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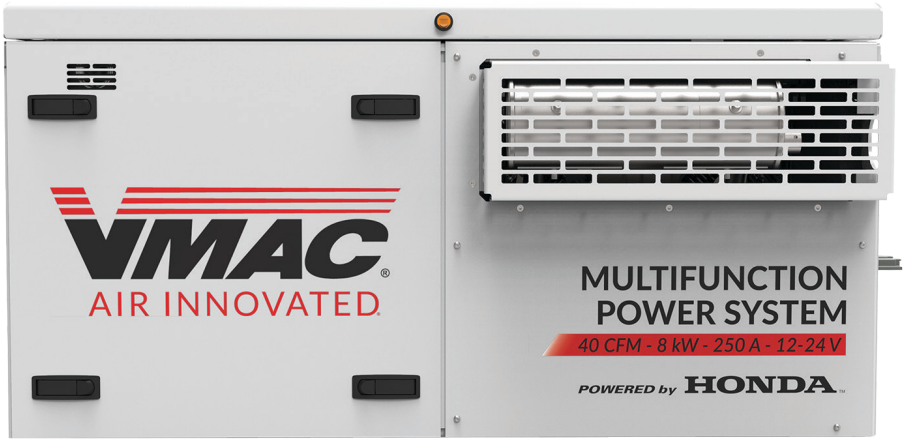

Installation and Owner's Manual
Multifunction Power System
(Honda Powered)

GMF0001

VMACAIR.com

Table of Contents

Revision	Revision Details	Revised by	Checked by				Implemented
			Eng.		Tech.	Qual.	
			Mech.	Elec.			
F	ECN: 24-143 Update VSI operating instructions	MSP	N/A	CAB	MSP	LPH	2 Oct. 2024
G	ECN: 24-170 Update accessories list	MSP	N/A	N/A	MSP	N/A	23 Oct. 2024
H	ECN: 25-042 Update CARB message	MSP	GJM	N/A	MSP	N/A	3 Apr. 2025

Additional Application Information

Note: This system may be preempt from CARB regulations dependent upon the application and equipment use. Adherence to local, state, and federal regulations is the responsibility of the operator.

- Refer to the Honda IGX800 Owner's Manual (VMAC P/N: 1901216) for engine specific information.

Registered Trademarks

All trademarks mentioned in this manual are the property of their respective owners. VMAC's use of manufacturers' trademarks in this manual is for identification of the products only and does not imply any affiliation to, or endorsement of said companies.

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Honda® is a registered trademark of Honda Motor Co., Ltd.

Important Information

The information in this manual is intended for certified VMAC installers who have been trained in installation and service procedures and/or for anyone with mechanical trade certification who has the tools and equipment to properly and safely perform the installation or service. Do not attempt installation or service without the appropriate mechanical training, knowledge and experience.

Follow all safety precautions. Any fabrication for correct fit in modified vehicles must follow industry standard "best practices".

Notice

Printed in Canada

General Information

Introduction

This manual provides operating instructions, specifications, adjustment, maintenance and warranty information for the Gas MF. Read this manual, as well as the HONDA iGX800 Owner's Manual (P/N: 1901216) prior to installation, operating or servicing the Gas MF.

Follow all safety precautions when servicing or operating the VMAC system as moving fan blades and other rotating components pose an extreme hazard.

Proper service and repair are important to the safety of the operator and the safe, reliable operation of the equipment. Always use genuine VMAC replacement parts.

The procedures described in this manual are the only approved methods of service and operation.

Ordering Parts

To order parts, contact a VMAC dealer. The dealer will ask for the VMAC System ID (see page 27), part number, description and quantity. Locate the nearest dealer online at https://www.vmacair.com/support/find-a-dealer or call (877) 912-6605.

Additional Support

Additional resources such as installation manuals, illustrated parts lists, the VMAC Knowledge Base, air tool consumption guides, etc. are available at https://www.vmacair.com/support/.

Safety

Important Safety Notice

The information contained in this manual is based on sound engineering principles, research, extensive field experience and technical information. Information is constantly changing with the addition of new models, assemblies, service techniques and running OEM changes. If a discrepancy is found in this manual, contact VMAC Technical Support prior to initiating or proceeding with installation, service or repair. Current information may clarify the issue. Anyone with knowledge of such discrepancies, who proceeds to perform service and repair, assumes all risks.

Only proven service procedures are recommended. Anyone who departs from the specific instructions provided in this manual must first ensure that their safety and that of others is not being compromised, and that there will be no adverse effects on the operational safety or performance of the equipment.

VMAC will not be held responsible for any liability, consequential damages, injuries, loss or damage to individuals or to equipment as a result of the failure of anyone to properly adhere to the procedures set out in this manual or standard safety practices.

Safety should be the first consideration when performing any service operations. If there are any questions concerning the procedures in this manual, or more information is required, please contact VMAC Technical Support prior to beginning work.

Safety Messages

This manual contains various warnings, cautions and notices that must be observed to reduce the risk of personal injury during installation, service or repair and the possibility that improper installation, service or repair may damage the equipment or render it unsafe.

This symbol is used to call attention to instructions concerning personal safety. Watch for this symbol; it points out important safety precautions, it means, "Attention, become alert! Your personal safety is involved". Read the message that follows and be aware of the possibility of personal injury or death. As it is impossible to warn of every conceivable hazard, common sense and industry standard safety practices must be observed.

This symbol is used to call attention to instructions on a specific procedure that if not followed may damage or reduce the useful life of the compressor or other equipment.

This symbol is used to call attention to additional instructions or special emphasis on a specific procedure.

Safety Precautions

As it is impossible to warn of every possible hazard that may result from operating this system, common sense and industry standard safety practices must be observed.

Read this information before operating the compressor for the first time. Follow the information and procedures in this manual for operation, maintenance and repair. Observe the following items to reduce the chance of personal injury or equipment damage.

Follow all safety precautions for mechanical work. Moving belts and rotating components are an extreme hazard. Stay clear of all moving parts when the system is operating. Only qualified personnel should perform maintenance and repair on system components and only while the system is properly shut down.

Proper service and repair are important to the safety of the service technician and the safe, reliable operation of the equipment. Always use genuine VMAC replacement parts.

The procedures described in this service manual are effective methods of service and repair. Some procedures may require the use of tools specially designed for a specific purpose. Anyone using a replacement part, service procedure or tool must first determine that neither their safety nor the safe operation of the equipment will be compromised by the replacement part, service procedure or tool selected.

Personal Safety

- Do not breathe the compressor air. Vaporized oil is a respiratory hazard.
- Do not breathe engine exhaust, internal combustion engines produce carbon monoxide, a poisonous odorless gas which can cause death. Do not start or operate this compressor in an enclosed area.
- Always use the appropriate personal protective equipment, particularly eye and hearing protection when operating air powered equipment.

Burn Hazard

- The engine, exhaust and the compressor system get very hot during operation, contact with the components or the oil can cause serious injury. Allow sufficient time for the system to cool prior to performing service.
- Avoid contact with the engine or compressor components until the system has cooled sufficiently.

Fire and Explosion Hazard

- Vaporized oil propelled by high pressure air is an explosive mixture.
- Fire in the compressor can cause an explosion and flame projection. Should this occur, there is potential for serious injury or death.
- Operate the compressor in a well ventilated area free of flammable vapors, dust, or other combustible materials.
- Do not refuel the engine while the system is running or hot.
- Do not refuel the engine in an enclosed space or area with poor ventilation.
- If fuel is spilled, clean the area and wait for it to dry before starting the engine.
- Never place objects against, or on top of, the compressor.
- Never expose the system to extreme heat.
- Do not use starting fluids (such as ether) as they can cause an explosion.
- Accumulated oil and grease can cause the system to overheat and pose a fire hazard. Keep the system clean and repair any leaks immediately.

Harmful Vapours

Breathing fuel vapours or engine exhaust can expose you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well ventilated area.
- Do not breathe engine exhaust. Internal combustion engines produce carbon monoxide, a poisonous odorless gas which can cause death. Do not start or operate this system in an enclosed area.
- If in an enclosed area, vent the exhaust to the outside and ensure there is adequate access to fresh breathable air.

Burst Hazard

This system is designed to generate air pressure up to 150 psi during normal operation (factory default: 135 psi):

- Serious injury or death may result from an air tank explosion.
- Never exceed manufacturer's maximum air pressure rating.
- Do not repair components, only replace with approved parts.
- Do not tamper with, or disable factory safety equipment.

Moving Parts Hazard

- Before performing service, disconnect the negative battery cable and the spark plug wire to prevent unexpected engine start.
- Do not operate the compressor without guards in place. If the guards are damaged or missing, replace them before operating the equipment.

Compressor Air and Oil Hazard

- The compressor system is under sufficient pressure that a leak could force the air/oil mixture through the skin directly into your bloodstream. This could cause serious injury or death.
- Ensure the system is completely depressurized before attempting maintenance or repair.
- Do not use compressed air to clean off clothing or skin, compressed air can penetrate the skin causing serious injury or death.
- Do not move or service the compressor while it is pressurized or operating.
- Components and hoses under pressure could separate suddenly, fly out and cause serious injury or death. If equipped, the air receiver tank must be drained before servicing any components in the compressor system.
- Never adjust or attempt to make any repairs to the system while the engine is running. Components and hoses under pressure could fail and cause serious injury or death.

Electrical Shock Hazard

- Do not operate the generator in wet conditions (including wet weather or if hands and feet are wet).
- Do not operate the generator with damaged electrical cords or equipment.
- Prior to use, ensure the ground fault circuit interrupter (GFCI) is functioning properly.
- Prior to use, ensure the 20 A breakers are functioning properly.
- Do not operate the generator with any covers removed.
- Ensure the ground point connection from the Gas MF is connected to the vehicle body/chassis to prevent the chance of personal injury or damage to the equipment.
- Ensure the vehicle is grounded appropriately.

Electrical Shock Hazard (Generator)

Generator voltage is potentially deadly. Any time the system is operating, the generator is producing up to 240 Volts AC and can cause an electrical shock (regardless of whether equipment is plugged into the receptacles or not.

- Do not tamper with, or modify, the generator.
- Do not bypass any safety features built into the Gas MF.
- Do not service the generator unless qualified to do so.
- Do not operate the Gas MF unless this manual has been read in its entirety.

Lead Acid Battery Hazard

Working near lead acid batteries is dangerous. Batteries may generate sulphuric acid and explosive gases during regular operation. Lead acid batteries may explode if exposed to a spark.

- Follow all safety precautions when jump starting or charging a battery.
- Never attempt to jump start a frozen battery.
- Never overcharge a battery.

General Warnings

- Disconnect the negative battery cable prior to attempting any repair or service.
- Be attentive for unexplained changes in operation parameters and record any changes.
- Check the engine and compressor oil levels and condition prior to starting the system.
- Do not add or change oil while the system is running.
- Use only approved oils.
- Inspect the equipment before every use.
- The compressor may operate anytime the engine is running. Avoid contact with the compressor, hoses, or engine during operation.
- While in "Standby", the Gas MF may start at any time.
- Keep hoses and wiring away from hot, sharp, or moving components.
- Use only approved hoses and replacement parts.
- Do not modify the equipment.
- Do not operate this system unless this manual has been read in its entirety.
- Do not operate this system when fatigued or under the influence of alcohol or drugs.
- Never bypass or disable any of the safety equipment.
- Never adjust or attempt to make any repairs to this system while the engine is running unless expressly instructed to do so.
- Components and hoses under pressure could fail and cause serious injury or death.
- Loose fasteners or components can damage equipment, ensure all fasteners and components are properly torqued or secured.

Warranty

VMAC Standard Warranty (Limited)

For complete warranty information, including both VMAC Standard Warranty (Limited) and VMAC Lifetime Warranty (Limited) requirements, please refer to our current published warranty located at: **www.vmacair.com/warranty**

If you do not have access to a computer, please contact us and we will be happy to send you our warranty.

VMAC's warranty is subject to change without notice.

VMAC Lifetime Warranty (Limited)

A VMAC Lifetime Limited Warranty is offered on the base air compressor only and only on UNDERHOOD, Hydraulic Driven, Transmission Mounted, Gas and Diesel Engine Driven Air Compressors, Multifunction Power Systems, and other products as defined by VMAC, provided that (i) the purchaser fully completes and submits a warranty registration form within 3 months of purchase, or 200 hours of operation, whichever occurs first; (ii) services are completed in accordance with the Owner's Manual; (iii) proof of purchase of applicable service kits are made available to VMAC upon request.

The VMAC Lifetime Warranty is applicable to new products shipped on or after 1 October, 2015.

Warranty Registration

The VMAC warranty registration form is located near the back of this manual. This warranty registration form must be completed and sent to VMAC at the time of installation for any subsequent warranty claim to be considered valid.

There are 4 ways the warranty can be registered with VMAC:

https://www.vmacair.com/support/warranty-registration

warranty@vmacair.com

(877) 740-3202

VMAC - Vehicle Mounted Air Compressors
1333 Kipp Road, Nanaimo, BC, Canada V9X 1R3

VMAC Warranty Claim Process

VMAC warranty work must be pre-authorized by VMAC. Claims are processed via our dealer network. If you are not a VMAC dealer, please select one to work with via our Dealer Locator:
https://www.vmacair.com/support/find-a-dealer

1) Communicate with VMAC Technical Support at (888) 241-2289 or tech@vmacair.com to help diagnose/troubleshoot the problem prior to repair. VMAC technical support will require the VMAC System ID, and hours on the compressor.
2) VMAC will provide direction for repair or replacement of the failed components.
3) If requested, failed parts must be returned to VMAC for evaluation.
4) Dealers may login to the VMAC website to view the "VMAC Labour Time Guide" (under "Agreements") to see the allowable warranty labour times.
5) Warranty invoices must include the Service Ticket number, VMAC System ID#, hours on the compressor, and a detailed description of the work performed.
6) VMAC Warranty does not cover consequential damages, loss of income, overtime charges, mileage, travel time, towing/recovery, cleaning or shop supplies.
7) Dealers submit warranty claims on behalf of the Vehicle Owner/End User affected by the defective part(s). The dealer ensures that all warranty credits are refunded back to the Vehicle Owner/End User who made the initial warranty claim.

In order to qualify for Lifetime Warranty (Limited), the completed warranty registration form must be received by VMAC within 3 months of the buyer receiving the Product(s), or 200 hours of operation, whichever occurs first.

If the completed warranty registration form has not been received by VMAC within 3 months of the buyer receiving the Product(s), or 200 hours of operation, the "Standard" warranty period will be deemed to commence 30 days from the date of shipment from VMAC.

Failure to follow the warranty claim process may result in denial of the warranty claim.

VMAC Product Warranty Policies & Warranty Registration can be found on the VMAC website (see previous page for URL).

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Gas MF Installation Manual

Installation Requirements and Considerations

The information in this section is critical to ensure proper operation of the system. Read these requirements prior beginning the installation.

Failure to adhere to these requirements may cause the Gas MF to operate erratically or impact the overall quality of the installation.

In order for the system to enter "Standby" mode and automatically shut down, an air receiver tank rated for 200 psi, with a minimum capacity of 5 USG, is required.

Requirements:

- Ensure there is adequate clearance around the unit to provide good air circulation and effective cooling (see page 14).
- Ensure the service panel is accessible.
- Ensure the engine and compressor oil level can be checked easily.
- Ensure the unit can be serviced easily (i.e. without having to disconnect hoses, or reposition/remove the unit).
- Ensure the hose lengths are as short, and with the least amount of 90° fittings, as possible.
- Ensure the unit is mounted in a location where hot air and/or exhaust will not recirculate into the system.
- Ensure the exhaust is routed to open air without being orientated in a way that will accumulate of water.
- Ensure the unit is protected from excessive exposure to the elements.
- Ensure the unit is protected from damage from other operations.
- Ensure the intended mounting location is capable of safely supporting a minimum of 550 lb (250 kg).
- Ensure the unit is sufficiently isolated from vibration to prevent damage to the frame and other components.

Considerations:

- Is the intended location convenient for electrical and air connections?
- Will the unit be mounted away from heat sources such as engines, exhaust, or other components that can generate heat?
- Will the unit be mounted where it will be exposed to high contamination levels, including combustible gases?
- Will the unit be used in temperatures below -5 °C (23 °F)? If so, VMAC recommends ordering the system with the optional Cold Climate Kit.

Mounting Locations and Ventilation Requirements

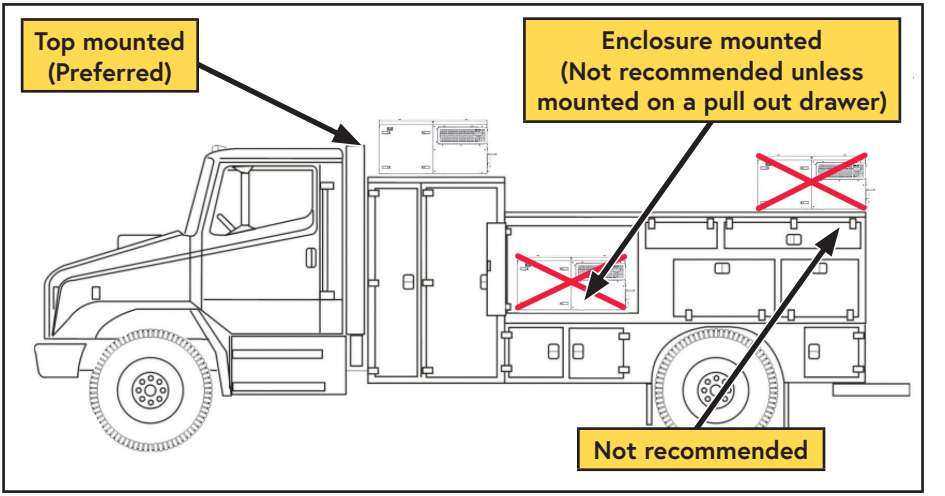


Figure 1 — Mounting locations

VMAC does not recommend mounting the unit at the back of the vehicle as the drag created when the vehicle is moving causes debris to be deposited (and accumulated) inside the unit.

Top Mounting (Preferred mounting location)

Placing the Gas on top of the service body provides the best access to cool fresh air. Maintain a minimum of 12 in between the sides of the Gas MF and all other solid objects. Ensure there is an ample supply of cool air to the engine air intake panel of the Gas MF and that the hot air exhausted from the muffler and exhaust panel vents can escape the area unrestricted (Figure 1).

Enclosed Mounting

Enclosed mounting is not recommended due to the risk of recirculating exhaust and the significant heat generated by the Gas MF.

Mounting the Gas MF in an enclosure will limit access to cool fresh air, restrict the escape of hot air from around the unit and have an adverse effect on cooling the system; ensure adequate ventilation is provided. If mounting in an enclosure, VMAC strongly recommends mounting the unit on a pullout drawer with a switch that prevents the unit from being operated unless the drawer is fully extended.

While it is not possible to make absolute recommendations regarding ventilation (due to the widely differing circumstances that are possible), duty cycle, ambient temperature and enclosure shape are some of the important variables that must be considered.

Ventilation Requirements

Ventilation Requirements

Adequate ventilation is vital for safety. Ensure the engine exhaust is directed away from any passenger compartments or enclosed areas where personal may be working.

Systems without adequate cool air flow may experience stalling, premature oil deterioration, increased oil consumption, power loss, and reduced life or failure of the engine and/or compressor.

If the compressor overheats, the intelligent control features will shut the engine down and prevent restart until the oil temperature drops below 140 °C (284 °F).

Exhaust and waste heat from the Gas MF must be vented away from the system to prevent the engine from ingesting its exhaust and stalling.

Cool air is drawn into the unit via the engine air intake panel while the hot air is pushed away from the unit via the muffler and exhaust panel vents.

During operation, the Gas MF generates a considerable amount of heat that must be evacuated from the unit to allow it to run efficiently. The engine is air cooled and requires an adequate supply of cool fresh air to cool the engine and allow proper fuel combustion.

Ensure there is a minimum of 12 in of clearance between the air intake panel, the exhaust panel, and any other components mounted on the vehicle.

The engine exhaust must be vented away from the Gas MF and toward a safe location. If mounted in an enclosure, or the bed of a pickup truck box, the exhaust must be vented outside of the vehicle to prevent the engine from ingesting its exhaust and overheating or stalling.

Fuel Supply Options and Requirements

Only fuel lines rated for gasoline and that meet EPA and CARB evaporative emissions regulations may be used.

It is the installer/customer's responsibility to ensure compliance with EPA, CARB, or other regulations specific to the local governing bodies.

For a complete list of approved evaporative components refer to:

- ***EPA "Nonroad Evaporative Components" certification.***
- ***CARB SORE "Evaporative Component" certification.***

12 Gallon fuel tank accessory

P/N: A500248 (customer installed) / P/N: A510045 (Factory Installed)

The 12 gallon fuel tank accessory meets EPA regulations.

Fuel pump accessory

P/N: A500247

It is the installer/customer's responsibility to ensure compliance with EPA, CARB, or other regulations specific to the local governing bodies.

Only fuel lines rated for gasoline, and that meet EPA and CARB evaporative emissions regulations, may be used.

Installer/customers supplied fuel connections

It is the installer/customer's responsibility to ensure compliance with EPA, CARB, or other regulations specific to the local governing bodies.

Only fuel lines rated for gasoline, and that meet EPA and CARB evaporative emissions regulations, may be used.

Mounting the Gas MF

External dimensions

☐ Locate a suitable mounting position for the Gas MF. Place the unit in its intended location and check clearances to any other objects (Figure 2).

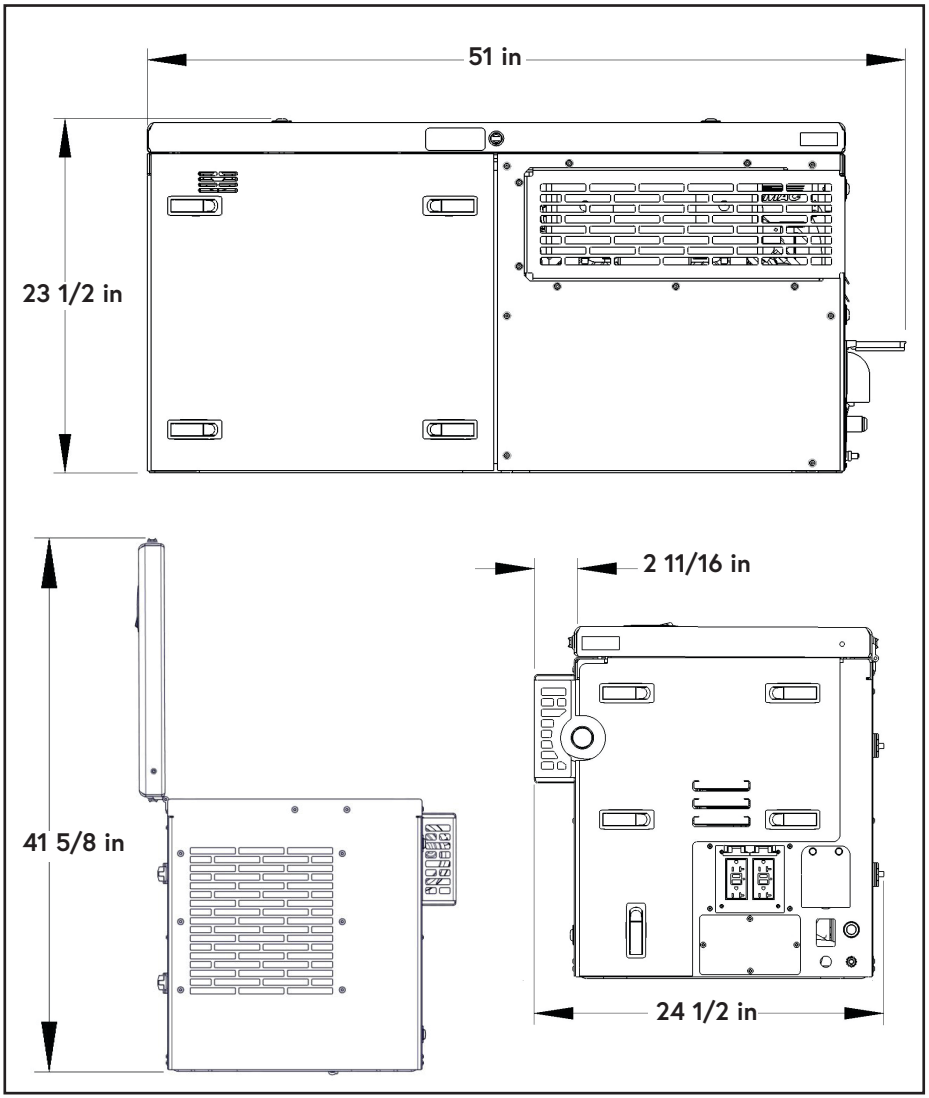


Figure 2 — External dimensions

Gas MF Base Plate

The base plate has 6 pre-drilled holes that can be used to mount the system.

New holes can be drilled in any location provided they do not interfere with the vibration isolator mounts.

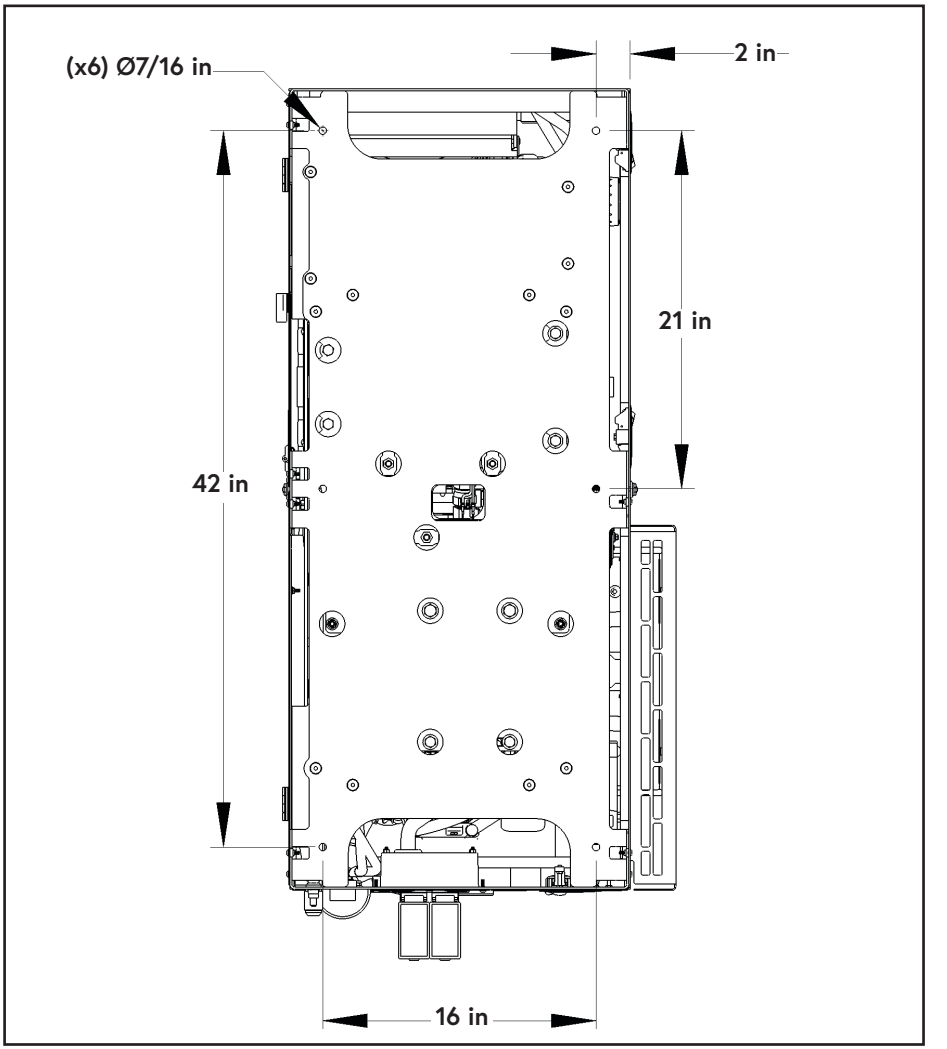


Figure 3 — Base plate

Installing the Gas MF

While the Gas MF is manufactured with heavy duty vibration isolators between the engine and the base plate, VMAC recommends installing additional vibration isolators if the vehicle will be driven off of paved roads to prevent impact damage to the frame and other components.

☐ Secure the Gas MF to the vehicle using (×6) 3/8 in or 10 mm bolts with washers, and either lock washers or Loctite 242 (blue).

Fuel Supply

If the Gas MF will be fueled via the vehicle's fuel tank, do not plumb the fuel line into the lowest area of the fuel tank to prevent the Gas MF from being able to drain the tank.

Connect the Gas MF to the gasoline fuel supply (see "Fuel Supply Options and Requirements" on page 16).

Air Discharge

☐ Remove the #12 cap from the air outlet (located on the exhaust side of the unit) and connect the Gas MF to the receiver tank (sold separately, see "Accessory Products from VMAC" on page 88).

Exhaust

Ensure the exhaust pipe has suitable clearance from, and will not contact, any flammable materials.

If extending the exhaust, a suitable flex coupling or flex pipe must be used to prevent damage to the muffler and exhaust system.

Dependent upon the length of the extension, extra support may be necessary.

Ensure the exhaust is installed such that it will prevent water accumulation in the exhaust system. If the exhaust will be oriented up, such as with the 90° exhaust elbow, ensure an appropriate flapper is installed.

Any exhaust pipe added to this system must be fitted over the Honda muffler, and must allow for the retention of the spark arrestor.

The upfitter must supply an exhaust pipe suitable to the application (such as the VMAC exhaust elbow kit P/N: A500249). The muffler OD is approximately 1 3/8 in.

☐ Install an adequate exhaust pipe (not supplied) suitable to the application.

Electrical Connections

Failure to sufficiently ground the Gas MF could cause severe injury or death due to electrical shock and static discharge.

While the American Welding Society® Safety & Health Fact Sheet No. 29 (Grounding of Portable and Vehicle Mounted Welding Generators) is a great reference for grounding the Gas MF, VMAC recommends working/consulting with a certified electrician and local regulatory bodies when grounding the Gas MF.

Certified electricians and local regulatory bodies can assist with any questions or concerns regarding proper grounding, and compliance with local regulations.

The Gas MF must be grounded to the vehicle frame (or an earth ground when not mounted to a vehicle) to prevent electrical hazards.

The vehicle mounted ground connection must be made by bare metal to metal contact to the vehicle frame as some service body materials (e.g. plastics, wood, bed liners, etc.) may insulate the Gas MF from the frame, resulting in inadequate grounding.

If permanently connecting the Gas MF to the vehicle battery, a battery isolator or circuit must be installed

Main System Ground (Vehicle Mounted)

☐ Connect a ground wire with a minimum size of 10 AWG to the ground terminal located on the engine side of the unit, next to the air outlet (Figure 4).

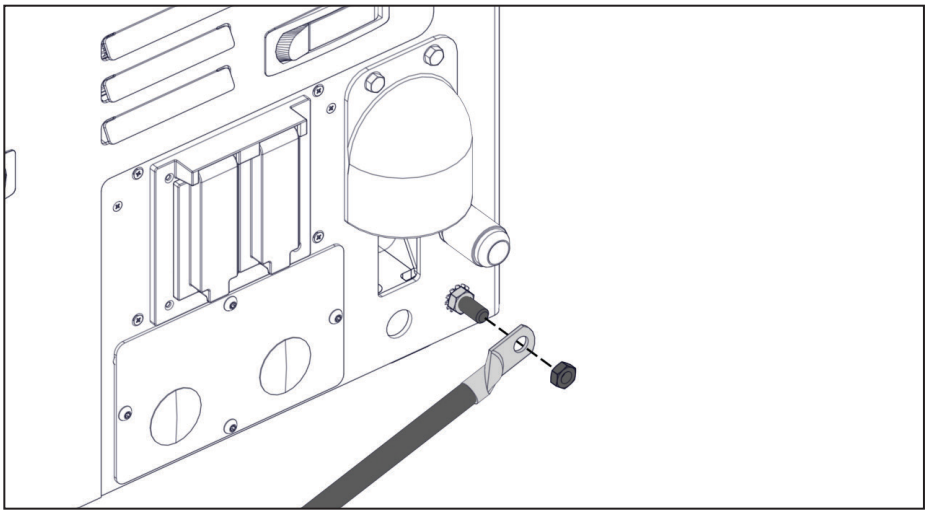


Figure 4 — Connect ground wire

☐ Connect the other end of the ground wire to the vehicle frame via a minimum 3/8 in post (this connection must be bare metal to metal contact).

Main System Ground (Non-Vehicle Mounted Applications)

☐ Connect a ground wire with a minimum size of 10 AWG to the ground terminal located on the engine side of the unit, next to the air outlet (Figure 4).

☐ Connect the other end of the ground wire to an earth ground device that complies with local electrical codes concerned with earth grounding devices.

Display Panel

The Display Box, rocker switches, and Welder Control Box are splash resistant, not weather proof; ensure they are mounted where they will be protected from rain, snow, mud, direct sunlight, etc. (e.g. inside the cab, service body, or a cabinet).

VMAC recommends that the harness extensions be soldered and sealed with heat shrink tubing, or sealed butt splices (not supplied) to provide durable, and moisture resistant connections.

The Gas MF is shipped with male and female connectors (with pig tails) to facilitate making extension harnesses to connect the various components.

☐ Mount the Display Panel in a convenient location that is protected from the weather.

☐ Using the included connectors with pig tails, connect the (×4) Display Panel connectors (Table 1).

Recommended Wire Gauge for Display Panel Harnesses Extensions				
Wire Description		Wire Gauge		
		Up to 10 ft	10 ft to 16 ft	16 ft to 22 ft
Display box connections (4 pin connector)		18 AWG	18 AWG	18 AWG
Rocker switches (compressor, generator, etc.)		18 AWG	18 AWG	18 AWG
Key switch	Key switch (yellow)	18 AWG	18 AWG	18 AWG
	Return power (orange)	14 AWG	12 AWG	10 AWG
	Supply power (red)	14 AWG	12 AWG	10 AWG

Table 1 — Display Panel harness connections

Welder Control Box

The Welder Control Box includes an 8 ft harness with (×4) plugs.

☐ Plug one side of the "T" harness with the (×2) flat 5-pin connectors into the matching connector at the MF unit and the other side into the connector running to the rocker switches on the Display Panel.

☐ Connect the (×2) Welder Control Box connectors into the matching connectors in the main harness bundle.

Optional Equipment

Remote Start Wire

The Gas MF can be started remotely using a remote start wire running to the Control Box. A blunt cut yellow wire can be found near the Control Box (located inside the service panel).

With the key-switch in the "RUN" position, the remote wire can be grounded to start the system. Once the ground is interrupted, the control system will stop the engine.

☐ Connect the yellow remote start wire to one of the terminals on a Single Pole, Single Throw (SPST) switch and connect the other terminal to ground on the Gas MF.

Completing the Installation

Ensure all hoses, tubes or wires related to the installation are secured so that they will not contact any hot, sharp or moving parts and that adequate steps are taken to mitigate any wear due to equipment vibration.

Ensure the following steps have been completed prior to operating the Gas MF for the first time.

Verify the following fluids are at the correct level:

- ☐ Check the engine oil level.
- ☐ Check the fuel level.
- ☐ Check the compressor oil level.

Perform a final inspection to ensure that:

- ☐ Ground point is connected.
- ☐ Fasteners and connections are tight.
- ☐ Hoses are secure and adequately protected.
- ☐ Wiring is secure and adequately protected.
- ☐ All air outlets / ball valves are closed.

Testing the System

- ☐ Connect a VMAC Air Test Tool (P/N: A700052) to the output of the air receiver tank (not the Gas MF discharge outlet; connecting the test tool directly to the Gas MF is only required when performance testing the compressor itself).
- ☐ Install the 40 cfm orifice into the air test tool.

Prime the Fuel System*:

- ☐ *Turn the key switch to the "ON" position, and listen for the high pressure fuel pump to turn off (approximately 10 seconds).
- ☐ *Once the high pressure fuel pump stops, turn the key switch to the "OFF" position.
- ☐ *Turn the key switch to the "ON" position.
- ☐ *Press the "ENTER" button to start the engine and allow it to reach normal operating temperature.

- ☐ Check the system for any leaks.
- ☐ Engage the generator by pressing the rocker switch (located on the Display Panel) to "ON".

Allow the system to run with the generator engaged for a minimum of 1/2 hour. This test ensures that the system has adequate ventilation.

- ☐ Turn off the generator by pressing the rocker switch (located on the Display Panel) to "OFF".
- ☐ Press the "ENTER" button to shut down the system.
- ☐ Turn the Key switch to "OFF".

Compressor Performance Testing

System operation can be tested using the tools that will be operated by the system or by using the VMAC Test Tool (A700052) with the appropriate orifice in the outlet to simulate tool use (Figure 5).

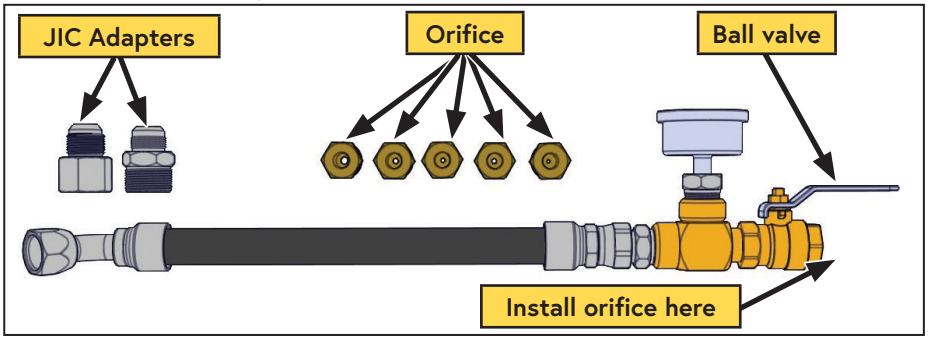


Figure 5 — A700052 VMAC Air Test Tool

Disconnect all downstream equipment (hose reels, etc.) and connect the test tool directly to the discharge fitting on the Gas MF.

Ensure there are no leaks in the test tool. The system may not idle down or enter standby if there are leaks in the lines or fittings.

- ☐ Install the VMAC test tool at the Gas MF outlet with the 40 cfm orifice.
- ☐ Ensure the ball valve is closed.
- ☐ Start the system and allow it to reach normal operating temperature.
- ☐ After the system has reached normal operating temperature, observe the pressure gauge on the test tool. The pressure should be approximately 150 psi.
- ☐ Open the ball valve on the test tool and observe the pressure gauge.

If the system is not able to maintain air pressure at 95 psi when the ball valve is opened fully, the compressor has failed the performance test.

- ☐ Close the ball valve slowly to allow the system pressure to rise.
- ☐ The Gas MF can be shut down normally unless the control system is being tested.

Control System Testing

- ☐ When the pressure reaches 150 psi (factory default setting), the system will "unload" and air should be heard to escape from the inlet.
- ☐ After 5 minutes without air use (factory setting), and with the PTO and generator turned off, the system will go into standby and the engine will shut down.

While in standby, the system will continue to monitor the battery voltage, system temperature, air use, and air pressure and will restart as needed to maintain operating parameters.

VMAC®

AIR INNOVATED®

Gas MF Owner's Manual

Identifying Your System

The System ID will be requested any time that parts are ordered, when calling for technical support, or submitting a warranty claim.

The system ID is the preferred method of identifying the system as it serves as a master record of all of the components in the system. The system ID plate is found on the engine plate below the generator (Figure 6).

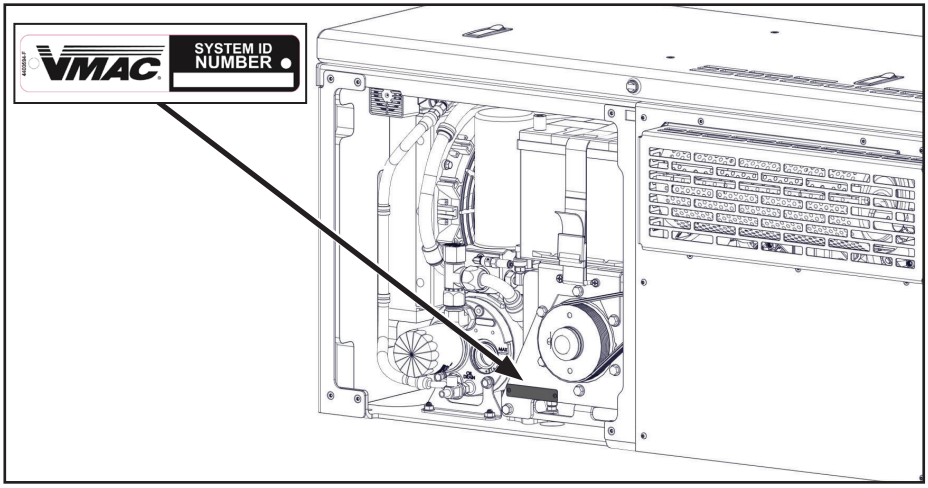


Figure 6 — System ID location

An alternative method of identifying the system is via the compressor serial number which is found on a plate attached to the compressor. This is a less desirable method of identifying the system as it may not link back to the original system if the compressor has been replaced.

System ID breakdown

The system ID provides specific information about the system such as the model, revision, production date and the unique identifier (Figure 7).

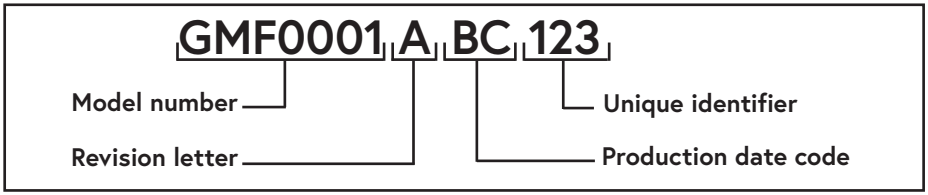


Figure 7 — System ID breakdown

Components

The Gas MF consists of the following components (dependent upon model and/or optional features):

- Air Separator Package (ASP).
- Compressor.
- Coalescing manifold (located on the ASP Tank).
- Control box / engine diagnostic lamp.
- Generator.
- Digital display panel.
- Remote Genset / Welder Control Box.
- Oil cooler.

Main Component Locations

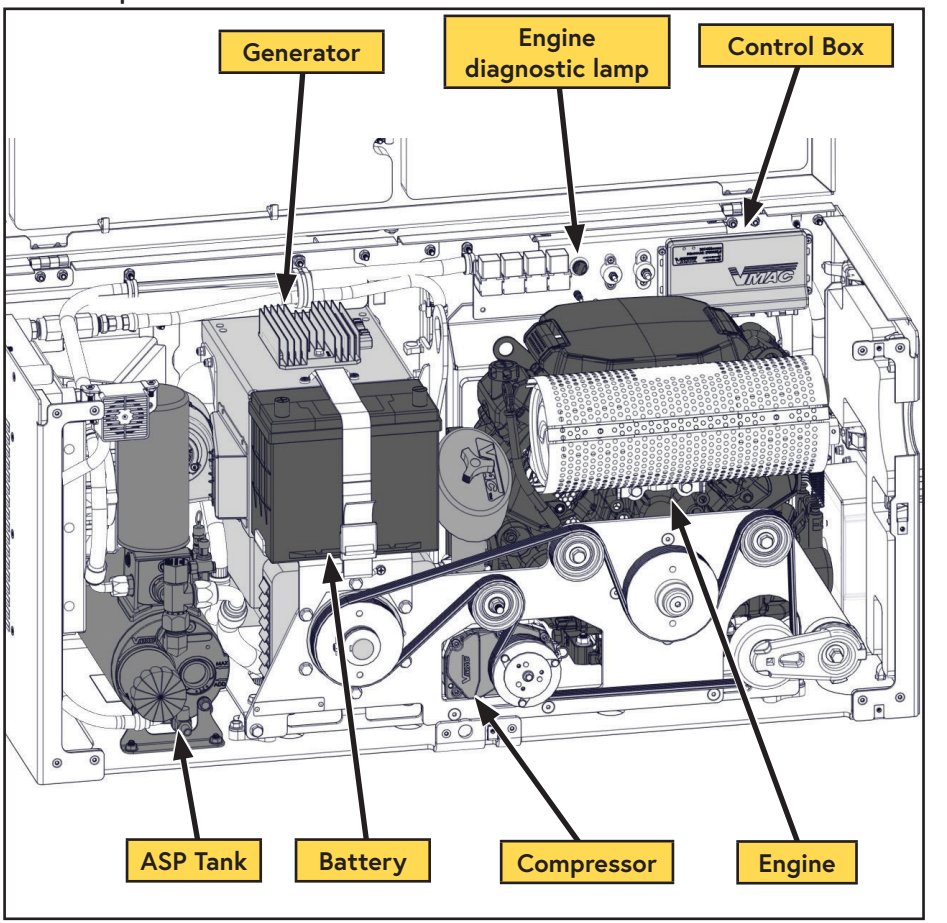


Figure 8 — Major component location

Generator Door

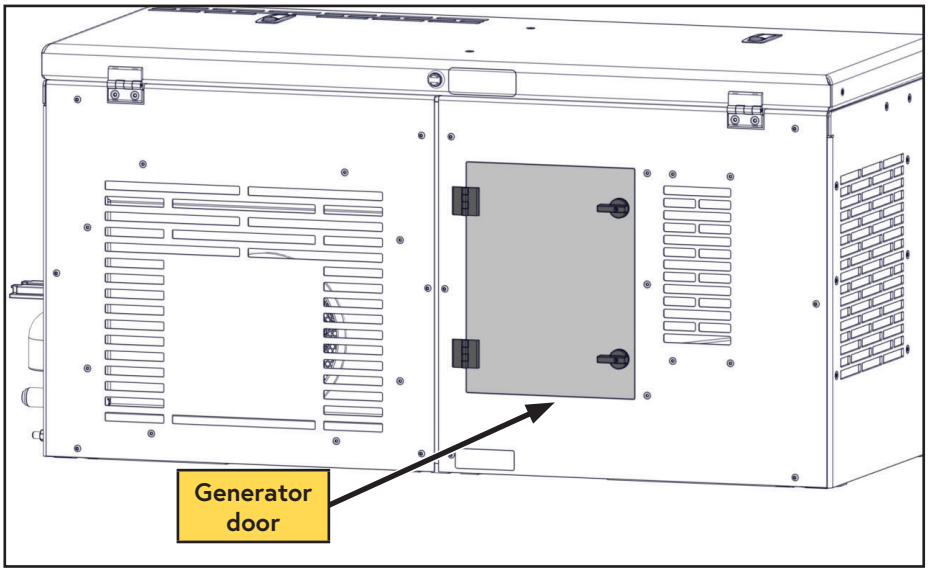


Figure 9 — Generator door

Top Panel and Service Panel

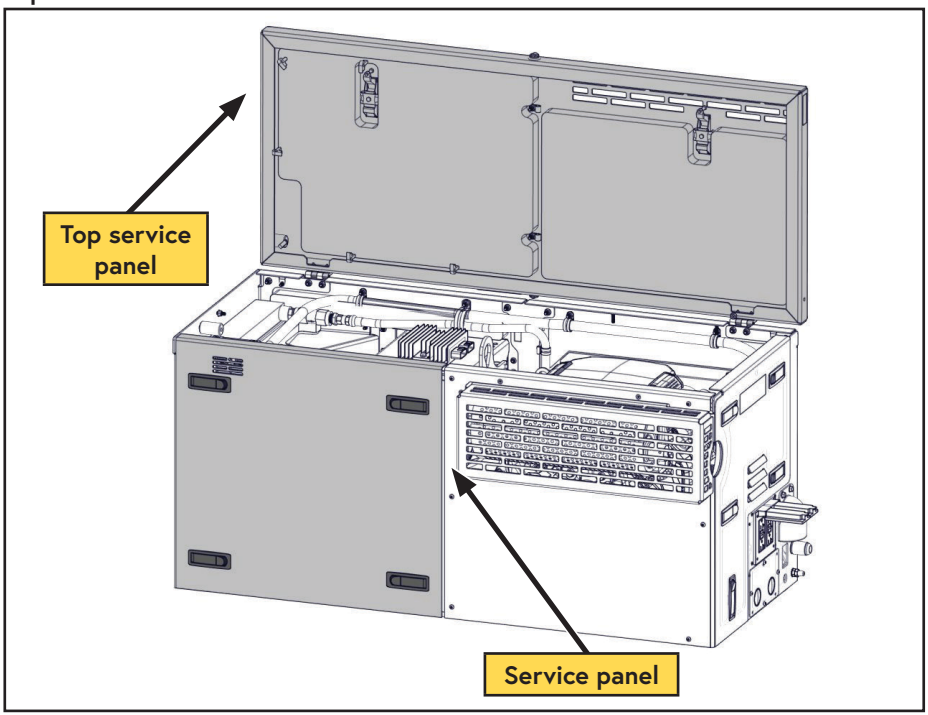


Figure 10 — Top and service panels

Discharge Side Panel

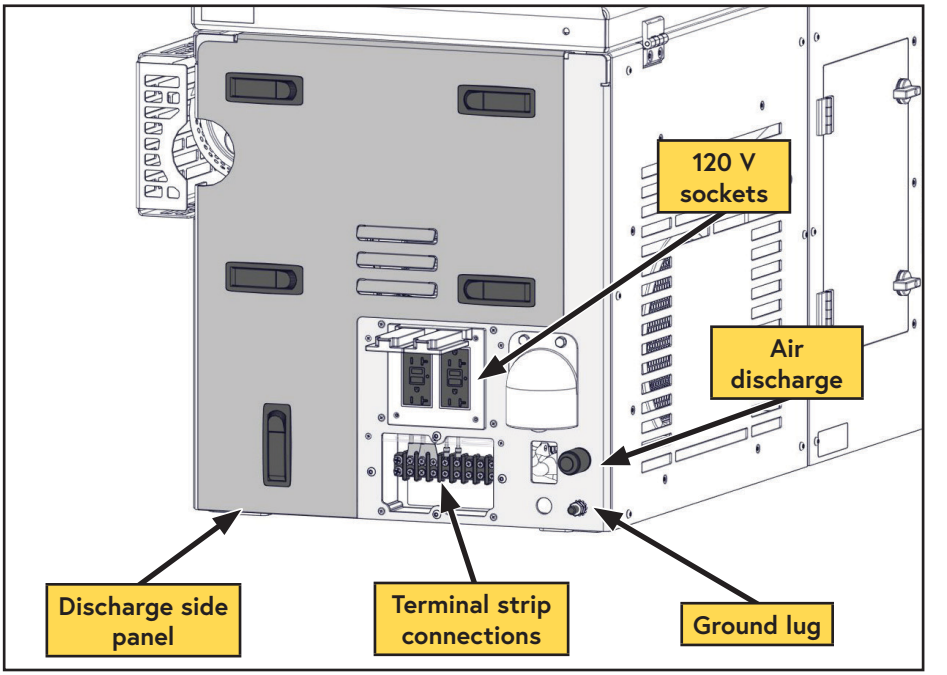


Figure 11 — Top and service panels

Generator

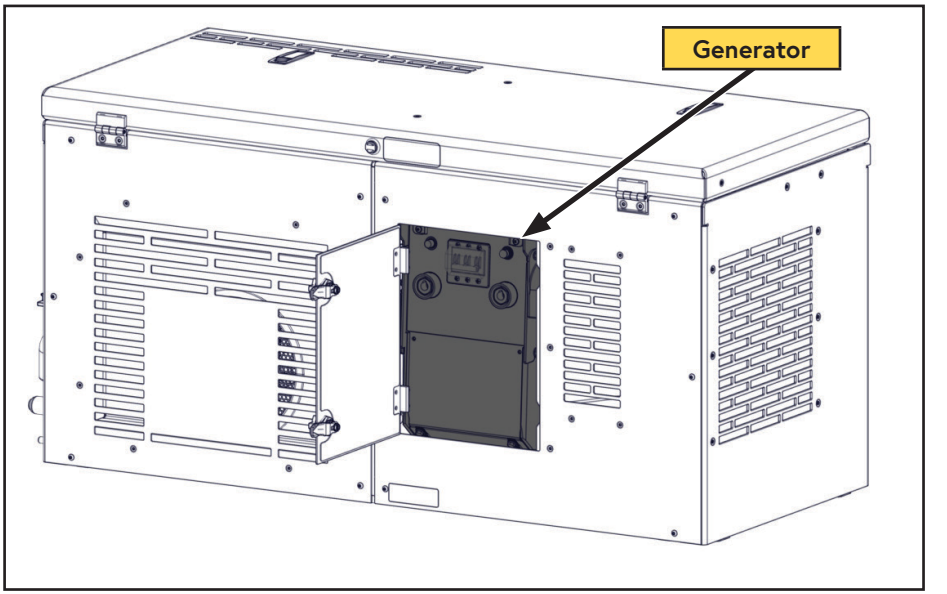


Figure 12 — Generator

Control Box / Engine Diagnostic Lamp

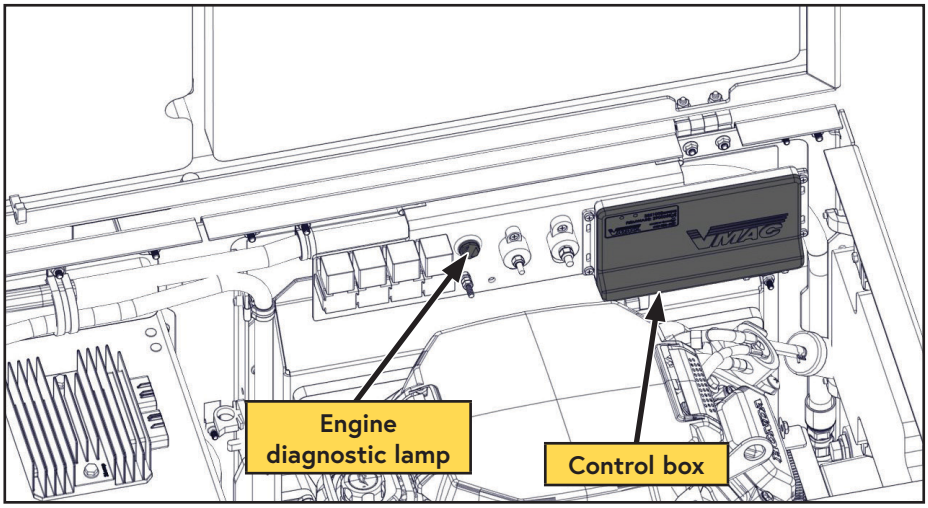


Figure 13 — Control box

ASP and Coalescing Manifold

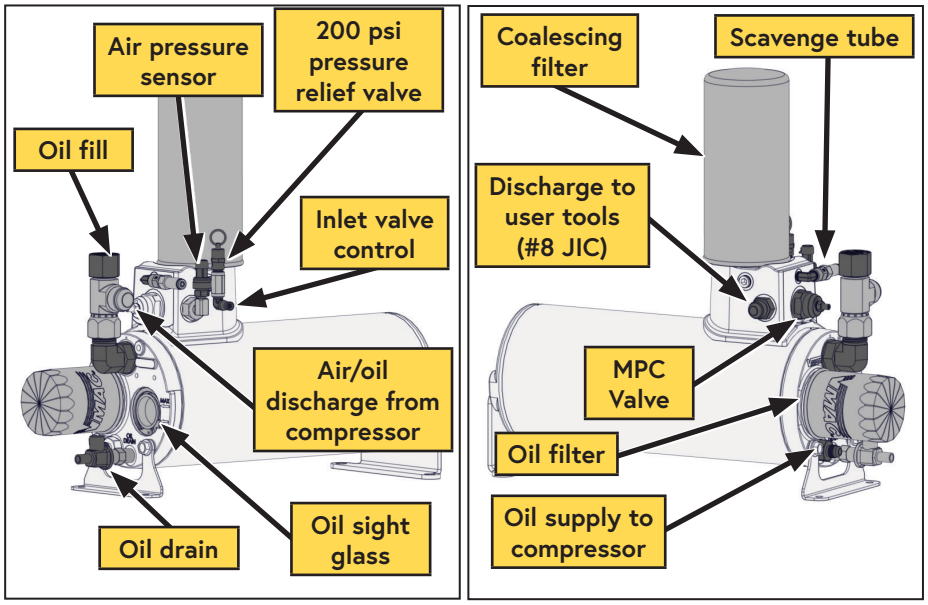


Figure 14 — ASP Tank

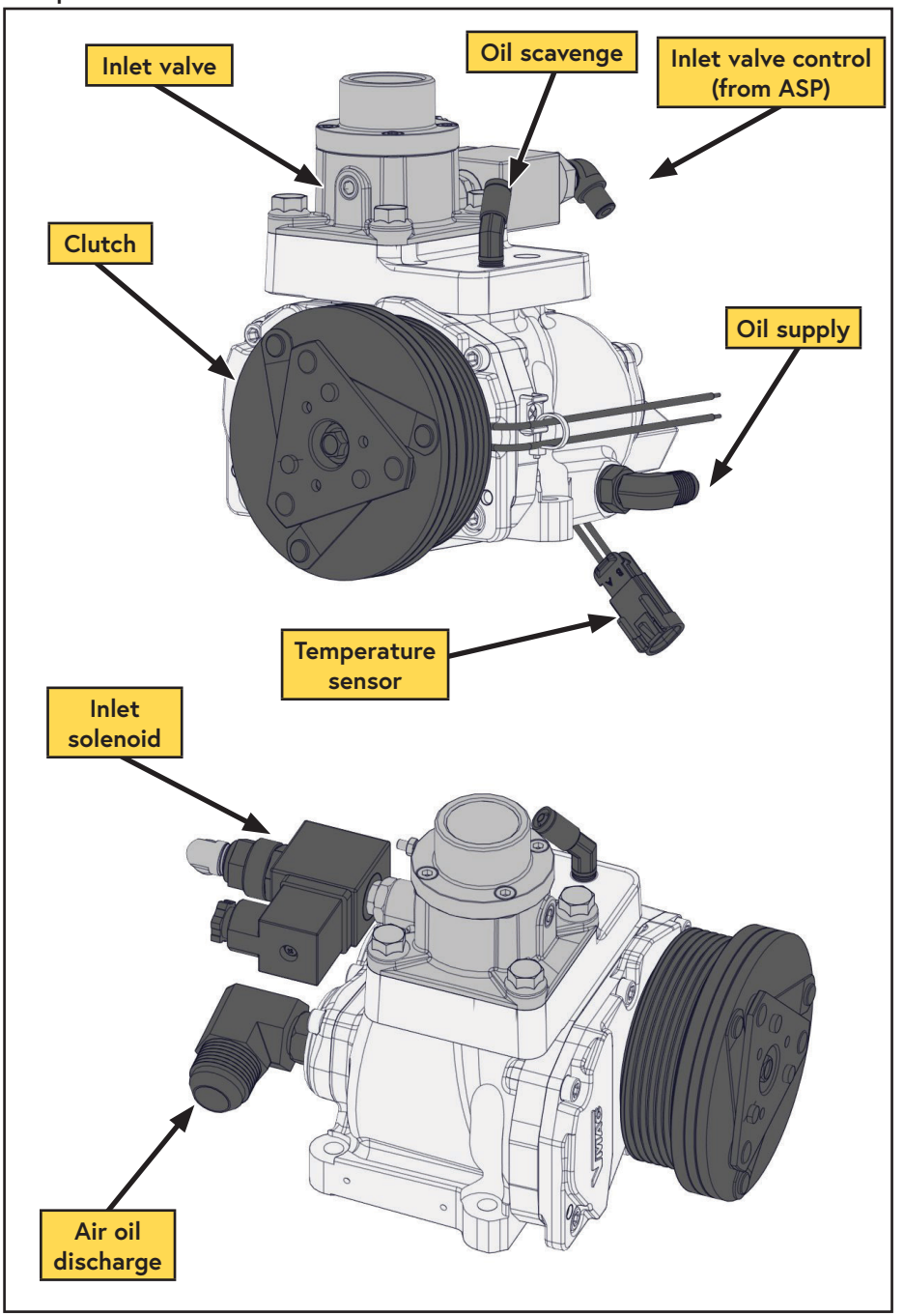


Figure 15 — Compressor assembly

Liquid to Air Compressor Oil Cooler

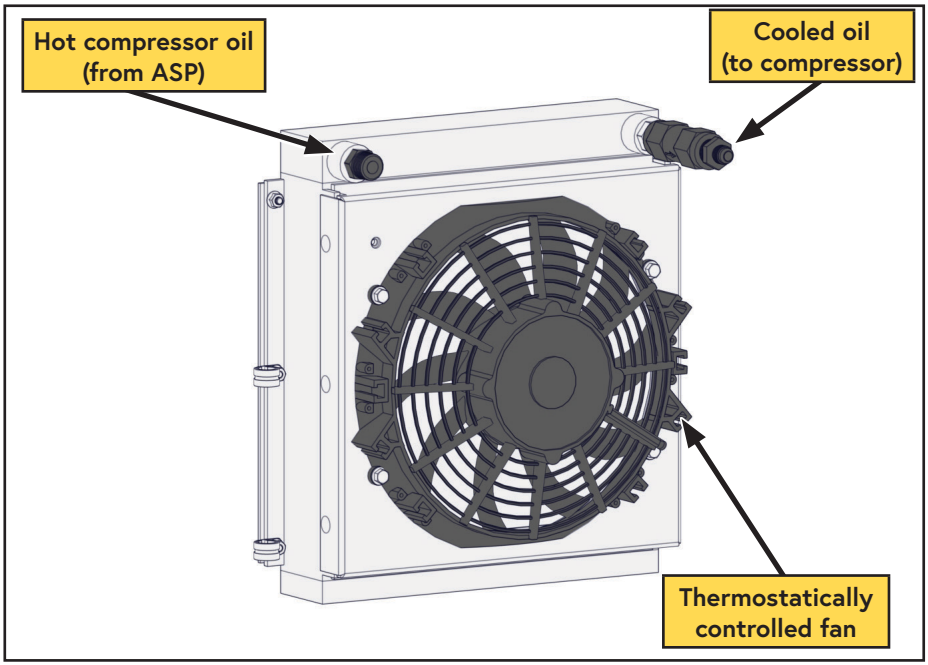


Figure 16 — Compressor oil cooler

Remote Genset / Welder Control Box

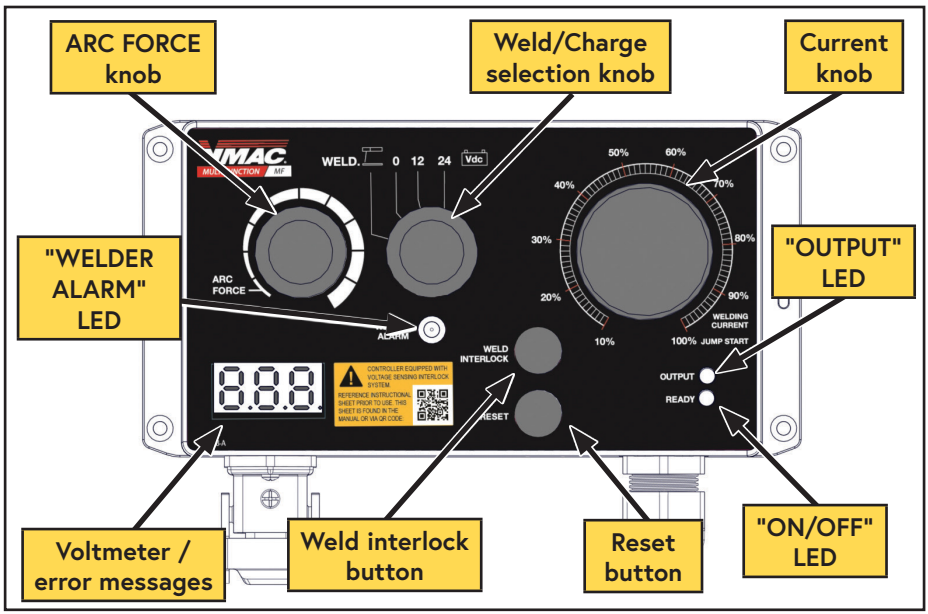


Figure 17 — Remote generator control box with Voltage Sense Interlock

Digital Display Panel

The digital display panel serves as the operator's control panel and contains the ignition key switch, the display LED (displays information such as compressor hours, service reminders, warning messages, error codes, adjustable parameters, and diagnostic information), the display box navigations buttons, the rocker switches used to operate the compressor and generator, and the "READY" and "WARNING" lights.

Low fuel indicator only included when Gas MF is ordered with optional fuel tank assembly.

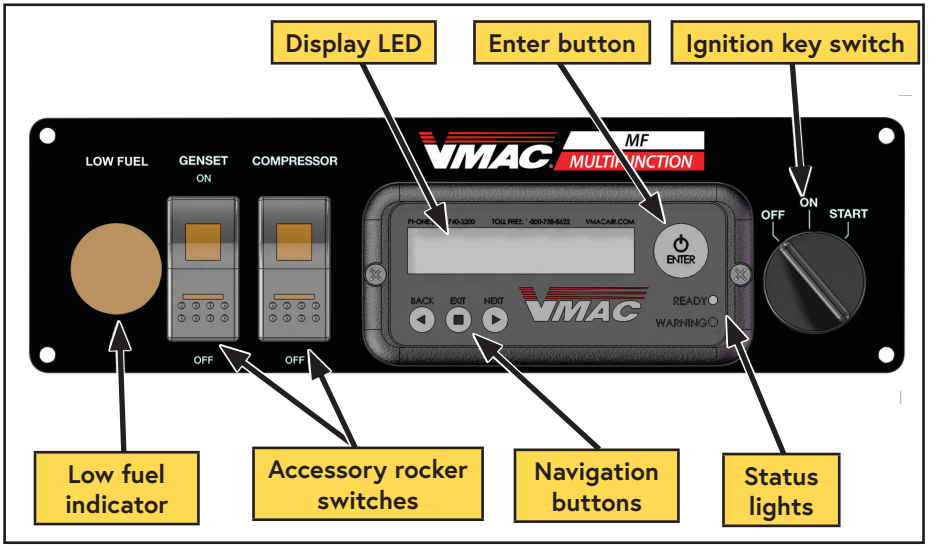


Figure 18 — Digital display panel

Hoses / Tubes

VMAC compressor systems include hoses that include an AQP inner liner that is compatible with VMAC compressor oil. The PTFE tubes used in VMAC systems are rated for the high temperatures VMAC compressors generate. Use of hoses or tubes other than those supplied or recommended by VMAC may fail and/or cause compressor damage and may void warranty. Please contact VMAC for replacement hoses or tubes or for further information.

- Hoses must have an AQP liner.
- Oil scavenge and pressure control tubes must be appropriately rated PTFE.

VMAC Compressor oil will degrade rubber lined hoses, use only hoses with an AQP elastomer type liner. Contact VMAC Technical Support at 1-888-241-2289 for further information.

System Specifications

The Gas MF is powered by the HONDA iGX800; this 24 hp (18.6 kw) naturally aspirated, V-twin air cooled gas engine drives a 40 cfm VMAC air compressor. Average fuel consumption is approximately 1.9 g/h (7.1 L/h).

Engine Speed

Base idle: 1,700 rpm (± 50 rpm).

Warm up idle: 2,500 rpm (± 50 rpm).

High Idle: 3,600 rpm (± 50 rpm).

Air Compression

The Gas MF uses a VMAC designed and manufactured flooded lobe, rotary screw compressor. The oil filled compressor housing contains (×2) rotors. Compression occurs when air (at normal atmospheric pressure) enters a chamber where it is trapped between meshing rotor lobes. Cooled oil is injected into the rotors during compression to lubricate the rotors and bearings, absorb the heat of compression, and seal the rotor lobes to allow for efficient compression. As the rotors rotate, the meshing lobes compress the volume of the trapped air/oil mixture before sending it, via the discharge line, to be cooled and separated by the ASP.

When the compressor switch is in the "ON" position, air pressure is monitored via a pressure sensor mounted in the coalescing manifold. The intelligent control system monitors the air pressure and will respond if the pressure drops below the configurable top up pressure and / or high air rate (see "Adjustable Parameters (User Setup)" on page 50).

The compressor clutch is electronically controlled and will automatically disengage when the engine speed drops below 3,000 rpm, to ensure the generator frequency remains within acceptable parameters.

Air Pressure Regulation

Air pressure regulation is achieved via an inlet valve and is adjustable via the Display Box. The system pressure (factory set at 150 psi) can be adjusted between 80 psi and 150 psi (maximum). VMAC recommends the use of a Filter Regulator Lubricator (FRL) to reduce the operating pressure delivered to the tools.

Compressor Oil Separation and Cooling

The system utilizes a 2 stage air/oil separator. The hot air/oil mixture from the compressor enters the ASP and is mechanically separated with internal baffles. The second stage uses a spin-on coalescing filter to remove the remainder of the oil from the air stream.

The small amount of oil recovered from the coalescing filter is returned directly to the compressor via a 1/4 in PTFE scavenge tube.

The hot compressor oil is directed to VMAC's liquid to air cooler (which is cooled via an electrically controlled fan) before being returned to the compressor.

Filtration

VMAC rotary screw compressors are designed and machined to exacting standards. Foreign particles entering the compressor can damage components such as rotors, bearings, seals, and the housing resulting in performance and efficiency losses, and reduced system life.

The system is equipped with a replaceable paper element air filter, a high pressure spin-on oil filter, and a spin-on coalescing filter.

Generator

The Gas MF is equipped with:

Ac/dc generator / welder / battery charger / light duty battery booster

- **ac**: 8 kW output with 1 × 30 A, 240 V, 60 Hz 3 phase circuit, 2 × 20 A, 120 V, 60 Hz single phase circuit with terminal strip.
- **dc**: "Constant Voltage" modes, 12 V – 24 V (selectable) for battery boosting and charging; "Constant Current" modes for welding.
- **Light duty battery booster / charger:** 12 V dc and 24 V dc modes for battery boosting (up to 300 A).
- **Welder:** This setting produces "Constant Current" output for arc welding.
- Safety Features

A 200 psi (1380 kPa) pressure relief valve is installed in the coalescing filter manifold to prevent over pressurization. The Gas MF is also equipped with an integrated rapid blow down system that, via an air solenoid connected to the inlet valve, automatically discharges pressure upon shutdown.

Temperature sensors are installed in the compressor and the engine. In the event that the air/oil, or engine temperature increases above a safe level, the system will shut down the engine, illuminate the "WARNING" light on the Display Box and log the error message.

Do not disable or bypass any safety components. Disabling or bypassing safety components could result in equipment damage, injury or death.

VMAC Cold Climate Kit (Optional)

VMAC's cold climate kit consists of a 110 V ac heater cartridge installed in the compressor housing and a 110 V ac pad heater installed on the ASP tank

The VMAC Cold Climate Kit requires connection to either a 1,500 W power inverter (minimum) or ac "shore power" in order to power the heater cartridges.

Dependant upon ambient temperature, the heaters may need to be energized for up to 90 minutes prior to attempting to start the system.

Control System Features

The Gas MF features an intelligent control system that monitors and manages various components, some of which are listed below:

- Multiple adjustable system parameters including: restart options, delayed restart, system pressure, etc.
- Hour meter.
- Starting and stopping the Gas MF (via the key switch on the Display Box, remote wire, or the optional crane remote interface (P/N: A500029).
- Automatic engine shutdown if no air use is detected.
    - If equipped with the optional external fuel tank, the control system will monitor the fuel level and will illuminate a low fuel warning on the display panel.
- Automatic engine restart. The system will restart from Standby when the system detects: high air use, air pressure drops below the reconfigured threshold, the system detects that the engine or compressor temperature drops too low, or the battery voltage gets too low.
    - If connected to the vehicle's engine battery, the Gas MF will monitor the vehicle's battery and automatically restart to charge it as required.
- Air filter restriction warning.
- Engine load detection will prioritize the generator, disabling the compressor if needed to maintain engine rpm.
- Monitor system air pressure and disengage the compressor clutch in the event of overpressurization.
- Engine monitoring and error logging:
    - Engine under speed.
    - Engine over speed.
    - Running when not expected.
    - Starting error.
    - Low oil pressure.
- Separate error and warning message logging for both the engine and VMAC systems.
- 200 hour and 400 hour compressor service reminders.
- 100 hour engine service reminders.
- LED lights warn that the system is in standby and may restart unexpectedly.
- Audible buzzer and LED lights warn when the system is about to start.

Control System Terminology

The following messages will appear on the Display Box to indicate the system state at a given time (key switch in the "ON" position).

"SYSTEM READY"

The Gas MF has completed its self diagnostic test and is ready to be started by:

- Pressing the "ENTER" button.
- Turning the key switch to the "START" position for 1 second and then releasing the key.
- Grounding the remote start wire.

"STARTING"

The control system will attempt to start the engine.

The starter will be engaged for up to 15 seconds. If the engine fails to start after 3 attempts, the system will log error code 35, "ENGINE CRANK TIME OUT".

"WARMING"

The control system is monitoring the engine temperature. The system will remain in the "WARMING" state until the engine reaches 10 °C (50 °F).

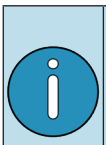
"RUNNING"

Once the engine temperature reaches 10 °C (50 °F), the system will enter the "RUNNING" state. The system is ready for the compressor, or generator to be engaged. Note that the while the compressor oil is below 5 °C (41 °F), the compressor clutch will not actually engage, and "COMP TOO COLD xx.x°F/xx.x°C" will be shown on the display.

If no demand is placed on the system (generator is turned off, and the compressor is turned off/has built to full system pressure), the "delay to unload" timer will begin counting down.

"STARTING CLUTCH"

The compressor clutch is engaged to allow the system to build air.



The control system will prevent the compressor clutch from restarting until pressure inside the compressor has had a chance to dissipate.

If the compressor switch is engaged while there is still pressure in the system, the "STARTING CLUTCH" message will be displayed.

"UNLOAD"

Once the "TIME TO UNLOAD" timer reaches 0M:00S, the control system will disengage the compressor clutch and reduce the engine speed to base idle (provided that the generator is not engaged).

While in the "UNLOAD" state, the control system will continue to monitor the air use rate and restart pressure. If the control system detects air use, it will return the system to the "RUNNING" state, engage the compressor clutch, and increase the engine rpm to the second speed, to meet the demand.

If no demand is placed on the system (generator is turned off, compressor is turned off, or has built to full system pressure), the control system will start the "TIME TO STANDBY" timer.

Any time that the generator is engaged, the "TIME TO STANDBY" timer will pause at 10 seconds and the system will be prevented from entering "STANDBY" until the generator is turned off.

"STANDBY"

Once the "TIME TO STANDBY" timer reaches 0M:00S, the control system will shut down the engine. While in "STANDBY", the control system will continue to monitor air pressure, air rate, battery voltage, and engine temperature. The control system will automatically restart the engine if the generator is activated, or in response to the adjustable parameters (see "Adjustable Parameters (User Setup)" on page 50).

While in "STANDBY", the strobe lights will flash to indicate that the engine may start unexpectedly.

If the control system sends a signal to start the engine, an audible alarm will sound to indicate that the engine is starting.

By default, the "DISABLE AUTO RESTART DELAY" is set to 60 minutes. After 60 minutes in "STANDBY", the system will shut down completely (including the strobe lights) even though the ignition key remains in the "ON" position. To start the system again, turn the ignition key to "OFF", then back to "ON", and follow the normal startup procedure.

See "Adjustable Parameters (User Setup)" on page 50 for more information on restart delay.

"STOPPING"

When the system is running and the "ENTER" button is pressed, the system will enter the "STOPPING" state.

Once in the "STOPPING" state, the system will shut down. If the system is still pressurized, it will blow down air pressure from the compressor and the ASP.

Cold or Hot Weather Operation

Cold Weather Operation

For optimal engine performance in temperatures below 0 °C (32 °F), ethanol free fuel is recommended. Consult the The HONDA iGC800 Owner's Manual (P/N: 1901216) for cold climate operation.

The HONDA iGX800 fuel injection control system is designed to compensate for cold climate conditions and does not require starting aids. The VMAC Cold Climate Kit includes a ASP Tank heater and compressor heater cartridge to speed warming of the compressor oil.

The control system will prevent the generator from starting until the engine temperature reaches 10° C (50° F). The control system will prevent the compressor from starting until the engine temperature reaches 10° C (50° F) and the compressor oil reached 5 °C (41 °F). Although the control system allows system operation at these temperatures, warming the engine to 20° C (68° F) is recommended for greater engine efficiency. Warm up time will vary based on ambient temperatures. Colder ambient temperatures will result in longer warm up time.

The HONDA iGX800 Owner's Manual (P/N: 1901216) advises that the engine should be warmed up for a minimum of 2-3 minutes.

In extremely cold weather, VMAC recommends setting the "STANDBY DELAY" to "NEVER" to prevent the engine from shutting down.

Optional VMAC Cold Climate Kit (A500234)

VMAC is unable to provide specific warming times as variations in air temperature and Gas MF mounting locations will affect the time it takes to warm the compressor system.

The heaters may need to be on for 30 minutes or more prior to the compressor clutch engaging to allow sufficient time for the compressor oil to warm up; this can generally be accomplished while driving to work.

Over temperature Shutdown

If the compressor or engine gets too hot, the over temperature circuit will disable the compressor to reduce the load on the engine to reduce the temperature. If the system temperature continues to rise, the system will shut the engine down.

In the event of an over temperature shutdown, the red LED on the display box will illuminate and the display box will show a message identifying the problem.

If this problem persists, see "Diagnostics and Troubleshooting" on page 76.

Starting and stopping the Gas MF

Prior to Operating the Gas MF

☐ Ensure the system is not mounted (or parked) on grades exceeding 15° as this will affect lubrication and air/oil separation (Figure 19).

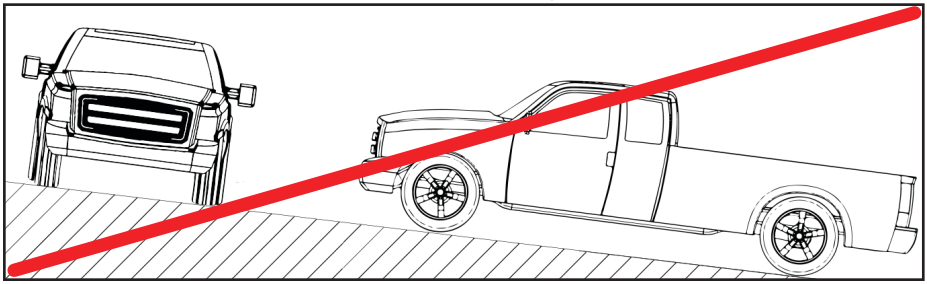


Figure 19 — Do not exceed 15° grade

If installed inside a cabinet or enclosure, open the door or cover completely and secure in the open position to provide proper ventilation

Startup Procedure

☐ If the temperature is below -5 °C (23 °F), enable the Cold Climate Kit (if installed) to start warming the compressor oil. The time required for the heaters to sufficiently warm the compressor oil to 5° C (41° F) will depend upon the ambient temperature.

☐ Check the compressor oil level at the sight glass in the ASP Tank.

☐ Check the engine oil level.

☐ Check the engine oil cooler to ensure no debris has accumulated.

☐ Check for any fluid leaks around the unit.

☐ Ensure any air tools are securely connected and the air discharge valve is closed.

If the Gas MF has not been started for several weeks, prime the fuel system prior to attempting to start the unit (page 23).

☐ Turn the key switch to the "ON" position.

The Display Box will go through a self diagnostic check; if no errors are detected, the system will move into the "ready" state.

During the first 10 hours of operation, the "WARNING" LED will flash, and a reminder about warranty registration will appear on the screen.

☐ Press the "ENTER" button (or turn the key switch to "START", hold it there for approximately 1 second, then release it.

- The control system will prevent the engine speed from ramping up, or the generator from engaging until the engine temperature is above 10 °C (50 °F)

- The control system will prevent the engine speed from ramping up, or the compressor from engaging until the engine temperature is above 10 °C (50 °F) *and* the compressor temperature is above 5° C (41° F).
- If no demand is made on the system (e.g. the compressor has built to full system pressure, or the generator, or compressor are not engaged), the system will enter the "UNLOAD" state and a countdown will start before the system enters "STANDBY" and shuts down.

☐ ***Note:*** If the optional Cold Climate Kit has been used to warm the compressor oil, it must be shut off once the compressor oil temperature reaches 5 °C (41 °F) or the clutch engages.

Additional Information

While the system is running, additional information such as air pressure, air rate, engine speed, engine temperature, battery voltage, time to unload / standby, compressor temperature, can be viewed by pressing the "▶" and "▶" buttons. To return to the "SYSTEM RUNNING" menu, press the "▶" button.

Shutdown Procedure

Prior to shutting down the Gas MF, allow the system to build to full system pressure, then turn off the compressor and generator, and allow the engine to reduce to base idle.

☐ Turn off the compressor via the rocker switch.

☐ Turn off any electrical equipment. If the electrical equipment cannot be completely powered down (e.g. an LED indicator light remains on) the device must be unplugged.

☐ The system will go to "UNLOAD MODE" and the engine speed will idle down to base idle.

☐ Press the "ENTER" button.

The Display Box will indicate "STOPPING" and the system will initiate the shut down sequence.

☐ Turn the ignition key to "OFF".

Battery Charging / Boosting and Welding

When in the 12 V or 24 V charge modes, the "READY" LED light on the remote Weld Control will be illuminated, and the "OUTPUT LED light will blink slowly.

When in Weld mode, the "READY" LED light and "OUTPUT" LED light will be illuminated.

See page 47 for a description of the different "WELDER ALARM", "READY" and "OUTPUT" LED states.

This generator has been equipped with a voltage monitoring circuit to ensure that charging/welding voltages are operating correctly for the intended process.

The order of operations for connecting batteries or moving the system into weld mode must be followed exactly or the system disables itself and the generator must be reset.

Charging / Boosting Procedure

Working near lead acid batteries is dangerous. Batteries may generate sulphuric acid and hydrogen gas during regular operation. Lead acid batteries may explode if exposed to a spark.

<u>Never</u> attempt to jump start a frozen battery.

<u>Never</u> overcharge a battery.

<u>Always</u> follow safety precautions when jump starting or charging a battery, including the use of appropriate Personal Protective Equipment.

The Gas MF jump starting feature requires that the circuit being jumped has a battery installed. Do not attempt to jump start the vehicle with the Gas MF connected directly to the starter.

Do not leave the Gas MF connected and charging at over 30% for more than 10 minutes. Extended high voltage / current charging can damage batteries.

The Gas MF offers battery jump starting capability up to 300 A.

- ☐ Prior to charging or boosting, ensure the Gas MF is not running, and the booster cables are disconnected from the battery to be charged.
- ☐ Set the "WELD" selection knob to 0 V.
- ☐ Start the Gas MF.
- ☐ Engage the generator via the toggle switch located at the display box.
- ☐ The voltmeter should read approximately 0 V.

If "ErX" is displayed*:

- ☐ *Ensure the booster cables are not shorted together, or connected to the batteries to be charged, and the "WELD" selection knob is set to "0".
- ☐ *Press and hold the "RESET" button for 2 seconds.

☐ Connect the positive clamp to the positive terminal on the battery.

☐ Connect the negative clamp to a good ground (ideally on the engine).

Observe the battery voltage using the Voltmeter*.

- ☐ *12 V systems should indicate battery voltage above 2.0 V.
- ☐ *24 V systems should indicate battery voltage above 14.0 V.

If the battery voltage is below the above values, the generator will not recognize the target and will not unlock the appropriate charge modes.

If the battery voltage is too low,*.

- ☐ *Disconnect the battery from all loads. This may allow the battery voltage to rise high enough to be recognized by the system.
- ☐ *If the battery does not recover adequate voltage after being disconnected, battery detection can be temporarily over-ridden by pressing and holding both the "RESET" and "WELD INTERLOCK" button for 5 seconds.

Once switched into charge mode, the system will re-enable battery detection after 60 seconds.

☐ With the battery connected, rotate the "WELD" selection knob to the appropriate charge mode*.

- ☐ *The voltage should rise as the system begins charging.

☐ Set the "WELDING CURRENT" knob to 100%.

☐ Let the batteries charge for at least 5 minutes.

☐ Try starting the vehicle.

While the Gas MF can provide up to 300 A of start assist, vehicle starters can draw upwards of 1,200 A while starting.

If the vehicle fails to start, allow it to charge for longer before attempting to start again.

Return the "WELD" selection knob to 0 V.

Weld Procedure

This generator has been equipped with a voltage monitoring circuit to ensure that welding voltages are operating correctly for the intended process.

The order of operations for moving the system into weld mode must be followed exactly or the system disables itself and the generator must be reset.

Weld Procedure

While the GMF includes two sets of welding lugs, only one set of welding lugs should be used at any time (Figure 20).

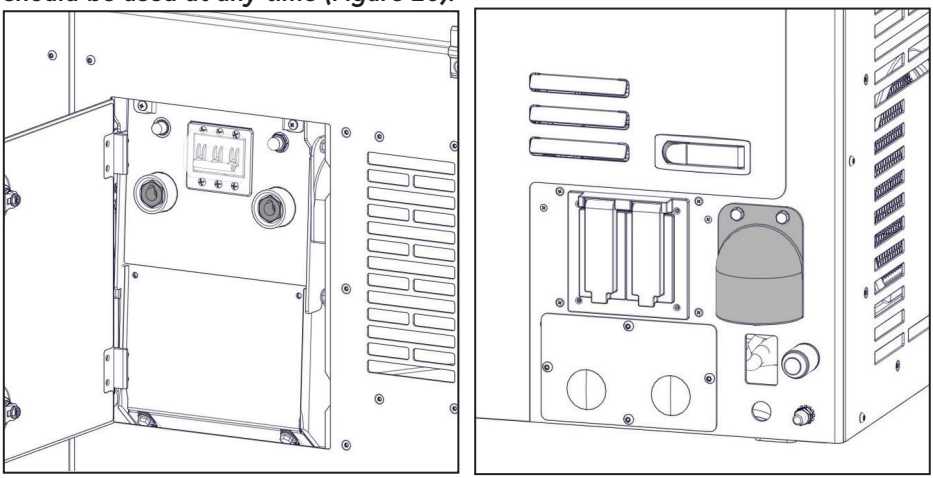


Figure 20 — Welding lugs

Plugging the optional Current Control Pendant (P/N: A500018) into the Remote Generator Control Box prior to entering "WELD" mode will cause an error.

- ☐ Prior to starting the Gas MF, set the "WELD" selection knob to 0 V.
- ☐ Start the Gas MF.
- ☐ Engage the generator via the toggle switch located at the display box.
- ☐ The voltmeter should read approximately 0 V.

If "ErX" is displayed*:

- ☐ *Ensure the weld cables are not shorted together, or connected to the batteries to be charged, and the "WELD" selection knob is set to "0".
- ☐ *Press and hold the "RESET" button for 2 seconds.

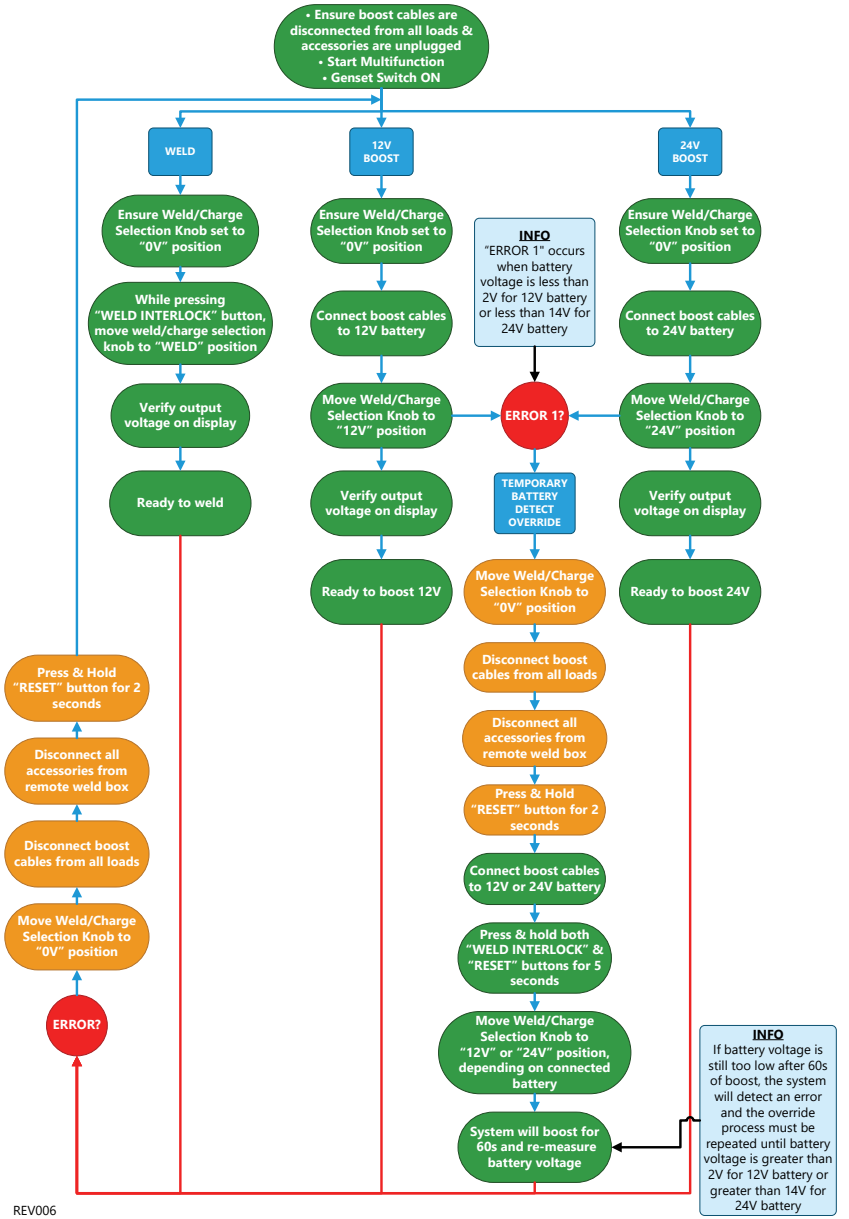
- ☐ Press and hold the "WELD INTERLOCK" button while rotating the "WELD" selection knob to "WELD".
- ☐ If using the optional Current Control Pendant (P/N: A500018), plug it into the Remote Generator Control Box.
- ☐ Adjust the "WELDING CURRENT" and "ARC FORCE" as required.

Once welding is complete:*

- ☐ *If using the Current Control Pendant, disconnect it.
- ☐ *Set the "WELD" selection knob to 0 V (The "WELD INTERLOCK" button is not required when returning the "WELD" selection knob to 0 V).

For a list of Welder Control Box error messages and troubleshooting steps, see page 48.

Read the warnings listed on page 43 prior to proceeding.



Weld Control Box LED Light Behaviour

LED Light	LED State	Description
OUTPUT LED	Slow flash	12/24 volt mode. Normal.
READY LED	On	

LED Light	LED State	Description
OUTPUT LED	On	Weld mode.
READY LED	On	

LED Light	LED State	Description
OUTPUT LED	Fast Flash	Error detected. See voltmeter for error code and refer to chart on page 48.
READY LED	Off	

LED Light	LED State	Description
OUTPUT LED	Off	0 volt mode. System ready.
READY LED	On	

LED Light	LED State	Description
OUTPUT LED	Slow flash	0 volt mode. Battery Detect Override Enabled.
READY LED	Slow flash	

LED Light	LED State	Description
OUTPUT LED	Double flash	12/24 volt mode. Battery Detect Override Enabled.
READY LED	On	

LED Light	LED State	Description
WELDER ALARM	On	The "WELDER ALARM" light will illuminate when the thermal breaker has tripped. Allow the welder/ generator to cool down and the breaker to reset before attempting to weld or boost. If the breaker is repeatedly tripping, reduce the duty cycle on the welder. If the thermal breaker will not reset, contact VMAC Technical support.

Weld Control Box Error Messages

If the voltmeter detects a voltage or state that is not permitted, an error will be displayed on the screen.

If an error is displayed:

- ☐ Disconnect the target battery and ensure the booster, or weld cables are not shorted together.
- ☐ Return the "WELD" selection knob to 0 V.
- ☐ Press and hold the "RESET" button for 2 seconds.
- ☐ If the error persists, contact VMAC for support.

Error	Description	Corrective Action
Er 0	Voltage detected above bounds for selected mode.	Gas MF output voltage is greater than 20 V (12 V boost mode) or 38 V (24 V boost mode). • Reset system and re-attempt boost procedure. • Contact Technical Support. • Remote Current Control Pendant plugged in prior to setting "WELD" mode (see page 45).
Er 1	Voltage detected under bounds for selected mode.	Target battery is less than 2 V (12 V boost mode) or 14 V (24 V boost mode). • Check connection between Gas MF boost cables and target battery. • Charge target battery in override mode to allow battery voltage to rise high enough to be recognized by system. • Target battery float voltage is too low to be charged.
Er 2	Reverse polarity detected.	Reverse polarity of connection from Gas MF boost cables to target battery. • Check connection between Gas MF boost cables and target battery. Verify correct polarity (+ to + and - to -).
Er 3	Incorrect mode detected.	Incorrect charge mode selected for detected target battery voltage. • WELD INTERLOCK button not pressed while entering WELD mode. • System not started in 0 V mode, Refer to page 45. • Select correct charge mode according to target battery voltage.
Er 4	Multifunction battery low.	Gas MF battery voltage less than 9.0 V. • Inspect cables/connections to Gas MF battery. • Service/replace Gas MF alternator.
Er 5	Multifunction battery high.	Gas MF battery voltage greater than 16.0 V. • Service/replace Gas MF alternator.
Er 6	MCU Reset.	• Inspect wiring harness for damage, short/open circuit. • Contact VMAC Technical Support.

Diagnostics Mode

Diagnostics Mode provides access to various features such as error logs, user adjustable settings, and service logs.

Entering DIAGNOSTICS mode

☐ Turn the key switch to the "RUN" position but do not start the system.

☐ Once the system has completed its self diagnostics, press and hold the "▶" and "◀" buttons for 5 seconds to enter the diagnostic mode.

☐ Cycle through the menus using the "▶" and "◀" buttons.

The system will slowly scroll through menu headings.

Entering a submenu

When the desired submenu is displayed:

☐ Press the "ENTER" button.

Scrolling

While in a submenu, scroll through the data and variables using the "▶" and "◀" buttons.

Making a selection

To accept a parameter, press the "ENTER" button.

Exiting a submenu

To exit a submenu, press the "■" button to return to the previous submenu.

Exiting DIAGNOSTICS mode

Repeatedly press the "■" button until "SYSTEM READY" is displayed on the Display Box.

Submenus

Once in the Diagnostics menu, there are (×5) submenus.

"USER SETUP"

This submenu contains all of the adjustable parameters.

"SERVICING"

Clears the compressor service message and records the system hours when the last 10 system service reminders where cleared.

If the display has been showing a compressor service reminder, enter this section and clear the message once the service has been completed.

"VIEW LOGGED ERRORS"

Lists the 10 most recent system errors. See page 77 for a list of error messages.

"VIEW LOGGED MESSAGES"

Lists the 10 most recent system messages. See page 80 for a list of warning messages.

"VIEW LOGGED SERVICES"

Lists the 10 most recent services logged.

Adjustable Parameters (User Setup)

Parameter	Description	Adjustment	Default Value
SYSTEM PRESSURE	Operating system pressure.	80 psi — 150 psi (5 psi increments).	150 psi.

Parameter	Description	Adjustment	Default Value
UNLOAD DELAY	Used to adjust the time delay before system changes from "RUNNING" state to "UNLOAD" state.	0.5 min, 1 min, 2 min, 5 min, 10 min, 15 min, 30 min, never.	1 min.

Parameter	Description	Adjustment	Default Value
STANDBY DELAY	Used to adjust the time delay before the system changes from "UNLOAD" to "STANDBY" state (engine shuts down).	1 min, 2 min, 5 min, 10 min, 15 min, 30 min, never.	5 min.

Parameter	Description	Adjustment	Default Value
TOP-UP PSI	psi drop below system pressure before the inlet will open to build air before the engine increases to its second speed. This prevents the engine from cycling between high and low rpm to maintain full system pressure and compensates for small drops in pressure (minor leaks at quick couplings, etc.)	1 psi — 15 psi (1 psi increments).	10 psi (System will engage compressor at 140 psi).

Parameter	Description	Adjustment	Default Value
HIGH AIR RATE	Measures the air use over time (psi/second). This parameter allows the system to potentially respond to high air use *before* system pressure drops below the "RESTART PRESSURE". This is useful for tools that use large volumes of air and will allow the system to start generating air before the air stored in the receiver tank is consumed.	0 psi — -30 psi (0.5 psi increments.) (A system with a small receiver tank combined with a high cfm tool will have a higher "air rate").	-3.0 psi/sec.

Parameter	Description	Adjustment	Default Value
RESTART PRESSURE	The pressure at which the system will restart the engine from "STANDBY".	80 psi — 150 psi (5 psi increments).	120 psi.

Parameter	Description	Adjustment	Default Value
COLD ENGINE RESTART	Allows the engine to restart if the engine begins to reach freezing temperatures.	Enabled \ Disabled.	Enabled.

Parameter	Description	Adjustment	Default Value
DISABLE AUTO RESTART	Disables the system from restarting from "STANDBY" after the configured time (behaves like turning the key to "OFF"). Key switch must be turned to "OFF", then back to "ON" to restart the system.	Always, 30 min, 60 min, 120 min, never.	60 min.

Parameter	Description	Adjustment	Default Value
LOW BATT RESTART	Allow the system to restart from "STANDBY" if the battery voltage drops below the configured value.	Enabled \ Disabled.	Enabled.

Parameter	Description	Adjustment	Default Value
BATT LOWER THRSH	The engine will restart if the battery voltage drops below the configured value for 30 seconds.	10.0 V — 14.0 V (0.1 V increments).	12.1 V.

Parameter	Description	Adjustment	Default Value
BATT UPPER THRSH	After a low battery restart, the engine will run until the battery voltage is above the "upper threshold".	10.0 V — 15.0 V (0.1 V increments).	12.8 V.

Parameter	Description	Adjustment	Default Value
LOW BATT RESTART DELAY	Delay before the countdown to "UNLOAD" / "STANDBY" starts.	1 min, 2 min, 5 min, 10 min, 15 min, 30 min.(A 2 minute delay should be adequate for standalone systems. If the Gas MF is connected to the vehicle's batteries, a setting of 5 minutes or more should be used).	2 min.

Maintenance Schedule and General Maintenance Information

Illustrated Parts Lists (IPL)

In addition to this manual, the illustrated parts list is an invaluable resource when inspecting, diagnosing or repairing the system. The IPL is available free of charge from VMAC. The part number portion of the System ID will be needed to locate the correct IPL. See "Identifying Your System" on page 27 for the System ID location.

Torque Specifications

All fasteners must be torqued to specifications. Use manufacturers' torque values for OEM fasteners.

The torque values supplied in Table 2 are intended for VMAC supplied components, or for use as a guide in the absence of a torque value provided by an OEM.

Apply Loctite 242 (blue) to all fasteners (except nylon lock nuts) unless otherwise stated.

Torque values are with Loctite applied unless otherwise specified.

Standard Grade 8 National Coarse Thread								
Size (in)	**1/4**	**5/16**	**3/8**	**7/16**	**1/2**	**9/16**	**5/8**	**3/4**
Foot pounds (ft•lb)	9	18	35	55	80	110	170	280
Newton meter (N•m)	12	24	47	74	108	149	230	379

Standard Grade 8 National Fine Thread					
Size (in)	**3/8**	**7/16**	**1/2**	**5/8**	**3/4**
Foot pounds (ft•lb)	40	60	90	180	320
Newton meter (N•m)	54	81	122	244	434

Metric Class 10.9						
Size (mm)	**M6**	**M8**	**M10**	**M12**	**M14**	**M16**
Foot pounds (ft•lb)	4.5	19	41	69	104	174
Newton meter (N•m)	6	25	55	93	141	236

Table 2 — Torque Table

Routine Maintenance and Maintenance Schedule

The Gas MF must be run a minimum of once every 30 days for at least 30 minutes to prevent impact damage and premature bearing failure in the compressor due to vibration. Regularly running the system will also help to vaporize and exhaust any water that has condensed and accumulated in the ASP.

In order to maintain the VMAC warranty, VMAC's maintenance schedule must be followed. Only genuine VMAC parts can be used to maintain the system.

With proper maintenance, the likelihood of premature failure or component replacement can be drastically reduced.

The most critical aspect of maintenance is proper air filtration, clean oil, and regular use. If any particles enter the compressor, they can score the rotors and contaminate the roller bearings in the compressor. Any contamination will cause rapid and severe damage to components.

In order to maintain the warranty on the Gas MF, use only genuine VMAC parts to service the system.

Refer to the HONDA iGX800 Owner's Manual (P/N: 1901216) for the engine maintenance schedule and instructions.

The following maintenance schedule must be observed to maintain both the "Standard" and "Lifetime" VMAC warranties and to assure proper performance and long service life of the system. In the event of a warranty claim, VMAC may request service records.

The hours indicated are those displayed on the Control Box. Service should be performed at the lesser of the two intervals (whichever occurs first).

To order service kits, see the ordering information on page 3.

Every 200 Hour / 6 Month Compressor Service Kit P/N: A700333	
• Change the compressor oil filter. • Change the compressor air filter.	• Change the compressor oil.

Every 400 Hour / 1 Year Compressor Service Kit P/N: A700334	
• Change the compressor oil filter. • Change the compressor air filter.	• Change the compressor oil. • Change the coalescing filter.

First 20, then Every 100 Engine Hours / 6 Month Service Kit P/N: A500251	
• Change the engine oil.	• Change the engine oil filter.

Every 300 Engine Hours / 1 Year Engine Tune Up Kit P/N: A500253	
• Change the engine oil. • Change the engine oil filter. • Replace spark plug.	• Replace fuel filter. • Replace engine air filter.

Maintenance and Repair Safety

It is impossible to warn of all the possible hazards that may result from operating, servicing, or repairing this system.

Follow all safety precautions and industry standard "best practices".

- ***Wear all appropriate Personal Protective Equipment and follow all industry standard safety practices.***
- ***Prior to performing any service, ensure the vehicle transmission is in "PARK" with the parking brake applied and the wheels chocked (if applicable).***
- ***Confirm that the system is depressurized and has cooled prior to performing any service work.***
- ***Never use flammable solvents to clean any components. If a flammable solvent has been used, rinse the component thoroughly with water and dry it before reinstalling it to prevent the possibility of explosion.***
- ***Use only genuine VMAC parts to maintain the system. Genuine VMAC parts are designed to work with the high pressure and heat generated by the compressor. Substituting genuine VMAC parts may void the warranty and could cause equipment damage, injury, or death.***
- ***This information is intended for people with mechanical trade certification who have the tools and equipment to properly and safely perform the service or repair. Do not attempt to service or repair this system without the appropriate mechanical training, knowledge and experience.***

Safety Check List

☐ Open the ball valve or connect an air tool to the system to ensure all the stored air is released.

☐ Gently pull up on the ring, on the pressure relief valve (located inside the service panel), to confirm the system is depressurized.

Do not use the pressure relief valve as a means of depressurizing the compressor system. Doing so will prematurely wear the internal spring or the seat, preventing the valve from maintaining normal system pressure.

☐ Disconnect the negative battery terminal.

Engine Maintenance and Warranty Information

The Honda engine maintenance schedule must be observed in order to maintain the Honda engine warranty (administered by Honda).

Refer to the HONDA iGX800 Owner's Manual (P/N: 1901216) for the complete engine maintenance schedule and instructions.

In the event of a warranty claim, VMAC or Honda may request service records.

The Gas MF control system records the engine and compressor hours separately. A service reminder indicating which type of service is upcoming will scroll on the display box before the service is due.

- Compressor: 10 hours before service is due,
- Engine: 2 hours before service is due).

The Gas MF uses the Honda iGX800. For engine service intervals and instructions, refer to the Honda Owner's Manual supplied with the system (P/N: 1901216).

Failure to follow the instructions in the Honda Owner's Manual could result in poor engine performance, engine damage and may void the Honda engine warranty.

For all Honda engine maintenance or warranty questions, contact a local Honda Equipment dealer.

Canada

https://engines.honda.com/dealer-locator

United States

https://engines.honda.com/dealer-locator

Regular Inspection Instructions

Read the "Maintenance and Repair Safety" section prior to performing any work on the system (beginning on page 27).

Wear appropriate Personal Protective Equipment and follow all industry standard safety practices.

The VMAC supplied and approved compressor oil must be used in this system. Failure to use this special oil will result in damage to the compressor and will void warranty.

Do not overfill the system. Overfilling the system with oil can flood the sight glass window and make the system appear empty.

Inspecting and Adding Compressor Oil

- ☐ Ensure the unit is level and that the compressor system is depressurized and cool to the touch.
- ☐ Check the oil level in the sight glass and ensure that it is between the "MAX" arrow and the "ADD" arrow.

If the level is below the "ADD" arrow, perform the following steps:

- ☐ Remove the fill cap (Figure 21).
- ☐ Using a funnel, pour oil into the fill fitting until the oil level in the sight glass reaches the "MAX" arrow.
- ☐ Replace the fill cap and tighten securely.

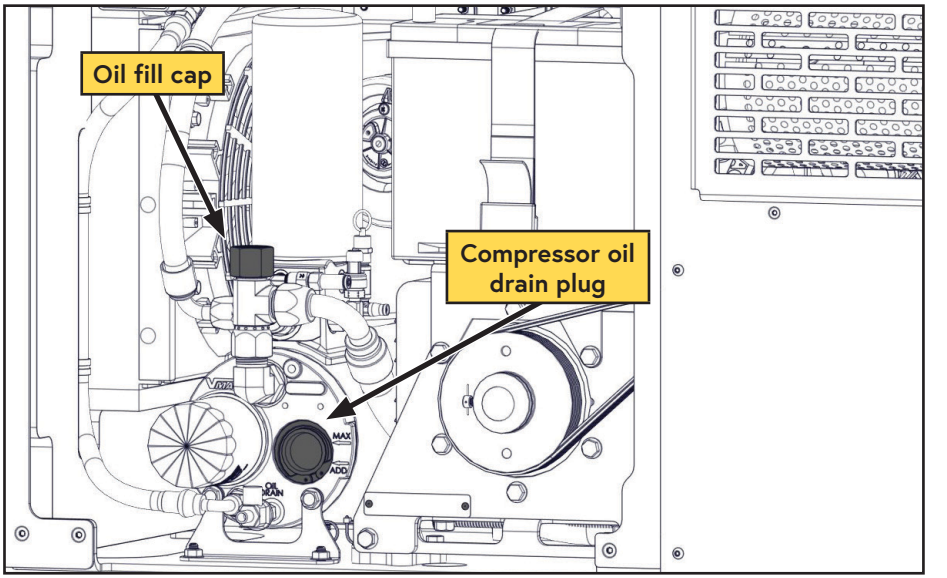


Figure 21 — Inspecting the compressor oil

Replacing the Compressor Air Filter

Read the "Maintenance and Repair Safety" section prior to performing any work on the system (beginning on page 54).

Wear appropriate Personal Protective Equipment and follow all industry standard safety practices.

To avoid any possibility of contamination, ensure the air inlet is covered with masking tape or a clean cloth whenever the air filter cover is removed.

Do not attempt to clean the filter element, or use compressed air to perform any tasks around the compressor until the filter and cover are replaced.

- ☐ Clean any loose debris from around the air filter housing to prevent contaminants from entering the system.
- ☐ Remove the filter cover and the filter element.
- ☐ Immediately cover the air inlet opening with a clean cloth or masking tape to prevent contaminants from entering the system.
- ☐ Clean the inside of the filter cover with a clean, dry cloth.
- ☐ Remove the cloth or masking tape from the air inlet and install the new air filter element.
- ☐ Ensure the filter element fits securely onto the filter plate "step" (Figure 22).
- ☐ Replace the air filter cover.

The compressor air filter can be accessed and changed from the top hatch of the Gas MF.

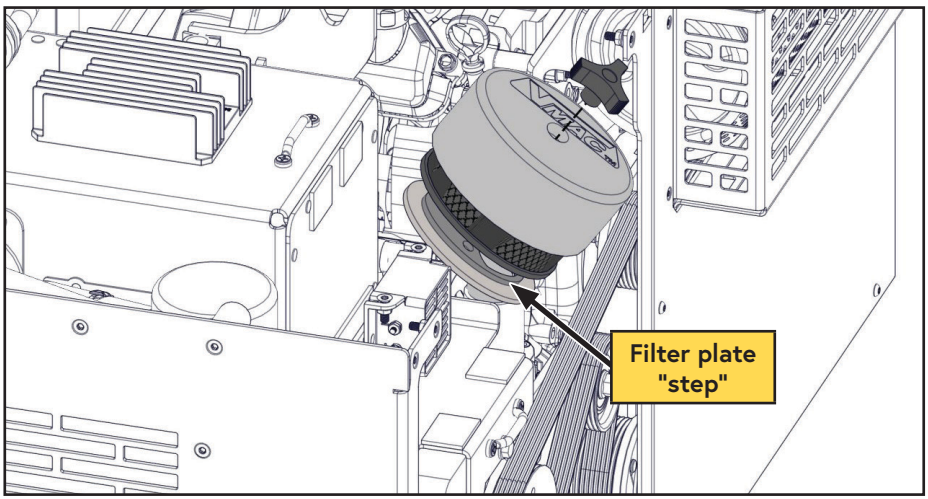


Figure 22 — Install air filter element

Inspecting and Replacing the Pressure Relief Valve

Read the "Maintenance and Repair Safety" section prior to performing any work on the system (beginning on page 54).

Wear appropriate Personal Protective Equipment and follow all industry standard safety practices.

Do not use the pressure relief valve as a means of releasing pressure from the system. Doing so will prematurely wear the internal spring or the seat, preventing the valve from maintaining normal system pressure.

- ☐ Visually inspect the valve and ensure it is not corroded and that the vent holes are not plugged.
- ☐ Turn the system on and allow it to reach full system pressure (factory setting 150 psi).
- ☐ Ensure that air does not leak out of the valve. Air leaking from the pressure relief valve when system pressure is at or below 150 psi indicates that the spring or seat in the valve is worn and the valve must be replaced.
- ☐ If the pressure relief valve is showing loss of functionality, contact a local VMAC dealer for a replacement.

While the pressure relief valve can be accessed and changed from the service panel side of the Gas MF, removing the top panel will provide the easiest access.

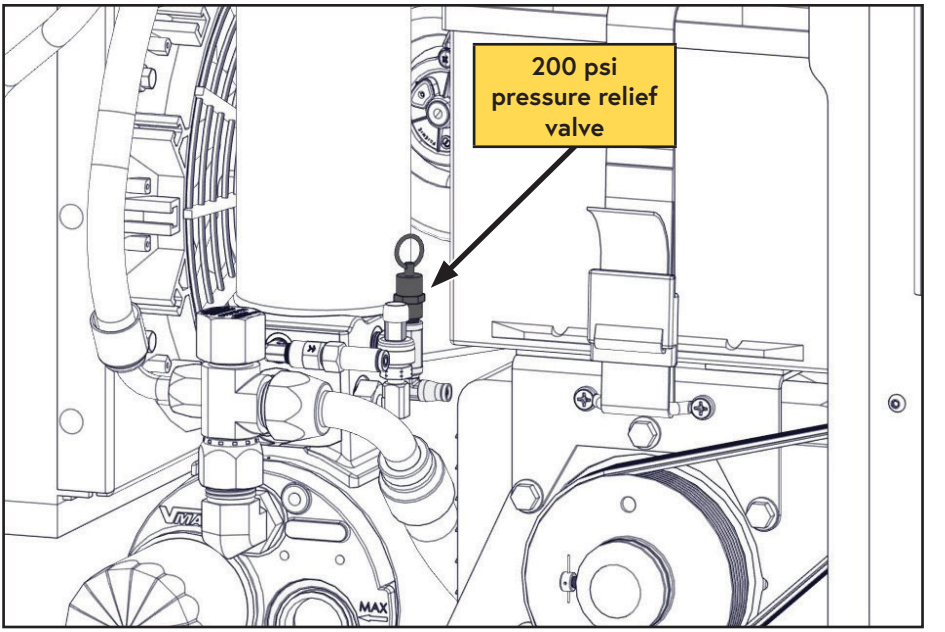


Figure 23 — Pressure relief valve

Inspecting the Engine Oil

Read the "Maintenance and Repair Safety" section prior to performing any work on the system (beginning on page 54).

Wear appropriate Personal Protective Equipment and follow all industry standard safety practices.

Refer to the HONDA iGX800 Owner's Manual (P/N: 1901216) for the proper procedure to check the Gas MF engine oil and the oil specifications.

☐ The engine oil dipstick is located beside the engine oil fill and can be accessed via the top hatch (Figure 24).

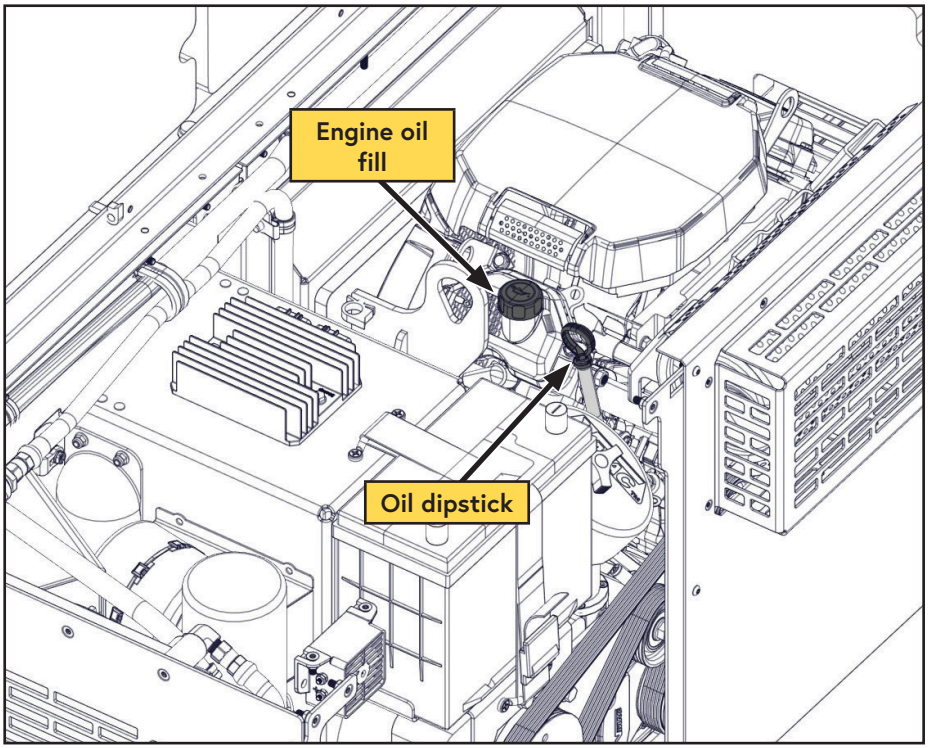


Figure 24 — Inspecting the engine oil

Inspecting the Drive Belt

Read the "Maintenance and Repair Safety" section prior to performing any work on the system (beginning on page 54).

Wear appropriate Personal Protective Equipment and follow all industry standard safety practices.

Check the Front End Accessory Drive (FEAD) belt for evidence of glazing, cracks, missing or damaged ribs or damage to the belt edges and surface. If the FEAD belt is damaged, install a new FEAD belt.

Inspect the pulley(s), idler(s), and tensioner for damage. If any of the components show cracks, chipping, impact damage or any other indications of physical damage, replace the component.

If the damage indicates possible misalignment, check the pulley/idler/tensioner alignment. If the pulleys are not properly aligned, check all fasteners to ensure that they are properly torqued and that there are no loose or worn components.

See the system specific Illustrated Parts List (IPL) for VMAC supplied part numbers.

VMAC Belt Routing

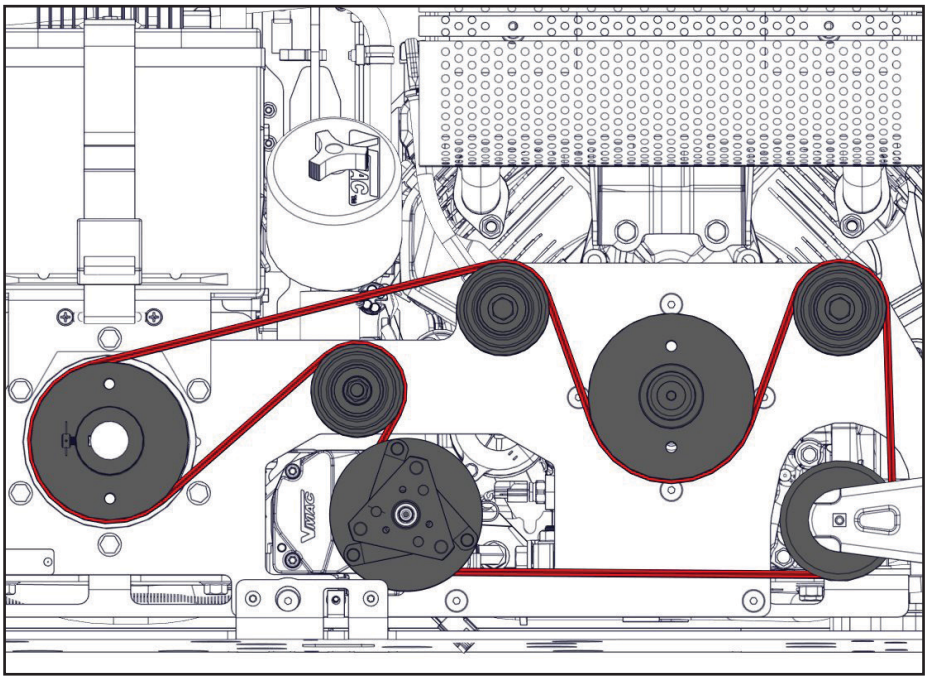


Figure 25 — Belt routing

General Service Information

Read the "Maintenance and Repair Safety" section prior to performing any work on the system (beginning on page 54).

Wear appropriate Personal Protective Equipment and follow all industry standard safety practices.

- ☐ If the system is cold, operate the compressor system for a few minutes to bring the compressor oil to operating temperature. Warming the system will allow the oil to flow better and will also help to suspend contaminants in the oil allowing them to be removed from the system with the old oil.
- ☐ Shut the compressor down.
- ☐ Ensure the system is fully depressurized prior to beginning any service work.
- ☐ Check the old oil for any evidence of metal filings or contamination. If any metal filings are found, flush the hoses and the ASP using the VMAC flushing kit (P/N: A700214).

PTFE Tubing, Loom, and Push-To-Connect Fittings

- PTFE tubing should only be cut using proper tubing cutters. Side cutters, utility knives, etc. will deform the tube, preventing a proper seal (or leave sharp edges which cut the internal O-ring).
- When applying loom to the PTFE tube, leave approximately 1 in between the loom and the fitting.
- Ensure the tube is clean, cut at 90° and that there are not sharp edges.
- Lubricate the tube and, with the collet pushed into the fitting, firmly push he tube into the fitting until the tube is fully seated.
- Slide the collet out, away from the body of the fitting to lock the tubing in place.
- Ensure the tube does not have any "play" to prevent the O-ring from wearing.

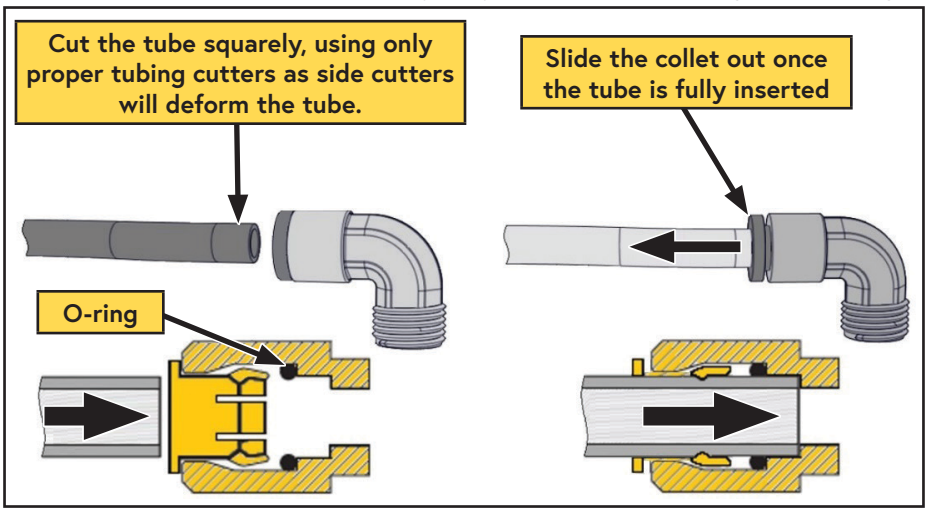


Figure 26 — Push-to-connect fittings

200 Hour / 6 Month Service (Compressor)

Read the "Maintenance and Repair Safety" section prior to performing any work on the system (beginning on page 54).

Wear appropriate Personal Protective Equipment and follow all industry standard safety practices.

Do not use compressed air or perform any other tasks around the air filter and cover until both are replaced. Never clean the filter element with compressed air as this may allow contaminants to enter the compressor system. Always replace the air filter element during this service.

Do not overfill the system. Overfilling the system with oil can flood the sight glass window and make the system appear empty.

A clean engine and generator compartment, in addition to being more efficient, makes detecting issues (i.e. oil leaks, wire or hose abrasion, etc.) easier. VMAC recommends cleaning the Gas MF as part of regular servicing.

- ☐ Run the compressor for a few minutes to warm the compressor oil.
- ☐ Clean the area around the ASP and the oil filter to prevent contamination.
- ☐ Place appropriate absorbent material under the filter to collect oil spills.
- ☐ Open the oil drain petcock and drain the oil into a container with a capacity of at least 1.6 USG (6 L) (Figure 27).

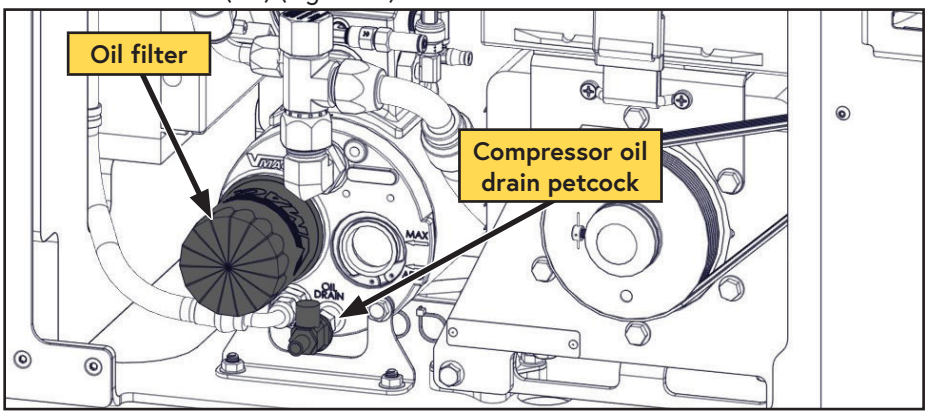


Figure 27 — Compressor oil filter

- ☐ Using a 1/2 in socket, rotate the clutch clockwise (do not use power tools) to assist draining the oil from the cooler and lines.
- ☐ Close the oil drain petcock.
- ☐ Remove the oil filter (Figure 27).
- ☐ Ensure the threaded nipple did not unscrew with the oil filter.

☐ *If the nipple came out with the oil filter, remove it from the filter, being careful to avoid damaging the threads (Figure 28).

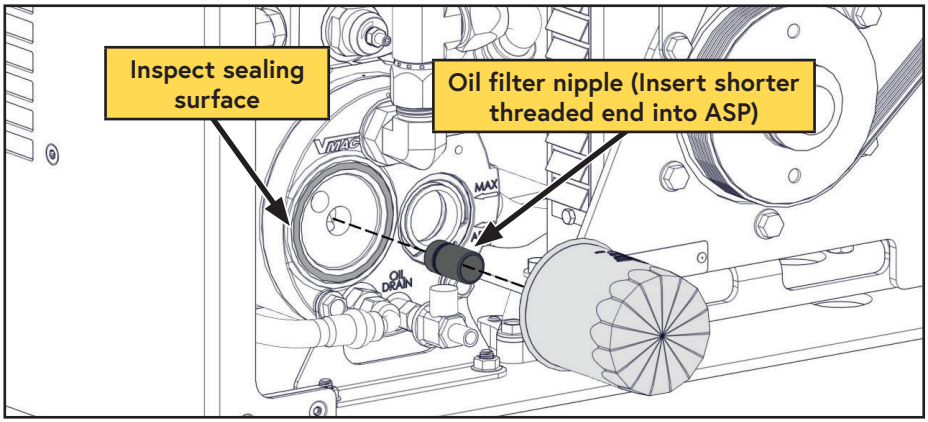


Figure 28 — Compressor oil filter

☐ *To reinstall the nipple, thoroughly clean the threads and apply Loctite 242 (blue) to the end with the short threads and replace it in the ASP (Figure 28).

☐ Clean the gasket sealing surface on the front of the ASP and inspect it for damage. The surface must be free of old gasket material, and smooth, to ensure a good seal (Figure 28).

☐ Apply a thin coat of compressor oil to the rubber gasket on the oil filter.

☐ Spin the filter onto the threaded nipple until the gasket contacts the sealing surface on the tank, then tighten the filter an additional 3/4 to 1 turn to seat the gasket.

☐ Remove the oil fill cap (Figure 29).

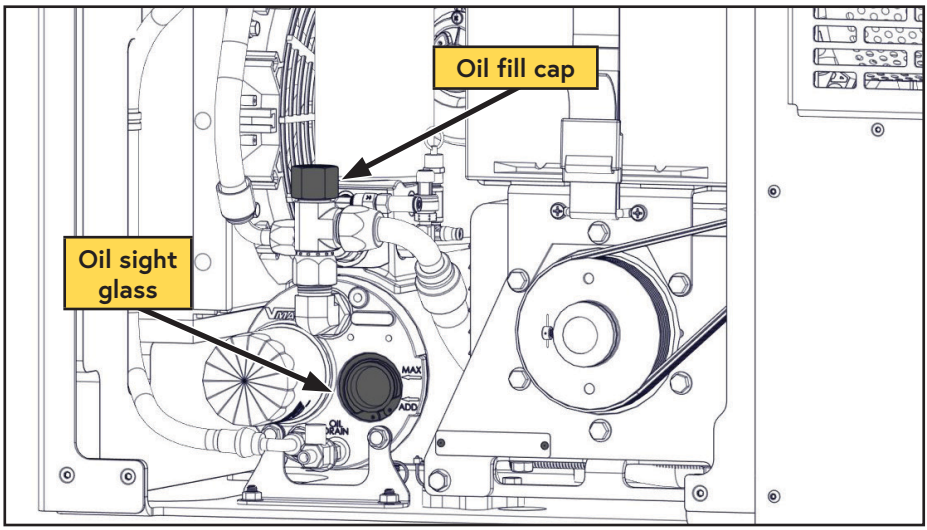


Figure 29 — Fill oil

- ☐ Using a funnel, pour oil into the fill fitting until the oil level in the sight glass reaches the "MAX" arrow. The air compressor system holds approximately 1 USG (4 L) of oil.
- ☐ Check the oil level in the sight glass on the front of the ASP. Continue adding oil until the level is correct.
- ☐ Replace the oil fill cap and tighten securely.
- ☐ Clean any loose debris from around the air filter housing to prevent contaminants from entering the system.
- ☐ Remove the filter cover and the filter element.

The compressor air filter can be accessed and changed from the service panel side of the Gas MF. For clarity, Figure 30 is shown with the top panel open.

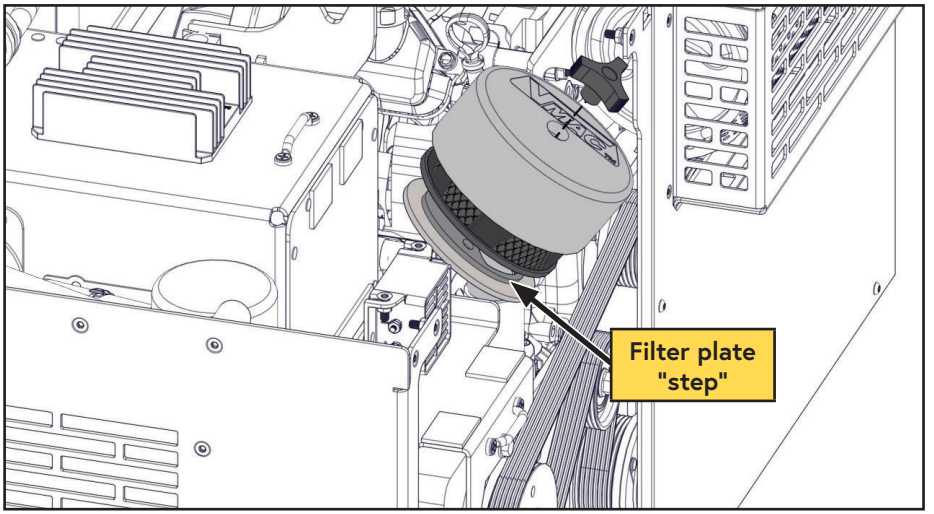


Figure 30 — Install air filter element

- ☐ Immediately cover the air inlet opening with a clean cloth or masking tape to prevent contaminants from entering the system.
- ☐ Clean the inside of the filter cover with a clean, dry cloth.
- ☐ Remove the cloth or masking tape from the air inlet and install the new air filter element.
- ☐ Ensure the filter element fits securely onto the filter plate "step" (Figure 30).
- ☐ Replace the air filter cover.
- ☐ Inspect the FEAD belt for signs of wear.
- ☐ Inspect all wire harnesses for signs of wear. If signs of wear are present, apply protective loom as necessary and secure with rubber coated P-clips or cable ties.
- ☐ Inspect all hoses for signs of wear. If signs of wear are present, take appropriate action to prevent further wear.

- ☐ Connect the negative battery terminal.
- ☐ Start the system and check for oil leaks.
- ☐ Allow the system to build to full system pressure (factory setting 150 psi).
- ☐ Turn the system "OFF".
- ☐ Once the system has sat for 5 minutes, check the oil level in the sight glass and add oil as necessary.
- ☐ Verify there are no oil leaks.

Clearing Service Reminders

For systems that show a message "HRSxxx200HRSVC" on the control box:

- ☐ Turn the key switch to the "ON" position but do not start the system.
- ☐ Once the system has completed its self diagnostics, press and hold the "▶" and "◀" buttons for 5 seconds to enter the diagnostic mode.
- ☐ Cycle through the menus using the "▶" button; once "SERVICING" is displayed, press the "ENTER" button.
- ☐ Press the "ENTER" button again to log the service.

400 Hour / 1 Year Service (Compressor)

Read the "Maintenance and Repair Safety" section prior to performing any work on the system (beginning on page 54).

Wear appropriate Personal Protective Equipment and follow all industry standard safety practices.

Do not use compressed air or perform any other tasks around the air filter and cover until both are replaced. Never clean the filter element with compressed air as this may allow contaminants to enter the compressor system. Always replace the air filter element during this service.

Do not overfill the system. Overfilling the system with oil can flood the sight glass window and make the system appear empty.

A clean engine and generator compartment, in addition to being more efficient, makes detecting issues (i.e. oil leaks, wire or hose abrasion, etc.) easier. VMAC recommends cleaning the Gas MF as part of regular servicing.

- ☐ Run the compressor for a few minutes to warm the compressor oil.
- ☐ Clean the area around the ASP and the oil filter to prevent contamination.
- ☐ Place appropriate absorbent material under the filter to collect oil spills.
- ☐ Open the oil drain petcock and drain the oil into a container with a capacity of at least 1.6 USG (6 L) (Figure 31).

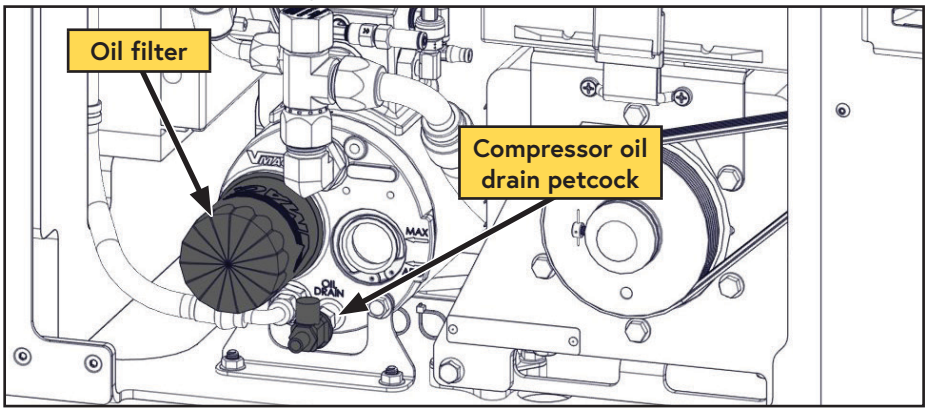


Figure 31 — Compressor oil filter

- ☐ Using a 1/2 in socket, rotate the clutch clockwise (do not use power tools) to assist draining the oil from the cooler and lines.
- ☐ Close the oil drain petcock.
- ☐ Remove the oil filter (Figure 27).
- ☐ Ensure the threaded nipple did not unscrew with the oil filter.

☐ *If the nipple came out with the oil filter, remove it from the filter, being careful to avoid damaging the threads (Figure 32).

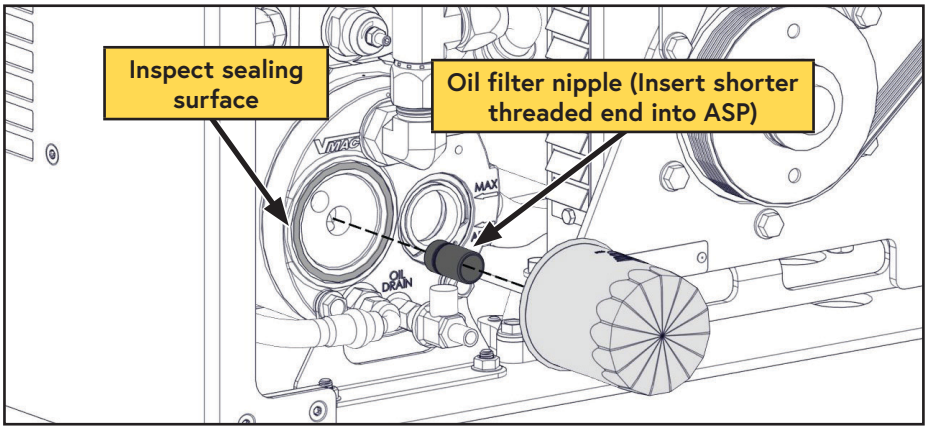


Figure 32 — Compressor oil filter

☐ *To reinstall the nipple, thoroughly clean the threads and apply Loctite 242 (blue) to the end with the short threads and replace it in the ASP (Figure 32).

☐ Clean the gasket sealing surface on the front of the ASP and inspect it for damage. The surface must be free of old gasket material, and smooth, to ensure a good seal (Figure 32).

☐ Apply a thin coat of compressor oil to the rubber gasket on the oil filter.

☐ Spin the filter onto the threaded nipple until the gasket contacts the sealing surface on the tank, then tighten the filter an additional 3/4 to 1 turn to seat the gasket.

☐ Remove the oil fill cap (Figure 33).

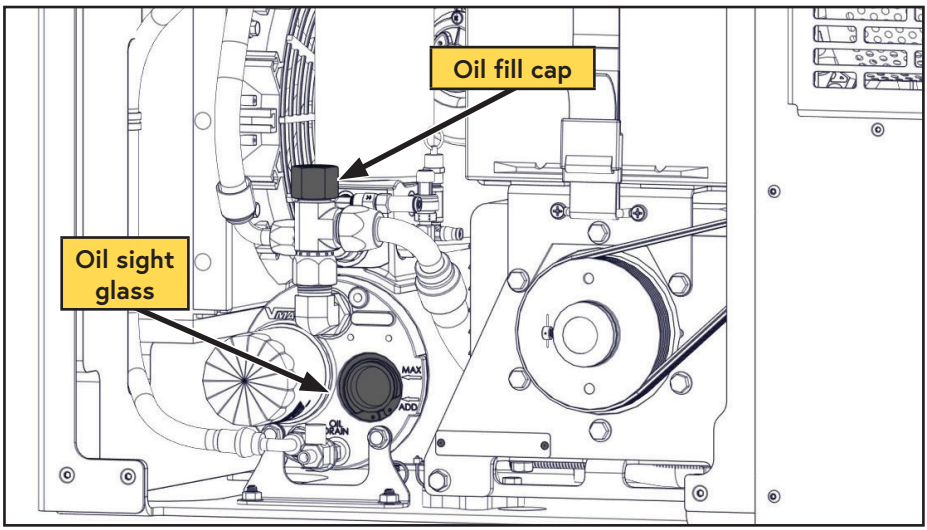


Figure 33 — Fill oil

☐ Using a funnel, pour oil into the fill fitting until the oil level in the sight glass reaches the "MAX" arrow. The air compressor system holds approximately 1 USG (4 L) of oil.

☐ Check the oil level in the sight glass on the front of the ASP. Continue adding oil until the level is correct.

☐ Replace the oil fill cap and tighten securely.

Only use an appropriate oil filter wrench to remove the coalescing filter, punching a screwdriver (or similar object) into the side of the filter may damage the ASP.

☐ Remove the coalescing filter, being careful to avoid damaging the scavenge tube or screen (Figure 34).

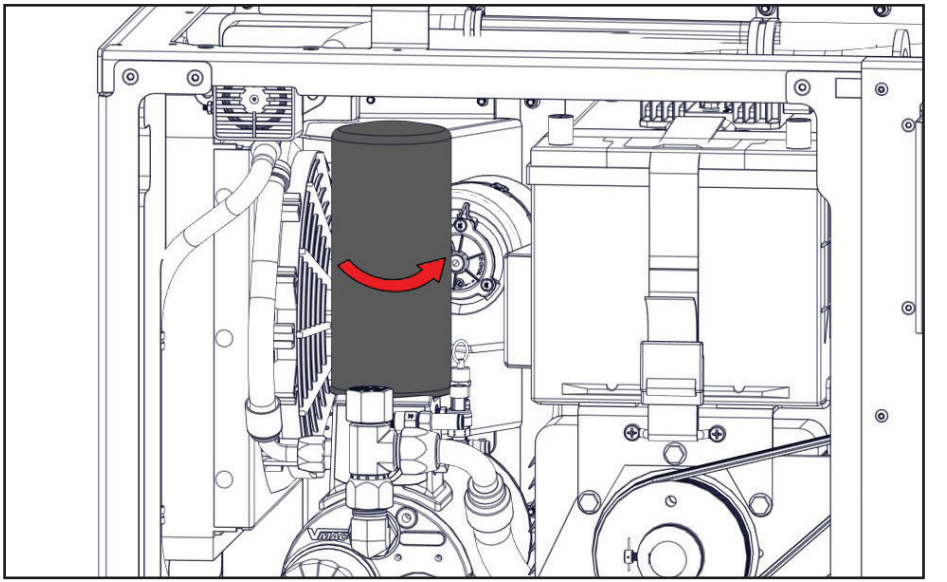


Figure 34 — Remove the coalescing filter

☐ Clean the gasket sealing surface on the coalescing manifold and inspect it for damage. The surface must be free of old gasket material, and smooth, to ensure a good seal.

☐ Apply a thin coat of compressor oil to the rubber gasket on the coalescing filter.

☐ Spin the coalescing filter onto the threaded nipple until the gasket contacts the sealing surface on the coalescing manifold, then tighten the filter an additional 3/4 to 1 turn to seat the gasket.

☐ Clean any loose debris from around the air filter housing to prevent contaminants from entering the system.

☐ Remove the air filter cover and the filter element.

- ☐ Clean any loose debris from around the air filter housing to prevent contaminants from entering the system.
- ☐ Remove the filter cover and the filter element.

The compressor air filter can be accessed and changed from the service panel side of the Gas MF. For clarity, Figure 35 is shown with the top panel open.

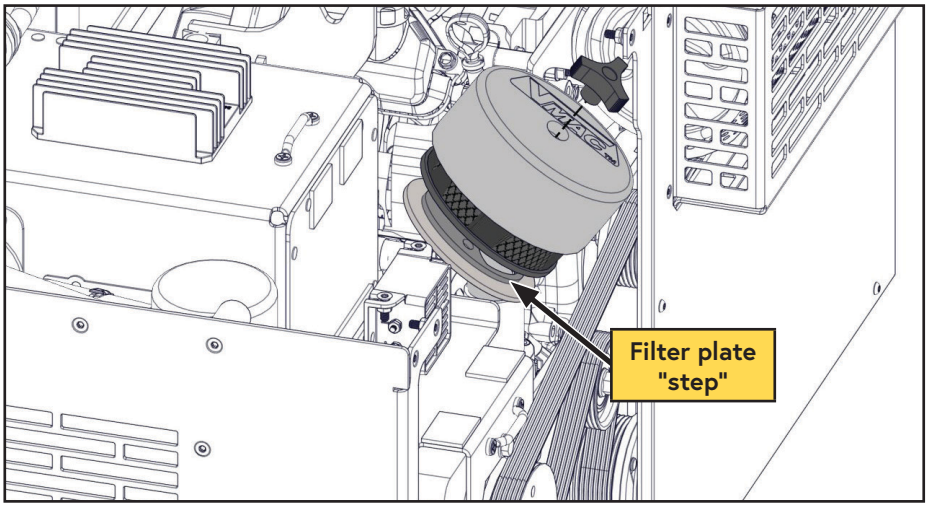


Figure 35 — Install air filter element

- ☐ Immediately cover the air inlet opening with a clean cloth or masking tape to prevent contaminants from entering the system.
- ☐ Clean the inside of the filter cover with a clean, dry cloth.
- ☐ Remove the cloth or masking tape from the air inlet and install the new air filter element.
- ☐ Ensure the filter element fits securely onto the filter plate "step" (Figure 30).
- ☐ Replace the air filter cover.
- ☐ Inspect the FEAD belt for signs of wear.
- ☐ Inspect all wire harnesses for signs of wear. If signs of wear are present, apply protective loom as necessary and secure with rubber coated P-clips or cable ties.
- ☐ Inspect all hoses for signs of wear. If signs of wear are present, take appropriate action to prevent further wear.
- ☐ Connect the negative battery terminal.
- ☐ Start the system and check for oil leaks.
- ☐ Allow the system to build to full system pressure (factory setting 150 psi).
- ☐ Turn the system "OFF".
- ☐ Once the system has sat for 5 minutes, check the oil level in the sight glass and add oil as necessary.
- ☐ Verify there are no oil leaks.

Clearing Service Reminders

For systems that show a message "HRSxxx400HRSVC" on the control box:

- ☐ Turn the key switch to the "ON" position but do not start the system.
- ☐ Once the system has completed its self diagnostics, press and hold the "►" and "◄" buttons for 5 seconds to enter the diagnostic mode.
- ☐ Cycle through the menus using the "►" button; once "SERVICING" is displayed, press the "ENTER" button.
- ☐ Press the "ENTER" button again to log the service.

100 Hour / 6 Month Service (Engine)

Read the "Maintenance and Repair Safety" section prior to performing any work on the system (beginning on page 54).

Wear appropriate Personal Protective Equipment and follow all industry standard safety practices.

The 100 hour / 6 month HONDA iGX800 Engine Service Kit (P/N: A500251) is intended to provide the components required to perform a basic engine service. These instructions are not comprehensive and are intended to supplement the HONDA iGX800 Owner's manual (P/N: 1901216).

See the HONDA iGX800 Owner's Manual for a complete list of maintenance recommendations and the service interval.

A clean engine and generator compartment, in addition to being more efficient, make detecting issues (i.e. oil leaks, hose or electrical harness wear, etc.) easier. VMAC recommends cleaning the Gas MF as part of regular servicing.

☐ Run the system for a few minutes to warm the engine oil.

☐ Remove the engine oil fill cap (Figure 36).

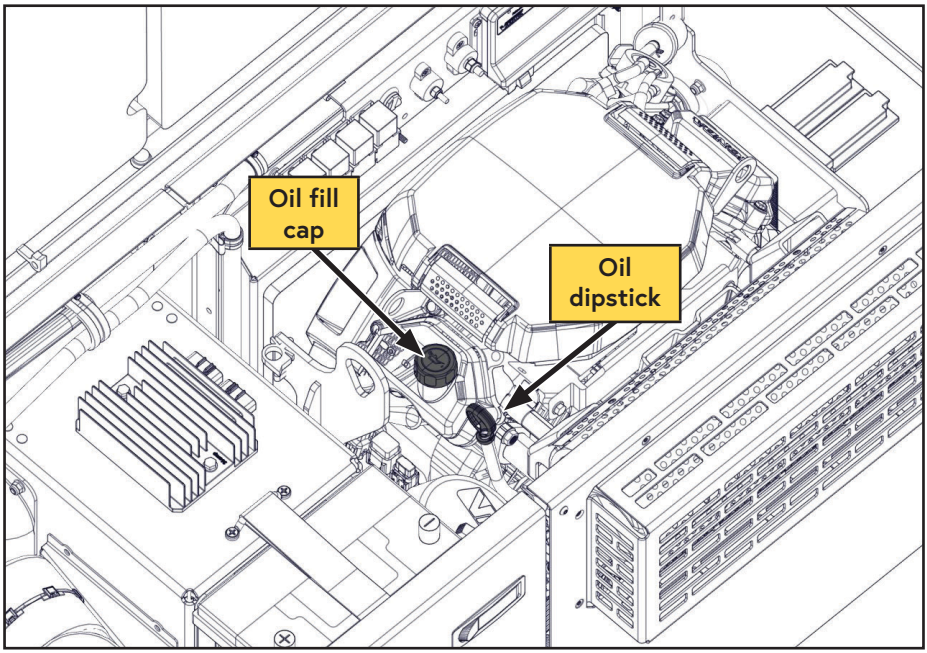


Figure 36 — Remove oil fill cap

☐ Clean the area around the engine and the oil filter to prevent contamination (Figure 37).

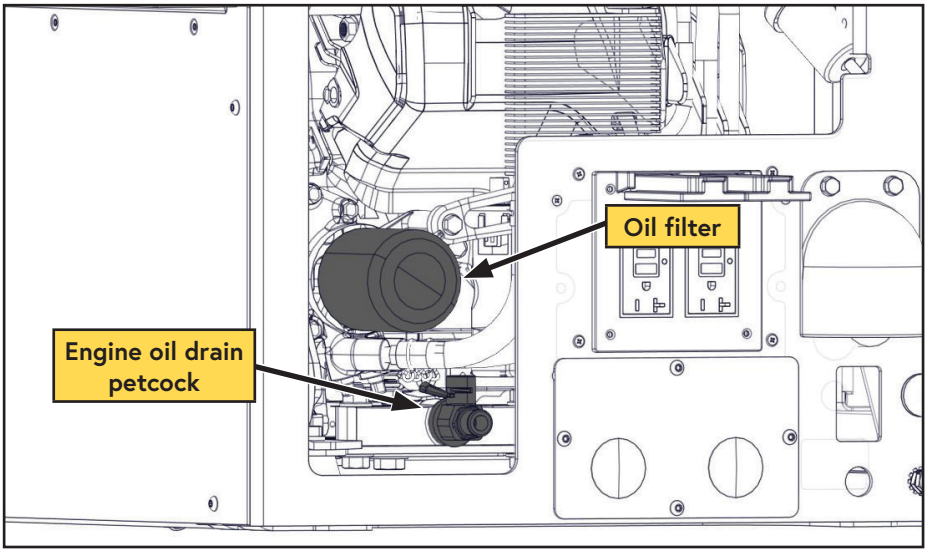


Figure 37 — Oil filter

☐ Place appropriate absorbent material under the filter to collect oil spills.

☐ Connect a drain hose (3/8 in ID) to the drain petcock.

☐ Open the oil drain petcock and drain the oil into a container with a capacity of at least 1/2 USG (2 L).

☐ Remove the oil filter.

☐ Once the oil has drained completely, close the oil drain petcock.

☐ Apply a thin coat of engine oil to the rubber gasket on the oil filter.

☐ Spin the filter onto the threaded nipple until the gasket contacts the sealing surface on the engine, then tighten the filter an additional 3/4 to 1 turn to seat the gasket.

☐ Using a funnel, pour oil into the oil fill until the oil level on the dipstick is within the acceptable range. The engine holds 1.9 US qt (1.8 L) of oil.

☐ Reinstall the oil fill cap and dipstick securely.

☐ Inspect all wire harnesses for signs of wear. If signs of wear are present, apply protective loom as necessary and secure with rubber coated P-clips or cable ties.

☐ Inspect all hoses for signs of wear. If signs of wear are present, take appropriate action to prevent further wear.

☐ Refer to the Honda iGX8000 Owner's Manual to complete the remainder of the recommended maintenance.

There is no way to clear the engine service reminder. Engine service reminders are displayed for 2 hours prior to the service being due, and for an additional 2 hours after the service was due.

300 Hour / 1 year Service (Engine)

Read the "Maintenance and Repair Safety" section prior to performing any work on the system (beginning on page 54). Wear appropriate Personal Protective Equipment and follow all industry standard safety practices.

The 300 hour / 1 year HONDA iGX800 Engine Service Kit (P/N: A500253) is intended to provide the components required to perform a basic engine service. These instructions are not comprehensive and are intended to supplement the HONDA iGX800 Owner's Manual (P/N: 1901216).

See the HONDA iGX800 Owner's Manual for a complete list of maintenance recommendations and the service interval.

A clean engine and generator compartment, in addition to being more efficient, make detecting issues (i.e. oil leaks, hose or electrical harness wear, etc.) easier. VMAC recommends cleaning the Gas MF as part of regular servicing.

☐ Run the system for a few minutes to warm the engine oil.

☐ Remove the engine oil fill cap (Figure 38).

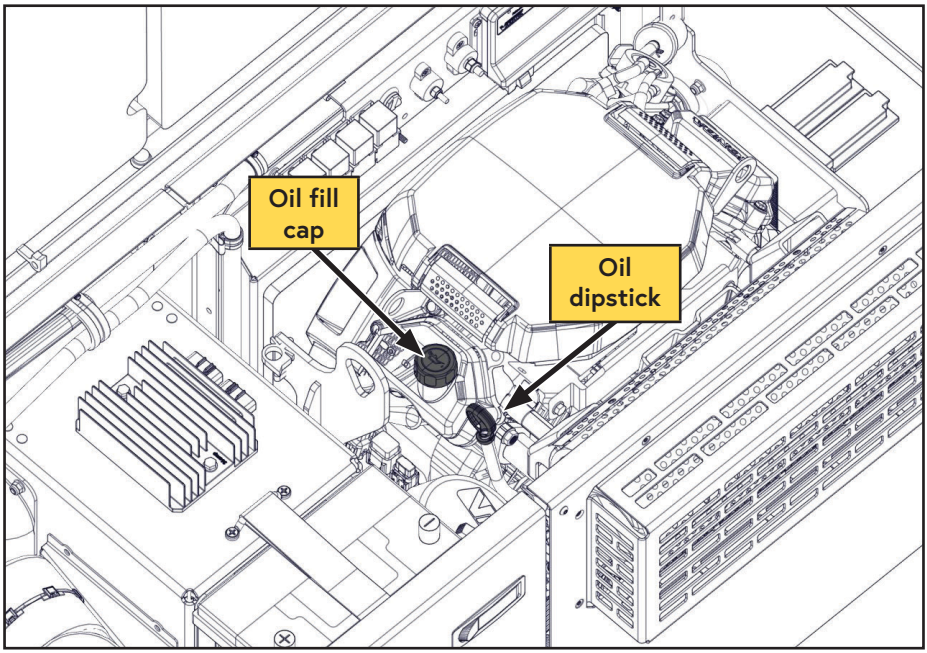


Figure 38 — Remove oil fill cap

☐ Clean the area around the engine and the oil filter to prevent contamination (Figure 39).

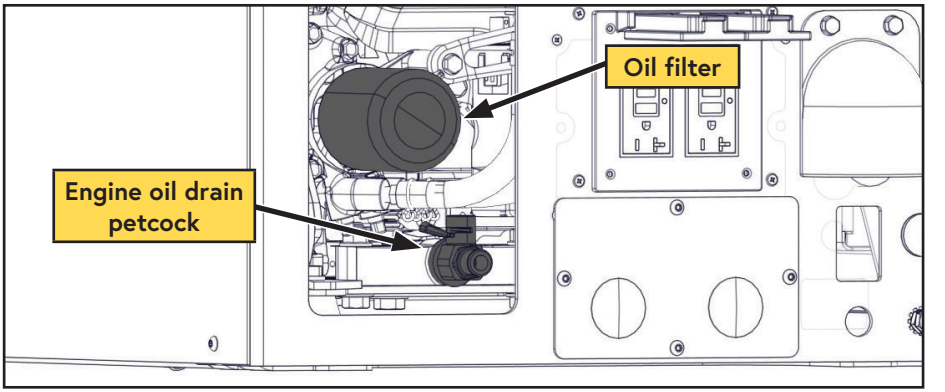


Figure 39 — Oil filter

☐ Place appropriate absorbent material under the filter to collect oil spills.

☐ Connect a drain hose (3/8 in ID) to the drain petcock.

☐ Open the oil drain petcock and drain the oil into a container with a capacity of at least 1/2 USG (2 L).

☐ Remove the oil filter.

☐ Once the oil has drained completely, close the oil drain petcock.

☐ Apply a thin coat of engine oil to the rubber gasket on the oil filter.

☐ Spin the filter onto the threaded nipple until the gasket contacts the sealing surface on the engine, then tighten the filter an additional 3/4 to 1 turn to seat the gasket.

☐ Using a funnel, pour oil into the oil fill until the oil level on the dipstick is within the acceptable range. The engine holds 1.9 US qt (1.8 L) of oil.

☐ Reinstall the oil fill cap and dipstick securely.

☐ Install the (×2) supplied spark plugs.

☐ Place appropriate absorbent material under the fuel filter to collect fuel spills (Figure 40).

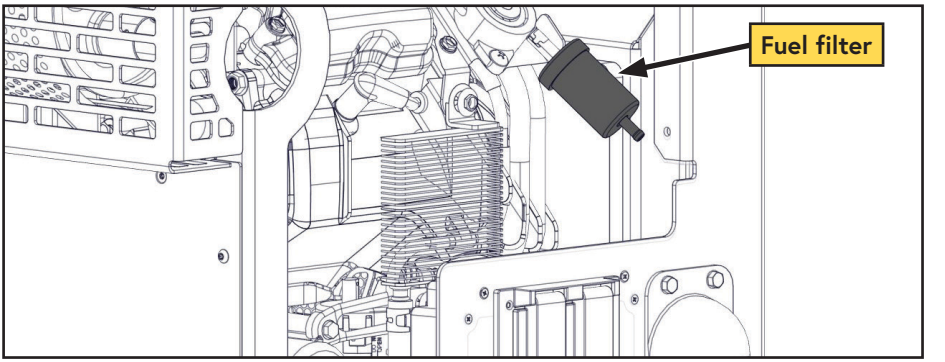


Figure 40 — Fuel filter

- ☐ Replace the fuel filter.
- ☐ Inspect all wire harnesses for signs of wear. If signs of wear are present, apply protective loom as necessary and secure with rubber coated P-clips or cable ties.
- ☐ Inspect all hoses for signs of wear. If signs of wear are present, take appropriate action to prevent further wear.
- ☐ Refer to the Honda iGX8000 Owner's Manual to complete the remainder of the recommended maintenance.

Prime the Fuel System*:

- ☐ *Turn the key switch to the "ON" position, and listen for the high pressure fuel pump to turn off (approximately 10 seconds).
- ☐ *Once the high pressure fuel pump stops, turn the key switch to the "OFF" position.

There is no way to clear the engine service reminder. Engine service reminders are displayed for 2 hours prior to the service being due, and for an additional 2 hours after the service was due.

Diagnostics and Troubleshooting

Read the "Maintenance and Repair Safety" section prior to performing any work on the system (beginning on page 54). Wear appropriate Personal Protective Equipment and follow all industry standard safety practices.

For the following tests, isolate the AOST from all downstream (customer supplied) equipment.

If the Gas MF is still within the warranty period, see the warranty claim process on page 10 prior to commencing with any diagnostics or repairs.

If you are unsure whether the unit is still covered under warranty, contact VMAC Technical Support.

Problem diagnosis should follow sound, recognized practices. Quick and accurate diagnosis of problems should involve the following:

- Follow industry standard safety practices.
- Accurately identify the problem by operating the system (provided it is safe to do so).
- Determining the possible causes for the problem by understanding how the system operates.
- Isolating the potential causes by accurate testing using correct and recognized procedures.
- Performing proper repairs using the correct procedures and the recommended replacement parts.
- Performing proper post repair testing to ensure that the repairs were effective.
- Electrical testing should be performed according to the processes described in the troubleshooting charts and in conjunction with any documentation provided by VMAC.
- Additional troubleshooting and specific test procedures can be found on VMAC's Knowledge Base kb.vamacair.com.

See "Diagnostics Mode" on page 49 for instruction to access diagnostic information.

VMAC Error Codes

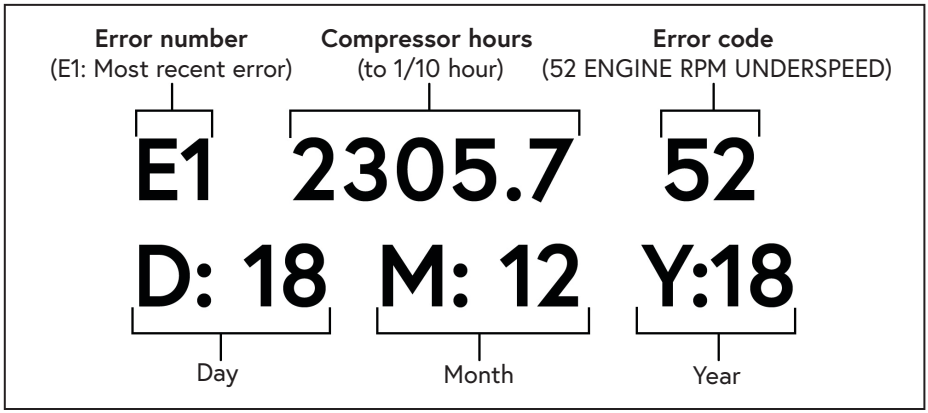


Figure 41 — Error log display

Error Code	Display	Fault	Possible Problem(s) / Solution(s)
05	COMP TEMP SENSOR FAILED – OPEN	Compressor temperature probe disconnected or failed.	• Test temperature sensor. • Repair wiring to sensor.
06	COMP TEMP SENSOR FAILED – SHORT	Compressor temperature probe wires shorted or failed.	Repair wiring to sensor.
07	COMP TOO COLD xx.x°F/xx.x°C	The compressor temperature is below 5 °C (41 °F).	Allow the system to warm up; once the compressor temperature reaches 5 °C (41 °F) the compressor will start.
08	COMP OVER TEMP xx.x°F/xx.x°C	The compressor temperature is above 138 °C (280 °F).	• Low compressor oil level. • Faulty or crushed cooler hoses. • Cooling fan not operating. • Insufficient air-flow or ventilation. • Failed temperature probe or faulty electrical connection. • Incorrect compressor oil used. See "Compressor is getting too hot and is shutting down." on page 83.
11	MANIFOLD ERROR CHECK COALESCER	Restriction detected at the coalescing filter.	Coalescing filter plugged or sensor is faulty.
12	AIR PRESS SIGNAL VOLTAGE LOW	The voltage signal from the air pressure sensor is below the expected value.	• Pressure sensor faulty. • Wiring to pressure sensor faulty.
13	AIR PRESS SIGNAL VOLTAGE HIGH	The voltage signal from the air pressure sensor is above the expected value.	• Pressure sensor faulty. • Wiring to pressure sensor faulty.

Error Code	Display	Fault	Possible Problem(s) / Solution(s)
14	AIR PRESS SENSOR TOO HIGH AIR PRESSURE xxx.x PSI	Air pressure is too high to start the engine (air pressure is displayed).	Blowdown not working. • Test blowdown solenoid. • Replace inlet valve.
27	UNEXPECTED ENGINE OPERATION	Rpm detected during an "OFF" state.	• Engine runaway due to combustible air. • Engine rpm drops to zero but control system still in a run state (e.g. ran out of fuel). • Stop circuit fault. • Test stop solenoid.
34	ENGINE RPM NOT DETECTED	The engine did not start during the crank cycle.	Engine rpm not detected. Engine stopped unexpectedly. • Tach wire from hall effect sensor cut or damaged. • Hall effect sensor on bellhousing faulty or out of adjustment. • Fuel delivery issue.
35	ENGINE CRANK TIME OUT	The engine did not start during the crank cycle.	• No fuel. • Too cold to start.
36	ENGINE OIL LOW	Engine oil pressure is low.	• Oil leak. • Lack of service. • Oil pressure switch faulty.
39	ENGINE TEMP TOO COLD TO START	Engine temperature is below -40 °C (-40 °F).	Plug the Cold Climate Kit in and allow the Gas MF to warm prior to attempting to start the engine.
40	ENGINE OVER TEMP	The engine is above 120 °C (248 °F).	• Inadequate ventilation. • Loose fan belt. • Lack of service. • Radiator fins plugged. • Reduce duty cycle.
42	FUEL LEVEL LOW PLEASE RE-FILL (Optional external fuel tank only)	Engine fuel level is low.	Fill fuel tank prior to attempting to restart the engine.
51	ENGINE OVERSPEED	Engine speed above 4,200 rpm detected.	Ensure engine high idle is within spec.
52	ENGINE RPM UNDERSPEED	Engine speed fell below 1,200 rpm for 3 seconds.	Engine speed below 1,200 rpm for 3 seconds.
—	DISPLAY CANBUS CONN ERROR	CAN bus error between the Display Box and the Control Box.	Check harness running between Control Box and Display Box.
—	END OF ERRORS RE-TRY STARTING?	All errors have been reviewed.	Press "ENTER" button to start Gas MF.

Engine Error Codes

The system will repeat the first 5 error codes until the power has been turned off (in the case of an oil alert, no other codes will be transmitted).

There is a 1.5 second delay between each error code.

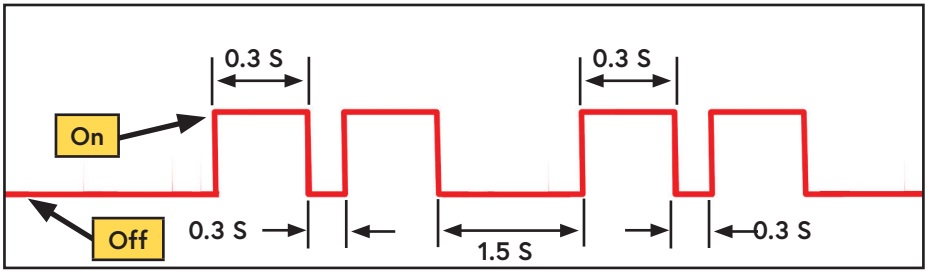


Figure 42 — Example of blink code 2

Blink code	Failure	Possible cause
On solid	Oil alert.	• Lack of oil. • Harness fault.
1	Abnormal battery voltage.	• Regulator failure. • Rectifier failure. • Electrical Overload
2	Abnormal throttle motor.	• Harness fault. • Throttle valve stuck.
3	Abnormal TPS-1.	• Harness fault. • Sensor failure.
4	Abnormal TPS-2.	• Harness fault. • Sensor failure.
5	Abnormal TPS 1 & 2.	• Harness fault. • Sensor failure.
6	Abnormal TA sensor.	• Harness fault. • Sensor failure.
7	Abnormal TE sensor.	• Harness fault. • Sensor failure.
8	Abnormal MAP sensor.	• Harness fault. • Sensor failure.
9	Abnormal CPU.	EEPROM or CAN communication error

Warning Messages

The messages below may be displayed in both the "SYSTEM READY" and "SYSTEM RUNNING" states.

If a message is present, the red "WARNING" LED will flash on and off.

Error Code	Display	Fault	Possible Problem(s) / Solution(s)
29	AIR FILTER PLUGGED	Air filter is restricted.	Check air filter and replace as necessary.
32	BATTERY VOLTAGE TOO LOW	Battery voltage below 11.9 V.	• Low battery automatic restart disabled. • System left in standby with low battery automatic restart disabled.
46	ENGINE RESTART DUE TO COLD	The engine was restarted as the internal temperature dropped below the threshold.	Engine will restart to prevent it from freezing. Once the engine has reached operating temperature, the system will enter standby mode and shut down.
—	200HR / 6MTH SERV DUE IN ×× HOURS	N/A.	This warning will be displayed 10 hours before the 200 hour / 6 month service is due.
54	COMPRESSOR SERV 200HR / 6MTH	The compressor system is due for service.	Perform 200 hour / 6 month service. Service reminder must be cleared via the "Diagnostics" menu (this also logs the service).
—	400HR / 12MTH SERV DUE IN ×× HOURS	N/A.	This warning will be displayed 10 hours before the 400 hour / 1 year service is due.
55	COMPRESSOR SERV 400HR / 12MTH	The compressor system is due for service.	Perform 400 hour / 1 year Service reminder must be cleared via the Diagnostics menu (this also logs the service).
—	ENGINE SERVICE 100 HOURS	The engine is due for service.	Perform 100 hour service. (Engine service reminders do not need to be cleared).
58	ENGINE RESTART DUE TO LOW BATT	Battery voltage below restart threshold for 30 seconds.	Engine will restart to charge the battery. Once upper battery voltage threshold is reached and the battery restart delay timer has counted down, the system will enter standby mode and shut down.

Symptoms

The following diagnostic tables are not exhaustive, they are intended to provide basic troubleshooting steps to resolve common errors. Further, or more in depth information may be posted on VMAC's Knowledge Base: kb.vmacair.com.

If the information provided in these tables does not resolve the issue, contact the VMAC Technical Support team at:

Toll free: (888) 241-2289

Email: tech@vmacair.com

Key Temperatures

Engine is too cold to start: -40 °C (-40 °F) and below
The engine is too cold. Plug the VMAC Cold Climate Kit in to warm the engine.

Engine is too cold to engage compressor, or generator 10 °C (50 °F) and below
Allow the engine to run until it reaches operating temperature.

Over temperature shutdown

- Once the engine reaches 118 °C (244 °F), the compressor and generator will automatically shutdown to reduce load on the engine.
- Once the engine temperature reaches 120 °C (248 °F), the engine will shut down.
- Once the compressor oil reaches 143 °C (290 °F), the compressor clutch will be disengaged.

Symptom	Possible Cause	Corrective Action
No power to Display Box.	Display Box harness disconnected or damaged.	• Check display box connection. • Check harness for damage.
	Poor connection at Display Box harness connector.	Check pins in harness plug to ensure they are fully seated.

Symptom	Possible Cause	Corrective Action
Engine will not start.	System in STANDBY.	• Use stored air. • Engage generator.
	Battery is discharged.	Check battery voltage and charge as necessary.
	Poor wiring or corroded connections.	Clean or repair wiring as necessary.
	Fuel delivery issue.	• Check fuel level in the tank (vehicle's fuel tank or optional 12 gallon tank). • Perform fuel prime instructions (page 23).
	No power to key switch.	Check voltage at key switch.

Symptom	Possible Cause	Corrective Action
Low air pressure.	Air receiver tank drain open.	Close air receiver tank drain.
	Air filter and/or air inlet obstructed.	Clean air inlet / replace air filter.
	Air leak.	Check air hoses and fittings for damage or wear.
	Air demand too high.	• Reduce air consumption. • Install air receiver tank (see page 87).
	Blowdown system stuck open.	Replace inlet valve.
	Air solenoid failure.	Check air solenoid and wiring.
	Pressure sensor faulty.	Test pressure sensor.
	System not properly grounded.	Tighten ground connections.
	Inlet valve will not open completely.	Replace inlet valve.

Symptom	Possible Cause	Corrective Action
Compressor not building any air.	Compressor clutch worn or contaminated.	Replace clutch.
	Inadequate FEAD belt tension.	Replace tensioner.
	FEAD belt failed.	Replace FEAD belt.
	Compressor inlet not opening.	Test air solenoid.

Symptom	Possible Cause	Corrective Action
Excessive oil in the air stream (oil carry over).	Compressor was shut down while building air.	Stop air demand prior to turning the compressor off and allow engine speed to drop to base idle.
	Unit operating on grade greater than 15°.	Level the vehicle and run the system. Oil carry over may take up to 40 minutes to dissipate.
	High oil level.	Correct oil level.
	Failed coalescing filter.	Replace coalescing filter.

Symptom	Possible Cause	Corrective Action
High compressor oil consumption.	Compressor, hose, fitting, or cooler oil leak.	Check system for leaks.
	Compressor shaft seal leaking (Oil will leak from bottom of gear case).	Replace compressor shaft seal.
	Excessive oil in the air stream.	Refer to "Excessive oil in the air stream (oil carry over) " on page 82 to troubleshoot.

Symptom	Possible Cause	Corrective Action
Compressor is getting too hot and is shutting down.	Low compressor oil.	• Add oil as necessary (page 56). • Refer to "Excessive oil in the air stream (oil carry over) " on page 82 to troubleshoot.
	Compressor oil flow restricted.	• Check oil filter for blockage. • Remove hoses and check for blockage. • Check cooler for blockage.
	Insufficient air-flow or ventilation.	• Ensure cooler and air filter are not blocked. • Pull out drawer (if installed in an enclosure). • Improve ventilation. • Move Gas MF out of cabinet.
	Failed temperature probe or bad electrical connection.	Check temperature probe and wiring connections.
	Lack of compressor and / or engine service.	Service system as necessary.
	Incorrect compressor oil used.	Flush and service system.

Symptom	Possible Cause	Corrective Action
Air pressure relief valve opens.	Compressor system pressure exceeding 200 psi.	• Install pressure gauge at ASP outlet to confirm pressure is above 200 psi. • Check pressure sensor.
	Air pressure relief valve failure (opens below 200 psi).	Replace pressure relief valve.
	Unload solenoid has failed energized.	Check solenoid and wiring.
	Inlet valve poppet O-ring dislodged.	Contact VMAC Technical Support.
	PTFE Pressure Control tube disconnected or failed.	Check PTFE tube between air solenoid and inlet valve.
	Connection to Control Box poor or faulty.	Check Control Box connectors and harness.

Symptom	Possible Cause	Corrective Action
Engine rpm not increasing to second speed.	No CANbus communication between VMAC control box and engine ECU.	Check harness between control box and engine (engine connections beside starter motor).
		Replace control box.
		ECU unit on engine faulty

Symptom	Possible Cause	Corrective Action
No generator output. (No ac / dc output).	Gas MF battery charge too low.	Allow Gas MF battery to charge above 10 V dc.
	Engine not going to second speed (elevated rpm).	See "Engine rpm not increasing to second speed." on page 83
	Internal generator issue.	See Knowledge Base article: EXT-MF-005 "TESTING MULTIFUNCTION AC AND DC CIRCUITS".

Symptom	Possible Cause	Corrective Action
Engine starts but remains at 1,800 rpm (does not ramp to warm up rpm).	No CANbus communication between VMAC control box and engine ECU.	Check harness between control box and engine (engine connections beside starter motor).
		Replace control box.
		ECU unit on engine faulty

Symptom	Possible Cause	Corrective Action
Engine engages starter while running.	No CANbus communication between VMAC control box and engine ECU.	Check harness between control box and engine (engine connections beside starter motor).
		Replace control box.
		ECU unit on engine faulty

Symptom	Possible Cause	Corrective Action
Water in the air stream.	Filter/Regulator/Lubricator failure (if installed).	Check drain on filter.
	Air receiver tank not drained regularly (if installed).	Drain air receiver tank daily.

Electrical Schematic

Scan or click the QR code for a high resolution electrical schematic

The link will take you to a page where you can select the correct electrical schematic for your MF model (see "Identifying Your System" on page 27).

Air Receiver Tank

This system has a built-in check valve. Pressure in the air receiver tank will not be relieved when the compressor system blows down. This is normal operation.

Prior to performing any service work on the system, discharge any stored air in the air receiver tank.

The system has a built-in check valve. Use of an additional check valve is not required and may cause erratic performance.

If an air receiver tank will be used with this system, the following installation procedure must be used to prevent damage to the system.

The VMAC compressor system will automatically depressurize when shutdown. The liquid to air cooler has a built in check valve that prevents blow back and moisture from the receiver tank entering the ASP. Installation of an additional check valve will cause erratic performance.

While the air receiver tank can be installed at any height in relation to the Gas MF, the discharge hose running from the Gas MF must be installed as high as possible on the air receiver tank to prevent problems with condensation that may have accumulated in the receiver tank (Figure 43).

Drain the condensed water from the receiver tank daily.

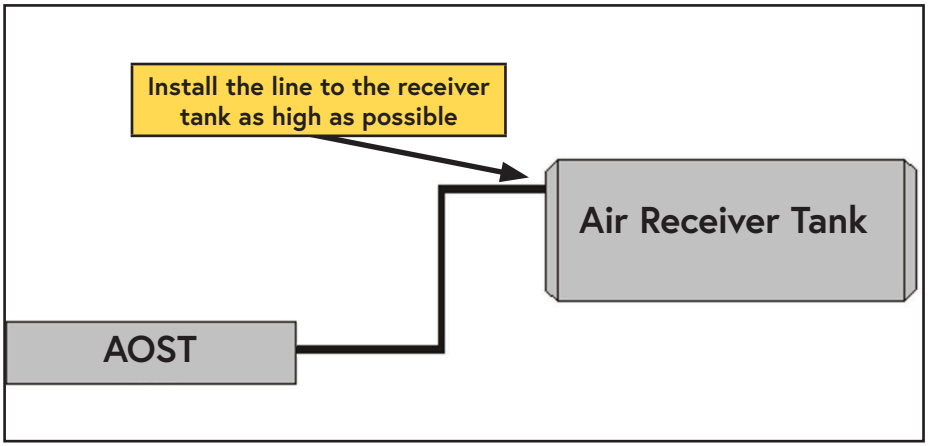


Figure 43 — Air receiver tank

Recommended Accessories

While the compressor system will function without the following accessories, VMAC strongly recommends their use for optimal performance.

See the "Accessory Product" section of this manual on page 88 for a list of products available for purchase through VMAC.

Receiver Tank

In order for the system to enter "Standby" mode and automatically shut down, an air receiver tank rated for 200 psi, with a minimum capacity of 5 USG, is required.

An air receiver tank provides a buffer as it gives the compressor time to react by increasing the engine speed and producing air before the tool stalls. It also has the advantage of lowering the duty cycle of the compressor system.

Pressure Gauge

While not critical to system performance, a pressure gauge is important for fine tuning the system and simplifies any potential troubleshooting.
Install a 200 psi pressure gauge downstream of the air discharge valve.

Pressure Regulator and/or Lubricator or FRL

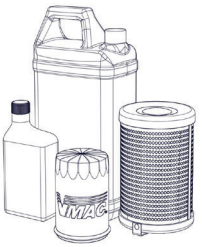
The compressor can produce air pressures up to approximately 150 psi

(1035 kPa). It is the responsibility of the user to know the pressure and air flow requirements of the tools powered by the air compressor system.

An appropriate air pressure regulator and lubricator can be installed downstream of the air discharge valve. Failure to regulate the air pressure may cause damage to the tool.

Accessory Products from VMAC

Compressor Service Kit



200 Hour or 6 Month Service Kit
Part number: A500333
Includes VMAC high performance compressor oil, oil filter, air filter, and next service due decal.

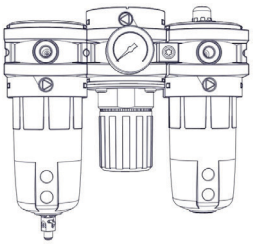
400 Hour or 1-Year Service Kit -
Part number: A500334
Includes VMAC high performance compressor oil, oil filter, air filter, coalescing filter, and next service due decal.

Honda Engine Service Kits

100 hour / 6 Month Engine Service Kit (also used for 20 hour break in service)
Part number: A500251
Includes engine oil, and oil filter.

300 hour / 1 Year Engine Service Kit
Part number: A500252
Includes spark plugs, fuel filter, engine air filter, engine oil, and oil filter.

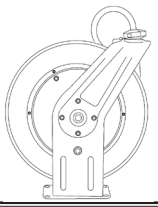
Filter Regulator Lubricator (FRL) — 70cfm



Part number: A700151
Extends the life of air tools; filter removes contaminants from the compressed air, adjustable regulator can reduce air pressure going to tools, lubricator adds atomized tool oil to the air stream to lubricate air tools (Tool oil not included).

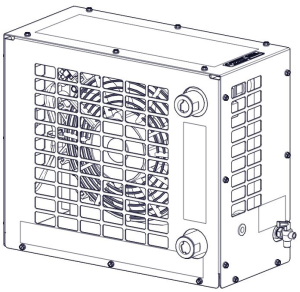
- Max air flow: up to 70 cfm / 150 psi.
- Port size: 3/4 in NPT inlet and outlet.

1/2 in × 50 ft Hose Reel



Part number: A700007
Spring-loaded 1/2 in × 50 ft hose reel; steel construction; full flow shaft and swivel for maximum performance.

Air Aftercooler



Part number: A800070
Improves tool performance and extends the life of air tools; removes up to 80% of water from compressed air; includes automatic water drain.

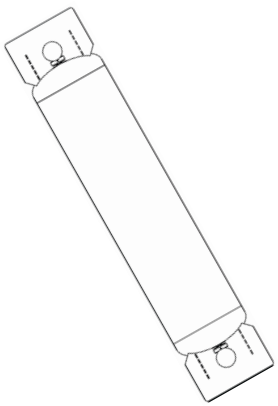
- Max air flow: 70 cfm / 175 psi.
- Port size: 3/4 in NPT inlet and outlet.
- Electrical: 12 V.
- Dimensions: 17 in (43.2 cm) L × 8.0 in (20.3 cm) W × 14.5 in (36.8 cm) H .
- Weight: 35 lb (15.8 kg).

10 Gallon, 200 psi Air Receiver Tank w/ Mounting Feet

Part number: A300047
Air receiver tanks are used for lowering compressor duty cycle and removing water from compressed air. Recommended for optimum operation of VMAC Hydraulic Air Compressors, VMAC Diesel Driven Air Compressors, UNDERHOOD40, UNDERHOOD70 (including Green Series Air Compressors), DTM70/ DTM70-H, and VMAC Multifunction Power Systems, which include standby mode; ASME certified; includes fittings, 200 psi pressure relief valve, tank drain, and 200 psi pressure gauge.

- Max pressure: up to 200 psi.
- Dimensions: 30 in (76.2 cm) L × 10 in (25.4 cm) D.
- Weight: 33 lb (15 kg).

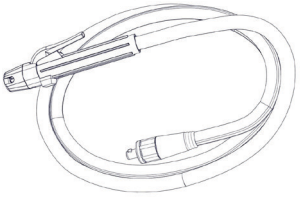
35 Gallon, 200 psi Air Receiver Wing Tank



Part number: A300010
Air receiver tanks are used for lowering compressor duty cycle and removing water from compressed air. Recommended for optimum operation of VMAC Diesel Air Compressors, Hydraulic Air Compressors, UNDERHOOD40, UNDERHOOD70 (including Green Series Air Compressors), DTM70/DTM70-H, and VMAC Multifunction Power Systems, which include standby mode; ASME certified; includes fittings, 200 psi pressure relief value, tank drain, and 200 psi pressure gauge.

- Max pressure: up to 200 psi.
- Dimensions: 73 3/4 in (187.3 cm) L × 14 in (35.6 cm) D.
- Weight: 95 lb (43.1 kg).

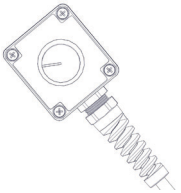
Welding Cables



Part number: A500008
Welding electrode cable 15 ft (4.5 m).

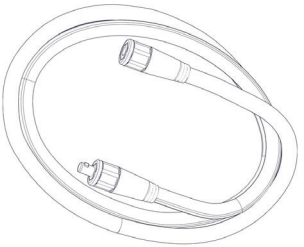
Part number: A500009
Welding ground cable 15 ft (4.5 m).

Remote Current Control Pendant



Part number: A500018
15 foot remote welding current control pendant.

Extension Cables



Part number: A500010
Electrode extension cable 25 ft (7.6 m).

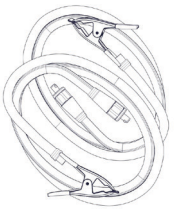
Part number: A500011
Ground extension cable 25 ft (7.6 m).

Part number: A500012
dc extension cable 6 ft (1.8 m).

Part number: A500019
Current control extension cable 25 ft (7.6 m).

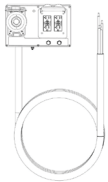
Part number: A500028
Remote welding control extension cable 10 ft (3 m).

Booster Cable Set



Part number: A500016
15 foot battery booster / jump start cables set 15 ft (4.5 m).

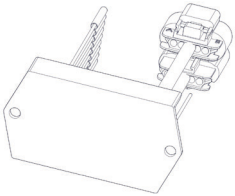
Remote Receptacle Box



Part number: A500250

20 foot extension harness with a weather-resistant enclosure containing one 240 V, 3-phase receptacle, and two 120 V single-phase GFCI receptacles.

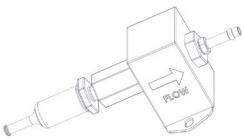
Remote Interface Harness



Part number: A500029

Allows the VMAC Multifunction to be controlled via various crane remotes; converts latching or momentary switched 12 V signals into the low side switching required by the VMAC Multifunction control system.

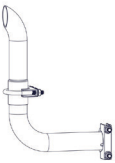
External Fuel Pump Kit



Part number: A500247

The external gas fuel pump allows the Gas MF to be tied into an external gasoline fuel tank (such as the vehicle's fuel tank); mounts externally; activates automatically when the air compressor key switch is in the "RUN" position and disables automatically when system enters "Standby" mode or key switch is turned to the "OFF" position.

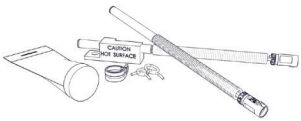
Exhaust Kit



Part number: A500249

Exhaust kit directs the exhaust as required by the operator.

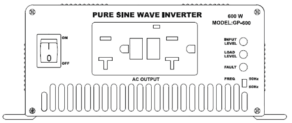
Cold Climate Kit



Part number: A500234; A510044 (factory installed)

Cold climate heater package for operating the Gas MF in cold climates; proven at temperatures of -30 °C (-22 °F); (×2) 120 V AC Heaters; requires 600 W total power.

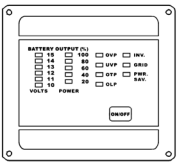
1,750 W Power Inverter



Part number: A500185

1,750 W, 12 V power inverter; required to power the MF Cold Climate Kit.

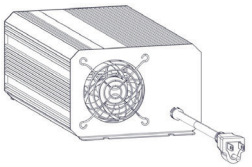
Power Inverter Remote Control Panel



Part number: A500186

Remote control panel for the 1,750 W power inverter; shows status and has an on/off button.

100 Amp Battery Charger



Part number: A500190

Used to charge the vehicle's battery.

12-Gallon (45.4 Liter) Gasoline Fuel Tank

Part number: A500250

12 USG (45.4 L) gasoline fuel tank mounts directly to the Gas MF; includes EPA compliant fuel tank, fuel cap, fuel lines, evaporative emissions port with carbon canister, low fuel switch, and mounting frame.

Notes

Notes

Notes

Warranty Registration

This form must be fully completed and returned to VMAC at the time the vehicle is put into service. Warranty may be void if this form is not received by VMAC within 3 months of receiving the vehicle, or 200 hours of operation, whichever occurs first.

VMAC's Warranty policy and registration can be viewed online at:
www.vmacair.com/warranty

Product Information

System Identification Number: **G** M F _ _ _ _ _ _ _ _ _ _

(See "Identifying Your System" on page 27)

Owner / End User Information

Company Name: _____

City: _____ State / Province: _____

Phone: (____) _____–_____

Email Address: _____

Date vehicle was put into service: _____/_____/_____
Day Month Year

Installer Information

Installer Company Name: _____

City: _____ State / Province: _____

Submitted by

Name: _____ Phone: (____) _____–_____

Email: _____

Vehicle Information (Optional)

Unit: _____ Year: _____

Make: _____ Model: _____

Vehicle Identification Number: _____

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