HONDA

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E400 PORTABLE GENERATOR
OWNER'S MANUAL

Thank you for purchasing the HONDA generator.

PREFACE

HONDA Portable Generator Model E 400 is a small, light weight and efficient AC-DC generator.

In order to obtain the fullest satisfaction and the best performance from your HONDA generator, it is recommended that this manual be read thoroughly. Proper handling and performing of the scheduled maintenance will keep the generator in the best operating condition, assuring long satisfactory service, free from troubles. If troubles should develope consult the dealer from whom you bought the generator and he will provide you with prompt and helpful assistance.

E 400

CONTENTS

SAFE OPERATION

Observe the safe operating methods.

Do not use the generator inside a room, a tunnel, a well or any other confined area.

Not only will the generator become overheated, but the accumulation of harmful carbon monoxide may prove to be dangerous.

Do not place inflammable objects near the exhaust outlet.

Temperature around the exhaust outlet becomes very high, therefore, keep away combistable materials such as gasoline, matches, celluloid, explosives, etc.

Do not replenish fuel while the engine is running.

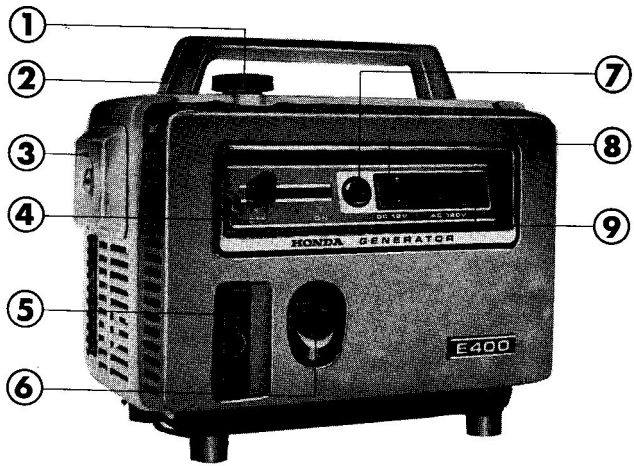
The fuel vapor may be ignited by a spark from the engine exhaust. Obey the rule of "keep inflammable away".
When fuel is spilled, wipe it off completely before starting. Always be extremely careful about fuel leakage.

Do not operate the generator with wet hands.

Severe electrical shock may be experienced in the same way as from power supply appliances. Take sufficient care when operating in rain or snow.

Do not connect to a household wiring.

DESCRIPTION OF MAIN COMPONENTS



① Fuel tank cap
② Carrying handle
③ Air cleaner cover
④ Engine switch
⑤ Starter
⑥ Oil filler cap
⑦ Pilot lamp
⑧ DC output receptacle
⑨ AC output receptacle

① Rear cover ② Exhaust vent

SPECIFICATIONS

Generator

	AC	DC
Maximun output (W)	400	—
Rated output (W)	300	100
Rated voltage (V)	120	12
Rated frequency (Hz)	60	—

Weight & Dimension

Length	14.1 in. (358 mm)
Width	10.4 in. (263 mm)
Height	12.1 in. (307 mm)
Dry weight	40.1 lbs (18.2 kg)
Curd weight	43.2 lbs (19.6 kg)

Engine

Engine Type	4 cycle, side valve, 1 cylinder
Displacement	3.38 cu. in. (55.4 cc)
Bore × Stroke	1.65 × 1.57 in. (42 × 40 mm)
Rated output	0.8 HP/3,600 rpm
Maximum output	1.1 HP/3,600 rpm
Cooling	Forced air cooled
Ignition	Magneto ignition
Spark plug	CM-6 10 mm (NGK)
Engine oil capacity	0.6 qt (0.29 ℓ)
Fuel	Gasoline
Fuel tank capacity	0.5 Gal. (2 ℓ)
Compression ratio	5.5 : 1

STANDARD ACCESSORIES

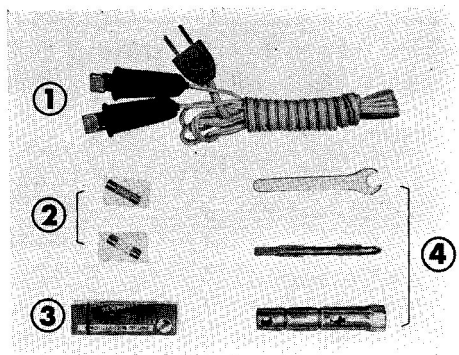
The following accessories are included with the generator and packed in the same shipping case.

① Charging cord : This cord is used for charging battery.

② Spare fuse, AC and DC : 3 Amp. for AC
10 Amp. for DC

③ Spark plug : This spark plug is a spare.

④ Tool kit, 1 set : This set of tools is necessary to perform the periodic inspection.



⑤ Power plug, 2 each : These plugs are used to draw the power from the generator.

PREPARATION FOR STARTING

Before starting the engine, observe the following procedures:

1. Engine oil

Remove the oil filler cap and fill the engine with oil up to the upper level mark on the level gauge.

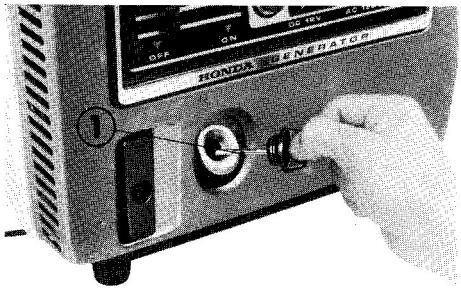
Oil capacity: 0.3 qts (0.29 ℓ)

Always check the oil with the generator in a level position.

Type of oil

Use good grade automotive engine oil. Select the proper viscosity oil for the operating temperature.

10 W-30 multigrade oil is recommended for general use.

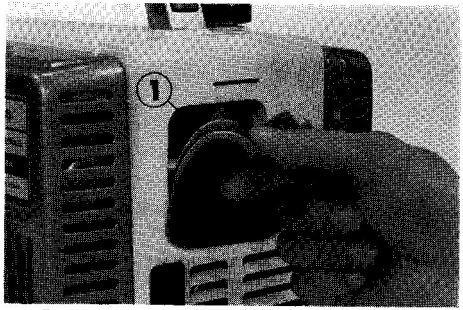


① Oil level gauge

S. A. E. Grade	Outside temp. °F	°C
30	60	15
20 20W	32	0
10W		

2. Air cleaner

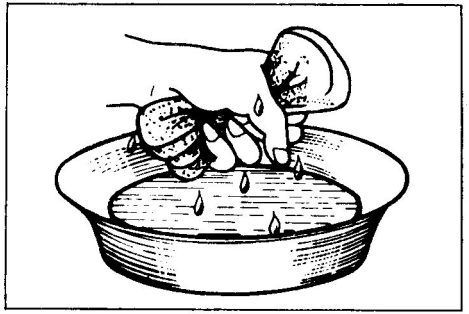
The air cleaner element must be soaked in oil-gasoline mixture for proper filtering of the dust from the air before it is taken into the engine. A dry air cleaner element will be lacking in filtering effect.



① Air cleaner element

Soaking air cleaner element in oil

Soak the element in a mixture of 10 parts gasoline to one part oil and then squeeze out the excess before installing into the air cleaner case.

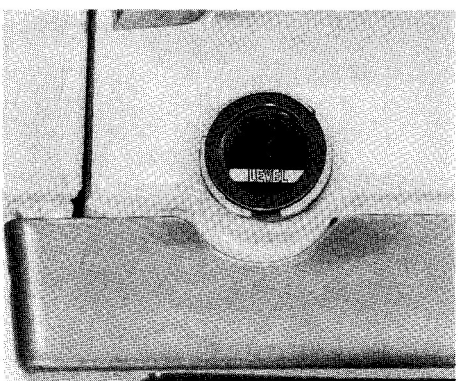


3. Fuel

When refueling the generator, do not overfill the tank.
Fill the tank to the "LEVEL" gauge on the fuel screen.

Fuel tank capacity : 0.5 Gal. (2 ℓ)

Total operating time with a full tank of fuel : approximately 4-5 hours



Important points to be observed during fueling.

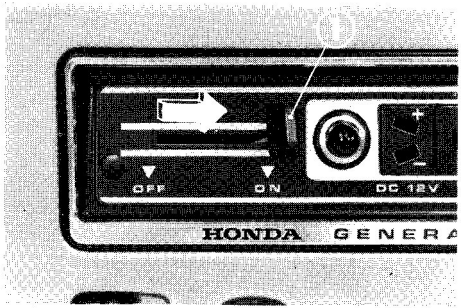
- Always stop the engine before refueling.
- Do not use gasoline-oil mixture as fuel in this engine.
- Exercise care when handling fuel so that dirt, water or other foreign substances do not contaminate the fuel.

STARTING

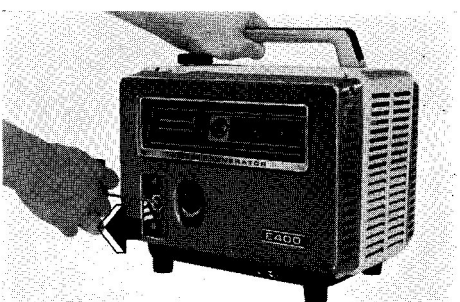
Appliances or other loads should not be plugged into the generator before starting. A load connected to the generator before the engine starts will cause hard starting. Always plug in the appliances only after the opration of the generator has become smooth.

Starting procedure

1. Shift the engine switch lever to the ON position.
   (The engine switch lever is interconnected to the fuel cock, therefore, by shifting the engine switch lever the fuel will flow from the tank to the carburetor.)
2. Pull slowly the starter rope untill the tension increases due to the engine coming up on the compression stroke, and at this time, pull through rapidly.

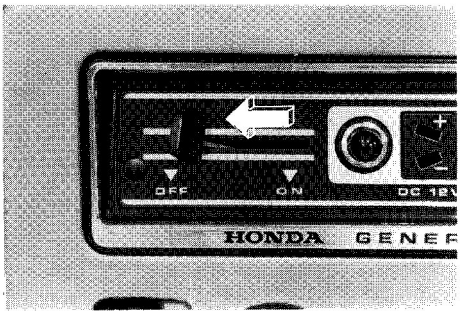


① Engine Switch Lever



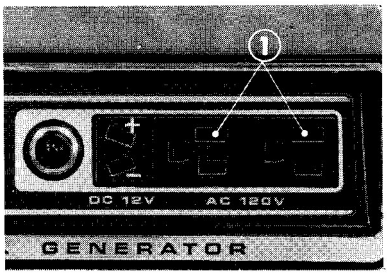
STOPPING

Shift the engine switch lever to the OFF position, and the engine stops.
(Shifting the engine switch lever shuts the fuel cock as well.)



CONNECTING A LOAD TO GENERATOR

AC and DC power cannot be drawn from the generator at the same time, therefore only one type of power appliance should be plugged into the generator at a time and it should be checked to make sure that the generator is not overloaded.



① AC output receptacles

Using AC Power

The plug of the AC appliance is inserted into the AC output receptacle after the generator is started. The generator can accomodate appliances up to a maximum of 300W, 120V (60Hz).

Starting a Motor

Appliances with motors up to about 150 W can be adequately started. Electric motors are of many types and used for various purposes.
Motors used in appliances with high initial load such as compressors, though having a rating less than 150 W, may not be adaptable for use with the E 400.

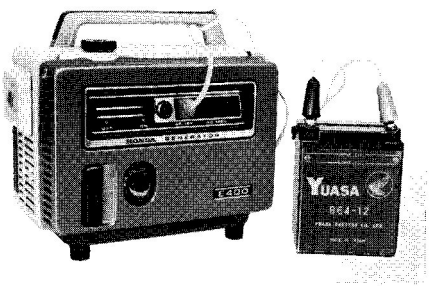
NOTE: When using an appliance with a long cord, lock the plug end of the cord around the handle before inserting the plug into the receptacle to prevent the plug from being pulled out.

Using the DC Power

Battery Charging

After starting the generator, clamp the grips on the charging cord (provided with the generator) on to the battery terminals and then insert the plug into the DC receptacle.

The (+) charging cord grip must be connected to the (+) terminal of the battery and the (−) grip must be connected to the (−) battery terminal.



Rated Output: 12V, 8A

NOTE: When charging a battery having a large capacity, an excessively large current flow may result and cause the fuse to blow out.
If this is experienced, adjust the governor setting (by referring to the section on "Voltage Adjustment") to lower the engine RPM and perform the charging at a reduced current.

Fuse Replacement

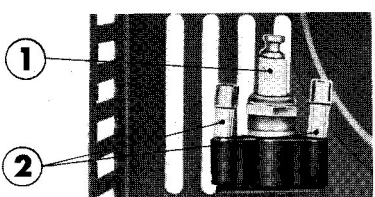
Fuse box is accessible by removing the rear cover. The DC fuse box is on the left side and the AC fuse box is on the right side.

If a fuse is blown, open the fuse box and replace the fuse.

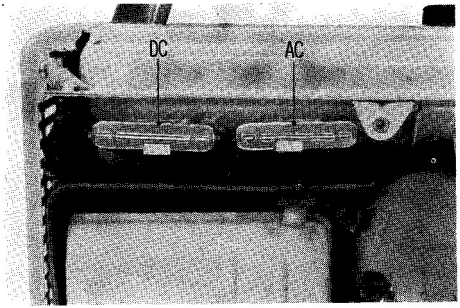
Always use the specified fuse size to protect the generator and appliance.

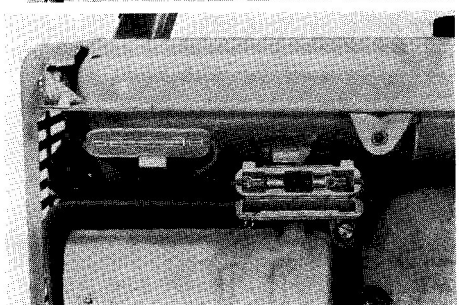
Fuse size AC : 3A, DC : 10A

Spare fuses should always be carried in the fuse holder on the rear cover.



① Spare spark plug ② Spare fuses



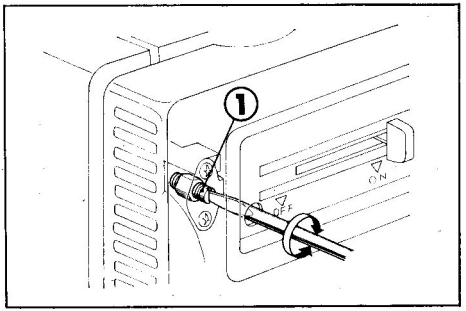


Voltage Adiustment

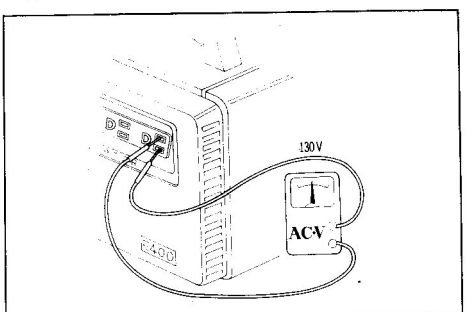
Honda generator E400 has been set to generate the specified voltage. If for any reason the adjustment is necessary, follow the procedure outlined below. (Generator adjustment has been made at the factory and requires no adjustment and should not be changed unless absolutely necessary.)

Adjusting Procedure

1. Start the engine and warm up for about 5 minutes (wait until the automatic choke is completely open).
2. Insert the AC voltmeter leads into the AC receptacle.
3. Remove the grommet on the front panel, insert a screwdriver and turn the governor adjuster screw. The voltmeter should indicate 130V.
   Turn the screw clockwise to increase the voltage. Turn the screw counter clockwise to decrease the voltage.



① Governor control screw



MAINTENANCE

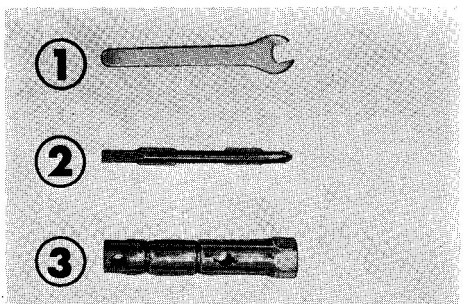
Periodic servicing chart

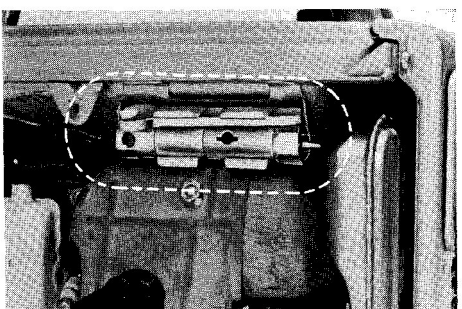
Maintenance is the most important factor in keeping the equipment in best operating condition. Be sure to perform the servicing periodically in accordance with the maintenance schedule below.

Items \ Period	Initial 20 Hrs	Every 50 Hrs	Every 100 Hrs	Every 200 Hrs
Change engine oil	○		●	
Service air cleaner	● When used in dusty place	●		
Check and service spark plug			●	
Check breaker points				●
Clean combustion chamber				●

Servicing tools

Keep the tool kit where it is always available for use.



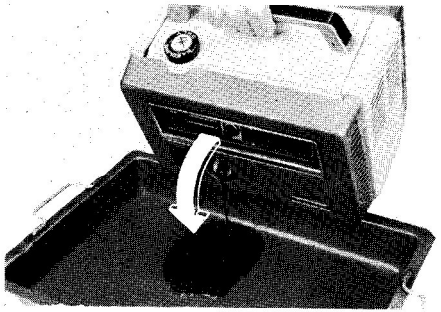


① Spanner
② Screwdriver
③ Box wrench

CHANGE ENGINE OIL

Draining

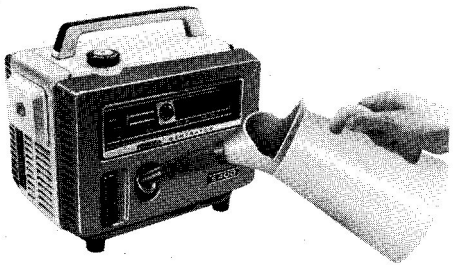
Remove oil filler cap and drain oil from the filler hole by tilting the whole generator. Please make sure to turn the engine switch OFF before draining.



Filling

Fill oil through the filler hole and check the level.

Oil capacity : 0.6 pt. (0.29 ℓ)

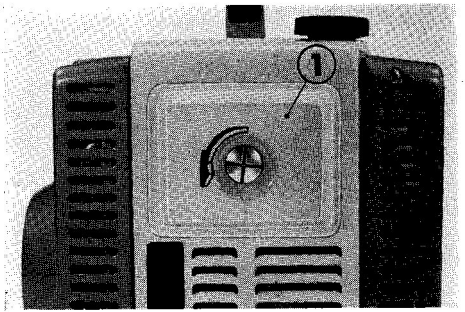


SERVICE AIR CLEANER

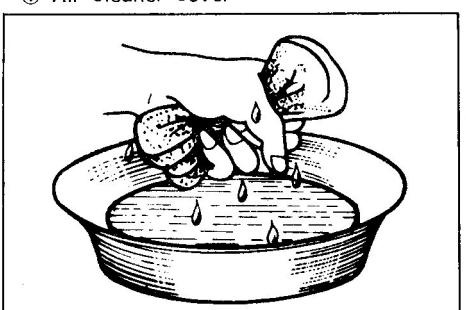
If a dirty air cleaner is used, filtering efficiency will be lowered, and will cause a loss in power output.

Cleaning

1. Remove the air cleaner cover and then take out the air cleaner element.
2. Wash the air cleaner element with gasoline or kerosene.
3. Soak the air cleaner element in a mixture of 10 parts gasoline and one part oil; squeeze out the excess and install into the air cleaner case.
   The air cleaner should be serviced at a more frequent interval when operating the generator in extremely dusty areas.



① Air cleaner cover



CLEANING AND ADJUSTING SPARK PLUG

In order for the engine to develop full power, the spark plug electrodes must be free of carbon deposits and the plug gap properly set.

Spark plug removal

Remove the rear cover and unscrew the plug with the plug wrench provided in the tool kit.

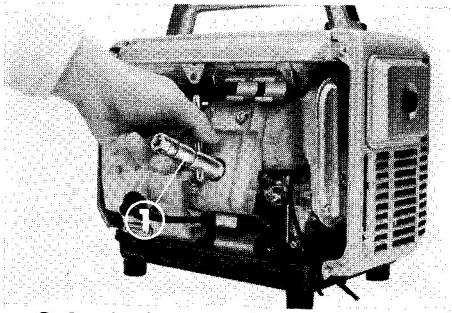
Cleaning

Use a wire brush or a wire to remove the carbon deposits from the electrode, exercising care not to damage the electrodes or scratch the insulator.

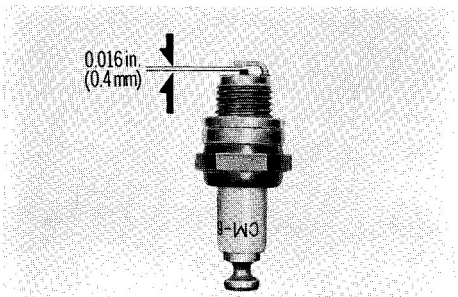
Spark gap adjustment

Use a feeler gauge to measure the plug; if it is not normal, correct the gap by bending the electrode on the grounded side.

Standard spark gap: 0.016 in. (0.4 mm)



① Spark plug wrench



CHECK BREAKER POINTS

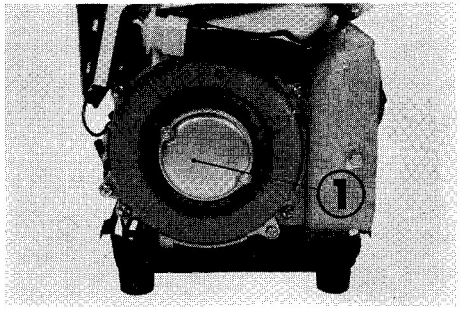
If the surface of the contact points is pitted or dirty, it should be cleaned up with fine emery paper or a file.

Adjusting Ignition Timing

Ignition timing which is either too fast or too slow will cause a drop in power output and starting difficulty.

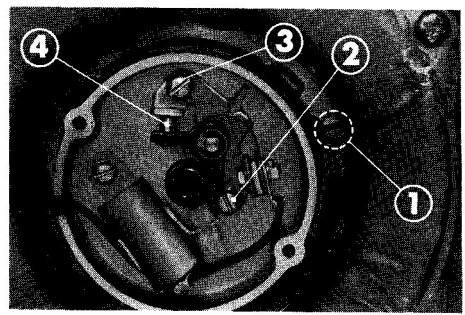
Adjusting procedure

1. Remove the right side cover and unscrew the two screws and then remove the contact breaker cover



① Contact breaker cover

2. Proper ignition timing is determined by observing the start of the contact point opening. The point should start to open when the cooling fin with the red timing mark passes the red timing index mark on the generator case.
3. When the ignition timing requires adjustment, loosen the contact point mounting bolt and then make the adjustment with the adjusting screw.
4. After completing adjustment, tighten the point mounting screw and assemble the contact points cover and right side cover.



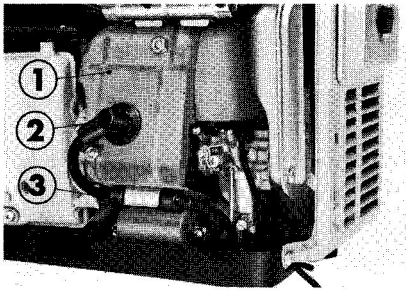
① Red marks ② Mounting screw
③ Adjusting screw ④ Contact points

CLEAN COMBUSTION CHAMBER

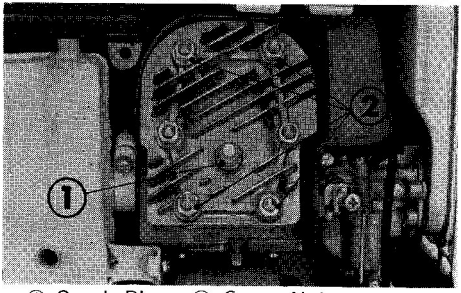
An engine which has been used for a long time will accumulate carbon in the combustion chamber. This will cause a drop in power output.

Disassembly

1. Remove the rear cover and the spark plug cap ; Remove the noise suppressor from the cylinder head cover.
2. Unscrew the two 6 mm nuts and the 5 mm bolts, loosen the special 5 mm bolt and remove the cylinder head cover.
3. Remove the spark plug.
4. Remove the six nuts and separate the cylinder head and gasket.



① Cylinder head cover
② Spark plug cap ③ Noise suppressor



① Spark Plug ② 6 mm Nuts

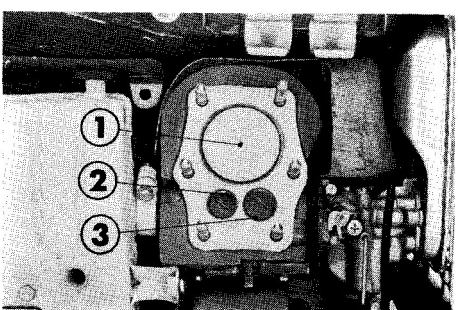
Cleaning

1. Position the piston to top-dead-center so that both the inlet and exhaust valves are closed, and in this position, remove the carbon from the piston head and valves.

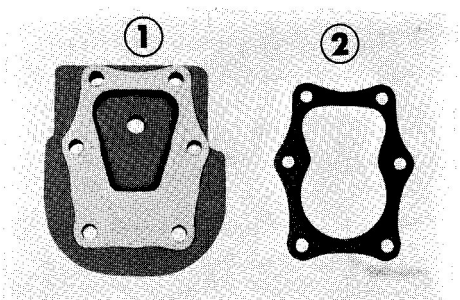
NOTE: Exercise care not to damage or scratch the piston or valves.

2. Removing carbon from insibe the cylinder head, and the gasket.

NOTE: Exercise care not to damage or scratch the internal surface of the cylinder head.



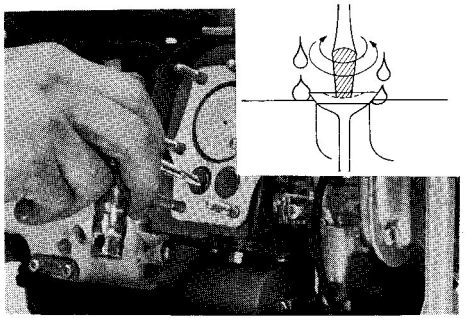
① Piston ② Exhaust valve
③ Inlet valve



① Cylinder head
② Cylinder head gasket

Lapping the valves

Apply a few drops of oil to the valve seat surface and turn the valve back and forth about ten times in both direction, using a screwdriver inserted into the groove in the valve head.
After completing the lapping of the valve, wipe off oil from the valve and seat.

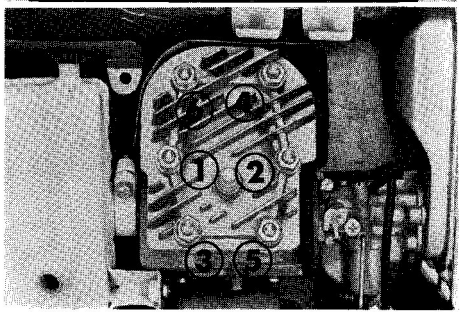


Reassembly

1. Install the gasket and the cylinder head, screw in the 6 nuts lightly, and then securely tighten the nuts in numbered sequence.

NOTE: Install a new cylinder head gasket.

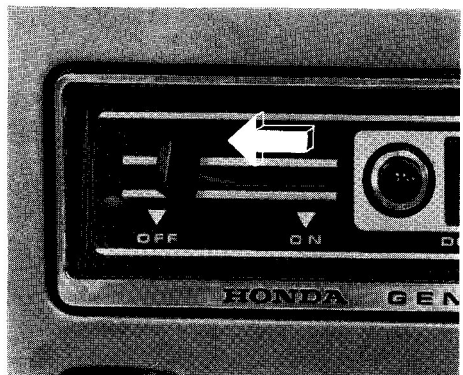
2. Install the cylinder head cover, spark plug and the rear cover.



TRANSPORTING

Observe the following when preparing the generator for transportation.

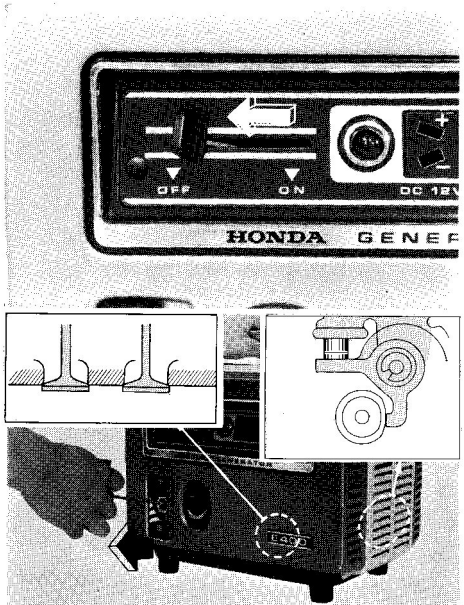
- Set the engine switch (fuel cock) to the OFF position.
- Check to make sure that the fuel tank cap is secured.
- Prevent the generator from being bumped or dropped.



EXTENDED STORAGE

When the generator is not in use for a long time, observe the following.

- Set the engine switch to the OFF position.
- Close the breaker points and valves. Pull the rope starter slowly until compression is felt and then pull an additional 1-2 in. (3-4 cm). In this position, both the inlet and exhaust valves as well as the breaker points are closed, preventing the breaker points surfaces and the valve face seat from corroding.

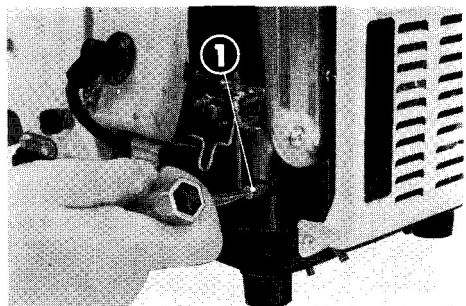


- Draining gasoline

  If the generator is not to be used for longer than a month, remove the drain screw on the carburetor and turn the engine switch to the ON position to drain the fuel from the tank and the carburetor.

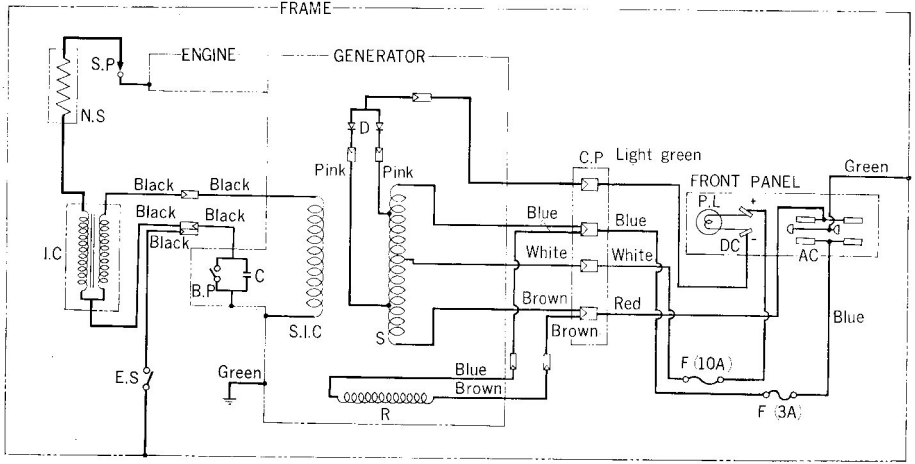
- Storage area

  Store the generator in an area which is dry, free from dust and which is well ventilated.



① Drain screw

WIRING DIAGRAM



N.S	Noise suppressor
S.P	Spark plug
I.C	Ignition coil
E.S	Engine switch
B.P	Breaker points

C	Condenser
S.I.C	Stator ignition coil
D	Diode
S	Stator coil
R	Reactor

C.P	4 pole coupler
P.L	Pilot lamp
F	Fuse

MEMO

MEMO

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HONDA

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