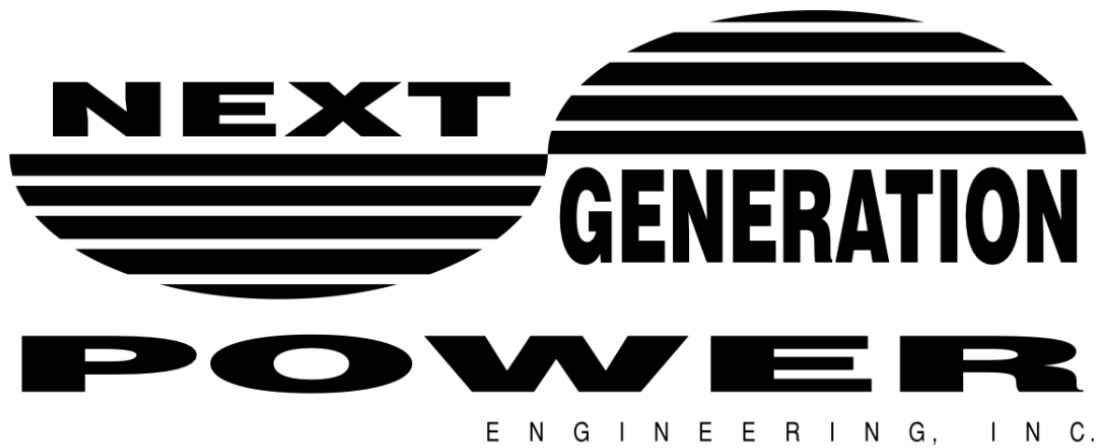




OWNER'S MANUAL

UCM3-9.5

S/N _____

General Safety Precautions

CAUTION

Unless your **GEN-SET** has been specifically ordered and built as an ignition protection certified unit, this set must not be installed in gasoline powered vessels, or where any flammable or explosive gases are present. If your unit is ignition protection certified, there will be a decal on the starter indicating that the unit is protected. If you have any doubt, please call Next Generation Power at 888-463-9879 before installation.

Please read the entire owner's manual before attempting to install or run your generator set. Safe and proper operation can only be achieved by following the installation, operating and maintenance directions that are laid out for you.

- Always have qualified electrical servicemen do any a.c. connection and service to avoid any possible danger of electrical shock or damage to other electrical equipment onboard.

Frequently inspect all power cables and wiring, initially for proper gauge and connection

- and later for signs of fraying or deterioration. Remember to use extra caution when handling any electrical equipment as neglect, misuse or deterioration can cause dangerous or deadly electrical shock or injury.

Never operate the generator set with any guards or covers removed.

-
- Engine must be completely stopped and fully cooled down before any maintenance or service can be performed.

Children and pets should be kept away from the generator set at all times.

-
- Never clean your generator set with running water, unit should be cleaned only when stopped with a damp or dry rag on outside surfaces only.

Disconnect battery from Gen-set before performing maintenance and service procedures.

-
- As well as following the directions given in this owner's manual all installations should follow the recommendation of:

A.B.Y.C., American Boat and Yacht Council
N.F.P.A. National Fire Protection Association
U.S. Coast Guard Regulations

Index

UCM2 - 5.5 Specifications	1 - 2
General Layout - Front View.....	3
Dimensions.....	4-5
General Layout - Side View.....	6
Selecting A Location.....	7
Mounting.....	8
Ventilating.....	9-10
Sound Proofing.....	11
Fuel System.....	12
Cooling System.....	13
Exhaust System.....	14
Vernalift Installation	15
D.C. Electrical.....	16-18
A.C. Electrical.....	19-22
Initial Start Up Procedure.....	23-24
Maintenance.....	25-26
Load Testing.....	27
Troubleshooting.....	28-31

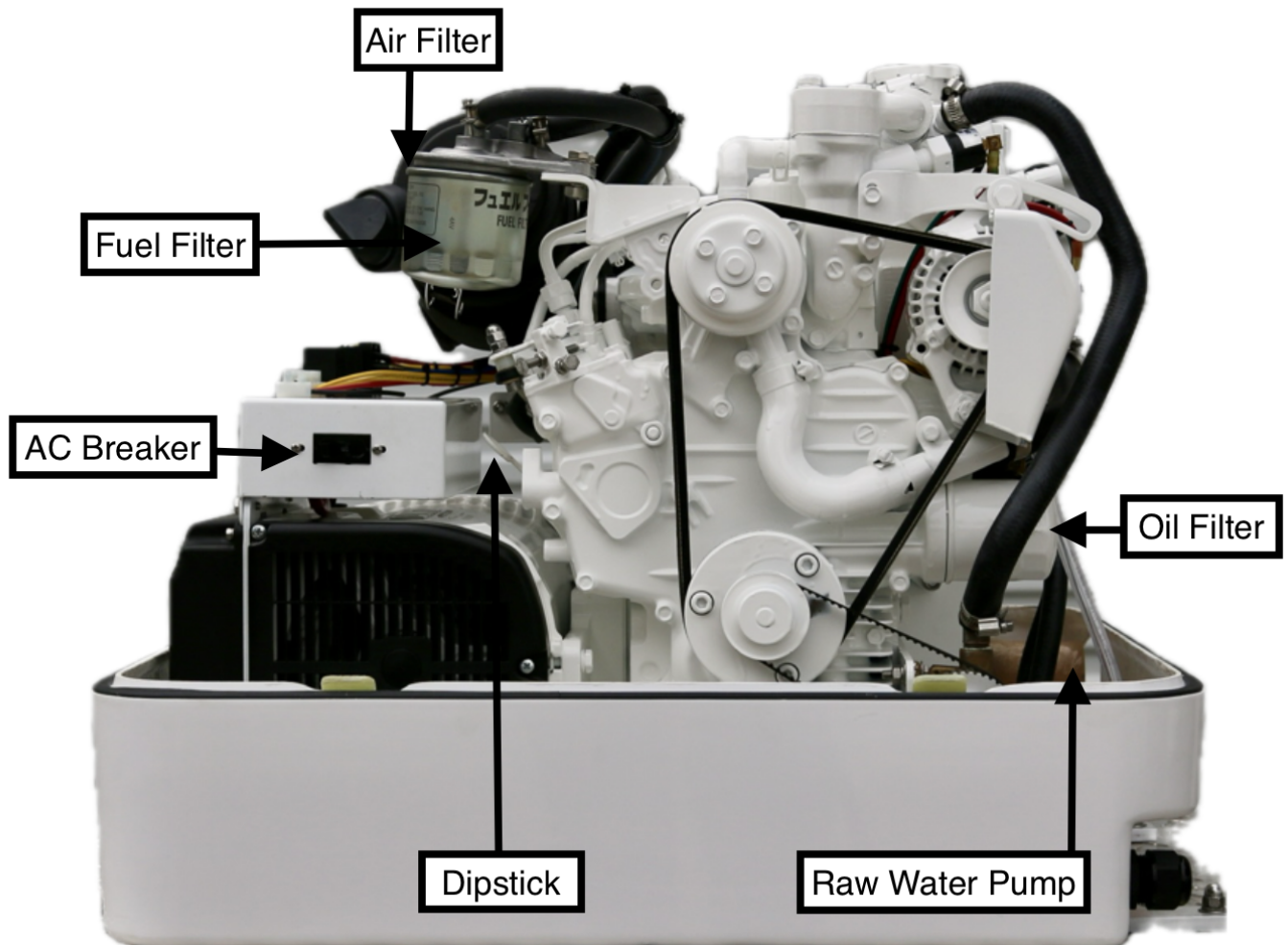
Specifications

Type.....	Vertical water cooled
4 cycle diesel engine	
# of cylinders.....	3
Bore x stroke [in.].....	2.83 x2.90
Displacement [cu. in.].....	54.80
SAE net intermittent (HP/rpm).....	19.0 @ 2800
Combustion system.....	Three Vortex
Compression ratio.....	24:1
Fuel injection pump type.....	Bosch “mini” type
Nozzle type.....	Bosch “throttle” type
Cooling system.....	Fresh water heat exchanger
Lubricating system.....	Forced lubricating with filter
Fuel.....	ASTM #2 diesel or equivalent
Lubricating oil.....15W-40.....	Quality better than API service CC class
Fresh water capacity (US Qt).....	3.4
Lubricating oil capacity (US Qt).....	4.0
Measurement (L x W x H) in.....	27.5 x 23.5 x 23
Dry weight (lbs.).....	330 lbs.
Starting system.....	12V Battery
Charging System.....	Optional
Fuel Line diameter.....	5/16”
Return line diameter.....	1/4”
Raw water diameter.....	5/8”
Exhaust diameter.....	2"
Output Voltage.....	120/240
Output Amps Intermittent.....	80/40
Output Amps Continuous.....	75/38
Output Watts Intermittent	9500
Output Watts Continuous	9000

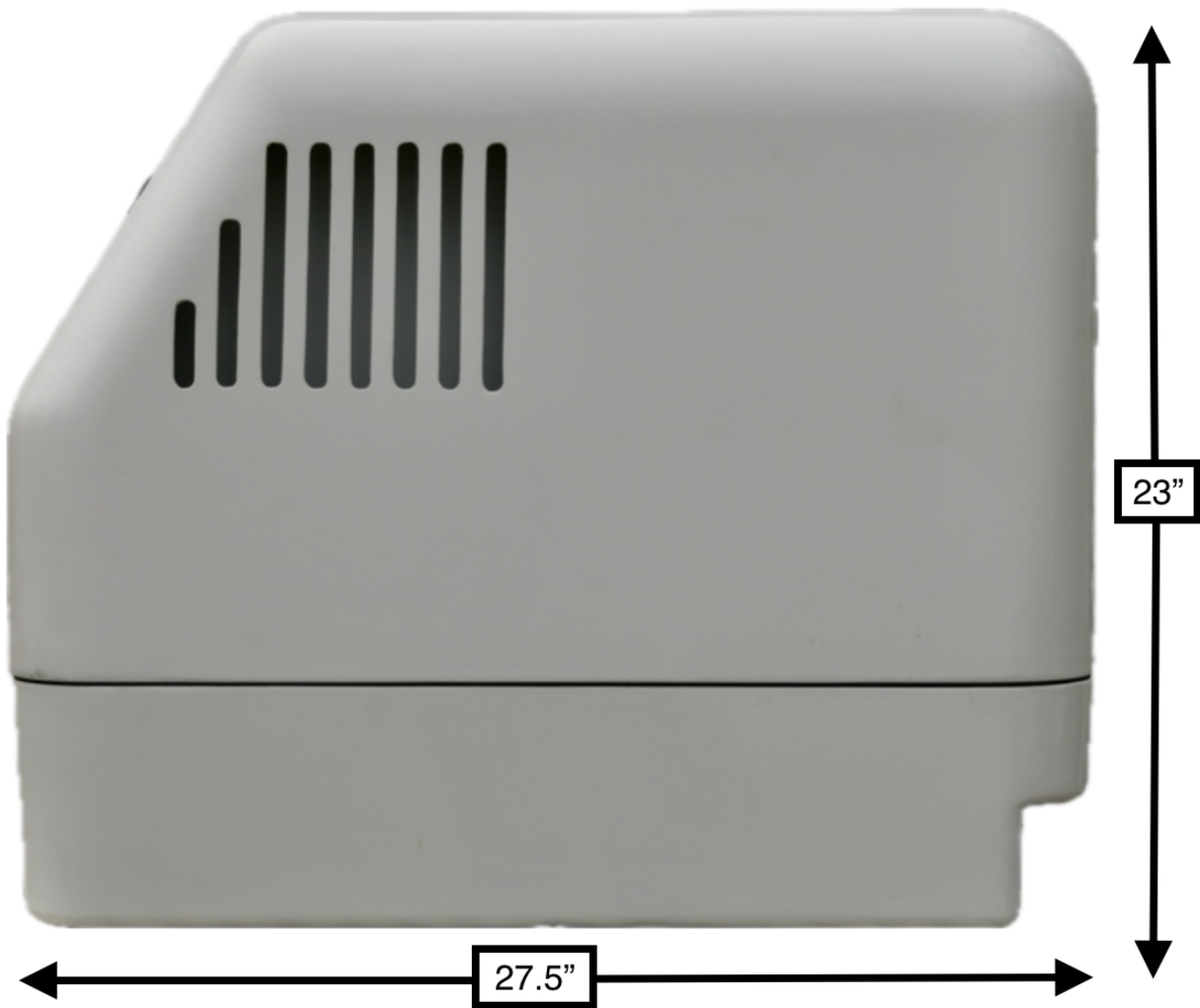
Specifications

60HZ Rating Intermittent.....	9.5 k.w.....	9.5 KVA.....	1.0 P.F.
60HZ Rating Continuous.....	9.0 k.w.....	9.0 KVA.....	1.0 P.F
50HZ Rating Intermittent.....	9.5 k.w.....	9.5 KVA.....	1.0 P.F
50HZ Rating Continuous.....	9.0 k.w.....	9.0 KVA	1.0 P.F
Voltage/Frequency Regulation.....	+ 5%		
Recommended Battery Size.....	100 A.H. or Larger		
Total Air Required.....	150 CFM		
Fuel Pump Lift MAX.....	3.0 FT		
Water Pump Lift Max	4.0 FT		
Cooling water Flow.....	3.0 Gal./Min		
Fuel Consumption Max	(.80 Gal/Hr)		
Fuel Consumption Avg.	(.40 Gal/Hr)		

General Layout - Front View



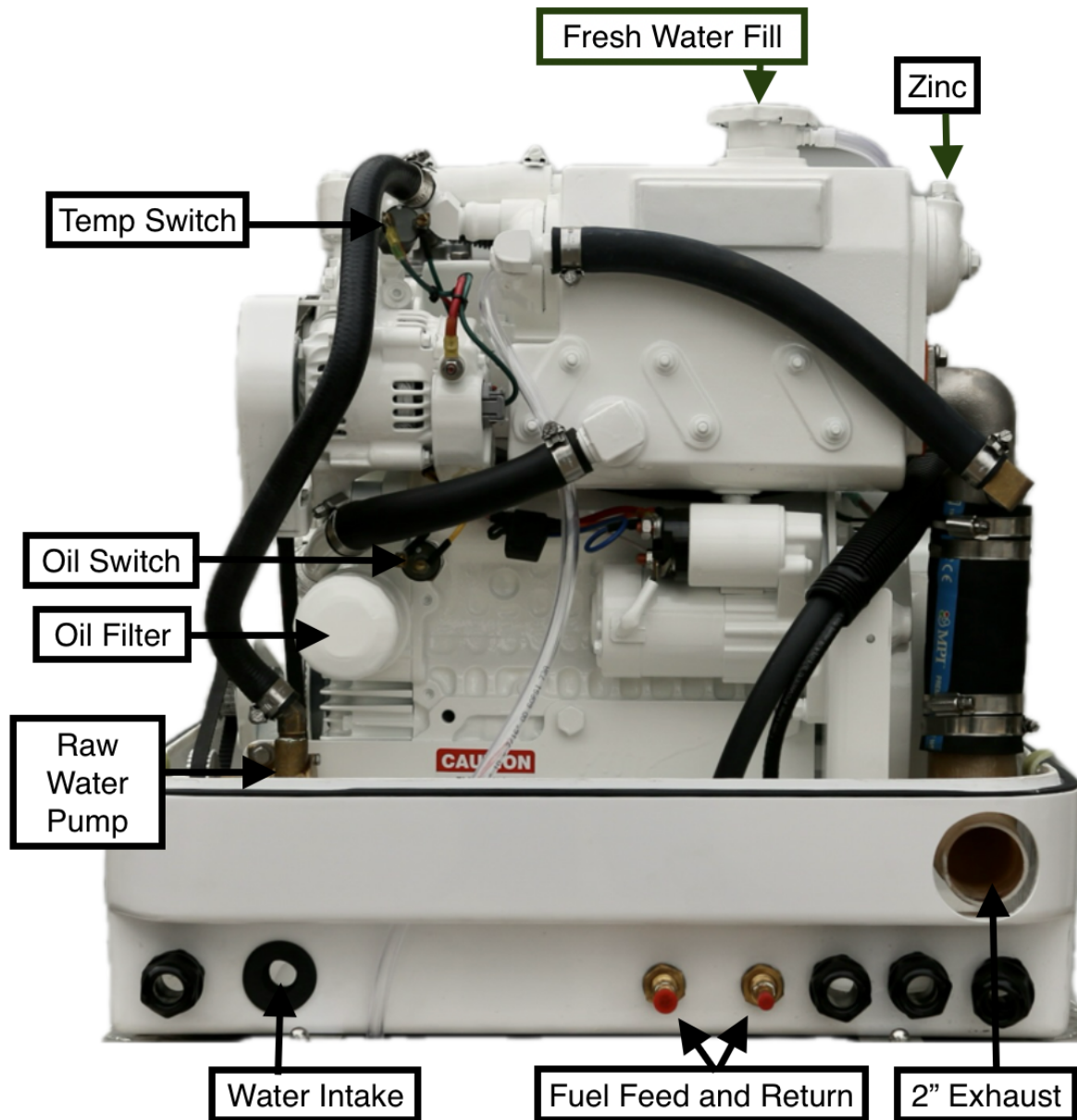
Dimensions



Dimensions



General Layout - Side View



Selecting a Location

The following factors should be considered before selecting the location where your generator will be installed.

Proximity to Living Quarters

If several locations are available it is advisable to install the set furthest away from living and sleeping quarters to keep noise levels in these areas to a minimum.

Dryness of Location

Keep the generator from under outside hatches where water (especially salt water) may drip or splash.

If a location under a hatch is chosen, provisions should be made to divert and water away from the set.

REMEMBER WATER AND ELECTRICITY DO NOT MIX

Ventilation

Air must be available to the generator for both combustion and alternator cooling, therefore you should try to select a location that already has adequate air flow or where inlet and exhaust fans can be installed.

Plumbing

Consideration must be given to fuel, raw water, exhaust and electrical connections.

Servicing

Unit must be accessible for regular and long term maintenance.

Space

There must be enough space around all sides of the unit for movement on the isolation mounts. One or two inches on all sides with extra room on the front side for maintenance would be the minimum required.

All the above factors should be considered before deciding on the permanent location of your unit. Keep in mind while selecting your location that the easiest place to install the set may not be the best long term home for the unit. It is always better to spend more time routing the plumbing etc....initially than to select an easy spot where the unit can not be serviced later, or is under a leaky hatch where it will rust away. In most cases where space permits the engine room is usually the best place for a generator as it usually has adequate ventilation, access to plumbing, sound proofing etc.

Mounting

Due to wide variations in boat styles and designs, it is impossible to give a complete description of any one particular installation. Following are guidelines to which one may follow to achieve an acceptable and safe installation.

The UCM3-9.5 is a very rugged design with a fully pressurized oil delivery system allowing continuous running at angles up to 20 degrees in any direction. It is slightly advantageous to mount the set on the vessels centerline but if not possible mount where otherwise suitable.

No matter where the unit is placed it must be securely attached to a platform, rails or stringers. If a flat relatively level platform is not available one should be constructed out of a minimum 3/4" thick marine grade plywood or 1/4" aluminum plate. Base must be lagged, bolted or glassed securely to the stringers.

Through bolting is the best way to secure the unit to the base, 5/16" diameter stainless steel bolts with large washers should be used. If you have a wood base and do not have bottom access for through bolting, 5/16" diameter stainless steel lag screws with large washers may be used. If at all possible when lag bolting a unit in place, try to align as many mounting holes over the stringers as possible so that extra long 2" or 2.5" lags secure the mounts through the base to the stringers. A spot of silicone or marine caulking on the lag screws works well in sealing moisture out of the wood where lags penetrate.

Ventilation

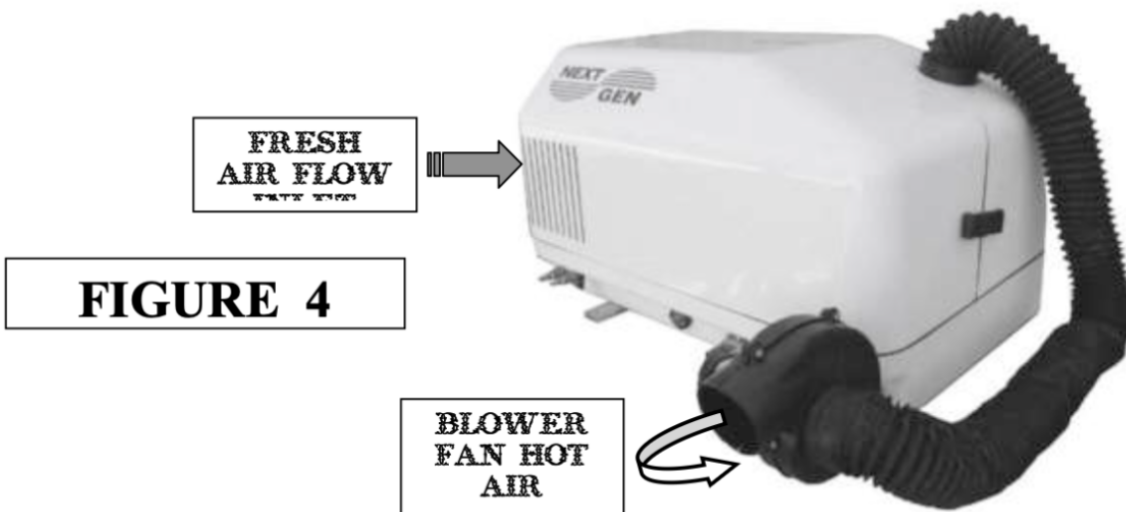
As previously mentioned, the generator needs air for both combustion and for alternator winding cooling. By far alternator cooling requires the most air (approximately 125-150 CFM) and since it is not consumed it must be evacuated from around the unit.

If the generator is installed with the enclosure in a reasonably sized engine room with good natural air flow, then the supplied blower should be adequate. The blower should be removing the hot air from the enclosure and should evacuate the hot air from the generator environment. It is possible for excessive temperatures to be reached in the same engine room under various conditions, such as very hot climates, when the vessel is not in motion, or when main engines are running while the generator is running.

The only sure way to know if there is adequate air flow is to monitor the engine room temperature on a hot day under various operating conditions. Temperature should be checked near the black plastic air inlet of the alternator and should not exceed 140 degrees Fahrenheit.

If the unit is to be installed in a smaller separate enclosure or compartment, an opening of 25-35 square inches is needed to admit air in. This combined with a blower fan of 125-150 CFM or more to force air out is required.

Caution - If you are installing the generator in a gasoline powered vessel all electrical components must be Ignition Protection Certified.



Sound Proofing

For those wanting the ultimate in quiet performance, Next Generation Power offers an optional sound dampening fiberglass enclosure that offers excellent noise suppression.

The enclosure also offers limited splash protection from liquids. This does not mean it is a water proof enclosure, since it was designed more for noise reduction. If space limitations allow for the added enclosure dimensions, you will find the sound enclosure a worthwhile investment.

Proper ducting is required to allow for air flow in and out of the enclosure to maintain proper cooling of the windings. The enclosure has clever design elements for the attachment of fuel hoses, raw water, exhaust hoses and cables.

In some vessels, critical space requirements may not allow for the addition of an enclosure, in this case consideration may be given to using sound dampening materials with appropriate venting and ducting to accomplish the task of reducing noise.

When the generator is placed near living quarters or under floorboards, a reduction in noise may be found by remote mounting an air intake silencer as far away as possible using flexible intake hose. Consult with NextGen for other recommendations if needed.

Fuel System

The fuel filter supplied is a fine 4 micron secondary filter and must be used in conjunction with a customer supplied 20 or 30 micron primary Racor filter. All filters should be mounted in a spot that is easy to access for servicing. Make sure to leave enough room below the filter bowl for easy draining and changing of filters.

It is best to use a separate pick up and return at the fuel tank for the generator as well as a dedicated primary filter. This generally will eliminate fuel starvation problems due to suction created by other engines running off the same fuel supply.

When it is not feasible to run a separate fuel pickup then it may be possible to use a fuel manifold or a second fuel outlet on a main engine primary filter. If you do this, both the main engine and the generator should be carefully monitored after initial installation to determine that fuel starvation is not happening. Fuel starvation would show up as a loss of speed and frequency on the generator and would typically happen during high load conditions.

A minimum of 5/16" diameter marine diesel approved fuel line should be used from the primary filter to the secondary filter and to the engine.

1/4" diameter fuel line should be used for the return line. The return should run from the engine back to the fuel tank and not tied into the fuel system as air would be re-circulated and cause intermittent shut down.

Caution: Do not use ether or any other starting fluid or severe engine damage will result!

Note: Most initial run problems and intermittent shut down situations are due to fuel supply leaks introducing air into the system, even small amounts of air will cause erratic running or immediate shut down. All fittings should be double checked for tightness, fuel pick ups should be inspected and hose clamps secured.

Always use hose clamps of the correct size, too large of a clamp reduced to a very small size will not remain completely round and air leaks will result.

Hint: When there is excessive lift or a long run from the fuel supply tank to the generator, there is a small possibility of fuel starvation and a greater chance of air entering the fuel system. If you have a situation such as this a secondary fuel pump mounted near the tank pushing fuel to the unit will help cure this situation

Cooling System

The Next Generation Ultra Compact 2 and 3 cylinder machines are completely fresh water marinized with the following components: Direct coupled self priming raw water pump, water cooled exhaust manifold, heat exchanger built into manifold/expansion tank, stainless steel exhaust elbow.

Fresh water anti-freeze mix is added to the engine through the cap at the top of the heat exchanger tank. Mixture should just cover the heat exchanger tubes leaving 1/4" - 3/8" of space for expansion. In warm climates we recommend approximately 30 % anti-freeze and 70% water mix. If you are operating in cold climates where you have danger of freezing up to 50% antifreeze may be used. If more than 50% antifreeze is used, overheating will almost always result.

Excess water may flow out of the overflow tube located below the pressure cap, this is normal and should only happen during first warm up after filling. A coolant catch can may be used to keep this excess coolant from getting into the bilge.

Because of the cooling design you can see operating temps of 170 degrees to 210 degrees F. These engines are very thermally stable and can be run at temperatures up to 240 degrees F.

Raw water is circulated through the heat exchanger and out the exhaust by a direct driven self priming pump located at the front side of the unit (see Fig. 1). A clean constant supply of raw water must feed the pump, generally via a through-hull, sea cock, and sea strainer. Raw water supply fitting is 5/8" diameter so a through-hull and strainer of 3/4" -or larger is fine.

Scoop type pickups should never be used as water will be forced through the pump and into the exhaust system while the vessel is in motion. This is very dangerous as the exhaust will eventually fill and raw water will back up into the engine through the exhaust valve. Catastrophic failure will result.

***NOTE:** All raw water hose fittings and clamps should be of an approved marine grade with all connections double clamped. Any bad connections or loose clamps could cause flooding and sinking of the vessel.

If the top of the heat exchanger is less than 10 inches above water line there is a danger of water siphoning through the raw water pump into the exhaust. This must be corrected by installing an anti-siphon valve or siphon brake into the raw water plumbing. The easiest place to install the siphon brake is between the raw water pump and the heat exchanger. The hose that is in place from the factory is removed and the siphon brake is installed according to the manufacturer of the brake. Usually the siphon brake is mounted 18 - 24" above water line to be effective.

Exhaust System

The water cooled exhaust mixer is 2" OD and should be used in conjunction with a water lift muffler and 1/5" ID approved marine grade exhaust hose. All connections must be double clamped.

It is possible to run the UCM3-9.5 without a water lock providing the entire exhaust system runs downhill. Exhaust noise without a water lock muffler will be markedly higher as well. The best results as far as noise level is concerned are achieved by using a water lock muffler and running the exhaust system out through the transom 2-3 inches above the waterline.

We have seen systems run up to 20 feet of 2" ID hose with no back pressure problems. There are many different brands and styles of water lock or water lift mufflers available that will work fine. At times your choice may be based on physical size or inlet/outlet arrangements.

We at Next Generation Power have had excellent results using the heavy-duty fiberglass units made by "Centek". Because of the low outlet on the UCM3-9.5, Centek model (1500026) works very well as it has a low side inlet with a top outlet. Top inlet with top outlet versions also available.

Most exhaust situations are shown in the following diagrams supplied by Centek. The most important consideration is that the exhaust run down hill into the water lock muffler so that exhaust flooding does not occur.

Vernalift Installation

FIG. 1 ENGINE INSTALLATION ABOVE WATERLINE

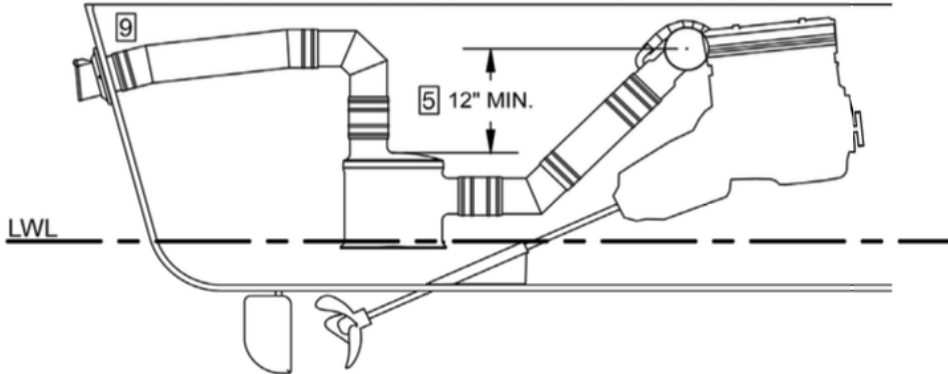


FIG. 2 ENGINE INSTALLATION BELOW WATERLINE WITH SPACE FOR MUFFLER BELOW ENGINE

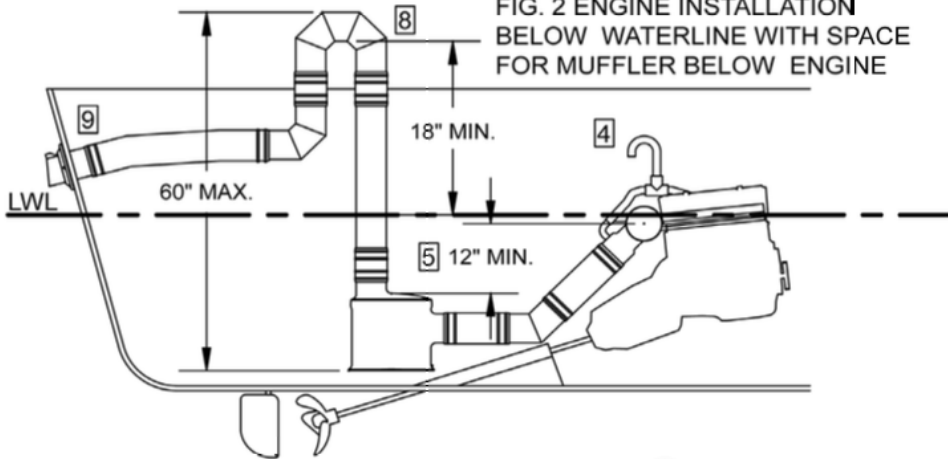
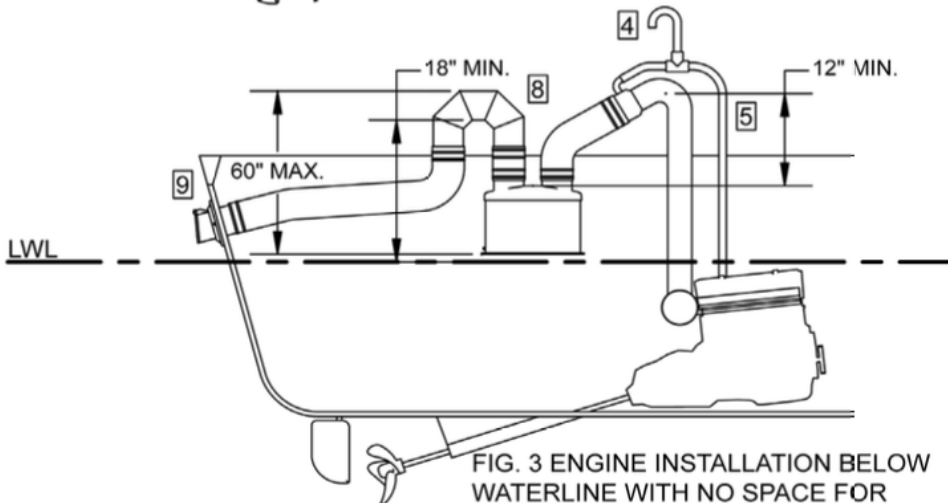
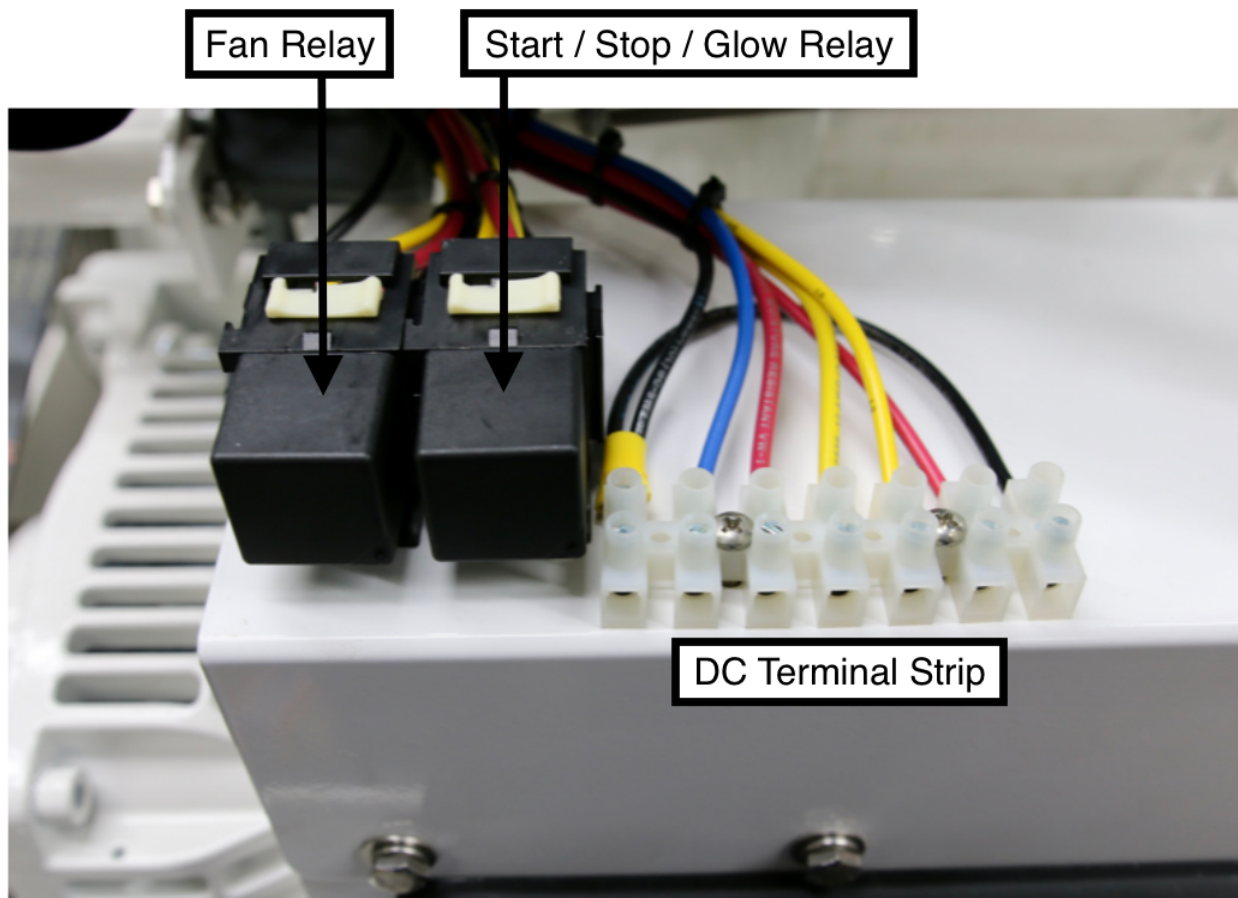


FIG. 3 ENGINE INSTALLATION BELOW WATERLINE WITH NO SPACE FOR MUFFLER BELOW ENGINE



CEN 0

DC Electrical



D.C. Electrical

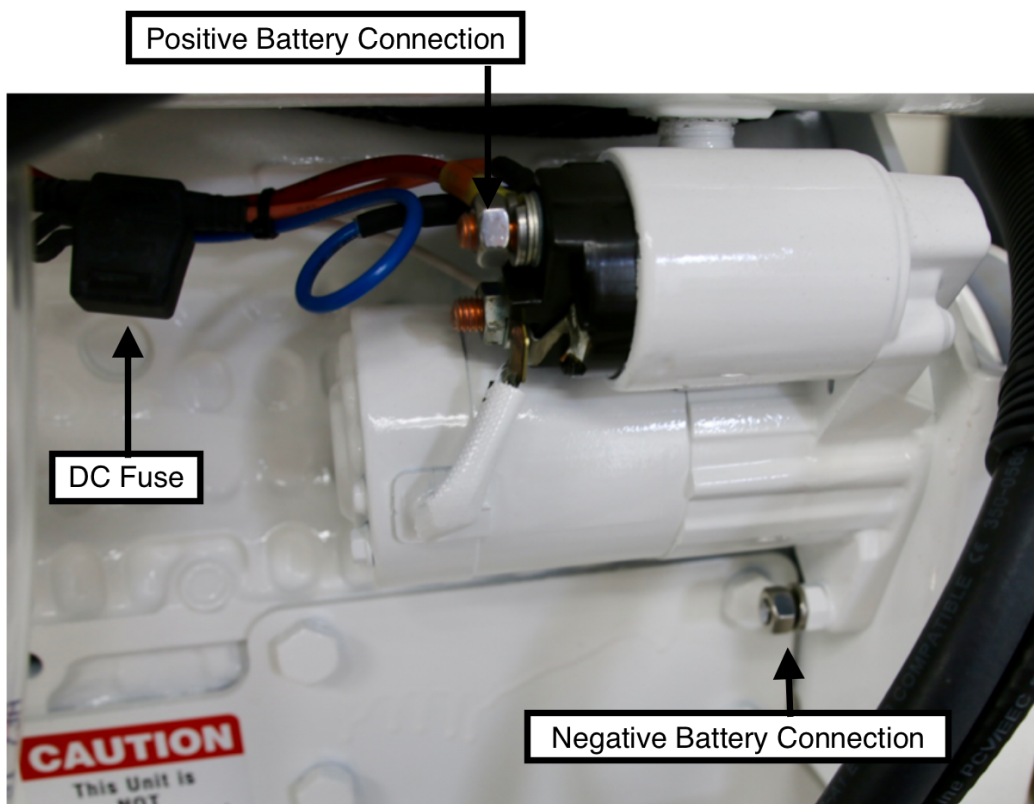
The UCM3-9.5 uses a very simple 12 volt DC system for starting, running and shutdown systems. The 9.5 comes with a 35amp DC alternator for charging the dedicated start battery.

If the unit is ordered Ignition Protection Certified it will not have the DC alternator installed.

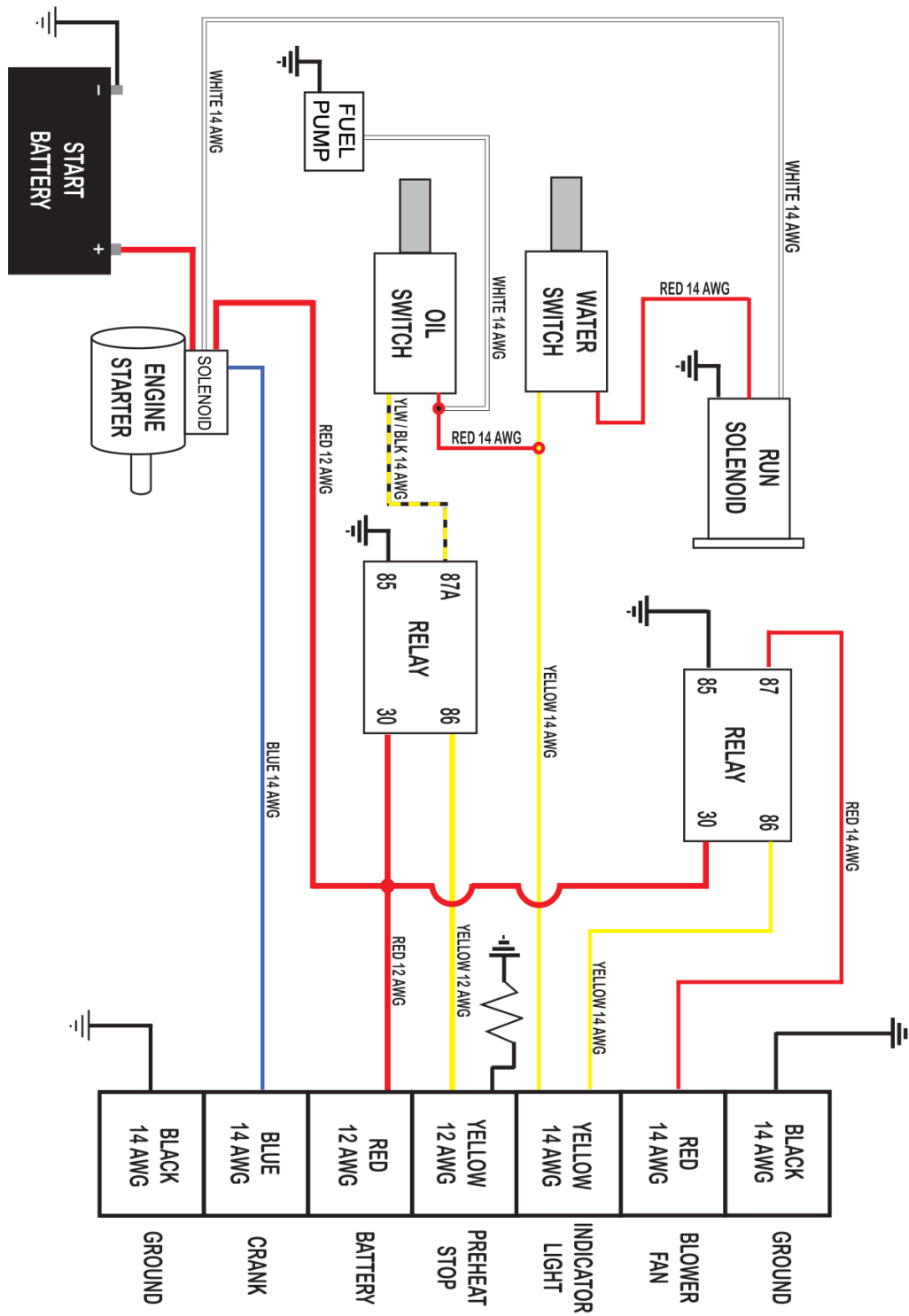
While the generator is running it uses 13-15 amps of 12 volt DC current (with exhaust blower) to operate the fuel solenoid and fuel pump.

Battery cable size should be determined by length of run, usually 4 gauge is adequate. Battery positive is connected to the top lug on the starter solenoid. Battery negative should be connected to a starter mounting bolt.

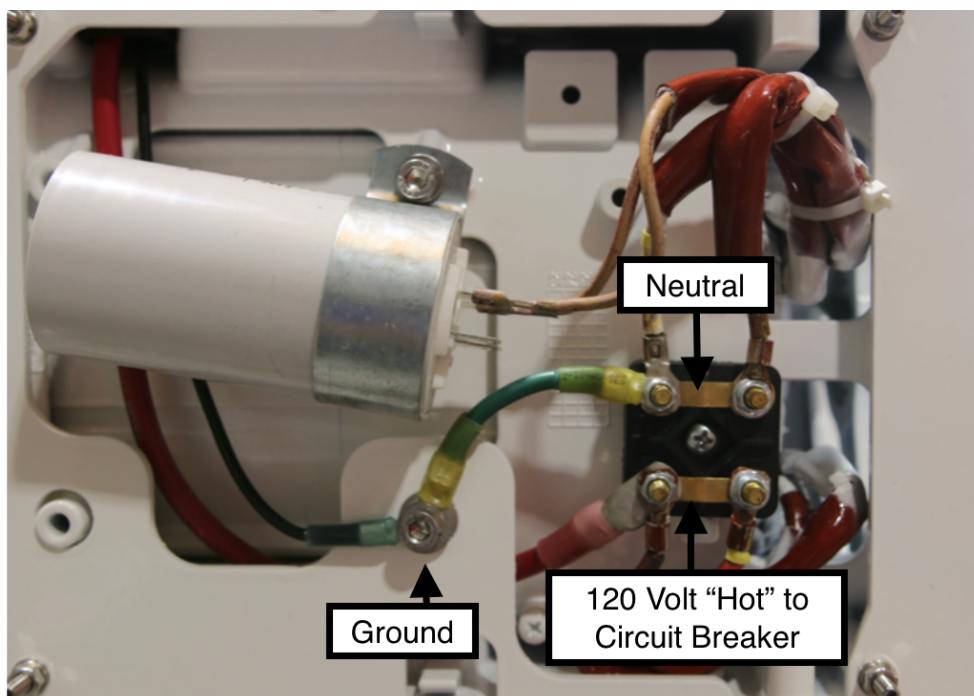
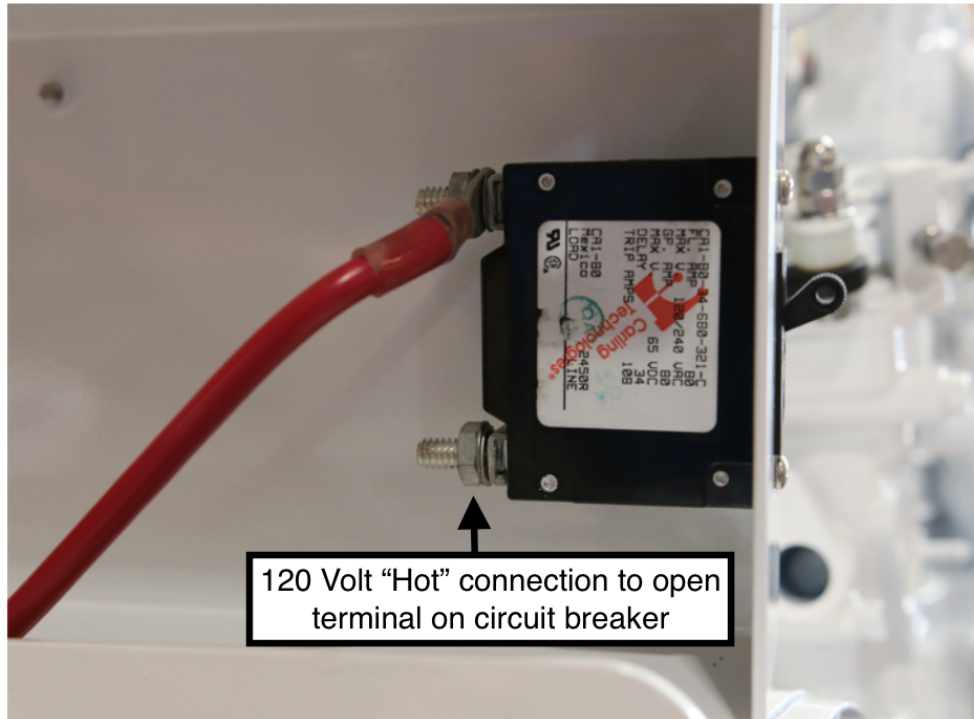
The remote panel wiring harness is color and size coded and should be connected to the DC terminal strip.



DC Wiring Diagram



AC Electrical Connections 120 Volt



AC Electrical

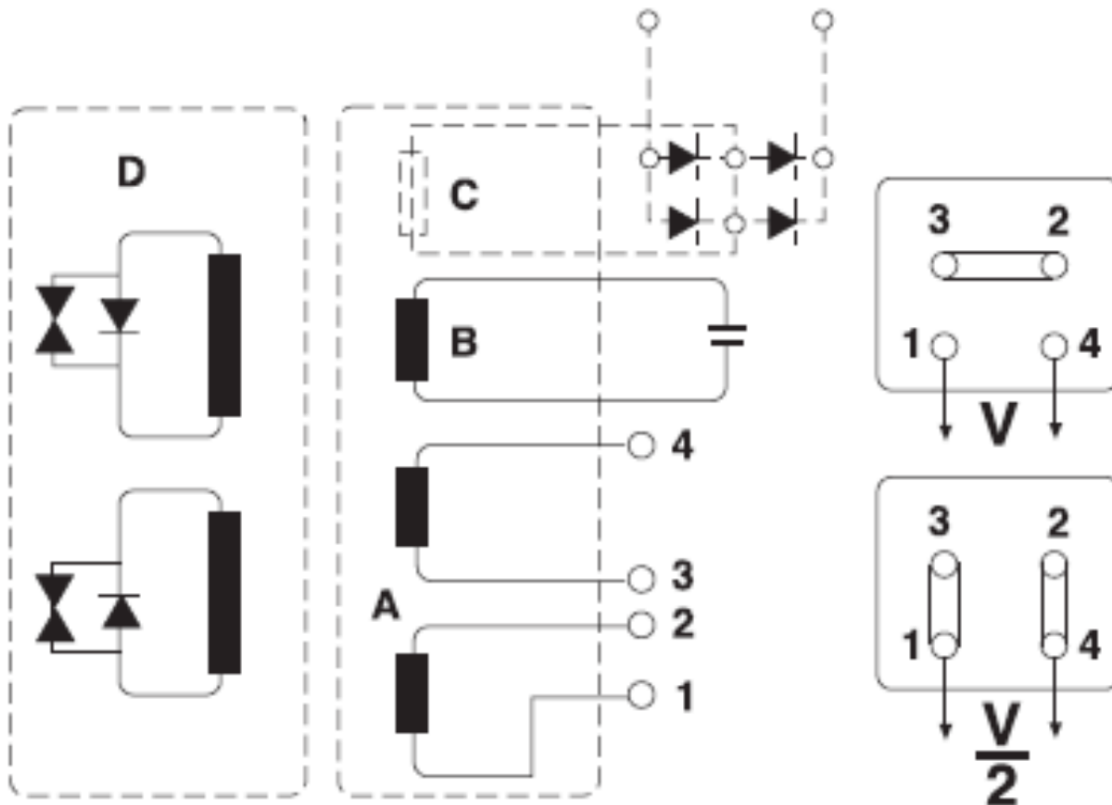
*All A.C. Electrical connections should be made or inspected by a licensed marine electrician.

Standard 120V 60Hz Output

Unless otherwise specified the UCM3-9.5 is manufactured using a standard four wire capacitor regulated brushless alternator. Standard wiring is 120V 60Hz output.

Access to the AC output connections is made by removing the 3 nuts holding the end cover in place.

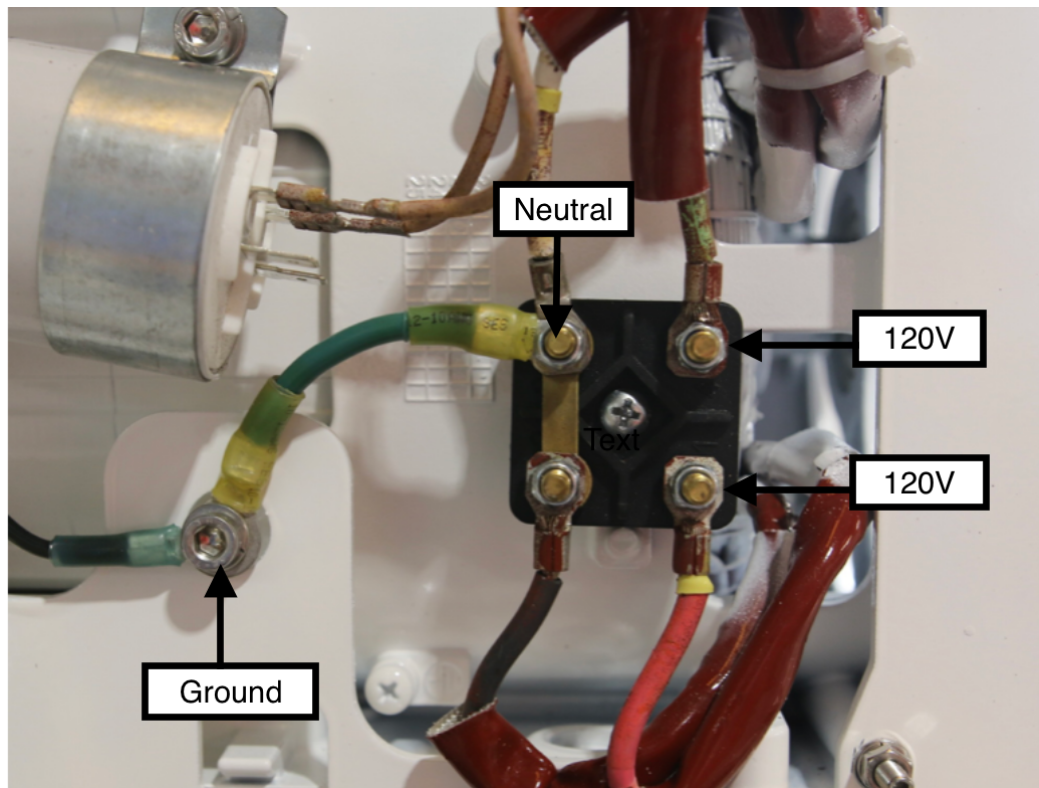
The hot leg of the vessel should be connected to the unused output terminal of the breaker. Ground and neutral wires should be connected to the neutral / ground lug.



120/240 Volt

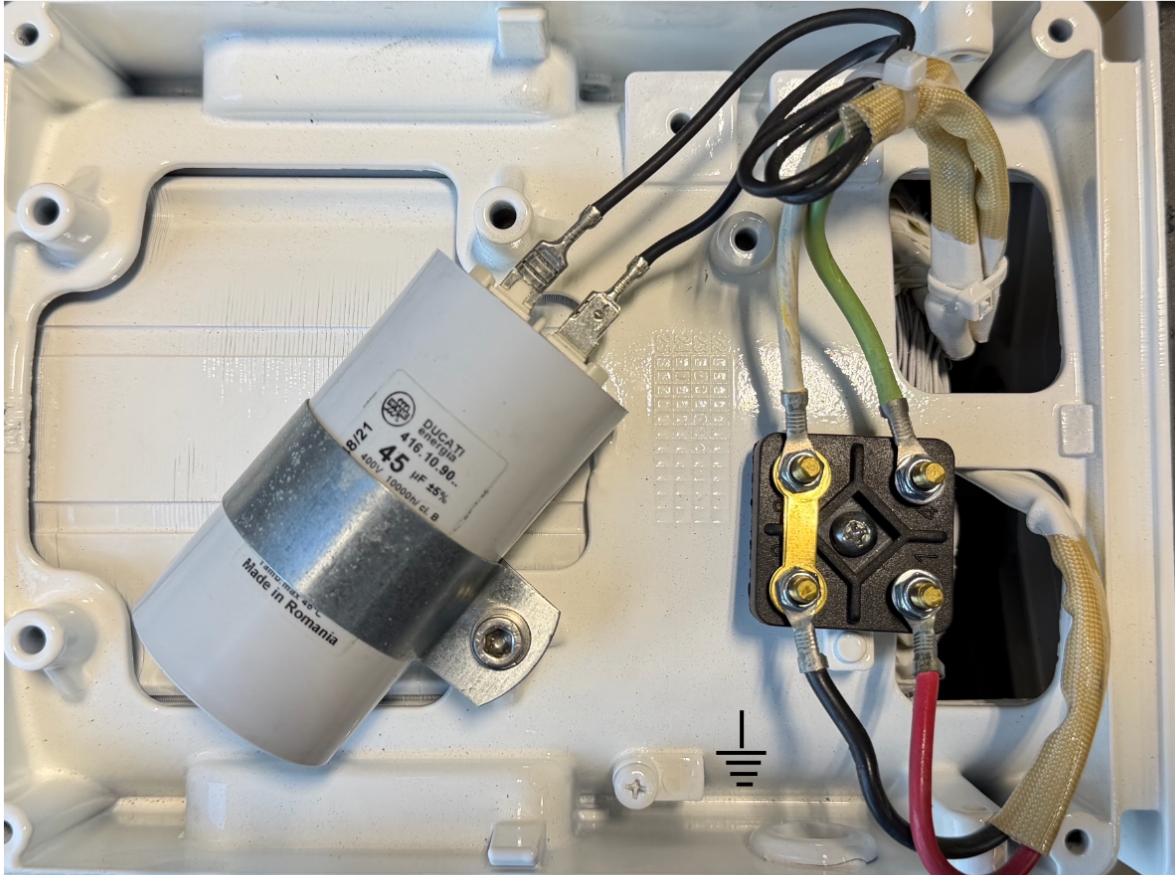
When connecting for 240V you attach your hot leads to the two open terminals on the circuit breaker.

Connect the neutral and ground to the appropriate location



Optional 50Hz 230 Volt Output

If your UCM3-9.5 was factory ordered as a 50hz 230 volt unit then follow the instructions below.



Bond from Green wire terminal to your chassis lug.
This makes Red wire terminal hot, Green wire terminal Neutral.

Hot (connected at generator to red terminal)
Neutral (connected at generator to green terminal)
Safety Ground (connected at generator to your chassis lug)

Initial Start Up Procedure

Initial checks and operations

Check oil and coolant levels

Double check all electrical connections to make sure they are correctly positioned and secured.

Rock the generator back and forth on its mounts one final time to make sure the unit is not hitting anything and to be sure that all hoses and lines will have adequate slack to allow the unit to move.

Turn off the main and auxiliary breakers on the vessels panel.

Open generator sea-cock and fuel shutoff valves.

Priming the fuel system

The fuel pump can be energized by jumping the red 12awg to the yellow 14awg on the DC terminal strip. You should hear the fuel pump working and fuel will flow back to the return on the tank. Run the fuel pump for 2-3 minutes allowing time for the fuel system to completely fill with fuel.

Starting

Preheat the glow plugs for 10-15 seconds at the remote panel and then crank the unit. Generator should start within 5-10 seconds. If not, stop for a minute and try again. Often on initial cold starts the set will run for a few seconds and then stop. This is normal as the oil pressure has not yet built up to override the oil pressure shutdown switch. If the set starts and runs for a bit or stumbles and runs slowly, you will have to re-prime the system, as air in the fuel lines is likely to be the problem.

Caution

If the unit does not start after several cranking attempts or one minute of cranking, there is a danger of filling the exhaust system with seawater. This may lead to serious engine damage. Close seacock or remove water pump drive belt to prevent further water from being pumped into the exhaust and proceed to trouble shooting section.

As soon as the set is running, check for water exiting the exhaust thru hull indicating the raw water pump is working and that the engine is actually getting the cooling water. If you do not see water shut the unit down immediately.

Inspect the machine for signs of fuel, water or exhaust leaks as well as unusual noises or smells. If any problems are noted, the unit should be shut down immediately until the problem is corrected.

Maintenance

All generators or engines should be visually checked frequently during their first 5-10 hours of operation for leaks, loose wires and fittings.

Following is a chart showing the various maintenance items and intervals that should be attended to in order to keep your machine running at peak performance for the longest possible time.

	Daily	Monthly or 100 Hrs.	6 Months 250 Hrs.	Yearly 750 Hrs.
Inspect the Set	X			
Check Oil Level	X			
Check Coolant Level	X			
Check Fuel Level	X			
*Change Oil and Filter		X		
Check Zinc Anode		X		
Check Air Filter			X	
Change Fuel Filter			X	
Change Air Filter Element				X
Change Pump/Alternator Belt				X

Initial oil change should be done after the first 30 hours of run time.

Inspect the set

Visually inspect the machine for leaks, loose connections, loose clamps, frayed wires

Check oil level

Remove the dipstick and make sure that the level is at or near the top mark

Check coolant level

Remove the heat exchanger fill cap and make sure the level of coolant is just above the cooling tubes. Add coolant mixture if needed.

Check fuel level

Make sure main or auxiliary tank has enough fuel for the intended run time. Running to of fuel will require bleeding of the fuel system.

Change oil / Clean filter

Oil should be drained by using a pump in the dip stick hole. Change the spin on oil filter. Fill crankcase to the full level on the dipstick with approved diesel grade oil.

Maintenance

Drain sediment from fuel filter

Water and sediment should be drained from the filter bowl by unscrewing the drain valve located at the bottom of the bowl.

Check zinc anode

Use a wrench to unscrew the zinc to determine rate of degradation. Zinc should be replaced if it is less than 1/3 of its original size. Rate of decomposition varies from vessel to vessel, after several inspections rate may easily be determined.

Check air filter

Air cleaner element may be inspected by unscrewing the top of the filter canister lid. Visually check the element for blockage, rips, tears or excessive moisture of the element material. Replace if needed.

Change fuel filter

Change the filter as per Racor instructions.

Check water pump / alternator belt

Visually check the belt for signs of cracking or fraying, change if needed. Check the belt tension by pressing lightly in the middle of the belt span.

Load Testing

Once the generator is running with no leaks or problems, you should determine that the output voltage is correct, either by gauges on the vessel or by a hand held meter. If using a hand held meter you can test voltage at a convenient receptacle after turning the appropriate breaker on.

If the voltage is in the acceptable range, you may begin to test load. Start by turning on one breaker at a time on the vessels panel beginning with non-critical loads such as a toaster, stove element etc... All devices should be checked one at a time at first for correct function and then in groups to determine what may be run together without an overload.

The UCM3-9.5 will provide 79 amps at 120 volts. If this is exceeded, overload will result and the unit will lose speed, frequency and voltage. A sure sign of overload is black smoke coming out of the exhaust.

Troubleshooting

UNIT DOES NOT CRANK

POSSIBLE CAUSE

DIAGNOSIS OR REMEDY

Bad battery or low voltage

Make sure battery is in good condition and is fully charged. Charge or replace as required.

Bad Battery cables or faulty wiring between Gen-set and remote panel

Check all wiring and connectors with a multi-meter. Repair wire or cable as req'd.

Bad Rocker switch

Test switch with a multimeter for proper operation. Replace if needed.

Bad starter

Feed 12 volts + directly to the cranking spade connection on starter (blue wire). Set should crank, if not, remove starter and have tested by a qualified technician. Replace starter if required.

UNIT CRANKS BUT DOES NOT START

Air in fuel system

Bleed air as instructed under initial start up procedures.

No preheat

Unit must be preheated for 10-20 seconds before every cold start.

Faulty wire or connections from remote switch. Test to be sure 12 volt + is getting to glow plug.

Glow plug itself may be faulty, remove from engine and test with 12V + and replace if needed.

Run solenoid not pulling in

The run solenoid must pull in or the unit will not start. While cranking gently push the solenoid linkage in. If the linkage pulls in and holds you may have a weak battery or bent and binding linkage. Charge battery and retest or check for sticky or binding linkage.

UNIT CRANKS BUT DOES NOT START

POSSIBLE CAUSE

DIAGNOSIS OR REMEDY

Run solenoid not pulling in (Con't)

Make sure 12 volt + is getting to the white wire on the solenoid while cranking. If not troubleshoot as required.

If 12 volt + is getting to the white wire on the solenoid and the solenoid does have a good ground assume the solenoid is faulty and replace.

Clogged air intake

Unit must have air to run, if the machine has a plugged air intake, unit will not run.

Clogged Exhaust System

Unit will not run with a clogged or collapsed exhaust system. Typical symptoms will be popping back through intake system.

UNIT STARTS BUT IMMEDIATELY STOPS

Solenoid NOT holding in

If the solenoid drops out as soon as you quit cranking, the unit will stop. Test the solenoid by feeding 12 volt + to the red hold wire while pushing the solenoid plunger into the fully retracted position. Solenoid should remain in the retracted position even after manually releasing the plunger.

If the solenoid drops out after 12 volt is applied and manual tension is released, we assume that it is bad and replace.

If the solenoid is o.k., we assume that 12 volts is not getting to the solenoid. First, make sure that the engine does have oil and that it is not overheating.

If oil and water are o.k., we assume that 12 volts is not getting through the oil or water switches. These switches should be tested one at a time by jumping across the switches terminals while attempting to start the machine. If the unit remains running while a switch is jumped and it quits when not jumped we have found the bad switch.

Do not rule out the possibility of two bad switches or faulty wiring and connections feeding the run circuit.

UNIT RUNS BUT SHUTS DOWN INTERMITTENTLY

POSSIBLE CAUSE

DIAGNOSIS OR REMEDY

Air in fuel system

The number one reason why the set would shut down is air in the fuel system.

All fittings, hoses, clamps, filters, pick-up tubes etc. should be double checked to make sure absolutely no air is entering the system. When in doubt disconnect the entire fuel system and run the machine out of a small fuel supply with short hoses for a period of time to determine if the vessel's fuel system is at fault.

Bad oil or water switch

Jump switches as previously discussed under "solenoid not holding" in but you may have to leave the switches jumped for longer periods of time to determine if you have an intermittently bad switch.

Faulty wiring

Inspect all wiring carefully for loose terminals or loose screws that may vibrate and cause intermittent shut down. Correct as required.

UNIT WILL NOT SHUT OFF

Solenoid stuck in

Check for jammed solenoid or linkage. Free up or replace as required.

Throttle misadjusted

If the unit almost stops but chugs along slowly the throttle stop screw may have to be turned in slightly.

Bad shutdown relay

If the shutdown relay does not energize the run circuit when stop position is activated, the relay is most likely at fault.

NO OUTPUT VOLTAGE

Breaker tripped

The circuit breaker will trip if the unit is overloaded or short-circuited. The breaker may also trip if the Gen-set is working to capacity in a very hot environment. In any case with a breaker tripping, it is advisable to determine the cause before restarting.

Faulty capacitor

It is possible to have a faulty capacitor causing loss of output voltage but this can only be tested by replacing the capacitor and restarting.

WRONG OUTPUT VOLTAGE

Generator output voltage may be changed slightly by adjusting the engine speed up or down. This is done at the speed linkage shown on Fig. (shortening linkage increases the speed)

Engine speed problems

Speed is factory set and tested. We do not recommend changing the speed unless you have an A.C. frequency meter to determine how much you have changed output frequency.