

4 In 1 VOLTTM PRO POWER SERIES

OPERATOR'S MANUAL

MODEL-VK4X1E



Owners Manual

We want to thank you for your purchase of our state of the Multi-Functional 4 in 1 Machinery. This manual will tell you how to use and maintain. Please read the manual carefully before operating the machine.

Operating the machine in the best conditions will increase the lifetime of the unit.

If you have any suggestions for the manual please contact your local dealer. We as a company are striving to make constant upgrades to our equipment to provide our customer base with the best units possible. The specifications for each unit may vary from machine to machine.

Catalogue

1.Safety.....	1
2.Specifications.....	4
3.Component Identification.....	5
4.Preparation.....	9
5.Starting.....	12
6.Operation.....	13
7.Engine Shut down.....	14
8.Maintenance.....	15
9.Common Faults and troubleshooting.....	23
10.Schematic Diagram.....	26

1. Safety Instruction

Please read the manual before operation, failure to comply with the manual could lead to danger of operator, others and the machine.

1.1. Protect yourself and others. Welding can make you and others in danger of many risk factors: Make sure to never weld without a welding mask. This goes for not only the operator, but all other bystanders as well. The damages to eyes include: electric arc, dazzle reflections, dazzle flicker, sparking molten, metal splashing. Looking at welding arc without eye protection can inflict great pain and even temporary blindness. Therefore, this products

owner/operator should ensure the welding machine operated by a user with prior welding knowledge. Use these professional protective equipment when operating.

- Face shield

- dedicated heat resistant gloves

- Protective clothing and shoes

1.2. Do not use machine in area where dust pollution, flammables or explosives are present.

1.3 Power supply and welding current can cause shock damage. Please do not touch inside or face plate of welding machine at any time. Make sure operator and all other have

protection. Do not let your body touch the ground and the electrode at that same time.

1.4 Welding fumes and gasses can cause serious harm to operator and all other by standards. Please keep your head away from a place you could possibly breathe in fumes and make sure to use the machine in a well ventilated area.

1.5 To prevent any fire hazards do not have any residue of gasoline or kerosene on your person, cylinder or piping you may be welding.

1.6 Do not operate machinery if you have a pacemaker. This includes being anywhere near the machine even if someone else is operating. The magnetic field produced by the welding machine could have adverse effects on a pacemaker.

1.7 Welding splatter can cause fire and explosions. Do not weld in dangerous situations such as around flammables, explosives, a closed barrel or pipe.

1.8 There is extreme heat produced by the exhaust pipe, engine, air compressor and muffler. Please do not touch these parts or have flammables anywhere near the unit. The high temperature produced by the exhaust is capable of igniting any flammables or explosives.

1.9. It is important that this unit is installed, used and maintained by professionals. Do not tamper or remove any safety or warning signs located on the unit.

1.10. The engine operates on gasoline. It is important to keep in mind this unit cannot be run indoors. Carbon Monoxide has no odor and can be fatal in a short period of time.

1.11. Gasoline is highly flammable and is capable of causing a large explosion. Please shut down the machine before ever adding fuel or oil. When adding fuel or oil make sure it is done in a well ventilated area. When filling the fuel tank be sure you always leave enough space for natural fuel inflation. Make sure to not smoke near fuel supply. Keep away from all other flames, sparks, etc. Make sure to wipe all leaked fuel on the unit before starting.

1.12 Take care when attaching your welding leads. Ensure a solid connection at the lead terminals at all times. Inspect your welding leads for damage before each use and never allow them to sit in a damp environment. Avoid dragging your welding leads, as this may cause the insulation to become damaged.

1.13 Check the oil level prior to each use by removing the oil dipstick. Do not operate the unit if it has become overfilled with oil, as this can affect normal operations. In addition make sure to change the oil on a regular basis.

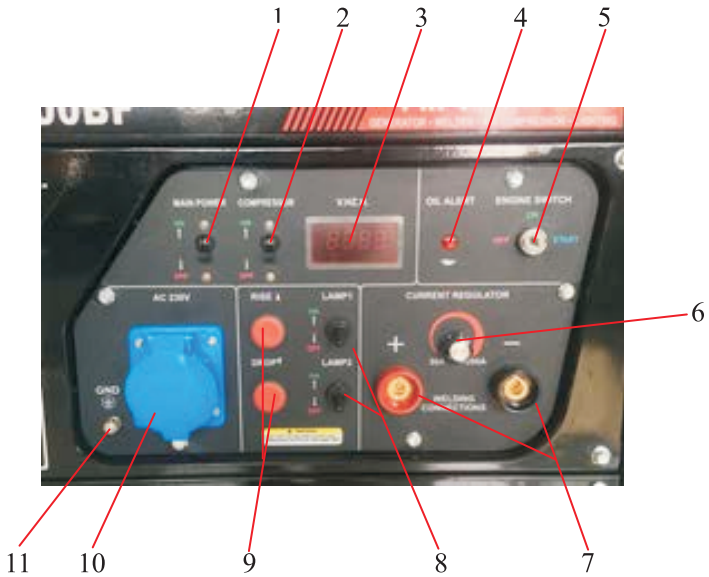
1.14 Refrain from using the air compressor when welding. Also, it is recommended that you disconnect all sources from the generator as well when welding.

2.Specifications

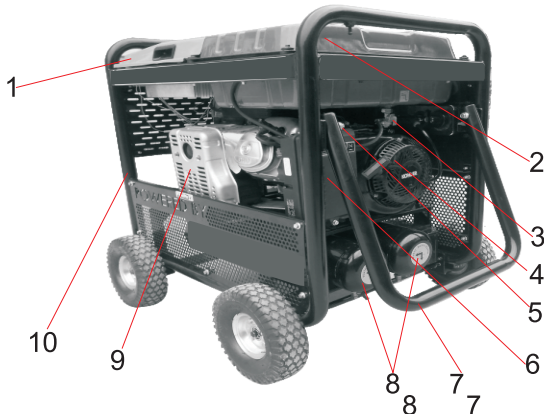
Welding	Welding current range (A)	50A-200A
	Duty cycle (%)	50
	power static characteristic curve	dropping characteristic
Generating	Rated voltage (V)	AC120/240V, 60Hz
	Rated output (KW)	5
	Max output (kW)	5.5
Air compressing	Starting	Recoil start + pressure trigger
	Air tank (Gal)	2X 2.5
	Alternator output (KW)	1. 35
	Pressure(PSI)	115
	Air output (CFM)	4.4 @ 90PSI
	Air input(CFM)	8
Engine	Speed control	Manual operation
	Cooling system	Air cool
	Air valve	OHV
	Ignition system	CID
	Fuel Tank (Gal)	7.9
	Oil alert system	Yes
	Fuel consumption (g/hp.hr)	374
	Start Mode	Recoil、 electric 、 Remote Start
Lighting	Working voltage(V)	AC120V/240V ±5%
	Lamp power(W)	LED/4×100W
	Solenoid valve	2pcs/DC12V/5W
	Lifting gear pressure(MPa)	0.8 ±0.1
	Lift height(mm)	1800-4500
Complete machine	Length×Width×Height (mm)	Machine size: 850.5*583*780
		Outer packing: 866*600*805
	Weight (Kg)	168KG
	IP Grade	IP21
	Insulation grade	F

3.Component Identification

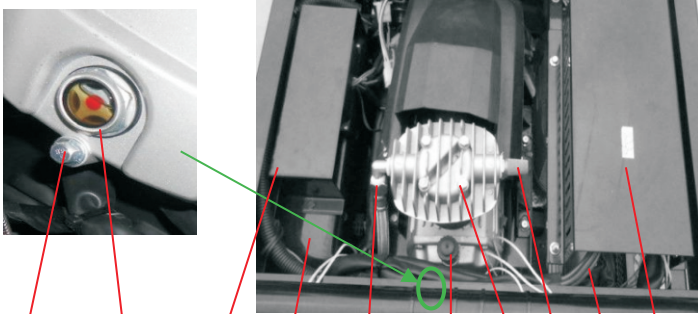
Note: Do not attempt to modify the control panel in any way. This will void your warranty and could present the potential for equipment failure and personal injury.



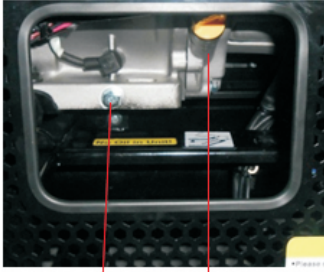
- | | |
|--------------------------|-----------------------------|
| 1. Main Switch | 7. Socket for welding |
| 2. Air compressor switch | 8. lighting control switch |
| 3. Display meter | 9. Push botton for lighting |
| 4. Oil alarm | 10. Socket |
| 5. key switch | 11. Groud bolt |
| 6. Welding adjustor | |



- 1. Engine Cover Plate
- 2. Fuel Tank
- 3. Fuel Petcock
- 4. Engine Pull-Start Assembly
- 5. Engine Choke Lever
- 6. Air Filter Assembly
- 7. Handle
- 8. Water Drain Valve
- 9. Muffler Assembly
- 10. Frame



- 1. Air Compressor Oil Drain Plug
- 2. Oil Sight Glass
- 3. AVR Cover Plate
- 4. Control Panel Case
- 5. Exhaust Port
- 6. Oil Fill Port
- 7. Air Compressor Cylinder Head
- 8. Air Filter
- 9. Air Supply Hose
- 10. Cover Plate



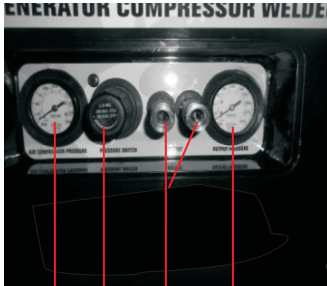
1 2

- 1. Engine Oil Drain Plug
- 2. Oil Fill Dipstick



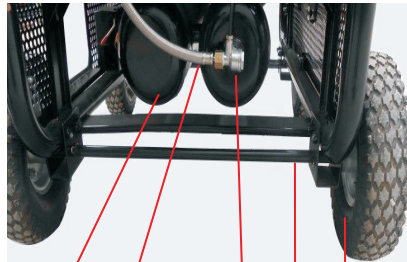
3 4 5

- 3. Air Pressure Relay
- 4. A/C Switch
- 5. Safety Valve



5 3

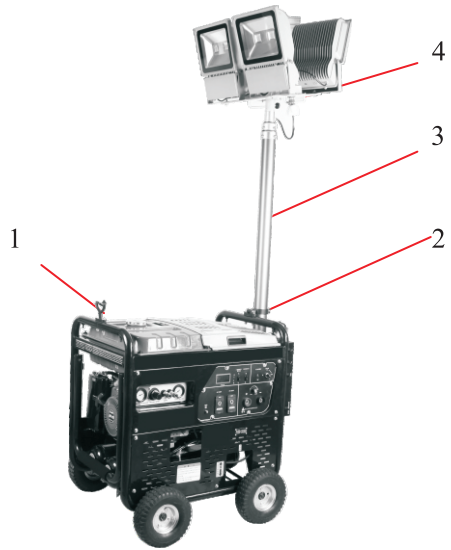
- 5. Air Tank
- 7. Air Valve
- 9. Wheel



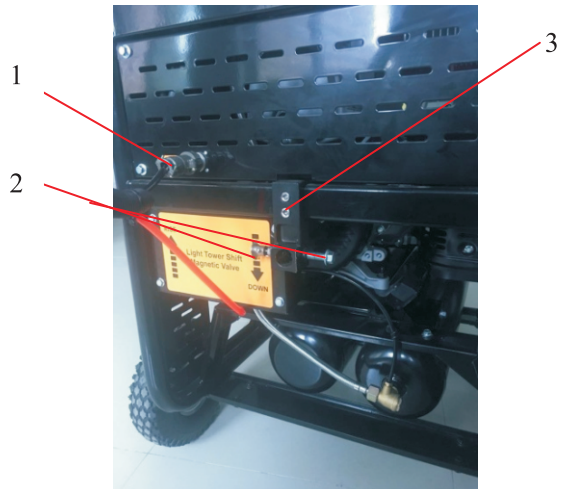
5 6 7 8 9

- 2. Air Pressure Regulator
- 4. Pressure Gauge
- 6. Air Hose
- 8. Wheel Axle

- 1. Lighting fixing device
- 2. Lighting shift device
- 3. Lift and drop arod assy
- 4. Lamps assy



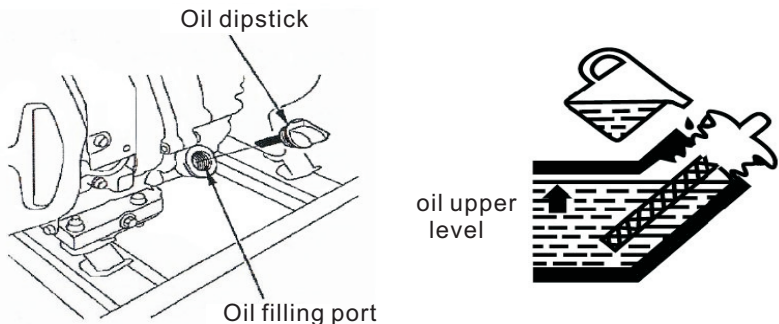
- 1. Air outlet
- 2. Lighting lock device
- 3. Lighting fixing device



4、 Preparation

- 4.1 Read this manual carefully and understand all operating procedures before using the equipment.
- 4.2 Make sure the wheel kit is firmly mounted before any type of movement. Please control the speed to avoid jerking.
- 4.3 The equipment must be stored horizontally in a clean, dry, well ventilated place.
- 4.4 Please check to ensure all components of machine are securely fastened. If fastener or connectors are loose they must be repaired before running the machine.
- 4.5 Make sure to always check engine oil before operating machine.
 - 4.5.1 Remove and wipe off dipstick.
 - 4.5.2 Insert dipstick and then remove to check exact level of

oil to its proper level.



4.6 Engine oil recommendation

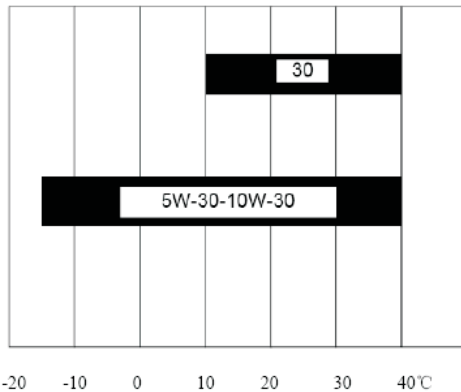
- 4.6.1 Oil is a major factor for overall performance. Please use 4 stroke oil that exceeds the standards for API service classification SE.

Always check the API SERVICE label on the oil container to be sure it includes the letters SE.

4.6.2 Check and change the oil in your machine regularly. This will avoid all problems related to the oil being too low, too high, dirty or thick.

4.6.3 SAE10W-30 oil is recommended. The SAE viscosity grade shows other viscosities to use in different average temperatures.

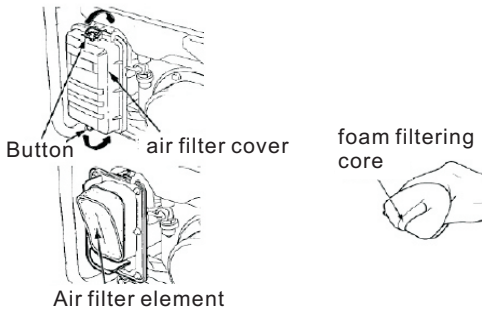
4.5.3 If the oil level is below the minimum level add oil to its proper level. We recommend the oil is in the middle of minimum and maximum levels.



Always check the API SERVICE label on the oil container to be sure it includes the letters SE.

4.6.2 Check and change the oil in your machine regularly. This will avoid all problems related to the oil being too low, too high, dirty or thick.

4.6.3 SAE10W-30 oil is recommended. The SAE viscosity grade shows other viscosities to use in different average temperatures.



4.7 Always check the fuel level before operating machinery. Use a strainer when adding fuel and make sure to always leave enough room at the top for fuel inflation to occur. Make sure you securely twist the fuel cap before operating. Do not use used, polluted or mixed fuel in the machine.

4.8 Check air filter

4.8.1 Open the clip to loosen the filter cover.

4.8.2 Move the clip and filter cover in order to remove the air filter. Do not damage the cover.

4.8.3 Remove the Filter.

4.8.4 Check the filter. If the filter is dirty, please wash it. If it is damaged then call local dealer for a replacement.

4.8.5 Install filter back into holder.

4.8.6 Install the filter cover and make sure no gap is in-between covers. If there is no filter or filter is damaged it will allow dust into the engine and cause major damages.

4.9 Lighting start

4.9.1 Check the battery wires were connected well and the

lighting was fixed well

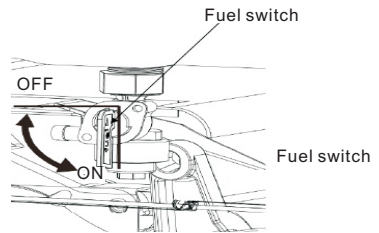
4.9.2 After the operation meet the starting air compressor start the air compressor.

After the air pressure more than 0.3Mpa,open the lift and drop switch, the lamp arrive the suitable height,then open the lighting switch on the control panel.

5.Starting

5.1 Start the fuel valve

The fuel valve is between fuel tank and the carburetor. When running the unit, the fuel valve is “on” . when stop the unit ,the fuel valve turn to “off” .

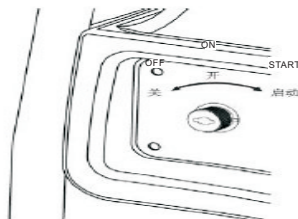


5.2 Try to drain all fuel and turn the fuel petcock to the off position when the unit will sit for a long period of time without use. This will keep the ethanol in gasoline from ruining the carb.

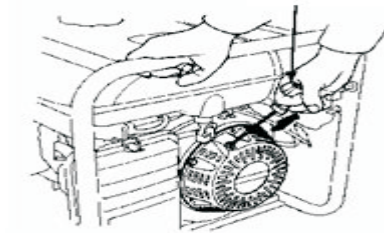
5.2.1 Electric start on the unit: Operate by turning the starting key on the control panel. Turn the key in a clockwise direction to start location until the unit starts. Return the key to “on” location if failed to start, wait 30 seconds and then try to restart the unit.

off: stop the unit start : start the unit

on : running the unit



5.2.2 Recoil start: Make sure the unit to the unit is in the “on” position. Pull the re-coil handle slightly until you feel resistance and then pull handle immediately. If failed, repeat until the unit has started. Gentle let the cord back down to avoid damaging the pull cord. Do not let the cord have friction or the cord may wear easily.



5.2.3 Remote control start

Make sure the key is in the “on” location. Then press the button on the remote control that reads “on”. If failed, retry after 30 seconds.

6 .Operation

6.1 Ambient temp: welding 14 F- 104 F

6.2 Transport and storage: -4 F- 131F

6.3 Relative humidity: when 104 F < 50%; when 68 F, < 90%.

Max altitude equals < 3280.84 feet.

6.4 Angle of inclination: the unit must be angled less than 10 degrees of the welding supply power.

6.5 If the unit has been overloaded after connecting the plug, the CB will close itself on the control panel. If this is

true please check the other equipment is running properly.
 Second check if it is overloaded.

Special Warning

1. The CB is not in control of the power of the welder.
2. Do not use the welder and air compressor at the same time or generator and welder at the same time for best performance.

6.6 Welding rods and welding leads chart: For your reference below these are the rods and cables we see the best performance.

Work piece thickness (mm)	≅ 2	3	4-5	6-12	Above 13
Welding rod diameter (mm)	1.6-2.5	2.5-3.2	3.2-4	4.0-5.0	5.0-6.0

Welding rod diameter (mm)	2.0	2.5	3.2	4.0	≅ 5.0
Welding Current (A)	40-60	60-80	90-130	160-210	200-270

7 Engine Shut Down

7.1 Remove all connections this includes generator, welding leads and air compressor outputs. Then turn off the circuit breaker. If the air compressor was in use

empty compressor tank of all remaining air. If welding please remove rod connections. Let the unit run for 2-3 minutes, then turn the key on the control panel to the “off” position.

7.2 If the unit must be transported a long distance. Make sure you stop the unit and remove any connections. Try and drain the unit of all remaining fuel in the tank and turn the fuel valve to the off position.

7.3 Make sure to inspect the unit after you have shut it down. Check the bolts and connections are all secure.

8: Maintenance

It is very important to get the best out of the product that you keep up on all maintenance. Regular oil and fluid changes will also ensure you are decreasing the amount of pollution being put into the air. In order to ensure you are maintaining your equipment we have comprised a list of daily checks procedure to be sure your unit is running at maximum potential. If any maintenance procedures need to be conducted by a professional please do so. And for any questions with these procedures feel free to contact your local service technician for step by step directions on how to do so. If the unit is being operated in a dusty area make sure to maintain these checks more frequently.

Change oil (when warm the unit, remove the oil to make sure that the drain the oil completely)

Daily maintenance cycle

Item: based on the running target month or the running hour to maintain		each time	the first month or 20h	every 3month or 50h	every 6month or 100h	every 1year or 300h
ENG oil	check the level	○				
	change		○		○	
Air cleaner filter	check	○				
	clean			○		
Sedimentation glass	clean				○	
Spark plug	check-adjust				○	
	replace					○
Valve clearance	Check -adjust					○
Combustion chamber	clean		every 500h			
Case and filter	clean					○
Fuel hose	check	○	every two years (if necessary, please replace)			

8.1 Changing the oil: Make sure you warm up the unit for a short period of time to ensure all oil residues will drain.

8.1.1 Make sure the unit is off of the ground to leave enough space to drain the oil into a container. Remove the oil plug, oil bolt and the seal.

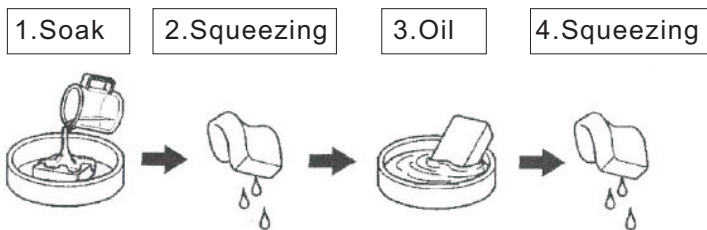
8.1.2 Make sure the oil is drained completely. Then tighten the bolt and replace the seal. To purchase a new seal please contact your local dealer.

8.1.3 Fill the unit with oil into the crankcase to the recommended level on the oil dipstick plug. Once you have reached the recommended level tighten the oil plug.

CAUTION: In order to protect the environment we strongly urge all users to drain the oil into a sealed container. Once finished please dispose of the oil into an oil waste barrel or to a local company that handles waste oil.

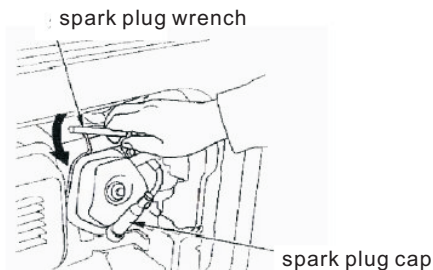
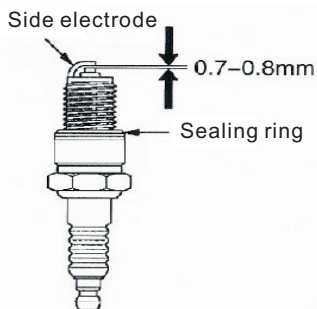
8.2 Cleaning the air filter

8.2.1 Use warm soapy water when cleaning the air filter. Make sure you dry the filter before installing.



8.3 Spark Plug Maintenance

In order to keep your 4 in 1 running at peak performance, the spark plug must be adjusted to get rid the unit of any carbon laydown. Using the wrong spark plug will damage the engine. Make sure to contacting your local service technician before changing the spark plug. Always remember to make sure the unit has had ample time to cool down before you perform any maintenance



CAUTION: If the spark plug is not fully tightened when reinstalling it could cause the engine to overheat. It is important to avoid any damage that the spark plug is tightened to the correct specifications. If you have any questions, contact your local service technician for any information.

8.3.5 Install the spark plug cap.

8.4 Battery maintenance

When running the machine, charging system will charge battery. But it is for periodically use, battery should be charged every month to make sure its service life and starting effectiveness.

8.4.1 Battery contains high corrosivity and virulent sulfacid (electrolyte). Eye or skin will be third-degree burn once contacted with it.

8.4.2 When working near battery, please put on protective cloth and eye shield. Let children far away from battery.

on the spark plug.

8.3.1 After letting the unit cool down clean a dirty spark plug by first, removing the cap on the plug. Then you must remove the spark plug with the spark plug remover tool that came in the toolbox of your unit.

8.3.2 Inspect the spark plug after removal. If the electric pole has worn or if there is visible damaged or the plug is broken, please replace the spark plug.

8.3.3 Use the plug gauge to measure the gap between the electric poles. If necessary, you can slightly bend the electric pole to adjust the gap. The gap is 0.7-0.8mm.

8.3.4 Make sure the spark plug is fully sealed. Install the spark plug by hand to avoid any over tightening. After tightening the spark plug, tighten the seal with the spark plug wrench. If the spark plug was used before installing, please re-tighten 1/8-1/4 round. If the spark plug is brand new, please re tighten by 1/2 round.

Attention: come into eye carelessly: use water in the container to wash at least 15 minutes. (water with pressure will let eye injured), then have medical treatment; Contact with skin carelessly: take off cloth and wash skin with much water, then have medical treatment; Come into body carelessly: drink a lot of water or milk, then have medical treatment.

8.5 Fuel

8.5.1 Ethanol in the fuel we purchase can have damaging effects to the fuel system. It is important that you never let fuel sit in the carburetor of the unit for longer than 30 days. If you will not be running the unit for 30 days or longer we strongly urge you turn the fuel petcock off and run the unit until the remaining fuel is burned off.

8.5.2 Metamorphic fuel will cause difficulty starting your 3 in 1. It will cause colloid sediment to block the fuel system. If you find your fuel to be metamorphic, you should maintain or replace the carburetor immediately.

8.5.3 You must never let fuel sit or be stored for more than 30 days in your product.

8.6 Taking off fuel tank and carburetor

Fuel is highly combustible and explosive. It is important to remember when handling fuel you can easily be burned or hurt. Make sure the engine is shut down away from heat, sparks and flames. Only deal with fuel issues outdoors.

8.6.1 Put a gasoline container below the carburetor and use a funnel to protect against over spilling.

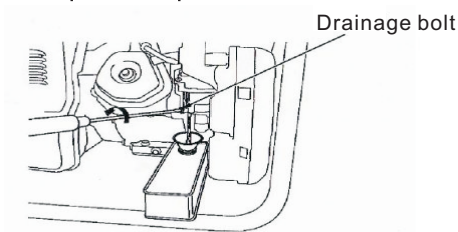
8.6.2 Loosen carburetor discharge bolt. Discharge any remaining fuel in the carburetor.

8.6.3 After discharging of all fuel into a container re tighten the discharge bolt.

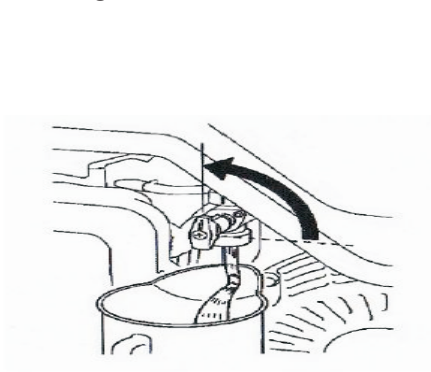
8.6.4 Put the container under the sedimentation glass and use a funnel to protect against over spill.

8.6.5 Dismantle sedimentation glass and turn fuel valve to the “on” position. Discharge fuel and remove sedimentation glass.

protect spilled



8.6.6 Dismantle sedimentation glass and turn fuel valve to the “on” position. Discharge fuel and remove sedimentation glass.



ATTENTION: When using the machine and you hear unfamiliar noises coming from the unit, it is important to stop the machine, and call your local dealer immediately.

8.7 Compressor maintenance

8.7.1 For any air compressor oil changes please refer to the engine oil change.

Do not mix or use the same model lubricating oil.

8.7.2 Compressor oil change should reference engine oil change step 8.1. Use HS-13# compressor oil in the winter. Use HS-19# compressor oil in the summer. Open the drain oil bolt which is located under the main fuel tank. After the oil has fully drained tighten the bolt and then add oil.

8.7.3 Inspect the oil level before use. Do not exceed or add less than the red line level.

8.7.4 Before each use of the air compressor drain the air compressor tanks of air and condensed water build up. The compressor petcocks are located at the bottom of the tanks.

8.7.5 Make sure you clean your air filter every month. If in poor working conditions you should inspect it every two weeks. Cleaning or changing the air filter should be based on oil contamination or block condition.

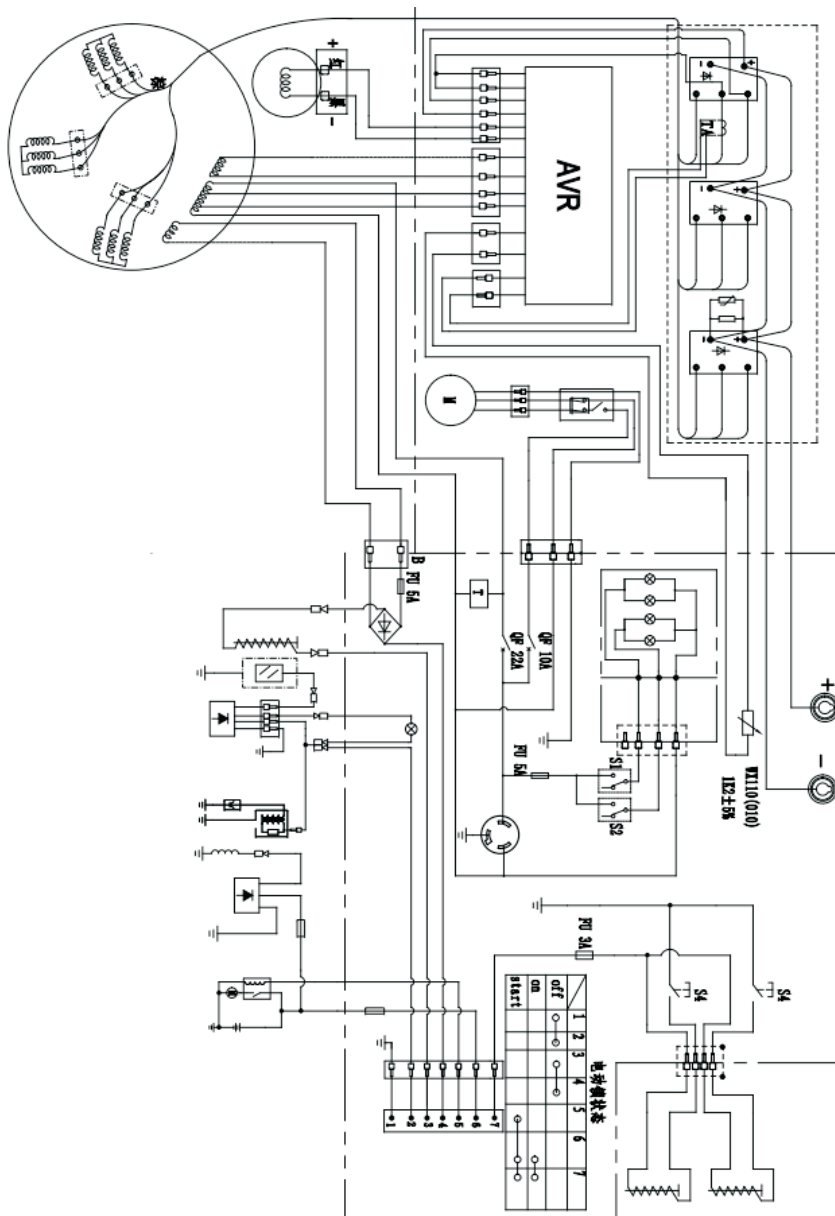
9.Common fault and processing methods

fault phenomenon	fault cause	failure process
Could not start	<ol style="list-style-type: none"> 1. battery low voltage 2. fuel cock not open 3. Chock valve not open 4. Low oil level 5. Oil warning system problem 6.Bad fuel oil quality 7.Oil circuit block 8.Ignition system problem 9.Carburetor problem 	<ol style="list-style-type: none"> 1. charge battery(only for electric start) 2. Open fuel cock 3. Refer step 3 4. Check oil level, add to the level 5. Pull up warning wire, restart to confirm (after confirm should stop machine) 6. Change fuel oil 7. Clean oil circuit 8. Check and clean spark plug, check ignition coil. 9. Clean or repair carburetor
genset no output	<ol style="list-style-type: none"> 1. voltage meter broken 2. Alternator leading wire and control panel wire fall off or not connect well. 3. Brush and slip ring do not connect well or disconnection 4. AVR control panel broken 5. Short circuit, open circuit or grounded wire 6. Circuit breaker not open 	<ol style="list-style-type: none"> 1. After confirm, stop machine and replace 2. Check and repair 3. Clean slip ring or replace brush or connect wire 4. replace 5. Inspect and repair, or replace alternator winding. 6. open circuit breaker (only limited to assistant power)
output voltage high or low	<ol style="list-style-type: none"> 1. High or low rotate peed 2. AVR issue 3. sample wire fall off or loose 	<ol style="list-style-type: none"> 1. Adjust rotate speed 2. Replace AVR 3. reconnect
output	<ol style="list-style-type: none"> 1. Rotate speed high or low 	<ol style="list-style-type: none"> 1. Adjust rotate speed
current high or low or can not adjust	<ol style="list-style-type: none"> 2. AVR issue 3. Sample mutual inductor winding fall off or loose 4. Short circuit, open circuit or grounded winding 5. MDS or rectifier diode short circuit or grounded 	<ol style="list-style-type: none"> 2. Replace AVR Replace mutual inductor winding or connect 3. Check and repair, or replace alternator winding 4. Replace MDS module or rectifier diode

compressor part overheat temperature	<ol style="list-style-type: none"> 1. Working pressure high 2. Not use correct lubricating oil 3. Ambient high temperature or poor ventilation 4. compressor valve block air leakage or damage 5. compressor can not stop automatically 	<ol style="list-style-type: none"> 1. reduce working pressure 2. reference this manual and use correct compressor oil 3. Shift to good ventilation place 4. repair valve block or replace compressor 5. inspect or replace safety valve or pressure relay.
compressor heavy vibrate	<ol style="list-style-type: none"> 1. Discharge pressure high 2. compressor positioning bolt loose or installation out of level 	<ol style="list-style-type: none"> 1. reduce discharge pressure 2. reposition
compressor pressure value can not get to go up or down rated pressure	<ol style="list-style-type: none"> 1. Gas circuit not sealed well 2. vent valve air leakage 3. pressure gage broken 4. safety valve air leakage 5. purge valve air leakage 6. compressor stator or rotor short circuit 7. compressor valve block air leakage or damage 	<ol style="list-style-type: none"> 1. Inspect or re-seal 2. replace 3. replace 4. replace 5. replace 6. replace 7. repair valve block or replace compressor
gasholder pressure high or safety valve alerting	<ol style="list-style-type: none"> 1. safety valve work pressure high 2. safety valve damage 3. pressure relay broken 	<ol style="list-style-type: none"> 1. readjust pressure working value 2. replace 3. replace
alternator smoking	<ol style="list-style-type: none"> 1. Rotor and stator rub 2. overload 3. winding short circuit or grounded 4. MDS or rectifier diode short circuit or grounded 	<ol style="list-style-type: none"> 1. Replace or repair 2. Remove some load 3. Replace alternator winding 4. Replace MDS module or rectifier diode
air compressor do not work	<ol style="list-style-type: none"> 1 alternator no output 2 compressor damage 3 bottom manual control switch is close 4 pressure relay broken 5 special circuit breaker on control panel work 6 thermal protector at alternator bottom work 	<ol style="list-style-type: none"> 1. inspect alternator and AVR 2. contact supplier to repair or replace 3. open manual control switch 4. replace pressure relay 5. inspect and recover 6. recover or replace

The lighting can't rise and drop	<ol style="list-style-type: none">1.the Solenoid valve damaged2.short circuit3.the air pressure was not enough4.the drop and rise switch on the contrl panel damaged5.air leakage	<ol style="list-style-type: none">1.change solenoid valve2.check the wires and reconnect3.Adding the air pressure and make it more than 0.3Mpa4.Change5.Change the parts
----------------------------------	---	--

10.Schematic diagram





KOHLER[®]
ENGINES