

HONDA TILLER MODEL F28



**OWNER'S
MANUAL**

PREFACE

This owner's manual contains all necessary information about the Honda Tiller, Model F28, to permit the operator to use it correctly.

This handbook should be carefully read to become familiar with the operation of the F28 Tiller before use.

Correct handling and proper servicing will maintain the tiller in top operating condition for a long and useful life. This tiller is designed for rugged service; however, if problems should arise, consult the dealer from whom you bought it and he will provide you with prompt service.

CONTENTS

FEATURES OF HONDA TILLER MODEL F28	2
NAMES OF MAIN COMPONENTS	4
ASSEMBLY INSTRUCTIONS	6
PRE-OPERATION SERVICING (Engine oil, Air cleaner oil, Fuel)	10
STARTING AND STOPPING THE ENGINE.....	13
OPERATING INSTRUCTIONS	16
MAINTENANCE	24
PREPARING FOR STORAGE	31
SPECIFICATIONS.....	32

FEATURES OF THE HONDA TILLER, MODEL F28

POWERFUL, GREAT WORK CAPACITY

This is the only tiller in the world powered by a small, high-output, 4-cycle, air-cooled engine employing an OHC design.

OIL BATH AIR CLEANER

The oil bath air cleaner is mounted on the top of the engine and effectively removes even the finest particles of dust. The dust-proof carburetor mounting on the engine permits full work capacity at no loss in power even under extremely dusty conditions.

EASY HANDLING

The steering handle can be easily adjusted both vertically and horizontally to permit positioning for the most comfortable use. Working on steep slopes or confined areas becomes easy with these adjustment features. Easy starting and convenient controls enables even youngsters to handle the tiller easily.

SIMPLE ENGINE REMOVAL

The unique Honda engine mount enables the owner to easily remove the engine and service it.

SAFETY AND CONVENIENCE

The non-spilling cap and convenient folding feature makes the tiller easy to store and safe to carry in an enclosed vehicle.

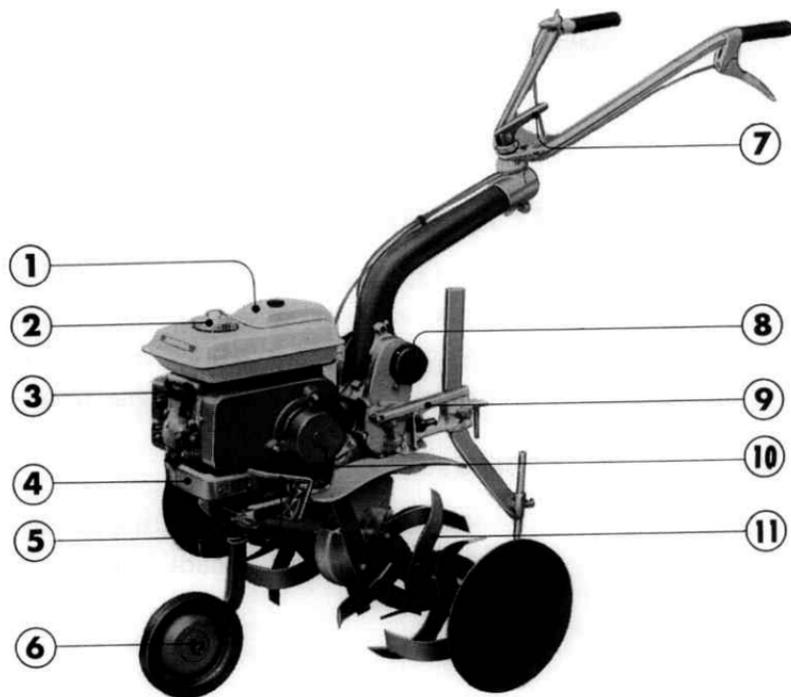
Honda's unique design allows the tiller to be folded into a small compact unit which can be carried easily in the trunk of a car.

ANTI POLLUTION DEVICE

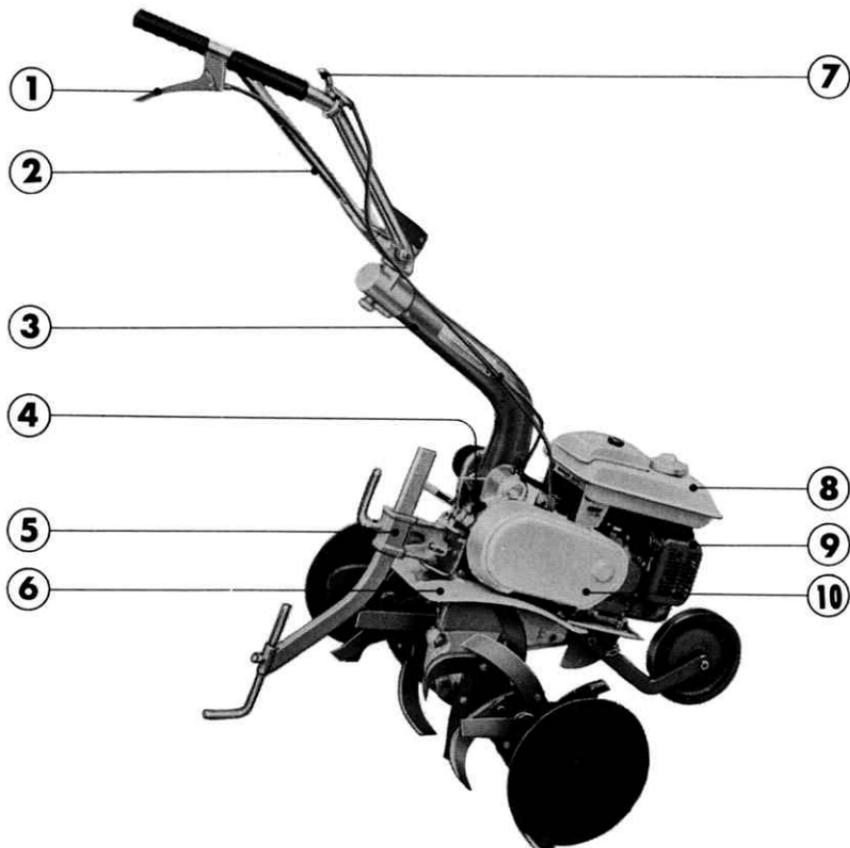
The Honda Tiller incorporates a crankcase breather which empties into the intake system and thus reduce significantly pollution of the air.

NAMES OF MAIN COMPONENTS

- ① Air cleaner cover
- ② Fuel tank cap
- ③ Spark plug cap
- ④ Muffler
- ⑤ Engine mounting lever
- ⑥ Front wheel
- ⑦ Handle adjuster
- ⑧ Handle column adjuster
- ⑨ Change lever
- ⑩ Recoil starter
- ⑪ Rotor assy



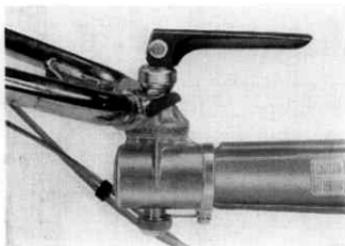
-
- ① Clutch lever
 - ② Handle
 - ③ Handle column
 - ④ Transmission oil filler cap
 - ⑤ Hitch drag bar assy
 - ⑥ Fender
 - ⑦ Throttle lever
 - ⑧ Fuel tank
 - ⑨ Carburetor cover
 - ⑩ V-belt cover



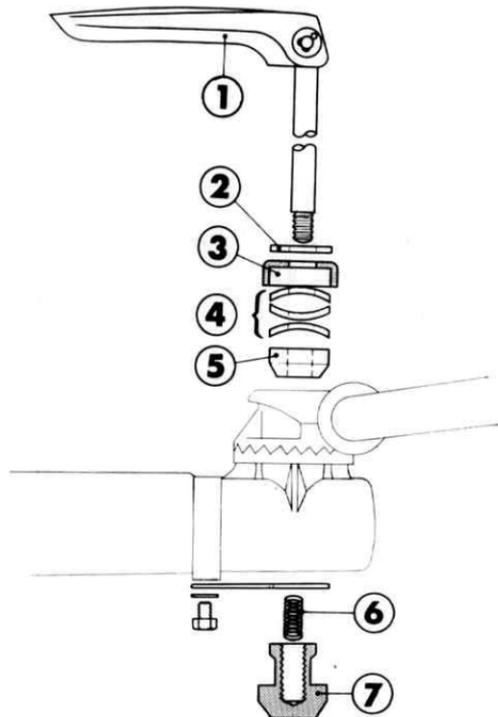
ASSEMBLY INSTRUCTIONS

STEERING HANDLE ASSEMBLY

1. Place steering handle adjuster arm on handle adjuster shaft.
2. Insert adjuster arm pivot pin through arm and shaft.
3. Secure pin with washer and cotter pin.
4. Place washer, spring seat, springs, and collar on adjuster shaft.
5. Insert shaft through steering handle and base at handle column.
6. Tighten handle adjuster nut.

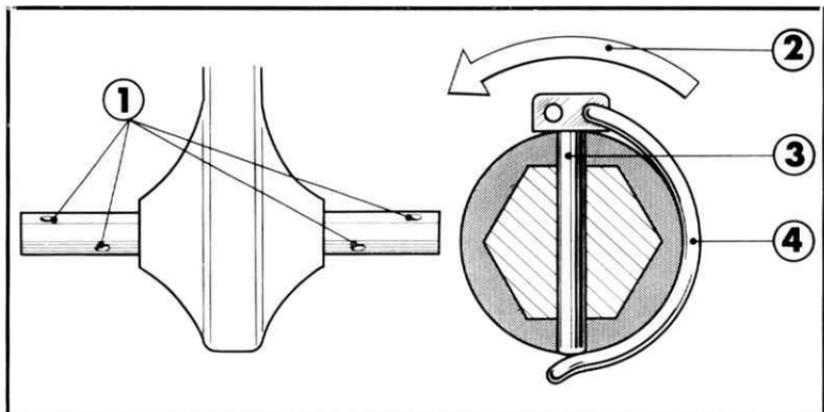
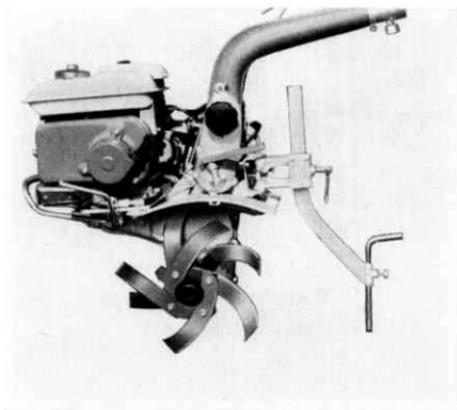


- ① Adjuster arm ② Washer
③ Spring seat
④ Springs (note camber)
⑤ Adjuster collar
⑥ Spring ⑦ Adjuster



ROTOR ASSEMBLY

1. Install the rotor blades on the axles with cutting edges in the direction of rotation.
2. Align rotor blades so that blades bite soil simultaneously ; otherwise, yawing may result.
3. Secure rotor blades with set pins through setting holes in axles.
Clip part of set pin snaps over axle opposite to the direction of rotation.
(There are two setting holes in each axle.)

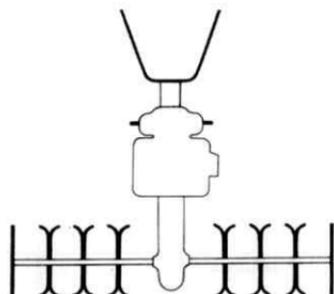


① Set pin holes ② Dissection of rotation ③ Set pin ④ Clip

Depending on the width of crop and the soil condition, number of rotor blades will be changed from one to three blades on each side.

Three blades are for normal use or to be used on cultivated ground. Two blades are used on hard ground.

Blade diameter	12 in.
Rotor width	36 in. (3 blades with disks)
	25 in. (2 ditto)
	13 in. (1 blade without disk)

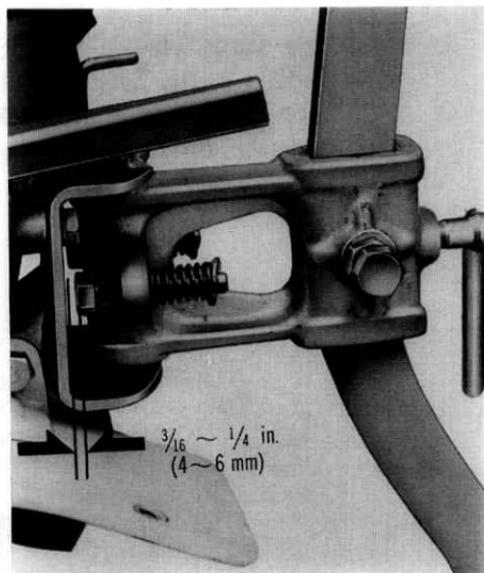


Standard rotor

Disk

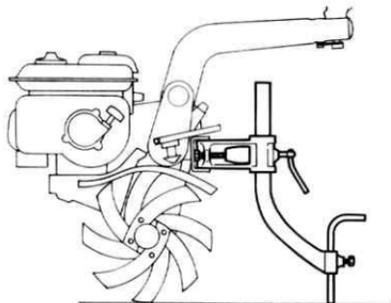
Disk can be used as a guide along sidewalks, fence, etc., and also can be used to stabilize unit.

HITCH DRAG BAR ASSEMBLY

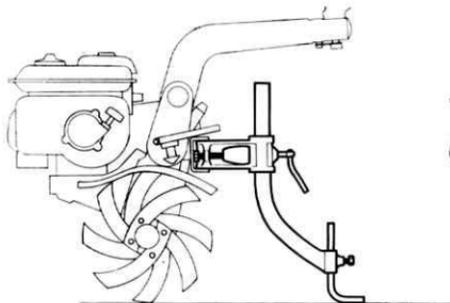


- ① Weight holder pin
- ② Hitch pin clip

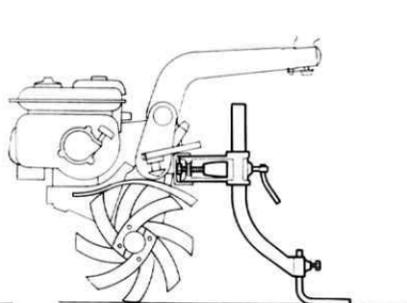
1. Install hitch attachment in hitch box with weight holder pin. (Hitch pin clip snaps into relief in weight holder pin to retain pin.)
2. Adjust hitch bolts so that the clearance between the hitch box and the tips of the bolts is $3/16$ - $1/4$ in. on either side when the hitch bar is aligned with the steering handle.
3. Set Drag Bar Tip
 - A. For hard soil, use the straight end of drag bar tip as stabilizer.
 - B. For normal soil, use the shorter bent end of drag bar tip as stabilizer.
 - C. For very soft soil, use the longer bend end of drag bar tip as stabilizer.



For hard soil



For normal soil



For very soft soil

PRE-OPERATION SERVICING

CHECK THE FOLLOWING ITEMS BEFORE STARTING OPERATION

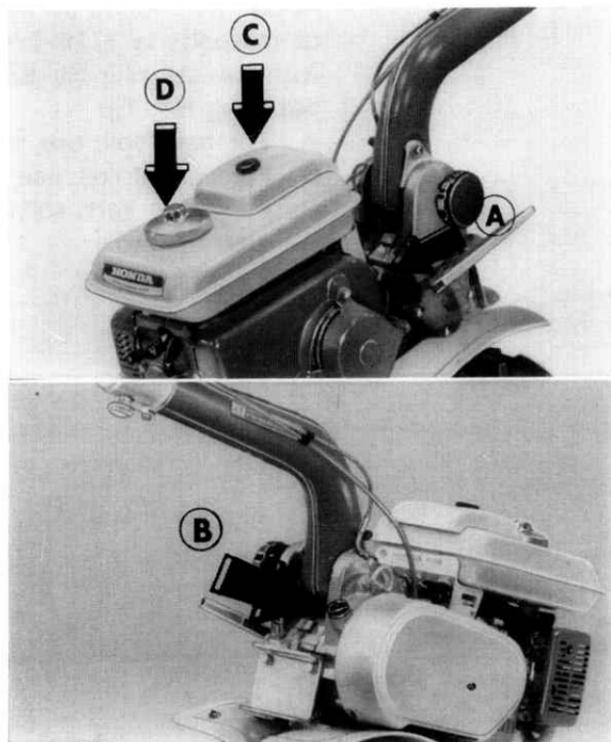
.....
A. Engine oil for proper level.
.....

B. Transmission oil for proper level.
.....

C. Air cleaner oil for proper level
.....

D. Check fuel level.
.....

E. Do not operate tiller in an enclosed space
.....



LUBRICANTS

Lubricating oil of top quality should be used in the engine, transmission, and air cleaner. Oils rated SAE MS, DG are desirable. The viscosity of oil to be used with varying temperatures is indicated in the accompanying chart.

Oil will deteriorate if left in an engine for a long period of time. The oil should be changed in the engine if the tiller has been stored for several months.

ENGINE OIL LEVEL

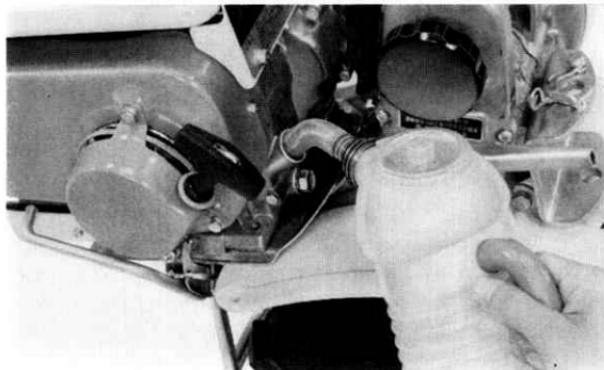
When filling or checking oil level, place the tiller in a horizontal position.

Remove the oil filler cap and fill with a proper grade oil to the required level (0.7qt)

Overfilling will result in power loss and smoking. Insufficient oil will cause overheating and consequent wear.



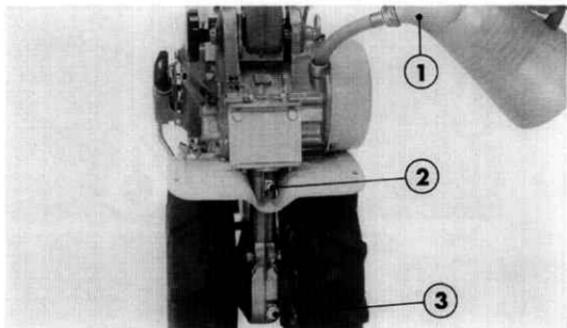
S. A. E. groups	Outside temp.	
#40	°C	°F
	30°	86°
#30	15°	59°
	0°	32°
#20		
#20W		
#10W		



TRANSMISSION OIL LEVEL

When filling or checking oil level, place the tiller in a horizontal position.

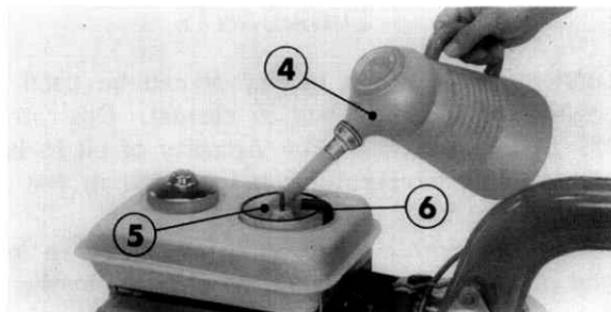
Loosen the oil level bolt, remove the oil filler cap and fill with the required oil of the proper grade. Oil will flow from the oil level bolt hole when the proper level has been reached.



① Oil ② Oil level ③ Oil drain plug

AIR CLEANER OIL LEVEL

Place the tiller in a level position. Remove the air cleaner cover and fill the air cleaner reservoir with oil to the oil level mark on the reservoir. The air cleaner oil should be changed frequently and the air cleaner element washed if the tiller is operated under dusty conditions.



④ Oil ⑤ Air cleaner ⑥ Breather tube

FUEL

The Honda F28 Tiller may be operated with regular automobile gasoline.

The engine should be stopped when refueling to prevent accidental fire. Care should be exercised so that dust, dirt, or water does not contaminate the fuel supply.



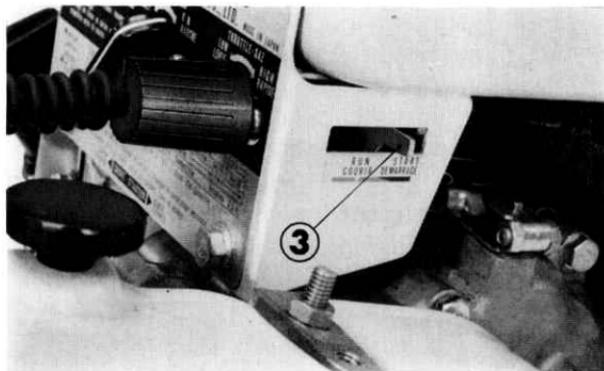
STARTING AND STOPPING THE ENGINE

1. Set the engine switch (Fuel cock) to ON and the choke lever to the CLOSE position.



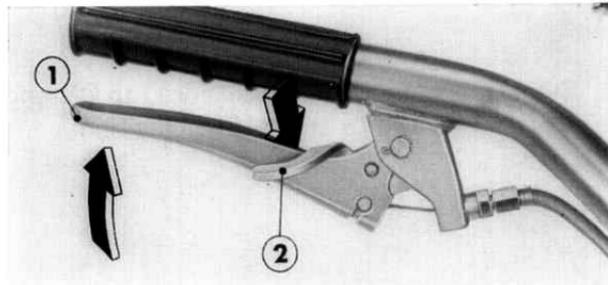
① Engine switch (fuel cock) ② Choke lever

2. Operate the throttle lever in the direction of the arrow so that the indicator located at the side of the throttle knob is brought to the START position



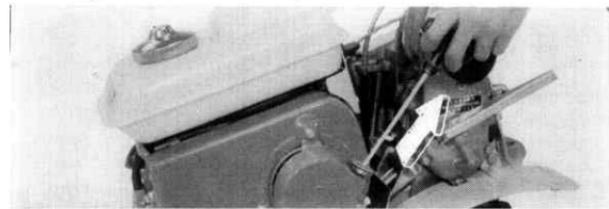
③ Engine speed indicator

3. Grasp and raise the clutch lever completely and engage the clutch lock. This disengages the transmission from the engine during starting.

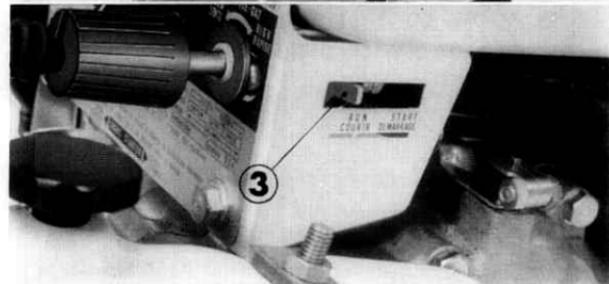


① Clutch lever ② Clutch lock lever

4. Pull the starter rope rapidly to start the engine.



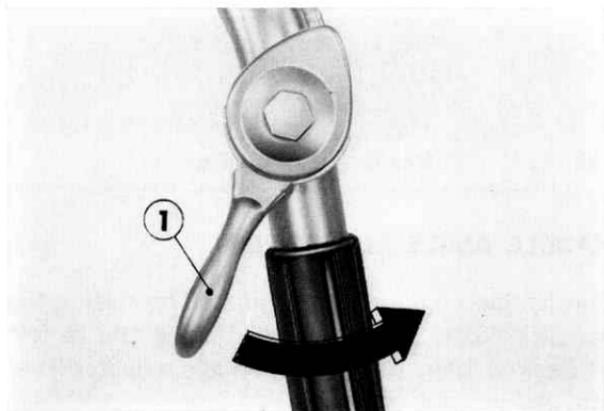
5. After the engine starts, open the choke lever and warm up the engine for one to two minutes. Then, set the engine speed indicator to the RUN position to increase the engine speed.



③ Engine speed indicator

STOPPING ENGINE

1. Return the throttle lever to the extreme right to lower the engine speed.
2. The engine will stop when the engine switch is turned to the OFF position.



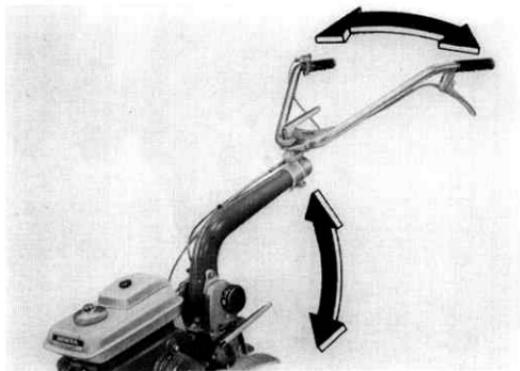
① Throttle lever



OPERATING INSTRUCTIONS

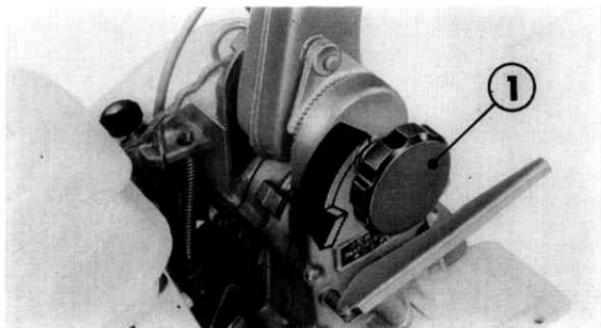
HANDLE POSITION

The handle position may be adjusted to suit the stature of the operator and the work conditions.



HANDLE HEIGHT ADJUSTMENT

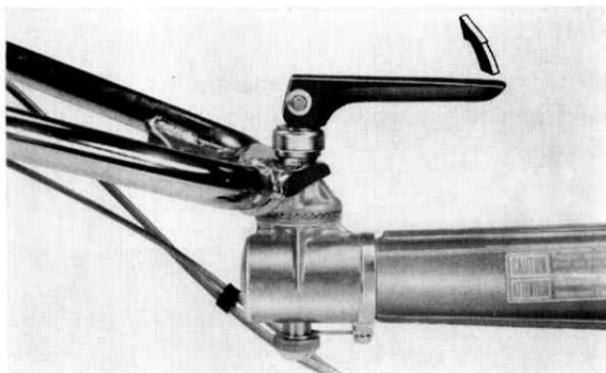
Height can be changed by means of the handle column adjuster ①.



① Handle column adjuster

HANDLE ANGLE ADJUSTMENT

The handle angle may be adjusted by raising the handle adjuster lever and positioning the handle as desired then forcing the handle adjuster lever into its original position.



② Handle adjuster lever

CLUTCHES

The Honda F28 Tiller has two clutch systems which insure easy operation of the tiller.

CENTRIFUGAL CLUTCH

The centrifugal clutch is built into the engine. When the engine speed is increased, the centrifugal clutch engages and the engine becomes linked to the drive pulley. This clutch prevents the engine from stopping when the throttle lever

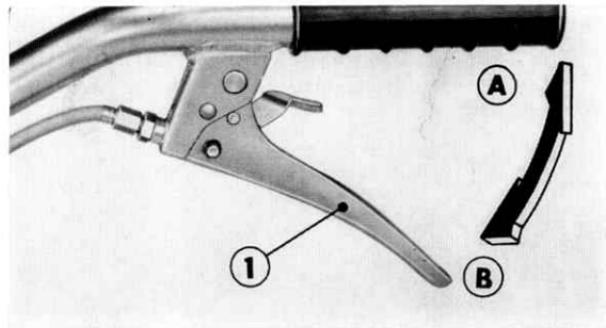
is placed in the idle position even if the manual clutch is engaged.

MANUAL CLUTCH (belt tension clutch)

The manual clutch engages the engine to the tiller transmission.

The manual clutch is engaged by first pulling up the clutch lever to release the clutch locking lever then slowly releasing the clutch lever to engage the transmission.

If the clutch lever lock is depressed, the clutch is kept disengaged.



① Clutch lever Ⓐ Disengaged Ⓑ Engaged

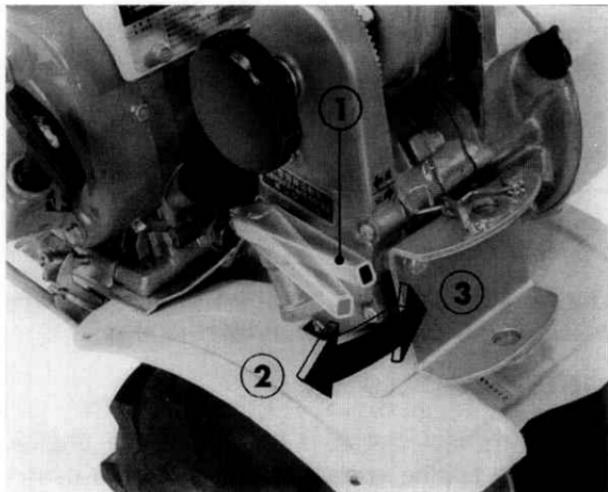
GEAR SELECTION

The Honda F28 Tiller has a two speed transmission. Normally the low speed is used for tilling, while the high speed is used for moving the tiller about.

GEAR SHIFTER OPERATION

1. Move the throttle lever to the idle position.
2. Disengage and lock the clutch lever. Shift the change.
3. Move the shifter lever to the high or low speed position as per the accompanying picture.

If the gear shifter will not engage the desired gear, engage the manual clutch and move the tiller slightly to position the gears properly.

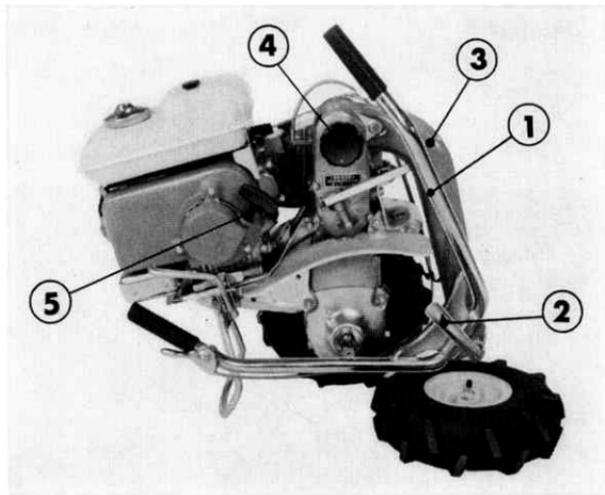


- ① Change lever
- ② High
- ③ Low

HANDLE FOLDING PROCEDURE

The handle may be folded for ease of transportation or storage.

1. Loosen the handle adjuster and fold the handle to the left side of the machine.
2. Remove the pin and remove the left side tire.
3. Loosen the handle column adjuster and swing the handle column downward.
4. For convenience the handle column adjuster and handle adjuster should be tightened.
5. When transporting the machine, special attention should be directed to the following points:
 - 1) Close the fuel cock (engine switch).
 - 2) The tiller should be laid on its left side.

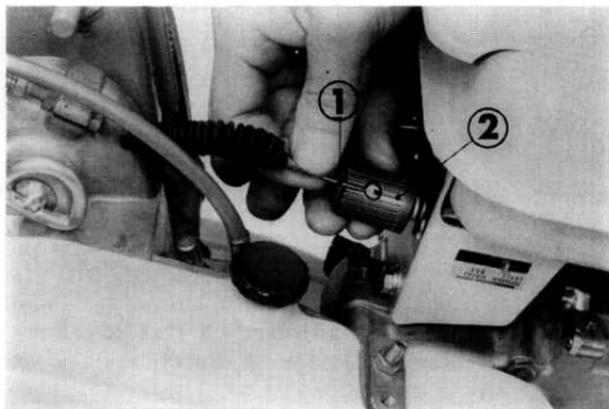


① Handle ② Handle adjuster ③ Handle column
④ Handle column adjuster ⑤ Recoil starter

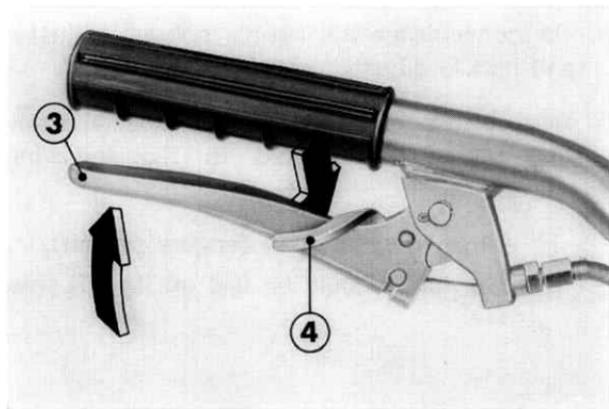
ENGINE MOUNTING AND DISMOUNTING

The engine can be easily mounted or dismounted for convenient maintenance.

1. Remove the throttle cable from the throttle knob.
2. Grasp the clutch lever and lock it.

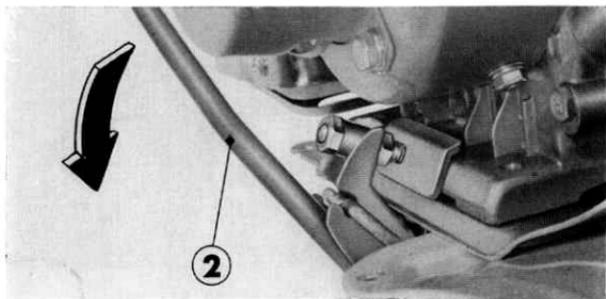
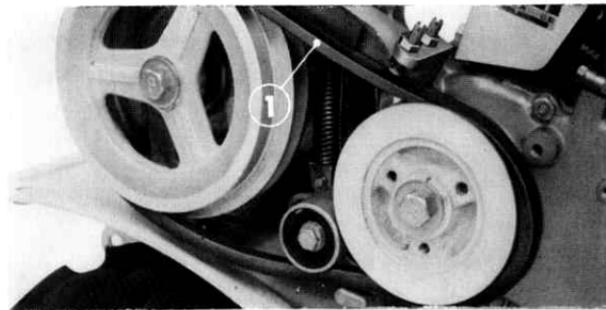


① Throttle cable ② Throttle knob



③ Clutch lever ④ Clutch lock lever

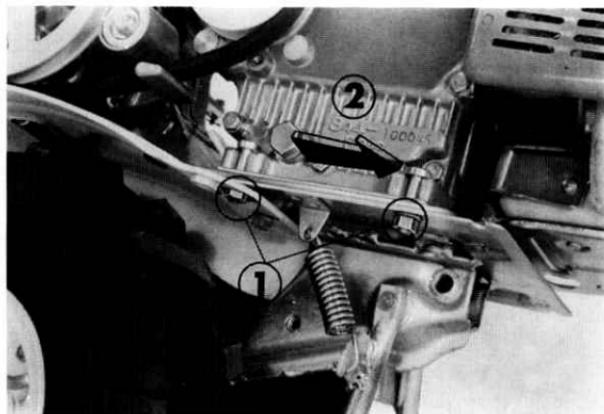
3. Remove the cover
4. Remove the V-belt.
5. Force the engine mounting lever down. Mount the engine by reversing this sequence.



① V-belt ② Engine mounting lever

BELT TENSION ADJUSTMENT

Loosen the bolts marked with a circle, unlatched the mount lever, and move the engine in the direction of the arrow to perform the adjustment of the belt

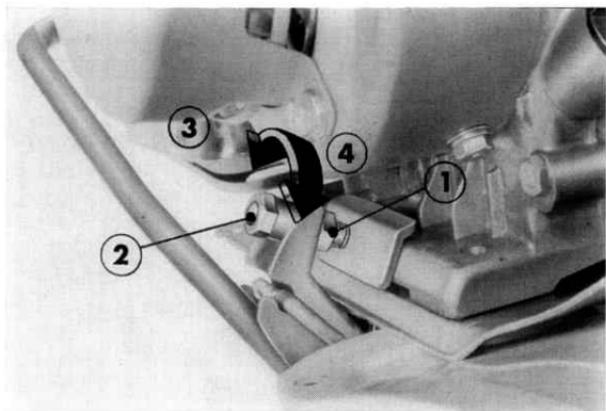


① Nuts ② Slide

ENGINE MOUNTING LEVER ADJUSTMENT

The engine should be mounted securely enough that it will not move during operation.

The engine mount may be tightened releasing the lock nut (Item 1) and turning the adjusting bolt in a clockwise direction until the engine is securely fastened. Then retighten the lock nut.

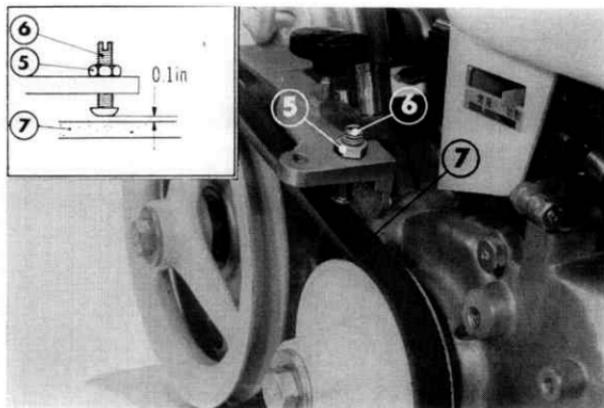


- ① Lock nut
- ② Adjusting bolt
- ③ Increase
- ④ Decrease

BELT STOPPER SCREW ADJUSTMENT

With the manual clutch engaged, the belt stopper screw should be adjusted so that a clearance of 0.1 inch exists between the belt and head of the stopper screw.

If the clearance is excessive, the belt may not fully disengage when the manual clutch lever is disengaged.



- ⑤ Lock nut
- ⑥ Adjusting screw
- ⑦ V-belt

HANDLING TIPS

Adjust steering handle height to comfortable position (waist high for normal tilling).

Should machine jerk forward when tilling, press down on steering handle.
If the machine will not move forward, shake the steering handle from side to side.

Turn : The proper method of negotiating a turn during tilling operation is to first centrally line up the drag bar, lower the handle to bring the weight toward the rear and then make the turn.
This will permit turn to be made with relative ease.

Engine Speed : Do not operate engine at low speed for a long period of time, because this could cause centrifugal clutch to slip and burn.

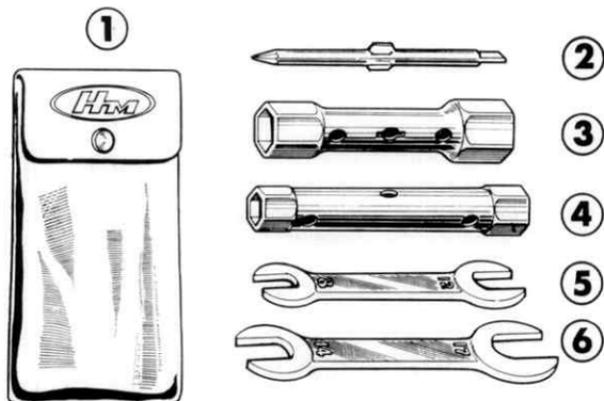


MAINTENANCE

TOOL KIT

The tool kit furnished with the F28 Tiller is illustrated in the picture below.

This tool kit is adequate for routine maintenance of the Honda Tiller. It should be kept in a convenient place so as to be available at all times.



- ① Tool bag ② Screw driver
③ Spark plug wrench ④ 10×14 mm box wrench
⑤ 8×12 mm spanner ⑥ 14×17 mm spanner

MAINTENANCE GUIDE

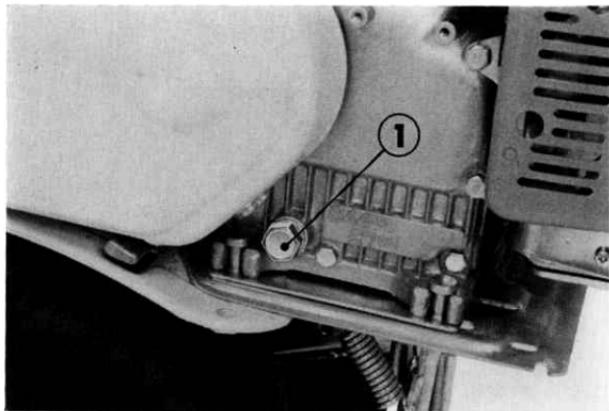
Periodic inspection and adjustment of the Honda Tiller is essential if a high level of performance is to be maintained. Regular maintenance will also insure the longest possible life of your Honda Tiller.

Provided below is a maintenance chart describing proper intervals and types of maintenance to be performed.

Item	Period	Initial 20 Hours	Every 50 Hours	Every 100 Hours	Every 200 Hours
Changing the engine oil		○		●	
Changing the reduction unit oil		○			●
Cleaning the air cleaner and changing the air cleaner oil		● When in dusty place	●		
Cleaning and checking the spark plug				●	
Adjusting the ignition timing					●

ENGINE OIL CHANGE

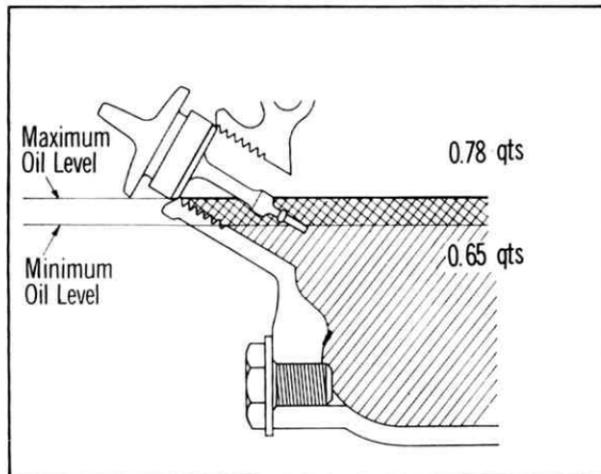
The drain bolt on the right side of the engine (picture below) is used to drain the engine oil. While removing the engine oil, be sure the engine is in a level position.



① Oil drain plug

OIL LEVEL

After the oil is drained completely, install and tighten the drain plug securely. With the engine in a horizontal position, fill the engine with the proper grade oil to the maximum oil level (0.7 qts).



CHANGING AND CHECKING THE TRANSMISSION OIL

HOW TO DRAIN THE TRANSMISSION OIL

Remove the drain bolt ① and drain oil. The engine should be in a horizontal position.

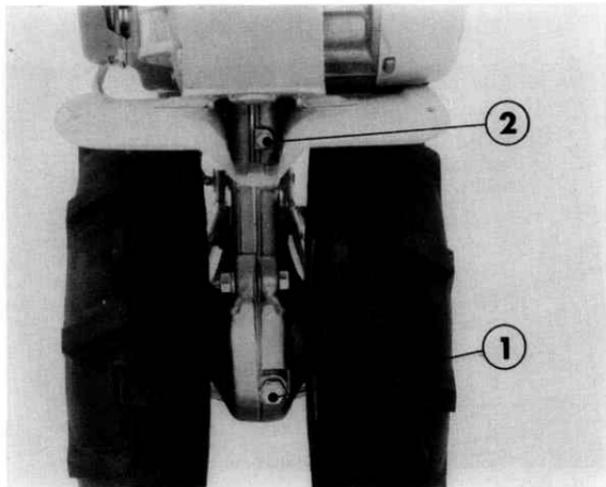
HOW TO FILL TRANSMISSION WITH OIL

Install and securely tighten the drain bolt and loosen oil level bolt. Fill transmission with proper grade oil until the oil begins to ooze from the oil level bolt hole (1.0 qts). Install and tighten the oil level bolt. Install and tighten the oil filler cap.

CHECKING TRANSMISSION OIL LEVEL

With the engine in a horizontal position, the oil level bolt should be removed. The proper amount of oil is indicated by oil oozing from oil level bolt hole.

After checking, be certain the oil level bolt is securely tightened.

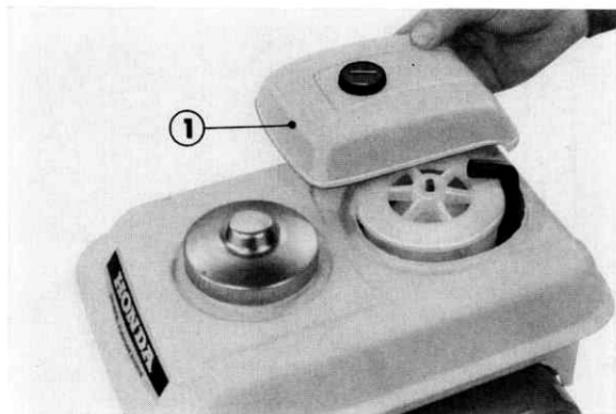


① Oil level bolt ② Drain bolt

CLEANING THE AIR FILTER AND CHANGING THE AIR FILTER OIL

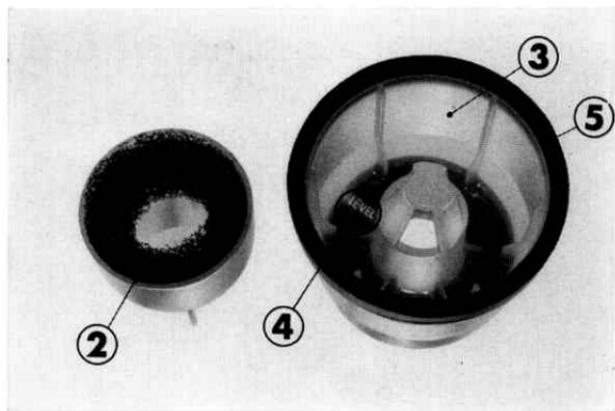
If the air filter element becomes clogged with dust, the output of the engine is reduced significantly. Also excess dust may begin to enter the engine and shorten the life of the piston and cylinder.

1. Remove the filter cover and clean the filter element with gasoline.



① Air cleaner cover

2. Change the oil in the oil pan.
3. Fill the oil to the oil level indicated in the picture below.



② Air cleaner element

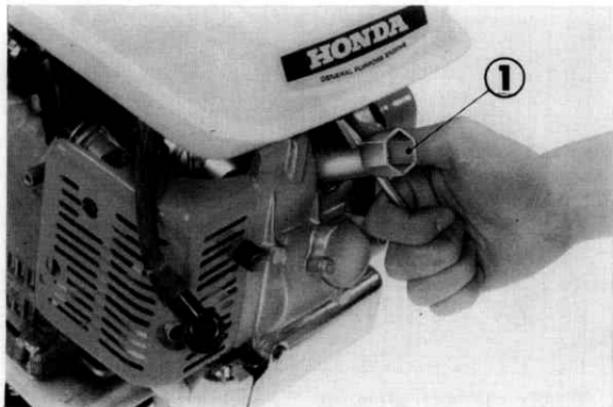
④ Oil level

③ Air cleaner case

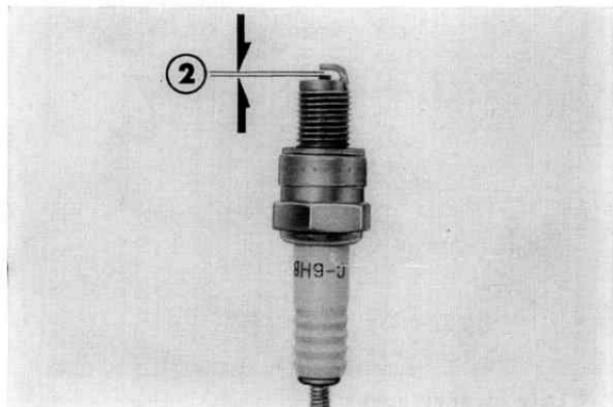
⑤ Rubber seal

CLEANING AND CHECKING SPARK PLUG

1. Remove spark plug cap and, using the spark plug wrench provided in the tool kit, remove the spark plug
2. Use a wire brush or wire pick to remove the carbon deposits from the spark plug. Adjust the spark plug gap to .030 inches.



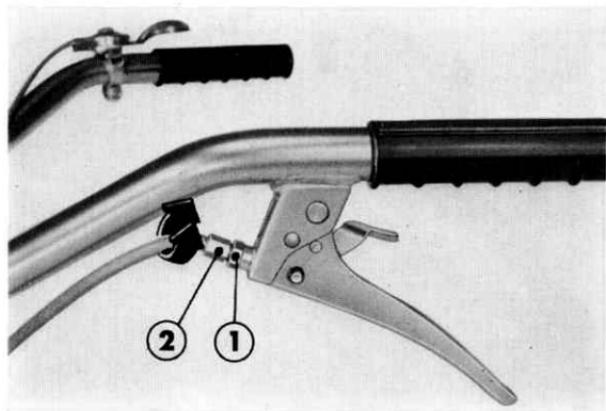
① Spark plug wrench



② .030 in.

ADJUSTING CLUTCH CABLE

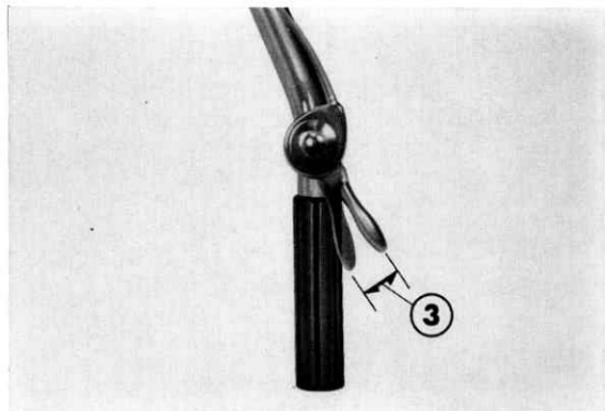
Disengage clutch lever and lock it. Then, using the adjusting bolt shown in picture below, adjust the cable so that the belt is completely separated from the engine pulley. After adjustment, the lock nut should be tightened securely. If play in the clutch lever is excessive, the clutch will not completely disengage.



① Lock nut ② Adjusting bolt

ADJUSTMENT OF THE THROTTLE CABLE

Loosen lock nut on the transmission housing and adjust the throttle adjustment screw until the play in the throttle lever is from .2 in. to .4 in. as shown in the picture below. After adjusting, securely tighten the throttle cable adjustment lock nut.

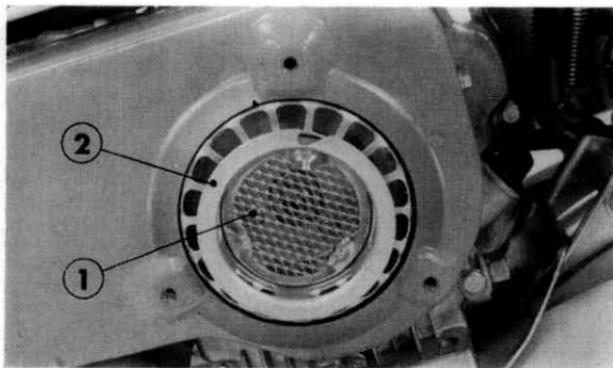


③ 5 to 10 mm (0.2 to 0.4 in.)

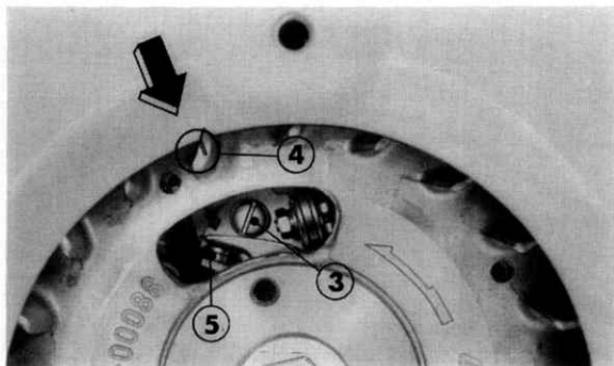
ADJUSTING THE IGNITION TIMING

Improper ignition timing will cause a reduction in power output of the F28 Tiller.

1. Remove the starter case, screen grid, starter pulley and point cover, this will expose the contact points.
2. The ignition timing is correct when the points start to open when the marked cooling fin passes the notch in the fan cover.
3. If the ignition timing requires adjustment, loosen the ignition point mounting screw and adjust the ignition timing with a screw driver inserted in the provided notches. If the ignition points are pitted, they should be cleaned with fine emery paper or point file and cleaned with gasoline.



① Screen grid ② Starter pulley

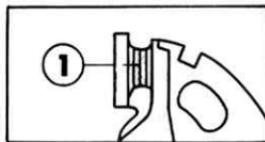
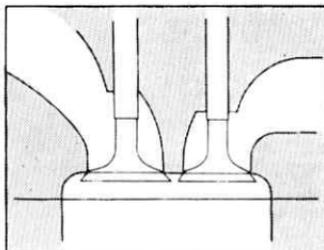


③ Adjusting screw ④ Marked fin
⑤ Contact points

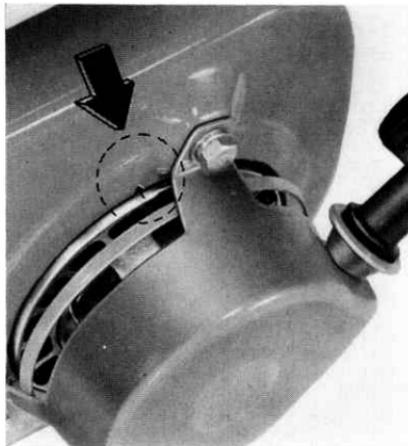
PREPARING FOR STORAGE

CRANKSHAFT POSITION

Rotate the starter pulley until it becomes hard to turn (the piston is coming up on the compression stroke) and then align the mark on the starter pulley to the cutout on the fan cover ; in this position both valves and the ignition points will be closed.



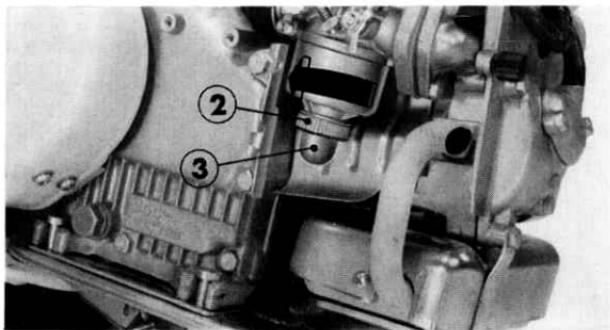
① Contact points



GASOLINE

Turn the engine switch to the ON position, remove the fuel strainer cup ③ on the bottom of the carburetor and drain the gasoline thoroughly from the carburetor and the fuel tank.

For a long storage, the tiller should be thoroughly cleaned and stored in an area where there is a minimum of humidity and dust.



② Ring nut ③ Fuel strainer cup

SPECIFICATIONS

Model Name	Model F28 CD
Weight	84 lbs.
Length×Width×Height	56.1×20.2×34.6 in.
<hr/>	
Engine	Honda G28 FD
Number of cylinders and type	1 cylinder, horizontal
Displacement	4.09 cu. in.
Maximum horsepower	3.0 HP/6,000 rpm
Continuous rated horsepower	2.0 HP/5,000 rpm
Cooling system	Forced air cooled
Fuel tank capacity	0.66 gal
Engine oil capacity	0.7 qts
Spark plug	NGK C-6HB
Output shaft diameter	3/4 inch
Clutch	Centrifugal clutch and belt tension clutch

Current customer service contact information:

United States, Puerto Rico, and U.S. Virgin Islands:

Honda Power Equipment dealership personnel are trained professionals. They should be able to answer any question you may have. If you encounter a problem that your dealer does not solve to your satisfaction, please discuss it with the dealership's management. The Service Manager or General Manager can help. Almost all problems are solved in this way.

If you are dissatisfied with the decision made by the dealership's management, contact the Honda Power Equipment Customer Relations Office. You can write:

American Honda Motor Co., Inc.
Power Equipment Division
Customer Relations Office
4900 Marconi Drive
Alpharetta, GA 30005-8847

Or telephone: (770) 497-6400 M-F, 8:30 am - 5:00 pm EST

When you write or call, please provide the following information:

- Model and serial numbers
- Name of the dealer who sold the Honda power equipment to you
- Name and address of the dealer who services your equipment
- Date of purchase
- Your name, address, and telephone number
- A detailed description of the problem



HONDA MOTOR CO., LTD.

317151

Ⓒ '70. 7 Ⓒ C. 3000
PRINTED IN JAPAN