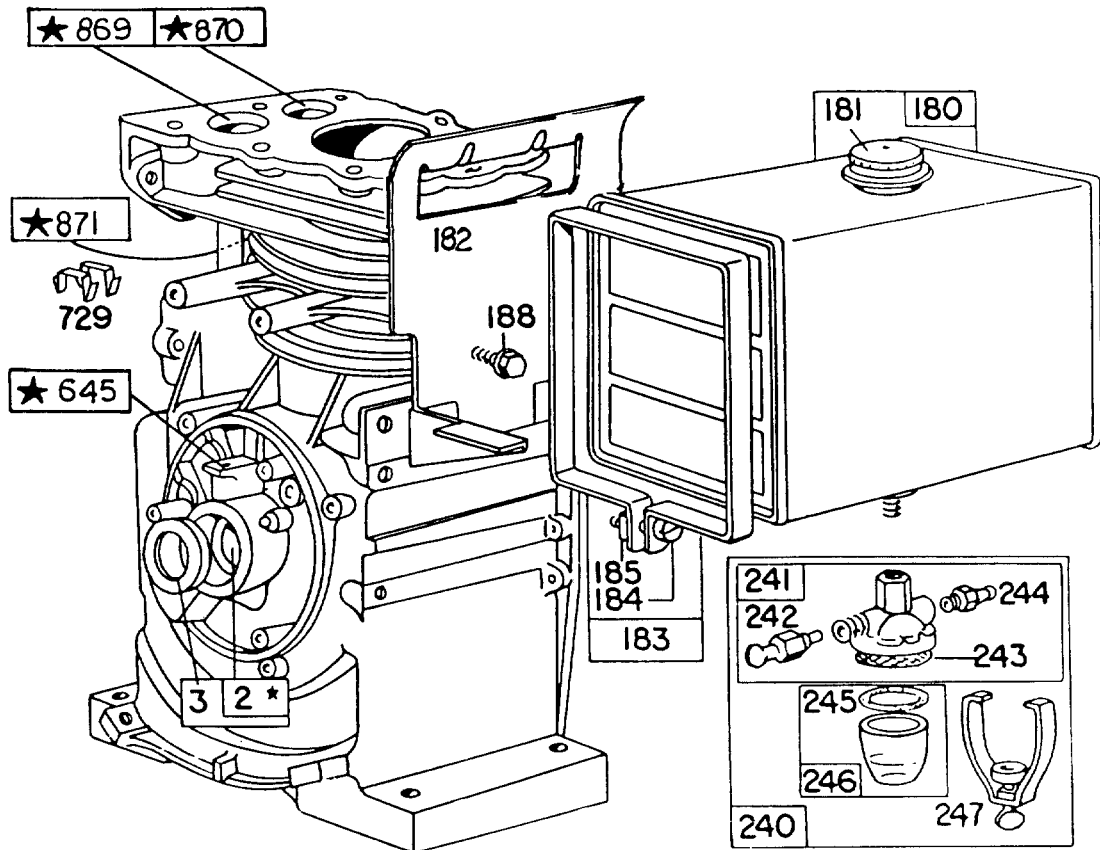
Ref. No.	JCPenney Part No.	Supplier Part No.	Description	Ref. No.	JCPenney Part No.	Supplier Part No.	Description
61		721-0119	Gasket	75		717-0188	11-2 Teeth Sprocket
62		711-0506	Tine Shaft				3/8 Pitch
63		713-0150	Roller Chain with Master Link #40-2 x 34" Long	76		715-0120	Spiral Pin 3/16 Diameter x 1" Long H.D.
63A	1136-3405	713-0152	Master Link	77		750-0118	Spacer
64		717-0189	24-2 Teeth Sprocket 1/2" Pitch	78			Part of Reference No. 74
65		715-0125	Spiral Pin 3/8 Diameter x 2" Long H.D.	79		713-0149	Roller Chain with Master Link #35-2 x 36 3/4" Long
66		710-0258	Hex Head Cap Screw 1/4 -20 x 5/8" Long*	79A	1136-3397	713-0151	Master Link
67		04530	Cast Bearing Housing Assembly	80		711-0505	Pulley Shaft
68		710-0118	Hex Head Cap Screw 5/16-18 x 3/4" Long*	81		748-0855	Flange Bearing
69		736-0119	Lockwasher 5/16 Screw*	82		726-0106	Push Nut
70		736-0195	Flat Washer	83		748-0180	Pivot Slide
71		04503	Housing Assembly— R.H. Side	84		750-0166	Spacer
72		711-0504	Sprocket Shaft	85		04521	Link Bracket Assembly
73		748-0855	Flange Bearing	86		730-0158	Lockwasher 5/8" Screw*
74		04529	Double Sprocket Assembly	87		04700	Chain Case Complete
				88		736-0268	Flat Washer .94 I.D. x 2.00 O.D.

+ + Not replaceable in service. Order
entire variable speed pulley
assembly, part number 10843.

Engine Parts Illustration 8 H.P. Model 190402-1835-02

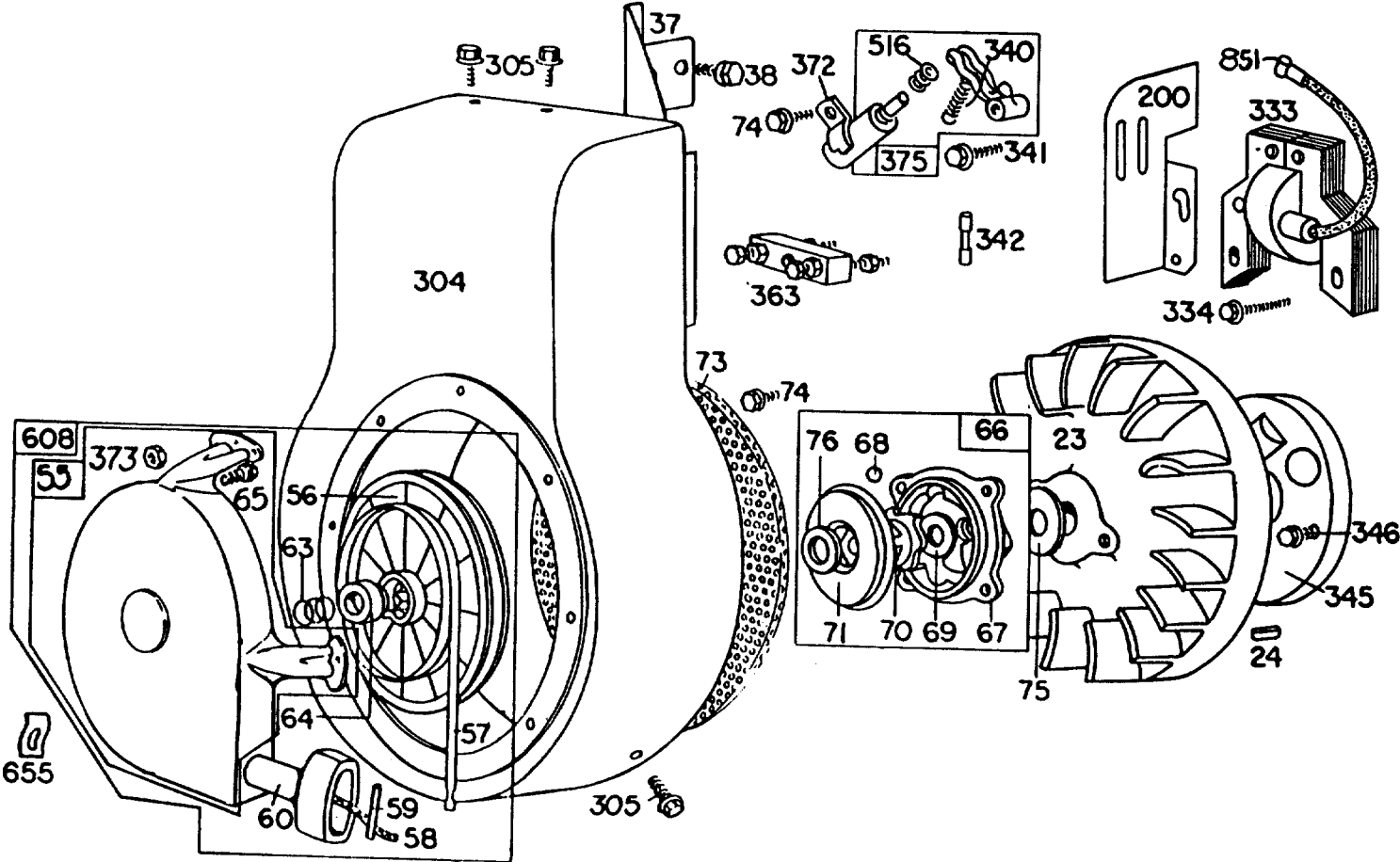


Engine Parts Illustration 8 H.P. Model 190402-1835-02



★ Special tools required to install.
See repair instruction manual

Engine Parts Illustration 8 H.P. Model 190402-1835-02



Engine Parts List 8 H.P. Model 190402-1835-02

Specify Model and Part
Number When Ordering

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	392001	Cylinder Assembly	37	222475	Guard — Flywheel
2	295962	Bushing — Cylinder NOTE: Requires special tools for installation.	38	93777	Screw — Sem
3	294606	Seal — Oil	40	221596	Retainer — Intake Valve
5	212286	Head — Cylinder	41	292260	Rotocoil — Exhaust Valve
6	22963	Washer	42	93630	Retainer — Exhaust Valve Rotocoil (2)
7	*270430	Gasket — Cylinder Head	45	260933	Tappet — Valve
8	390321	Breather Assembly	46	211689	Gear — Cam
9	*27803	Gasket — Valve Cover	50	211812	Elbow — Intake
10	93394	Screw — Sem	51	*270684	Gasket — Carburetor Mounting
11	67068	Tube — Breather	52	*27828	Gasket — Intake Elbow Mounting
12	*27750	Gasket — Crankcase Cover — 1/64" thick	53	93128	Screw — Carburetor Mounting Sem
	*27876	Gasket — Crankcase Cover — .005" thick	54	93208	Screw — Intake Elbow Mounting Sem
	*27877	Gasket — Crankcase Cover — .009" thick	55	393576	Housing — Rewind Starter
13	93211	Screw — Cylinder Head (2-21/32" long) Note: 93776 Stud 22963 Washer	56	295871	Pulley — Rewind Starter NOTE: Includes 63" rope; if longer rope is required, order rope No. 66894 and cut to required length.
14	93723	Screw — Cylinder Head (3" long)	57	294303	Spring — Rewind Starter
15	91084	Plug — Oil Drain	58	66884	Rope — Rewind Starter — 63" long For use with Plastic Pulley; if longer rope is needed, order No. 66894 and cut to required length.
16	261077	Crankshaft	59	230228	Pin — Starter Grip
18	392818	Cover Assembly — Crankcase	60	66728	Grip — Starter Rope
19	295964	Bushing — Crankcase Cover NOTE: Requires special tools for installation.	63	260414	Spring — Ratchet
20	298423	Seal — Oil	64	230543	Adapter — Ratchet Spring
21	66768	Plug	65	93067	Screw — Stamped Steel Rewind Starter Housing Mounting Sem
22	93585	Screw — Crankcase Cover Mounting Sem	66	298798	Clutch Assembly — Rewind Starter
23	298260	Flywheel — Magneto	67	212132	Housing — Rewind Starter Clutch
24	61760	Key — Flywheel	68	63770	Ball — Clutch
25	391673	Piston Assembly — Standard	69	66718	Washer — Starter Clutch, Thrust
	391674	Piston Assembly — .010" O.S.	70	298799	Ratchet — Rewind Starter Clutch
	391675	Piston Assembly — .020" O.S.	71	221653	Washer — Retainer
	391676	Piston Assembly — .030" O.S.	73	221796	Screen — Rewind Starter
PISTON RING SETS:			74	93042	Screw — Sem
		NOTE: For Chrome Ring Set — Standard Size — order No. 299743.	75	220865	Washer — Spring
26	391669	Ring Set — Piston — Standard	76	68238	Washer — Ratchet Sealing
	391670	Ring Set — Piston — .010" O.S.	81	222263	Lock — Muffler Mounting Screw
	391671	Ring Set — Piston — .020" O.S.	90	390323	Carburetor Assembly (Manual Choke)
	391672	Ring Set — Piston — .030" O.S.	91	390404	Body Assembly — Upper Carburetor
27	68546	Lock — Piston Pin	92	390503	Body — Upper Carburetor
28	295840	Pin Assembly — Piston — Standard	93	23108	Bushing — Throttle Shaft
	295841	Pin Assembly — Piston — .005" O.S.	94	†292681	Valve Assembly — Carburetor Idle
29	390401	Rod Assembly — Connecting NOTE: For Connecting Rod with .020" undersize Crankpin Bore — Order No. 390773.	95	93499	Screw — Throttle and Choke Valve Mounting Sem
30	222113	Dipper — Connecting Rod	96	62940	Valve — Throttle
31	222114	Lock — Connecting Rod Screw	97	298826	Shaft and Lever — Throttle
32	92659	Screw — Connecting Rod	98	91920	Screw — Machine, Fil. Head — 8-32 x 5/8"
33	390419	Valve — Exhaust	99	26157	Spring — Throttle Adjustment
34	261055	Valve — Intake	100	61967	Stop — Throttle
35	65906	Spring — Intake Valve	101	93043	Pin — Throttle Stop
36	26828	Spring — Exhaust Valve	102	†27918	Gasket — Carburetor Body
			103	99333	Float — Carburetor
			104	†230896	Pin — Float Hinge

Engine Parts List 8 H.P. Model 190402-1835-02

Order Parts From JCPenney by
Specifying Model and Part Number

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
105	299096	Valve—Fuel Inlet	337	293918	Plug—Spark (1½" high—37-42 M.M.)
107	390403	Body Assembly—Lower Carburetor			NOTE: Spark Plugs use Ignition Cable Terminal no. 221798.
108	62872	Valve—Choke	340	26018	Spring—Breaker Arm
109	391987	Shaft and Lever—Choke	341	93381	Screw—Breaker Arm Mounting Sem
110	62899	Washer—Choke Lever	342	65704	Plunger—Breaker Point
111	26155	Spring—Choke Lever	345	222117	Cover—Breaker Point
112	23123	Screw—Choke Lever	346	93705	Screw—Sem
113	†390395	Nozzle—Carburetor	356	299500	Wire—Ground
114	†68667	Gasket—Nozzle	357	91540	Key—Pulley
118	†99525	Valve—Needle	358	299577	Gasket Set
119	90746	Screw—Machine, Fil. Head—10-32 x 5/8"	363	19203	Puller—Flywheel (Optional Accessory)
120	92290	Washer—Lock—No. 10 x 1/16" x 3/64"	372	220477	Clamp—Condenser
121	295938	Carburetor Overhaul Kit	373	92987	Nut—Hex
163	27907	Gasket Air Cleaner	375	294628	Breaker Points and Condenser Set
164	391628	Pipe Assembly—Air Cleaner			Note: 299061 Ignition Kit Includes: 294628 Point Set 65704 Plunger 61760 Key—Flywheel
165	93453	Nut—Wing	445	390930	Cartridge
166	392105	Stud—Air Cleaner (9-29/32" long)			Uses: 222272 Cup
167	65978	Seal—Air Cleaner Stud	516	260374	Spring—Connector
180	290816	Tank Assembly—Fuel (4 quart)	523	390969	Cap and Dipstick
181	392301	Cap—Fuel Tank	524	68838	Seal-Filler Tube
182	222758	Bracket—Fuel Tank	525	390970	Tube—Oil Filler Uses: 270933
183	291367	Strap Assembly—Fuel Tank	535	270782	Element—Air Cleaner
184	91257	Screw—Machine, Fil. Head—¼-20 x 1½"	536	391063	Cleaner Assembly—Air
185	90970	Nut—Square—¼-20	552	231056	Bushing—Governor Crank (¼" inside diameter)
186	67218	Connector—Fuel Pipe	562	92613	Bolt—Governor Lever
187	296004	Pipe—Fuel (Flexible) 23" Long	592	231082	Nut—Hex—10-24
188	93535	Screw—Sem	601	93053	Clamp—Fuel Pipe
200	221760	Guide—Air	608	390391	Starter Assembly—Rewind
201	260872	Link—Governor	613	93704	Screw—Muffler Mounting
209	261126	Spring—Governor	614	93306	Cotter—Hair Pin
219	391737	Gear—Governor	615	93307	Retainer—E-Ring
220	221551	Washer—Thrust	616	231057	Crank—Governor (¼" Diameter)
222	390670	Plate—Governor Control	621	297472	Switch—Stop
227	391965	Lever Assembly—Governor (For ¼" Diameter Crank)	635	66538	Elbow
230	222450	Washer—Governor Crank (¼" I.D.)	642	222271	Cover—Air Cleaner
240	295984	Filter Assembly—Fuel	645	23513	Bushing Plunger
241	296005	Cover Assembly—Fuel Filter	655	222598	Anchor—Spring
242	295913	Valve—Fuel Shut-Off	657	93496	Screw—Sem
243	22547	Screen—Fuel Filter	676	222292	Deflector
244	230318	Connector—Fuel Pipe	725	221885	Shield—Heat
245	*68477	Gasket—Fuel Filter Bowl	729	221907	Clip—Wire
246	298683	Bowl—Fuel Filter	836	93559	Screw—Sem
247	99665	Yoke—Fuel Filter	851	221798	Terminal—Cable
265	221535	Clamp—Casing	869	211661	Seat—Intake Valve
300	391313	Muffler—Exhaust	870	211661	Seat—Exhaust Valve
304	299853	Housing—Blower	871	230665	Guide—Exhaust Valve
305	93158	Screw—Sem			
306	222830	Shield—Cylinder			
307	93163	Screw—Cylinder Shield Mounting Sem			
308	222636	Cover—Cylinder Head			
333	298968	Armature Assembly			
334	93381	Screw—Armature Mounting Sem			

*Included in Gasket Set—Part No. 299577.

†Included in Carburetor Overhaul Kit—Part No. 295938.

Maintenance Record

[illegible]

Maintenance Record

[illegible]

[illegible]