

## Guarantee Terms and Conditions

Our products are guaranteed 1 years against faults of the manufacturing.

1. The warranty period is 1 years from the date of delivery of the goods.
2. The product, the warranty does not cover damage resulting from improper use of the user.
3. Please follow your user manual to use product, if not, warranty doesn't cover damage resulting.
4. The product repairing time in warranty period will be add warranty period. Maximum repairing day is 30 working days after receiving the product.
5. If the product has a problem in 30 days from buying period without user error, manufacturer / seller doesn't get repairing cost. If the product has a problem after 30 days, manufacturer / seller get repairing cost from customer.
6. The product repairing has to be carried out by company's authorized service. Customer has to pays all cargo cost.
7. All interventions, inner or outer thinker with, that carried out by an unauthorized service or users, changing parts are not covered by guarantee.
8. From time of delivery by remaining within the warranty period, the product meet same problem more than two times in a year or meeting different problems more than four time, warranty will be reimbursed.



**Barbaros**

### MANUFACTURER

BARBAROS MOTOR MAKİNA SAN. İÇ VE DIŞ TİC. LTD. ŞTİ.  
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**Barbaros®**

## SPRAYERS

*PM100 Model  
PM200 Model*



## USER MANUAL



**Before using machine, surely read this manual**

## **CAUTION !**

- \* REED USED MANUAL BEFORE USING !
- \* KEEP CHILDREN AWAY WHEN MACHINE IS RUNNING !

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## SAFETY SIGNS & SYMBOLS



**READ USER MANUAL BEFORE USING !**



### BEFORE RUNNING

Engine : 650 ml - No.10/40

Pump : 650 ml - No.30

**FILL OIL !**

### **CAUTION !**

**DO NOT GET INTO !**  
YOUR HAND TO MOVING PARTS



**KEEP YOUR MACHINE  
FROM RISK OF FREEZING**

### **CAUTION !**

Do not use flammable and  
inflammable fluid with  
pulverizers.



For cleaning and maintenance  
you should wait for the motor  
stop first.



Do not dispose of waste produced  
by the machine directly in the trash.  
Handle depending on your countries  
environmental regulations.



**HOT  
SURFACE**



 **CAUTION !**  
**DO NOT SPRAY CHEMICALS  
TO THE LIVINGS.**



Despite the chemicals are  
corrosive and toxic, you should  
use protection masks, glasses  
and gloves.

TS12600 / April 2008 is complies with the standards of  
"authorized service-machines which is using in livestock- rules"

## SAFETY INSTRUCTIONS

- In case of any malfunction or suspected negative operation, do not interfere during working/operating. Firstly let your machine stop and then intervene.
- For safety reasons; Keep children away from the machine when the machine is in operation or not.
- During working with the machine; Wear your protective clothing, safety goggles and mask.

### CAUTION !

- At the end of daily operations, stop your machine completely and take necessary measures, then clean regularly. This is important both for hygiene and also to extend the lifetime of your machine.
- Never wash your machine, clean it with a damp cloth or sponge.
- Store your machine in a dry and clean place.
- Contact your authorized technical service in case of any malfunction in your machine.

## DESCRIPTION OF MACHINE WORKING PRINCIPLE

the pump with three pistons that taking movement from thermal engine by belt pulley, pushing the liquid to spraying control group which has been absorbed from chemical tank. the liquid that adjusted of pressure in here is forwarded to the sprayer gun via hose.pulverization process is being done by sprayer gun which has adjustable spayer head.

## BEFORE STARTING SPRAYER

Depending on the process to be done the chemical tank cover of the tank with full with chemical or existed full water is opened and discharge to inside than closed.

By getting the mixer valve which on the pump takes to open position to make movement to pump. thus, the mixture of water with chemical is provided.

Duration of the mixture completion can be change depending on type of used chemicals

**CAUTION ! : IN ORDER TO PREVENT MACHINE'S RISING TO EXTREME HIGH RPM, PLEASE FOLLOW THE PRESSURE FROM PRESSURE GAUGE.**

**NOTE : MIXER VALVE CAN BE LET OPEN CONTINUOUSLY DURING APPLICATION, THERE IS NO PROBLEM FOR THE MACHINE**

## SPRAYING PROCESS

While starting to spraying process, by opening chemical valve to start application.

Meanwhile, pressure is adjusted by the pressure adjustment valve which is on the regulator in order make the mixture get reach to requested pressure.

**ATTENTION: WHILE MAKING PRESSURE ADJUSTMENT , IT MUST BE DONE DEFINETELY THE INDICATOR SHOULD BE ADJUSTED AS NOT TO OVER THAN 40 BAR ( YELLOW AREA). OTHERWISE IT CAUSE TO OCCUR PUMP MALFUNCTION**

## THINGS TO DO CROP PROCESSING & ENDING

ALL MAINTENANCES AT THE BELOW MUST BE IMPLEMENT IN TIME FOR THE GUARANTY VALIDITY.

### MACHINE MAINTENANCE

\*THE TANK SHOULD BE WASHED WITH CLEAN WATER AFTER EACH USE AND THE MACHINE WORKING METHOD USED TO CLEAR OUT. IN THIS WAY PUMP, HOSE AND WEAPON CAN BE CLEANED.

\*FIRST CHANGE OF PUMP OIL MUST BE DONE AFTER 10 HOURS.

\*SECOND CHANGE OF PUMP OIL MUST BE DONE AFTER 50 HOURS.

\*THIRD CHANGE OF PUMP OIL MUST BE DONE AFTER 70 HOURS.

\*ENGINE OIL SHOULD BE CHECKED EVERY 100 HOURS.

\*AIR FILTER SHOULD BE CHECKED EVERY 100 HOURS.

\*SPARK PLUG SHOULD BE CHECKED EVERY 50 HOURS.

\*THE FELT OF PUMP COMPRESSION SHOULD BE CHECKED EVERY 50 HOURS.

\*THE PUMP VALVES SHOULD BE CHECKED EVERY 100 HOURS.

EXCEPT AS AUTHORIZED SERVICE PERSON IF TRY TO REPAIR AND REMOVING THE MACHINE SPARE PARTS OR INSTALLING AFTERMARKET PURPOSE OR NON-USE OF MACHINE VOID THE GUARANTY EXCLUDES.

IF THE MAINTENANCES DOES NOT IMPLEMENT THEN THE MACHINE WILL NOT UNDER THE GUARANTY.

### OIL CHANGING



You should use no 20-50 motor oil inside motor

THE USED OIL SHOULD BE DRAINED WHILE THE ENGINE IS HOT.

**Before each use you must control oil level**

THE TANK SHOULD BE WASHED WITH CLEAN WATER AFTER EACH USE AND THE MACHINE WORKING METHOD USED TO CLEAR OUT. IN THIS WAY PUMP, HOSE AND WEAPON CAN BE CLEANED.

**CAUTION!**  
**BEFORE STARTING**

Engine : 650 ml - No.10/40  
Pump : 650 ml - No.30

**FILL OIL !**

Fill up the oil tank when the cursor comes half filling level position. 20-50 engine oil should be used in the pump. If the pesticide remains the tank after sprayin it will be harmful to the machine.



## MALFUNCTION AND MAINTENANCE INSTRUCTIONS

**⚠ Please stop the machine in order to mame periodic maintenance.**

- Load off the machine 15 minutes in every 1 hour while it is working.
- Check the screws periodicaly once a month. tighten the loosen screws.
- Do not clean your machine with wet something in order to make your machine long life against to corrosion.
- Keep it store between -50°C and +40°C temperatures.

### USE & MAINTENANCE INSTRUCTIONS

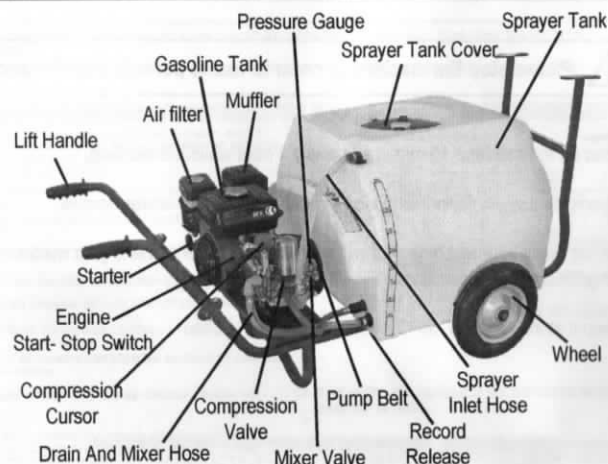
1. Don't start sprayer without water inside of spraying tank
2. Before starting sprayer please be sure sprayer gun and valfes on position
3. Use clear water to long life of pump
4. To keep freeze in winter time, please be sure keep your products without water inside of gun and spraying hoses
5. Check engine and pump oil every month.
6. Buy your product spare parts from our factory or authorized our dealer
7. Our all products have 2 year warranty to production mistakes



### WHILE MOVING AND TRANSPORTATION !

- Please get fasten up mobile parts of machine whjle doing transportation process.

## SPRAYER PM200 - Technical Specifications



MODEL	PM200	PM100
Engine Capacity	196 cc	196 cc
Engine Power	6,5 Hp	6,5 Hp
Engine Type	4 Stroke,	4 Stroke,
Speed	3600 rpm/min	3600 rpm/min
Fuel Tank Capacity	3,6 L	3,6 L
Sprayer Tank Capacity	200 L (Polythene)	100 L (Polythene)
Pump Type	22 L/Max.	22 L/Max.
Pump Power / Bar	1,5 ~ 2 Hp (Max.40 Bar)	1,5 ~ 2 Hp (Max.40 Bar)
Pump Speed	800 ~ 1200 s/min	800 ~ 1200 s/min
Suction	13 ~ 22 L/min	13 ~ 22 L/min
Pressure	10 ~ 40 kgf/cm <sup>2</sup>	10 ~ 40 kgf/cm <sup>2</sup>
Max. Spraying Distance	8 - 10 m	8 - 10 m
Hose Reel	Optional	Optional
Weight	60 Kg	52 Kg
Dimensions (WXLXH)	81 x 125 x 75 cm	81 x 117 x 60 cm

## USING PUMP

### Attention!

To keep the sprayer perfect in performance, please follow the instruction printed in this page.

#### A. Operation Instruction

1. Check every fastener and make sure that the sprayer and the motor are installed firmly on the frame.
2. Set the two pulleys in a straight line, and the belt in an appropriate tightness.
3. Every joint of the hoses must be tightened to prevent from leaking.
4. Before starting the motor, shut off the ( 57 ) Cock ( Valve ), loose the ( 59 ) Pressure Adjusting Screw and pull the ( 72 ) Pressure Adjuster to the top.
5. Start the motor to power the sprayer, keep a proper revolution. Press the ( 72 ) Pressure Adjuster to the bottom. Keep the pressure around 21-35Kgs. By adjusting the ( 59 ) Pressure Adjusting Screw.
6. Open the ( 57 ) Cock ( Valve ) to start spraying.
7. After the spraying is over, pull the ( 72 ) Pressure Adjuster to the top and operate the sprayer with fresh water to clean out the remaining chemicals.

#### B. Pump Lubrication

1. Replace the engine oil after the sprayer has been used for the first 10 hours, 50 hours, and thence every 70 hours.
2. Drain away the dirty engine oil by screwing off the ( 14 ) Drain Plug.
3. After the ( 14 ) Drain Plug is screwed on, remove the ( 2 ) oil Inlet Cover and refill #30-40 clean engine oil.
4. Keep the oil level at 2 / 3 of the ( 13 ) oil Gauge.
5. Always fill the ( 36 ) Grease Cups with grease. Screw on the ( 36 ) Grease Cups 2-3 cycles every 2 hours of spraying.

#### C. Trouble Shooting

##### a. Feeding Failure & Pressure Instability

1. Check whether the ( 92 ) Suction Hose is leaking or is stuck.
2. Open the ( 57 ) Cock ( valve ) to release the surplus air.
3. Remove the ( 45 ) Suction Chamber and the ( 51 ) Water Outlet Chamber check if the ( 39 ) Valve Assembly are stuck or damaged.

##### b. Pressure Insufficiency

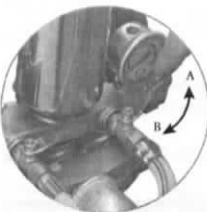
1. Check whether the pressure has been adjusted properly.  
( refer to the operation instruction No. 5 )
2. Check whether the belt is too loose.
3. Check whether the Spray Hose and the couplings are broken and damaged.

##### c. Cylinder Leakage.

1. Remove the ( 25 ) Gland cover and wind up the ( 31 ) Adjusting Rings.
2. If still in vain, replace the ( 34 ) V-packings in the ( 37 ) Cylinder.

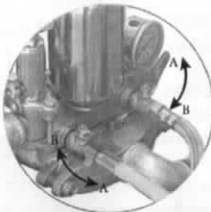
Remark: ( ) indicates the " part number " of relative part.

## USING PUMP

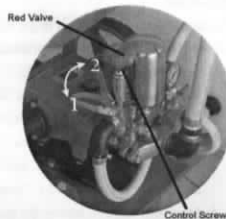


Run the engine. (How to run gasoline engine is in the other pages.)

Turn the mixer valve of pump from **A** position to **B** position. In this way the chemicals will be mixed in the pesticide tank.



Turn the hose valve to **A** position for the prepare to disinfect. (The valve will be off on the **B** position.)



Turn the compression switch to **2** position for the compression transfer to hose valve. (Optimum compression is 25 BAR.

Compression setting is fixable with the black plastic screw on the regulator. Pull on the yellow control screw on the bottom after the compression setting.

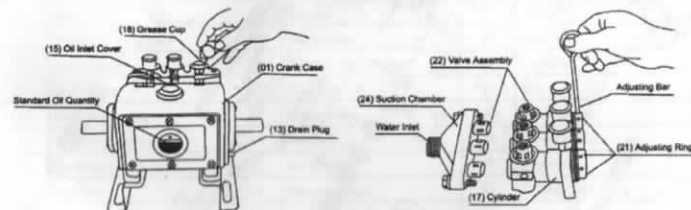
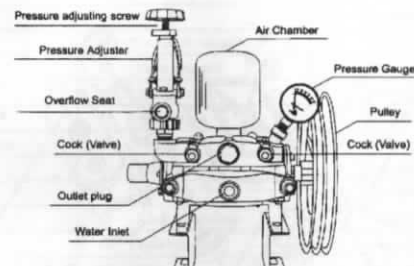
**Do not operate without put water inside Tank.**  
**Pay attention that valves and sprayer guns should be switch ON before starting.**

Spraying pressure valve, mixing valve and pressure lever turns to close position before starting.  
The machine works by pushing black button after proper electric socket and adjust pressure level till coming to 4 level on the green closed pressure indicator from pressure gauging regulator.  
After that start to operating by opening of valves by providing chemical and water mixture.



If the pressure is on these levels, operating makes harmful to your pump.

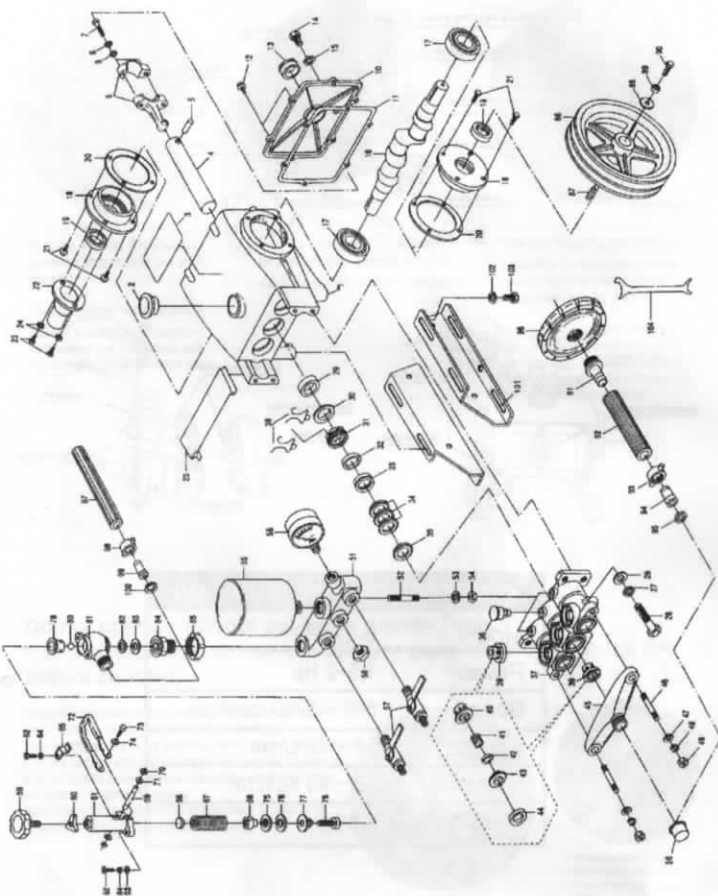
## PUMP DEFINITION



### PUMP TECHICAL SPECIFICATION

Model	B-22JPD
Power	1,5~2 Hp
Speed	800 ~ 1200 rpm/min
Emme	14 ~ 22 L/min
Pressure	10 ~ 40 Kg/cm <sup>2</sup>
Weight	8,5 kg

## DIAGRAM OF THE SPRAYER PUMP



## PART LIST

01	Crank case	36	Grease cup	71	Plain washer
02	Oil inlet cover	37	Cylinder	72	Pressure adjuster
03	Name plate	38	Set clip for adjusting	73	Hex bolt
04	Plunger	39	Valve assembly	74	Plain washer
05	Plunger pin	40	Spring box	75	Packing holder
06	Connecting rod	41	Valve spring	76	Spindle packing
07	Bolt, connecting rod	42	Stopper	77	Box, oil seal
08	Spring washer	43	Valve seat	78	Spindle
09	Plain washer	44	Valve seal	79	Spindle cap
10	Cover, crank case	45	Suction chamber	80	Ball valve
11	Packing, cover	46	Stud bolt	81	Body, over flow
12	Screw, cover	47	Plain washer	82	Valve seat
13	Oil gauge	48	Spring washer	83	Packing, valve seat
14	Drain plug	49	Hex nut	84	Flange
15	Packing drain plug	50	Suction cap	85	Lock nut
16	Crank shaft	51	Water outlet chamber	86	V-pulley
17	Ball bearing	52	Stud bolt	87	Key
18	Case ball bearing	53	Plain washer	88	Plain washer
19	Oil seal, crank shaft	54	Hex nut	89	Spring washer
20	Packing, bearing case	55	Air chamber	90	Hex bolt
21	Hex bolt	56	Pressure gauge	91	Strainer joint
22	Cover, crank shaft	57	Cock ( valve )	92	Suction hose
23	Screw, crank cover	58	Outlet plug	93	Wing nut, suction
24	Plain washer	59	Pressure adjusting screw	94	Male joint
25	Gland cover	60	Fly nut	95	Suction, packing
26	Plain washer	61	Spring box	96	Strainer, suction assembly
27	Spring washer	62	Cross screw	97	Over flow hose
28	Stud bolt	63	Plain washer	98	Wing nut, over flow
29	Plunger oil seal	64	Spring washer	99	Male joint
30	Check ring	65	Level	100	Over flow packing
31	Adjusting ring	66	Upper metal	101	Bed, crank case
32	Grease seal	67	Regulation spring	102	Spring washer
33	Grease ring	68	Spring seat	103	Hex bolt
34	Vpacking	69	Pin	104	Adjusting handle
35	Vpacking seat	70	E-ring		

## USING GASOLINE ENGINE



### CAUTION !

Please read this USER MANUAL carefully before using BARTECH GASOLINE ENGINE to prevent any damages because of wrong usage or any causing accident and please follow using instructions. Pay attention to the informations and warnings on BARTECH GASOLINE ENGINE. It is forbidden to make any modification and to change revolution cycles which had been set by manufacturer on BARTECH GASOLINE ENGINE. In case to do contrary, product will be OUT OF WARRANTY.

## STANDARD FEATURES

### OIL WARNING SYSTEM

Engine does not work if the oil quantity is less than requested level. In case of drop down of level during working, engine stops automatically in order to prevent further damages.

### AUTOMATIC DECOMPRESSION SYSTEM

BARTECH series gasoline engine ensures advantage to users by working of automatically decompression system without power needed.

### AIR CLEANING SYSTEM

High performance oily air filter is suitable to changeable environment conditions by itself structure. Because of it has OIL BATHING special air filter, the engine works long time even if extremely dusty places.

## SAFETY INSTRUCTIONS

### GENERAL SAFETY INSTRUCTIONS

- \* Please start the BARTECH GASOLINE ENGINE away from wall and 1 mtr away from other appliances.
- \* Please do necessary controls not to cause any accident and damage to your unit
- \* In order to benefit fully from the BARTECH GASOLINE ENGINE, please use BARTECH GASOLINE ENGINE according to your needs.
- \* Waste gases are poisonous and harmful to health. BARTECH gasoline engine must be started in ventilated areas. Waste gases must be goes out via a pipe.
- \* Do not touch wet hands to the BARTECH gasoline engine when its working. Do not start it up under rain and snow. If needed to work it, please take caution.
- \* Children and pets must be kept away while BARTECH gasoline engine is working
- \* Do not touch hot parts such as driving engine and exhaust fitting.
- \* Do not use generator at the areas where the materials can be flaming easily. If needed to work it, please take caution.
- \* The ground must be steady and flat when the BARTECH gasoline engine will start.
- \* Please learn how the Generator stops quickly for emergency situations.
- \* Please stop the engine while input fuel into BARTECH gasoline engine and do not fill fuel in at the areas which has fire and spark.

### GASOLINE ENGINE TECHNICAL SPECIFICATIONS

ENGINE	GASOLINE ENGINE
Engine Type	single cylinder, 4 stroke, air cooled, gasoline engine
Fuel / Fuel tank capacity lt	No.90 Unleaded fuel / 4.3
Seat inside dia. ( mm)	68 * 45
Current density ( cu.in)	196 (11.96)
Cycle ( cycle/min.)	3600
Compression ratio	8.5 : 1
Power KW / HP	4.0 / 5.44
Max. Torque N.M. ( r.p.m.)	11.0 / 2500
Oil quantity (lt) / Oil no / Type of using oil	0.6 / SAE10W30 / 4 stroke engine oil
First starting	Rope starter
Dimensions	385 x 335 x 350
Fuel consumption g/ s.s.	1,05
Spark plug	F6T
Weight (Kg)	16



## SAFETY INSTRUCTIONS

### GENERAL SAFETY INSTRUCTIONS

#### BEFORE STARTING

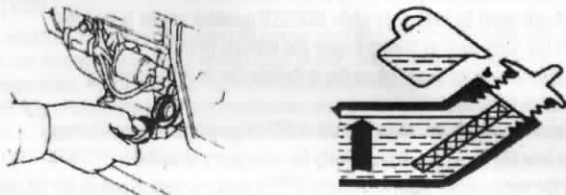
##### \* CHECK THE OIL LEVEL !

Engine delivered without oil. Please fill the oil before using. If there is no oil inside engine or oil level less in that time OIL LAMP shines, if motor is working, it stops. Oil must be filled till the minimum oil level sign of the engine. The engine oil affects engine's lifetime and its performance.

Please use four stroke and high quality oil.

Do not use herbal and dirty oil. Please wait about 3 minutes after you filled the oil and before start the engine.

The low oil level automatic closing fitting engages and it will prepare itself to starting.



##### \* CHECK THE FUEL LEVEL !

Stop the engine while filling FUEL. Do not use FUEL which is dirty and if you are not sure quality of it. Never add oil to fuel. Fuel is extremely flameable and explosive, never smoke during filling operation.

Do not fill at the areas which has flameable and sparky.

Fill the fuel to the tank by using BIN with filling hose or nozzle and do not overflow from the tank. There must not be any fuel around tank cover. After filling operation, tank cover must be closed tightly.

If there is any poured fuel, please clean it.

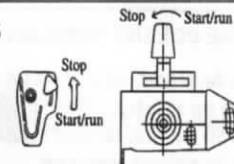
##### \* CHECK THE AIR FILTER !

Never work the WATER PUMP without air filter. Check the air filter components, make sure that all are clean and good condition. If filter torn or very dirty, please replace it.

## STARTING

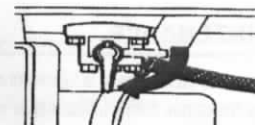
### STARTING ON THE ENGINES WITH ROPES

1- Place the open -close switch to " START " position.

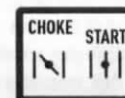


2- Place the fuel cock to " ON " position. If there is air inside of fuel hose, take it out. Drain the fuel till there will be not any air bubble inside fuel.

When there is no air bubble, reassemble the hose to its place and tight.



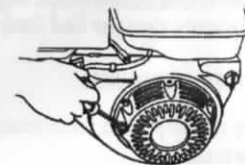
3. Place choke rod to " CHOKE " position.



4. Pull the rope till you feel resistance, and release it slowly. Grab the ROPE HOLDER properly and pull by forced and release it.

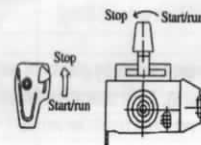
Place the choke rod to " START/RUN " position.

If you don't start it up, please try again.



## STOPPING

\* Place the engine open close lever to " STOP " position



\* turn off the FUEL COCK.

## TROUBLES

### ENGINE DOESNT WORK OR ITS STOPPING WHILE WORKING

- \* Check the oil level, add oil if needed
- \* is there any air in fuel system ? If have, take it out.
- \* Check the fuel tank, fill fuel if needed.
- \* Check the fuel cock open or not.

## MAINTENANCE

- \* Purpose of maintenance is to ensure of motopump works in best condition.
- \* Stop the engine during maintenance operation. Do maintenance often in dusty areas.

### OIL CHANGING

- \* Do draining of oil operation while engine is hot
- \* Remove oil drain plug and oil filling plug.
- \* After drained oil, reassemble the plugs to their places tightly
- \* Fill the oil till oil filling sign .
- \* Do not dirtying the environment while changing the oil. Ensure the cleaning of outgoing oils properly. clean your hand plenty of water and soap.

### AIR FILTER MAINTENANCE

- \* Dirty air filter prevents the carburator's working properly and efficiently by preventing air flow to carburator.  
Please do air filter maintenance often in dusty and dirty areas.
- \* Remove the air filter cover, take out sponge filter element.
- \* Replace torn or punched parts.
- \* Replace the paper filter element in case of torn or very dirty.
- \* Clean the filter seat and air passing pipe.
- \* After washed the sponge element in detergent water by plenty of water, DRY it. Dip it into clean oil and take out excess oil by squeezing. After operation finished, reassemble the sponge element its place by closing the cover and tight the screw.

## FUEL FILTER MAINTENANCE

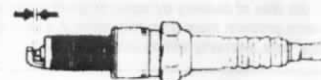
- \* Place the fuel cock to " ON" position and remove the filter cover.
- \* Clean inside of box.
- \* Pay attention that fuel filter can not be dirty or watery, replace it if dirty.
- \* While disassemble and assemble , do not damage to O-RING, replace it if it is deformed.

## SAFETY INSTRUCTIONS

### SPARK PLUG MAINTENANCE

- \* Check the spark plug by your eye, please clean the dirt and soots with wire brush.  
If there is break or split on insulator, throw it out.
- \* Measure the electrode gap of spark plug by feeler gauge. Gap must be between 0,7-0,8 mm
- \* Assemble the spark plug to its place after cleaned with tight. Do not leave the spark plug loosen, it gets hot and causes damage to engine.

0,7 - 0,8 mm



### STANDARD FEATURES

- \* Powerful and technologic
- \* four stroke, air cooled
- \* direct injection, silence working
- \* easy starting and maintenance ( with rope)
- \* its proper to easy transport, small and light.

## MAINTENANCE SHEET

CONTROLS		BEFORE USING	FIRST MONTH OR IN 20 HOURS	EVERY 3 MONTHS OR IN 50 HOURS	EVERY 6 MONTHS OR IN 100 HOURS	EVERY YEAR OR IN 300 HOURS
ENGINE OIL	Level check	X				
	Replace		X		X	
OIL FILTER	Replace					X
AIR FILTER	Control	X				
	Cleaning			X		
FUEL FILTER	Cleaning				X	
GAPS OF VALVES	Check + adjust					X
FUEL TANK AND FILTER	Cleaning					X