

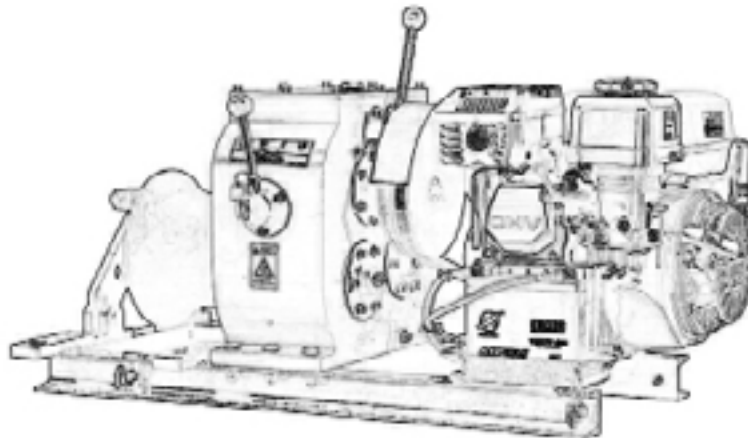


## **PWCD / PWCG Winches Series**

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**User's Manual / Manual de usuario**

**Safety Warnings / Advertencias de Seguridad**



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**PWCG3T**



**PWCG1Te**



**PWCD5T**



**PWCG120**



**PWCD8Te**



**PWCG5T**



**PWCD5TTM**



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## **PROWINCH® DISCLAIMER**

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Prowinch® LLC declares that it has made available to the Customer each and every one of the security warnings related to the purchased product and that, as a result, it does not assume any responsibility for any damages or losses that may be suffered by the client or third parties. Cause or as a direct or indirect consequence of the breach or omission of any of the instructions or safety warnings contained in the User Manual and Security Warnings corresponding to the unit purchased.

In this sense, Prowinch® LLC will not be liable for accidents and / or damages to persons and / or property resulting from the negligent use of the product. In no case does Prowinch® LLC assume any liability arising from the use of these voluntary recommendations, and does not offer any guarantee in relation to them. These recommendations do not take precedence over the current safety regulations of the plant. For purposes of enforcing the Warranty of the product purchased, Prowinch® LLC, will only be liable for any damage when it is possible to prove that the user has followed each and every one of the warnings contained in the User Manual and Safety Warnings.

1. It is the sole responsibility of the Client / User to verify that the acquired equipment, products and accessories comply with the characteristics, capacities, requirements, components, accessories and other conditions for the use that the Client / user intends to give it.

2. It is also the sole responsibility of the Client / User to ensure that the equipment and products purchased are operated and maintained with adequate safety standards and by personnel duly trained in the use thereof. The Client / User is also responsible for implementing all the security measures necessary to prevent accidents or damages to people or property and for following the indications and warnings of the corresponding manual.

3. Any assistance provided by Prowinch® LLC in the selection of the equipment, the capacities and characteristics required by the clients is delivered free of charge and based on the information about the application, use and requirements indicated by the Client itself. It does not correspond to Prowinch® LLC to verify the accuracy of the given information. It is the sole and exclusive responsibility of the Client -or who will use the equipment and products acquired- to ensure that the specifications comply with the capabilities, characteristics, up-to-date maintenance and everything necessary for a correct and safe operation in relation to the intended use.

4. Prowinch® LLC recommends the use of winches with 4 brakes for personnel lifting. The use of winches of 3 brakes or less or safety features lower than the best available for personnel lifting, is the sole responsibility of the customer in order to guarantee the safety of the personnel and users of the equipment it is necessary to carry out the inspections

and maintenance of the equipment according to the recommended frequency in relation to its work cycle. It is mandatory to keep record and evidence the written and photographic reports of: Maintenance, Start-up, Load Tests, Training, Certifications, Inspections and Reports of failures and accidents.

5. The aforementioned reports must be sent by email to [registros@prowinch.com](mailto:registros@prowinch.com) within the first 7 calendar days after the occurrence of an event.

6. Compliance with the timely implementation of the mandatory activities described in points 6 and 7 in addition to all the activities mentioned in the corresponding rules applied are the sole responsibility of the user. Failure to comply with the foregoing conditions releases Prowinch® LLC from any type of Liability and Warranty to the team, customer, staff or user, or any other liability that could be attributed to Prowinch® LLC.

7. The information contained in this manual may contain technical errors or inaccuracies. Prowinch® LLC is not responsible for typing errors, omission or incorrect information.

8. This manual is subject to change without prior notice. Download the latest version available at [www.prowinch.com](http://www.prowinch.com).

9. Always check [www.prowinch.com](http://www.prowinch.com) for the latest information regarding this product.



## WARNING

Hoists, Cranes and other Lifting and material-movement related equipment USERS, must be knowledgeable about the safe and proper use of this equipment and be aware of their responsibilities as outlined in all applicable standards and regulations.

The ASME/ANSI B30 Standard contains provisions that apply to the construction, installation, operation, inspection, testing, maintenance, and use of cranes and other lifting and material-movement related equipment.

As OSHA's, ASME and ANSI standards state, the installation, setup and operation of these units and equipment shall be performed by a qualified person.

OSHA requires rated load tests for new and altered cranes, OSHA's standard at 29 CFR 1910.179(k) states:

Operational tests.

Prior to initial use all new and altered cranes shall be tested to insure compliance with this section including the following functions:

Hoisting and lowering.

Trolley travel.

Bridge travel.

Limit switches, locking and safety devices.

The trip setting of hoist limit switches shall be determined by tests with an empty hook traveling in increasing speeds up to the maximum speed. The actuating mechanism of the limit switch shall be located so that it will trip the switch, under all conditions, in sufficient time to prevent contact of the hook or hook block with any part of the trolley.

Rated load test. Test loads shall not be more than 125 percent of the rated load unless otherwise recommended by the manufacturer.

Once a rated load test is performed, paragraph 1910.179(k)(2) requires that "[t]he test reports shall be placed on file where readily available to appointed personnel."

In order to ensure Safety and installation requirements Prowinch requires Load Tests to be performed prior to initial use for all Hoists, Winches and Cranes, as well as other related components. Not fulfilling this requirement is dangerous, could lead to equipment failure and will automatically void the warranty.

The B30 Standard is intended to:

(a) Prevent or minimize injury to workers, and otherwise provide for the protection of life, limb, and property by prescribing safety requirements.

(b) Provide direction to manufacturers, owners, employers, users, and others concerned with, or responsible for, its application.



## WARNING

(c) Guide governments and other regulatory bodies in the development, promulgation, and enforcement of appropriate safety directives.

The equipment covered by the B30 Standard is subject to hazards that cannot be abated by mechanical means, but only by the exercise of intelligence, care, and common sense. It is therefore essential to have personnel involved in the use and operation of equipment who are competent, careful, physically and mentally qualified, and trained in the proper operation of the equipment and the handling of loads. Serious hazards include, but are not limited to, improper or inadequate maintenance, overloading, dropping or slipping of the load, obstructing the free passage of the load, and using equipment for a purpose for which it was not intended or designed.

Failure to Read, Understand and Follow the information in the corresponding ASME B30 Standard for your Hoist and Lifting equipment may result in severe INJURY or DEATH. It is YOUR RESPONSIBILITY to consider all risk factors and follow all the equipment related ASME B30 standard, which comprises the following volumes:

B30.1 Jacks, Industrial Rollers, Air Casters, and Hydraulic Gantries.

B30.2 Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist).

B30.3 Tower Cranes.

B30.4 Portal and Pedestal Cranes.

B30.5 Mobile and Locomotive Cranes.

B30.6 Derricks.

B30.7 Winches.

B30.8 Floating Cranes and Floating Derricks.

B30.9 Slings.

B30.10 Hooks.

B30.11 Monorails and Underhung Cranes.

B30.12 Handling Loads Suspended From Rotorcraft.

B30.13 Storage/Retrieval (S/R) Machines and Associated Equipment.

B30.14 Side Boom Tractors.

B30.15 Mobile Hydraulic Cranes.

B30.16 Overhead Hoists (Underhung).

B30.17 Overhead and Gantry Cranes (Top Running Bridge, Single Girder, Underhung Hoist).

B30.18 Stacker Cranes (Top or Under Running Bridge, Multiple Girder With Top or Under Running Trolley Hoist).

B30.19 Cableways.

B30.20 Below-the-Hook Lifting Devices.

B30.21 Lever Hoists.

B30.22 Articulating Boom Cranes.

B30.23 Personnel Lifting Systems.

B30.24 Container Cranes.

B30.25 Scrap and Material Handlers.



## WARNING

B30.26 Rigging Hardware.  
 B30.27 Material Placement Systems.  
 B30.28 Balance Lifting Units.  
 B30.29 Self-Erecting Tower Cranes.  
 B30.30 Ropes.

## DO NOT



## WARNING

1. DO NOT Operate, install, or repair the hoist unless trained and authorized.
2. DO NOT Operate the hoist unless you have first read the operator's manual.
3. DO NOT Operate the hoist without appropriate PPE and without performing a pre-shift inspection.
4. DO NOT Operate the hoist if not complying with all required OSHA regulations.
5. DO NOT Lift more than the rated load.
6. DO NOT Lift people or lift loads over people.
7. DO NOT Wrap the hoisting rope or chain around the load.
8. DO NOT Operate with the chain/rope not properly seated in the sprockets, drum, or sheave.
9. DO NOT Operate unless the direction of the hook travel agrees with the direction shown on the control.
10. DO NOT Operate the hoist unless the hook travel limit devices function properly. (Test without a load PRE-SHIFT )
11. DO NOT Operate the hoist with twisted, kinked, damaged, dirty, or unlubricated chain or rope.
12. DO NOT Operate a damaged or malfunctioning hoist.
13. DO NOT Operate the hoist when the hook is not centered under the hoist
14. DO NOT Remove or obscure this tag or other WARNING & SAFETY LABELS.

## DAILY CHECKLIST



## WARNING

**TAGGED HOIST:** Ensure the crane or hoist is not tagged out of order.

**CONTROL DEVICES:** Test Run. Ensure all motions agree with control device marking.

**BRAKES:** Check all motions for excessive drift and abnormal stopping distances.

**HOOK:** Check for damage, cracks, nicks, gouges, deformations on throat opening, wear on saddle or load-bearing point, and twist.

**HOOK LATCH:** Check for proper operations.





## WARNING

**WIRE ROPE:** Check for broken wires, broken strands, kinks, and deformation or damage to the rope structure.

**CHAIN:** Check for corrosion, wear, elongation, twist, nicks, or gouges. Keep Chain/Wire Rope Clean and Lubricated.

**REEVING:** Check the rope for proper reeving and that rope parts are not twisted.

**LIMIT SWITCHES:** Ensure that all limit devices stop lifting motion before the load block or chain/rope stop strikes the hoist.

**OIL LEAKAGE:** Check for any signs of oil leakage on the crane/hoist and the floor.

**UNUSUAL SOUNDS:** Check for unusual sounds from the hoist while operating.

**WARNING & SAFETY LABELS:** Ensure that labels are not missing and they are legible.

Thank you for purchasing a Prowinch® winch. This manual describes the operation and maintenance of the winch. All information in this publication is based on the newest production information is available at print time.

## 1. SAFETY PRECAUTIONS

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Prowinch®'s winches are designed for delivering a safe and trustable service if they are operated according to this manual.

This manual contains important information to help you properly install, operate and maintain your winch for maximum performance, economy and safety. Please study its contents thoroughly before putting your winch into operation. By practicing correct operating procedures and by carrying out the recommended preventive maintenance suggestions, you will experience long, dependable and safe service.

After you have completely familiarized yourself with the contents of this manual, we recommend that you carefully file it for future reference.

### Applications for PWTR Prowinch® winches

Choose the Prowinch® winch that is right for you: PWTR series offers you top of the line models from 9500 lb up to 17000 lbs, featuring standard and optional accessories for recovery applications. We offer you lightweight, durable and affordable winches. Specially design for recovery applications, our winches are equipped of a durable wound motor for long life and extra pulling power, featuring a tough 3 stage planetary gear box delivering power and reliability. The body and frame of your winch are corrosion resistant stainless steel to provide a long life.

### Mandatory use of:

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**Hard Hat**



**Safety Glasses**



**Safety Gloves**



**Safety Shoes**

## 1.1. Safety Precautions

### WARNING:

This symbol indicates unsafe practices or situations which may cause damage to the property and even injuries to the personnel.



### DANGER:

This symbol indicates a potentially dangerous situation which if not avoided may cause severe injuries or death



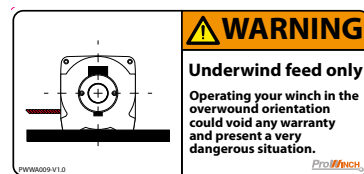
### DANGER

All operators and other users who are near the steel chain or its load must wear required safety equipment: gloves, safety helmet / hard hat, safety shoes and eye protection.



### WARNING

Before installing, removing, inspecting, or performing any maintenance on the winche, the unit must be unplugged, locked out, and tagged out. Do not use this equipment in hazardous locations.



Read and understand the contents of this User Manual thoroughly before handling the product. Practicing correct and safe operating procedures and carrying out the recommended preventative maintenance will ensure a long, reliable, and safe service.

After carefully reading and understanding the User Manual, store it for future reference.

## 2. GENERAL SAFETY PRECAUTIONS

1. Take time to fully read the instructions from this User's Manual, in order to understand your winch and its operations.
2. Do not exceed winch or winch wire rope rated capacity. Double line using a snatch block to reduce winch load.
3. Do not use winch or winch wire rope for towing. Shockloads can damage, overload and break wire rope.
4. Do not use a winch to secure a load.
5. Do not operate this winch when under the influence of drugs, alcohol or medication.
6. Always wear heavy leather gloves when handling winch wire rope.
7. Always remove jewelry and wear eye protection.
8. Always be aware of possible hot surfaces at winch motor, drum or wire rope during or after winch use.
9. Inspect equipment regularly, replace damaged or worn parts, and keep appropriate records of maintenance.
10. Use only PROWINCH®'s recommended parts for replacement. Any modifications or repairs without the approval from PROWINCH® will void warranty.

### 2.1. SAFETY INSTALLATION

1. Choose a mounting location that is sufficiently strong to withstand the maximum pulling capacity of your winch.
2. Use class 8.8 metric (grade 5) or better hardware.
3. Do not weld mounting bolts.
4. Use factory approved mounting hardware, components, and accessories.
5. Do not use bolts that are too long.
6. required bolt length to ensure proper thread engagement.
7. Complete the winch installation and hook attachment before installing the wiring.
8. Always keep hands clear of winch wire rope, hook loop, hook and fairlead opening during installation, operation, and when spooling in or out.
9. Always position fairlead with warning readily visible on top.
10. Prestretch wire rope and respool under load before use. Tightly wound wire rope reduces chances of binding, which can damage the wire rope.
11. Insulate and protect all exposed wiring and electrical terminals.
12. Do not route electrical cables across sharp edges, near parts that get hot and/or through or near moving parts.
13. Always place the supplied terminal boots on wires and terminals as directed by the installation instructions.
14. Do not lean over battery while making connections.
15. Do not route electrical cables over battery terminals.
16. Do not short battery terminals with metal objects.
17. Battery Recommendations A fully charged conventional automotive battery with a minimum rating of 650 cold cranking amps is recommended to obtain peak performance from your winch. Make sure all electrical connections are clean and tight.
18. Consult this User's Manual for proper wiring details.



#### **DANGER:**

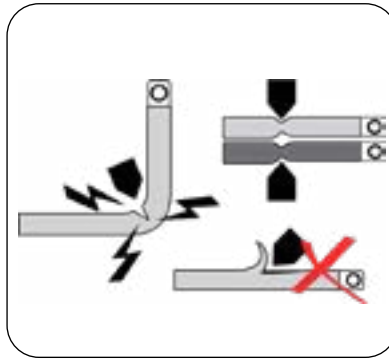
Failure to observe these instructions could lead to serious injury or death.

## 2.2. SAFETY OPERATION

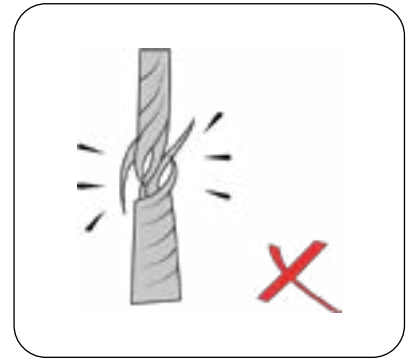
- 1.** Inspect winch wire rope, hook, and slings before operating winch. Frayed, kinked or damaged winch wire rope must be replaced immediately. Damaged components must be replaced before operation. Protect parts from damage.
- 2.** Remove any element or obstacle that may interfere with safe operation of the winch.
- 3.** Always be certain the anchor you select will withstand the load and the strap will not slip.
- 4.** Always use supplied hook strap whenever spooling winch wire rope in or out, during installation and during operation.
- 5.** Always require operators and bystanders to be aware of vehicle and or load.
- 6.** Be aware of stability of vehicle and load during winching, keep others away. Alert all bystanders of an unstable condition.
- 7.** Always unspool as much winch wire rope as possible when rigging. Double line or pick distant anchor point.
- 8.** Take time to use appropriate rigging techniques for a winch pull.
- 9.** Do not touch winch wire rope or hook while someone else is at the control switch or during winching operation.
- 10.** Do not engage or disengage clutch if winch is underload, winch wire rope is in tension or drum is moving.
- 11.** Do not touch winch wire rope or hook while under tension or under load.
- 12.** Stand clear of winch wire rope and load and keep other away while winching.
- 13.** Do not use vehicle to pull load on winch wire rope. Combined load or shock load can damage, overload and break wire rope.
- 14.** Do not wrap winch wire rope back onto itself. Use a choker chain or tree trunk protector on the anchor.
- 15.** Do not operate winch with less than 5 wraps of winch wire rope or 10 wraps of synthetic rope around the drum. Wire rope could come loose from the drum, as the wire rope attachment to the drum is not designed to hold a load.
- 16.** Do not use winch as a hoist or to suspend a load.
- 17.** Always be certain anchor will withstand load, use appropriate rigging and take time to rig correctly.
- 18.** Do not use winch to lift or move persons.
- 19.** Do not use excessive effort to freespool winch wire rope.
- 20.** Always use proper lifting technique or get lifting assistance while handling and installing.
- 21.** Always wind the winch wire rope on bottom (mountside) of drum.
- 22.** Do not wind wire rope over top of drum. Always spool the winch wire rope onto the drum in the direction in this manual.
- 23.** Do not leave remote control where it can be activated during free spooling, rigging, or when the winch is not being used.
- 24.** Do not leave the winch remote control plugged in when installing, freespooling, rigging, servicing or when the winch is not being used.
- 25.** Do not operate any equipment on which the safety placards or decals are missing or illegible.
- 26.** Report any malfunction or irregular operation of the equipment.
- 27.** Do not operate an equipment that has been modified without previous PROWINCH® approval.
- 28.** Winch damper helps to prevent wire rope recoil in the event of a wire rope failure. Do not approach or move the damper once tension is applied. Do not allow it to get pulled into the fairlead.



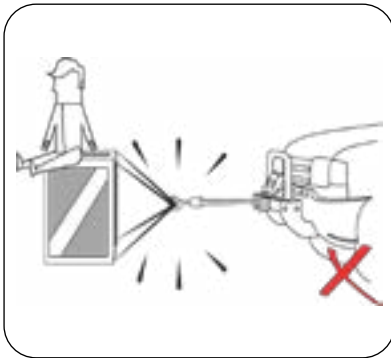
**1.** Do not exceed winch or winch rope rated capacity.



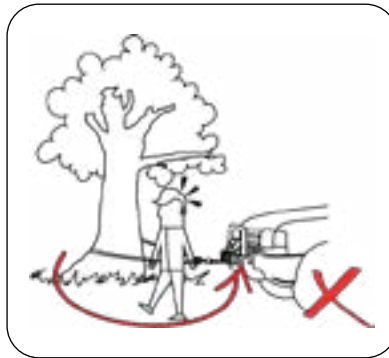
**2.** Do not route electrical cables across sharp edges, near parts that get hot and/ or through or near moving parts.



**3.** Always inspect winch rope, hook, and slings before operating winch. Frayed, kinked or damaged winch rope must be replaced immediately.



**4.** Do not use the equipment to lift or move people.



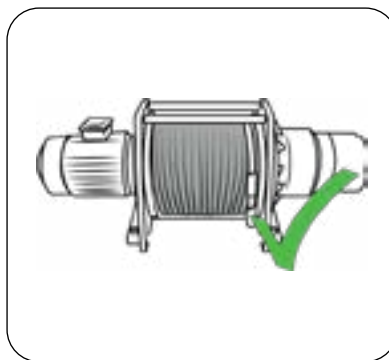
**5.** During winching operation always be aware of stability of vehicle and load during winching, keep others away. Alert all bystanders of an unstable condition.



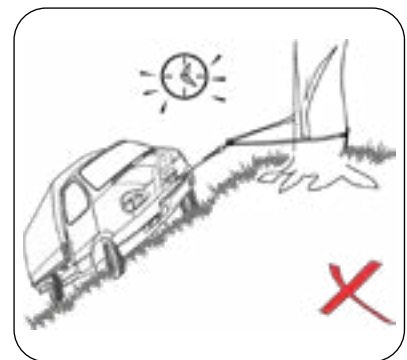
**6.** Do not submerge winch in water. Always store the remote control in a protected, clean, dry area.



**7.** Perform preventive checks as part of a regular maintenance schedule to keep your winch operating properly.



**8.** Always verify installation before operating.



**9.** Do not leave loads unattended, wire rope could come loose from the drum, as the wire rope attachment to the drum is not designed to hold a load.

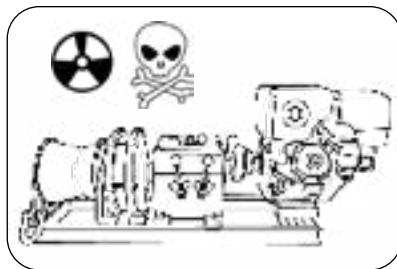
## 2.3. GENERAL ENVIRONMENTAL PRECAUTIONS



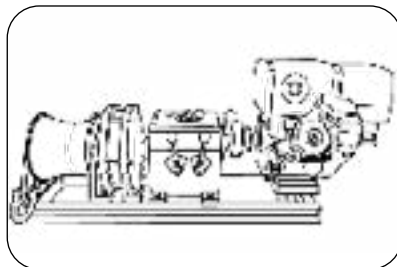
### DANGER:

The following environmental conditions can cause malfunction of the winch.

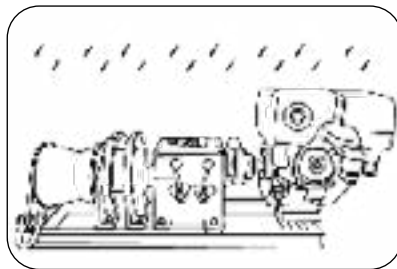
The following environmental conditions may cause malfunctions in the equipment. When operated outdoor, a shelter should be used for extreme weather conditions: below  $-10^{\circ}\text{C}$  or above  $40^{\circ}\text{C}$



If used near chemicals, corrosive gas or explosives may cause an explosion.  
Exposure to salt or acids may cause malfunctioning.



Exposure to sand may cause malfunctioning.



Avoid exposure to rain or snow.  
It may cause rusting of the equipment.

## WARNINGS



## SPECIFICATIONS

### 3. Unpacking

When unpacking, check to make sure all parts is included. Refer to Winch Assembly Drawing and Parts List (both with respective item numbers) at the end of this manual.

#### 3.1. Installation

Mount winch to the vehicle by using high strength cap screw. It should be aligned and secured to a solid part of the vehicle (front or rear) where the full rated load will be evenly distributed.

#### 3.2 Mounting the directional solenoid valve assembly(Optional)

The valve should be mounted away from any areas where heat may be considered too extreme. Such as an exhaust manifold or turbo. Be sure all plumbing and wiring reaches from the area is selected without being stressed. It may be mounted by using the bracket and Allen screws supplied. Using the bracket as a guide, mark the location of where the mounting holes are going to be drilled, remove the plate and drill four 1/4" holes. Mount valve assembly using nuts, bolts.

Note: No need to mount directional solenoid valve if there is one manual directional valve on the vehicle already.

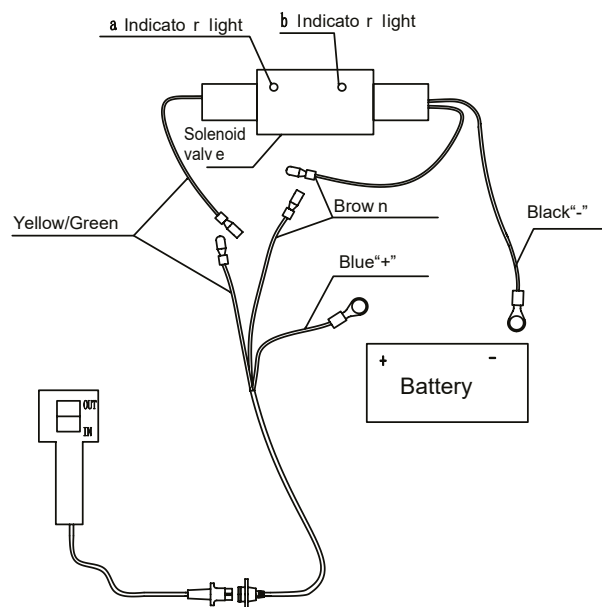
#### 3.3 Electrical connections(Optional)

If winch's power supply is from the vehicle's exiting power steering pump, the solenoid valve system is designed default to the power steering box so power steering is always available even when the winch is in use.

The power source to the solenoid is not energized until the three-pole quick connector plug is plugged in. Each solenoid has two wires--either of which can be used as a ground or for electric power. The grounds are connected to each other at the factory.

The other will connect to the blue and yellow wire in the harness (see illustration). Determine a location on the front grill to mount the female 3 pole plug connector. Drill a hole and mount the female 3 pole plug connector using nuts, bolts and washers supplied. Connect all wiring as shown in illustration.

Test hand control unit, solenoids will make a slight "click" sound if connected properly. Note: No need to do the wiring if there is one manual directional valve on the vehicle already.





### 3.4 Plumbing connections

Keep all hoses away from any areas where heat may be considered too extreme such as an exhaust manifold or turbo. Lines should not be allowed to rub on any abrasive or vibrating surfaces. In some applications, right angle fittings on the directional valve and motor or balance valve are necessary to make hose mounting more flexible. After plumbing has been laid out on vehicle, install o-ring fittings supplied to valve. Torque tight. **DO NOT OVERTIGHTEN ANY FITTINGS.** Install o-ring fittings on winch motor. Torque tight. Connect any hose port A on motor or port C1 on balance valve to port A on directional valve, port B on motor or port C2 on balance valve to port B on directional valve, port P on directional valve to pump's high pressure port, port T on valve to reservoir. Attach any o-ring or seal from vehicles original tube fitting to tube fitting.

### 3.5 Cautions

Battery cables should not be drawn taut leave slack for some cable movement. If your application is supplied with an added cooler, please check and follow the steps.

1. Check fluid level.
2. Replace lost fluid to system.(System will need to be purged).
3. Start engine. (Power winch cable in 5 feet).
4. Shut engine off.
5. Check fluid level. (Add fluid until full, start engine, power winch cable, Out 5 feet, Shut engine off and Check fluid level.) Add fluid until full if necessary.
6. Start engine. Power winch cable into desired position. Turn vehicle wheels from lock to lock position 5 times. This will aid in bleeding out any air that may have got into the system.



#### WARNING

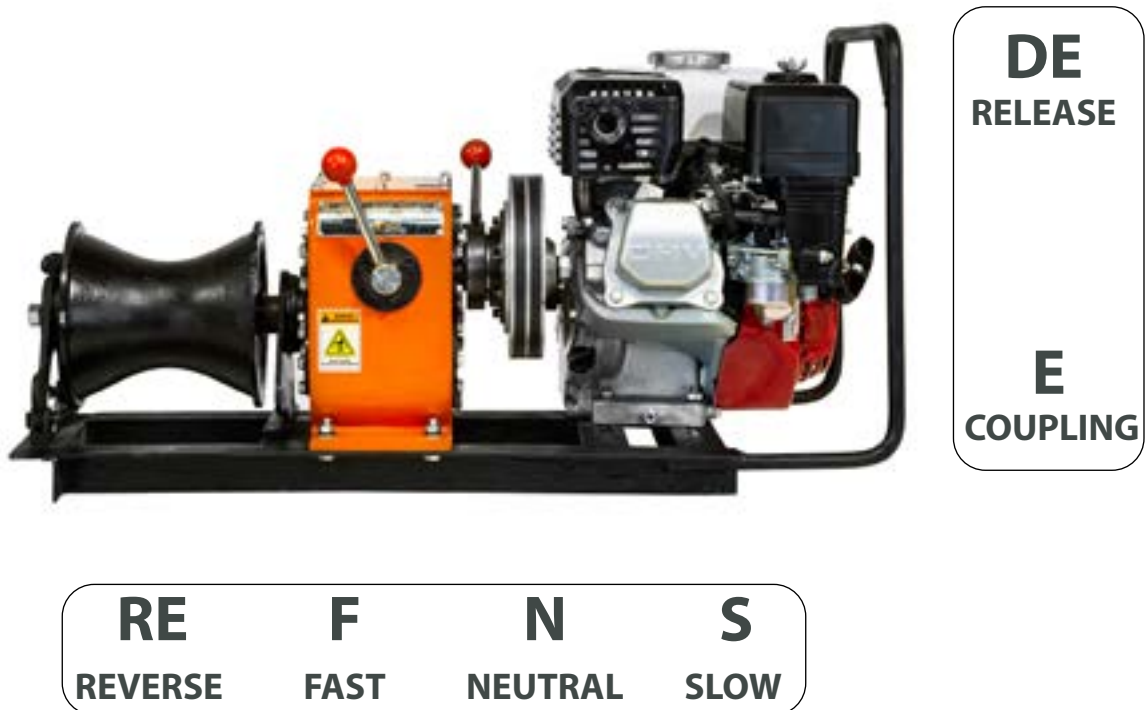
Make sure the clutch is totally engaged before starting any winch operation.  
Stay clear and away from raised loads.  
Stay clear of cable while pulling do not try to guide cable.  
A min. of wraps of cable around the drum.

### Procedures to winding the cable

- 1. Wind the cable around the drum by opening the side of the adjustable frame with a wrench.
- 2. Ways to wind the cable: from the bottom and up, both ends of the cable come out through the lower side of the winch giving 5 to 6 turns minimum of it, one towards where it is the load and the other next to the operator's assistant, who holds the cable tightly and guides it pulling or delivering according to the direction of operation.
- 3. The winch has pulling capabilities with the engine running slow and fast, adjust the acceleration according to demand.
- 4. Make sure that everyone is clear of the Winch cable during the stages of work, 1.5 times the length of the cable is recommended. If a cable becomes loose or breaks under the charging can produce a whiplash causing serious injury or even death.
- 5. NEVER unhook the winch lock when there is a load.

## 4 Speed Winch Operations

### PWCG1T Lever Instructions Diagram



PWCG3T Lever Instructions Diagram

**DE**  
RELEASE

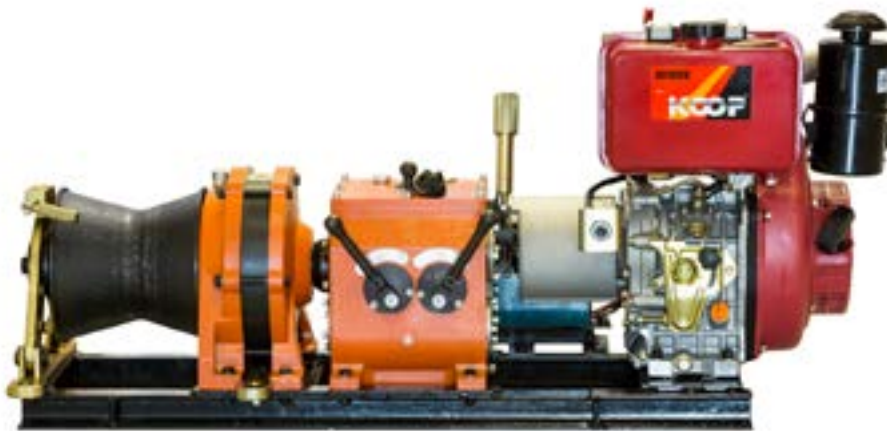
**E**  
COUPLING



**RE**      **F**      **N**      **S**  
REVERSE      FAST      NEUTRAL      SLOW

**F**      **S**  
FAST      SLOW

PWCD5T y PWCG5T Lever Instructions Diagram



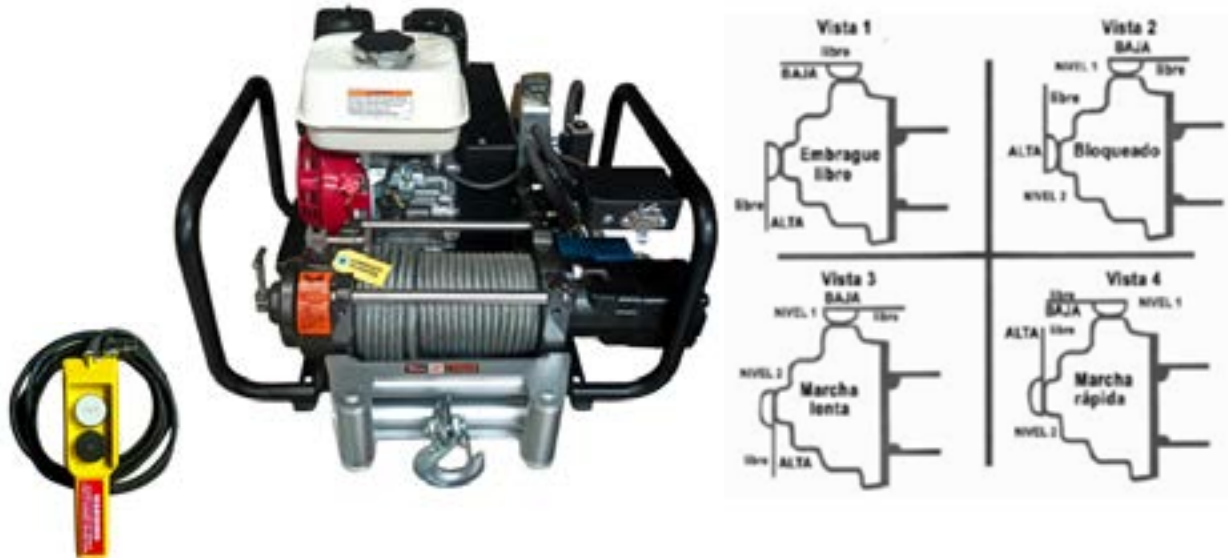
**DE**  
RELEASE

**E**  
COUPLING

**RE**      **F**      **N**      **S**  
REVERSE      FAST      NEUTRAL      SLOW

PARAMETERS	GEARBOX		
	I		II
	FAST	SLOW	FAST
Capacity (Ton)	2,5	5	0,9
Velocity (m/mm)	8	4	24

### PWCG120 Lever Instructions Diagram



#### 7. MAINTENANCE OF THE WINCH

It is recommended that the Winch be used with a certain frequency in order to maintain all internal parts lubricated. Get it going and go through all the gears both ways. This ensures that all components are in good condition so you can trust Winch when you need it. Contact Prowinch® for technical assistance, spare parts and repairs.

After being inactive for more than 6 months and in order to ensure the proper functioning of the winch, careful examination and inspection by operators will be necessary trained in maintenance.

Keep the winch clean in a dry place, free from dust and / or harmful pollutants and a temperature between 0° and 40°.



### WARNING

- Make sure the clutch is totally engaged before starting any winch operation.
- Stay clear and away from raised loads.
- Stay clear of cable while pulling do not try to guide cable.
- A min. of wraps of cable around the drum.

## WARRANTY

Prowinch guarantees for 3 years from the date of purchase, the operation of this product against any defect in the materials and workmanship used for its manufacture. Our Warranty includes repair or replacement of components at no charge to the customer, including workforce.

Prowinch undertakes to deliver the product within a period of no more than 30 days from the date of receipt of the same in our service workshops. Will not assume responsibility any in case of delay in service due to force majeure.

## LIMITATION OF LIABILITY.

1. All guarantees are given in our facilities.
2. In the event a technical site visit is requested, it will always be canceled by the client, regardless of whether services are performed at no cost covered by the guarantee. I know understands as a technical visit to the field the costs involved in the transfer of personnel, transportation, fuel, food, accommodation, overtime, etc.
3. This warranty does not cover consequential damages, caused by the stoppage of the equipment under review, It does not cover costs of moving the equipment, dismantling, transfer of personnel, lost profits, stopped operations or any other cost that could be related to the cessation of operation of a team whether for any reason or motive.
4. To make this guarantee effective, it will be necessary:
  - a) Within the first year, only present the invoice or purchase slip.
  - b) After the first year, proof of annual maintenance services authorized.

## EXCLUSIONS

THIS WARRANTY WILL NOT BE VALID UNDER THE FOLLOWING CONDITIONS

1. When the use, care, installation and operation of the product has not been in accordance with the instructions contained in the operation manual and the applicable Standards corresponding to each team.
2. Lack of preventive maintenance by the user, as stipulated in the Manual of Equipment Operation and Maintenance.
3. Lack of annual preventive maintenance at an authorized Prowinch dealer.
4. When the product has been used beyond its capacity, abused, beaten, exposed to humidity, wet by some liquid or corrosive substance, as well as by any other fault attributable to the consumer, improper use of the equipment, abuse or neglect.
5. Connection of electrical or electronic components powered by external sources (Red Normal), subject to potential variations.
6. When the product has been disassembled, modified or repaired by persons not authorized by Prowinch.
7. When the failure is caused by the normal wear of the parts due to use.

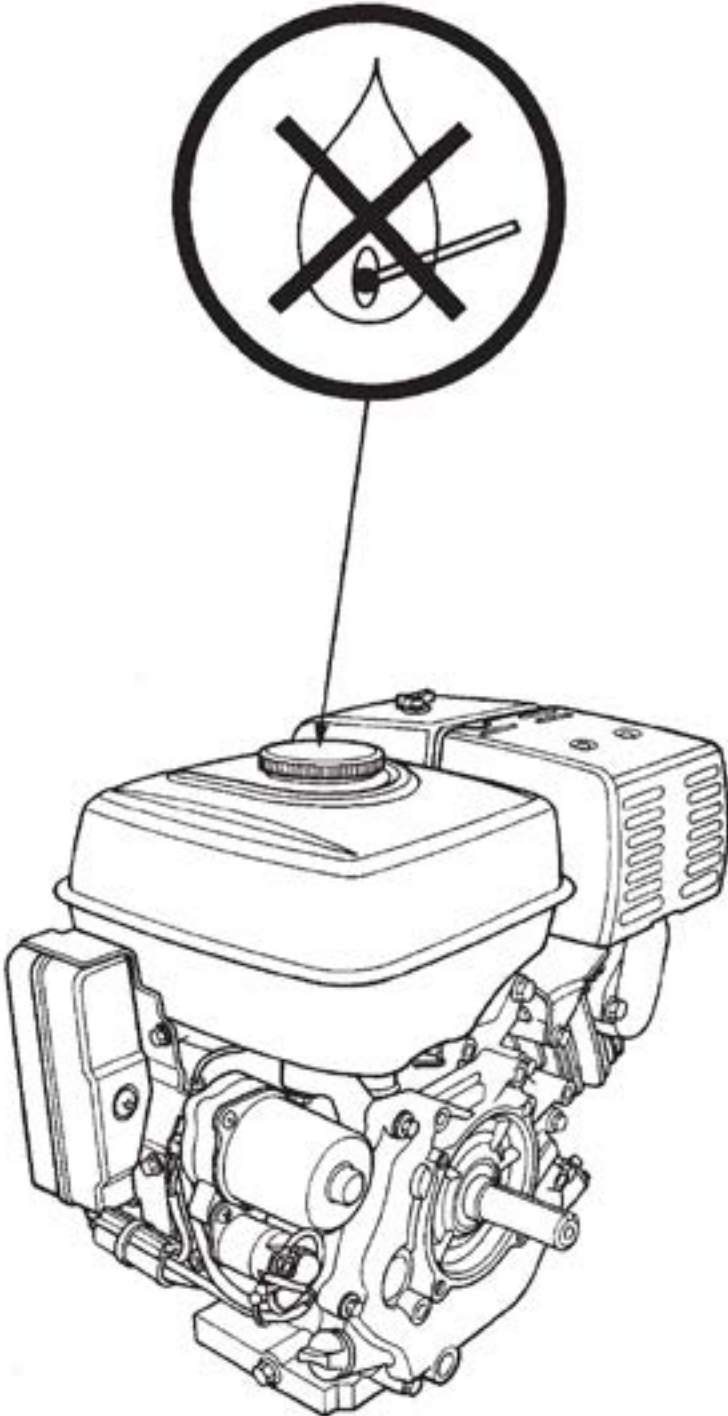
8. The incorrect use and inappropriate handling of equipment resistant to water or immersion.
9. Damages caused in the transport or in loading or unloading maneuvers.
10. Occurrence of accidents (Fires, Earthquakes, Floods, Electrical Discharges, etc).
11. Use of non-original spare parts or not recommended by the manufacturer.
12. The warranty does not cover consumable items or other items subject to wear and tear.
13. Commissioning of the equipment by personnel not authorized by Prowinch.
14. Carry out repairs, modifications and / or removal of equipment parts.
15. Installation of winches on bases not properly aligned and without the exact holes of anchorage.
16. Lack of break-in and oil change in the first 20 hours in equipment with engines at combustion.
17. Maintenance costs are not covered by the Warranty.
18. No other verbal or written warranty other than the one expressed here will be recognized by Prowinch

## ENGINE SAFETY

- 1.** Honda engines are designed to give safe and dependable service if operated according to instructions. Read and understand this Owner's Manual before operating the engine. Failure to do so could result in personal injury or equipment damage.
- 2.** To prevent fire hazards and to provide adequate ventilation, keep the engine at least 1 meter (3 feet) away from buildings and other equipment during operation. Do not place flammable objects close to the engine.
- 3.** Children and pets must be kept away from the area of operation due to a possibility of burns from hot engine components or injury from any equipment the engine may be used to operate.
- 4.** Know how to stop the engine quickly, and understand the operation of all controls. Never permit anyone to operate the engine without proper instructions.
- 5.** Gasoline is extremely flammable and is explosive under certain conditions.
- 6.** Refuel in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the refueling area or where gasoline is stored.
- 7.** Do not overfill the fuel tank. After refueling, make sure the tank cap is closed properly and securely.
- 8.** Be careful not to spill fuel when refueling. Fuel vapor or spilled fuel may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.
- 9.** Never run the engine in an enclosed or confined area. Exhaust contains poisonous carbon monoxide gas; exposure may cause loss of consciousness and may lead to death.
- 10.** The muffler becomes very hot during operation and remains hot for a while after stopping the engine. Be careful not to touch the muffler while it is hot. To avoid severe burns or fire hazards, let the engine cool before transporting it or storing it indoors.

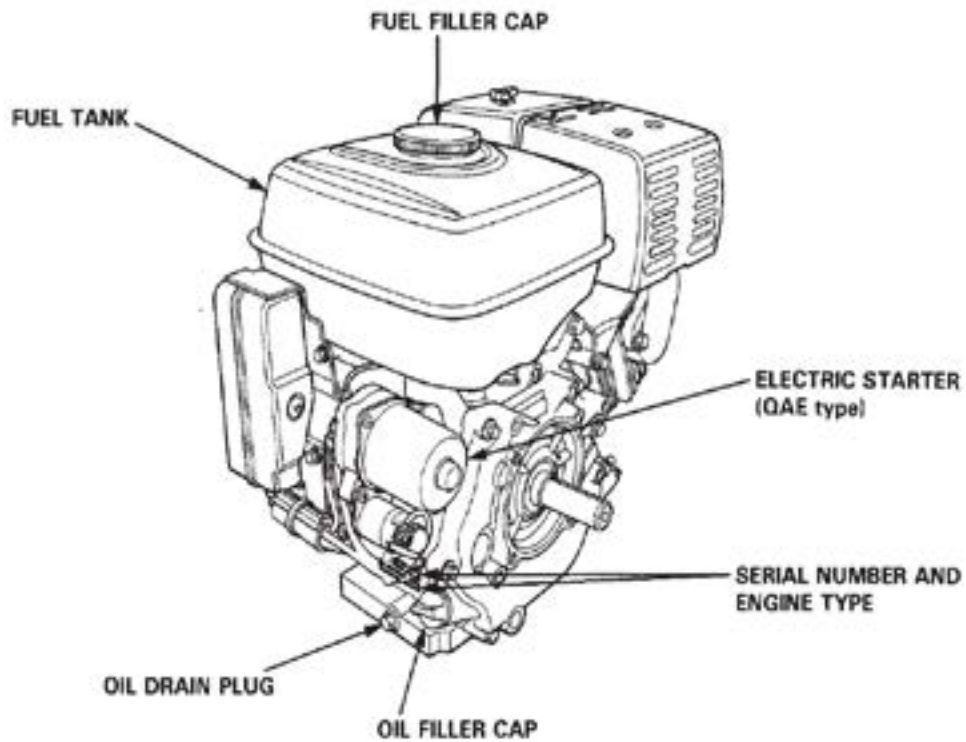
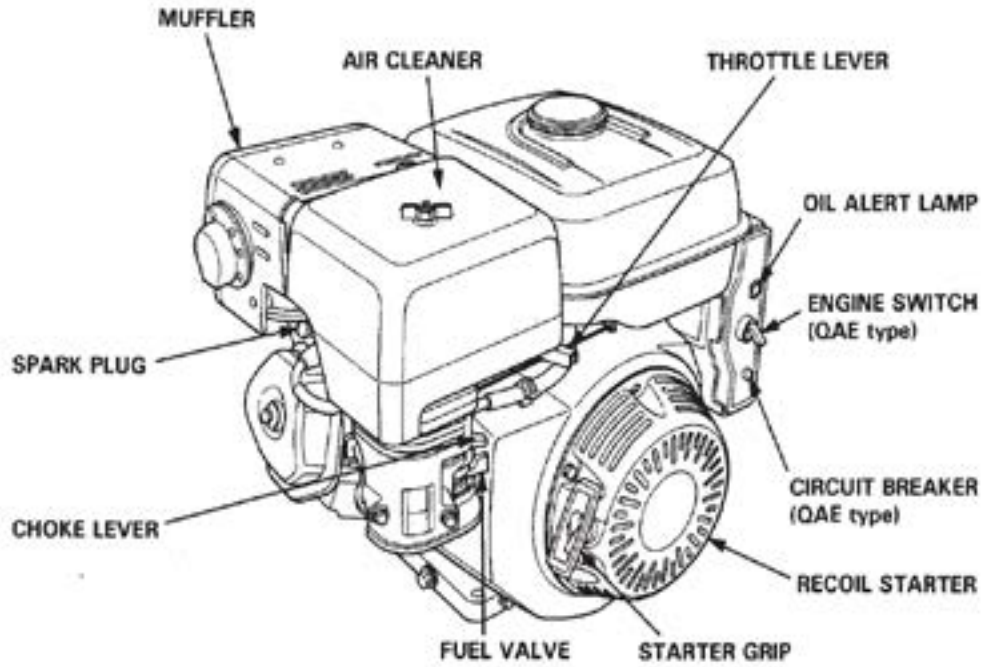
Read these labels before you operate the engine.

**GASOLINE WARNING LABEL**





# COMPONENT IDENTIFICATION



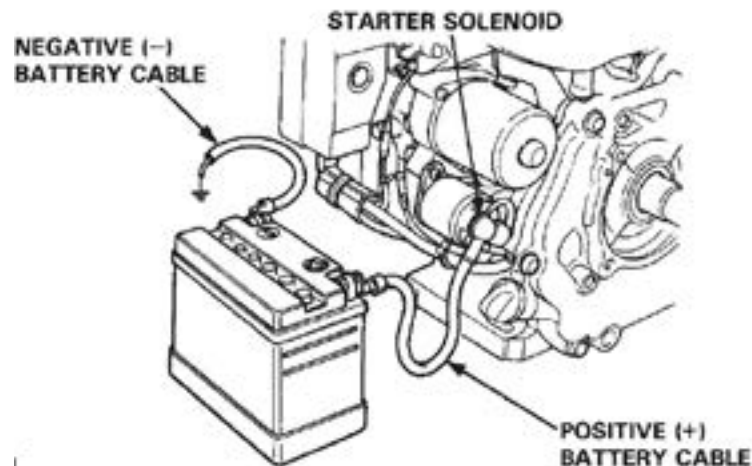
## BATTERY CONNECTIONS (QAE TYPE)

Use a 12 volt battery with an ampere-hour rating of at least 18 AH.

Connect the battery positive (+) cable to the starter solenoid terminal, as shown.

Connect the battery negative (-) cable to an engine mounting bolt, frame bolt, or other good engine ground connection.

Check the battery cable connections to be sure the cables are tightened and free of corrosion. Remove any corrosion and coat the terminals and cable ends with grease.



### WARNINGS

- The battery gives off explosive gases; keep sparks, flames and cigarettes away. Provide adequate ventilation when charging or using batteries in an enclosed space.
- The battery contains sulfuric acid (electrolyte). Contact with skin or eyes may cause severe burns. Wear protective clothing and a face shield.
- If electrolyte gets on your skin, flush with water.
- If electrolyte gets in your eyes, flush with water for at least 15 minutes and call a physician immediately.
- Electrolyte is poisonous. (If swallowed, drink large quantities of water or milk and follow with milk of magnesia or vegetable oil and call a physician).
- KEEP OUT OF REACH OF CHILDREN.

### NOTICE

- Use only distilled water in the battery. Tap water will shorten the service life of the battery.
- Filling the battery above the UPPER LEVEL line may cause the electrolyte to overflow, resulting in corrosion to engine or nearby parts. Immediately wash off any spilled electrolyte.
- Be careful not to connect the battery in reverse polarity, as this will short circuit the battery charging system and trip the circuit breaker or fuse.

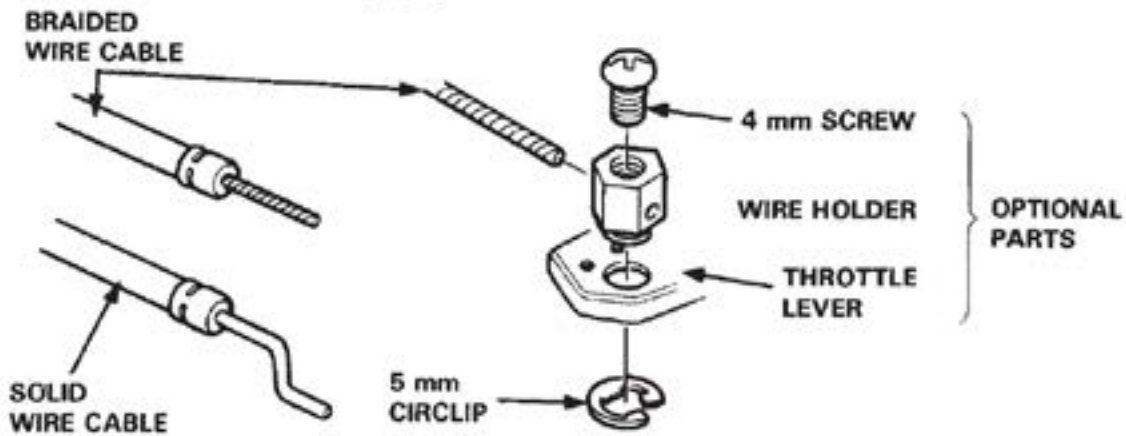
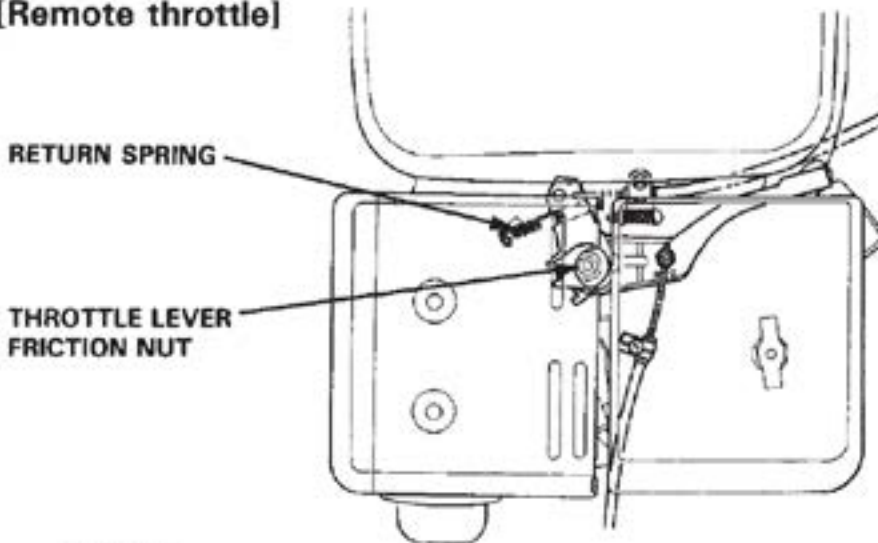
# REMOTE CONTROL LINKAGE

For throttle and choke cables

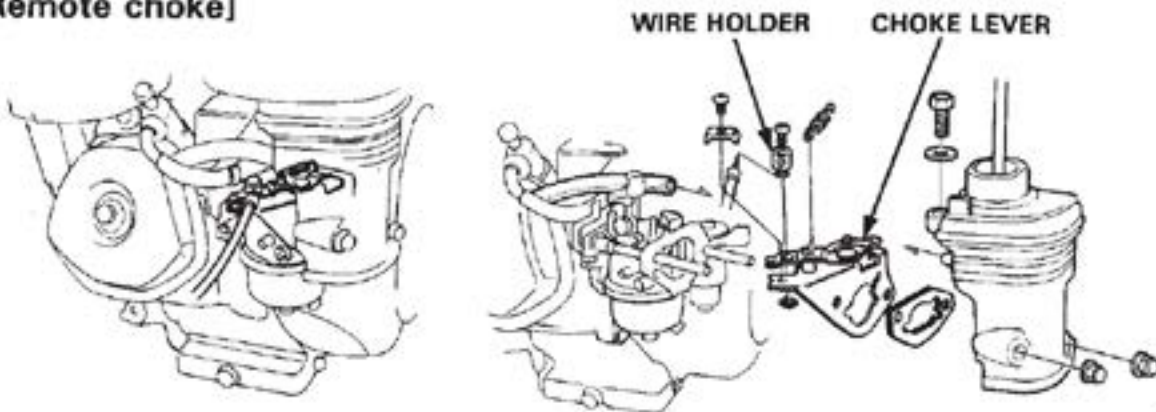
The throttle and choke control levers are provided with holes for optional cable attachment. The following illustrations show installation examples for a solid wire cable and for a braided wire cable. If using a braided wire cable, add a return spring as shown.

It is necessary to loosen the throttle lever friction nut when operating the throttle with a remote cable.

## [Remote throttle]



## [Remote choke]



# PRE-OPERATION CHECK

## 1. ENGINE OIL NOTICE

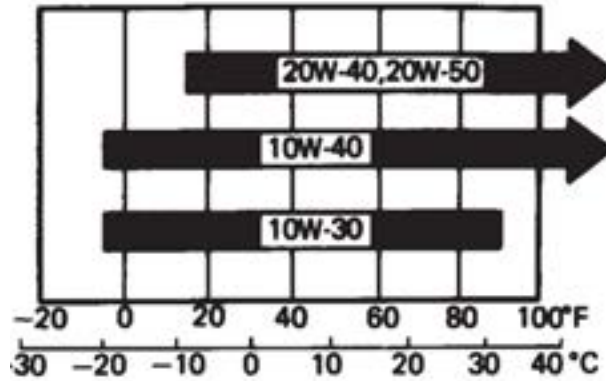
Engine oil is a major factor affecting engine performance and service life. Nondetergent oils and 2 stroke engine oils are not recommended because they have inadequate lubricating characteristics.

Be sure to check the engine on a level surface with the engine stopped.

Use Honda 4-stroke oil, or an equivalent high-detergent, premium quality motor oil certified to meet or exceed U.S. automobile manufacturer's requirements for Service Classification SG-SF/CC-CD. (Motor oils classified SG-SF/CC-CD will show this designation on the container.)

SAE 10W-30 is recommended for general, all-temperature use.

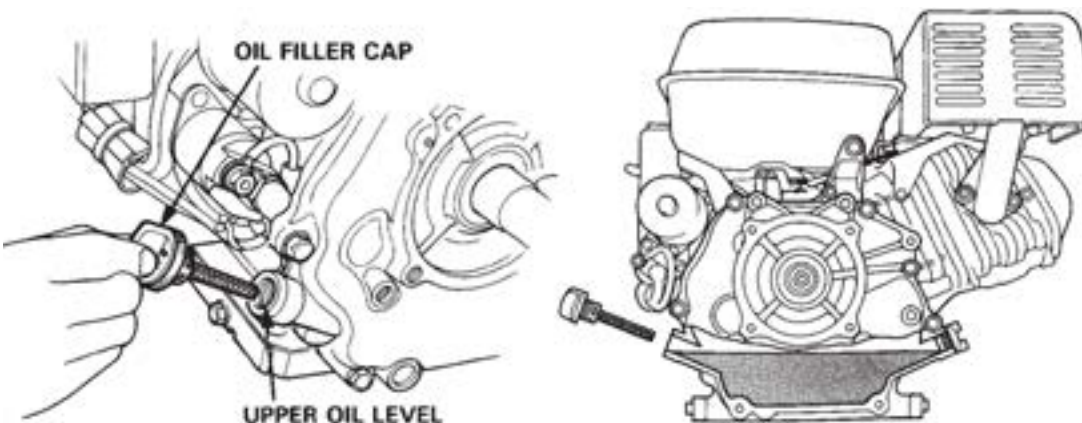
Other viscosities shown in the chart may be used when the average temperature in your area is within the indicated range.



Ambient Temperature

1. Remove the oil filler cap and wipe the dipstick clean.
2. Insert the dipstick into the oil filler neck, but do not screw it in.
3. If the level is low, fill to the top of the oil filler neck with the recommended oil.

NOTE: The oil Alert System will automatically stop the engine before the oil level falls below the safe limit. However, to avoid the inconvenience of an unexpected shutdown, it is advisable to visually inspect the oil level regularly.

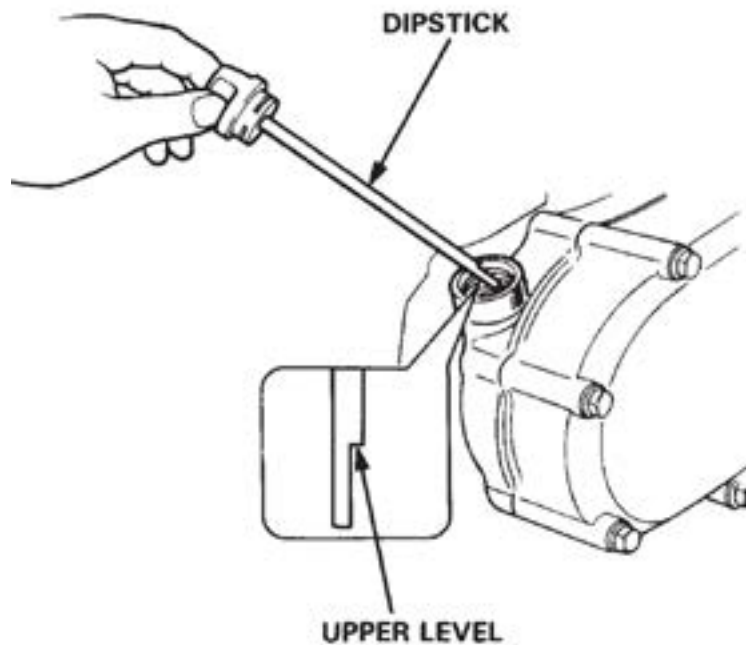


## REDUCTION GEAR OIL

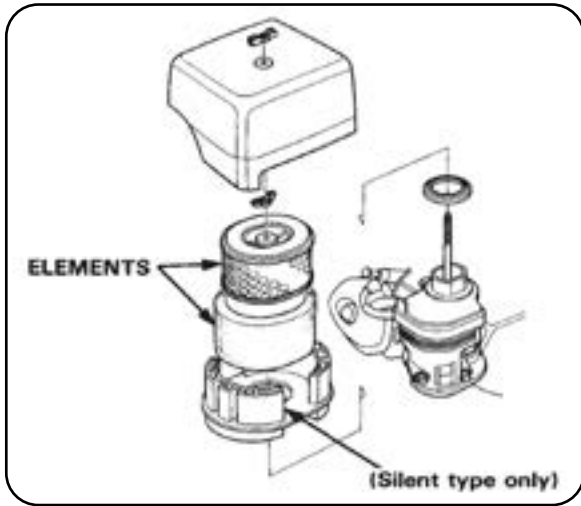
<1/2 reduction with automatic centrifugal clutch>

1. Remove the oil filler cap and wipe the dipstick clean.
2. Insert the dipstick into the filler neck, but do not screw it in.
3. If the level is low, fill to the upper level mark with the same oil that is recommended
4. for the engine (see engine oil recommendations on page 8).

Oil capacity: 300 cc (10 US oz, 8.4 Imp oz)



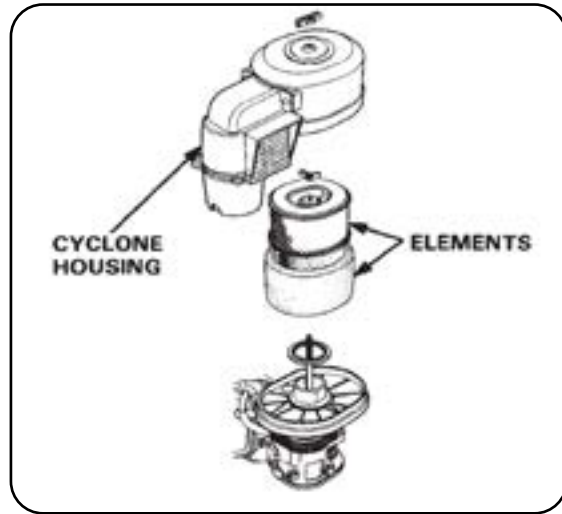
**AIR CLEANER  
NOTICE**



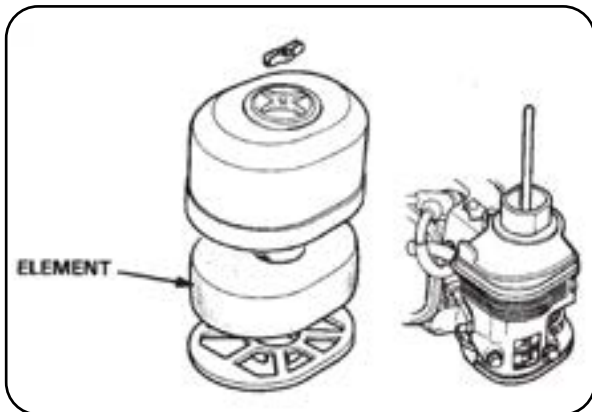
Never run the engine without the air cleaner. Rapid engine wear will result from contaminants, such as dust and dirt, being drawn through the carburetor and into the engine.

<Dual element type>

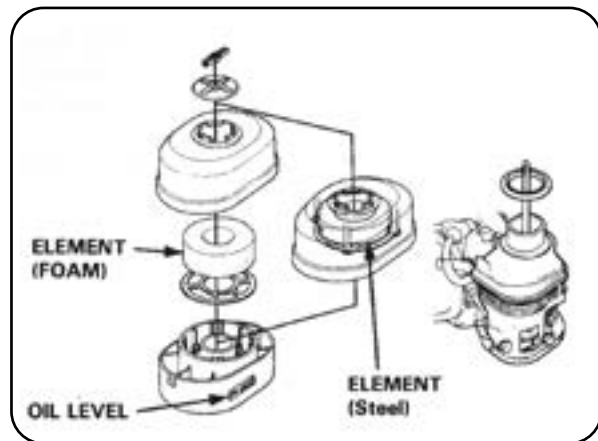
Check the air cleaner elements to be sure they are clean and in good condition. Clean or replace the elements if necessary (p.22).



1. Check the air cleaner element to be sure they are clean and in good condition.
2. Clean or replace the elements if necessary (p.23).
3. Check the cyclone housing, and clean it if it is clogged or excessively dirty (p.23).



Check the air cleaner element to be sure it is clean and in good condition. Clean or replace the element if necessary (p. 24).



<Oil bath type>

1. Check the air cleaner element to be sure it is clean and in good condition. Clean or replace the element if necessary (p.24).
2. Check oil level and condition.



## FUEL

Your engine is designed to use any gasoline that has a pump octane number (R + M) of 86 or higher, or that has a research octane number of 91 or higher. Gasoline pumps at service station normally display the pump octane number.

We recommend that you use unleaded fuel because it produces fewer engine and spark plug deposits and extends the life of exhaust system components.

Never use stale or contaminated gasoline or an oil/gasoline mixture. Avoid getting dirt, dust or water in the fuel tank. Use of a lower octane gasoline can cause persistent "pinging" or heavy "spark knock" (a metallic rapping noise) which, if severe, can lead to engine damage.

## NOTICE

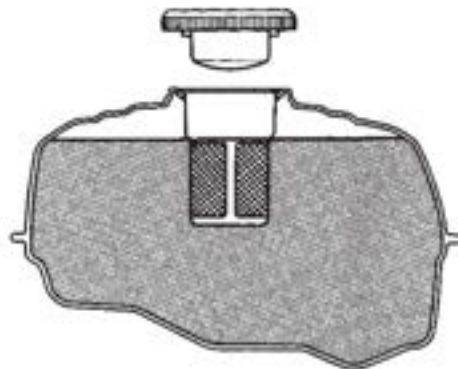
If "spark knock" or "pinging" occurs at a steady engine speed under normal load, change brands of gasoline. If spark knock or pinging persists, consult your authorized Honda dealer. Failure to do so is considered misuse, and damage caused by misuse is not covered by Honda's Limited Warranty.

Occasionally you may experience light spark knock while operating under heavy loads. This is no cause for concern, it simply means your engine is operating efficiently.



## WARNINGS

- Gasoline is extremely flammable and is explosive under certain conditions.
- Refuel in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where the engine is refueled or where gasoline is stored.
- Do not overfill the fuel tank (there should be no fuel in the filler neck). After refueling, make sure the tank cap is closed properly and securely.
- Be careful not to spill fuel when refueling. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.
- Avoid repeated or prolonged contact with skin or breathing of vapor. KEEP OUT OF REACH OF CHILDREN.
- Fuel tank capacity: GX240 • GX270 5.9 f (1.6 US Gal, 10.4 Imp pt)  
GX340 • GX390 6.5 f (1.7 US Gal, 11.4 Imp pt)



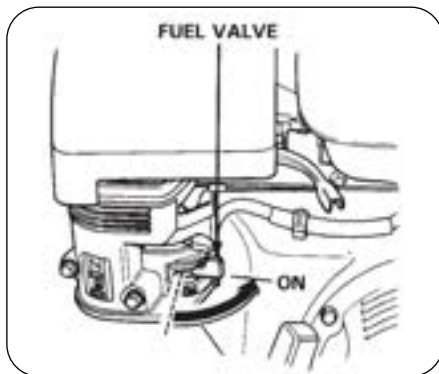
## GASOLINE CONTAINING ALCOHOL

If you decide to use a gasoline containing alcohol (gasohol), be sure its octane rating is at least as high as that recommended by Honda. There are two types of "gasohol": one containing ethanol, and the other containing methanol. Do not use gasohol that contains more than 10% ethanol. Do not use gasoline containing methanol (methyl or wood alcohol) that does not also contain cosolvents and corrosion inhibitors for methanol. Never use gasoline containing more than 5% methanol, even if it has cosolvents and corrosion inhibitors.

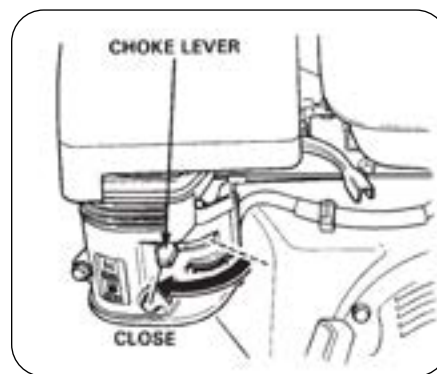
### NOTE:

- Fuel system damage or engine performance problems resulting from the use of fuels that contain alcohol is not covered under the warranty. Honda cannot endorse the use of fuels containing methanol since evidence of their suitability is as yet incomplete.
- Before buying fuel from an unfamiliar station, try to find out if the fuel contains alcohol, if it does, confirm the type and percentage of alcohol used. If you notice any undesirable operating symptoms while using a gasoline that contains alcohol, or one that you think contains alcohol, switch to a gasoline that you know does not contain alcohol.

## STARTING THE ENGINE

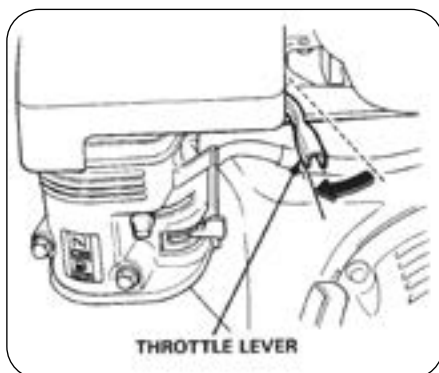


1. Turn the fuel valve to the ON Position

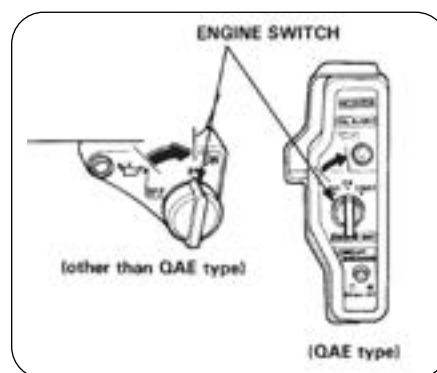


2. Move the choke lever to the CLOSE position

NOTE: The choke may not be needed if the engine is warm or the air temperature is high.

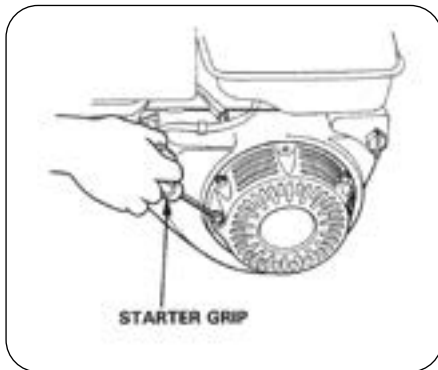


3. Move the throttle lever slightly to the left.



4. Start the engine. With recoil starter. Turn the engine switch to the ON position.



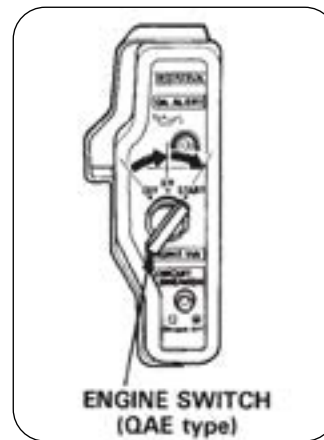


Pull the starter grip lightly until resistance is felt, then pull briskly.  
 I NOTICE I Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.

With electric starter (OAE type): Turn the engine switch to the START position and hold it there until the engine starts.

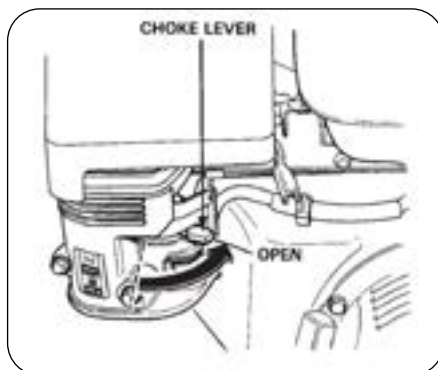
### NOTICE

Do not use the electric starter for more than 5 seconds or starter motor damage may occur. If the engine falls to start, release the switch and wait 10 seconds before operating the starter again.

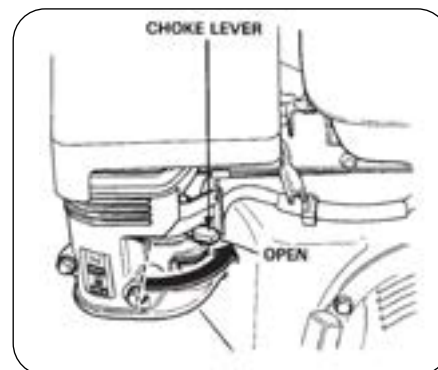


When the engine starts, allow the engine switch to return to the ON position.

## OPERATION



**1.** As the engine warms up, gradually move the choke lever to the OPEN position.

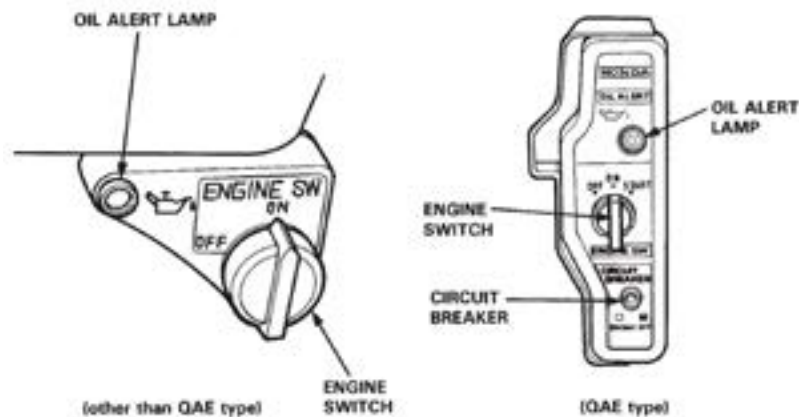


**2.** Position the throttle lever for the desired engine speed.

## Oil Alert System

The Oil Alert system is designed to prevent engine damage caused by an insufficient amount of oil in the crankcase. Before the oil level in the crankcase can fall below a safe limit, the Oil Alert system will automatically shut down the engine (the engine switch will remain in the ON position).

If the Oil Alert system shuts down the engine, the Oil Alert lamp will flash when you operate the starter, and the engine will not run. If this occurs, add engine oil (p.8).



### Circuit Breaker (QAE type)

The circuit breaker protects the battery charging circuit. A short circuit or a battery connected in reverse polarity will trip the circuit breaker.

The green indicator inside the circuit breaker will pop out to show that the circuit breaker has switched off. If this occurs, determine the cause of the problem, and correct it before resetting the circuit breaker.

Push the circuit breaker button to reset.

### High altitude operation

At high altitude, the standard carburetor air-fuel mixture will be excessively rich. Performance will decrease, and fuel consumption will increase.

High altitude performance can be improved by installing a smaller diameter main fuel jet in the carburetor and readjusting the pilot screw. If you always operate the engine at altitudes higher than 6,000 feet above sea level, have these carburetor modifications performed by a dealership displaying the Honda Power Equipment Engines sign.

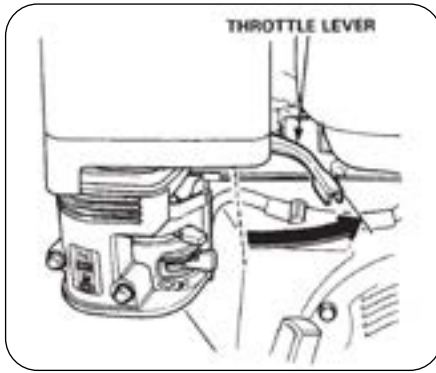
Even with suitable carburetor jetting, engine horsepower will decrease approximately 3.5% for each 1,000 foot increase in altitude. The effect of altitude on horsepower will be greater than this if no carburetor modification is made.

### NOTICE

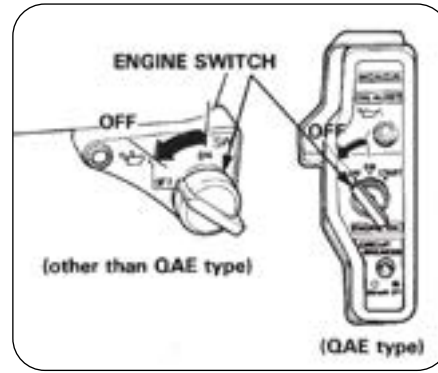
Operation of the engine at an altitude lower than the carburetor is jetted for may result in reduced performance, overheating, and serious engine damage caused by an excessively lean air/fuel mixture.

## STOPPING THE ENGINE

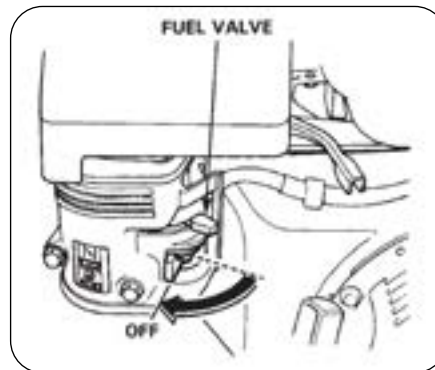
To stop the engine in an emergency, turn the engine switch to the OFF position. Under normal conditions, use the following procedure:



1. Move the throttle lever fully to the right.



2. Turn the engine switch to the OFF position.



3. Turn the fuel valve to the OFF position

## MAINTENANCE

Periodic maintenance and adjustment is necessary to keep the engine in good operating condition. Perform the service and inspection scheduled in the following table.



### WARNINGS

Shut off the engine before performing any maintenance. If the engine must be run, make sure the area is well ventilated. The exhaust contains poisonous carbon monoxide gas; exposure can cause loss of consciousness and may lead to death.

### NOTICE

Use only genuine HONDA parts or their equivalent. The use of replacement parts which are not of equivalent quality may damage the engine.

## Maintenance Schedule

ITEM <small>Performed at every indicated month or operating hour interval, whichever comes first.</small>		Each Use	First month or 20 Hrs.	Every 3 months or 50 Hrs.	Every 6 months or 100 Hrs.	Every year or 300 Hrs.
Engine Oil	Check Level Change	●				
Reduction gear oil (Applicable models only)	Check Level Change		●		●	
Air cleaner	Check Level Clean	●	● Only the First Time			
Sediment Cup	Clean					
Spark Plug	Clean/Readjust	●				
Spark Arrester (Optional part)	Clean	●				
Valve Clearance	Clean/Readjust					●
Fuel tank and strainer	Clean					●
Fuel Line	Check (Replace if necessary)	Every 2 Years (2)				

### NOTE:

1. Service more frequently when used in dusty areas.
2. These items should be serviced by an authorized Honda dealer, unless the owner has the proper tools and is mechanically proficient. See the Honda Shop Manual.

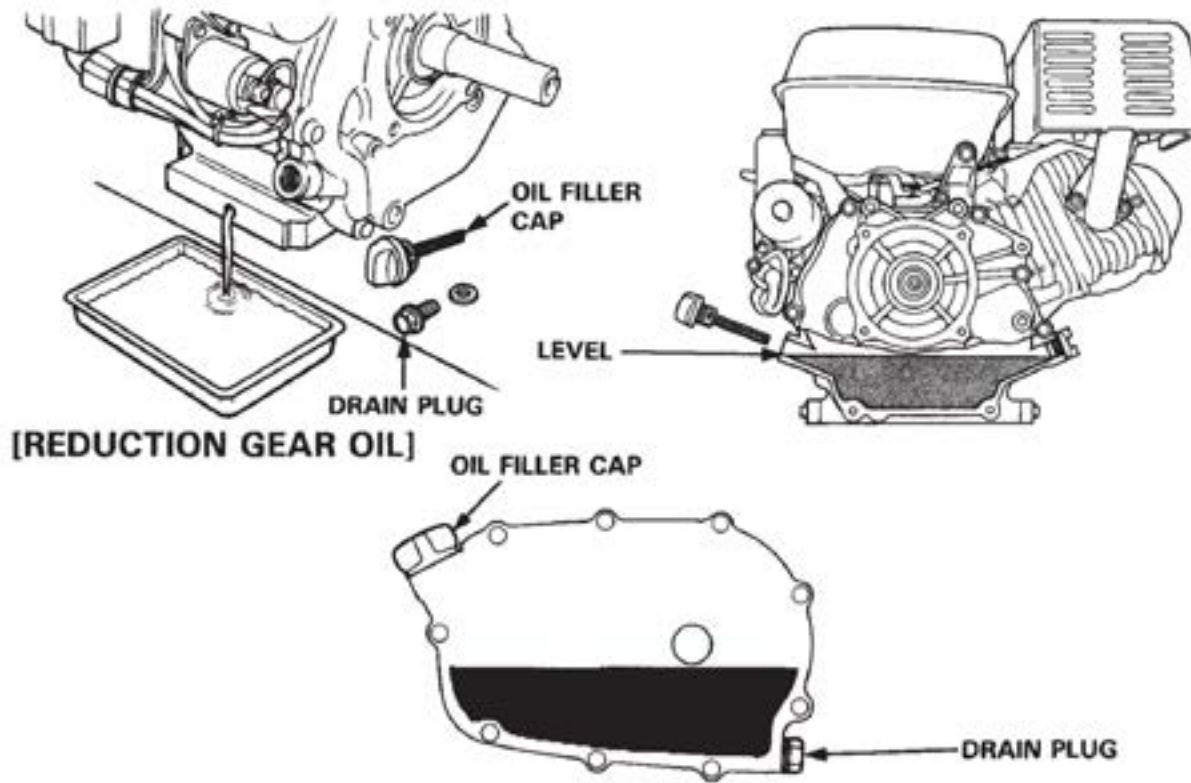
### 1. Oil change

Drain the oil while the engine is still warm to assure rapid and complete draining.

1. Remove the oil filler cap and drain plug to drain the oil.
2. Install the drain plug, and tighten it securely.
3. Refill with the recommended oil (see pages 8 and 9), and check the oil level.
4. Install the oil filler cap.

ENGINE OIL CAPACITY: 1.1 (1.2 US qt, 1.94 Imp qt)

REDUCTION GEAR OIL CAPACITY: 300 cc (10 US oz, 8.4 Imp oz)

**ENGINE OIL****WARNINGS**

Used motor oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash

your hands with soap and water as soon as possible after handling used oil.

NOTE: Please dispose of used motor oil in a manner that is compatible with the environment. Do not throw it in the trash or pour it on the ground.

## 2. Air cleaner service

A dirty air cleaner will restrict air flow to the carburetor. To prevent carburetor malfunction, service the air cleaner regularly. Service more frequently when operating the engine in extremely dusty areas.

Never use gasoline or low flash point solvents for cleaning the air cleaner element. A fire or explosion could result.

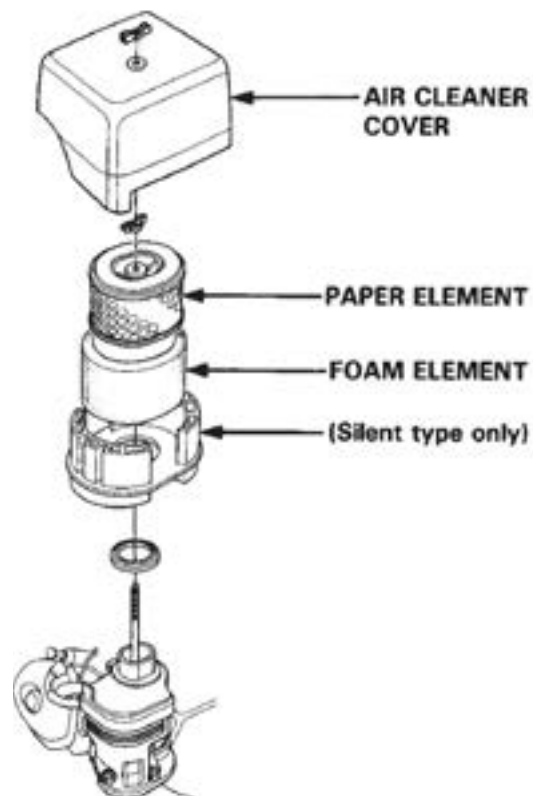
### NOTICE

Never run the engine without the air cleaner. Rapid engine wear will result from contaminants, such as dust and dirt, being drawn through the carburetor, into the engine.

**1.** Remove the wing nut and the air cleaner cover. Remove the elements and separate them. Carefully check both elements for holes or tears and replace if damaged.

**2.** Foam element: Wash the element in a solution of household detergent and warm water, then rinse thoroughly, or wash in non flammable or high flash point solvent. Allow the element to dry thoroughly. Soak the element in clean engine oil, and squeeze out the excess oil. The engine will smoke during initial start-up if too much oil is left in the foam.

**3.** Paper element: Tap the element lightly several times on a hard surface to remove excess dirt, or blow compressed air through the filter from the inside out. Never try to brush the dirt off; brushing will force dirt into the fibers. Replace the paper element if it is excessively dirty.



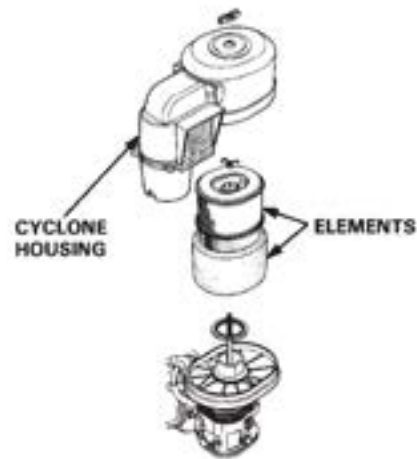
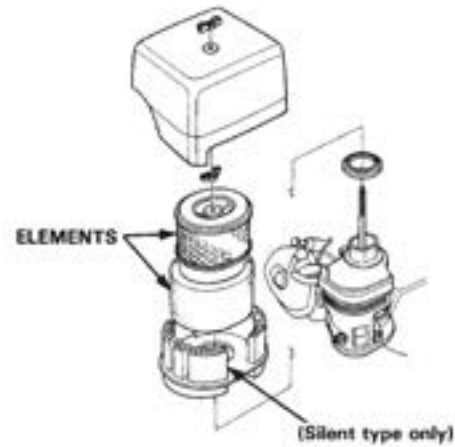
## &lt;Cyclone Type&gt;

1. Remove the wing nut and the air cleaner cover. Remove the elements and separate them. Carefully check both elements for holes or tears and replace if damaged.

2. Foam element: Wash the element in a solution of household detergent and warm water, then rinse thoroughly, or wash in nonflammable or high flash point solvent. Allow the element to dry thoroughly. Soak the element in clean engine oil and squeeze out the excess oil. The engine will smoke during initial start-up if too much oil is left in the foam.

3. Paper element: Tap the element lightly several times on a hard surface to remove excess dirt, or blow compressed air through the filter from the inside out. Never try to brush the dirt off; brushing will force dirt into the fibers. Replace the paper element if it is excessively dirty.

4. Cyclone Housing: Remove the three special pan head screws, remove the housing, and wash the components with water. Dry the components thoroughly, and carefully reassemble them.



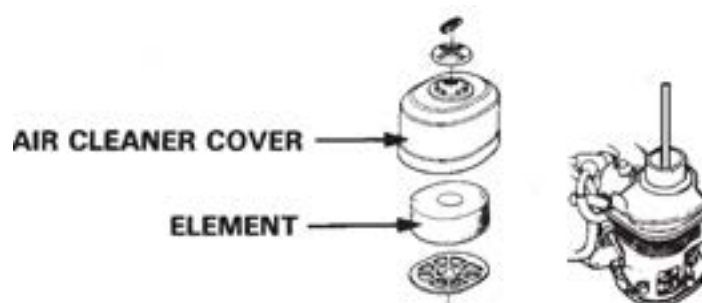
## &lt;Single element type&gt;

1. Unscrew the wing nut, remove the air cleaner cover and remove the element.

2. Wash the element in a solution of household detergent and warm water, then rinse thoroughly, or wash in nonflammable or high flash point solvent. Allow the element to dry thoroughly.

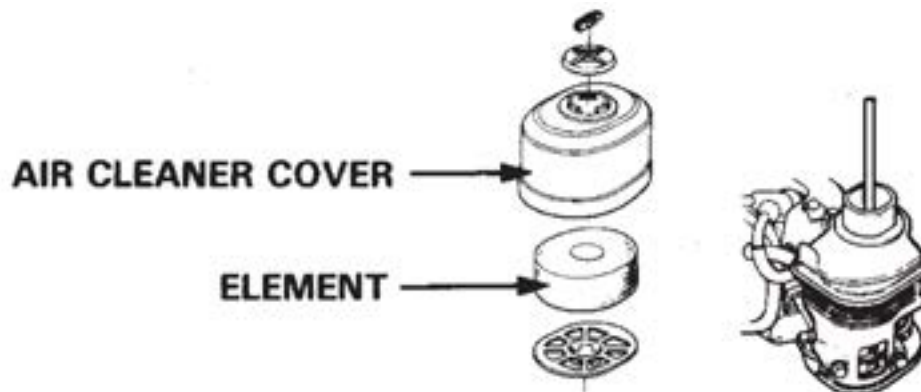
3. Soak the element in clean engine oil and squeeze out the excess oil. The engine will smoke during initial start-up if too much oil is left in the element.

4. Reinstall the air cleaner element and the cover.



1. Unscrew the wing nut, remove the air cleaner cover and remove the element.
2. Wash the element in a solution of household detergent and warm water, then rinse thoroughly, or wash in nonflammable or high flash point solvent. Allow the element to dry thoroughly.
3. Soak the element in clean engine oil and squeeze out the excess oil. The engine will smoke during initial start-up if too much oil is left in the element.
4. Empty the oil from the air cleaner case and wash out any accumulated dirt with nonflammable or high flash point solvent. Dry the case.
5. Fill the air cleaner case to the level mark with the same oil that is recommended for the engine (see engine oil recommendations on page 8).
6. Reinstall the element and the cover.

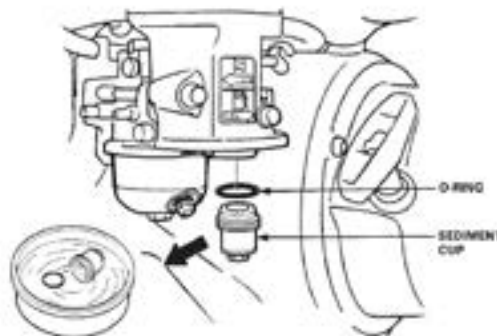
OIL CAPACITY: GX240 • GX270 60 cc (2.0 US oz, 1.69 Imp oz)  
GX340 • GX390 80 cc (2.7 US oz, 2.25 Imp oz)



### 3. Sediment cup cleaning

- Gasoline is extremely flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks in the area.
- After installing the sediment cup, check for leaks, and make sure the area is dry before starting the engine.

Turn the fuel valve to OFF. Remove the sediment cup and O-ring, and wash them in nonflammable or high flash point solvent. Dry them thoroughly, and reinstall securely. Turn the fuel valve ON, and check for leaks.





## 4. Spark plug service

Recommended spark plug: BPR6ES (NGK)  
W20EPR-U (ND)

### NOTICE

Use only the recommended spark plugs or equivalent. Spark plugs which have an improper heat range may cause engine damage.

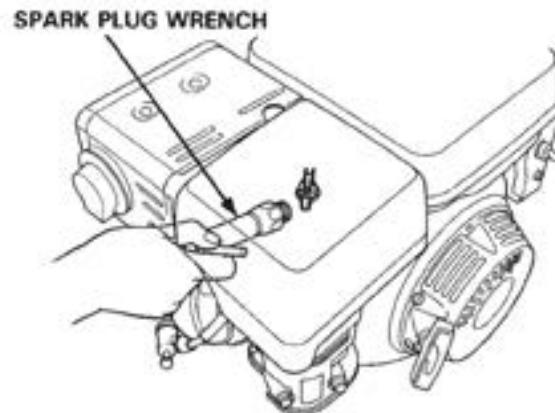
To ensure proper engine operation, the spark plug must be properly gapped and free of deposits.

1. Remove the spark plug cap, and use a spark plug wrench to remove the plug.



### WARNINGS

If the engine has been running, the muffler will be very hot. Be careful not to touch the muffler.

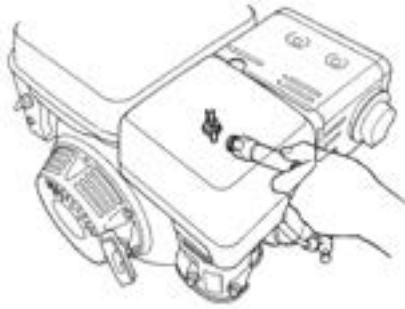


2. Visually inspect the spark plug. Discard it if the insulator is cracked or chipped. Clean the spark plug with a wire brush if it is to be reused.

3. Measure the plug gap with a feeler gauge. The gap should be 0.7-0.8mm (0.028-0.031 in).



4. Check that the spark plug washer is in good condition, and thread the spark plug in by hand to prevent cross-threading.



5. After the spark plug is seated, tighten with a spark plug wrench to compress the washer.

NOTE:

If installing a new spark plug, tighten 1/2 turn after the spark plug seats to compress the washer. If reinstalling a used spark plug, tighten 1/8-1/4 turn after the spark plug seats to compress the washer.

## NOTICE I

The spark plug must be securely tightened. An improperly tightened spark plug can become very hot and may damage the engine.

## 6. Spark arrester maintenance (optional part)



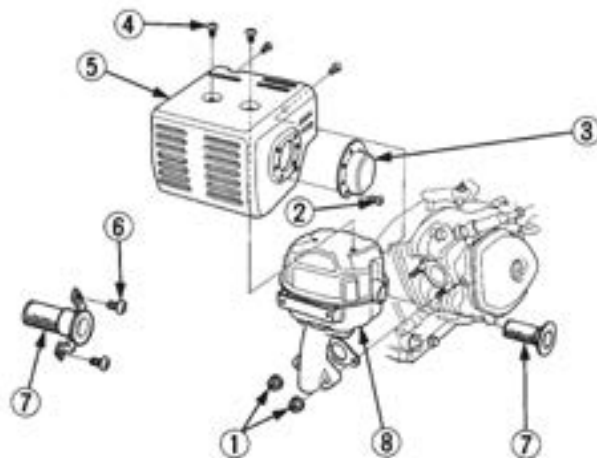
### WARNINGS

The muffler becomes very hot during operation and remains hot for a while after stopping the engine. Be careful not to touch the muffler while it is hot. Allow it to cool before proceeding.

## NOTICE I

The spark arrester must be serviced every 100 hours to maintain its efficiency.

1. Remove the two 8 mm nuts (G) and remove the muffler from the cylinder.
2. Remove the three 4 mm screws<sup>®</sup> from the exhaust deflector<sup>®</sup>, and remove the deflector.
3. Remove the four 5 mm screws © from the muffler protector<sup>®</sup>, and remove the muffler protector.
4. Remove the 4 mm screw<sup>®</sup> from the spark arrester (J), and remove the spark arrester from the muffler<sup>®</sup>.



5. Use a brush to remove carbon deposits from the spark arrester screen.

## NOTICE

Be careful not to damage the spark arrester screen.



NOTE:

The spark arrester must be free of breaks and holes. Replace, if necessary.

6. Install the spark arrester and the muffler in the reverse order of disassembly.

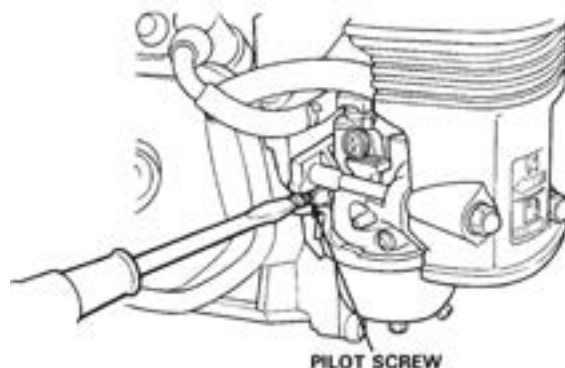
## 6. Carburetor adjustment

1. Start the engine and allow it to warm up to normal operating temperature.
2. With the engine idling, turn the pilot screw in or out to the setting that produces the highest idle rpm. Usually the correct setting will be found to be:

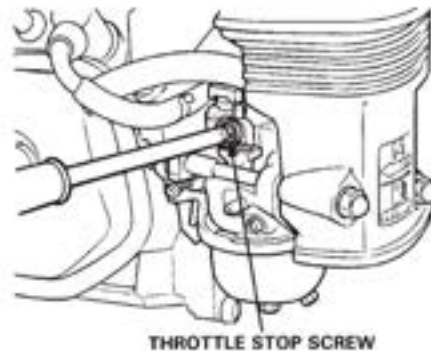
	GX240	GX270	GX340	GX390
Dual element type				
Single element type				
Oil bath type	2	2 7/8	2 1/2	2 1/4
Cyclone Type	2	2	2 1/4	2 1/4

## NOTICE

Do not tighten the pilot screw against its seat; this will damage the pilot screw or seat.



3. After the pilot screw is correctly adjusted, turn the throttle stop screw to obtain the standard idle speed. Standard idle speed:  $1400 \pm 150$  rpm.



## TRANSPORTING STORAGE



### WARNINGS

- To avoid severe burns or fire hazards, let the engine cool before transporting it or storing it indoors.
  - When transporting the engine, turn the fuel valve to the OFF position and keep the engine level to prevent fuel spillage. Fuel vapor or spilled fuel may ignite.
- Before storing the unit for an extended period;

1. Be sure the storage area is free of excessive humidity and dust.
2. Drain the fuel...
  - a. With the fuel valve OFF, remove and empty the sediment cup.
  - b. Turn the fuel valve ON and drain the gasoline in the fuel tank into a suitable container.
  - c. Replace the sediment cup and tighten securely.
  - d. Drain the carburetor by loosening the drain screw. Drain the gasoline into a suitable container.

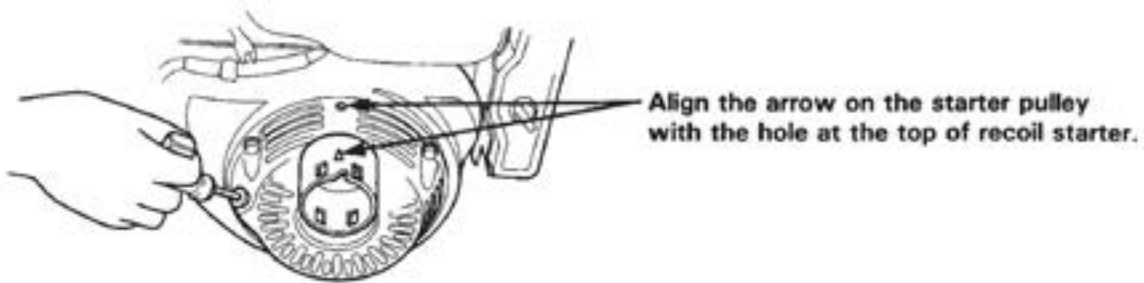


### WARNINGS

Gasoline is extremely flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks in the area.



3. Change the engine oil.
4. Remove the spark plug and pour about a tablespoon of clean engine oil into the cylinder. Crank the engine several revolutions to distribute the oil, then reinstall the spark plug.
5. Pull the starter rope slowly until resistance is felt. Continue pulling until the notch on the starter pulley aligns with the hole on the recoil starter (see illustration below). At this point, the intake and exhaust valves are closed, and this will help to protect the engine from internal corrosion.



## TROUBLESHOOTING

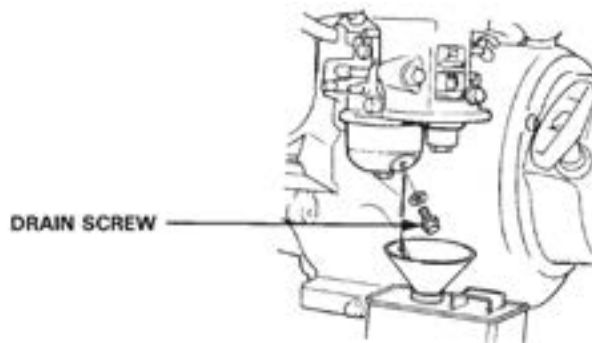
Engine will not start, using recoil starter:

1. 1. Is the engine switch ON?
2. 2. Does the oil alert lamp flash when the starter is operated?
3. 3. Is the fuel valve ON?
4. 4. Is there fuel in the fuel tank?
5. 5. Is gasoline reaching the carburetor? To check, loosen the drain screw with the fuel valve on.



### WARNINGS

If any fuel is spilled, make sure the area is dry before testing the spark plug or starting the engine. Fuel vapor or spilled fuel may ignite.



6. Is there a spark at the spark plug?
    - a. Remove the spark plug cap. Clean any dirt from around the spark plug base, then remove the spark plug.
    - b. Install the spark plug in the plug cap.
    - c. Turn the engine switch on.
    - d. Grounding the side electrode to any engine ground, and pull the recoil starter to see if sparks jump across the gap.
    - e. If there is no spark, replace the plug.
- If OK, try to start the engine according to the instructions.

7. If the engine still does not start, take the engine to the dealer.

Engine will not start, using electric starter:

1. Are the battery cables securely connected and free of corrosion?
2. Is the battery fully charged?

NOTE:

If the engine does not charge the battery, check the circuit breaker.

3. If the starter motor operates but the engine will not start, follow the troubleshooting procedures described under recoil starter operation.

## SPECIFICATIONS

### GX240 - GX270

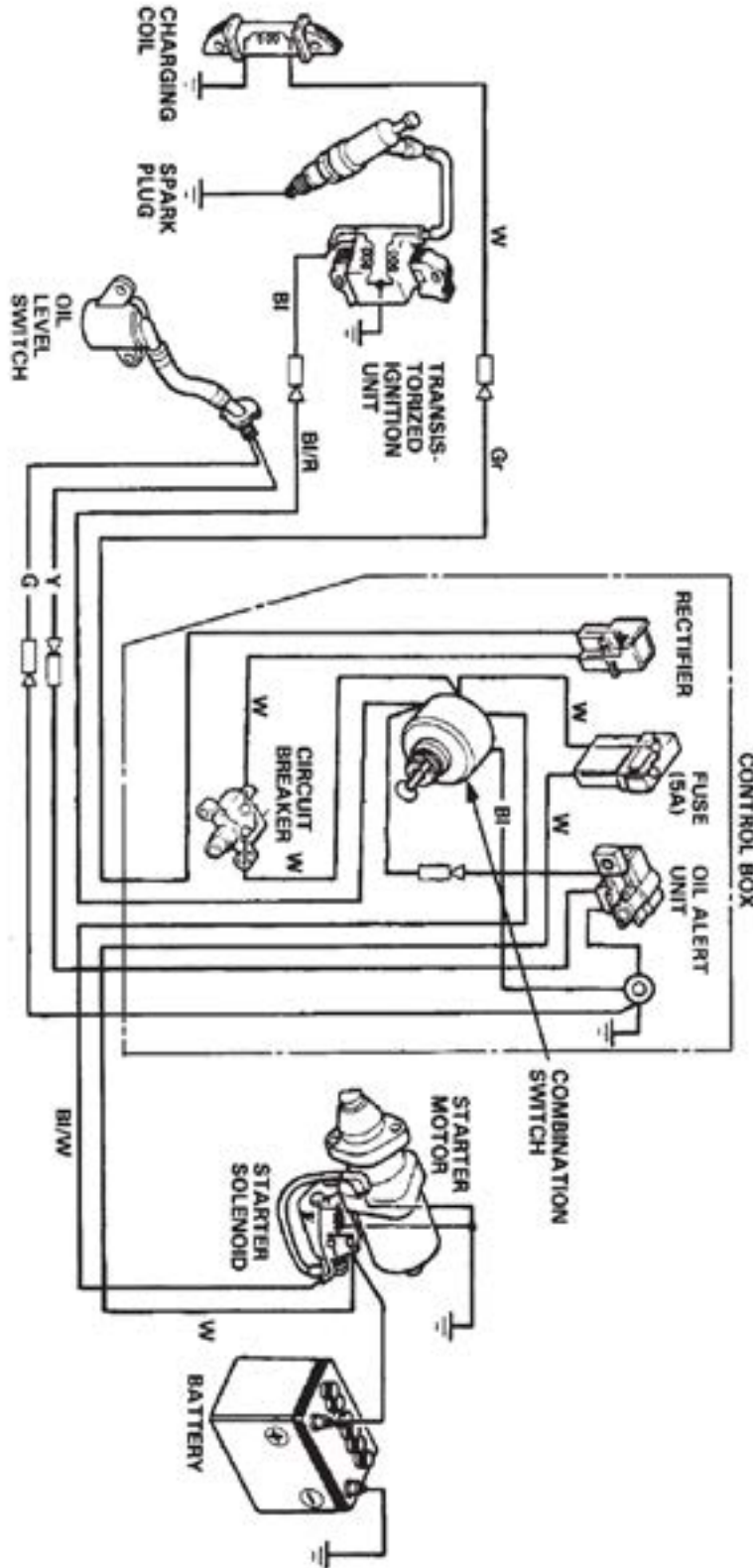
DIMENSIONS & WEIGHT	GX240	GX270
Description code	GC04	GX270
Cyclone Type	2	2
LENGTH x WIDTH x HEIGHT	390 x 450 x 435 mm	
Dry Weight	23.5 kg (51.8 lb)	
Engine Type	4 - Stroke, overhead valve, single cylinder	
Displacement (Bore x Stroke)	242 cc (14.8 cu in) 173 x 58 mm (2.9 x 2.3 in)]	270 cc (16.5 cu in) [77 x 58 mm (3.0 in x 2.3 in)]
Max. Output	8.0 HP / 3.600 rpm	9.0 HP / 3.600 rpm
Max. Torque	1.7 kg-m (12.29 ft-lb)/2,500 rpm	1.95 kg (14.1 ft-lb)/2,500 rpm
Fuel Consumption	230 g/HPh (0.7 lb/HPh)	
Cooling System	Forced Air	
Ignition System	Transistorized Magneto	

## GX340 - GX390

DIMENSIONS & WEIGHT	GX340	GX390
Description code	GC05	GCAA
Cyclone Type	2	2
LENGTH x WIDTH x HEIGHT	390 x 450 x 435 mm (15.4 X 17.7 X 17.1 in)	
Dry Weight	31 kg (68.4 lb)	
Engine Type	4 - Stroke, overhead valve, single cylinder	
Displacement (Bore x Stroke)	377 cc (20.6 cu in) 82 x 64 mm (2.9 x 2.3 in)]	270 cc (16.5 cu in) [77 x 58 mm (3.0 in x 2.3 in)]
Max. Output	11.0 HP / 3.600 rpm	13 HP / 3.600 rpm
Max. Torque	2.4 kg-m (17.36 ft-lb)/2,500 rpm	2.7 kg (19.5 ft-lb)/2,500 rpm
Fuel Consumption	230 g/HPh (0.7 lb/HPh)	
Cooling System	Forced Air	
Ignition System	Transistorized Magneto	
PTO Shaft Rotation	Counterclockwise	

NOTE: Specifications may vary according to the types, and are subject to change without notice.

QAE TYPE



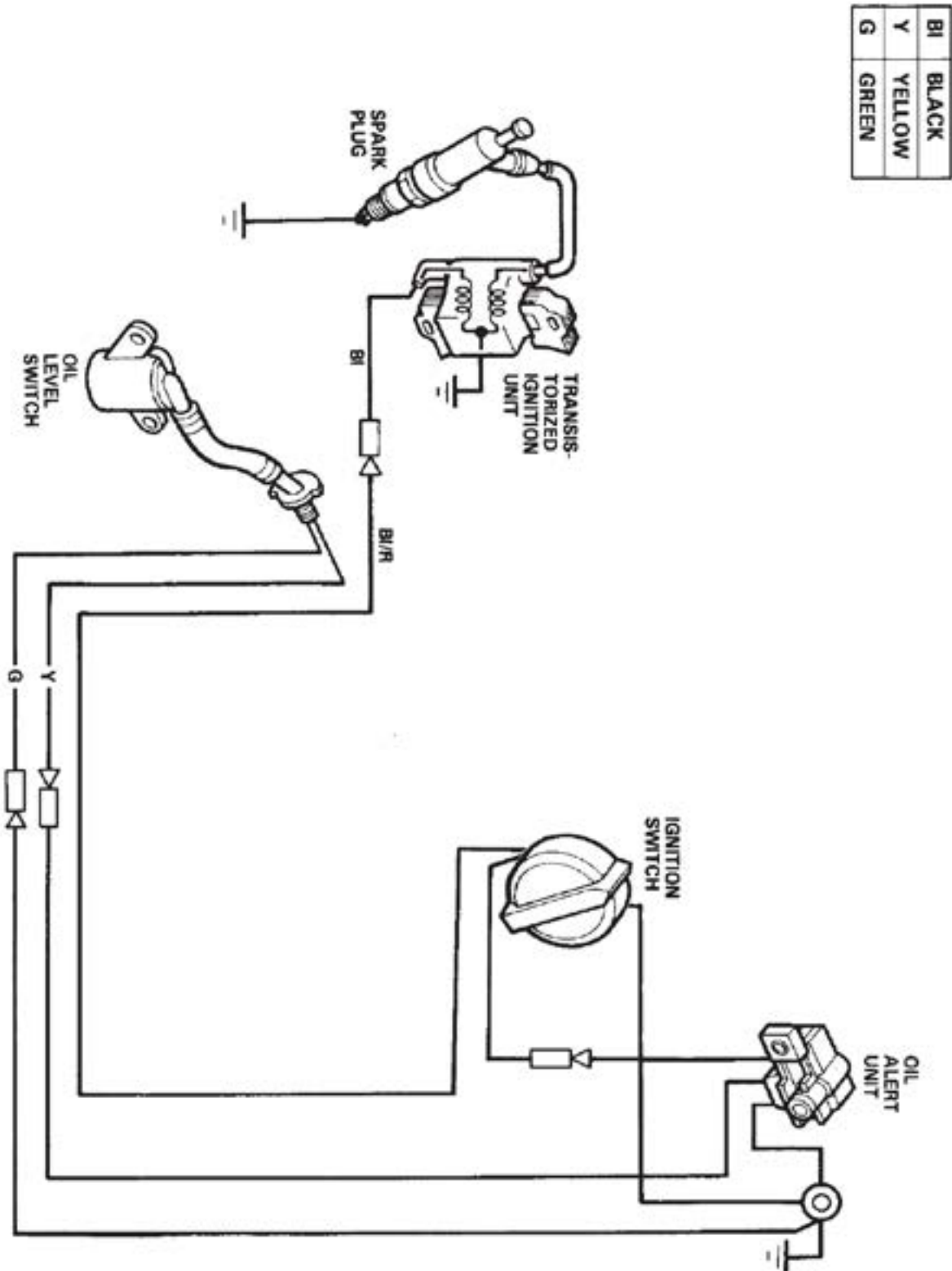
BI	BLACK	Gr	GRAY
Y	YELLOW	R	RED
W	WHITE	G	GREEN

COMBINATION SW					
	IG	E	ST	BAT	
OFF	<input type="checkbox"/>	<input type="checkbox"/>			
ON	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
START				<input type="checkbox"/>	<input type="checkbox"/>



### Except QAE Type

NOTE: Wiring diagrams may vary according to the types.



### 3.SAFE USE

This mark denotes those items that are very important for safety. Please be sure to obey them.

1. Do not allow people who do not understand this owner's manual to operate the engine.
2. Do not run engine indoors or where the ventilation is poor. (The exhaust gas contains carbon monoxide, an odorless and harmful substance.)
3. Do not place hands or feet near moving or rotating parts. (Be sure to cover the area around the power take off shaft and belts that link the engine with other equipment.)
4. Do not store, spill, or use gasoline near heat or flame or equipment that uses flame or sparks, such as stoves, ovens, water heaters, etc. (An explosion could occur.)
5. Do not add fuel indoors or where the ventilation is poor.
6. Do not smoke when adding fuel.
7. Do not remove the fuel tank cap or add fuel while the engine is running or hot. (Add fuel after the engine has cooled by waiting 2 or more minutes after the engine is stopped.)
8. Do not operate the engine when gasoline has been spilt, when there is the smell of gasoline, or when there is a danger of explosion.
9. Do not transport the engine with fuel in tank. (If fuel were to spill it could cause a fire.)
10. Do not stop the engine by using the choke lever.
11. Do not unreasonably adjust the engine speed.
12. Do not check for spark with the spark plug removed.
13. Do not operate the engine with the muffler or air cleaner removed. (Especially for the muffler, check the tightness of mounting screw, damage and leakage periodically, and if abnormality is found, repair or replace it.)
14. Do not operate the engine with grass, leaves, or other combustible material in muffler area.
15. Do not touch the high-voltage cord or spark plug cap.
16. Occasionally inspect the fuel system components to check for cracks and leaks. Replace components when necessary.
17. Remove trash, grass, and other debris from around the cooling fins and recoil starter. (When doing this be sure to stop the engine and attached equipment and wait until the engine has cooled.)
18. To prevent burns, do not touch the muffler or other engine parts that have become hot.
19. Always use new gasoline. (Using old gasoline could cause build up in the carburetor, which could cause poor engine operation.)
20. Use genuine Mitsubishi Meiki engine parts. Not using genuine parts could result in engine damage and premature wear.




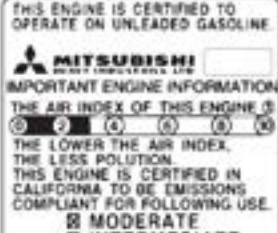


#### WARNING

The important safety instruction items shown in this operation manual do not cover all possible statuses or conditions. Although we pay sufficient attention for safety, the person who uses or maintains the engine is requested to pay sufficient attention for safety as well.

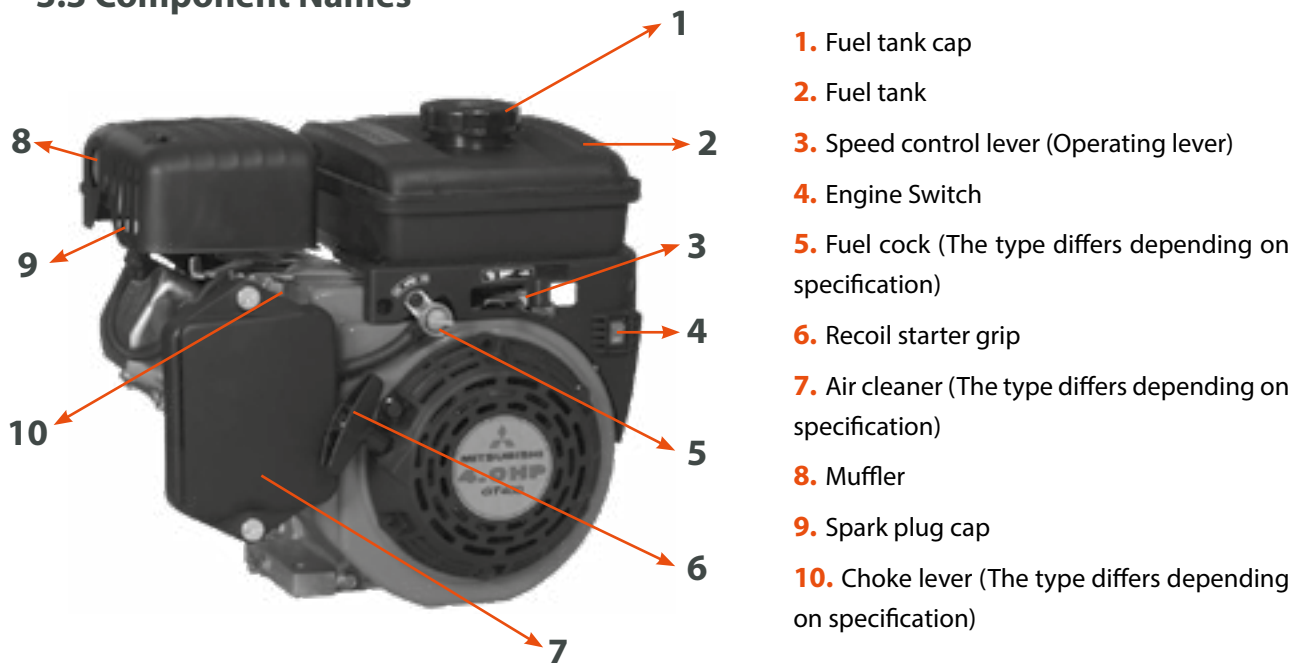


### 3.2 Emission Label

Emission label "COMPONENT NAMES"

 <p>THIS ENGINE CONFORMS TO EU EMISSION DIRECTIVE FOR SMALL OFF-ROAD ENGINES. REFER TO OWNER'S MANUAL FOR MAINTENANCE SPECS, ADJUSTMENTS. EUTYPE APPROVAL NO. _____</p>	<p>The emission label applicable to engines which are used in the EU.</p>	 <p>THIS ENGINE IS CERTIFIED TO OPERATE ON UNLEADED GASOLINE. THE AIR INDEX OF THIS ENGINE IS [2] [3] [4] [5] [6] [7]. THE LOWER THE AIR INDEX, THE LESS POLLUTION. THIS ENGINE IS CERTIFIED IN CALIFORNIA TO BE EMISSIONS COMPLIANT FOR FOLLOWING USE. <input checked="" type="checkbox"/> MODERATE <input type="checkbox"/> INTERMEDIATE <input type="checkbox"/> EXTENDED</p>	<p>The emission label applicable to engines which are used in California, and in the United States (and in Canada). page 30 "Emission System Warranty" is applied.</p>
 <p>THIS ENGINE CONFORMS TO 2007 U.S. EPA PHASE 2 REGULATIONS FOR SMALL NON-ROAD ENGINES. REFER TO OWNER'S MANUAL FOR MAINTENANCE SPECS, ADJUSTMENTS, &amp; EMISSION DURABILITY INFORMATION. EMISSIONS COMPLIANCE PERIOD: 125 HOURS. FAMILY - _____ (EPA) (CAN) DISPLACEMENT - _____ CC D. O. M. MONTH/YEAR - _____ /01</p>	<p>The emission label applicable to engines which are used in the United States (and in Canada except the state of California). page 28 "Emission System Warranty" is applied.</p>	 <p>THIS ENGINE CONFORMS TO 2007 CALIFORNIA EXH AND EVP AND EPA EMISSION REGULATIONS FOR SMALL OFF-ROAD ENGINES. REFER TO OWNER'S MANUAL FOR MAINTENANCE SPECS, ADJUSTMENTS, &amp; EMISSION DURABILITY INFORMATION. EMISSIONS COMPLIANCE PERIOD: 125 HOURS. FAMILY - _____ (EPA) (CAN) DISPLACEMENT - _____ CC D. O. M. MONTH/YEAR - _____ /01</p>	

### 3.3 Component Names





- 11. Oil gauge & oil filler cap
- 12. Oil drain plug
- 13. Power take off shaft
- 14. Emission label



### 3.4 Fuel and Engine Oil

#### Fuel

- Use clean, fresh, unleaded gasoline. (Do not use leaded gasoline.)
- Use gasoline within 30 days of purchase. Do not use old gasoline. Doing so could cause problems.
- Do not mix oil into the gasoline.
- Do not overflow the gasoline when filling the fuel tank. (Leave several centimeters of space at the top of the tank.)



### WARNING

Flame and heat can cause gasoline to explode. Be sufficiently careful of flame and heat when handling gasoline.

#### Engine Oil

Engine is shipped from Mitsubishi Heavy Industry Ltd. without oil. Before starting the engine, be sure to conduct an oil inspection by following the instructions given below.

1. Place the engine on a level surface when adding oil and conducting inspections.
2. Check the oil level without the oil gauge screwed in.
3. Fill the oil up to the F-level of the oil gauge (correct level).
4. Before starting the engine, tightly screw in the oil gauge.
5. Replace or add engine oil following the table below.
6. For oil, use high-quality pure API class oils with a grade of SE or higher.
7. Do not add commercial additives to the recommended oil. Do not mix gasoline into the oil.
8. When using multiple grade oils, the amount of oil consumption will increase, so check the oil level more frequently than single grade oil.

### 3.5 PRE OPERATION ENGINE INSPECTION

Be sure to check the following before operating the engine.



#### 1. Fuel inspection

- Is there gasoline in the tank?
- Is old gasoline being used?
- Add the correct fuel following the instructions "FUEL AND ENGINE OIL".
- Is the fuel tank cap closed correctly?



Be sufficiently careful of heat and Be flame sufficiently when handling-careful and adding fuel. Not doing so could cause a fire or explosion.



#### 2. Air Cleaner Inspection

- Is the air cleaner element dirty or is the air cleaner oil (oil bath type) insufficient?
- When the air cleaner element is dirty or oil in the air cleaner is dirty or insufficient, check and maintain according "CARE OF THE ENGINE" "INSPECTION AND MAINTENANCE".



#### 3. Engine Oil Inspection

- Is the engine filled with the specified amount of engine oil? And is the oil dirty?
- If there is not enough oil, if it is dirty, or it has been used longer than the specified time, follow the inspection and maintenance instructions "FUEL AND ENGINE OIL" and check "CARE OF THE ENGINE".



#### 4. Inspect the tightness of all fastener screws

- Are all the screws tight?
- Be sure to check the screws used to fasten the muffler. (Do this when the muffler is cold.)



#### 5. Component Cleaning Inspection

- Are there grass, leaves, or combustible materials around the muffler?
- Are there grass, leaves, or combustible materials around the recoil starter air intake?
- If there to is trash, etc., in the vicinity, be sure to remove it before operating the engine.



#### 6. Fuel and oil leaks inspection

Are there any fuel or oil leaks? If any are found have the engine repaired.

Standard fuel tank capacity and oil quantity for the various models

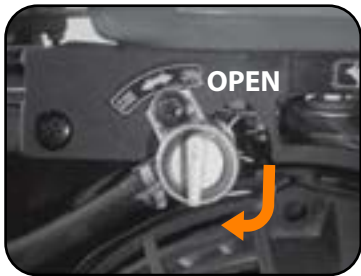
Model	Fuel Tank Capacity	Engine Oil Quantity
GT240	1.5 e	0.4 e
GT400	2.5 E	0.6 e
GT600	3.8 e	0.6 e
GT241	1.5 e	0.4 e

### 3.6 STARTING AND STOPPING ENGINE

Before starting the engine, carefully read and understand the "SAFE USE" and "PRE-OPERATION ENGINE INSPECTION" sections of this instruction manual.

#### Fuel Cock

Cock type without strainer



Cock type with strainer cup



Open fuel cock

#### Engine switch (Rocker Type)



Push the engine switch to the ON (I) position.

#### After Starting

- After starting the engine, gradually return the choke lever to the open position while watching how the engine is running.
- After warm-up operation (about-5minutes), align the throttle with the required speed.

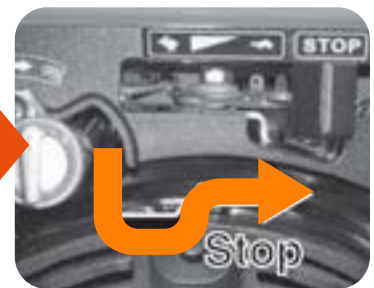
STOP



Move the speed control to the slow position and keep the engine running for 1 or 2 minutes.



Push the engine switch to the OFF (0) position or turn the key switch to the OFF (0) position.



Move the lever further to the right direction from the slow position to stop.

### Speed control lever & Engine Switch



Open the speed control lever a little toward the high-speed side.

### Starting with the electric-starter (GT600)

- Starting with the electric-starter (optional specification/GT600)
- Turn the key switch to the START(e) position.
- If the engine does not start after running of the electric starter for 5 seconds, wait 5 seconds before trying to start again.
- After turning the switch to the START(6) position and releasing the key switch will automatically return to the ON (I) position.

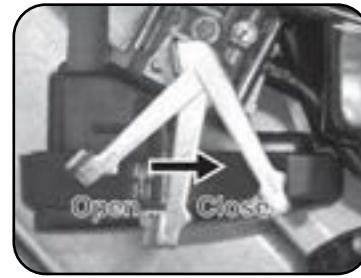
### Fuel cock

Cock type without strainer



Close the fuel cock.

### Choke lever



- Close the choke fully during cold weather or when the engine is hard to start.
- Open the choke partially or fully during hot weather or when the engine has warmed up.



### Recoil start



- Hold onto the starter grip and lightly pull it until the compression position is reached and then pull swiftly from this position.
- Slowly return the starter grip to its original position after the engine starts.

Cock type with strainer cup





### Care Of The Engine



Daily and regular care of the engine is important to assure safe, proper, and long-term operation of the engine. Refer to the regular inspection table when conducting inspections and maintenance.

#### Regular inspection table

ITEM	Before Every Operation	Every 25 hours	Every 50 hours	Every 100 hours
Inspection and tightening of bolt and nut at each place	●			
Engine oil level check and supply	●			
Change of engine oil		● Only the First Time	●	
Check for fuel and oil leaks.				
Check and cleaning of air cleaner	●			
Cleaning around the recoil starter	●			
Cleaning of circumference of the muffler cover	●			
Check and cleaning of spark plug	●			
Check and cleaning of spark plug			●	
Check and cleaning of fuel cock (cock with strainer cup specification)			●	
Removal of carbon in combustion chamber				●
Check and adjustment of valve clearance				●
Replace the fuel lines.	3 years (or when necessary)			

Items marked with a ● require advanced skill and tools, so they should be done by the distributor.



#### INSPECTION PRECAUTION ITEMS

- Conduct inspections on a level and well-lit area.
- Detach the spark plug wires when conducting inspections and maintenance to prevent the engine from starting unintentionally.
- Immediately after operation the engine is hot, so do not touch it.
- When handling fuel (gasoline) absolutely do not use heat or flame.
- When fuel or oil has been spilled, completely wipe it up.
- Do not wash the engine with water.
- Do not unreasonably change the engine speed (Have it done by the distributor.)
- The inspection times listed in the regular inspection table are at best recommended for

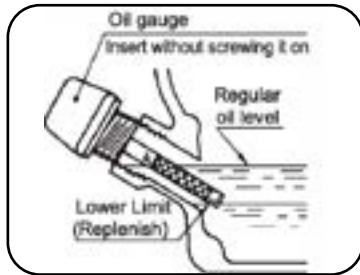


general use conditions. The equipment used or the work area could cause engine operation to degrade from debris or dust. In such a case, stop work and clean the engine in a safe area.

## INSPECTION AND MAINTENANCE

Before each operation

### Adding engine oil



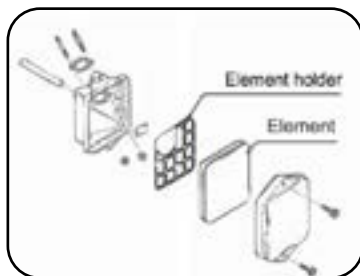
Be sure to check the amount of oil before each operation and fill the reservoir to the proper level. Change the oil if it is dirty.

### Cleaning and inspecting components

- Clean the area around the muffler cover. (Remove trash, etc.)
- Inspect and tighten all nuts and bolts. (Are the muffler nuts loose?)
- Clean around the recoil starter. (Remove trash, etc.)
- Inspect fuel spills and oil leaks. (Completely wipe away fuel spills.)

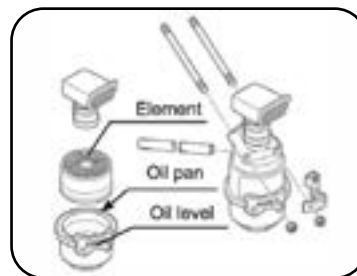
## Air cleaner inspection and maintenance

Semi-dry type



When the element is very dirty or when the oil has been used up making the element dry, after cleaning the element soak it in kerosene and strongly wring out the element with one hand.

Oil bath type (optional specification)



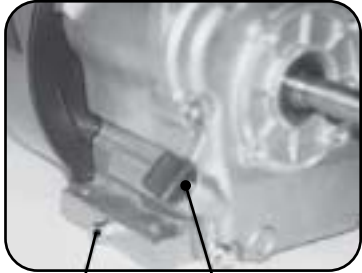
When the oil level is low, add oil to raise it to the correct level. When the element is very dirty, wash both the oil pan and the element with kerosene, soak the element in engine oil, and then shake it or wring it until it does not drip.



**Use of heat or flame is absolutely prohibited.**

**First 25 hours and each 50 hours of operation**

**Change the engine oil**



Drain Plug / Oil Gauge

(Only the first 25 hours)  
While the engine is still warm, drain the oil from the drain plug and replace it with new oil.

**Clean maintain the spark plug**



Remove the carbon attached to the electrode, polish the electrode with emery paper, and adjust the electrode gap.

Burns could be caused by hot oil touching the skin, so be sufficiently careful.

Inspection and cleaning of the fuel cock (Cock with strainer cup specification only)



Remove the strainer cup of fuel cock , remove the deposit in the cup and clean the net.

**Spark plug product Nos.**

Manufacturer name	NGK	Denso	Champion	NHSP*
Product No.	BP6HS	W20FP	L66Y	E6TC
Product No.	BPR6HS	W20FPR	RL82YC	E6RTC

\* Nanjing Huade Spark Plug Co., Ltd.

## Long Term Storage

1. If the engine is not used for more than 30 days, changes in the fuel quality could cause poor engine starting, etc., so to prevent this loosen the fuel drain screw to drain out the fuel from the carburetor. Also open the fuel cock to drain the fuel from the fuel tank.



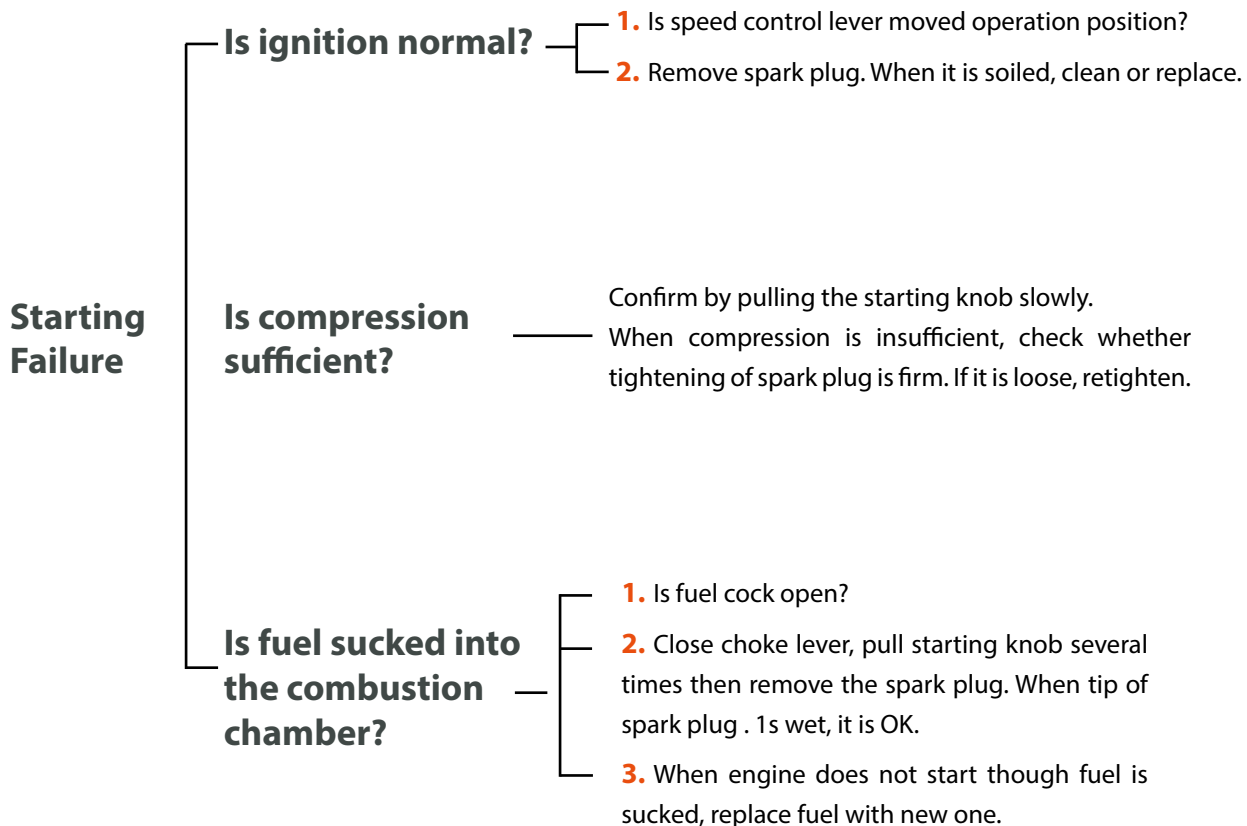
When doing this, be sufficiently careful in how the fuel is handled.  
Handling around heat or flame is absolutely prohibited.

2. When storing the engine, remove the spark plug, pour 2 to 3 cc of engine oil into the cylinder, turn the crank shaft several times, replace the spark plug, and stop at the crank shaft at the point of compression.

3. Wipe the outside of the engine with a cloth soaked in oil. Do not wash the engine with water.

4. Store in a location with low humidity.

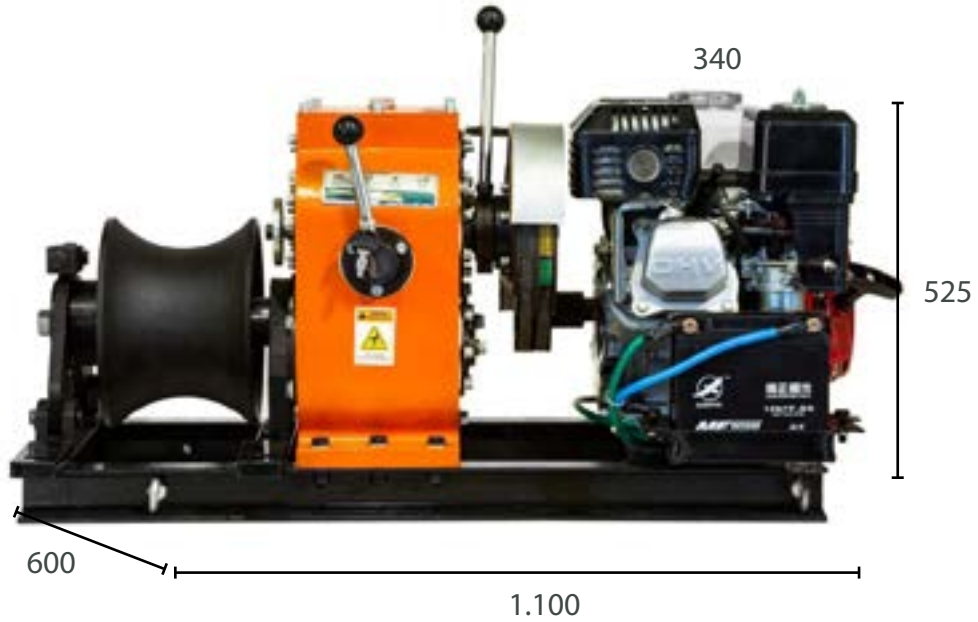
## Trouble Shooting



When the engine does not start in spite of above mentioned inspection, ask the distributor or repair factory for inspection.

# PWCD5T

## TECHNICAL PARAMETERS



PARAMETERS	GEAR			
	I		II	
	FAST	SLOW	FAST	SLOW
CAPACITY	2,5	5	0,9	1,5
SPEED	8	4	24	13

CODE	PWCD5T
CAPACITY	11.023 Lb
SPEED	13 - 79 Ft / Min
MOTOR	Electrical Starting
TOTAL WEIGHT	326 Lb
TRANSMISSION	Mechanics
APPLICATION	Pulling

### WARRANTY

1 Year Included  
 2 Year Extended  
 10Years Parts Service Availability

## WINCHE PWCD5TTM TECHNICAL PARAMETERS



Dimensions in mm

PARAMETERS	GEAR			
	I		II	
	FAST	SLOW	FAST	SLOW
CAPACITY	2,5	5	0,9	1,5
SPEED	8	4	24	13

CODE	PWCG3T
APPLICATION	Pulling
CAPACITY	11.000 Lb
SPEED	18 - 29 Ft / Min
MOTOR	Diesel 18 f - 9p
OIL FLOW	19 L / min
PRESSURE	1.400 psi
IWRC ROPE	3/8" x 98 ft
TOTAL WEIGHT	Pulling

**WARRANTY 3 GEAR INCLUDED**

**TECHNICAL SPECIFICATIONS**

**Winche PWCG1T**

**Technical Parameters**



PARAMETERS	GEAR		
	REVERSE	FAST	SLOW
CAPACITY	N/A	0.6	0.8
SPEED	12	15	10

CODE	PWCG1T
CAPACITY	1.763 Lb
SPEED	33 - 49 Ft / Min
MOTOR	4Hp Mitsubishi Gasoline
TOTAL WEIGHT	84 Lb
TRANSMISSION	Manual

## WINCHE PWCG3T

### TECHNICAL PARAMETERS

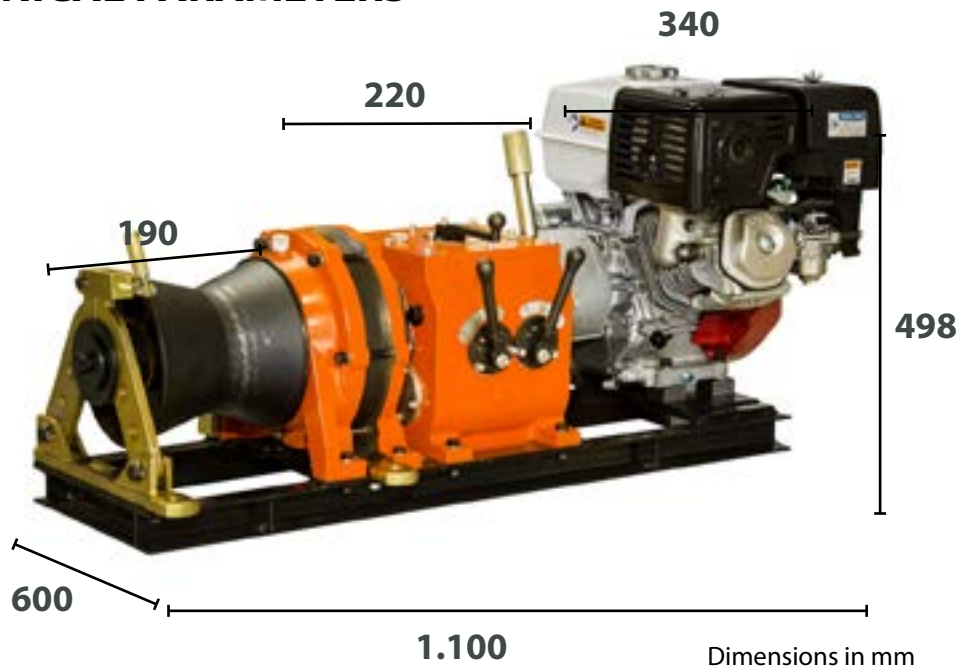


PARAMETERS	GEAR		
	REVERSE	FAST	SLOW
CAPACITY	N/A	1.8	3
SPEED	4	9	5

CODE	PWCG3T
CAPACITY	6.613 Lb
SPEED	13 - 30 Ft / Min
MOTOR	Honda GX200 - 6.5 HP
TOTAL WEIGHT	181 Lb
TRANSMISSION	Manual
APPLICATION	Pulling & Lifting

**WARRANTY 3 GEAR INCLUDED**

## WINCHE PWCG5T TECHNICAL PARAMETERS



PARAMETERS	GEAR			
	I		II	
	FAST	SLOW	FAST	SLOW
CAPACITY	2,5	5	0,9	1,5
SPEED	8	4	24	13

CODE	PWCG3T
CAPACITY	11.023 Lb
SPEED	13 - 79 Ft / Min
MOTOR	Honda GX390 Gasoline
TOTAL WEIGHT	304 Lb
TRANSMISSION	Mechanics
APPLICATION	Pulling

**WARRANTY 3 GEAR INCLUDED**

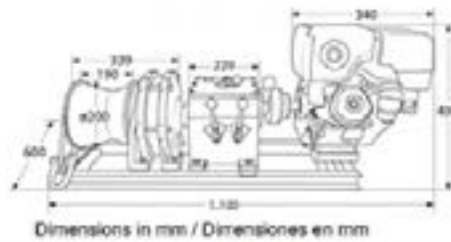


### 5T Engine Powered Winch Instruction

5T type engine powered winch is one kind of no power condition as traction, lifting machinery equipment to adapt to the serious of products that mountainous area and field construction needed, it has the characteristic including small volume, small weight, big traction etc.

This winch is composed by petrol engine, clutch, transmission, brake, planetary gear producer, ground grinding core

Model	Gear	Turn Direction	Pulling Speed	Pulling Force	Power	Weight
Petrol Engine	Fast	Positive	26.5	9	11-13	138
		Reverse	26.5			
	Fast	Positive	15.0	15		
		Reverse	15.0			
	Slow	Positive	9.0	25		
		Reverse	9.0			
	Slow	Positive	4.5	50		
		Reverse	4.5			
Diesel Engine	Fast	Positive	26.5	9	9	148
		Reverse	26.5			
	Fast	Positive	15.0	15		
		Reverse	15.0			
	Slow	Positive	9.0	25		
		Reverse	9.0			
	Slow	Positive	4.5	50		
		Reverse	4.5			



Parameter Parámetros	Gear / Caja de cambio			
	I		II	
	Fast / Rapido	Slow / Lento	Fast / Rapido	Slow / Lento
Capacity Capacidad	2.5 L / 5511 lb	5L / 11025 lb	0.9 L / 1964 lb	1.5 L / 3308 lb
Speed (per/min) Velocidad (por/min)	26 ft / 8 m	13 ft / 4 m	78.7 ft / 24 m	42.6 ft / 13 m

1. Easy to maintain and operate.

Type adopt import Honda petrol engine, his machine's rated load is 11 horsepower, hand pull on the rope start.

Type adopt import diesel engine, this machine's rated load is 10 horsepower hand pull on the rope start, the driven machine enjoys a reputation in domestic reliable performance, easy to maintain and operate.

2. **Clutch** is the movement of the gasoline engine and the power, through born elastic coupling device given the synchronous, movement of the block, through the clutch handle's rotation of the wheel in contact with the fixed seat cone driven activities, under the action of friction, the motion and power output, the clutch has a good clam mind, strong absorb shock resistance, big transmission torque, smooth and flexible operation, clutch freely etc. In addition, the clutch handle also with a lateral or radial positioning mechanism, to facilitate the operator to work long hours.

3. **Transmission** is the movement of gasoline engine and the power directly by clutch input, in order to achieve the machine lock needed work speed, the transmission adopts the straight tooth cylindrical gears and spline, connection speed, the transmission structure is compact, small size, simple operation is flexible, change the gear sensitive.

4. **Brake Staff:** This machine adopts the main brake and hand brake combination, main brake used overrunning brake, the brake is installed on the shaft in transmission, hand brake is controlled by clutch handle when clutch is disengaged by friction will stop transmission of the movement, to achieve the brake effect.

Planetary Gear Producer: The machine adopts the involute tooth difference planetary reducer, (picture 2). It is consist of eccentric shaft, the gear ring and two symmetrical layout of the planetary gear to technology institutions, this gear reducer with large transmission ratio compact structure small volume, light weight, characteristic of long service life.

5. **Grinding Core:** Grinding core adopts high quality steel manufacturing connected with the planetary gear reducer output shaft, also with rolling shaft and sliding bearing force, unloader, grinding core use activity support bracket, convenient for wire rope handling.



### WARNING:

1. Before the engine powered winch installed and use, please check whether the machine damaged, once find damaged please use after maintain.
2. Before install and use the machine, please choose good fixed earth pile or pile substitute.
3. After engine powered winch installed, please check the machine comprehensive.
  1. Installation position of earth pile or pile substitute, if they are strong, safe, reliable or not.
  2. If there exist a phenomenon that every fastens parts loose.
  3. Whether the rope that connected with the earth pile fastening and reliable or not .
  4. Whether all lubrication parts added lubricating oil in accordance with the regulation or not
  5. Whether clutch is disengaged and the rope is strong or not.
1. The usage and maintenance of gasoline (diesel)engine should according to the instruction manual of the gasoline engine.
2. The engine should be separated from the clutch before starting .
3. Be quick when close the clutch, otherwise it is easy to abrade, it is not suitable to release strongly.
4. You must release the clutch when transmission shift, if there exist any obstacles in shift, you can close the clutch slightly and change gear position, then shift again, no forcing shift.
5. After engine powered winch installed, you should do 10 minutes no-load test, check whether the clutch and each shift lever handle flexible, accurate, reliable or not, if there were any abnormal phenomenon of each part or not.
6. Method installing rope
  1. After loose the fastener screws and open the bracketing face of grinding heart, make the wire rope roll the grinding heart according to the top-down clockwise tightly, traction side close to the bracket, the rope trail near the reducer.
  2. Turns of wire rope on the grinding depends on tractor load .and when the load within the rated load, the turns should be keep six laps, the safety stake should be set up in the rope trail.

3. If the gasoline engine malfunction in the process of working and the weights dangling, you can release the clutch, using a wrench on the shaft according to desired direction, let the weights up or down.
4. The engine powered winch should work within rated load, it is forbidden to run overload.
5. The discharge power ring of engine powered winch is used to connect to substitute of earth pile, you can not determine the connection position outside the discharge power ring in use.
6. The engine powered winch should be operated by specially assigned people, the operator should control the operation completely, and the performance and operation method, achieve the proficiency level.
7. The operator should be focus on the process of work according to the requirements and watch out every part's work condition of the engine powered winch, pull the trail of the rope should be operated by specially assigned people strictly.
8. It's forbid to use your finger to stir the wire rope in the rope enter side when engine powered winch are under working to avoid accident.
9. After engine powered winch stopped, if there exist load, must let the rope trail insurance, in case of each transmission permanent distortion.
10. In order to guarantee the reliability of the engine powered winch' use .the winch should be check comprehensive by specially assigned people after half a year ,take measures immediately once find malfunction and clean the transmission reducer ,change into clean lubricating oil.

### **Method and volume of filling oil**

1. While filling oil into transmission from top side cup, you should open the screw on the handle bottom' observation oil hole, volume of oil depend on observation oil hole full.
2. While filling oil into reducer from the above side, you should open the observation oil hole screw on the ground grinding core trail, volume of oil depend on the minimum level of observation oil hole full.
3. Please use Albany grease daub on the surface of bearings after clutch have worked 100 hours.
4. Transmission adopts T-20 mechanical oil, reducer adopts HT-50 mechanical oil.
5. Parts of engine powered winch adopt ZL401 aluminum alloy, so during maintenance process, don't tight the screw too much, also you can't use hammer knock avoid damage.
6. The process of engine powered winch 's maintenance, dismantle, check, and remove.

7. The engine powered winch and screws that used to fasten bottom shelf, move transmission out.
8. Tweak transmission and screws that used to fasten bottom shelf, move reducer out.
9. Tweak reducer, bracket, and the screws that used to fasten bottom shelf, to make them separate.
10. The disassembly of clutch, use cir clip plier to snatch check ring that used for input axis firstly, then rotate clutch handle, using displacement produced by screw rotation to make fixed seat exit, take the active wheel out.
11. The disassembly of transmission, discharge oil in gearbox completely firstly, open cover and demount input axis, strike the fastening screws on ratchet wheel, rotate shaft to push off brake and shaft gear etc, according to clockwise, you can use a ratchet seat hole to exit pay attention to remove check ring used for shaft, before remove the intermediate gear, after that, the shaft shall be removed.
12. The disassembly of reducer, discharge oil in gearbox completely firstly, demount the connecting screws on both side cover, remove left cover and take out inner gear ring, knock the eccentric shaft slightly, use copper bar from trail of output hole, make eccentric shaft and planetary gear dis board accompany when assemble reducer, you should make the marks into 180° symmetry on planetary gears, only in this way can you install the reducer.

**WINCHE PWCG120  
TECHNICAL PARAMETERS**



PARAMETERS	GEAR			
	I		II	
	FAST	SLOW	FAST	SLOW
<b>CAPACITY</b>	2,5	5	0,9	1,5
<b>SPEED</b>	8	4	24	13

CODE	PWCG120
<b>APPLICATION</b>	Pulling
<b>CAPACITY</b>	12.000 Lb
<b>SPEED</b>	13 - 66 Ft / Min
<b>MOTOR</b>	Honda GX390 Gasoline
<b>OIL FLOW</b>	19 L / min
<b>PRESSURE</b>	1.400 psi
<b>IWRC ROPE</b>	3/8" x 98 ft
<b>TOTAL WEIGHT</b>	Pulling

**WARRANTY 3 GEAR INCLUDED**

# Index

<b>PROWINCH® DISCLAIMER.....</b>	<b>5</b>
<b>SAFETY BULLETIN.....</b>	<b>6</b>
<b>SAFETY PRECAUTIONS.....</b>	<b>10</b>
Applications For PWRT Prowinch® Winches.....	10
Mandatory Use Of.....	11
Safety Installation.....	12
Safety Operation.....	13
General Enviromental Precautions.....	15
<b>SPECIFICATIONS.....</b>	<b>16</b>
Unpacking.....	16
Installation.....	16
Mounting solenoid valve assembly.....	17
Electrical connections.....	17
Plumbing connections.....	17
Cautions.....	17
4 Speed Winch Operations.....	18
Procedure for winding the cable.....	18
Warranty.....	21
<b>HONDA ENGINE.....</b>	<b>23 - 49</b>
<b>MITSUBISHI ENGINE.....</b>	<b>50 - 59</b>
<b>PWCD5T .....</b>	<b>60</b>
Technical parameters.....	60
<b>PWCD5TTM.....</b>	<b>61</b>
Technical parameters.....	61
<b>PWCG1T.....</b>	<b>62</b>
Technical parameters.....	62
<b>PWCG3T.....</b>	<b>63</b>
Technical parameters.....	63
<b>PWCG5T.....</b>	<b>64-69</b>
Technical parameters.....	64 - 69
<b>PWCG120.....</b>	<b>70</b>
Technical parameters.....	70