

OPERATION AND PARTS MANUAL



MODEL QP2E CENTRIFUGAL PUMP (ROBIN EX130D51111 GASOLINE ENGINE)

Revision #0 (02/12/09)

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publication, visit our website at:
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THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.



CALIFORNIA — Proposition 65 Warning

Gasoline engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

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PARTS ORDERING PROCEDURES

Ordering parts has never been easier! Choose from three easy options:

Effective:
January 1st, 2006

www.multiquip.com



Order via Internet (Dealers Only):

Order parts on-line using Multiquip's SmartEquip website!

- View Parts Diagrams
- Order Parts
- Print Specification Information



If you have an MQ Account, to obtain a Username and Password, E-mail us at: parts@multiquip.com.

To obtain an MQ Account, contact your District Sales Manager for more information.

Goto www.multiquip.com and click on **Order Parts** to log in and save!

Use the **internet** and qualify for a **5% Discount** on *Standard orders* for all orders which include complete part numbers.*

Note: Discounts Are Subject To Change



Order via Fax (Dealers Only):

All customers are welcome to order parts via Fax.

Domestic (US) Customers dial:

1-800-6-PARTS-7 (800-672-7877)

Fax your order in and qualify for a **2% Discount** on *Standard orders* for all orders which include complete part numbers.*

Note: Discounts Are Subject To Change



Order via Phone: Domestic (US) Dealers Call:
1-800-427-1244

Non-Dealer Customers:

Contact your local Multiquip Dealer for parts or call 800-427-1244 for help in locating a dealer near you.



International Customers should contact their local Multiquip Representatives for Parts Ordering information.

When ordering parts, please supply:

- | | |
|---|--|
| <input type="checkbox"/> Dealer Account Number | <input type="checkbox"/> Specify Preferred Method of Shipment: |
| <input type="checkbox"/> Dealer Name and Address | <input checked="" type="checkbox"/> UPS/Fed Ex <input checked="" type="checkbox"/> DHL |
| <input type="checkbox"/> Shipping Address (if different than billing address) | <input type="checkbox"/> Priority One <input checked="" type="checkbox"/> Truck |
| <input type="checkbox"/> Return Fax Number | <input type="checkbox"/> Ground |
| <input type="checkbox"/> Applicable Model Number | <input type="checkbox"/> Next Day |
| <input type="checkbox"/> Quantity, Part Number and Description of Each Part | <input type="checkbox"/> Second/Third Day |

NOTICE

All orders are treated as *Standard Orders* and will ship the same day if received prior to 3PM PST.

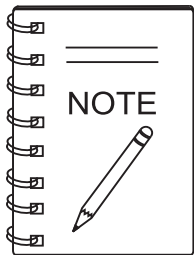
WE ACCEPT ALL MAJOR CREDIT CARDS!



SAFETY INFORMATION

FOR YOUR SAFETY AND SAFETY OF OTHERS!

Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the safety messages and operating instructions could result in injury to yourself and others.



This manual has been developed to provide complete instructions for the safe and efficient operation of this equipment. Refer to the engine manufacturer's instructions for data relative to its safe operation.

Before using this equipment ensure that the operating individual has read and understood all instructions in this manual.

SAFETY MESSAGES

The three safety messages shown below will inform you about potential hazards that could injure you or others. The safety messages specifically address the level of exposure to the operator, and are preceded by one of three words: **DANGER**, **WARNING** or **CAUTION**.

⚠ DANGER

You **WILL** be **KILLED** or **SERIOUSLY INJURED** if you **DO NOT** follow these directions.

⚠ WARNING








You **CAN** be **KILLED** or **SERIOUSLY INJURED** if you **DO NOT** follow these directions.

⚠ CAUTION

You **CAN** be **INJURED** if you **DO NOT** follow these directions.

HAZARD SYMBOLS

Potential hazards associated with the operation of this equipment will be referenced with hazard symbols which may appear throughout this manual in conjunction with safety messages.

Symbol	Safety Hazard
	Lethal exhaust gas hazards
	Explosive fuel hazards
	Burn hazards
	Respiratory hazards
	Accidental starting hazards
	Eye and hearing hazards
	Pressure hazards

SAFETY INFORMATION

GENERAL SAFETY

■ **DO NOT** operate or service this equipment before reading the entire manual. The equipment is to be operated by trained and qualified personnel only! The equipment is for industrial use only.



■ This equipment should not be operated by persons under 18 years of age.

■ **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, respiratory protection, hearing protection, steel-toed boots and other protective devices required by the job.



■ **NEVER** operate this equipment when not feeling well due to fatigue, illness or when under medication.



■ **NEVER** operate this equipment under the influence of drugs or alcohol.



■ **NEVER** disconnect any “**emergency or safety devices.**” These devices are intended for operator safety. Disconnection of these devices can cause severe injury, bodily harm or even death! Disconnection of any of these devices will void all warranties.

■ **NEVER** use accessories or attachments that are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.

■ Manufacturer does not assume responsibility for any accident due to equipment modifications. Unauthorized equipment modification will void all warranties.

■ Whenever necessary, replace nameplate, operation and safety decals when they become difficult read.

■ **ALWAYS** check the equipment for loosened threads or bolts before starting.

■ **NEVER** touch the hot exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing engine or pump. Never operate the engine with heat shields or guards removed.



■ **ALWAYS** allow the engine to cool before adding fuel or performing service and maintenance functions. Contact with *hot* components can cause serious burns.

■ **NEVER** operate this equipment in any enclosed or narrow area where free flow of the air is restricted. The engine of this equipment requires an adequate free flow of cooling air. If the air flow is restricted it will cause serious damage to the equipment or engine and may cause injury to people and property. The engine fuel exhaust gases contain poisonous carbon monoxide. This gas is colorless and odorless, and can cause death if inhaled.



■ **ALWAYS** refuel in a well-ventilated area, away from sparks and open flames. **DO NOT** fill the fuel tank while the engine is running or hot. **DO NOT** overfill tank, since spilled fuel could ignite if it comes into contact with hot engine parts or sparks from the ignition system. Store fuel in approved containers.

■ **ALWAYS** use extreme caution when working with **flammable** liquids. When refueling, **stop** the engine and allow it to cool.

■ **DO NOT** smoke around or near the equipment. Fire or explosion could result from fuel vapors, or if fuel is spilled on a hot engine.



■ **NEVER** operate the equipment in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe **bodily harm or even death.**



■ **ALWAYS** store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children.

SAFETY INFORMATION

■ **NEVER** run engine without air cleaner. Severe engine damage may occur.

■ **ALWAYS** ensure pump is on level ground before use.

■ **NEVER** pump volatile, explosive, flammable or low flash point fluids. These fluids could ignite or explode. **NEVER** pump corrosive chemicals or water containing toxic substances. These fluids could create serious health and environmental hazards. Contact local authorities for assistance.



■ **NEVER** open the priming plug when pump is hot. Hot water inside could be pressurized much like the radiator of an automobile. Allow pump to cool to the touch before loosening plug. The possibility exists of scalding, resulting in severe bodily harm.

■ **NEVER** block or restrict flow from discharge hose. Remove kinks from discharge line before starting pump. Operation with a blocked discharge line can cause water inside pump to overheat.

■ **ALWAYS** fill the pump casing with water before starting the engine. Failure to maintain water inside the pump housing will cause severe damage to the pump and mechanical seal.

■ In winter drain water from pump housing to prevent freezing.

■ **NEVER** tamper with the factory setting of the engine governor. Personal injury and equipment damage can result if operating in speed ranges above the maximum allowable.



LOADING AND UNLOADING

■ Before lifting, make sure that equipment parts (hook and vibration insulator) are not damaged and screws are not loosened or lost.

■ **ALWAYS** make sure crane or lifting device has been properly secured to the lifting bail (hook) of the equipment.

■ **NEVER** lift the equipment while the engine is running.

■ Use adequate lifting cable (wire or rope) of sufficient strength.

■ Use one point suspension hook and lift straight upwards.

■ **NEVER** allow any person or animal to stand underneath the equipment while lifting.

■ **DO NOT** lift machine to unnecessary heights.



TRANSPORTING

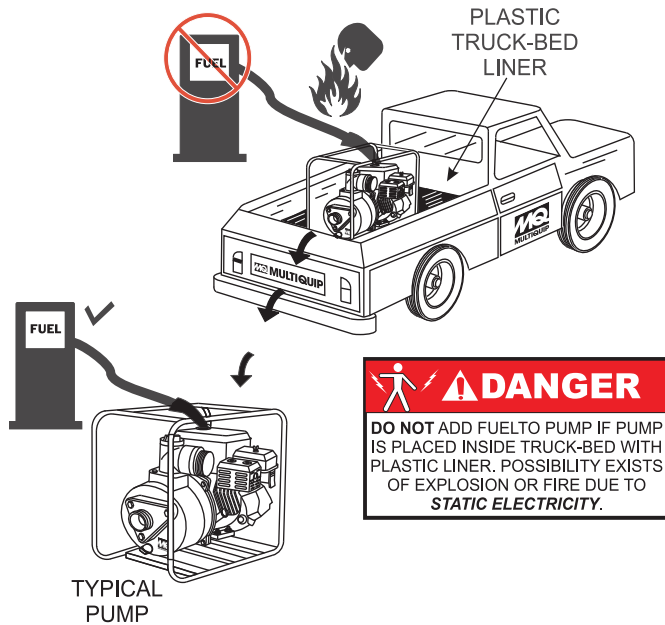
■ **ALWAYS** shutdown engine before transporting.

■ Tighten fuel tank cap securely and close fuel cock to prevent fuel from spilling.

■ **ALWAYS** tie down the equipment during transport by securing the equipment with rope.

SAFETY INFORMATION

REFUELING

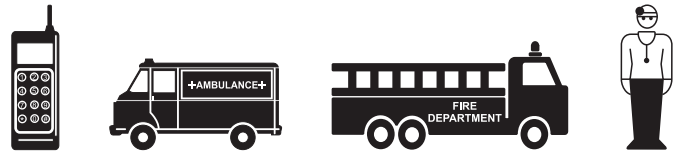


MAINTENANCE SAFETY

- **NEVER** lubricate components or attempt service on a running machine.
- **ALWAYS** allow the machine a proper amount of time to cool before servicing.
- Keep the equipment in proper running condition.
- Fix damage to the equipment immediately and always replace broken parts.
- Dispose of hazardous waste properly. Examples of potentially hazardous waste are used motor oil, fuel and fuel filters.
- **DO NOT** use food or plastic containers to dispose of hazardous waste.
- **DO NOT** pour waste, oil or fuel directly onto the ground, down a drain or into any water source.

EMERGENCIES

- **ALWAYS** know the location of the nearest *fire extinguisher*.
- **ALWAYS** know the location of the nearest *first aid kit*.
- In emergencies, *always* know the location of the nearest phone or *keep a phone on the job site*. Also know the phone numbers of the nearest *ambulance*, *doctor* and *fire department*. This information will be invaluable in case of emergency.



SPECIFICATIONS/DIMENSIONS (PUMP)

Table 1. Specifications (Pump)	
Model	QP2E
Type	Centrifugal Pump
Suction and Discharge Size	2.00 in (51 mm)
Maximum Pumping Capacity	158 gallons/minute (600 liters/minute)
Max. Lift	25 ft (7.62 meters)
Max. Head	115 ft. (35.0 meters)
Dry Net Weight	53 lbs (24 kg)

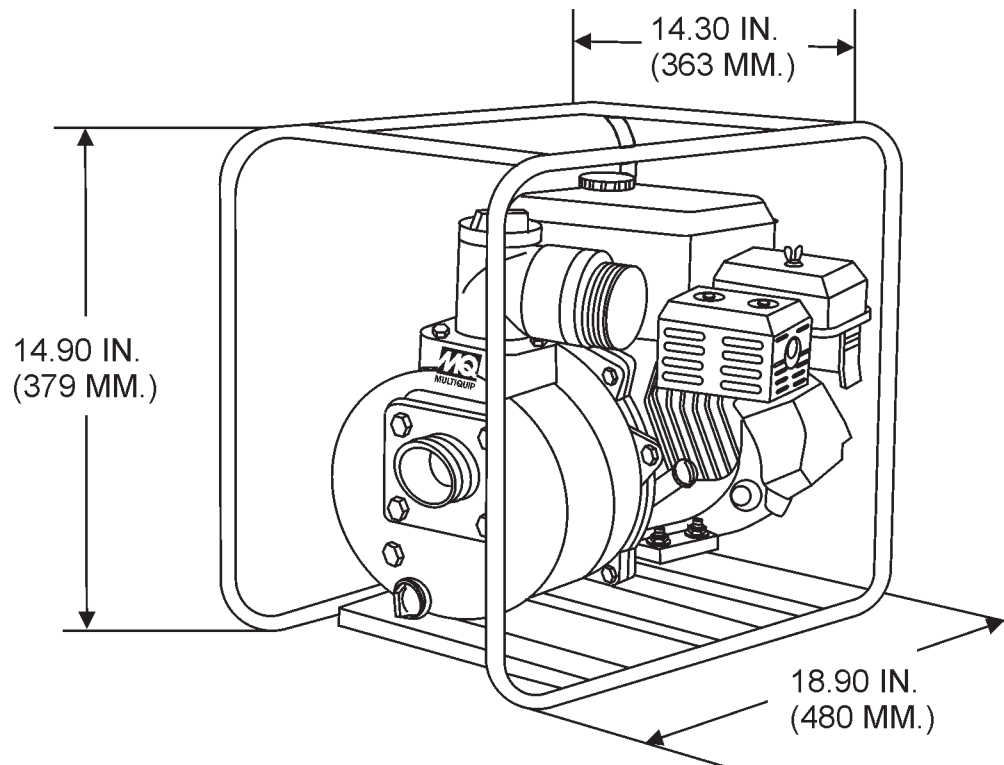


Figure 1. QP2E Dimensions

SPECIFICATIONS (ENGINE)

Table 2. Specifications (Engine)	
Model	Robin EX130D51111
Type	Air cooled, 4-cycle single cylinder, overhead camshaft, gasoline engine
Displacement	7.7 cu. in (126 ml)
Continuous Output	3/3600 kW/rpm (2.2/3600 HP/rpm)
Maximum Output	4.3/4000 kW/rpm (3.2/3600 HP/rpm)
Oil Capacity	0.63 quart (0.6 liter)
Fuel	Unleaded Automobile Gasoline
Fuel Tank Capacity	2.8 quarts (2.7 liters)
Starting System	Recoil Starter
Weight	30.9 lbs (14 kg)
Dimensions (L x W x H)	11.7 x 13.4 x 12.5 in (297 x 341 x 318 mm)

GENERAL INFORMATION

DESCRIPTION

The QP2E Centrifugal Pump is designed to handle all types of clear water applications. It is ideal for residential use such as dewatering basements and swimming pools. Both the suction and discharge ports on the pump use a 2-inch diameter opening, which allows the pump to pump at a rate of approximately 158 gallons/minute (gpm) or 600 liters/minute (lpm).

Centrifugal or self-priming pumps are designed to purge air from the suction line and create a partial vacuum in the pump body. The reduced atmospheric pressure inside the pump allows water to flow through the suction line and into the pump body. The centrifugal force created by the rotating impeller pressurizes the water and expels it from the pump.

ENGINE

This centrifugal pump is powered by an air-cooled 4-cycle, single cylinder Robin EX130D51111 gasoline engine.

STANDARD CENTRIFUGAL PUMP

Standard centrifugal pumps provide an economical choice for general purpose dewatering. These types of pumps should only be used in clear water applications (agricultural, industrial, residential) as they have a limited solid handling capability of only 10% by volume.

SUCTION LIFT

This pump is capable of suction lifts up to 25 feet at sea level. For optimal suction lift performance keep the suction hose or line as short as possible. In general, always place the pump as close to the water as possible.

PUMP SUPPORT

The pump should always be placed on solid stationary ground, on a level position.

NEVER place the pump on soft soil. The suction hose or pipe connection should always be checked for tightness and leaks. A small suction leak in the hose or fittings could prevent the pump from priming.

ELEVATION

Higher elevations will effect the performance of the pump. Due to less atmospheric pressure at higher altitudes, pumps do not have the priming ability that they have at sea level. This is due to the "thinner air" or lack of oxygen at higher altitudes.

A general rule of thumb is that for every 1,000 feet of elevation above sea level a pump will lose one foot of priming ability.

For example, in Flagstaff, Arizona where the elevation is approximately 7,000 feet, the pump would have a suction lift of only 18 feet rather than the 25 feet at sea level. Table 3 shows suction lift at various elevations.

Table 3. Suction Lift at Various Elevations

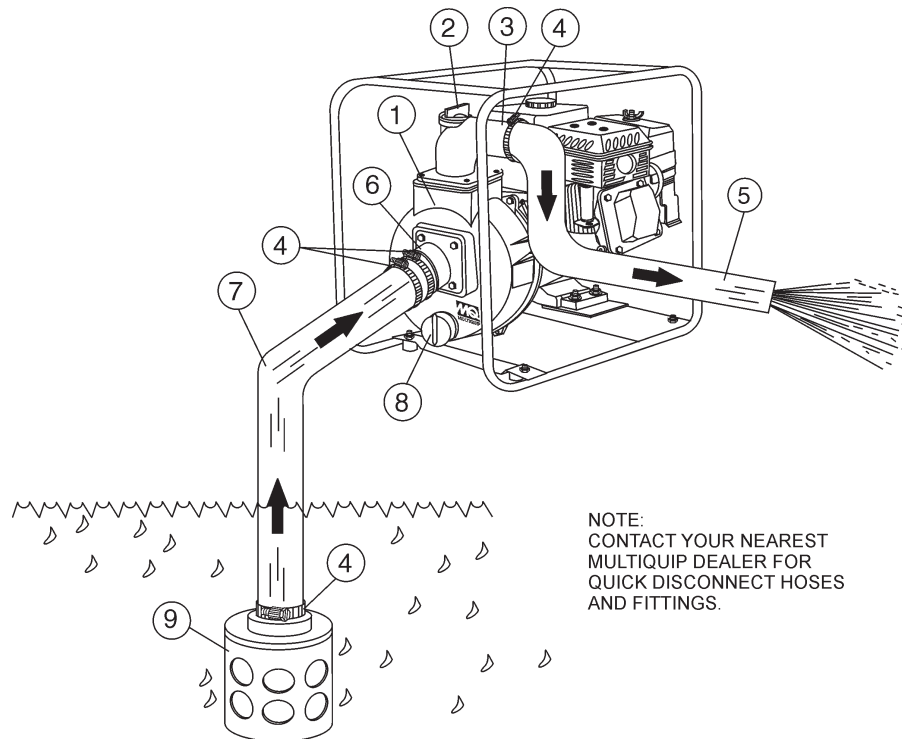
Altitude Ft (Meters)	Suction Lift in Feet (Meters)			
	10.0 (3.048)	15.0 (4.572)	20.0 (6.096)	25.0 (7.620)
Sea Level	10.0 (3.048)	15.0 (4.572)	20.0 (6.096)	25.0 (7.620)
2,000 (610)	8.80 (2.680)	13.2 (4.023)	17.6 (5.364)	22.0 (6.705)
4,000 (1,219)	7.80 (2.377)	11.7 (3.566)	15.6 (4.754)	19.5 (5.943)
6,000 (1,829)	6.90 (2.103)	10.4 (3.169)	13.8 (4.206)	17.3 (5.273)
8,000 (2,438)	6.20 (1.889)	9.30 (2.834)	12.4 (3.779)	15.5 (4.724)
10,000 (3,048)	5.70 (1.737)	8.60 (2.621)	11.4 (3.474)	14.3 (4.358)

Table 4 shows percentage drops in performance as elevation increases.

Table 4. Performance Loss at Various Elevations

Altitude Ft (Meters)	Discharge Flow	Discharge Head
Sea Level	100%	100%
2,000 (610)	97%	95%
4,000 (1,219)	95%	91%
6,000 (1,829)	93%	87%
8,000 (2,438)	91%	83%
10,000 (3,048)	88%	78%

Figure 2 shows a typical application using the QP2E centrifugal pump. Please note that this pump is intended for the removal of clean water.



NOTE:
CONTACT YOUR NEAREST
MULTIQUIP DEALER FOR
QUICK DISCONNECT HOSES
AND FITTINGS.

Figure 2. QP2E Pump Application

- 1. Pump** — A 2-inch centrifugal pump used in general dewatering applications. Typical dewatering applications consist of dewatering basements and swimming pools.
- 2. Fill Cap** — Prior to operation, the pump casing should be filled with water. Remove this cap to add water to the pump. After the initial prime, a sufficient amount of water will be retained in the casing so that the operator will not need to re-prime later.

If the casing is dry or has insufficient water, the pump will have difficulty in priming which could lead to premature mechanical seal wear thus causing damage to the pump.
- 3. Discharge Port** — Connect a 2-inch discharge hose to this port.
- 4. Worm Clamp** — Used to secure the hose to the inlet and outlet ports on the pump. Use two clamps to secure the hose on the inlet side of the pump.
- 5. Discharge Hose** — Connect this flexible rubber hose to the discharge port on the pump. Make sure that the hose lays flat and is not kinked. Use only recommended type discharge hose. Contact Multiquip parts department for ordering information.
- 6. Suction Port** — Connect a 2-inch inlet hose to this port. Use two worm clamps to secure the hose.
- 7. Suction Hose** — Connect this flexible rubber hose to the suction port on the pump. Make sure that the hose lays flat and is not kinked. Use only recommended type suction hose. Contact Multiquip Parts Department for ordering information.
- 8. Drain Plug** — Remove this plug to drain water from the pump.
- 9. Strainer** — Always attach a strainer to bottom side of the suction hose to prevent large objects and debris from entering the pump. Strainer should be positioned so that it will remain completely under water. Running the pump with the strainer above water for long periods can damage pump.

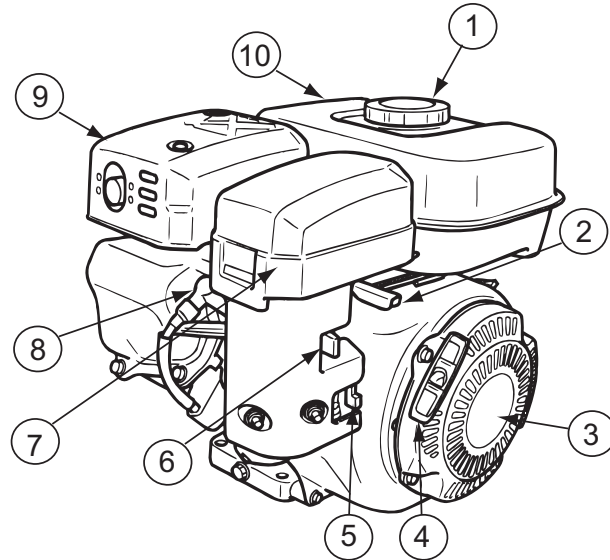


Figure 3. Robin Engine Components

The engine (Figure 3) must be checked for proper lubrication and filled with fuel prior to operation. Refer to the manufacturer's engine manual for instructions and details of operation and servicing.

1. **Fuel Filler Cap** — Remove this cap to add unleaded gasoline to the fuel tank. Make sure cap is tightened securely. **DO NOT** over fill.

DANGER



Adding fuel to the tank should be done only when the engine is stopped and has had an opportunity to cool down. In the event of a fuel spill, **DO NOT** attempt to start the engine until the fuel residue has been completely wiped up and the area surrounding the engine is dry.

2. **Throttle Lever** — Used to adjust engine RPM speed (lever advanced forward - **SLOW**, lever back toward operator - **FAST**).
3. **Engine ON/OFF Switch** — **ON** position permits engine starting, **OFF** position stops engine operations.
4. **Recoil Starter (pull rope)** — Manual-starting method. Pull the starter grip until resistance is felt, then pull briskly and smoothly.
5. **Fuel Valve Lever** — **OPEN** to let fuel flow, **CLOSE** to stop the flow of fuel.

6. **Choke Lever** — Used in the starting of a cold engine, or in cold weather conditions. The choke enriches the fuel mixture.
7. **Air Cleaner** — Prevents dirt and other debris from entering the fuel system. Remove wing-nut on top of air filter canister to gain access to filter element.

NOTICE

Operating the engine without an air filter, with a damaged air filter, or a filter in need of replacement will allow dirt to enter the engine, causing rapid engine wear.

8. **Spark Plug** — Provides spark to the ignition system. Set spark plug gap to 0.6 - 0.7 mm (0.028 - 0.031 inch). Clean spark plug once a week.
9. **Muffler** — Used to reduce noise and emissions.

WARNING



Engine components can generate extreme heat. To prevent burns, **DO NOT** touch these areas while the engine is running or immediately after operating. **NEVER** operate the engine with the muffler removed.

10. **Fuel Tank** — Holds unleaded gasoline. For additional information refer to engine owner's manual.

BEFORE STARTING

1. Read safety instructions at the beginning of manual.
2. Clean the pump, removing dirt and dust, particularly the engine cooling air inlet, carburetor and air cleaner.
3. Check the air filter for dirt and dust. If air filter is dirty, replace air filter with a new one as required.
4. Check carburetor for external dirt and dust. Clean with dry compressed air.
5. Check fastening nuts and bolts for tightness.

ENGINE OIL CHECK

1. To check the engine oil level, place the pump on secure level ground with the engine stopped.
2. Remove the filler dipstick from the engine oil filler hole (Figure 4) and wipe clean.

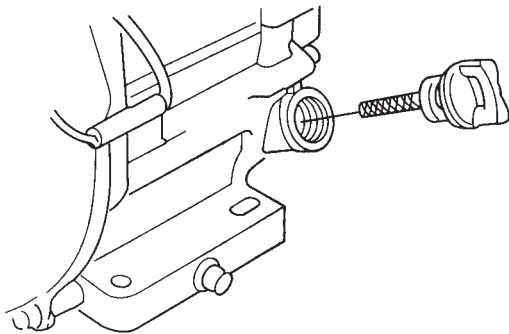


Figure 4. Engine Oil Dipstick (Removal)

3. Insert and remove the dipstick without screwing it into the filler neck. Check the oil level shown on the dipstick.
4. If the oil level is low (Figure 5), fill to the edge of the oil filler hole with the recommended oil type (Table 4). Maximum oil capacity is 0.63 quarts (0.60 liters).

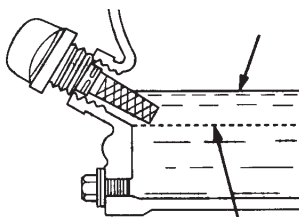


Figure 5. Engine Oil Dipstick (Oil Level)

Table 5. Oil Type

Season	Temperature	Oil Type
Summer	25° C or higher	SAE 10W-30
Spring/Fall	25° C - 10° C	SAE 10W-30/20
Winter	0° C	SAE 10W-10

DANGER



Adding fuel to the tank should be done only when the engine is stopped and has had an opportunity to cool down. In the event of a fuel spill, **DO NOT** attempt to start the engine until the fuel residue has been completely wiped up and the area surrounding the engine is dry.

FUEL CHECK

1. Remove the gasoline cap located on top of fuel tank.
2. Visually inspect to see if the fuel level is low. If fuel is low, replenish with unleaded fuel.
3. When refueling, be sure to use a strainer for filtration. **DO NOT** top-off fuel. Wipe up any spilled fuel immediately!

SETUP

1. Place pump as near to water as possible, on a firm flat, level surface.
2. To prime pump, remove fill cap (Figure 2) and fill pump casing with water. If the pump casing is not filled with water before starting, it will not begin pumping.
3. Attach suction and discharge hoses to the pump. Check that all hoses are securely attached to the pump. Make certain suction hose (Figure 2) does not have any air leakage. Tighten hose clamps and couplings as required.
4. It is recommended that 2 clamps be used when securing the suction hose to the inlet side (suction) of the pump.
5. Remember suction hoses must be rigid enough not to collapse when the pump is in operation.
6. Check that the discharge hose (Figure 2) is not restricted. Place hose so that it lays as straight as it is possible on the ground. Remove any twists or sharp bends from hose which may block the flow of water.

NOTICE

Suction and discharge hoses are available from Multiquip. Contact your nearest dealer for more information.,

7. The discharge hose is usually a collapsible (thin-walled) hose. However if a thin-walled discharge hose is not available, a rigid suction hose can be substituted in its place.
8. Make sure the suction strainer (Figure 2) is clean and securely attached to the water end of the suction hose. The strainer is designed to protect the pump by preventing large objects from being pulled into the pump.

CAUTION

The strainer should be positioned so it will remain completely under water. Running the pump with the strainer above water for long periods can damage the pump.

CAUTION

DO NOT attempt to start the engine unless the pump has previously been primed with water. Severe pump damage will occur if pump has not been primed.

INITIAL STARTUP

9. Place the fuel valve lever (Figure 6) in the "ON" position.

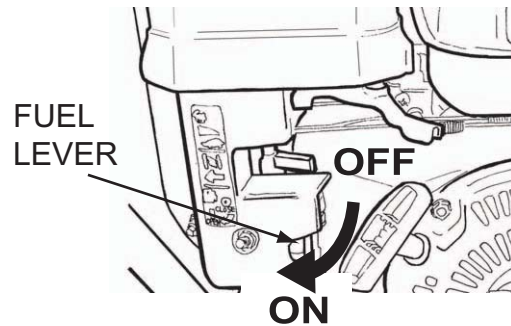


Figure 6. Fuel Valve Lever

10. Place the Engine ON/OFF switch (Figure 7) in the "ON" position.

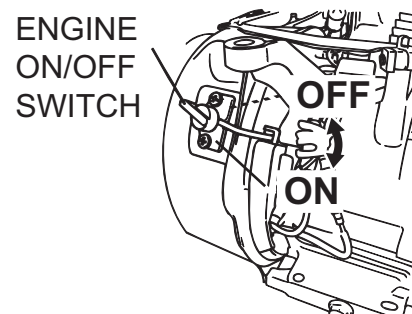


Figure 7. Engine ON/Off Switch

11. Place the Choke Lever (Figure 8) in the "OPEN" position.

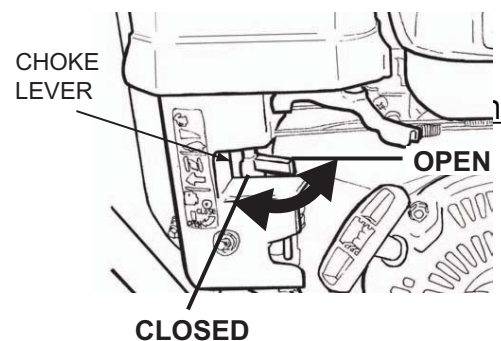


Figure 8. Choke Lever

NOTICE

The **CLOSED** position of the choke lever enriches the fuel mixture for starting a **COLD** engine. The **OPEN** position provides the correct fuel mixture for normal operation after starting, and for restarting a warm engine.

12. Place the throttle lever (Figure 9) halfway between fast and slow.

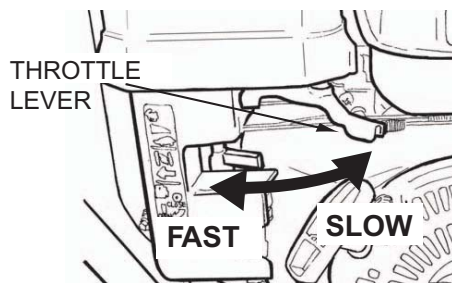


Figure 9. Throttle Lever

13. Grasp the starter grip (Figure 10) and slowly pull it out. The resistance becomes the hardest at a certain position, corresponding the compression point. Rewind the rope a little from that point and pull out sharply.

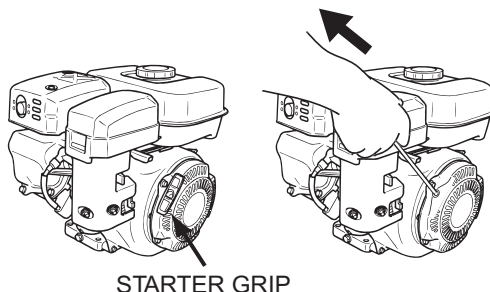


Figure 10. Starter Grip

CAUTION

DO NOT pull the starter rope all the way to the end.
DO NOT release the starter rope after pulling. Allow it to rewind as soon as possible.

14. If the engine has started, slowly return the choke lever (Figure 8) to the **CLOSED** position. If the engine has not started repeat steps 1 through 5.
15. Before the pump is put into operation run the engine for 3-5 minutes.

16. Check for fuel leaks and noises that would be associated with a loose component. Check for leaks between pump and engine. If water is leaking between the pump and engine housing, the seal inside the pump may be worn or damaged. Continued operation of the pump is not recommended. Further usage of the pump under these conditions may cause severe water damage to engine.

OPERATION

1. Once the engine has started, move the engine throttle lever quickly to the fast position to begin pumping. If water is not flowing out of the discharge port, turn off the engine and check for and clear any obstructions within the suction hose.

WARNING

Water must always be flowing through the pump casing while the engine is running. Loss of flow may be the result of a loss of prime, restricted water flow or a dead-head situation. Please note that in such a condition, water in the pump can reach temperatures of 150-200°F in 15 to 20 minutes. This can cause serious burns if this hot water comes into contact with unprotected skin. Before touching or opening the fill plug or drain plug, first turn off the engine and allow the pump casing to cool to the touch, and then open the pump carefully. Be cautious of any built up water pressure.

CAUTION

ALWAYS run engine at full speed while pumping.

STOPPING THE ENGINE

1. Place the throttle lever (Figure 9) in slow position, and listen for the engine speed to decrease.
2. Place the Engine ON/OFF switch (Figure 7) in the "**OFF**" position.
3. Place the fuel valve lever (Figure 6) in the "**OFF**" position.

PUMP VACUUM TEST

CAUTION

DO NOT attempt to start the engine unless the pump has previously been primed with water. Severe pump damage will occur if pump has not been primed.

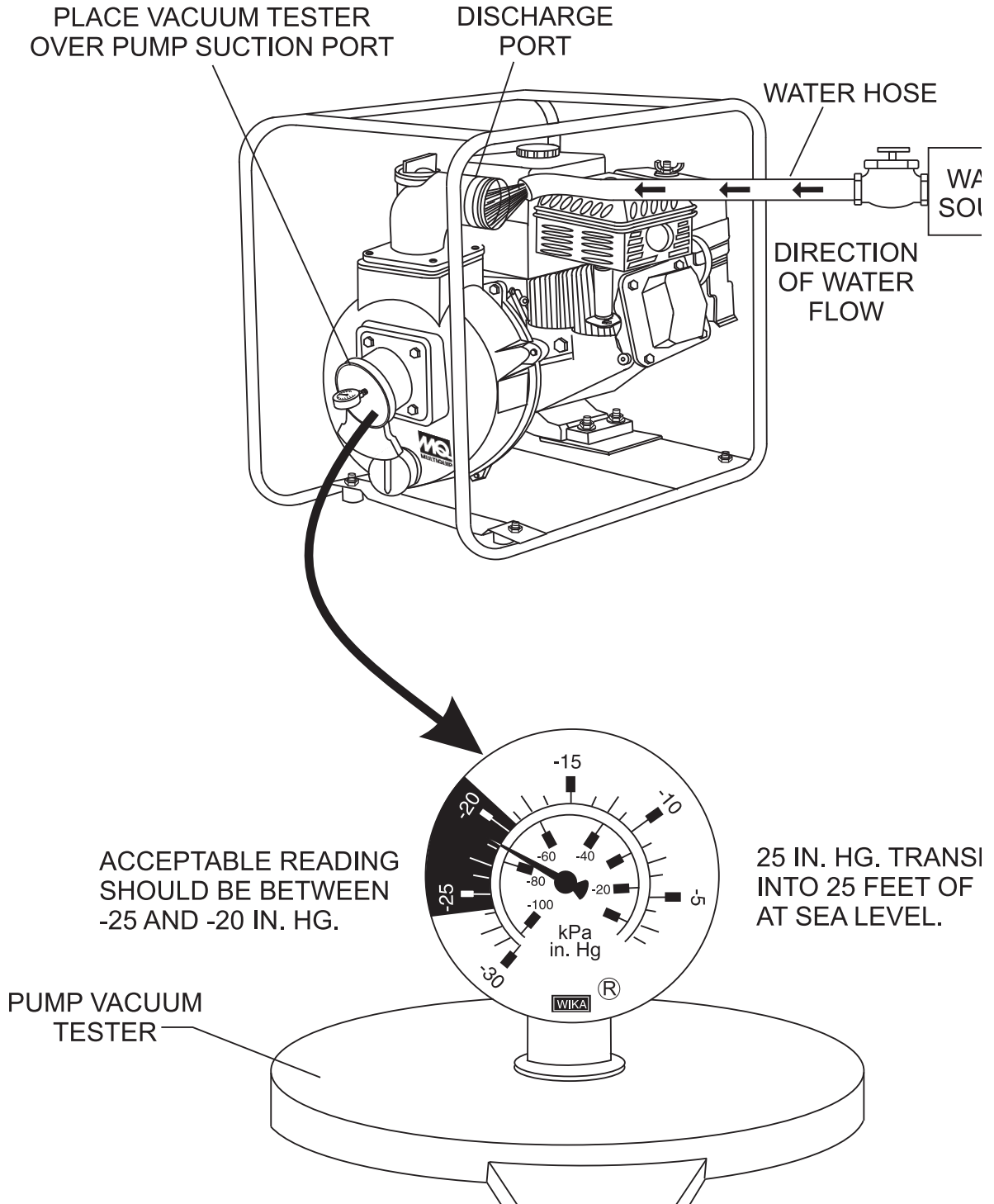
To perform the pump vacuum test do the following:

1. Remove the pump fill cap (Figure 2), and fill the pump with water.
2. Start the engine as outlined in the initial start-up section, and wait for the pump to begin pumping.
3. As shown in Figure 11, place a water hose inside the discharge opening of the pump, and turn on the water. This flow of water into the discharge opening will prevent the pump from running dry.
4. Place the Pump Vacuum Tester (P/N 7000030) over the pump suction (inlet) opening (Figure 11) with the vacuum gauge facing upwards. It may be necessary to apply a small amount of water around the rubber seal of the vacuum tester to make a good suction fit.
5. Check and make sure that there are no air leaks between the vacuum tester and the inlet port on the pump. If air leaks are present reset vacuum tester.
6. Run the pump for a few minutes while monitoring the vacuum gauge. If the gauge indicates a reading between -25 and -20 in. Hg. (inches of mercury) then it can be assumed that the pump is working correctly.

NOTICE

25 in. Hg (inches of mercury) translates into 25 feet of lift at sea level.

7. If the vacuum tester gauge indicates a reading below -20 in. Hg, it can then be assumed that the pump is not functioning correctly, and corrective action needs to be taken.
8. To test the flapper valve, shut down the engine. The vacuum tester should remain attached to the pump suction inlet port by vacuum. This indicates the pump's flapper valve is seating properly to hold water in the suction hose when the engine is stopped. This prevents backflow and allows for faster priming when the engine is restarted.



NOTICE

Vacuum test may be performed without water flowing through the discharge port. However, it is recommended to have water flowing to prevent any heat-up.

Figure 11. Pump Vacuum Tester

ENGINE MAINTENANCE

Perform engine maintenance procedures as listed in Table 6:

Table 6. Inspection/Maintenance									
DESCRIPTION (3)	OPERATION	BEFORE	FIRST MONTH OR 10 HRS	FIRST 25 HRS	EVERY 3 MONTHS OR 25 HRS	EVERY 6 MONTHS OR 50 HRS	EVERY YEAR OR 100 HRS	EVERY YEAR OR 200 HRS	EVERY 2 YEARS OR 200 HRS
Engine Oil	Check	X						X	
	Change		X						
Air Cleaner	Check	X							
	Change				X (1)				
Nuts and Bolts	Re-Tighten If Necessary	X							
Spark Plug	Check-Clean					X			
	Replace								X
Cooling Fins	Check					X			
Spark Arrester	Clean						X		
Fuel Tank	Clean						X		
Fuel Filter	Check						X		
Idle Speed	Check-Adjust						X (2)		
Valve Clearance	Check-Adjust			X				X	X (2)
Fuel lines	Check	Every 2 years (replace if necessary) (2)							

(1) Service more frequently when used in DUSTY areas.

(2) These items should be serviced by your service dealer, unless you have the proper tools and are mechanically proficient. Refer to the Robin shop Manual for service procedures.

(3) For commercial use, log hours of operation to determine proper maintenance intervals.

Perform the engine maintenance procedures as indicated below:

DAILY

1. Thoroughly remove dirt and oil from the engine and control area.
2. Clean or replace the air cleaner elements as necessary.
3. Check and retighten all fasteners as necessary.
4. Check the spring box and bellows for oil leaks. Repair or replace as needed.

WEEKLY

1. Remove the fuel filter cap and clean the inside of the fuel tank.
2. Remove or clean the filter at the bottom of the tank.
3. Remove and clean the spark plug (Figure 12), then adjust the spark gap to 0.028 ~0.031 inch (0.6~0.7 mm). This unit has electronic ignition, which requires no adjustments.

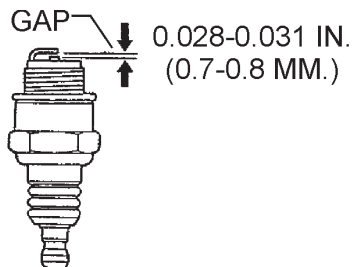


Figure 12. Spark Plug Gap

ENGINE OIL

1. Drain the engine oil when the oil is warm as shown in Figure 13.

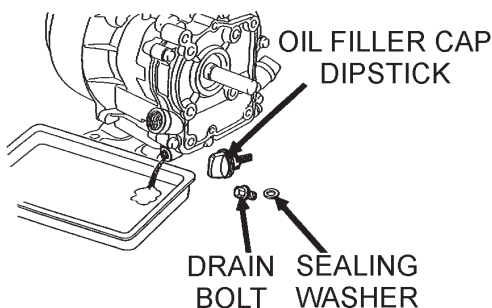


Figure 13. Draining Engine Oil

2. Remove the oil drain bolt and sealing washer and allow the oil to drain into a suitable container.
3. Replace engine oil with recommended type oil as listed in Table 5. Engine oil capacity is 1.16 quarts (1.1 liters). DO NOT overfill.
4. Install drain bolt with sealing washer and tighten securely.

ENGINE AIR CLEANER

1. Remove the air cleaner cover and foam filter element as shown in Figure 14.

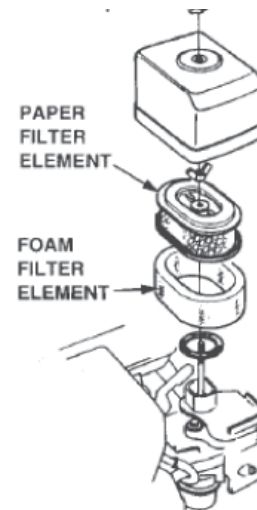


Figure 14. Engine Air Cleaner

2. Tap the paper filter element (Figure 14) several times on a hard surface to remove dirt, or blow compressed air [not exceeding 30 psi (207 kPa, 2.1 kgf/cm²)] through the filter element from the air cleaner case side. NEVER brush off dirt. Brushing will force dirt into the fibers. Replace the paper filter element if it is excessively dirty.
3. Clean foam element in warm, soapy water or nonflammable solvent. Rinse and dry thoroughly. Dip the element in clean engine oil and completely squeeze out the excess oil from the element before installing.

PUMP STORAGE

For storage of the pump for over 30 days, the following is required:

1. Drain the fuel tank completely.
2. Run the engine until the fuel in the carburetor is completely consumed.
3. Completely drain used oil from the engine crankcase and fill with fresh clean oil, then follow the procedures described in the engine manual for engine storage.
4. Remove the drain plug from the pump and drain out any water from left in the housing.
5. Remove the pump cover and clean inside of pump housing. Coat inside of pump housing with a light film of oil to reduce corrosion. A spray can of oil works well for this application.
6. Cover suction and discharge ports with duct tape to prevent any foreign matter from falling into pump.
7. Cover pump and engine with plastic covering or equivalent and store in a clean, dry place.
8. To protect the water-cooled seals, place one-half pint of lubricating oil (new or used) through the discharge opening on the pump and crank the engine several times. This will prevent excessive corrosion and also keep the mechanical seal lubricated.

TROUBLESHOOTING

Table 7. Engine Troubleshooting

Symptom	Possible Cause	Solution
Difficult to start. Fuel is available but no SPARK at spark plug.	Spark plug bridging?	Check gap, insulation or replace spark plug.
	Carbon deposit on spark plug?	Clean or replace spark plug.
	Short circuit due to deficient spark plug insulation?	Check spark plug insulation. Replace if worn.
	Improper spark plug gap?	Set to proper gap.
Difficult to start. Fuel is available and SPARK is present at the spark plug.	ON/OFF switch is shorted?	Check switch wiring. Replace switch.
	Ignition coil defective?	Replace ignition coil.
	Improper spark gap, points dirty?	Set correct spark gap and clean points.
	Condenser insulation worn or short circuiting?	Replace condenser.
	Spark plug wire broken or short circuiting?	Replace defective spark plug wiring.
Difficult to start. Fuel is available, SPARK is present at the spark plug and compression is normal.	Wrong fuel type?	Flush fuel system and replace with correct type of fuel.
	Water or dust in fuel system?	Flush fuel system.
	Air cleaner dirty?	Clean or replace air cleaner.
Difficult to start. Fuel is available, SPARK is present at the spark plug and compression is low.	Suction/exhaust valve stuck or protruded?	Reseat valves.
	Piston ring and/or cylinder worn?	Replace piston rings or piston.
	Cylinder head and/or spark plug not tightened properly?	Torque cylinder head bolts and spark plug.
	Head gasket and/or spark plug gasket damaged?	Replace head and spark plug gaskets.
No fuel present at carburetor.	Fuel not available in fuel tank?	Fill with correct type of fuel.
	Fuel cock does not open properly?	Apply lubricant to loosen fuel cock lever. Replace if necessary.
	Fuel filter clogged?	Replace fuel filter.
	Fuel tank cap breather hole clogged?	Clean or replace fuel tank cap.
	Air in fuel line?	Bleed fuel line
Weak in power. Compression is proper and does not misfire.	Air cleaner dirty?	Clean or replace air cleaner.
	Improper level in carburetor?	Check float adjustment. Rebuild carburetor.
	Defective spark plug?	Clean or replace spark plug.

Table 8. Pump Troubleshooting

Symptom	Possible Cause	Solution
Pump does not take on water.	Not enough priming water in the housing?	Add water.
	Engine speed too low?	Increase throttle.
	Strainer plugged?	Clean strainer.
	Suction hose damaged?	Replace or repair hose, and clamps
	Air leak at suction port?	Check that fittings are tight and properly sealed.
	Pump is located too high above water line?	Move pump closer to water.
	Debris collecting in pump housing?	Clean pump housing.
	Too much distance between impeller and volute?-	Adjust clearance by adding shims or replace impeller. Min. .006" - Max. .020"
	Water leaking out weep hole between pump and engine?	Check condition of mechanical seal and gaskets, between pump end and engine housing.
Pump takes in water, little or no discharge.	Engine speed too low?	Increase throttle speed.
	Suction strainer partially plugged?	Clean strainer.
	Impeller/Volute worn?	Adjust clearance by adding shims or replace impeller/volute
Suction hose leaks at inlet.	Fittings/clamps are not sealed properly?	Tighten, replace or add clamp. (Keep extra seals on pump)
	Hose diameter is too large?	Use smaller diameter hose or replace hose.
Discharge does not stay on coupling.	Pressure too high?	Check pressure, add additional clamp.
	Hose kinked or end blocked?	Check hose.
Impeller does not turn: pump is hard to start.	Impeller jammed or blocked?	Open pump cover and clean dirt and debris from inside housing.
	Impeller and volute binding?	Adjust clearance by removing shim from behind impeller.
	Defective engine?	See Engine Owner's Manual.

EXPLANATION OF CODE IN REMARKS COLUMN

The following section explains the different symbols and remarks used in the Parts section of this manual. Use the help numbers found on the back page of the manual if there are any questions.

NOTICE

The contents and part numbers listed in the parts section are subject to change **without notice**. Multiquip does not guarantee the availability of the parts listed.

SAMPLE PARTS LIST

NO.	PART NO.	PART NAME	QTY.	REMARKS
1	12345	BOLT.....	1	INCLUDES ITEMS W/%
2%		WASHER, 1/4 IN.....		NOT SOLD SEPARATELY
2%	12347	WASHER, 3/8 IN....	1	MQ-45T ONLY
3	12348	HOSE	A/R	MAKE LOCALLY
4	12349	BEARING	1	S/N 2345B AND ABOVE

NO. Column

Unique Symbols — All items with same unique symbol

(@, #, +, %, or >) in the number column belong to the same assembly or kit, which is indicated by a note in the “Remarks” column.

Duplicate Item Numbers — Duplicate numbers indicate multiple part numbers, which are in effect for the same general item, such as different size saw blade guards in use or a part that has been updated on newer versions of the same machine.

NOTICE

When ordering a part that has more than one item number listed, check the remarks column for help in determining the proper part to order.

PART NO. Column

Numbers Used — Part numbers can be indicated by a number, a blank entry, or TBD.

TBD (To Be Determined) is generally used to show a part that has not been assigned a formal part number at the time of publication.

QTY. Column

Numbers Used — Item quantity can be indicated by a number, a blank entry, or A/R.

A/R (As Required) is generally used for hoses or other parts that are sold in bulk and cut to length.

A blank entry generally indicates that the item is not sold separately. Other entries will be clarified in the “Remarks” Column.

REMARKS Column

Some of the most common notes found in the “Remarks” Column are listed below. Other additional notes needed to describe the item can also be shown.

Assembly/Kit — All items on the parts list with the same unique symbol will be included when this item is purchased.

Indicated by:

“INCLUDES ITEMS W/(unique symbol)”

Serial Number Break — Used to list an effective serial number range where a particular part is used.

Indicated by:

“S/N XXXXX AND BELOW”

“S/N XXXX AND ABOVE”

“S/N XXXX TO S/N XXX”

Specific Model Number Use — Indicates that the part is used only with the specific model number or model number variant listed. It can also be used to show a part is NOT used on a specific model or model number variant.

Indicated by:

“XXXXX ONLY”

“NOT USED ON XXXX”

“Make/Obtain Locally” — Indicates that the part can be purchased at any hardware shop or made out of available items. Examples include battery cables, shims, and certain washers and nuts.

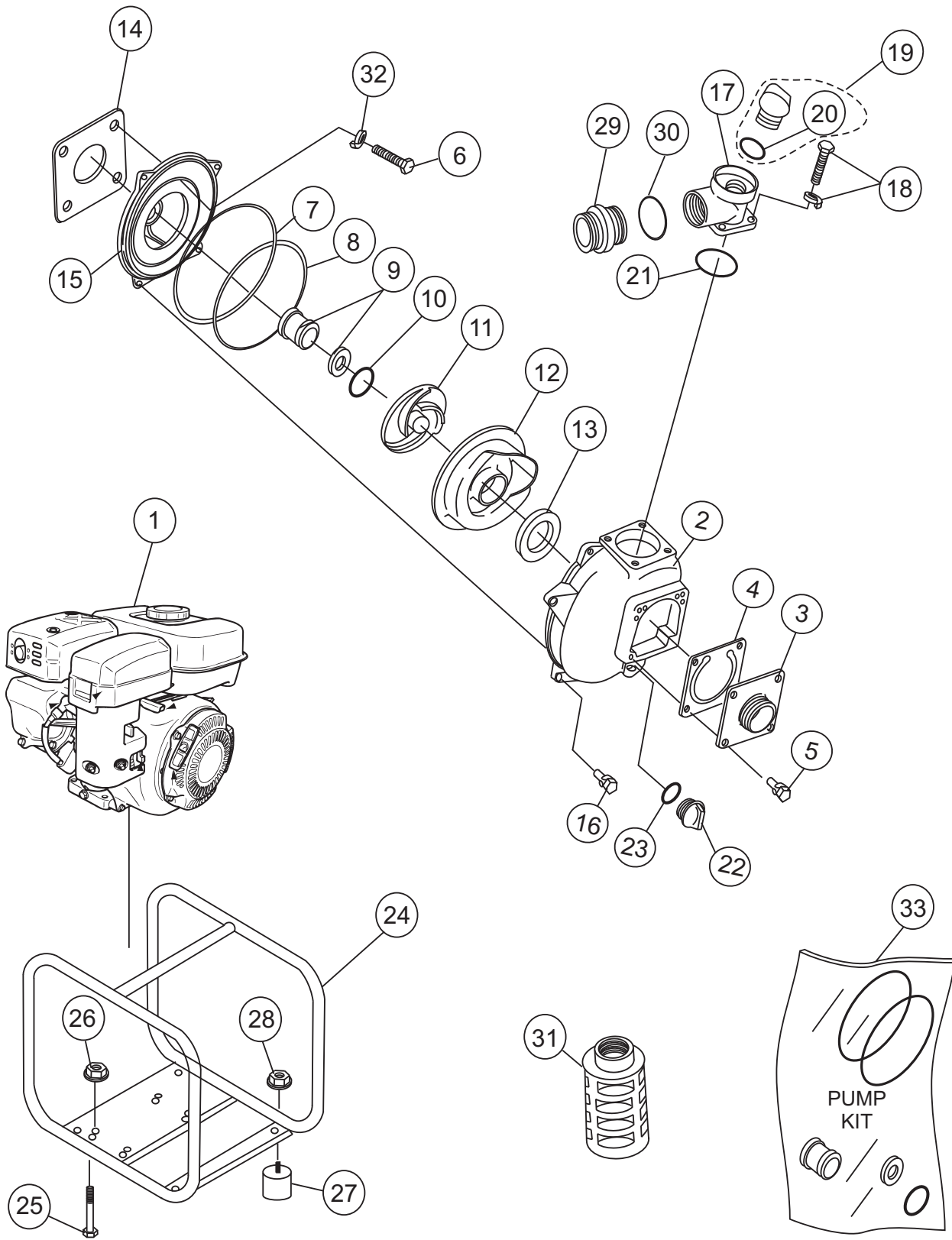
SUGGESTED SPARE PARTS

QP2E PUMP WITH ROBIN EX130D51111 ENGINE

1 to 3 units

Qty.	P/N	Description
2	KIT204.....	KIT, PUMP
2	0631211100ASSY	CAP, FLOODING WITH O-RING
2	0480350300.....	O-RING FLOODING CAP
1	7204000030.....	IMPELLER
2	2773260308.....	ELEMENT, AIR CLEANER
3	0650140150.....	SPARK PLUG
3	2825011118.....	ROPE, STARTER
1	0430440050.....	CAP, FUEL TANK
1	X641360010	FUEL FILTER

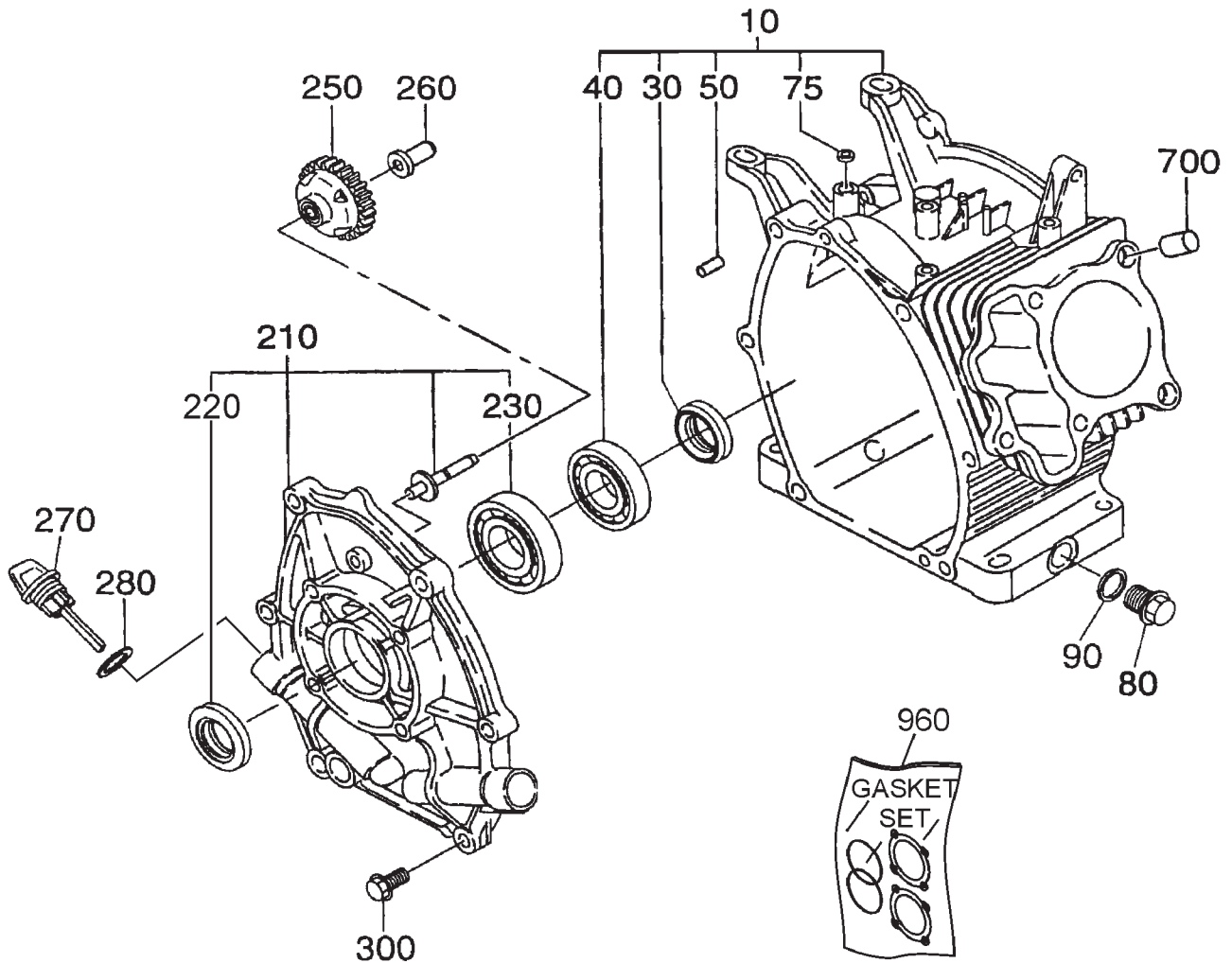
PUMP ASSY.



PUMP ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	EX130D51111	ENGINE, ROBIN	1	
2	7204100010	CASING	1	
3	72040001600014	SUCTION COVER NPT2"	1	
4	1889350351	CHECK VALVE	1	
5	0181050820	BOLT SET WITH WASHER, LOCK M8X20	4	
6	0191150520	BOLT	4	
7%	0489242100	O-RING (CASING). DIA 2.4 X DIA. 210	1	
8%	0489241780	O-RING (VOLUTE CASING)	1	
9%	0803442320	MECHANICAL SEAL SILCON CARBIDE	1 SET	
10%	0852831600	ADJUST LINER DIA. 0.3 THICKNESS	1~3	
10%	0852851600	ADJUST LINER DIA. 0.5 THICKNESS	1~3	
11	7204000030	IMPELLER 3/4"-16UNF	1	
12	1808000130	VOLUTE CASING	1	
13%	1293330620	VOLUTE CASING PACKING	1	
14	1211390610	CASING COVER PACKING	1	
15	7204100020	CASING COVER	1	
16	0181050825	BOLT SET WITH WASHER, LOCK (DELIVERY ELBOW) M8 X 25	6	
17	9246100090	DELIVERY ELBOW NPS2"	1	
18	0181050820	BOLT SET WITH WASHER, LOCK	4	
19	0631211100ASSY	FLOODING CAP PF1"	1.....	INCLUDES ITEM W/ #
20#	0480350300	O-RING (FLOODING CAP)	1	
21	0481310550	O-RING (DELIVERY ELBOW)	1	
22	0631211100ASSY	DRAIN CAP PF1"	1	
23	0480350300	O-RING (DRAIN CAP)	1	
24	7204214010P002	BASE	1	
25	0105050840	BOLT (ENGINE) M8 X 40	4	
26	0209150080	FLANGE NUT (ENGINE) M8	4	
27	0723322030R	CUSHION RUBBER	4	
28	0209150060	FLANGE NUT (CUSHION RUBBER) M6	4	
29	07904320200014	NIPPLE (DELIVERY) NPS2" X NPT2"	1	
30	0481310550	O-RING (NIPPLE)	1	
31	0742303050	STRAINER NPT2"	1	
32	0451250080	WASHER, LOCK M8	4	
33	KIT204	KIT, PUMP	1.....	INCLUDES ITEMS W/%

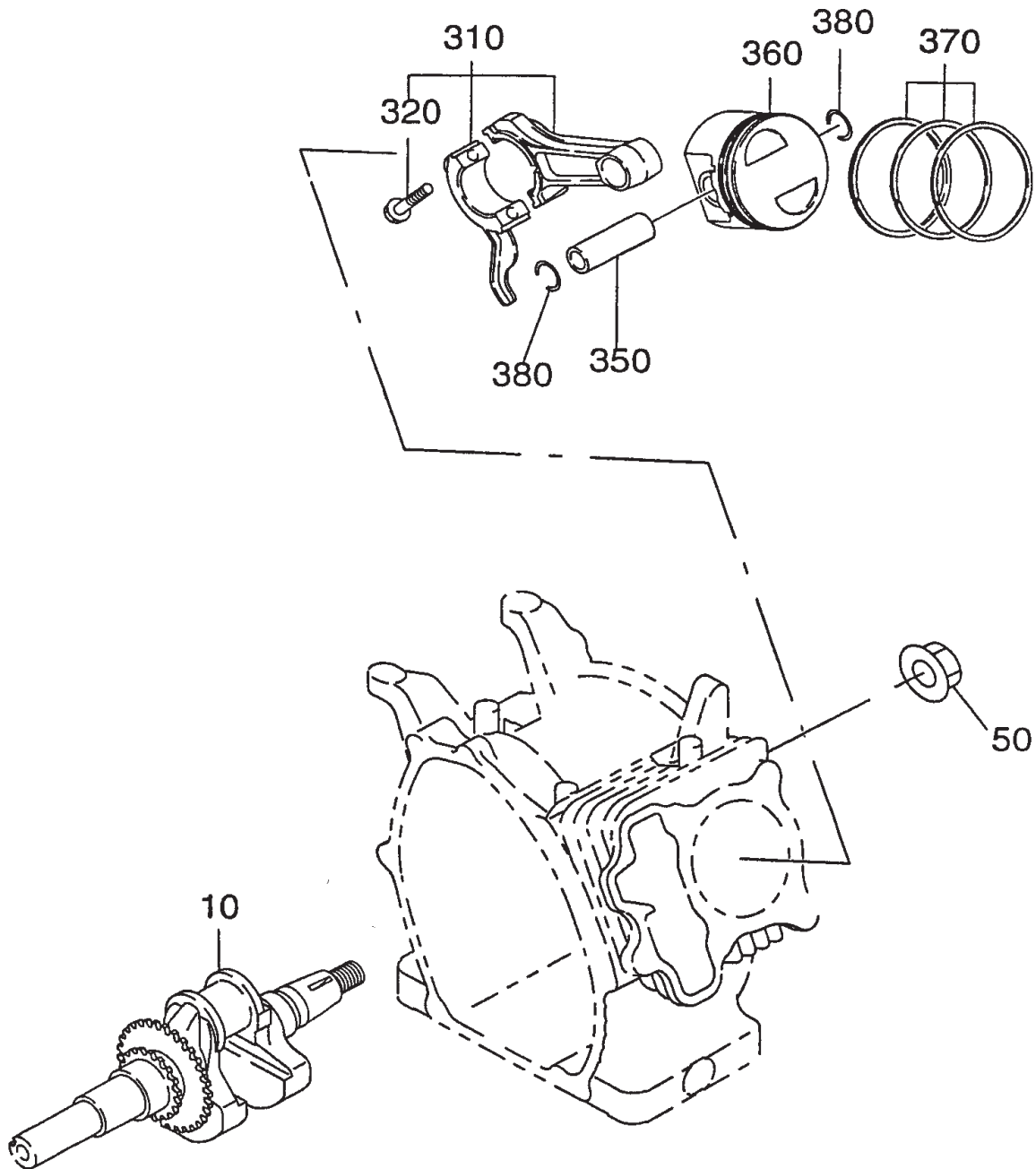
ROBIN EX130D5111 ENGINE — CRANKCASE ASSY.



ROBIN EX130D51111 ENGINE — CRANKCASE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
10	2761010241	CRANKCASE CP	1.....	INCLUDES ITEMS W/ #
30#	0440250200	OIL SEAL	1	
40#	0600280021	BALL BEARING	1	
50#	2771501103	PIPE KNOCK	2	
75#	0440060020	OIL SEAL	1	
80	0401140030	PLUG	1	
90	0211140020	GASKET	1	
210	2771100221	MAIN BEARING COVER	1.....	INCLUDES ITEMS W/ \$
220\$	0440250210	OIL SEAL	1	
230\$	0600250140	BALL BEARING	1	
250	27745004J1	GOVERNOR GEAR CP	1	
260	2774190103	GOVERNOR SLEEVE	1	
270	2776360113	OIL GAUGE	2	
280	0213160020	GASKET (HEAD)	1	
300	0010408350	FLANGE BOLT	6	
700	2771501103	PIPE KNOCK	1	
960	2769900127	GASKET SET	1	

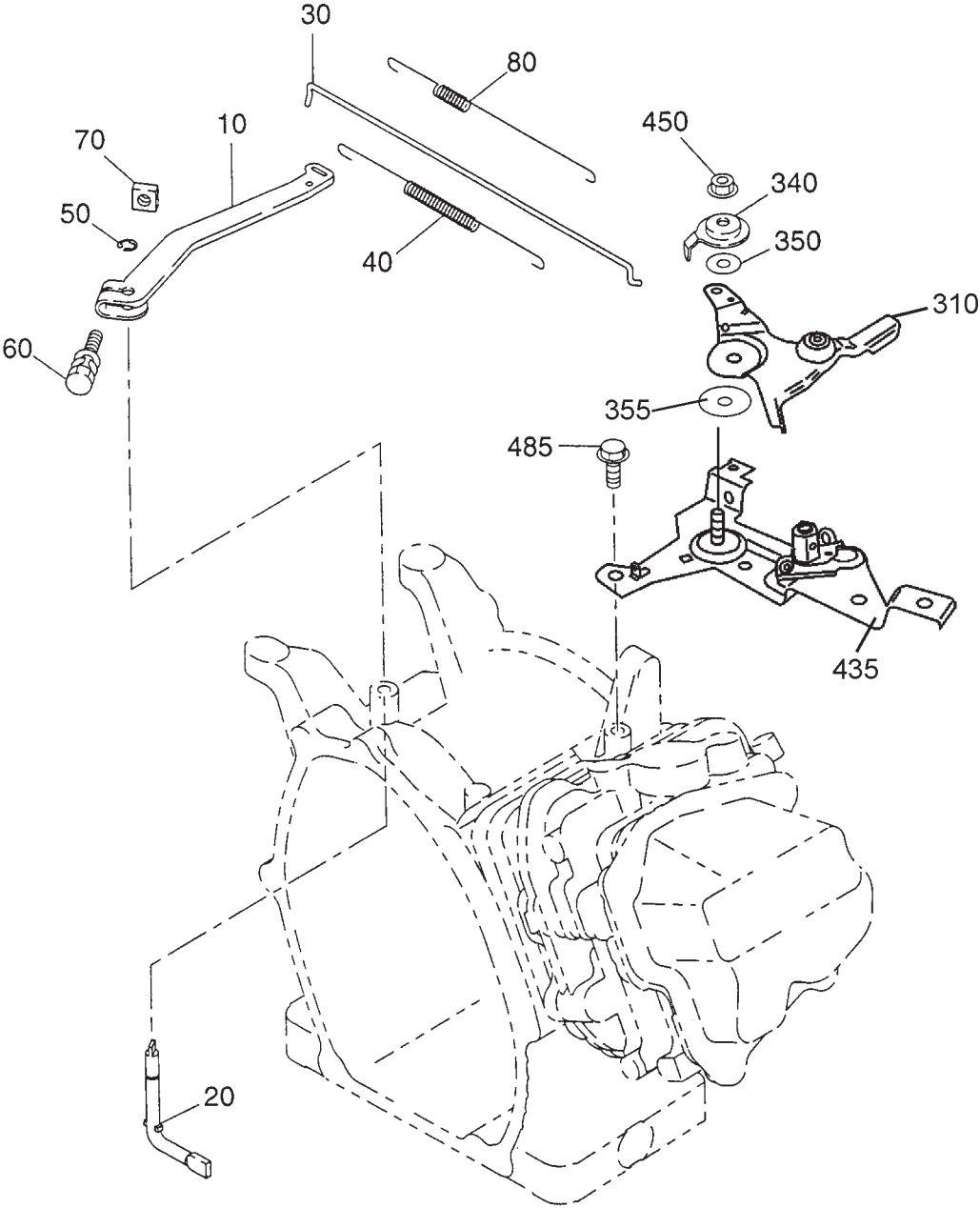
ROBIN EX130D51111 ENGINE — CRANKSHAFT, PISTON ASSY.



ROBIN EX130D51111 ENGINE — CRANKSHAFT, PISTON ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
10	2762100221	CRANK SHAFT CP	1	
50	0180140020	FLANGE NUT	1	
310	2762250110	CONNECTING ROD ASSY	1.....	INCLUDES ITEM W/ #
320#	2772300103	CONNECTING ROD BOLT	2	
350	2762330113	PISTON PIN	1	
360	27623401H3	PISTON	1	
370	2762351117	PISTON RING SET	1	
380	2152500403	CLIP	2	

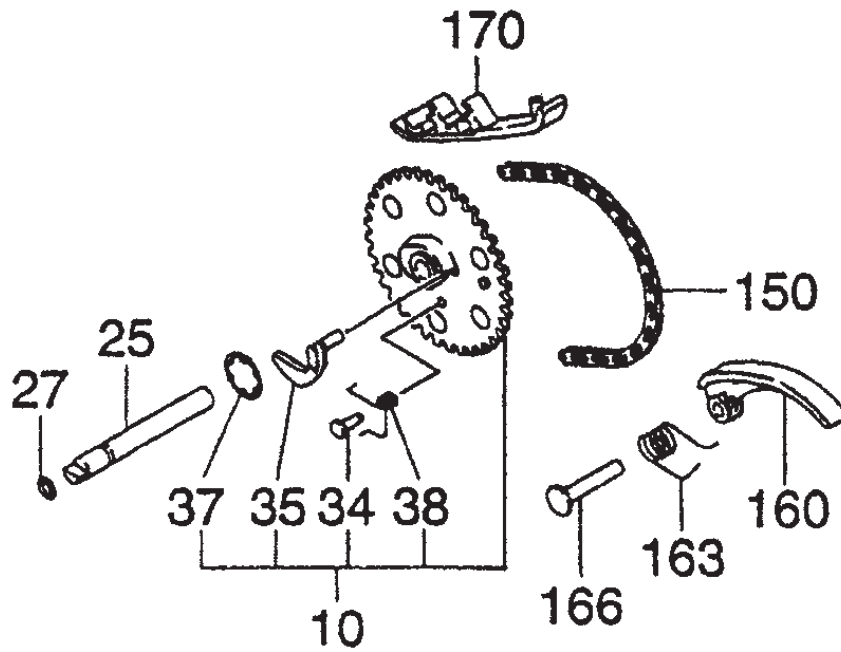
ROBIN EX130D51111 ENGINE — GOVERNOR ASSY.



ROBIN EX130D5111 ENGINE — GOVERNOR ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
10	2774230123	GOVERNOR LEVER	1	
20	2774220133	GOVERNOR SHAFT	1	
30	2794270111	GOVERNOR ROD CP	1	
40	2774280123	ROD SPRING	1	
50	0031305000	CLIP	1	
60	0130060240	BOLT AND WASHER ASSY	1	
70	0186060020	NUT	1	
80	2774251013	GOVERNOR SPRING	1	
310	2774330303	SPEED CONTROL LEVER	1	
340	2774350203	STOP PLATE	1	
350	2774450103	WASHER	1	
355	0217060070	FRICTION WASHER	1	
435	2774600202	SPEED CONT. BRKT UN	1	
450	0023506000	SELF LOCK NUT	1	
485	0110060020	FLANGE BOLT	2	

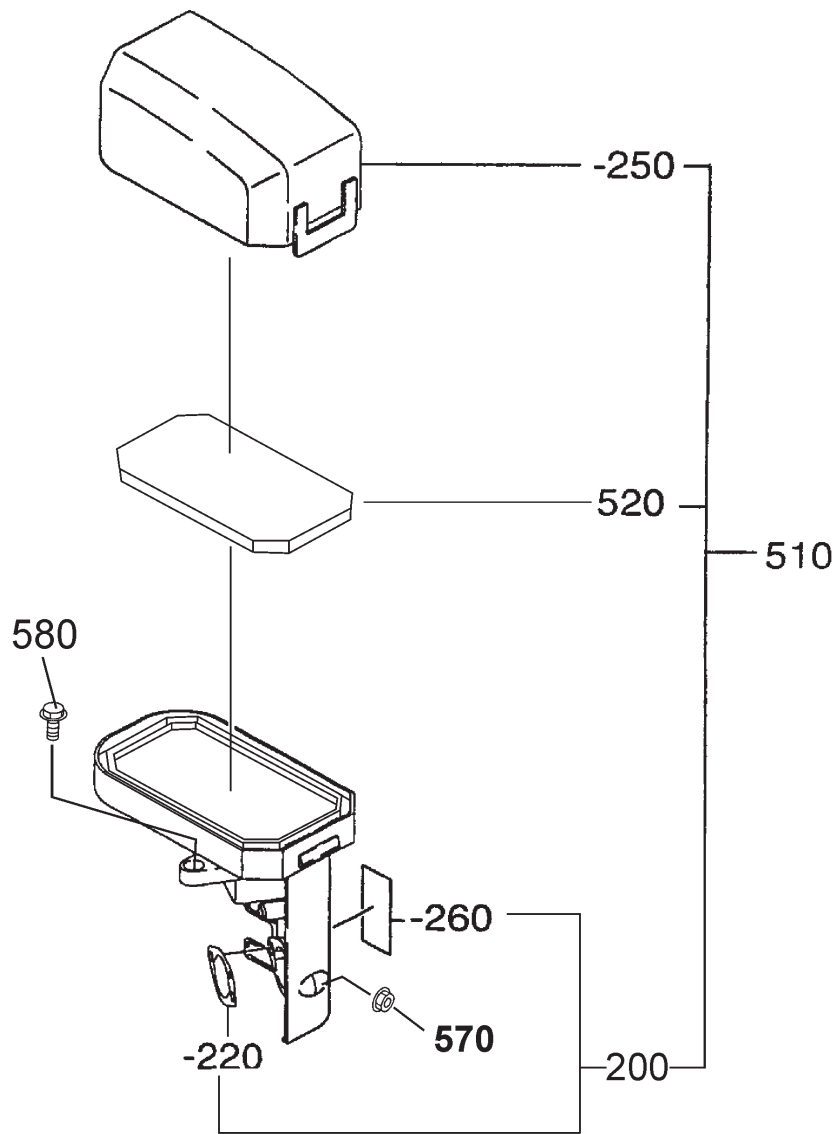
ROBIN EX130D51111 ENGINE — CAMSHAFT ASSY.



ROBIN EX130D51111 ENGINE — CAMSHAFT ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
10	2773160131	CAM SHAFT CP	1.....	INCLUDES ITEMS W/ #
25	2773510103	PIN,CAMSHAFT	1	
27	0240060010	O RING	1	
34#	2773860103	PIN, SPRING	1	
35#	2773640103	RELEASE LEVER	1	
37#	2773650103	CLIP	1	
38#	2773870203	RETURN SPRING	1	
150	2763560111	TIMING CHAIN CP	1	
160	2773691103	TENSIONER	1	
163	2773710103	SPRING (TENSIONER)	1	
166	2773690203	PIN (TENSIONER)	1	
170	2773691313	CHAIN GUIDE	1	

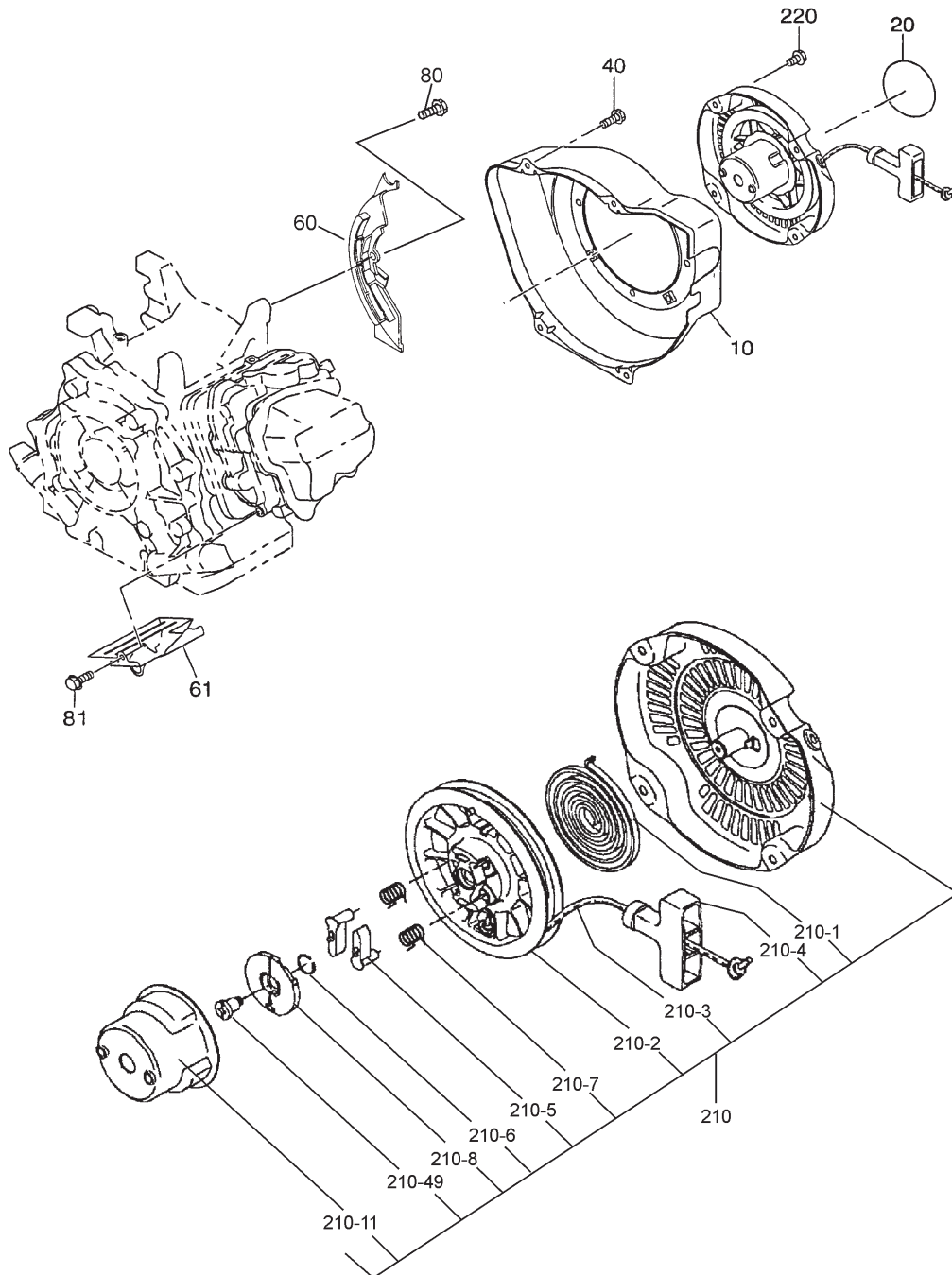
ROBIN EX130D5111 ENGINE — AIR CLEANER ASSY.



ROBIN EX130D51111 ENGINE — AIR CLEANER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
510	2773261110	AIR CLEANER ASSY	1.....	INCLUDES ITEMS W/ #
200#	2773260118	BASE CP	1.....	INCLUDES ITEMS W/ \$
220#	2773260408	PACKING	1	
250#	2773260208	COVER CP	1	
260#	2773260908	LABEL	1	
520#	2773260308	ELEMENT	1	
570	0023806000	FLANGE NUT	1	
580	0110060050	FLANGE BOLT	1	

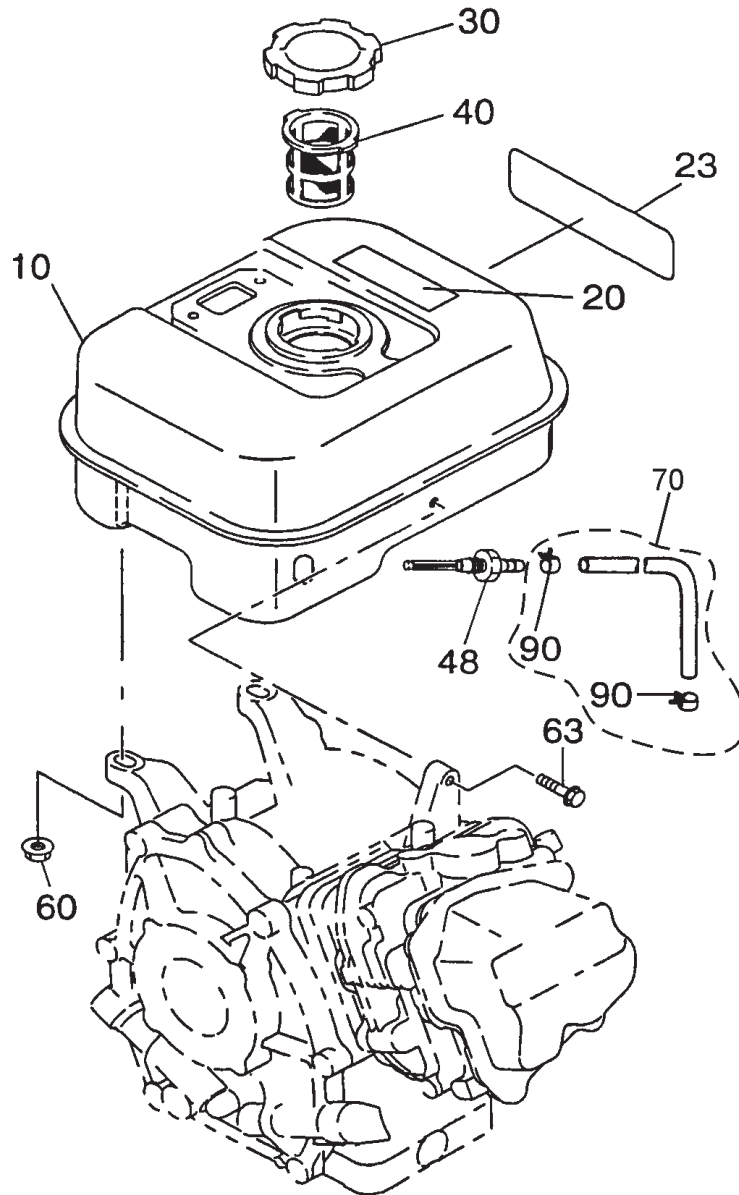
ROBIN EX130D5111 ENGINE — COOLING, STARTING ASSY.



ROBIN EX130D51111 ENGINE — COOLING, STARTING ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
10	2765120201	BLOWER HOUSING CP	1	
20	0732005470	LABEL (TRADE MARK)	1	
40	0110060030	FLANGE BOLT	4	
60	2775271121	BAFFLE 1 (CASE) CP	1	
61	2775270203	BAFFLE 2 (HEAD)	1	
80	0010406160	FLANGE BOLT	1	
81	0110060020	FLANGE BOLT	1	
220	0110060010	FLANGE BOLT	4	
210	2685020130	RECOIL STARTER ASSY.....	1	INCLUDES ITEMS W/ #
210-1#	2705011508	SPIRAL SPRING	1	
210-2#	2695012008	REEL	1	
210-3#	2825011118	STARTER ROPE	1	
210-4#	2615010008	STARTER KNOB	1	
210-5#	2705012508	RATCHET	2	
210-6#	2275013108	FRICTION SPRING	1	
210-7#	2275013508	RETURN SPRING	2	
210-8#	2705026108	RATCHET GUIDE	1	
210-11#	2685014518	STARTER PULLEY	1	
210-49#	2275015208	SET SCREW	1	

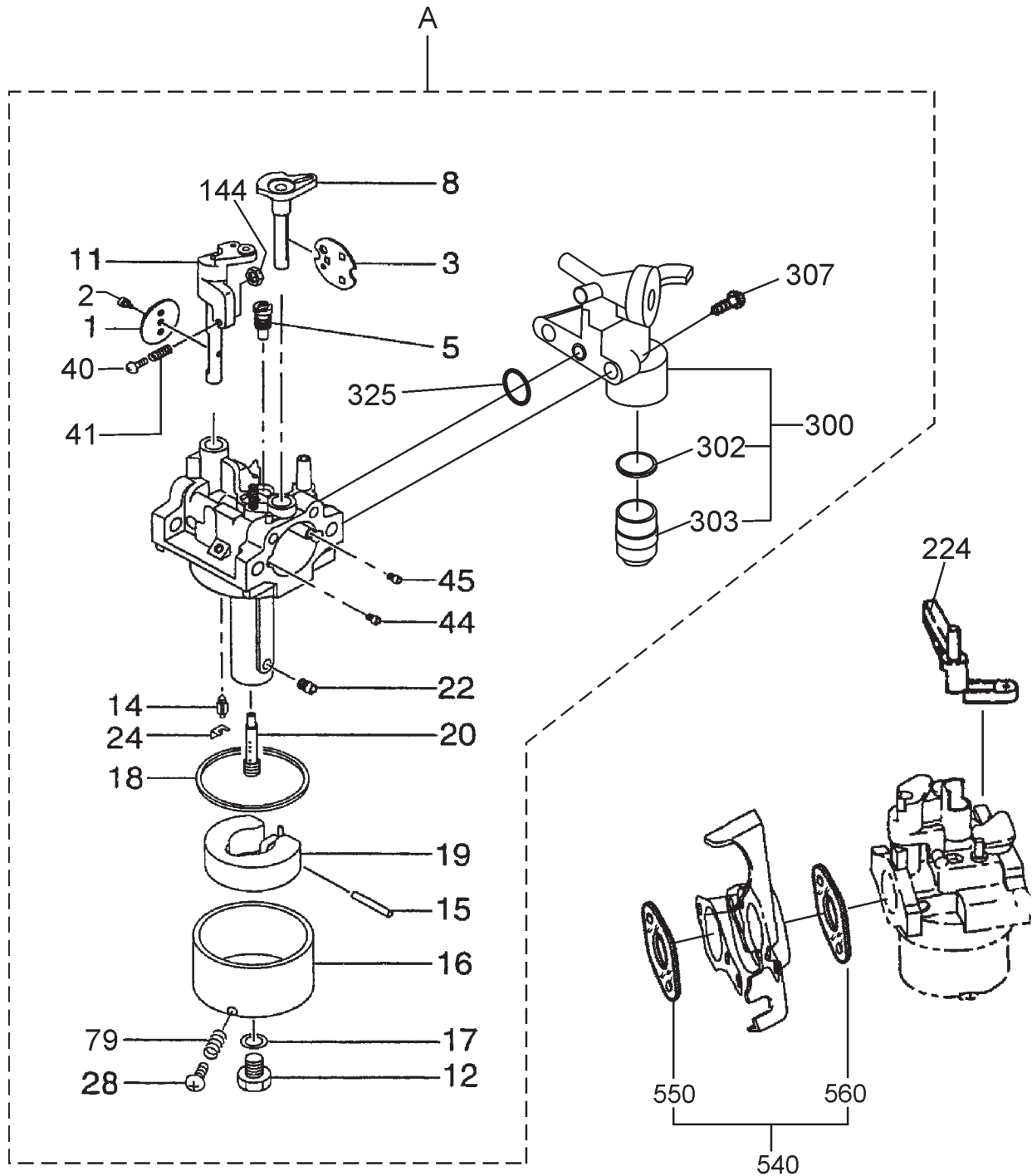
ROBIN EX130D51111 ENGINE — FUEL TANK ASSY.



ROBIN EX130D51111 ENGINE — FUEL TANK ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
10	2766010201	FUEL TANK CP	1	
20	0732005181	LABEL (WARNING)	1	
23	2769511103	LABEL (MODEL)	1	
30	0430440050	FUEL TANK CAP CP	1	
40	X641360010	FUEL FILTER	1	
48	0505120020	UNION	1	
60	0023806000	FLANGE NUT	2	
63	0110060130	FLANGE BOLT	1	
70	2766260301	FUEL PIPE CP.....	1.....	INCLUDES ITEM W/ #
90#	0561110050	HOSE CLAMP	2	

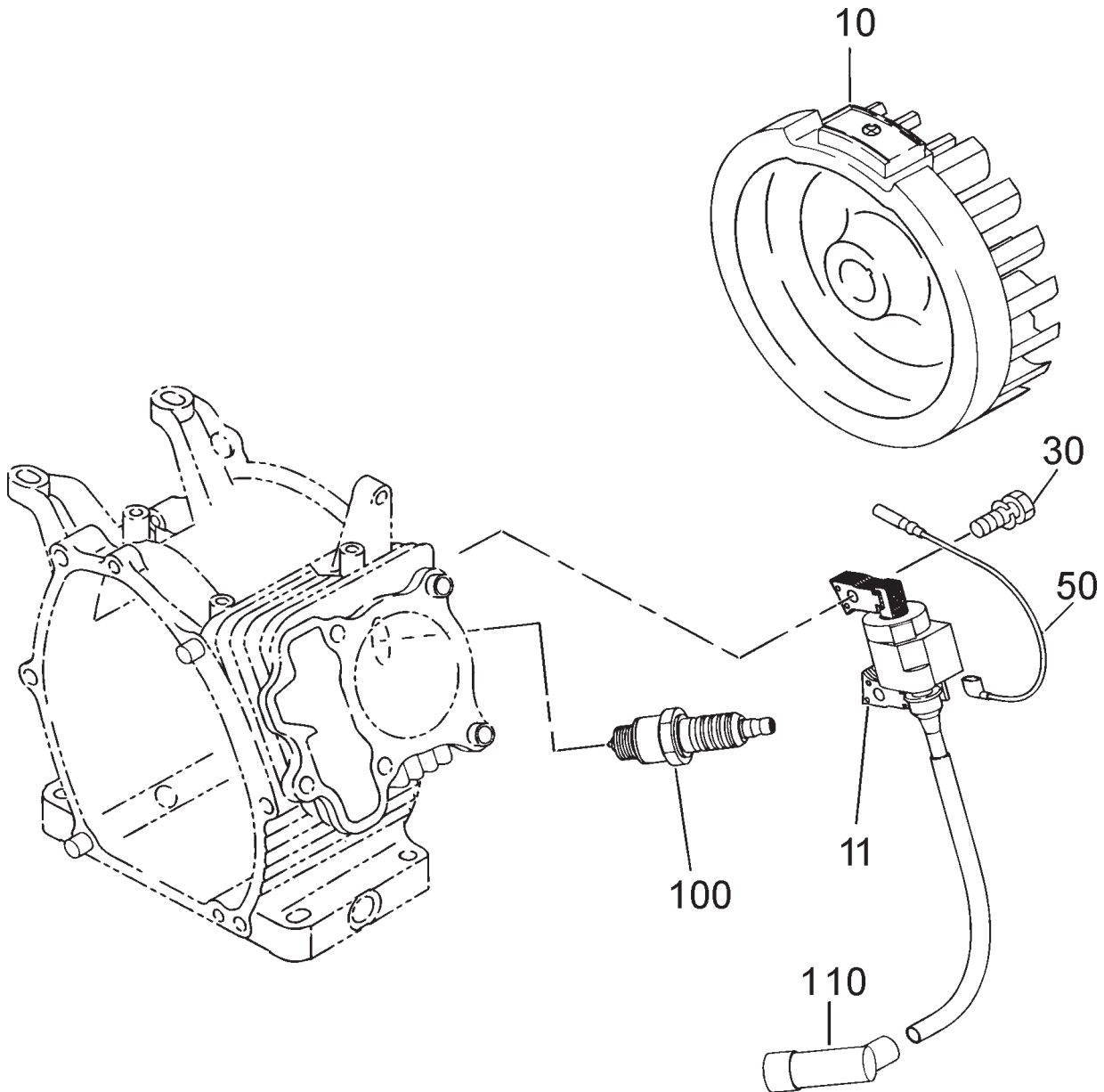
ROBIN EX130D51111 ENGINE — CARBURETOR ASSY.



ROBIN EX130D51111 ENGINE — CARBURETOR ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
A	2766230130	CARBURETOR ASSY	1.....	INCLUDES ITEMS W/ #
1#	1066253808	THROTTLE VALVE	1	
2#	2096235108	SCREW	1	
3#	2776252508	CHOKE VALVE	1	
5#	2466242008	PILOT JET	1	
8#	2776252008	CHOKE LEVER	1	
11#	2766253018	THROTTLE SHAFT A	1	
12#	2276245108	BOLT	1	
14#	2776250008	NEEDLE	1	
15#	2776251508	PIN	1	
16#	2776250608	FLOAT BODY ASSY	1	
17#	2146245008	PACKING	1	
18#	2146254008	CHAMBER PACKING	1	
19#	2266250608	FLOAT	1	
20#	2766244008	MAIN NOZZLE	1	
22#	2776240418	MAIN JET	1	
24#	2266270118	CLIP	1	
28#	2776236008	BOLT	1	
40#	1066255608	SCREW	1	
41#	2836235708	SPRING	1	
44#	2076241008	AIR JET	1	
45#	1066241008	AIR JET (PILOT)	1	
79#	2366254108	PACKING	1	
144#	2776255308	NUT	1	
300#	2796210310	COCK BODY- A	1	
302#	2776211018	PACKING	1	
303#	2776210018	CUP	1	
325#	2776255208	O-RING	1	
327#	1656237708	SCREW	2	
224	2774380101	CHOKE LEVER CP	1	
540	27732902J1	INSULATOR CP	1.....	INCLUDES ITEMS W/ \$
550\$	27735903J3	GASKET 2 (INSULATOR)	1	
560\$	27735902J3	GASKET 1 (INSULATOR)	1	

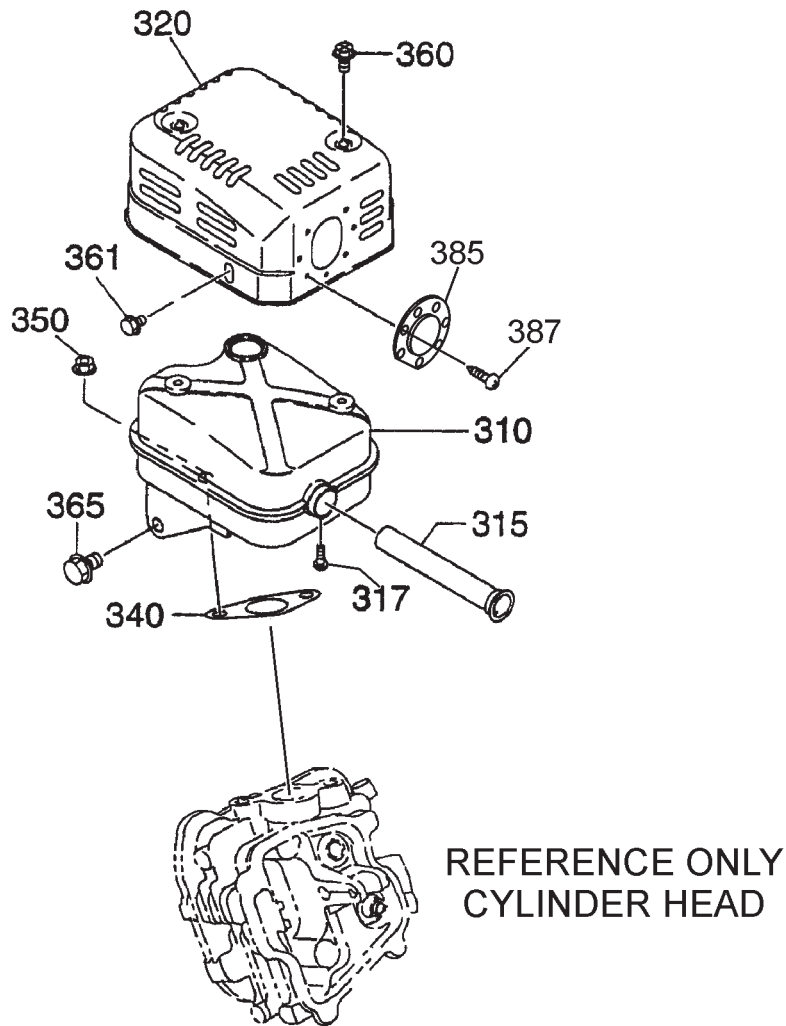
ROBIN EX130D51111 ENGINE — FLYWHEEL ASSY.



ROBIN EX130D51111 ENGINE — FLYWHEEL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
10	2767923021	FLYWHEEL CP	1	
11	2777943101	IGNITION COIL CP	1	
30	0011406250	BOLT AND WASHER ASSY	2	
50	27773101H1	WIRE 1 CP	1	
100	0650140150	SPARK PLUG, NGK BR6HS	1	
110	0655000270	SPARK PLUG CAP	1	

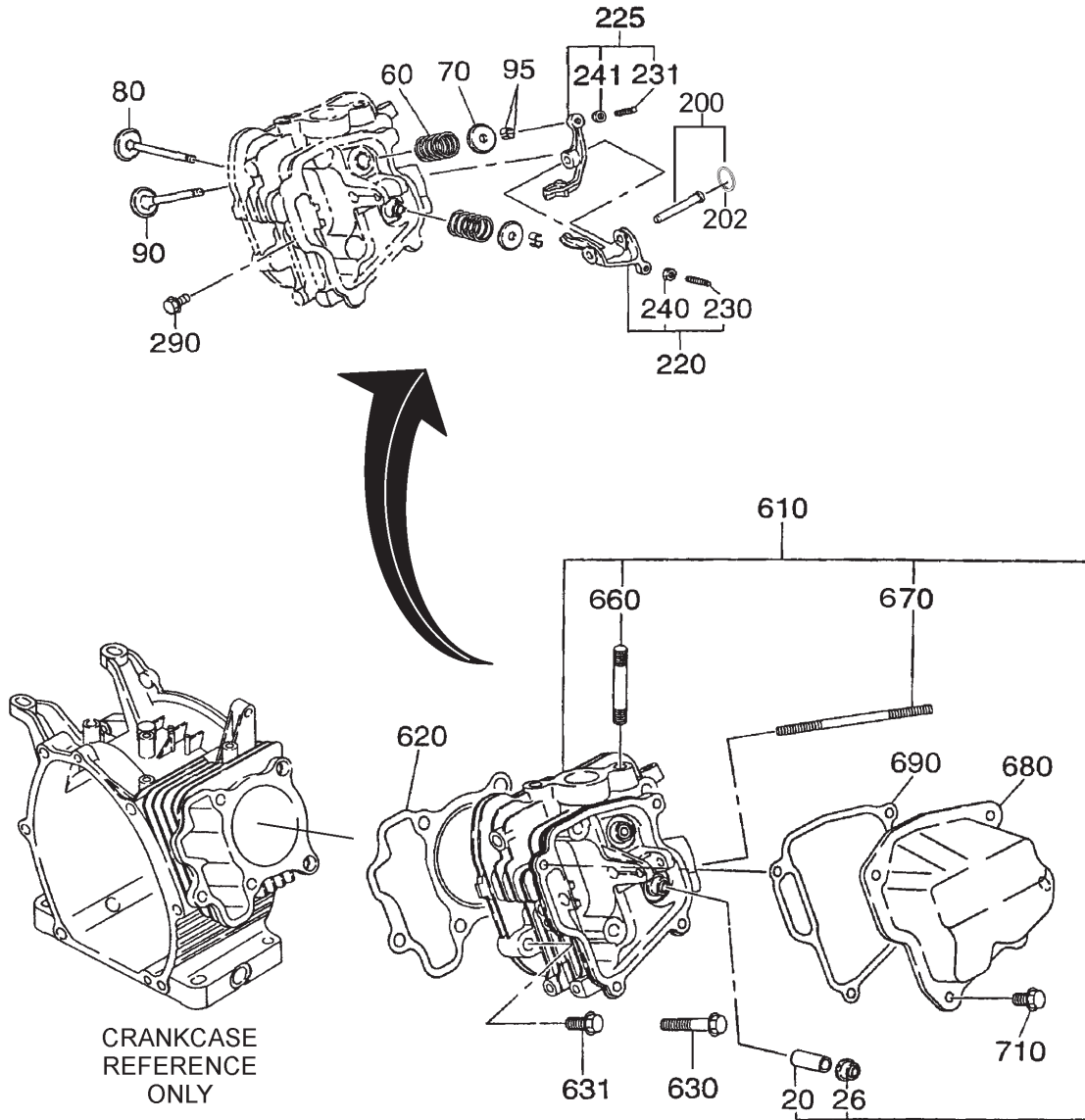
ROBIN EX130D5111 ENGINE — MUFFLER ASSY.



ROBIN EX130D51111 ENGINE — MUFFLER ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
310	27630111J1	MUFFLER CP	1	
315	2773760101	SPARK ARRESTER CP	1	
317	0150040060	TAPPING SCREW, M4X6L	1	
320	2763420101	MUFFLER COVER CP	1	
340	2773520113	GASKET (MUFFLER)	1	
350	9802008280	FLANGE NUT	2	
360	0152060090	TAPPING BOLT	2	
361	0110060010	FLANGE BOLT	1	
365	0110080320	FLANGE BOLT	1	
385	27737203H1	SCREEN CP	1	
387	0150040060	TAPPING SCREW	2	

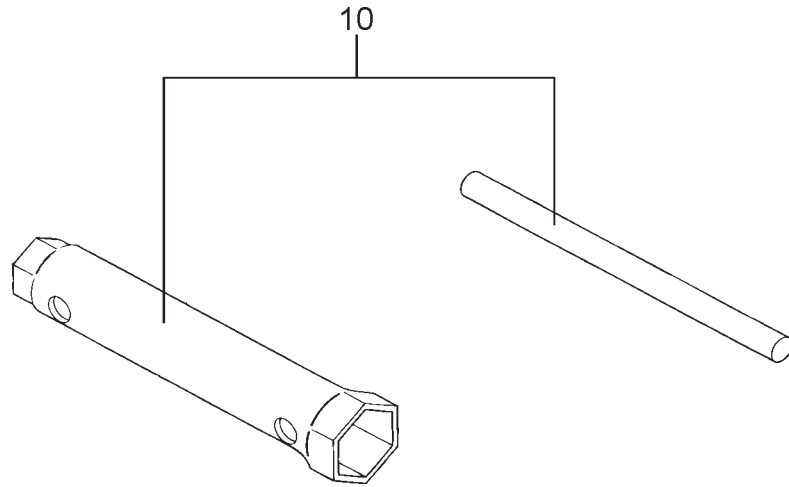
ROBIN EX130D51111 ENGINE — CYLINDER HEAD ASSY.



ROBIN EX130D51111 ENGINE — CYLINDER HEAD ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
20#	2371420203	VALVE GUIDE	2	
26#	2771601001	STEM SEAL	1	
60	2793360103	VALVE SPRING	2	
70	2693370103	SPRING RETAINER	2	
80	27633401H3	INTAKE VALVE	1	
90	27633501H3	EXHAUST VALVE	1	
95	13210KA031	COLLET- VALVE	4	
200	2773500201	PIN (ROCKER) CP	1	INCLUDES ITEM W/ \$
202\$	0031305000	CLIP	1	
220	2773620100	ROCKER ARM (IN) ASSY	1	INCLUDES ITEMS W/ %
225	2773620200	ROCKER ARM (EX) ASSY	1	INCLUDES ITEMS W/ @
230%	0149050020	ADJUST SCREW	1	
231@	0149050020	ADJUST SCREW	1	
240%	0170050030	NUT	1	
241@	0170050030	NUT	1	
290	0110060020	FLANGE BOLT	1	
610	2761300111	CYLINDER HEAD CP	1	INCLUDES ITEMS W/ #
620	2761500133	GASKET (HEAD)	1	
630	0110080240	FLANGE BOLT	4	
631	0110080310	FLANGE BOLT	1	
660#	0105080250	STUD	2	
670#	0105060351	STUD	2	
680	2771550301	ROCKER COVER CP	1	
690	2771600113	GASKET (ROCKER COVER)	1	
710	0110060020	FLANGE BOLT	4	

ROBIN EX130D51111 ENGINE — ACCESSORIES ASSY.



ROBIN EX130D51111 ENGINE — ACCESSORIES ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
10	27790301H0	ACCESSORY TOOL KIT	1	

TERMS AND CONDITIONS OF SALE — PARTS

PAYMENT TERMS

Terms of payment for parts are net 30 days.

FREIGHT POLICY

All parts orders will be shipped collect or prepaid with the charges added to the invoice. All shipments are F.O.B. point of origin. Multiquip's responsibility ceases when a signed manifest has been obtained from the carrier, and any claim for shortage or damage must be settled between the consignee and the carrier.

MINIMUM ORDER

The minimum charge for orders from Multiquip is \$15.00 net. Customers will be asked for instructions regarding handling of orders not meeting this requirement.

RETURNED GOODS POLICY

Return shipments will be accepted and credit will be allowed, subject to the following provisions:

1. A Returned Material Authorization must be approved by Multiquip prior to shipment.
2. To obtain a Return Material Authorization, a list must be provided to Multiquip Parts Sales that defines item numbers, quantities, and descriptions of the items to be returned.
 - a. The parts numbers and descriptions must match the current parts price list.
 - b. The list must be typed or computer generated.
 - c. The list must state the reason(s) for the return.
 - d. The list must reference the sales order(s) or invoice(s) under which the items were originally purchased.
 - e. The list must include the name and phone number of the person requesting the RMA.
3. A copy of the Return Material Authorization must accompany the return shipment.
4. Freight is at the sender's expense. All parts must be returned freight prepaid to Multiquip's designated receiving point.

5. Parts must be in new and resalable condition, in the original Multiquip package (if any), and with Multiquip part numbers clearly marked.
6. The following items are not returnable:
 - a. Obsolete parts. (If an item is in the price book and shows as being replaced by another item, it is obsolete.)
 - b. Any parts with a limited shelf life (such as gaskets, seals, "O" rings, and other rubber parts) that were purchased more than six months prior to the return date.
 - c. Any line item with an extended dealer net price of less than \$5.00.
 - d. Special order items.
 - e. Electrical components.
 - f. Paint, chemicals, and lubricants.
 - g. Decals and paper products.
 - h. Items purchased in kits.
7. The sender will be notified of any material received that is not acceptable.
8. Such material will be held for five working days from notification, pending instructions. If a reply is not received within five days, the material will be returned to the sender at his expense.
9. Credit on returned parts will be issued at dealer net price at time of the original purchase, less a 15% restocking charge.
10. In cases where an item is accepted, for which the original purchase document can not be determined, the price will be based on the list price that was effective twelve months prior to the RMA date.
11. Credit issued will be applied to future purchases only.

PRICING AND REBATES

Prices are subject to change without prior notice. Price changes are effective on a specific date and all orders received on or after that date will be billed at the revised price. Rebates for price declines and added charges for price increases will not be made for stock on hand at the time of any price change.

Multiquip reserves the right to quote and sell direct to Government agencies, and to Original Equipment Manufacturer accounts who use our products as integral parts of their own products.

SPECIAL EXPEDITING SERVICE

A \$35.00 surcharge will be added to the invoice for special handling including bus shipments, insured parcel post or in cases where Multiquip must personally deliver the parts to the carrier.

LIMITATIONS OF SELLER'S LIABILITY

Multiquip shall not be liable hereunder for damages in excess of the purchase price of the item with respect to which damages are claimed, and in no event shall Multiquip be liable for loss of profit or good will or for any other special, consequential or incidental damages.

LIMITATION OF WARRANTIES

No warranties, express or implied, are made in connection with the sale of parts or trade accessories nor as to any engine not manufactured by Multiquip. Such warranties made in connection with the sale of new, complete units are made exclusively by a statement of warranty packaged with such units, and Multiquip neither assumes nor authorizes any person to assume for it any other obligation or liability whatever in connection with the sale of its products. Apart from such written statement of warranty, there are no warranties, express, implied or statutory, which extend beyond the description of the products on the face hereof.

Effective: February 22, 2006

OPERATION AND PARTS MANUAL

HERE'S HOW TO GET HELP

PLEASE HAVE THE MODEL AND SERIAL
NUMBER ON-HAND WHEN CALLING

UNITED STATES

Multiquip Corporate Office

18910 Wilmington Ave. Tel. (800) 421-1244
Carson, CA 90746 Fax (800) 537-3927
Contact: mq@multiquip.com

Mayco Parts

800-306-2926 Fax: 800-672-7877
310-537-3700 Fax: 310-637-3284

Service Department

800-421-1244 Fax: 310-537-4259
310-537-3700

MQ Parts Department

800-427-1244 Fax: 800-672-7877
310-537-3700 Fax: 310-637-3284

Warranty Department

800-421-1244, Ext. 279 Fax: 310-537-1173
310-537-3700, Ext. 279

Technical Assistance

800-478-1244 Fax: 310-631-5032

MEXICO

MQ Cipsa

Carr. Fed. Mexico-Puebla KM 126.5 Tel: (52) 222-225-9900
Momoxpan, Cholula, Puebla 72760 Mexico Fax: (52) 222-285-0420
Contact: pmastretta@cipsa.com.mx

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Multiquip (UK) Limited Head Office

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Ashton-under-Lyne, Fax: 0161 339 3226
Lancashire OL7 0TL
Contact: sales@multiquip.co.uk

CANADA

Multiquip

4110 Industriel Boul. Tel: (450) 625-2244
Laval, Quebec, Canada H7L 6V3 Fax: (450) 625-8664
Contact: jmartin@multiquip.com

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This manual MUST accompany the equipment at all times. This manual is considered a permanent part of the equipment and should remain with the unit if resold.

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