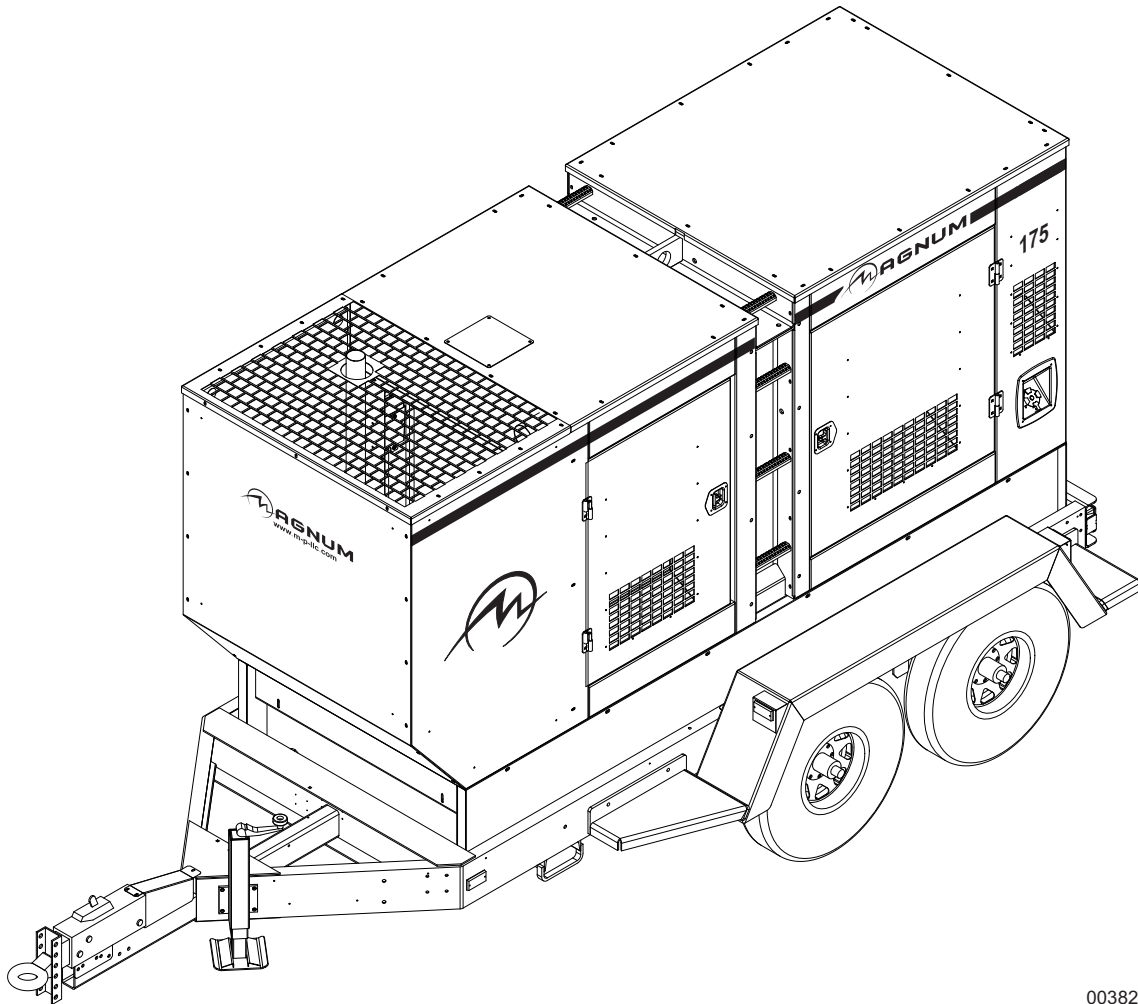




DIESEL GENERATOR MMG130D • MMG175 • MMG205

With **Power Zone**™ Controller



00382

OPERATING MANUAL

Parts manuals available online! www.m-p-llc.com

INTRODUCTION

This manual provides information and procedures to safely operate and maintain the Magnum Power Products LLC unit. For your own safety and protection from physical injury, carefully read, understand, and observe the safety instructions described in this manual. Keep a copy of this manual with the unit at all times. Additional copies are available from Magnum Power Products LLC, or can be found at **www.m-p-llc.com**. *The information contained in this manual was based on machines in production at the time of publication. Magnum Power Products LLC reserves the right to change any portion of this information without notice.*

Read all of the manuals included with the unit. Each manual details specific information regarding items such as setup, use and service requirements. An engine operator's manual provides detailed operation and maintenance procedures for the engine. Additional copies of the engine operator's manual are available from the engine manufacturer.

DO NOT MODIFY or use this equipment for any application other than which it was designed for.

Magnum Power Products LLC recommends that a trained and licensed professional perform all electrical wiring and testing functions. Installation should be in compliance with the National Electrical Code (NEC), state and local regulations and Occupational Safety and Health Association (OSHA) guidelines.

MAGNUM POWER PRODUCTS LLC

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U.S.A.

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www.m-p-llc.com

For technical or parts QUESTIONS, please contact the Magnum Power Products LLC Customer Support or Technical Support team at 1-800-926-9768. Please have your serial number available.

To ORDER SERVICE PARTS, please contact the dealer from which you purchased the unit, or call Magnum Power Products LLC to locate a dealer in your area.

Engine Make: _____

Engine Serial Number: _____

Engine Model Number: _____

Generator Make: _____

Generator Model Number: _____

Generator Serial Number: _____

Unit Model Number: _____

Unit Serial Number: _____

▲ WARNING

CALIFORNIA PROPOSITION 65 WARNING: Diesel engine exhaust and some of its constituents are known to the state of California to cause cancer, birth defects and other reproductive harm.

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SAFETY NOTES



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

This manual contains DANGERS, WARNINGS, CAUTIONS, NOTICES and NOTES which must be followed to prevent the possibility of improper service, damage to the equipment, personal injury or death. The following formatting options will apply when calling the reader's attention to the DANGERS, WARNINGS, CAUTIONS, NOTICES and NOTES.

▲ DANGER

INDICATES A HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.

▲ WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

▲ CAUTION

Indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTICE

Indicates a hazardous situation which, if not avoided, may result in property or equipment damage.

Note: Notes contain additional information important to a procedure and will be found within the regular text body of this manual.

OPERATING SAFETY



Before using the generator, be sure to read and understand all of the instructions. This equipment was designed for specific applications; **DO NOT** modify or use this equipment for any application other than which it was designed for. Equipment operated improperly or by untrained personnel can be dangerous. Read the operating instructions and familiarize yourself with the location and proper use of all instruments and controls. Inexperienced operators should receive instruction from someone familiar with the equipment before being allowed to operate or set up the generator. The following points should be practiced at all times:

- The area immediately surrounding the generator should be dry, clean, and free of debris.
- **NEVER** start a unit in need of repair.
- Make certain the generator is securely fastened to a good earthen ground before use.
- **NEVER** operate the unit on a combustible surface.
- **NEVER** operate the generator if any of the following conditions exist during operation:
 1. Noticeable change in engine speed.
 2. Loss of electrical output.
 3. Equipment connected to the generator overheats.
 4. Sparking occurs.
 5. Engine misfires or there is excessive engine/generator vibration.
 6. Protective covers are loose or missing.
 7. If the ambient air temperature is above 120°F (49°C).

- Make sure slings, chains, hooks, ramps, jacks, and other types of lifting devices are attached securely and have enough weight-bearing capacity to lift or hold the equipment safely. Always remain aware of the position of other people around you when lifting the equipment.
- **NEVER** operate a unit while tired, distracted, or under the influence of drugs or alcohol.

ENGINE SAFETY



Internal combustion engines present special hazards during operation and fueling. Failure to follow the safety guidelines described below could result in severe injury or death. Read and follow all safety warnings described in the engine operator's manual. A copy of this manual was supplied with unit when it was shipped from the factory.

- **DO NOT** run engine indoors or in an area with poor ventilation. Diesel engine exhaust contains carbon monoxide, a deadly, odorless and colorless gas which, if inhaled, can cause nausea, fainting or death. Only use this unit outside and away from windows, doors, and ventilation equipment.
- **DO NOT** fill fuel tank near an open flame, while smoking, or while engine is running. **DO NOT** fill tank in an enclosed area with poor ventilation.
- **DO NOT** operate with the fuel tank cap loose or missing.
- **DO NOT** touch or lean against hot exhaust pipes or engine cylinders.
- **DO NOT** clean air filter with gasoline or other types of low flash point solvents.
- **DO NOT** remove engine coolant cap while engine is hot.
- **DO NOT** operate the unit without a functional exhaust system. Prolonged exposure to sound levels in excess of 85 dB(A) can cause permanent hearing loss. Wear hearing protection when working around a running engine.
- Keep hands, feet and loose clothing away from moving parts on the generator and engine.
- Keep area around exhaust pipes and air ducts free of debris to reduce the chance of an accidental fire.
- Batteries contain sulfuric acid which can cause severe injury or death. Sulfuric acid can cause eye damage, burn flesh or eat holes in clothing. Protective eye wear and clothing are necessary when working on or around the battery. Always disconnect the negative (-) battery cable from the corresponding terminal before performing any service on the engine or other components.

ELECTRICAL SAFETY



The unit is powered by a generator driven by a diesel engine. While the engine is running, potentially lethal voltages are present at the 120V Ground Fault Circuit Interrupt (GFCI) receptacles and the 240V twist-lock receptacles located on the control panel, and at the connection lugs and optional cam lock receptacles. Failure to follow the safety guidelines described below could result in severe injury or death.

- Only a qualified and licensed electrician should make connections to the generator.
- **NEVER** wash the unit with high pressure hoses or power washers.
- **NEVER** start the unit under load. The circuit breakers must be in the OFF (O) position when starting the unit in Manual mode. The circuit breakers can be in the ON (I) position only when started in the Auto mode. A transfer switch must be used in the Auto mode to deflect the load upon startup.
- **ALWAYS** disconnect the negative (-) battery cable from the corresponding terminal before performing any service on the engine, generator, or any other components. Remove the negative (-) battery cable from the corresponding terminal if the unit is to be stored or transported.
- **ALWAYS** use extreme caution when servicing this unit in damp conditions. Do not service the unit if your skin or clothing is wet. Do not allow water to collect around the base of the unit.
- **ALWAYS** connect the unit to a good earthen ground before use. Follow all the National Electrical Code (NEC), state and local regulations.

TOWING SAFETY



Towing a trailer requires care. Both the trailer and vehicle must be in good condition and securely fastened to each other to reduce the possibility of an accident. Also, some states require that large trailers be registered and licensed. Contact your local Department of Transportation office to check on license requirements for your particular unit.

- Check that the hitch and coupling on the towing vehicle are rated equal to, or greater than, the trailer's Gross Vehicle Weight Rating (GVWR).
- Check tires on trailer for tread wear, inflation, and condition.
- **NEVER** tow trailer using defective parts. Inspect the hitch and coupling for wear or damage.
- Make sure the trailer hitch and the coupling are compatible. Make sure the coupling is securely fastened to the vehicle.
- Connect safety chains in a crossing pattern under the tongue and **ATTACH THE BREAKAWAY CABLE TO THE REAR BUMPER OF THE TOWING VEHICLE**. Do not attach the cable to the trailer hitch.
- Make sure directional and brake lights on the trailer are connected and working properly.
- Check that lug nuts holding wheels are tight and that none are missing.
- Maximum recommended speed for highway towing is 45 mph (72 km/h). Recommended off-road towing speed is not to exceed 10 mph (16 km/h) or less, depending on terrain.

Before towing the trailer, check that the weight of the trailer is equal across all tires. On trailers with adjustable height hitches, adjust the angle of the trailer tongue to keep the trailer as level as possible. On units equipped with a tandem axle trailer, a large angle between the trailer and tow vehicle will cause more weight to be carried by one axle, which could cause premature wear on the tires and axles and cause potentially unsafe operating conditions.

The trailer is equipped with hydraulic surge brakes or electric surge brakes. Check the operation of the brakes by braking the vehicle at a slow speed before entering traffic. Both the trailer and the vehicle should brake smoothly. If the trailer seems to be pushing, check the level in the surge brake fluid reservoir.

When towing, maintain extra space between vehicles and avoid soft shoulders, curbs and sudden lane changes. If you have not pulled a trailer before, practice turning, stopping, and backing up in an area away from heavy traffic.

A film of grease on the coupler will extend coupler life and eliminate squeaking. Wipe the coupler clean and apply fresh grease each time the trailer is towed.

REPORTING TRAILER SAFETY DEFECTS

If you believe your trailer has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Magnum Power Products LLC.

If NHTSA receives similar complaints, it may open an investigation; and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Magnum Power Products LLC.

To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153), go to <http://www.safercar.gov>; or write to:

Administrator
NHTSA
1200 New Jersey Avenue S.E.
Washington, DC 20590

You can also obtain other information about motor vehicle safety from <http://www.safercar.gov>.

SAFETY SYMBOL SUMMARY

This equipment has been supplied with numerous safety and operating decals. These decals provide important operating instructions and warn of dangers and hazards. Replace any missing or hard-to-read decals and use care when washing or cleaning the unit. Decal placement and part numbers can be found in the parts manual. Below is a summary of the intended meanings for the symbols used on the decals.

	Safety alert symbol; used to alert you to potential personal injury hazards.		Asphyxiation hazard; operate in well ventilated area.
	Hot surface(s) nearby.		Dangerous voltage may be present.
	Belt/entanglement hazard; keep body parts clear of this area.		Anchor/tie down point.
	Fan hazard; keep body parts clear of this area.		Isolate generator to prevent electrocution hazard.
	Never change switch position while engine is running.		Use clean diesel fuel only.
	Stop engine before making connections.		Remove negative battery cable before performing any service on unit.
	Stop engine before fueling.		Read and understand the supplied operator's manual before operating unit.
	Hearing protection required while operating unit with doors open.		Unit electrical ground.
	Lift here only.		Fire/explosion hazard; keep open flames away from unit.
	Engine running.		Burn/scald hazard; pressurized steam.
	Exhaust Filter Cleaning enabled.		Exhaust Filter Cleaning disabled.

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SPECIFICATIONS - MMG130D

MAGNUM MODEL	MMG130D	MMG130D Super Start
Engine		
Make/Brand.....	John Deere	John Deere
Model	PE4045HFG93.....	PE4045HFG93
EPA Tier	4i	4i
Horsepower - prime hp (kW)	152 (113).....	152 (113)
Horsepower - standby hp (kW)	166 (124).....	166 (124)
Operating Speed rpm	1800	1800
Displacement in³ (L)	275 (4.5).....	275 (4.5)
Cylinders - qty	4	4
Fuel Consumption - 100% prime gph (Lph)	7.4 (28.0).....	7.4 (28.0)
Battery Type	Group 24	Group 24
Battery Voltage (Quantity per Unit)	12V (1)	12V (1)
Battery Rating	1000 CCA	1000 CCA
Generator		
Make/Brand.....	Marathon Electric	Marathon Electric
Model	363PSL1607	431CSL6206
Type, Insulation	Brushless, H.....	Brushless, H
Generator Set (Engine/Generator)		
3Ø - Standby kW (kVA)	107 (134).....	110 (138)
Amps - 3Ø Standby 480V (208V) A	161 (372).....	166 (383)
3Ø - Prime kW (kVA)	98 (122).....	100 (125)
Amps - 3Ø Prime 480V (208V) A	147 (339).....	150 (347)
1Ø - Standby kW (kVA)	96 (96).....	108 (108)
Amps - 1Ø Standby - 240V A	400	450
1Ø - Prime kW (kVA)	90 (90).....	98 (98)
Amps - 1Ø Prime - 240V A	375	408
Frequency Hz	60	60
Power Factor.....	1 (1Ø), 0.8 (3Ø).....	1 (1Ø), 0.8 (3Ø)
Sound dB(A) 23 ft @ prime	68	68
Weights		
Dry Weight, Skid Mounted lbs (kg)	5444 (2469).....	5909 (2680)
Operating Weight, Skid Mounted lbs (kg)	7929 (3596).....	8394 (3807)
Dry Weight, Trailer Mounted* lbs (kg)	6840 (3102).....	7305 (3313)
Operating Weight, Trailer Mounted* lbs (kg)	9325 (4230).....	9790 (4441)
*Standard trailer only. Consult factory for custom trailer weights.		
Capacities		
Fuel Tank Volume gal (L)	342 (1295).....	342 (1295)
Usable Fuel Volume gal (L)	313 (1185).....	313 (1185)
Coolant (incl. engine) qt (L)	31.5 (29.8).....	31.5 (29.8)
Oil (incl. filter) qt (L)	33.0 (31.2).....	33.0 (31.2)
Maximum Run Time hrs	44	44
AC Distribution		
Circuit Breaker Size	450	450
Voltage Selection	3 Position Switch (lockable)	3 Position Switch (lockable)
Voltage Regulation	+/- 0.5%	+/- 0.5%
Voltages Available 1Ø.....	120, 139, 208, 220, 240, 277	120, 139, 208, 220, 240, 277
Voltages Available 3Ø.....	208, 220, 440, 480	208, 220, 440, 480
Trailer		
Number of Axles	2	2
Capacity - Axle Rating lbs (kg)	6000 (2722).....	6000 (2722)
Tire Size in	16	16
Brakes.....	Surge	Surge
Hitch - Standard	3" Ring	3" Ring
Maximum Tire Pressure psi	75	75

Specifications are subject to change without notice.

SPECIFICATIONS - MMG175

MAGNUM MODEL

MMG175

MMG175 Super Start

Engine

Make/Brand.....	John Deere	John Deere
Model	PE6068HFG94.....	PE6068HFG94
EPA Tier	4i	4i
Horsepower - prime hp (kW)	217 (162).....	217 (162)
Horsepower - standby hp (kW)	241 (180).....	241 (180)
Operating Speed rpm	1800	1800
Displacement in³ (L)	415 (6.8).....	415 (6.8)
Cylinders - qty	6	6
Fuel Consumption - 100% prime gph (Lph)	10.9 (41.3).....	10.9 (41.3)
Battery Type	Group 31	Group 31
Battery Voltage (Quantity per Unit)	12V (1)	12V (1)
Battery Rating	1000 CCA	1000 CCA

Generator

Make/Brand.....	Marathon Electric	Marathon Electric
Model	431PSL6306	432PSL6210
Type, Insulation	Brushless, H.....	Brushless, H

Generator Set (Engine/Generator)

3Ø - Standby kW (kVA)	153 (191).....	161 (201)
Amps - 3Ø Standby 480V (208V) A	230 (530).....	242 (558)
3Ø - Prime kW (kVA)	138 (172).....	145 (181)
Amps - 3Ø Prime 480V (208V) A	207 (477).....	218 (502)
1Ø - Standby kW (kVA)	125 (125).....	157 (157)
Amps - 1Ø Standby - 240V A	521	654
1Ø - Prime kW (kVA)	120 (120).....	143 (143)
Amps - 1Ø Prime - 240V A	500	596
Frequency Hz	60	60
Power Factor.....	1 (1Ø), 0.8 (3Ø).....	1 (1Ø), 0.8 (3Ø)
Sound dB(A) 23 ft @ prime	68	68

Weights

Dry Weight, Skid Mounted lbs (kg)	6604 (2996).....	7069 (3206)
Operating Weight, Skid Mounted lbs (kg)	9032 (4097).....	9497 (4307)
Dry Weight, Trailer Mounted* lbs (kg)	8000 (3629).....	8465 (1646)
Operating Weight, Trailer Mounted* lbs (kg)	10428 (4730).....	10893 (4941)

*Standard trailer only. Consult factory for custom trailer weights.

Capacities

Fuel Tank Volume gal (L)	342 (1295).....	342 (1295)
Usable Fuel Volume gal (L)	313 (1185).....	313 (1185)
Coolant (incl. engine) qt (L)	31.5 (29.8).....	31.5 (29.8)
Oil (incl. filter) qt (L)	33.0 (31.2).....	33.0 (31.2)
Maximum Run Time hrs	29	29

AC Distribution

Circuit Breaker Size	700	700
Voltage Selection	3 Position Switch (lockable)	3 Position Switch (lockable)
Voltage Regulation	+/- 0.5%	+/- 0.5%
Voltages Available 1Ø.....	120, 139, 208, 220, 240, 277	120, 139, 208, 220, 240, 277
Voltages Available 3Ø.....	208, 220, 440, 480	208, 220, 440, 480

Trailer

Number of Axles	2	2
Capacity - Axle Rating lbs (kg)	6000 (2722).....	6000 (2722)
Tire Size in	16	16
Brakes.....	Surge	Surge
Hitch - Standard	3" Ring	3" Ring
Maximum Tire Pressure psi	75	75

Specifications are subject to change without notice.

SPECIFICATIONS - MMG205

MAGNUM MODEL

MMG205

MMG205 Super Start

Engine

Make/Brand.....	John Deere	John Deere
Model	PE6068HFG95.....	PE6068HFG95
EPA Tier	4i	4i
Horsepower - prime hp (kW)	252 (188).....	252 (188)
Horsepower - standby hp (kW)	268 (200).....	268 (200)
Operating Speed rpm	1800	1800
Displacement in³ (L)	415 (6.8).....	415 (6.8)
Cylinders - qty	6	6
Fuel Consumption - 100% prime gph (Lph)	12.8 (48.5).....	12.8 (48.5)
Battery Type.....	Group 31	Group 31
Battery Voltage (Quantity per Unit)	12V (1)	12V (1)
Battery Rating	1000 CCA	1000 CCA

Generator

Make/Brand.....	Marathon Electric	Marathon Electric
Model	431PSL6336	433PSL6216
Type, Insulation	Brushless, H.....	Brushless, H

Generator Set (Engine/Generator)

3Ø - Standby kW (kVA)	174 (217).....	178 (222)
Amps - 3Ø Standby 480V (208V) A	261 (602).....	267 (616)
3Ø - Prime kW (kVA)	164 (205).....	166 (208)
Amps - 3Ø Prime 480V (208V) A	247 (569).....	250 (577)
1Ø - Standby kW (kVA)	155	176
Amps - 1Ø Standby - 240V A	646	733
1Ø - Prime kW (kVA)	142	167
Amps - 1Ø Prime - 240V A	592	696
Frequency Hz	60	60
Power Factor.....	1 (1Ø), 0.8 (3Ø).....	1 (1Ø), 0.8 (3Ø)
Sound dB(A) 23 ft @ prime	68	68

Weights

Dry Weight, Skid Mounted lbs (kg)	6624 (3005).....	7444 (3377)
Operating Weight, Skid Mounted lbs (kg)	9052 (4106).....	9872 (4478)
Dry Weight, Trailer Mounted* lbs (kg)	8020 (3638).....	8840 (4010)
Operating Weight, Trailer Mounted* lbs (kg)	10448 (4739).....	11268 (5111)

*Standard trailer only. Consult factory for custom trailer weights.

Capacities

Fuel Tank Volume gal (L)	342 (1295).....	342 (1295)
Usable Fuel Volume gal (L)	313 (1185).....	313 (1185)
Coolant (incl. engine) qt (L)	31.5 (29.8).....	31.5 (29.8)
Oil (incl. filter) qt (L)	33.0 (31.2).....	33.0 (31.2)
Maximum Run Time hrs	24	24

AC Distribution

Circuit Breaker Size	800	800
Voltage Selection	3 Position Switch (lockable)	3 Position Switch (lockable)
Voltage Regulation	+/- 0.5%	+/- 0.5%
Voltages Available 1Ø.....	120, 139, 208, 220, 240, 277	120, 139, 208, 220, 240, 277
Voltages Available 3Ø.....	208, 220, 440, 480	208, 220, 440, 480

Trailer

Number of Axles	2	2
Capacity - Axle Rating lbs (kg)	6000 (2722).....	6000 (2722)
Tire Size in	16	16
Brakes.....	Surge	Surge
Hitch - Standard	3" Ring	3" Ring
Maximum Tire Pressure psi	75	75

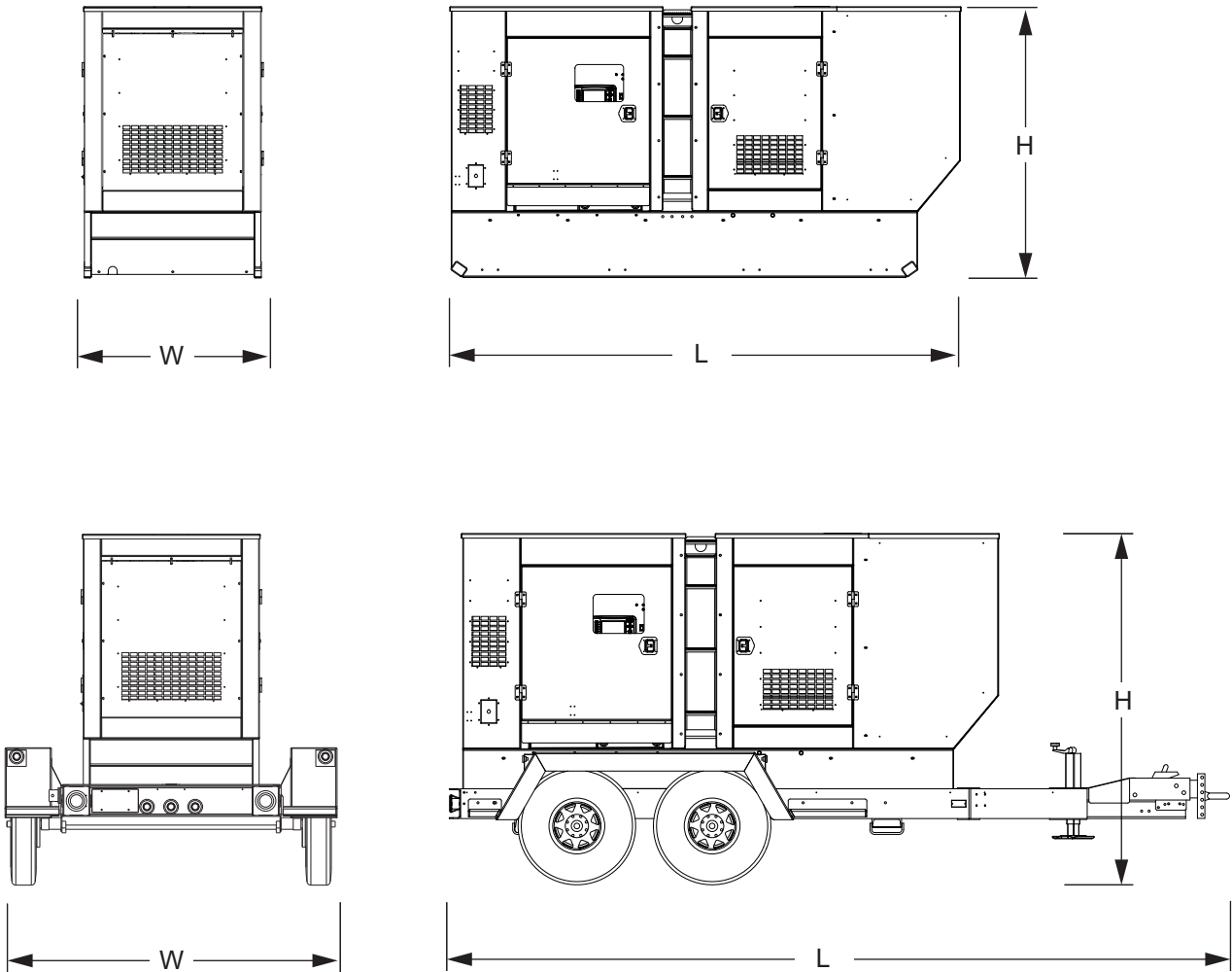
Specifications are subject to change without notice.

UNIT DIMENSIONS

MAGNUM MODEL

MMG130D, MMG175, MMG205

Dimensions (L x W x H)	
Skid Mounted in (m)	144 x 50 x 77 (3.66 x 1.27 x 1.96)
Trailer Mounted in (m)	210 x 86 x 93 (5.33 x 2.18 x 2.36)



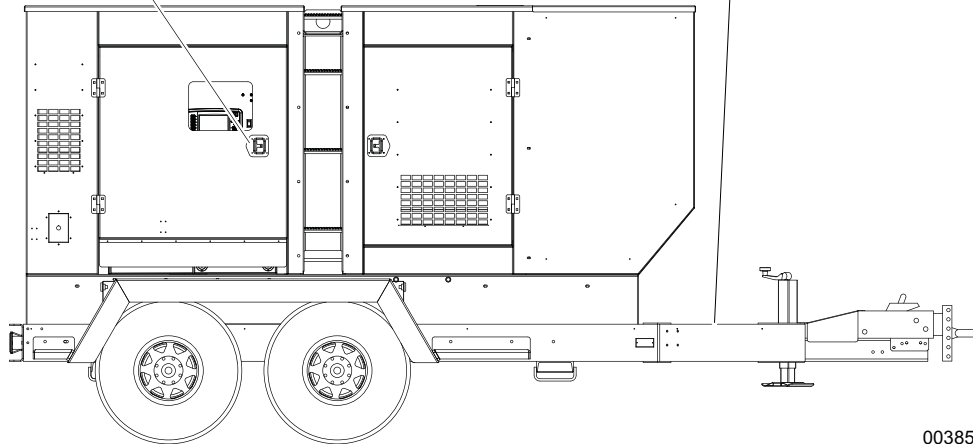
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Specifications are subject to change without notice.

Refer to the illustration to locate the unit ID tag and Vehicle Identification Number (VIN) tag on the unit. Important information, such as the unit serial number, model number, VIN and tire loading information are found on these tags. Record the information from these tags so it is available if the tags are lost or damaged. When ordering parts or requesting assistance, you may be asked to provide this information.

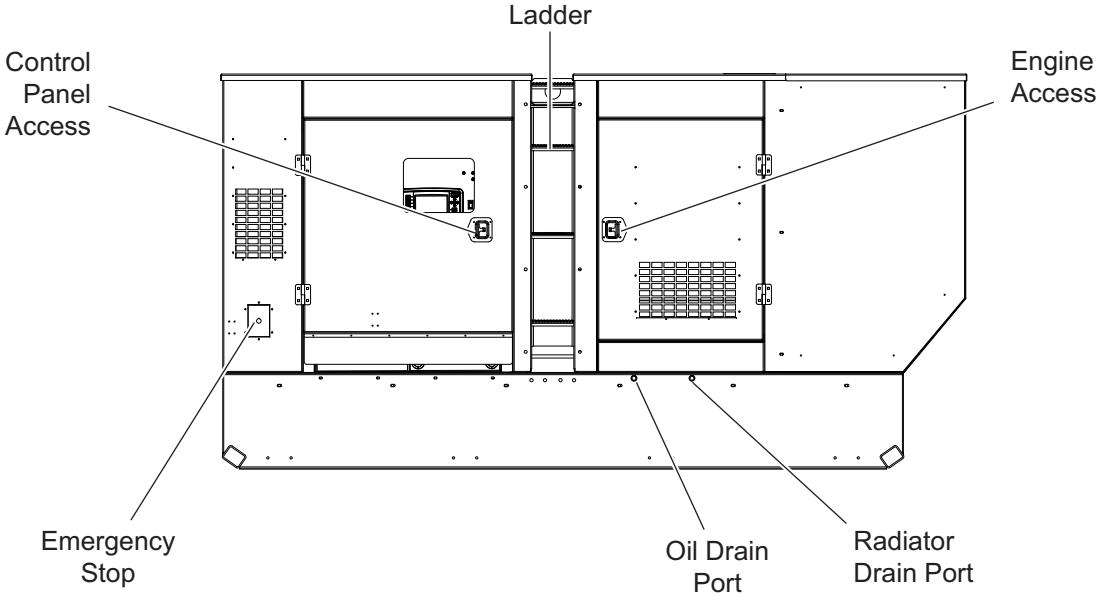
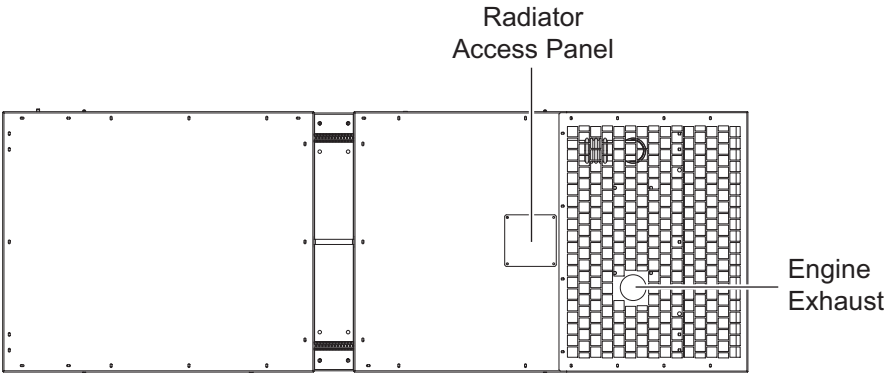
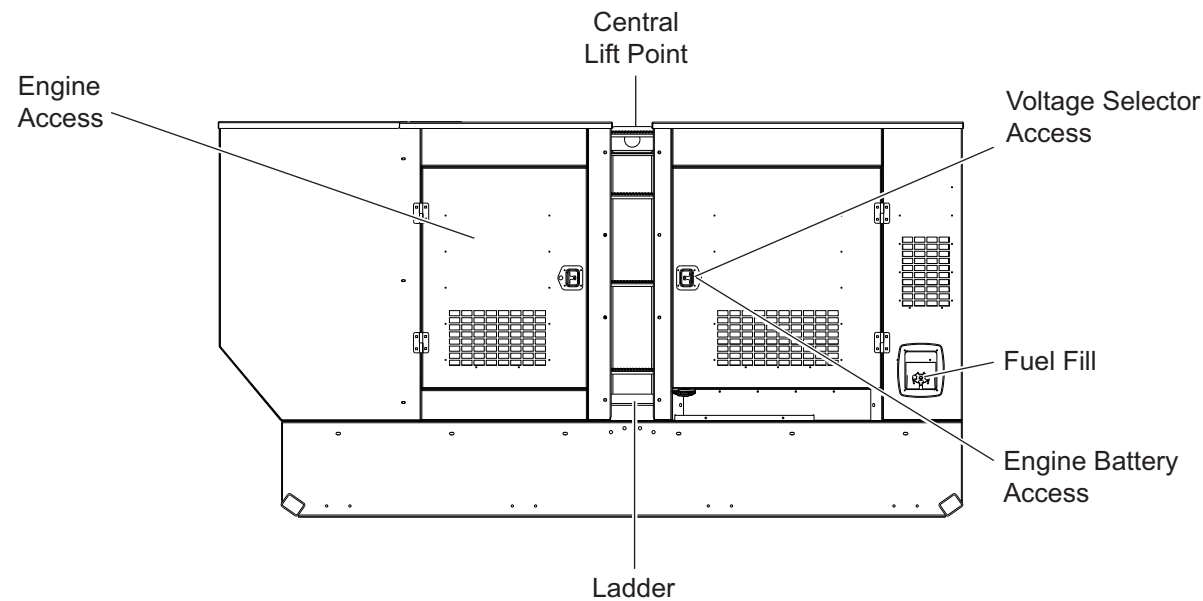
UNIT ID Tag

MANUFACTURED BY/FABRIQUE PAR: Magnum Power Products Ltd		DATE: 00/00/00	
GVIR/PNEU: 000KG (000.00LBS)		COLD H/ PRESS / PRESSURE / CON F/AIROID - KPAP(S/LPCL) SOLI/DUAL	
GAUW/ PNEU	TIRE / PNEU	RM / JANTE	
<p>EACH VALUE</p> <p>THIS VEHICLE COMPLIES WITH ALL APPLICABLE STANDARDS PREPARED UNDER THE U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS/LES VEHICULES CONFORMENT AVEC LES NORMES DE SECURITE PREPAREES EN VERTU DE LA LOI FEDERALE AMERICAINE SUR LA SECURITE DES VEHICULES AUTOMOBILES.</p> <p>THIS VEHICLE IS EQUIPPED WITH AIR BAGS. PLEASE DO NOT OPERATE THIS VEHICLE WITHOUT THE AIR BAGS. LES VEHICULES SONT EQUIPPES D'AIR BAGS. NE PAS CONDUIRE CE VEHICULE SANS LES AIR BAGS.</p>			
VIN/LIN/LV: 00000000000000000000		MODEL: XXXXXX TYPE: TRAILER	



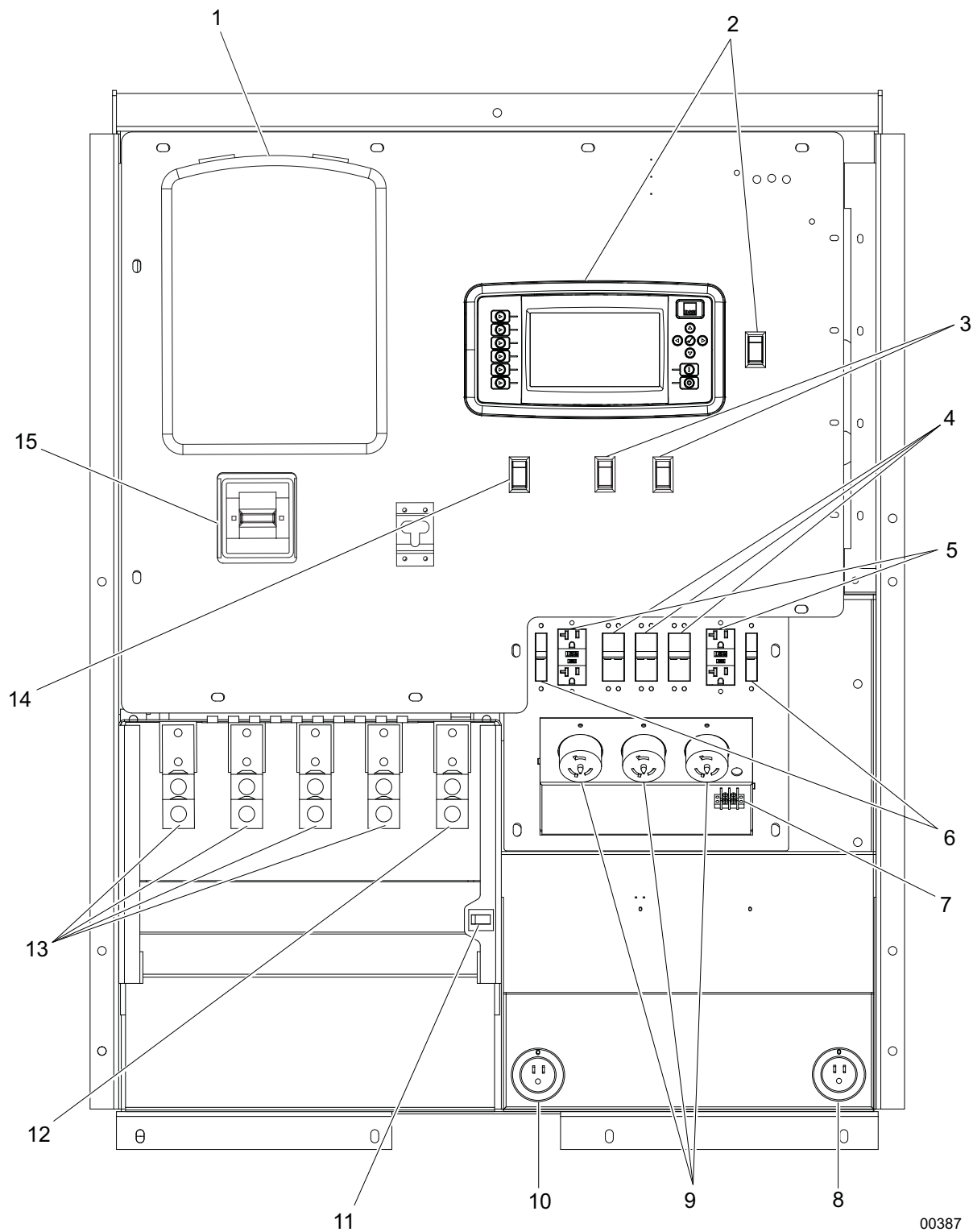
14

COMPONENT LOCATIONS



00386

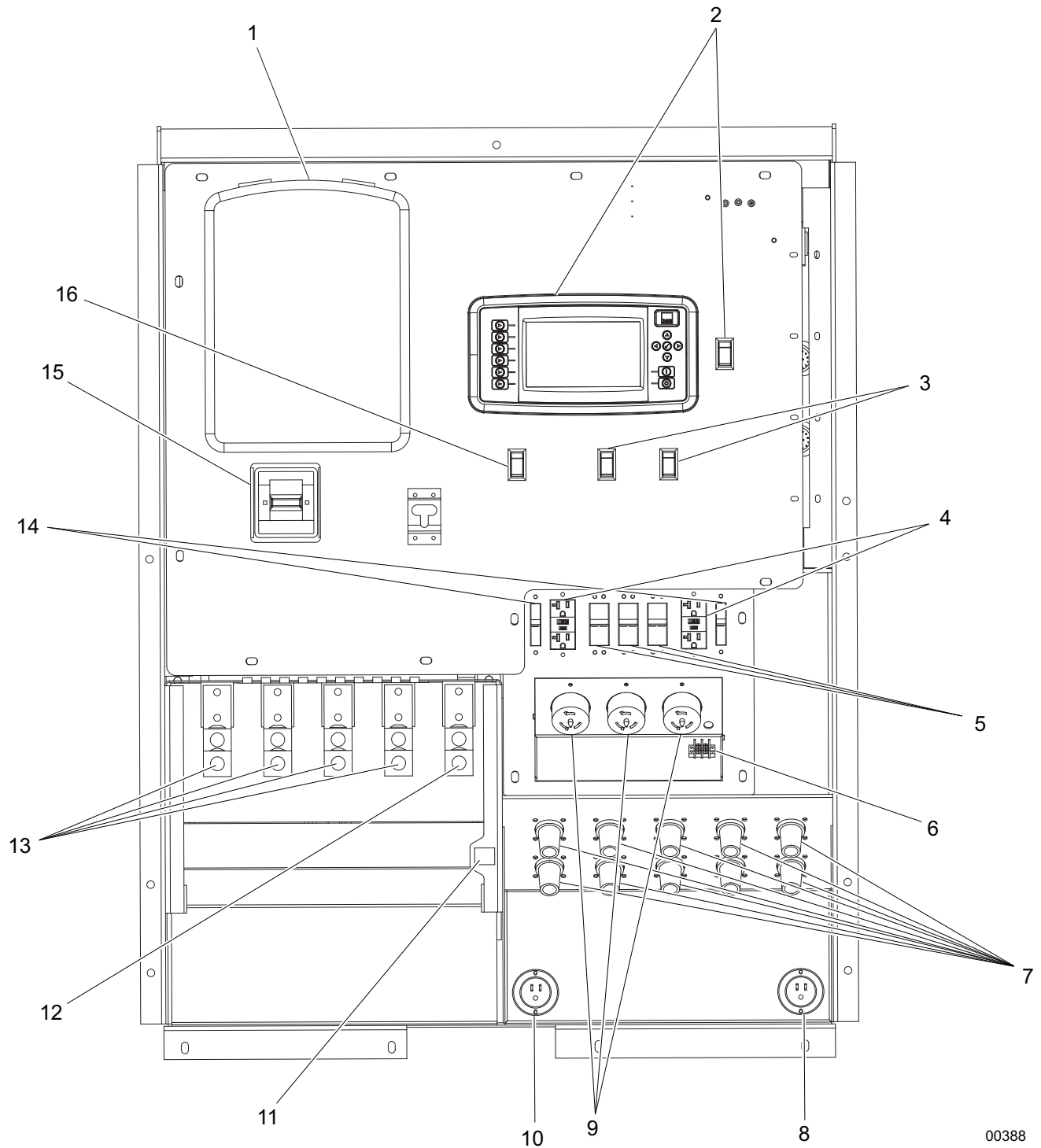
MAIN CONTROL PANEL FEATURES



00387

1. **DOCUMENT HOLDER**
2. **POWER ZONE™ CONTROLLER:** Refer to [“Power Zone™ Controller” on page 20.](#)
3. **AUXILIARY LIGHT SWITCHES (2) (Optional):** These switches operate the control panel and interior lights.
4. **50A CIRCUIT BREAKERS (3):** Circuit breakers for the 120/240V twist-lock receptacles.
5. **120V GFCI RECEPTACLES (2):** Receptacles for additional equipment that may require Ground Fault Circuit Interrupt (GFCI) protection.
6. **20A CIRCUIT BREAKERS (2):** Circuit breakers for the 120V GFCI receptacles.
7. **REMOTE START TERMINAL BLOCK:** Used to connect the generator to a dry-contact closure switch for remote starting of the unit.
8. **CONNECTION FOR BATTERY CHARGER (Optional):** Allows for 120VAC input to power an onboard battery charger.
9. **120/240V TWIST-LOCK RECEPTACLES (3):** These receptacles are used for connecting additional loads or equipment to the generator in 240 and 208 voltage selections only.
10. **CONNECTION FOR ENGINE BLOCK HEATER (Optional):** Allows for 120VAC input to power the engine block heater.
11. **DOOR SAFETY SWITCH:** The connection lug door is equipped with a safety interlock switch that will trip the main circuit breaker and disable the voltage regulator if the door is opened while the unit is operating.
12. **OUTPUT GROUND CONNECTION:** Ground lug for attaching the generator to a good earthen ground.
13. **CONNECTION TERMINAL LUGS (4):** External loads can be wired to these lugs.
14. **DIESEL EXHAUST FILTER CLEANING SWITCH:** This switch toggles between enabling or disabling the auto exhaust cleaning feature and entering manual regeneration. For additional information, refer to [“Exhaust Filter Cleaning Operations” on page 38.](#)
15. **MAIN CIRCUIT BREAKER FOR CONNECTION LUGS:** This breaker will disconnect power to the connection lugs (items 12-13). It **WILL NOT** disconnect power to the receptacles when the engine is running. The main circuit breaker will trip in order to protect the generator from damage if a load is too great.

MAIN CONTROL PANEL FEATURES - WITH CAM LOCK OPTION



00388

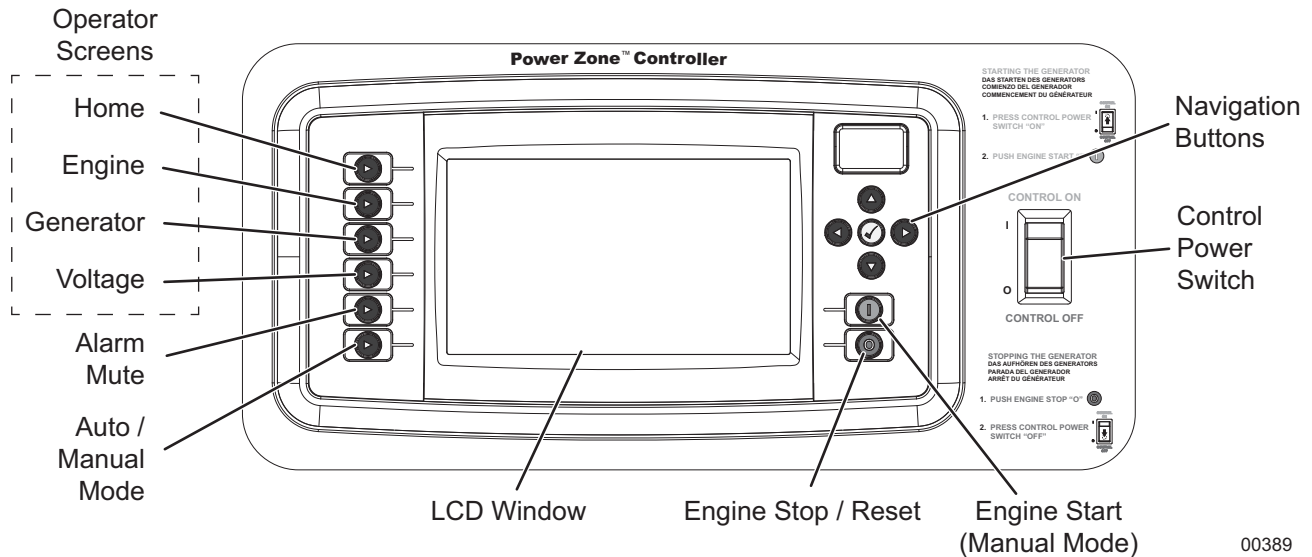
1. **DOCUMENT HOLDER**
2. **POWER ZONE™ CONTROLLER:** Refer to [“Power Zone™ Controller” on page 20](#).
3. **AUXILIARY LIGHT SWITCHES (2) (Optional):** These switches operate the control panel and interior lights.
4. **120V GFCI RECEPTACLES (2):** Receptacles for additional equipment that may require Ground Fault Circuit Interrupt (GFCI) protection.
5. **50A CIRCUIT BREAKERS (3):** Circuit breakers for the 120/240V twist-lock receptacles.
6. **REMOTE START TERMINAL BLOCK:** Used to connect the generator to a dry-contact closure switch for remote starting of the unit.
7. **CAM LOCK CONNECTORS (10) (Optional):** Series 16 taper nose 400A/600V cam locks are connected here. (Green) Cam lock ground connection for attaching the generator to a good earthen ground. For additional information, refer to [“Generator Cam Lock Connection\(s\) Option” on page 28](#).
8. **CONNECTION FOR BATTERY CHARGER (Optional):** Allows for 120VAC input to power onboard battery charger.
9. **120/240V TWIST-LOCK RECEPTACLES (3):** These receptacles are used for connecting additional loads or equipment to the generator in the 240 and 208 voltage selections only.
10. **CONNECTION FOR ENGINE BLOCK HEATER (Optional):** Allows for 120VAC input to power the engine block heater.
11. **DOOR SAFETY SWITCH:** The connection lug door and cam lock door are equipped with a safety interlock switch that will trip the main circuit breaker and disable the voltage regulator if the doors are opened while the unit is operating.
12. **OUTPUT GROUND CONNECTION:** Ground lug for attaching the generator to a good earthen ground.
13. **CONNECTION TERMINAL LUGS (4):** External loads can be wired to these lugs.
14. **20A CIRCUIT BREAKERS (2):** Circuit breakers for the 120V GFCI receptacles.
15. **MAIN CIRCUIT BREAKER FOR CONNECTION LUGS:** This breaker will disconnect power to the connection lugs (items 12-13). It **WILL NOT** disconnect power to the receptacles when the engine is running. The main circuit breaker will trip in order to protect the generator from damage if a load is too great.
16. **DIESEL EXHAUST FILTER CLEANING SWITCH:** This switch toggles between enabling or disabling the auto exhaust cleaning feature and entering manual regeneration. For additional information, refer to [“Exhaust Filter Cleaning Operations” on page 38](#).

POWER ZONE™ CONTROLLER

The Power Zone™ controller is an auto start controller that monitors the unit and indicates operational status and fault conditions. The controller can be programmed to automatically start or stop based on time schedule, fault condition, or load demand.

The controller constantly monitors vital generator and engine functions for a number of preprogrammed alarm and fault conditions. When a fault condition occurs, the engine can be shut down automatically and the LCD window will show the fault that caused the shut down; to resume operation, the fault condition must be resolved.

This controller also records a history of unit performance which may be viewed at any time and will not be lost when the controller is powered down.



CONTROLLER FEATURES AND FUNCTIONS

OPERATOR SCREENS

These buttons are used to enter the various operator screens from any other screen. The operator screens consists of four screens: Home (🏠), Engine (🚗), Generator (GEN), and Voltage Adjust (⚡). For information about the screens, refer to [“Operator Screens” on page 21](#).

ALARM MUTE

The Alarm Mute (🔕) button silences the audible alarm. Additional action will be required to fully disable the active alarm.

AUTO/MANUAL MODE

The Auto/Manual Mode (🔧) button is used to change the startup and shutdown modes of the unit. When pressed once, the unit enters Manual mode and when pressed and held for five seconds, the unit enters Auto mode. If in Auto mode, pressing once will return the unit to Manual mode.

NAVIGATION BUTTONS

These buttons are used to navigate and interact with the Power Zone™ controller screens. Pressing any directional arrow (⬆, ⬇, ⬇, ⬆) while on any of the operator screens will open the maintenance screens, and navigate the tabs and pages within the maintenance screens. The Enter (✓) button is used to select menus, confirm alarms, and confirm altered settings.

CONTROL POWER SWITCH

Use this switch to start up and shut down the Power Zone™ controller. This switch should not be turned off when the unit is running.

ENGINE START

Pressing the Engine Start (I) button while the controller is in Manual mode will start the unit, provided there are no shutdown errors, and the engine satisfies the start status. If the controller is in Auto mode, the Engine Start (I) button has no effect.

ENGINE STOP/RESET

Pressing the Engine Stop/Reset (O) button will shut down the unit and put the controller into Stop mode, whether in Manual mode or Auto mode.

⚠ CAUTION

In case of an emergency, always press the emergency stop switch located on the side of the unit to stop the engine immediately. The Engine Stop/Reset (O) button may delay the engine shutdown if stop faults exist.

NOTICE

To prevent damage to the generator and connected equipment, remove all loads from the generator by opening all circuit breakers (turn to the OFF (O) position) before pressing the Engine Stop/Reset (O) button.

THE LIQUID CRYSTAL DISPLAY (LCD)

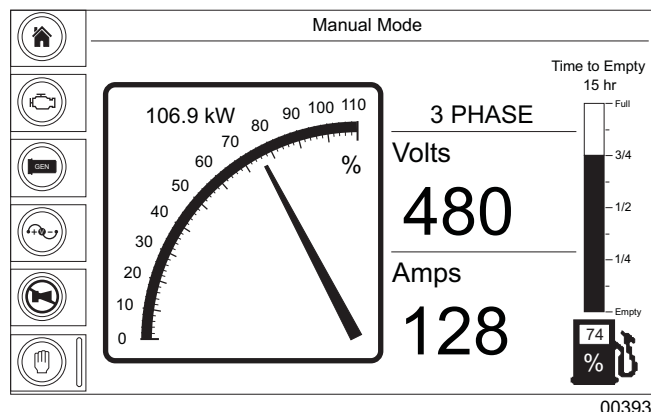
This window will display the various operator and maintenance screens. By viewing these screens, the operator will be able to monitor both the engine and generator status while the unit is running.

OPERATOR SCREENS

The operator screens display the most relevant and critical information an operator will need to properly configure and utilize a unit. From these four screens, the operator can access engine, generator and power transmission information necessary to operate the unit under normal conditions.

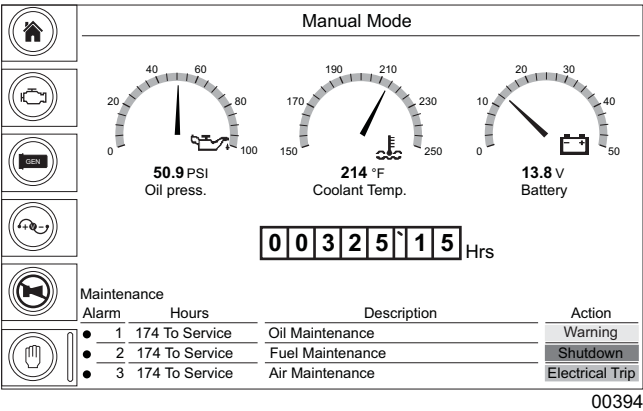
HOME SCREEN

The Home screen is the default screen of the controller and will display after the controller is powered up and the unit management software is loaded. It displays a live readout of the kW meter, percent of load used (gauge), selected phase, volts and amps being produced by the generator, and the fuel level with time until empty. The controller will automatically return to this screen from any other screen after a period of inactivity.



ENGINE SCREEN

The Engine screen displays the oil pressure, coolant temperature and battery voltage on three main gauges. Below the gauges is an hour gauge displaying the total run time on the engine. At the bottom of the screen, this screen also displays maintenance alarm status with the time remaining (black text) or the time past (red text) a scheduled maintenance tasks, along with the description of the maintenance procedure and the action that will take place when the timer trips the alarm.

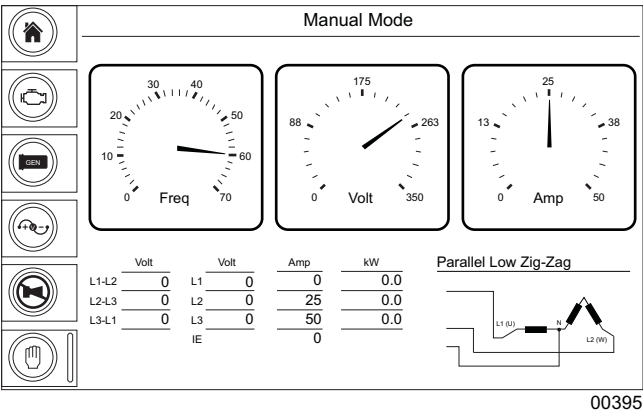


Note: If the measured value is outside the range of a gauge, the needle will not be displayed. The digital value below the gauge will still show the measured value.

- Oil Press:** Displays engine oil pressure. Current coolant temperature is displayed directly below the gauge at all times. The gauge registers oil pressure between 0-100 psi (0-689 kPa). Normal operating pressure is between 35-80 psi (241-552 kPa).
- Coolant Temp:** Displays engine coolant temperature. Current coolant temperature is displayed directly below the gauge at all times. The gauge displays coolant temperature between 150°-250°F (66°-121°C). Normal operating temperature of the unit is between 180°-200°F (82°-93°C) with an average ambient air temperature of 70°F (21°C).
- Battery:** Displays the engine battery voltage. Current battery voltage is displayed directly below the gauge at all times. The gauge displays battery voltage between 0-50V. A normal reading is 12-14V on 12 volt systems and 24-26V on 24 volt systems (with the engine running).

GENERATOR SCREEN

The Generator screen displays the average voltage frequency, volts and amps from the generator, as well as line-to-line voltage, and individual line-to-neutral voltage, amperage and power (kW). This screen also displays the generator winding configuration set by the voltage selector switch in the lower right corner.



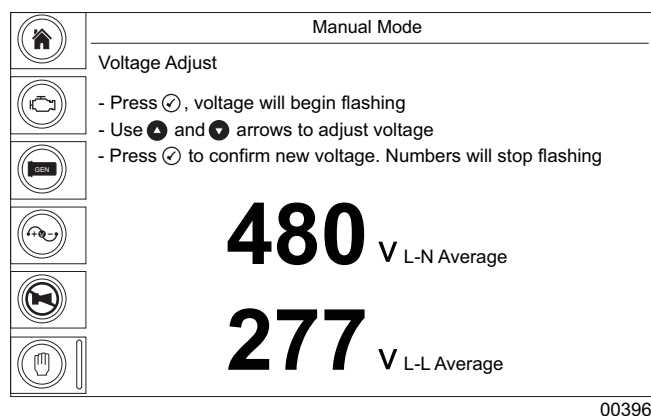
Note: When loading the generator, it is important to observe the amperage to determine the load balance on each line of the generator. Minor load unbalances, usually ten percent or less, will not cause any particular problems. Every effort should be made to distribute the load equally between all lines.

- **Freq:** Displays the output frequency in Hertz (Hz). Normal operating frequency is 60 Hz.
- **Volts:** Displays the nominal voltage in Volts (V).
- **Amps:** Displays the AC output amperage produced by the generator in Amps (A).

Additional information can be found on the electric power table at the bottom-left side of the screen. This provides an overview of all three lines and average voltage and amperage readouts.

VOLTAGE ADJUST SCREEN

The Voltage Adjust screen displays the line-to-neutral and line-to-line voltage averages. The operator can electronically adjust the voltage within limits to prevent under-voltage or over-voltage conditions using the on-screen instructions. This feature replaces a traditional potentiometer. Refer to [“Fine Voltage Adjustment” on page 38](#) for more information.



MAINTENANCE SCREENS

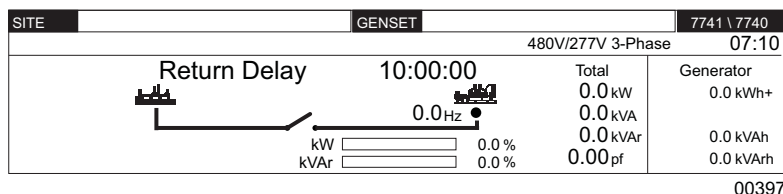
All of the data inputs from the engine, generator, inputs/outputs, schedule and Power Zone™ controller are visible on the maintenance screens.

The information displayed on the maintenance screens can be used to identify, diagnose and troubleshoot unit shutdown conditions and poor unit performance. The maintenance screens can be accessed from any Operator screen by pressing any directional arrow (▲, ►, ▼, ◀).

The bottom of the screens have a list of available tabs, with the currently displayed tab highlighted in blue. The tabs can be selected by using the ▲ or ▼ buttons. To the left of the tabs, the current/available pages are displayed. The pages within a tab can be viewed by using the ▲ and ▼ buttons. Whenever a new tab is selected, the current page will always be page 1.

GENERATOR SUMMARY

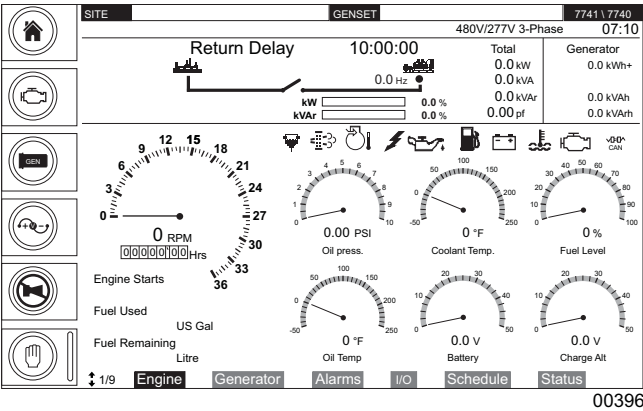
The Generator Summary can be found at the top of all maintenance screens and provides an overview of the system.



ENGINE TAB

The Engine tab contains maintenance and instrumentation data gathered from the engine itself. Above the engine analogue meters is a row of alarm icons. Each icon can be one of three colors: grey (inactive), yellow (warning) or red (shutdown). The alarm icons are as follows from left to right: water in fuel, emission filter, engine air inlet temperature, charge alternator, oil pressure, fuel level, battery voltage, coolant temperature, and ECU lamp.

Note: The content may change depending upon the selected engine and the features supported by the engine.

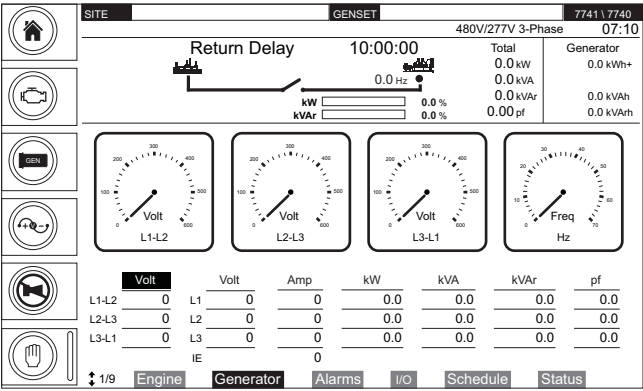


00396

GENERATOR TAB

The Generator tab contains maintenance and instrumentation data gathered from the generator. Each page highlights different data gathered by the generator with the analogue meters changing accordingly. The last two pages will display the information in the bar graph. The bar graph shows blue for positive and red for negative. For the power factor bar graph, blue is for lagging pf and red is for leading pf.

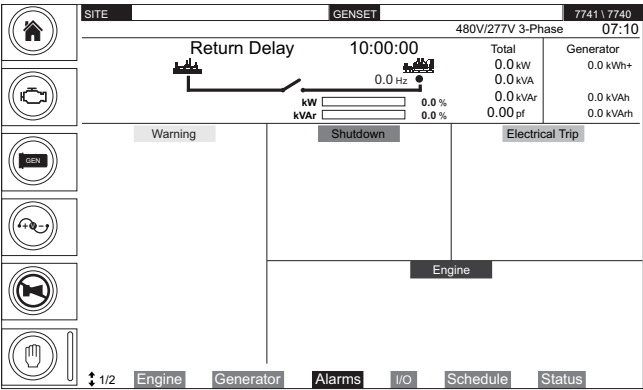
Note: The content may change depending upon the selected generator and the features supported by the generator.



00399

ALARMS TAB

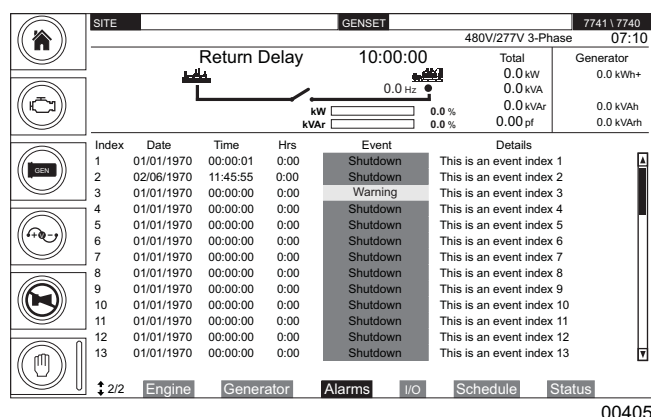
The Alarms tab display any warnings, electrical trip and shutdown alarms and any engine Diagnostic Trouble Codes (DTC) that are occurring or have occurred previously. The first page on the Alarms tab displays the alarms that are currently active. They are organized by alarm type.



00400

Alarm Type	Color - Background/Text	Graphic
Warning	Yellow/Black	Warning
Electrical Trip	Purple/Black	Electrical Trip
Shutdown	Red/Black	Shutdown
ECU Code	Blue/White	Engine

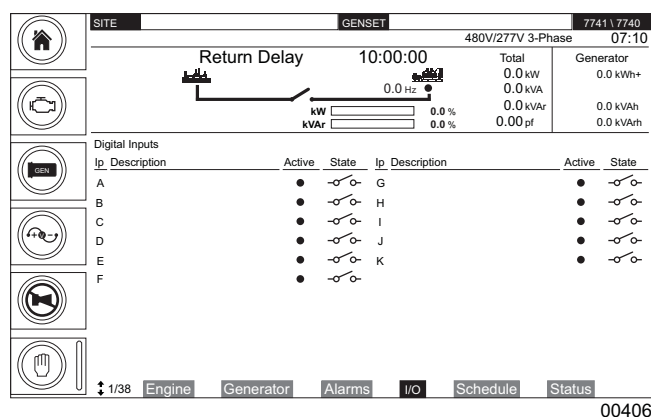
The second page of the Alarms tab shows the event log with a list of events including normal operation events and alarm notifications with the most recent events at the top of the list. All indexed events include the date and time of the event, hours of runtime on the engine when it occurred, along with the event name or alarm type and details.



To scroll down within the event log, press the Enter (✓) button. The scroll bar will change to blue, signifying it is active. Press the ▲ or ▼ buttons to scroll up or down in the event log. When finished, press the Enter (✓) button again.

INPUT/OUTPUT TAB

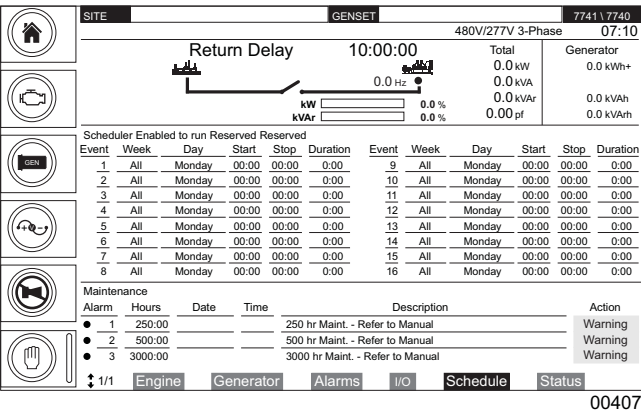
The Input/Output (I/O) tab shows a list of digital inputs and outputs connected to the controller, whether they are active and the current state (open/closed status) of the input and output.



SCHEDULE TAB

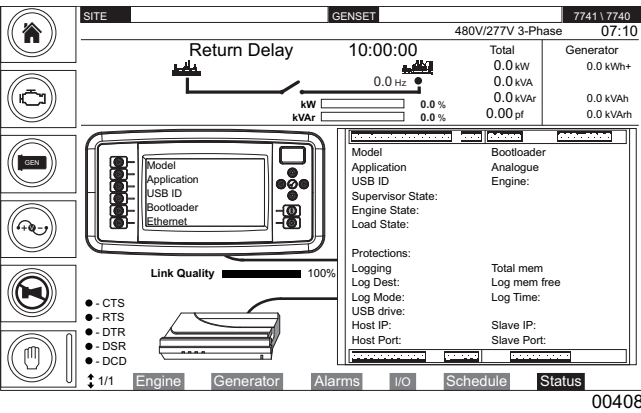
The Scheduler tab shows the current configuration and status of the scheduler, located below the generator summary. At the bottom of the screen, the maintenance configuration status and time remaining until an alarm, electrical trip or shutdown will occur. The lamp(s) to the left shows the configuration status of the maintenance alarm, not the alarm

condition.



STATUS TAB

The Status tab contains the status and configuration of the controller, firmware and data connections.



GENERATOR MONITORING

Generator information is displayed on both the Generator operator screen and Generator tab within the maintenance screens. For more information, refer to [“Operator Screens” on page 21](#) and [“Maintenance Screens” on page 23](#).

ENGINE MONITORING

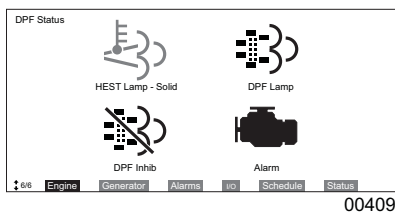
Engine information is displayed on both the Engine operator screen and Engine tab within the maintenance screens. For more information, refer to [“Operator Screens” on page 21](#) and [“Maintenance Screens” on page 23](#).

DIESEL EXHAUST FILTER MONITORING

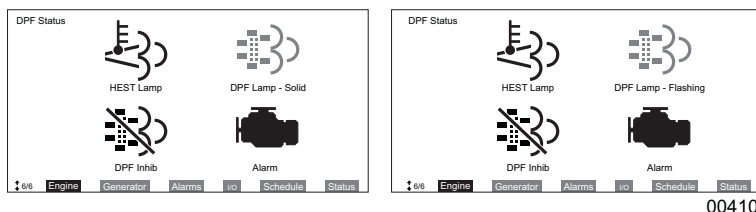
This unit is equipped with a Diesel Particulate Filter (DPF) to meet current EPA emissions standards. This section gives an explanation of the indicators that are displayed on the DPF Status page of the Engine tab.

To access the DPF Status page, press any direction arrow (▲, ►, ▼, ◀) to enter the maintenance screens, and then while on the Engine tab, press the ▼ button to toggle through the pages until the DPF Status page appears. There are four areas on the DPF Status page that communicate various information to the operator. The areas and the indicators that appear in those areas are explained here:

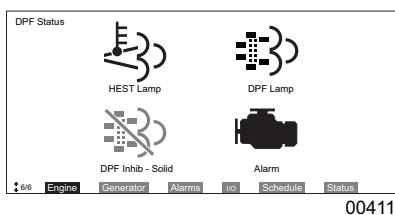
- **HEST Lamp (High Exhaust System Temperature):** This area will display the Regeneration Underway indicator above the words “HEST Lamp - Solid” when the unit is in the process of diesel exhaust filter regeneration. During the regeneration process, the exhaust temperature will be very high.



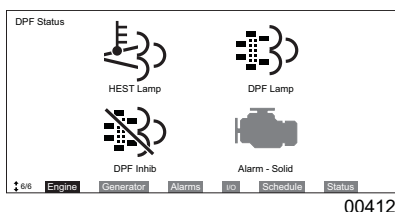
- **DPF Lamp:** This area will display the Regeneration indicator above the words “DPF Lamp - Solid” when auto exhaust filter cleaning is enabled. When the unit is being operated with auto exhaust filter cleaning disabled, the indicator will begin to flash above the words “DPF Lamp -Flashing” if the soot load level goes above 80%.



- **DPF Inhib:** This area will display the Disabled Regeneration indicator above the words “DPF Inhib - Solid” when auto exhaust filter cleaning is disabled.



- **Alarm:** This area will display the Engine Alarm indicator above the words “Alarm - Solid” when an alarm condition occurs. This area displays different text depending upon which alarm condition occurs.



For more information on the operation of auto exhaust filter regeneration and service regeneration, refer to [“Exhaust Filter Cleaning Operations” on page 38](#).

POWER ZONE™ CONTROLLER INFORMATION DISPLAYS, FUNCTIONS, AND RESET

The Power Zone™ controller constantly monitors vital generator and engine functions for a number of operation, alarm and fault conditions. When a fault condition occurs, the engine will shut down automatically and the main display will show the fault that has caused the shutdown. To resume operation, the fault condition must be resolved. To reset the controller and resume operation, press the Enter (✓) button.

GENERATOR OUTPUT CONNECTION LUGS

The unit is equipped with connection lugs, located on the lower portion of the control box behind the lug box door. The lugs provide connection points for attachment of external loads to the generator. A large decal on the inside of the connection lug door details the proper connections for selected voltages.

⚠ WARNING

It is **HIGHLY RECOMMENDED** that only a trained and licensed electrician perform any wiring and related connections to the generator. Installation should be in compliance with the National Electrical Code (NEC), state and local regulations. Failure to follow proper installation requirements may result in equipment or property damage, personal injury, or death.

⚠ WARNING

Before any connections are made to the generator, make sure that the main circuit breaker and the Control Power switch are in the OFF (O) position. Potentially lethal voltages may be present at the generator connection lugs.

⚠ DANGER

IMPROPER OR INCORRECT CONNECTIONS TO A BUILDING'S ELECTRICAL SYSTEM CAN CAUSE POTENTIALLY LETHAL VOLTAGES TO BACKFEED INTO UTILITY LINES. THIS MAY RESULT IN INJURY OR ELECTROCUTION TO UTILITY WORKERS NEARBY. MAKE SURE THE GENERATOR IS SUPPLYING POWER TO AN ISOLATED OBJECT OR BUILDING THAT IS NOT CONNECTED TO ANY UTILITY LINES.

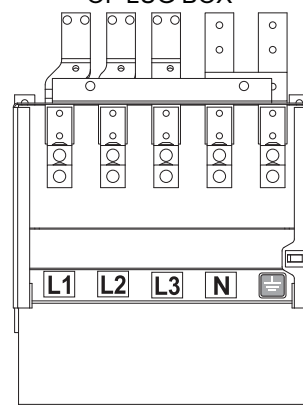
Connections to the lugs should be made by running the power cables up through the opening in the bottom of the box. **DO NOT** make any connections directly to the lugs without routing the cables through the slot. Use a hex-wrench to tighten the cable connections. The connection lug door is equipped with safety interlock switches that will trip the main circuit breaker and disable the voltage regulator, if the door is opened while the unit is operating.

⚠ WARNING

Never attempt to disable or modify the lug door safety switches. Equipment damage, personal injury or death may result.

A ground connection is located next to the connection lugs. The unit **MUST** be connected to a good earthen ground for proper operating safety. The generator neutral is bonded to ground when it is shipped from the factory. The bonding plate will need to be removed when the generator is used as a standby power source. **INSTALLATION SHOULD BE IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE (NEC), STATE AND LOCAL REGULATIONS.**

RUN CABLES THROUGH
OPENING IN BOTTOM
OF LUG BOX



00450

GENERATOR CAM LOCK CONNECTION(S) OPTION

The unit may be equipped with cam lock connections located below the receptacles. These receptacles provide connection points for the attachment of external loads to the generator. A decal below the cam lock connections details the proper connections for selected voltages.

⚠ WARNING

It is **HIGHLY RECOMMENDED** that only a trained and licensed electrician perform any wiring and related connections to the generator. Installation should be in compliance with the National Electrical Code (NEC), state and local regulations. Failure to follow proper installation requirements may result in equipment or property damage, personal injury or death.

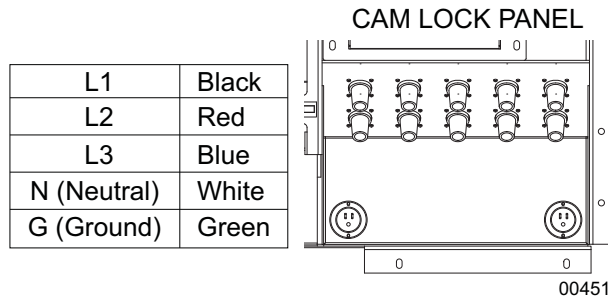
⚠ WARNING

Before any connections are made to the generator, make sure that the main circuit breaker and the Control Power switch are in the OFF (O) position and that the negative (-) battery cable is disconnected. Potentially lethal voltages may be present at the generator connection lugs.

⚠ DANGER

IMPROPER OR INCORRECT CONNECTIONS TO A BUILDING'S ELECTRICAL SYSTEM CAN CAUSE POTENTIALLY LETHAL VOLTAGE TO BACKFEED INTO UTILITY LINES. THIS MAY RESULT IN INJURY OR ELECTROCUTION TO UTILITY WORKERS NEARBY. MAKE SURE THE GENERATOR IS SUPPLYING POWER TO AN ISOLATED OBJECT OR BUILDING THAT IS NOT CONNECTED TO ANY UTILITY LINES.

Connections should be made by plugging power cables equipped with series 16 taper nose 400A/600V cam lock plugs into the cam lock receptacles. Secure the connection by rotating the plug a 1/2 turn to the right.



⚠ WARNING

NEVER attempt to disable or modify the lug door safety switches. Equipment damage, personal injury or death may result.

A ground connection is located on the far right of the cam lock panel. The unit **MUST** be connected to a good earthen ground for proper operating safety. The generator neutral is bonded to ground when it is shipped from the factory. The bonding plate will need to be removed when the generator is used as a standby power source. **INSTALLATION SHOULD BE IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE (NEC), STATE AND LOCAL REGULATIONS.**

⚠ WARNING

Some units are equipped with two sets of cam lock connections. Make sure all connections to the cam lock receptacles are made to one side only, below each corresponding breaker. i.e. DO NOT attach L1, L2 and L3 to the left side and Neutral and Ground to the right side.

VOLTAGE SELECTOR SWITCH

The voltage selector switch mechanically changes the connections between the generator output leads and the connection lugs on the main control panel. Voltage ranges are selected by rotating the handle on the switch to the desired voltage.

NOTICE

NEVER change the voltage selector switch while the engine is running or the controller is on. If the engine is running or starts while the setting is changed, severe arcing will occur causing damage to the switch and generator windings.

The voltage selector switch is equipped with a lockout mechanism. Once the proper voltage has been selected, insert a padlock through the lockout hole(s). By locking the handle in place, unauthorized changing of the voltage

setting is prevented.

120/
208V

277/
480V

Switch styles vary by model.

L1
T1

T4
T7

T10
N

T12
T11

T9
T6

T3
T8

T5
T2

L2

L-L

L-N

L1-L2 = 480V L1-N = 277V N = \perp

L2-L3 = 480V L2-N = 277V

L3-L1 = 480V L3-N = 277V

VOLTAGES AT RECEPTACLES

RECEPTACLE	L-L	L-N
GFCI	-	139V
GFCI w/Buck	-	120V
Twist-locks	240V	139V

00083

120/
208V

277/
480V

120/
240V

Switch styles vary by model.

L1
T7

T1
T4

T10
N

T12
T11

T9
T6

T3
T8

T5
T2

L2

L-L

L-N

L1-L2 = 208V L1-N = 120V N = \perp

L2-L3 = 208V L2-N = 120V

L3-L1 = 208V L3-N = 120V

VOLTAGES AT RECEPTACLES

RECEPTACLE	L-L	L-N
GFCI	-	120V
GFCI w/Buck	-	120V
Twist-locks	208V	120V

00085

120/
208V

120/
240V 3PH

277/
480V

120/
240V 1PH

Switch styles vary by model.

L1
T12

T1
T4

T10
T7

T9
T6

T3
T8

T5
T2

L2

L-L

L-N

L1-L2 = 240V L1-N = 120V N = \perp

L2-L3 = 240V L2-N = 208V

L3-L1 = 240V L3-N = 120V

VOLTAGES AT RECEPTACLES

RECEPTACLE	L-L	L-N
GFCI	-	120V
GFCI w/Buck	-	120V
Twist-locks	120V	0/120V

4 Position Voltage Selector Switch Option

00086

120/
208V

120/
240V

Switch styles vary by model.

T6
T2

T3
T9

T12
T8

T11
T5

N

T4
T1

T10
T7

L1

120V

240V

L1-L2 = - L1-N = 120V N = \perp


L2-L3 = - L2-N = -

L3-L1 = 240V L3-N = 120V

VOLTAGES AT RECEPTACLES

RECEPTACLE	L-L	L-N
GFCI	-	120V
GFCI w/Buck	-	120V
Twist-locks	240V	120V

00087

 = Not recommended for normal use.

PRESTART CHECKLIST

Before starting the unit, carefully read the prestart checklist. Make sure that all of the items are checked before trying to start the unit. This checklist applies to both manual and remote starting of the unit.

- ☐ Read and understand **ALL** safety sections at the beginning of this manual.
- ☐ Check the Control Power switch is in the OFF (O) position.
- ☐ Check all the circuit breakers are switched to the OFF (O) position.
- ☐ Verify the unit is properly grounded to a good earthen ground. Installation should be in compliance with the National Electrical Code (NEC), state and local regulations.
- ☐ Inspect all electrical cords; repair or replace any that are cut, worn, or bare.
- ☐ Verify all electrical connections at the connection lugs are tight and wired correctly.
- ☐ Verify the voltage selector switch is set to the desired voltage and locked.
- ☐ Check the unit is level.
- ☐ Thoroughly check for any water inside, on, or near the generator. Dry the unit before starting.
- ☐ Check oil, coolant, and fuel levels. For more information, refer to [“General Maintenance” on page 40](#).
- ☐ Check the engine fan belt tension and condition.
- ☐ Check the engine fan belt guard.
- ☐ Check the engine exhaust system for loose or rusted components.
- ☐ Check the radiator and surrounding shroud for debris.
- ☐ Check to make sure none of the generator covers are loose or missing.
- ☐ Verify all maintenance procedures are up to date. For more information, refer to [“General Maintenance” on page 40](#).
- ☐ Verify the engine battery connections are secure.
- ☐ Check that the battery disconnect switch is on, if equipped.
- ☐ Verify the emergency stop switch is pulled out.

ENGINE BREAK-IN REQUIREMENTS

Note: During the first 20 hours of operation, avoid long periods of no load or sustained maximum load operation. If the generator is to run for longer than five minutes without a load, shut the generator down.

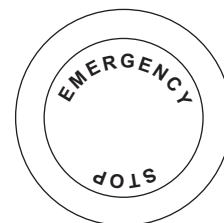
John Deere engines are supplied with engine break-in oil from the factory. Extra care during the first 100 hours of engine operation will result in better performance and longer engine life. **DO NOT** exceed 100 hours of operation with the break-in oil. Operate the engine at heavy loads (60-90% of maximum) as much as possible. If the engine has spent significant time at idle, constant speed(s), and/or light load, or if makeup oil is required, a longer break in period may be needed. Refer to the engine operator's manual for a full description of necessary procedures on the addition of break-in oil and extension of the break-in period. For more information on regular maintenance intervals, refer to [“Basic Maintenance Schedule - John Deere Engine” on page 41](#).

EMERGENCY STOP SWITCH

The unit is equipped with one emergency stop switch. For location of the emergency stop switch, refer to [“Component Locations” on page 15](#). The red switch is clearly labeled “EMERGENCY STOP.” The switch can be accessed and activated with all doors closed and locked.

Activate the emergency stop switch by pushing the red button in until it locks down. This will trip the main circuit breaker which will open the contact, disconnecting the load to the connection lugs. This will also open the fuel circuit, shutting down the engine. The emergency stop fault will be displayed on the control panel.

The switch will remain closed until it is pulled out.



00230

NOTICE

Use the emergency stop switch only when the unit must be shut down immediately. For any

other shut down, refer to [“Shutting Down the Unit” on page 38](#).

MANUAL STARTING OF THE UNIT

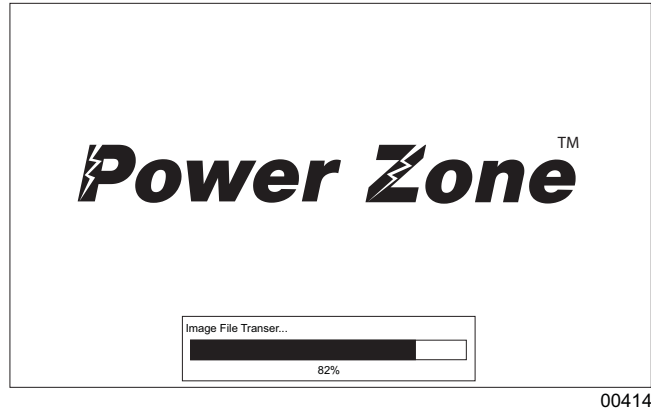
All units equipped with the Power Zone™ controller will initially start up in Stop mode. Use the following procedure to start the generator in Manual mode:

1. Move the Control Power switch to the ON (I) position.

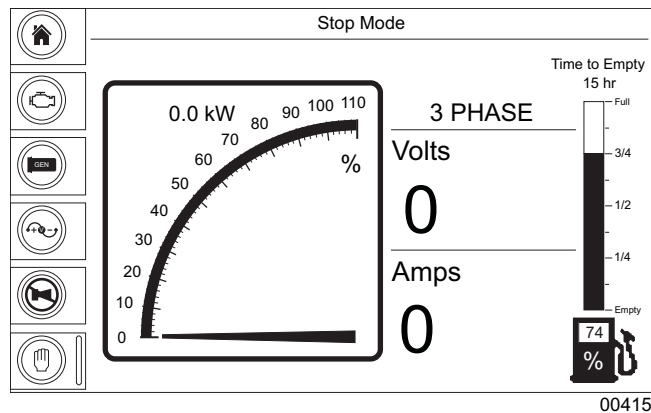
⚠ DANGER

CARBON MONOXIDE: USING A GENERATOR INDOORS CAN KILL YOU IN MINUTES.

2. The LCD window will show the prestart diagnosis and the controller will load the unit management software.



3. When the software is loaded, the Home screen will be displayed and the controller will be in Stop mode as indicated at the top of the screen. Press the Auto/Manual Mode (👤) button to enter Manual mode.



Note: The controller can be started from any screen when it is in Manual mode.

4. Pressing the green Engine Start (I) button on the controller will initiate the startup procedure and start the engine, provided there are no engine faults preventing the unit from starting.

Note: It may take a few seconds for the engine to run smoothly and reach its governed operating speed. During this time, the screen will show a voltage different from that set with the voltage selector switch.

5. If the engine does not start after the first cranking attempt, the engine will pause for 15 seconds to allow the starter to cool. The LCD window will show “Manual Mode - Crank Rest” at the top of the screen. The engine will make two more attempts to start for a total of three crank cycles.


6. Should the engine not start and run within three starting cycles, the LCD window will show the “Fail to Start” alarm. The starting sequence may be repeated after the starter has had a minimum of two minutes to cool. Pressing the Enter (✓) button will clear the alarm and reset the controller.

Note: The engine controller may skip the preheat engine steps on some of the larger models.

7. Once the engine starts, it will immediately begin speeding up to a constant 1800 rpm. The engine may hunt or change speeds until operating speed is reached. After a few minutes of operation, the engine will be warmed up and the operator screens will show engine and generator operating parameters.
8. Check the generator for excessive noise or vibration and any coolant, oil, or fuel leaks before applying any loads.
9. Check that the AC output voltage is correct. The output voltage can be fine adjusted by using the Voltage Adjust screen as described on [page 38](#).
10. Check that the frequency (Hz) is correct on the Generator screen. With no loads connected to the generator, the frequency should read approximately 60 Hz, depending on the type of engine governing used.
11. If all wiring connections have been made correctly, switch the main circuit breaker to the ON (I) position and then add any loads attached to the receptacles by switching the respective circuit breaker to the ON (I) position. You will notice a slight change in engine sound when a load is applied to the unit.

AUTO (REMOTE) STARTING OF THE UNIT

Auto Mode is used when the unit is started from a location other than the control panel by using a transfer switch. Auto (remote start) is the normal setting when the generator is being used as a standby power supply. Before putting the unit in the Auto mode, review the [“Prestart Checklist” on page 31](#) and [“Manual Starting of the Unit” on page 32](#). Also follow all safety warnings and information on isolating the generator with a transfer switch if the unit is to be used as a standby power supply. Refer to [“Prestart Checklist” on page 31](#). Then continue with the steps described below:

1. Perform a manual start of the unit at least once to verify that the engine is operating correctly.
2. If a check of the remote start circuit is desired, remove the wires from the remote start terminal block. Press the Auto/Manual Mode () button, the LCD window should show “Auto Mode” at the top of the screen. Attach a jumper wire (minimum 16 gauge) across the two terminals on the remote start terminal block. This applies a ground to the Power Zone™ Controller to close the starting circuit contacts. The engine should crank, start and run.
3. Remove the jumper wire from the remote start terminal block and the engine will stop. Reconnect any necessary wires from the remote start switch (transfer switch) to the remote start terminal block.
4. Confirm the unit is in Auto mode. The LCD window should show “Auto Mode” at the top of the screen.
5. Close the main circuit breaker (set to the ON (I) position).
6. Secure the unit by closing and locking all access doors.
7. The unit is now ready for remote starting.

VOLTAGE REGULATION

The electronic voltage regulator controls the output of the generator by regulating the current into the exciter field. The regulator has six screwdriver adjustable potentiometers that may be adjusted for U/F dip, under frequency protection (U/F), droop, stability, voltage, and trim. The voltage regulator on the unit is adjusted before shipment from the factory. Contact Magnum Power Products LLC for additional information before attempting to adjust the voltage regulator.

Note: For units equipped with a Marathon DVR2000E+ digital voltage regulator, please refer to the Marathon operating manual provided with the unit.

DERATING FOR ALTITUDE

All units are subject to derating for altitude and temperature; this will reduce the available power for operating tools and accessories connected to the receptacles. Typical reductions in performance are 2-4% for every 1000 ft (305 m) of elevation and 1% per 10°F (5.6°C) increase in ambient air temperature over 72°F (22°C).

WET STACKING

The unit is powered by a diesel engine. Diesel engines are susceptible to wet stacking if lightly loaded. Wet stacking occurs when an engine is run at less than 30% of its full load capacity, causing unburned fuel to accumulate in the exhaust system. Wet stacking can be detected by continuous black exhaust when the unit is under a constant load. It can also cause fouling of injectors and buildup on engine valves. Diesel engines operate properly when applied loads are between 30% and 100% capacity. Appropriate generator sizing is determined by the anticipated load. If the unit is in a wet stack condition, load the unit heavily for five hours or until the exhaust is clear.

Wet stacking in the exhaust system is less likely to occur in iT4-certified engines because of regeneration of the Diesel Particulate Filter (DPF). During the regeneration process, exhaust temperatures are increased to burn off accumulated particulate, and in the process also removes any un-burned diesel fuel or engine oil in the exhaust system. Wet stacking may still be present in the engine due to low cylinder temperatures.

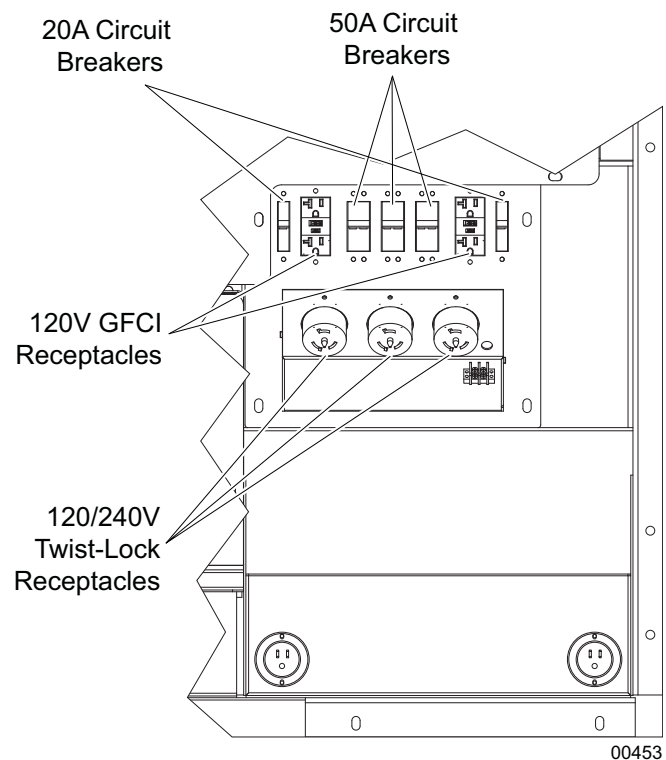
Note: If the unit has a 15% or less load for 10 minutes, “Wet Stacking Alarm” will pop up. The unit will still run but the controller will be inaccessible. The alarm needs to be acknowledged in order to allow the controller to be accessible again by pressing the Alarm Mute button.

CONTROL PANEL RECEPTACLES

The generator is equipped with five receptacles. The large receptacles are 240/120VAC twist-lock receptacles rated at 50A each. The smaller duplex receptacles are 120VAC rated at 20A each with ground fault circuit interrupt (GFCI) protection. These receptacles are not routed through the main circuit breaker. Each receptacle has its own circuit breaker, located directly above or next to the receptacle. Each breaker is sized to the maximum rating of the corresponding receptacle.

NOTICE

Power to the receptacles is available any time the generator is running, **EVEN IF THE MAIN CIRCUIT BREAKER IS IN THE OFF (O) POSITION. MAKE SURE THAT ANY EQUIPMENT CONNECTED TO THE RECEPTACLES IS TURNED OFF BEFORE TURNING THE BREAKERS ON.** Make sure that the voltage selector switch is in the proper position and that the output voltage is correct for the equipment that is connected to the receptacles. Improper voltage may cause equipment damage or malfunction.



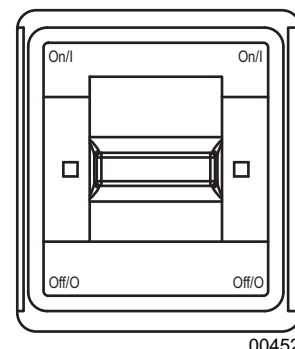
Note: When the voltage selector switch is in position for 480/277V 3Ø, voltage at the two GFCI receptacles is 139 volts and the voltage at the three twist-lock receptacles is 240/139 volts. Magnum Power Products LLC does not recommend using the receptacles in the 480V position without a buck transformer. When the voltage selector switch is in position for 208/120V 3Ø, voltage at the three twist-lock receptacles and the two GFCI receptacles is 208/120 volts.

MAIN CIRCUIT BREAKER

The main circuit breaker is located on the main control panel. When the breaker is in the OFF (O) position, power is interrupted between the connection lugs, the optional cam lock receptacles, and the generator. Once the connections have been made to the connection lugs or the optional cam lock receptacles, and the generator has been started and allowed to reach normal operating temperature, the breaker may be switched to the ON (I) position.

The main circuit breaker will be tripped, disconnecting power to the connection lugs and the optional cam lock receptacles if any of the following items occur while the unit is running:

1. Overload of the generator circuits to the connection lugs or the optional cam lock receptacles (208/120V only).
2. The door covering the connection lugs or the optional cam lock receptacles is opened.
3. If the emergency stop switch is activated.



00452

Make sure any problems that cause the main circuit breaker to trip are corrected before returning the switch to the ON (I) position.

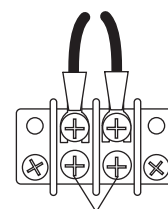
⚠ WARNING

The main circuit breaker interrupts power to the connection lugs and the optional cam lock receptacles only. The control panel receptacles have power even if the main circuit breaker is in the OFF (O) position. To disconnect power to these receptacles, use the individual circuit breakers located near each receptacle.

REMOTE START TERMINAL BLOCK

The remote start terminal block provides a connection for installation of a remote start switch which will allow the unit to be started by a remote dry-contact closure switch. For location of the remote start terminal block, refer to [“Main Control Panel Features” on page 16](#).

Before entering Auto mode, verify that the contacts on any remote switch linked to the unit are **OPEN**. If the contacts on a remote switch are closed, the engine will crank and start when Auto mode is entered. Attach the switch leads to the two unused terminals on the unit's remote start terminal block. For additional information, refer to [“Auto \(Remote\) Starting of the Unit” on page 33](#).



Remote Start Switch Terminals 00231

TRANSFER SWITCH

NOTICE

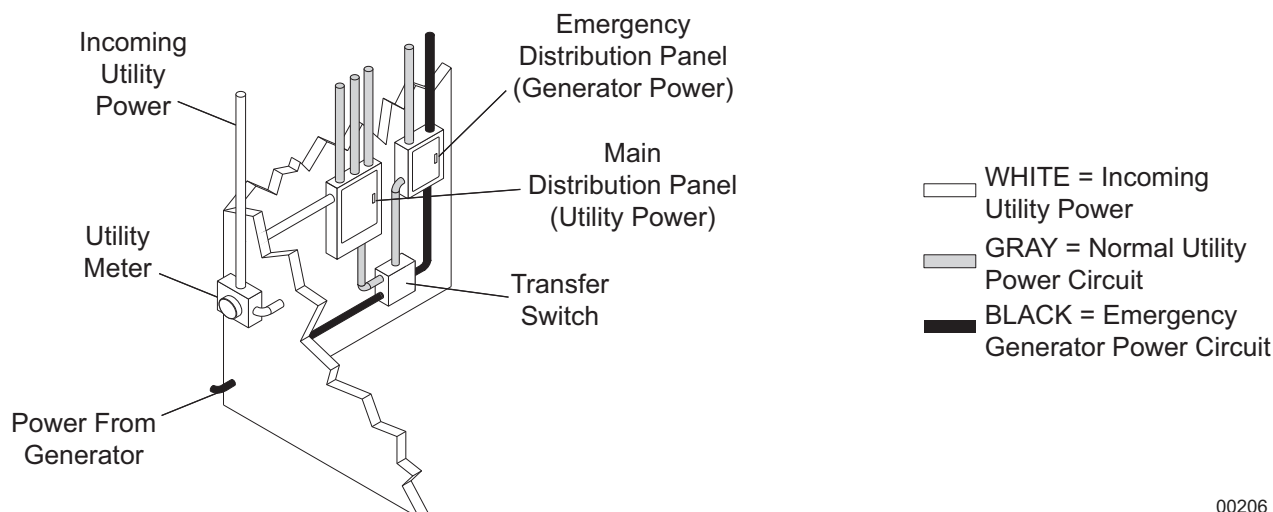
The generator neutral is bonded to ground when shipped from the factory. The bonding plate will need to be removed when the generator is used as a standby power supply. Installation should be in compliance with the National Electrical Code (NEC), state and local regulations.

When the generator is used as a standby power supply, it must be equipped with a transfer switch which isolates it from the utility's distribution system. A transfer switch is designed to transfer electrical loads from the normal power source (utility) to the emergency power source (generator) when normal voltage falls below a prescribed level. The transfer switch automatically returns the load back to the normal source when power is restored back to operating levels.

⚠ DANGER

FAILURE TO ISOLATE THE GENERATOR FROM THE NORMAL POWER UTILITY CAN CAUSE POTENTIALLY LETHAL VOLTAGE TO BACKFEED INTO THE UTILITY LINES. THIS MAY RESULT IN INJURY OR ELECTROCUTION OF UTILITY WORKERS NEARBY. MAKE SURE THE GENERATOR IS ISOLATED BY A TRANSFER SWITCH FROM ANY LOCAL UTILITY LINES. THIS ALSO APPLIES IF THE GENERATOR IS BEING USED AS A BACKUP TO SOME OTHER TYPE OF POWER SUPPLY.

Installation of a transfer switch or other type of remote starting device is the responsibility of the generator user. Installation of such devices must be performed by following all directions supplied by the manufacturer of the switch. If attaching the generator to a power supply normally serviced by a utility company, notify the utility company and check state and local regulations. Familiarize yourself with all instructions and warning labels supplied with the switch.



00206

⚠ WARNING

ONLY a licensed electrician should perform wiring or related connections to the generator. Installation should be in compliance with the National Electrical Code (NEC), state and local regulations. Failure to follow these procedures could result in property damage, personal injury or death. Before any connections are attempted, make sure the main circuit breaker and the Control Power switch are in the OFF (O) position and that the negative (-) battery cable has been disconnected from the engine starting battery.

NOTICE

When using the generator as a standby or substitute power supply, make sure the output voltage and phase rotation of the generator match those of the local power utility. Improper voltage or phase rotation may cause equipment damage or malfunction.

AUTO EXERCISE TIMER

The Power Zone™ controller is capable of starting and stopping the unit automatically, based on a programmable schedule.

Units installed in a standby application should be exercised regularly to maintain operating condition and to ensure responsiveness in an emergency situation. Use the following procedures to operate the unit in Auto mode:

ACCESSING THE CONFIGURATION MENU

1. With the unit stopped, press ▲, ►, ▼, or ◀ to navigate to the maintenance screens from any of the operator screens.

2. While on any maintenance screen, press ✓ and O simultaneously. The controller will display the Configuration menu.
3. To save any changes and exit the Configuration menu, press and hold ✓ for five seconds. To cancel any changes and return to the maintenance screen, press and hold O for five seconds.

SET THE CONTROLLER CLOCK

The schedule runs based off the time set in the controller clock. Use the following procedure to set the controller clock **BEFORE** setting the schedule:

1. Navigate to the Maintenance group and press ► to access it.
2. Press ► to select the Time section.
3. Set the time and date to the correct local time.

SET THE SCHEDULE

1. Access the Scheduler group by pressing the ► button.

Note: The Scheduler group is made up of the Scheduler Options and Scheduler Setup sections. Each section can be accessed and exited using the ► and ◀ buttons.

2. Access the Scheduler Options section. Within this section, the scheduler can be enabled, run mode selected, and load mode selected.


Item	Values
Enable	Yes/No
Run Mode	Monthly/Weekly
Load	Idle, In Island, On Load, Off Load

3. Access the Scheduler Setup section. Within this section, each schedule entry can be modified by pressing the ✓ button to select the item and the ▲ and ▼ buttons to define them.

Item	Values
Schedule Entry	1-16
Start Time	00:00-23:59
Duration	00:00-99:59
Day	Monday-Sunday
Week (of month)	First, Second, Third, Fourth

Note: The controller must be in Auto mode to run at the programmed time. Use a trickle or solar battery charger to prevent the controller from draining the battery while in Auto mode.

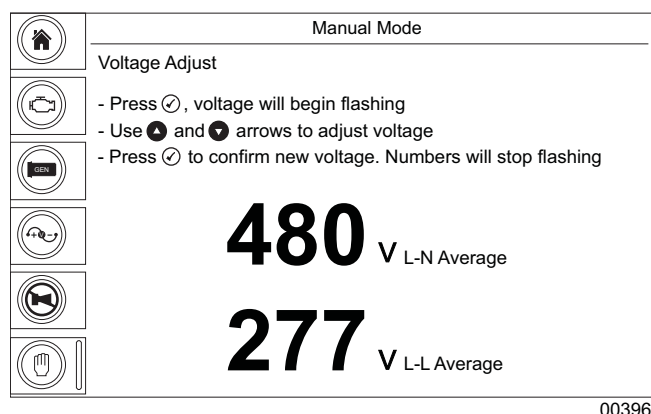
SET THE UNIT TO AUTO MODE

1. From any operator or maintenance screen, press and hold the Auto/Manual Mode  button for five seconds, or until Auto mode is displayed at the top of the screen.

Note: If any of the scheduled time slots are currently active, the controller will begin the starting sequence and start the unit provided there are no shutdown conditions present.

FINE VOLTAGE ADJUSTMENT

Adjustment of the output voltage from the generator is necessary to provide the correct voltage to the end of the power line. Voltage adjustment can be carried out at any time on the Voltage Adjust screen.



1. With the unit running, press [checkmark].
2. Press [checkmark]. The voltages displayed will begin flashing.
3. Use [up] and [down] to adjust the voltage.
4. Press [checkmark] to confirm the new voltage. The voltages displayed will stop flashing.

SHUTTING DOWN THE UNIT

Check with personnel using power supplied by the generator and let them know that the power is going to be turned off. Make sure the power shut down will not create any hazards by accidentally turning off equipment that needs to be kept on (pumps, compressors, lights, etc.).

1. Remove all loads from the generator by opening all circuit breakers (turn to the OFF (O) position).
2. Let the engine run for approximately five minutes to allow it to cool down.
3. Push O. Pressing the red Engine Stop/Reset (O) button will result in the generator going into the shutdown cycle and starting a 15 second shutdown timer called stopping. If the unit does not shut down within 15 seconds, a stop fail alarm will be displayed on the LCD window.
4. After the unit shuts down, move the Control Power switch to the OFF (O) position.

Note: For extended storage time, disconnect the battery. Refer to the engine operator's manual for extended storage requirements.

EXHAUST FILTER CLEANING OPERATIONS

When enabled, the exhaust filter system goes through an automatic cleaning process known as regeneration. Under normal circumstances, regeneration occurs without interruption of unit operation and with minimal operator involvement. In the event there are conditions requiring the operation of the unit with the auto exhaust filter cleaning disabled, the operator may be required to perform procedures to enable or disable the auto exhaust filter cleaning. The operator may also be required to perform a manual regeneration. The following procedures describe how to perform these functions.

⚠ WARNING

The area above and surrounding the exhaust system during an auto or manual exhaust filter cleaning should be clear of any people and objects. Exhaust gases and components can reach temperatures hot enough to ignite and melt common materials.

Note: Always park the unit in a safe location for elevated exhaust temperatures and check for adequate fuel level before beginning the exhaust filter cleaning process. The cleaning cycle can take an extended period of time (approximately 45 minutes). Cleaning is complete when the Regeneration indicator remains off.

DISABLE AUTOMATIC (AUTO) EXHAUST FILTER CLEANING

The auto exhaust filter cleaning feature should always be enabled unless doing so would cause an unsafe working environment. In the event that an unsafe working environment would occur, use the following procedure to disable the auto exhaust filter cleaning feature:

1. Open the control door and locate the switch labeled "EXHAUST FILTER CLEANING."
2. Move the switch into the DISABLED (O) position.
3. Enter the DPF Status screen and verify the Disabled Regeneration indicator appears above the words "DPF Inhib - Solid." For information regarding the DPF Status screen and indicators, refer to ["Diesel Exhaust Filter Monitoring" on page 26](#).

NOTICE

Disabling Auto Exhaust Filter Cleaning is not recommended for any situation unless it is safety related or if the fuel tank lacks the required fuel to complete the cleaning process.

FORCE A MANUAL EXHAUST FILTER CLEANING

If running the unit with the exhaust filter cleaning function disabled, the DPF Status screen may display a red alarm, prompting the operator to force a manual exhaust filter cleaning. Use the following procedure to force a manual exhaust filter cleaning feature:

1. Open the control door and locate the switch labeled "EXHAUST FILTER CLEANING."
2. Move and hold the switch into the ON / FORCED (I) position for five seconds.
3. Enter the DPF Status screen and verify the Regeneration indicator appears above the words "DPF Lamp - Solid." For information regarding the DPF Status screen and indicators, refer to ["Diesel Exhaust Filter Monitoring" on page 26](#).

ENABLE EXHAUST FILTER CLEANING

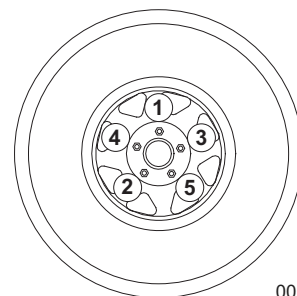
If the environment no longer requires the function to be disabled and there are no alarms present on the DPF Status screen, the auto exhaust filter cleaning function should be enabled. Use the following procedure to enable the auto exhaust filter cleaning feature:

1. Open the control door and locate the switch labeled "EXHAUST FILTER CLEANING."
2. Move the switch into the ON / AUTO (I/O) position.
3. Enter the DPF Status screen and verify the Regeneration indicator appears above the words "DPF Lamp - Solid." For information regarding the DPF Status screen and indicators, refer to ["Diesel Exhaust Filter Monitoring" on page 26](#).

TOWING THE UNIT

1. Use the jack to raise or lower the trailer onto the hitch of the towing vehicle. Lock the hitch coupling and attach the safety chains or cables to the vehicle. Raise the jack foot completely.
2. Connect any trailer wiring to the tow vehicle. Check for proper operation of the directional and brake lights.
3. Make sure all doors are properly latched.

4. Check for proper inflation of the trailer tires. For maximum tire pressures, refer to Specifications beginning on [page 10](#).
5. Check the wheel lugs. Tighten or replace any that are loose or missing. If a tire has been removed for axle service or replaced, tighten the lugs in the order shown to the following specifications:
 - A. Start all lug nuts by hand.
 - B. First pass tighten to 20-25 ft-lbs (27-33 Nm).
 - C. Second pass tighten to 50-60 ft-lbs (67-81 Nm).
 - D. Third pass tighten to 90-120 ft-lbs (122-162 Nm).



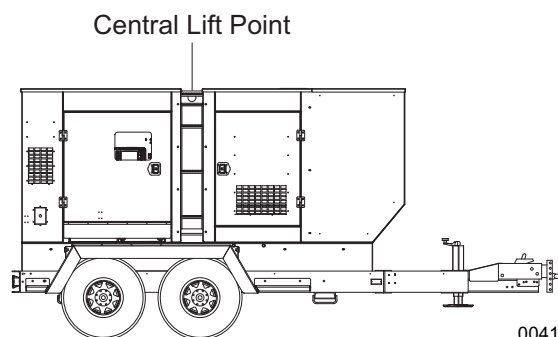
00204

Note: After the first road use, re-torque the lug nuts in sequence.

6. Maximum recommended speed for highway towing is 45 mph (72 km/h). Recommended off-road towing speed is not to exceed 10 mph (16 km/h) or less, depending on terrain.

LIFTING THE UNIT

A central lift point is located on the top of the unit. The central lift point is connected to a lift structure inside the unit. Attach a sling or hook directly to the central lift point only if the devices are in good condition and the equipment being used to raise the unit has sufficient capacity. For approximate weights, refer to Specifications beginning on [page 10](#). Always remain aware of others around you when moving or lifting the unit. Keep the doors closed and locked.



00419

DAILY WALK AROUND INSPECTION

Look for conditions that could hinder performance or safety, such as (but not limited to) oil/coolant/fuel leakage, blocked vents, loose/missing hardware, and electrical connections.

Visually inspect the fan belt for cracks, fraying, stretching, and verify the belt is properly seated in the pulley grooves. Replace the belt according to the manufacturer's recommendations.

Note: At the 500 hour/12 month service interval, it is recommended that the belt be removed and checked for wear. While the belt is removed, inspect pulleys and bearings. Rotate and feel for hard turning or unusual sounds. If pulleys or bearings need replacement, contact the engine manufacturer.

NOTICE

Failure to perform a daily inspection may result in serious damage to the prime mover.

GENERAL MAINTENANCE

Poorly maintained equipment can become a safety hazard. In order for the equipment to operate safely and properly over a long period of time, periodic maintenance and occasional repairs are necessary. **NEVER** perform routine service (oil/filter changes, cleaning, etc.) unless all electrical components are shut off. Before servicing the unit, always follow the instructions listed below.

- Verify the Control Power switch is turned to the OFF (O) position.
- Verify the circuit breakers are open, the OFF (O) position.
- Activate (push in) the emergency stop switch.
- Disconnect the negative (-) terminal on the battery.
- Attach a "Do Not Start" sign to the control panel. This will notify everyone that the unit is being serviced and will reduce the chance of someone inadvertently trying to start the unit.
- Never wash the unit with a high pressure hose or with any kind of power washer.

- Never wash the engine block or fuel tank with a power washer or steam cleaner. Water may enter the cabinet and collect in the generator windings or other electrical parts, causing damage.
- If the unit is stored outside, check for water inside the cabinet and generator before each use. If wet, dry the unit thoroughly before starting.
- Inspect condition of electrical cords. **DO NOT** use the unit if insulation is cut or worn through.
- Check the condition of the air filter by viewing the level of the vacuum draw on the filter minder gauge. Replace the air filter when the yellow center bar reaches the red section on the gauge (20 in. H₂O).
- Check the wheel lugs. Refer to [“Towing The Unit” on page 39](#).
- Check the coolant level daily. Refer to the engine operator’s manual for coolant recommendations and proper mixture.
 - Coolant is checked visually by inspecting the level in coolant overflow jug located near the radiator.
 - Normal operating level is anywhere between the full and add markings on the overflow jug known as normal range.
 - **WHEN ENGINE IS STOPPED AND COMPLETELY COOL**, coolant may be added directly to the coolant overflow jug.
- Check the oil level daily. Refer to the engine operator’s manual for the proper grade of oil, including special operating conditions such as a change in season or climate.
 - **DO NOT** start the unit if the engine oil level is below the add mark on the dipstick.
 - Normal operating level is anywhere in the cross-hatch pattern between the full and add markings on the dipstick.
 - Add oil to the engine only if oil level is below the add mark on the bottom of the cross-hatch pattern on the dipstick. **DO NOT OVERFILL** crankcase.
- Check the fuel level.
- If the unit is connected to a remote start or transfer switch, make sure the remote switch is also off and tagged.

Note: If the engine was run out of fuel or the fuel tank was drained, it may be necessary to bleed the fuel lines. Refer to the engine operator’s manual supplied with the unit.

BASIC MAINTENANCE SCHEDULE - JOHN DEERE ENGINE

NOTICE

Refer to the original equipment manufacturer’s operating manual for a complete list of maintenance requirements. Failure to comply with the procedures as described in the engine operator manual will nullify the warranty, decrease performance and cause equipment damage or premature equipment failure. Maintenance records may be required to complete a warranty request.

Use the schedule in the following table as a guide for regular maintenance intervals. For additional or replacement copies of the engine operator’s manual, contact an authorized dealer in your area.

Item	Daily	250 Hrs.	500 Hrs./12 Months	3000 Hrs./ 36 Months	As Required
Check Oil Level	◆				
Check Coolant Level	◆				
Check Fuel Level	◆				
Check Tire Pressure	◆				
Check All Electrical Connections	◆				
Inspect Radiator Fins For Debris, Clean As Required	◆				
Check Fuel Filter/Water Separator Bowl	◆				
Check Air Cleaner Dust Valve Restriction Indicator Gauge	◆*				
Perform Visual Walkaround Inspection	◆				
Check Oil Vapor Recirculation System/Non-Return Valve		◆			
Change Engine Oil and Replace Oil Filter			◆**		
Replace Oil Vapor Recirculation Filter			◆		
Service Battery			◆		

Item	Daily	250 Hrs.	500 Hrs./12 Months	3000 Hrs./ 36 Months	As Required
Replace Fuel Filter Elements			◆		
Check Engine Mounts			◆		
Check Air Intake Hoses, Connections, and System			◆		
Check Engine Electrical Ground Connection			◆		
Check Automatic Belt Tensioner and Belt Wear			◆		
Check Cooling System			◆		
Lubricate Leveling Jack(s)			◆		
Check Generator Drive Plate Torque (refer to page 43)			◆		
Test Thermostats				◆	
Replace Air Cleaner Elements					◆
Replace Alternator and Fan Belts					◆
Check Fuses					◆
Add Coolant					◆
Check Electrical Wiring and Connections					◆

* Replace primary air cleaner when dust valve restriction indicator gauge shows a vacuum of 25 in. H₂O.

** Change the oil and oil filter after the first 100 hours, then every 500 hours. If not using John Deere Plus 50 II engine oil, the interval must be decreased to every 250 hours.

RESETTING THE MAINTENANCE ALARMS

The Power Zone™ controller will display a warning message when the unit is due for maintenance or service. The maintenance or service intervals are set at 250, 500, and 3000 hours of engine running time. Once the unit has been serviced, the appropriate maintenance alarm reminder needs to be reset. The following procedure demonstrates how to reset the maintenance alarms:

1. With the unit shut down, move the Control Power switch to the ON (I) position. After initialization, the controller will toggle automatically to the Home screen.
2. Press ▲, ►, ▼, or ◀ to enter the maintenance screens.
3. Press ✓ and O simultaneously. The next screen will display the Configuration menu.
4. Press ▼ to move the cursor (blue highlighted text) down to the Maintenance group.
5. Press ► to access the sections. Press ▼ to highlight the Maintenance section.
6. Press ► to access the parameters and highlight the maintenance alarm that needs to be reset.
7. Press ✓ to select the editable parameters. The cursor will highlight “Not Reset” under the selected maintenance alarm. Press ▲ to highlight “Reset”.
8. Press ✓ to reset the selected maintenance alarm.

Note: If the selected maintenance alarm does not need to be reset, press ▼ to highlight “Not Reset” and press ✓ to return to the parameters section.

1. To perform additional maintenance alarm resets, repeat steps 6-8.
2. To save changes, press and hold ✓ for five seconds. To discard changes made, press and hold O for five seconds.

BELT TENSIONERS

John Deere engines use two types of belt tensioners: manual and automatic. Adjust the belt using the manual tensioner according to the manufacturer's specifications. The automatic tensioner cannot be adjusted or repaired and is designed to maintain proper tension over the belt's life. Units with the automatic belt tensioner must be inspected according to the manufacturer's specifications.

EXHAUST FILTER SERVICE REQUIREMENTS

The exhaust filter system contains a Diesel Particulate Filter (DPF). Over time, the DPF will require professional servicing to remove ash buildup. The expected service interval will be at least 3,000 or 4,500 hours, based on engine power and operating conditions. Actual service should take place when the indicator light appears on the Power Zone™ controller. The DPF should be cleaned or replaced by an authorized service provider only. The removal of DPF ash must be done by removing the DPF from the unit and placing it into specialized equipment.

⚠ CAUTION

Do not remove ash by using water or other chemicals. Removing ash by these methods may cause equipment damage and create unsafe operating conditions.

⚠ CAUTION

Only a qualified service provider should remove, handle and dispose of DPF ash. These materials may be considered hazardous under federal, state and local regulations, and must be handled and disposed of properly.

To avoid unnecessary buildup of diesel particulates or soot in the exhaust filter system:

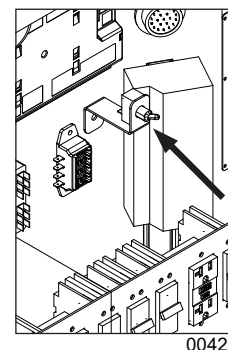
1. Utilize the Automatic Exhaust Filter Cleaning mode.
2. Avoid unnecessary idling.
3. Use proper engine oil. Refer to the engine operator's manual.
4. Use only ultra low sulfur diesel fuel. Refer to the engine operator's manual.

ECU OVERRIDE SWITCH

The ECU override switch is located inside the control box. This toggle switch powers up the ECU without having to start the engine. Use the ECU override switch to turn the ECU off. If the unit needs to be shut down immediately, use the emergency stop switch. Refer to [“Emergency Stop Switch” on page 31](#) for additional information.

NOTICE

DO NOT start the engine with the ECU override switch on.
Doing so will damage the ECU.



CHECKING GENERATOR DRIVE PLATE TORQUE

Follow the procedure below to check the torque of the generator drive plate bolts in accordance with the maintenance chart. Refer to [“Basic Maintenance Schedule - John Deere Engine” on page 41](#).

1. Disconnect the engine starting battery.
2. Remove the generator fan guard.
3. Torque each of the drive plate bolts to the appropriate specification shown in the table below.

Unit	ft-lbs (Nm)
MMG130D	36 (49)

MMG175	46 (63)
MMG205	47 (64)

4. Reinstall the generator fan guard. Reconnect the battery.

JACK MAINTENANCE

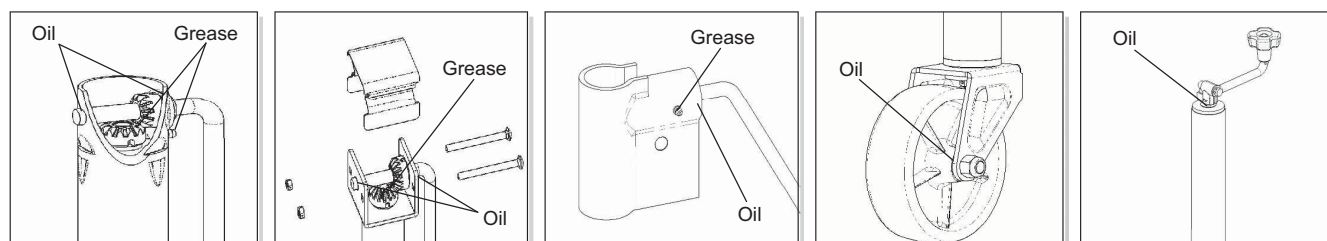
The following procedures should be performed at least annually.

SIDE-WIND MODELS

- The internal gearing and bushings of the jack must be kept lubricated. Apply a small amount of automotive grease to the internal gearing by removing the jack cover, or if equipped, use a needle nose applicator or standard grease gun on the lubrication point found on the side of the jack near the crank. Rotate the jack handle to distribute the grease evenly.
- A lightweight oil must be applied to the handle unit at both sides of the tube.
- If equipped, the axle bolt and nut assembly of the caster wheel must also be lubricated with the same lightweight oil.

TOP-WIND MODELS

- Apply a lightweight oil to the screw stem.



00243

TRAILER WHEEL BEARINGS

The trailer axles are equipped with a grease zerk fitting to allow lubrication of the wheel bearings without the need to disassemble the axle hub. To lubricate the axle bearings, remove the small rubber plug on the grease cap, attach a standard grease gun fitting to the grease zerk fitting and pump grease into the fitting until new grease is visible around the nozzle of the grease gun. Use only a high quality grease made specifically for lubrication of wheel bearings. Wipe any excess grease from the hub with a clean cloth and replace the rubber plug when finished. The minimum recommended lubrication is every 12 months or 12,000 miles (19,312 km). More frequent lubrication may be required under extremely dusty or damp operating conditions.

TROUBLESHOOTING AUTOMATIC SHUTDOWN CONDITIONS

▲ WARNING

Allow engine to cool before performing any troubleshooting procedures. Contacting the engine when it is hot will cause severe personal injury.

LOW FUEL LEVEL SHUTDOWN

1. Check the fuel level on the LCD window. Confirm that the unit is sitting level to ensure an accurate reading.
2. Check for leaks in the fuel tank. The fuel tank should not run dry under normal circumstances. The engine controller will shut the engine down when there is five percent of fuel remaining in the tank. This is done to keep the fuel lines from running dry.
3. If the fuel level is good and no leaks are found, check the fuel level sender and the connecting wiring for damage. To check for continuity between the sender and the engine controller, remove the appropriate

bolts from the control panel to access the inside of the control box. Refer to the DC wiring diagram in the back of this manual for the proper path between the engine controller and the fuel level sender.

LOW OIL PRESSURE SHUTDOWN

1. Check the level of the engine oil with the dipstick. The engine controller will shut the engine down when the oil pressure is less than 20 psi (138 kPa). Add oil if required.
2. Visually inspect the engine for oil leaks.
3. If the oil level is good, restart the unit and verify the loss of oil pressure. Shut the engine down immediately if the oil pressure value does not read 5 psi (34 kPa) within five seconds.
4. Check the oil pressure sender. To identify corrective action, refer to the troubleshooting section of the engine operator's manual provided with the unit.

LOW COOLANT LEVEL SHUTDOWN

1. Allow the engine to cool.
2. Check the coolant level in the radiator. To access the radiator cap, you must remove the access panel from the top of the enclosure directly above the radiator. Add coolant until it is 3/4 in. (1.9 cm) below the filler neck. Secure the radiator cap back into its original position.
3. Inspect coolant hoses, engine block and water pump for visible leaks.
4. Check engine oil to verify no coolant has mixed with it (oil will appear milky if coolant is present). Refer to the engine operator's manual for additional information.

HIGH COOLANT TEMPERATURE SHUTDOWN

1. Check the coolant level in the overflow jug.
2. Restart the engine and read the coolant temperature to verify a high coolant temperature shutdown. Stop the engine immediately if the coolant temperature is 230°F (110°C) or more.
3. Allow the engine to cool. Add coolant to the overflow jug if it is low and then check the level of coolant in the radiator. To access the radiator cap, you must remove the access panel from the top of the enclosure directly above the radiator. Add coolant until it is 3/4 in. (1.9 cm) below the filler neck. Secure the radiator cap back into its original position.
4. Check the radiator shroud and ducting for blockage and remove any foreign matter.
5. Inspect coolant hoses, engine block and water pump for visible leaks.
6. Check the tension of the serpentine drive belt for the water pump.
7. If no other problems are found, remove the load on the generator and restart the engine. Check the coolant temperature and shut the engine down immediately if it starts to overheat. Refer to the engine operator's manual for additional information on engine overheating.

OVERCRANK SHUTDOWN

1. Check the fuel level in the tank.
2. Check for proper operation of the fuel pump.
3. Check the air filter for blockage.
4. If the engine will not start, refer to the engine operator's manual for additional information on troubleshooting starting problems.

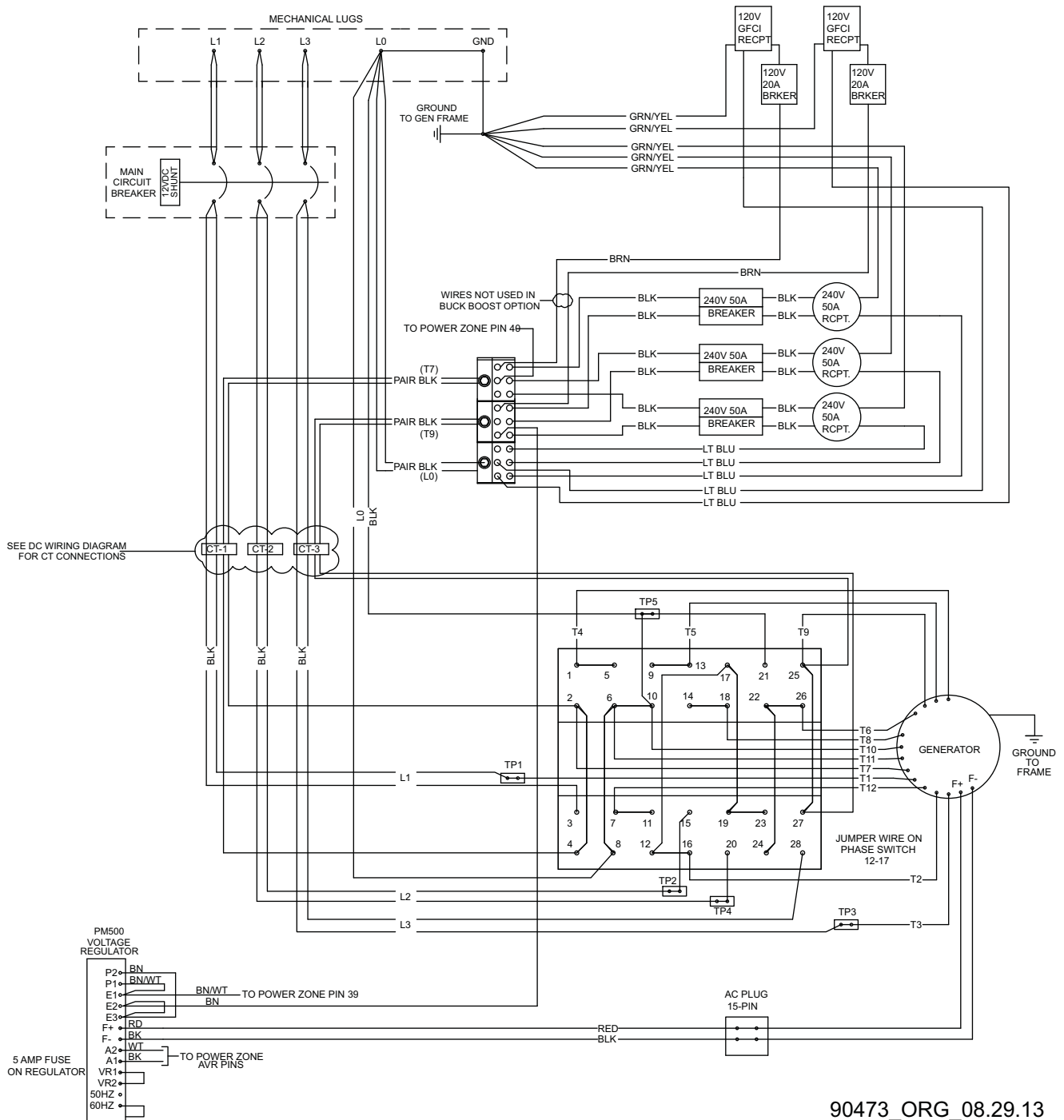
OVERSPEED OR UNDERSPEED SHUTDOWN

1. Disconnect all loads and restart the generator. Read the frequency (Hz) on the LCD window. With no loads on the generator, the frequency should read 60.0 Hz.
2. If the frequency is above or below 60.0 Hz, the engine speed will have to be adjusted. Refer to the engine operator's manual for throttle adjustments on mechanically governed units and refer to the electronic governor manual for electronically controlled units. Contact John Deere with speed related issues since the engine is governed by the John Deere Electronic Engine Control Unit (ECU).

VISCOUS FAN CLUTCH OPTION

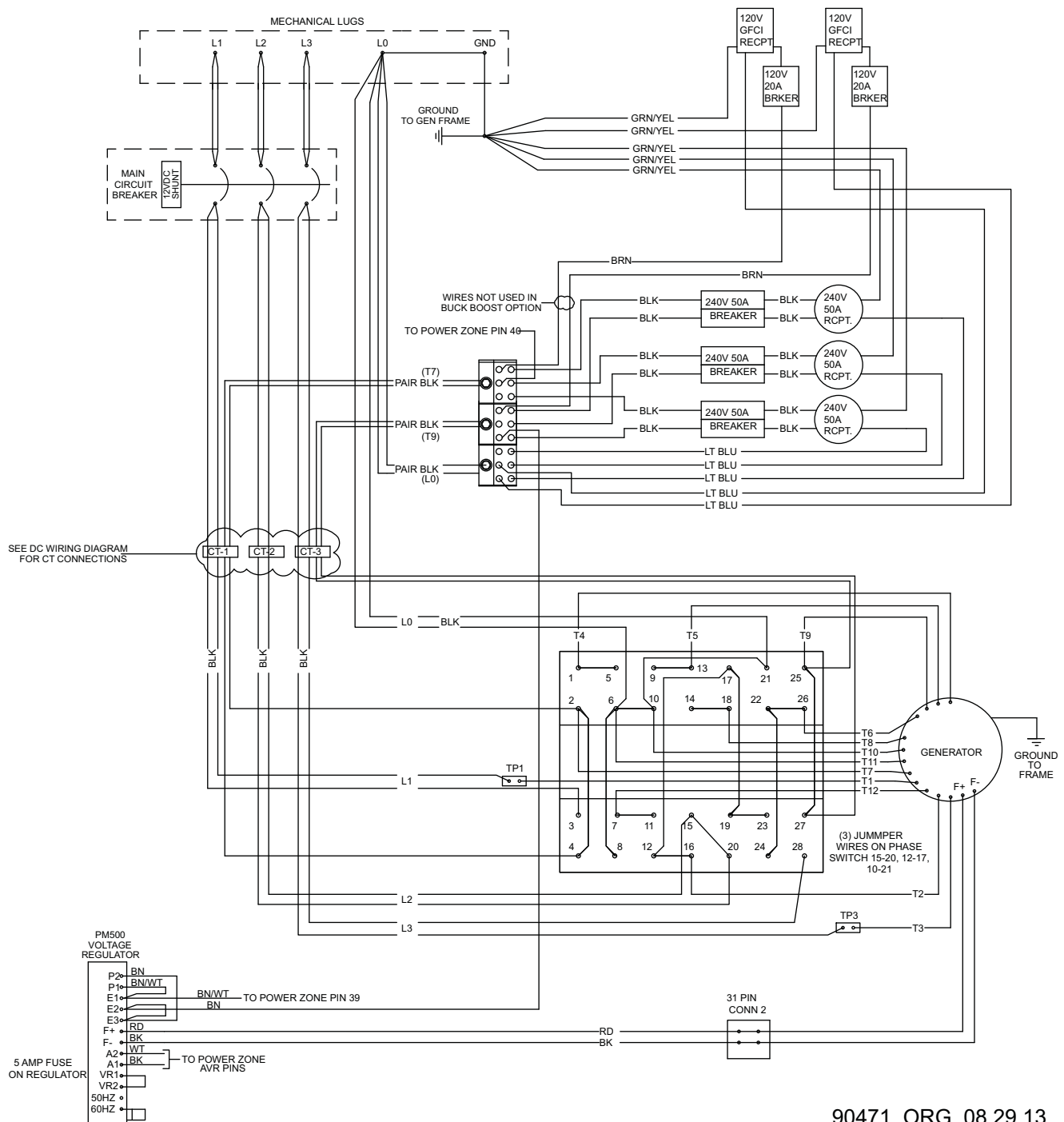
The viscous fan clutch option allows the engine cooling fan to engage at lower speeds and disengage at higher speeds, increasing cooling system efficiency. The cooling fan will engage at full speed when the coolant temperature rises. When the fan is operating at full speed, it will switch to a slower speed when the coolant temperature drops. There will be an audible difference when the engine cooling fan switches speeds. Depending on unit model, the temperature ranges vary between 170°F and 200°F (77°C and 93°C).

AC WIRING DIAGRAM - 3 POSITION VOLTAGE SELECTOR SWITCH - MMG130D



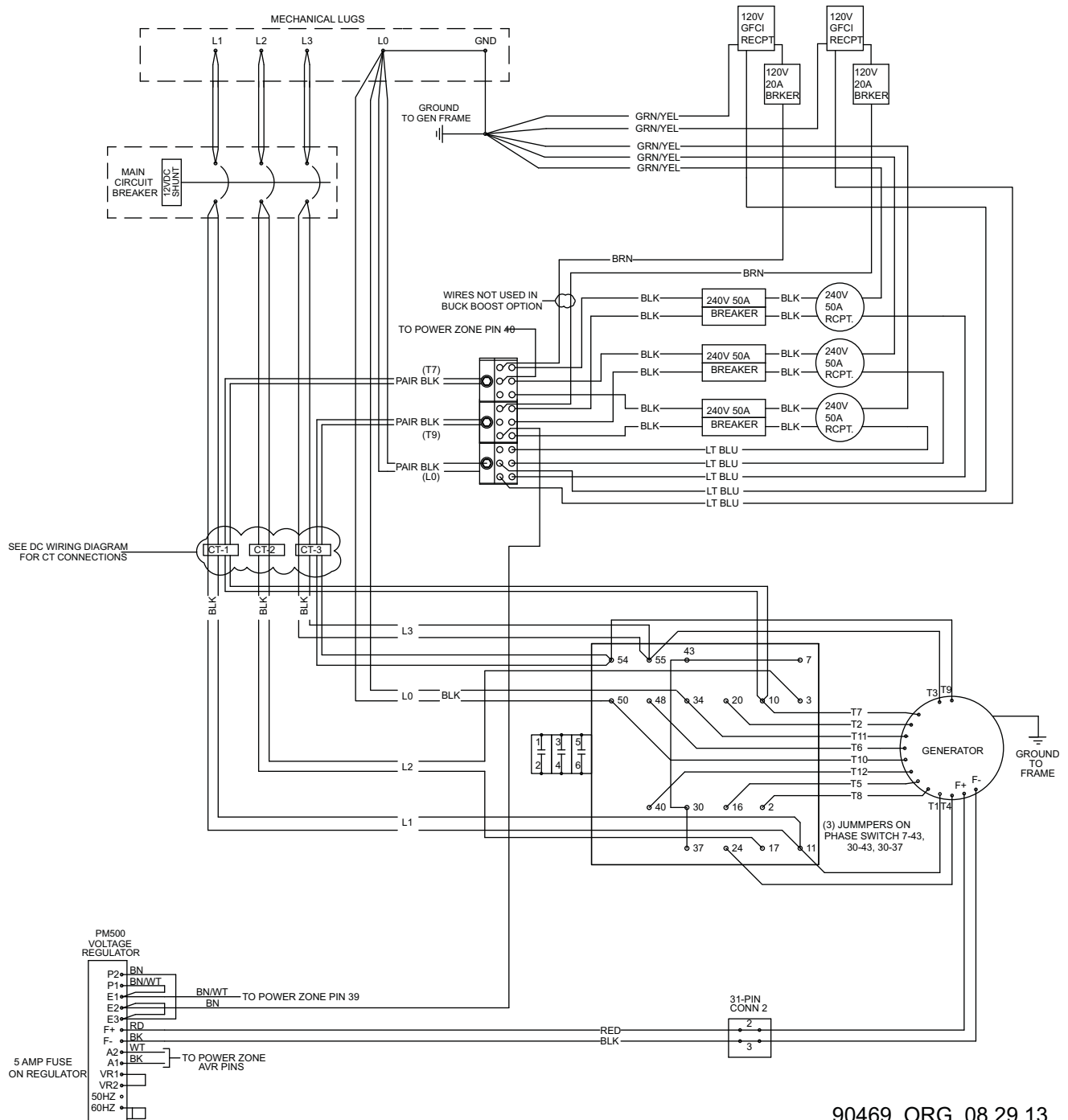
90473_ORG_08.29.13

AC WIRING DIAGRAM - 3 POSITION VOLTAGE SELECTOR SWITCH - MMG175



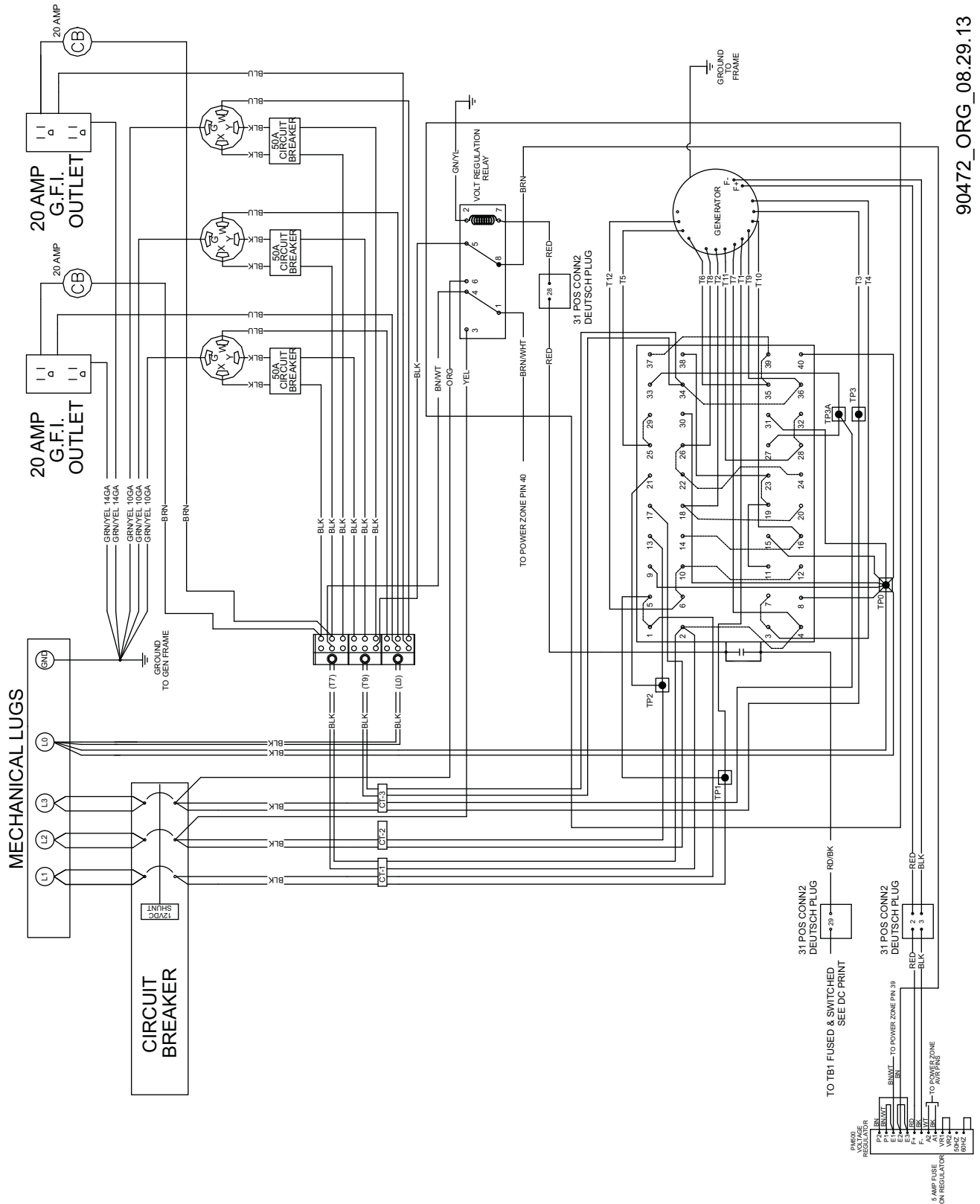
90471_ORG_08.29.13

AC WIRING DIAGRAM - 3 POSITION VOLTAGE SELECTOR SWITCH - MMG205

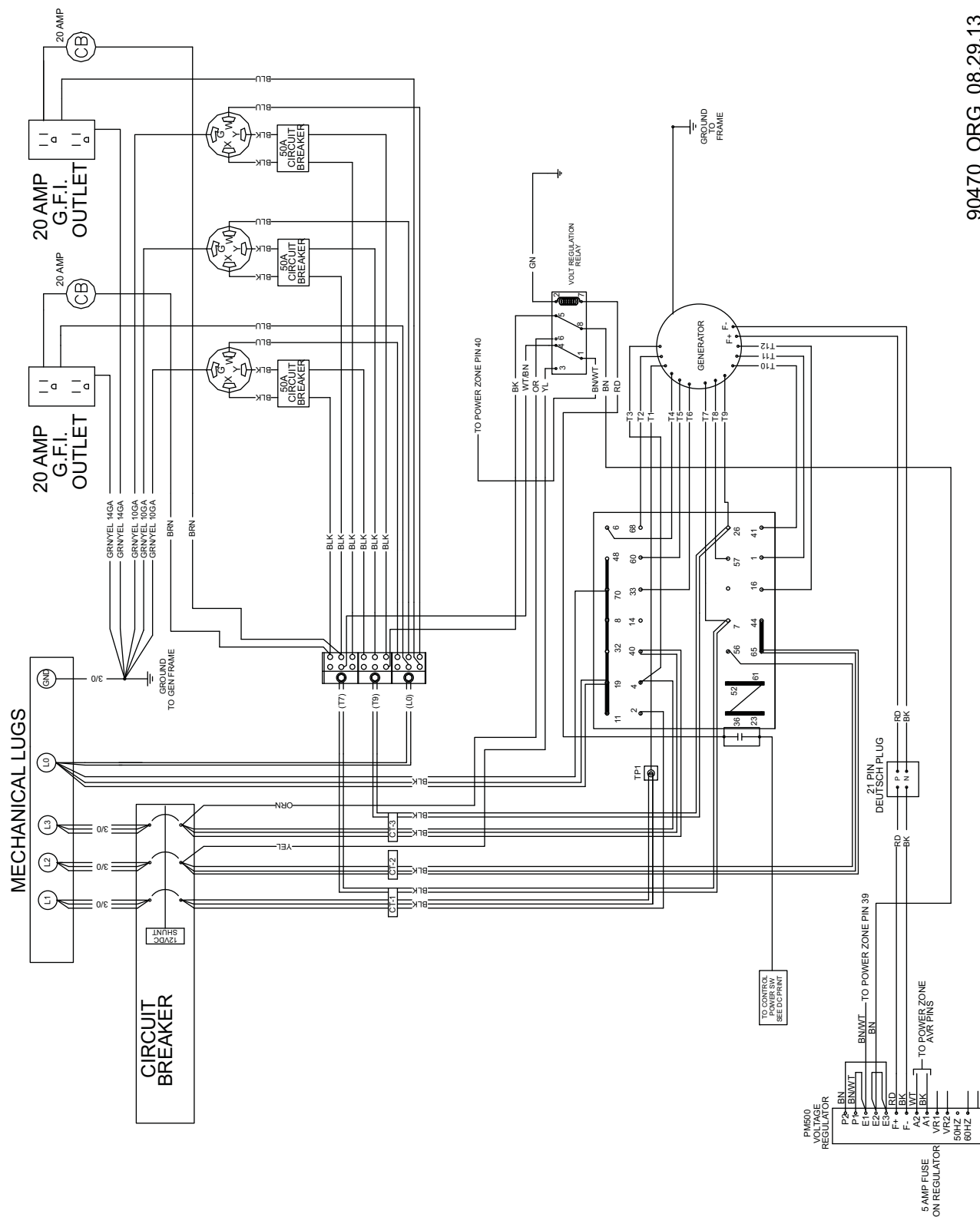


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AC WIRING DIAGRAM - 4-POS. VOLT. SELECTOR SWITCH OPTION - MMG130D, MMG175

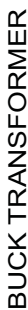


AC WIRING DIAGRAM - 4-POS. VOLT. SELECTOR SWITCH OPTION - MMG205

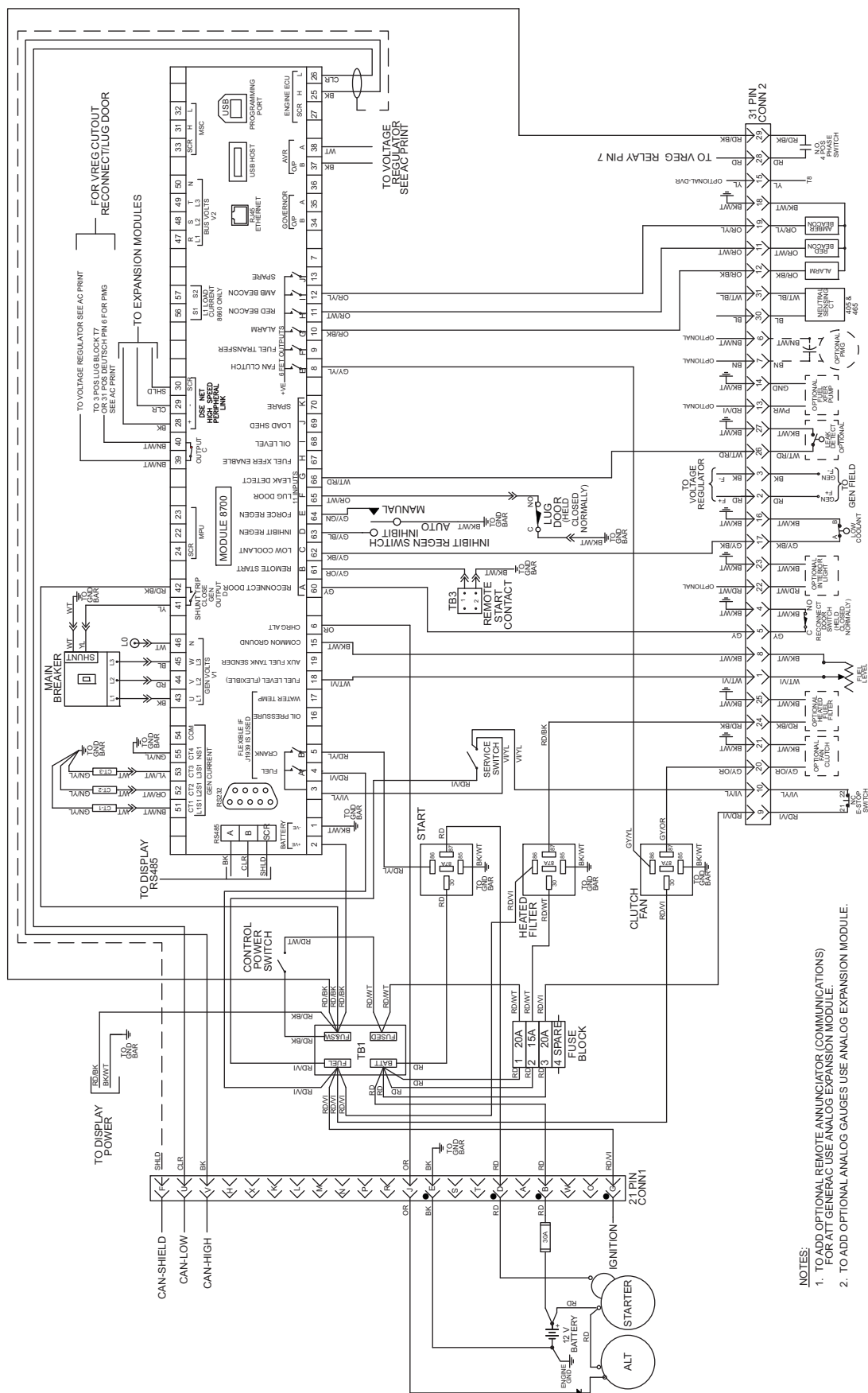


90470_ORG_08.29.13

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DC WIRING DIAGRAM

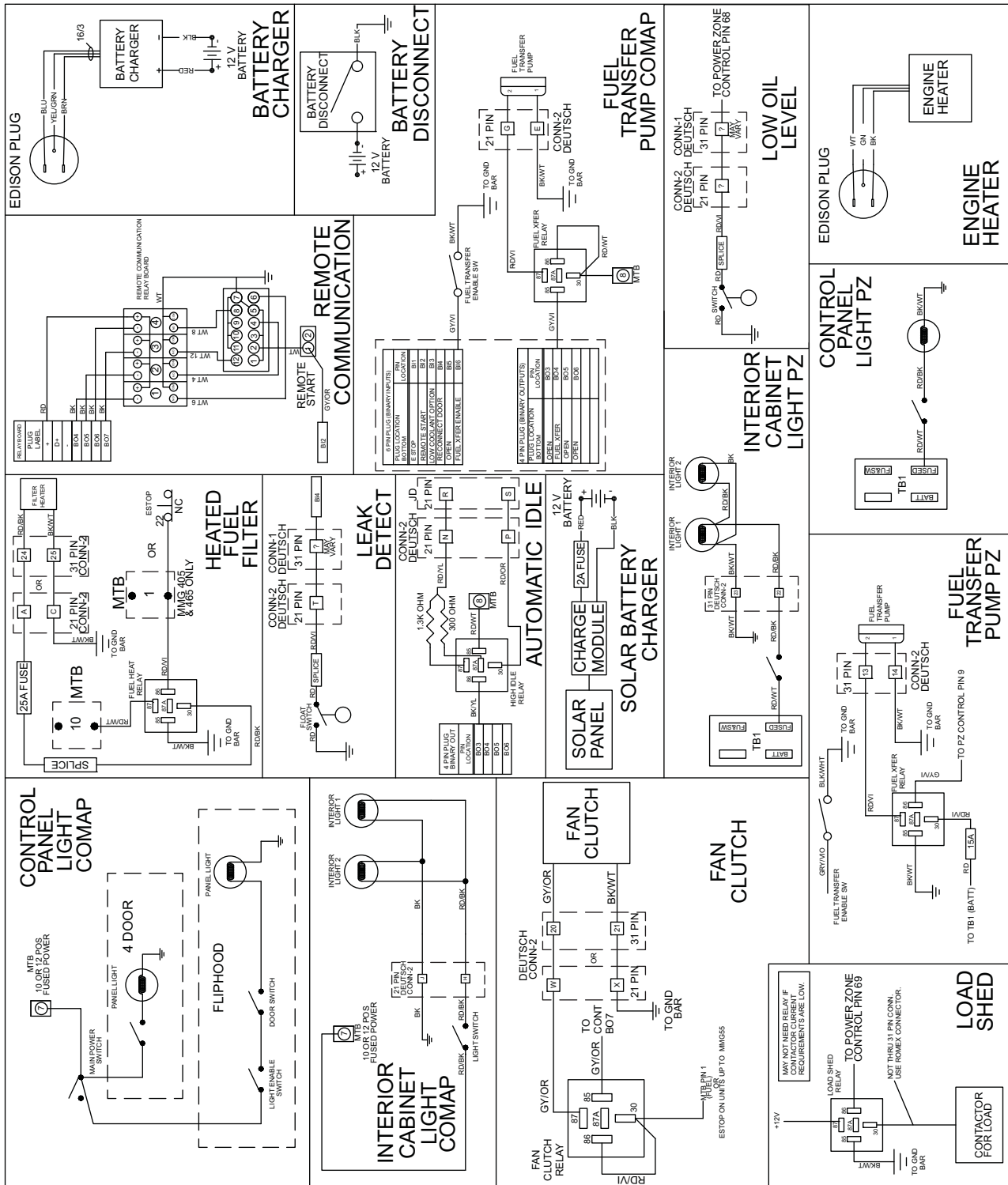


90438_E_02.12.14

NOTES:

1. TO ADD OPTIONAL REMOTE ANNUNCIATOR (COMMUNICATIONS) FOR ATT GENERAC USE ANALOG EXPANSION MODULE.
2. TO ADD OPTIONAL ANALOG GAUGES USE ANALOG EXPANSION MODULE.

DC WIRING DIAGRAMS FOR OPTIONAL EQUIPMENT

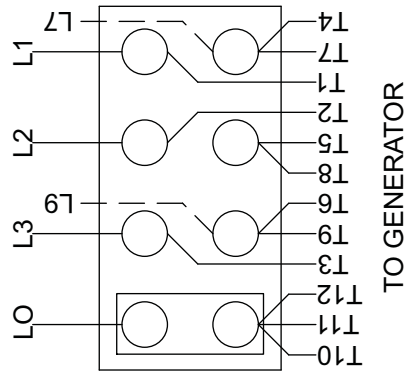


90416_L_02.04.14

WIRING BLOCK DIAGRAM - DEDICATED 12 LEAD GENERATORS OPTION

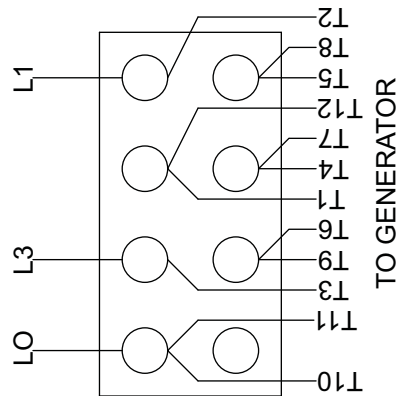
480/277V 3PH

HIGH WYE
TO CONTROL BOX



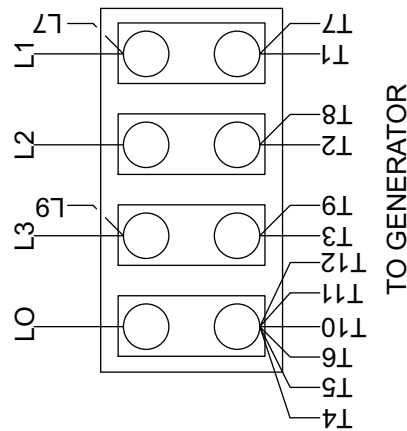
480/240V 1 PH

HIGH ZIG ZAG
TO CONTROL BOX



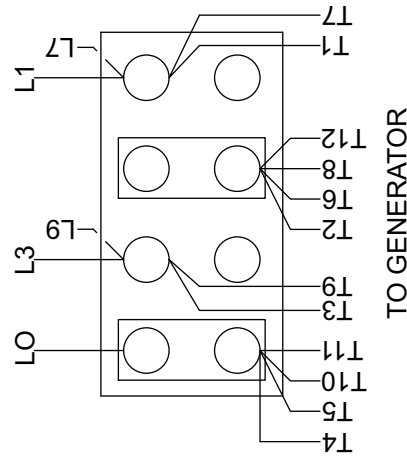
208/120V 3PH

LOW WYE
TO CONTROL BOX



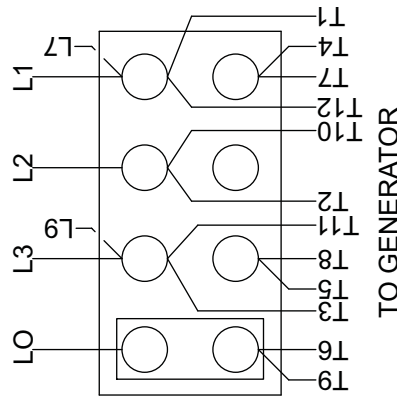
240/120V 1 PH

LOW ZIG ZAG
TO CONTROL BOX



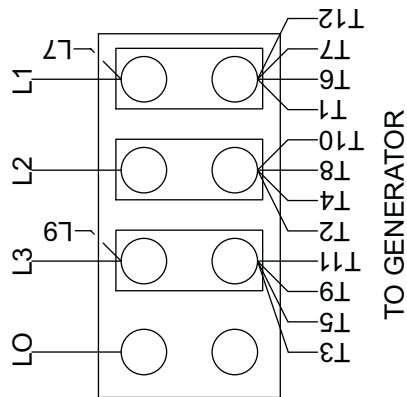
240/120V 3PH

HIGH DELTA
TO CONTROL BOX



120V 3PH

LOW DELTA
TO CONTROL BOX

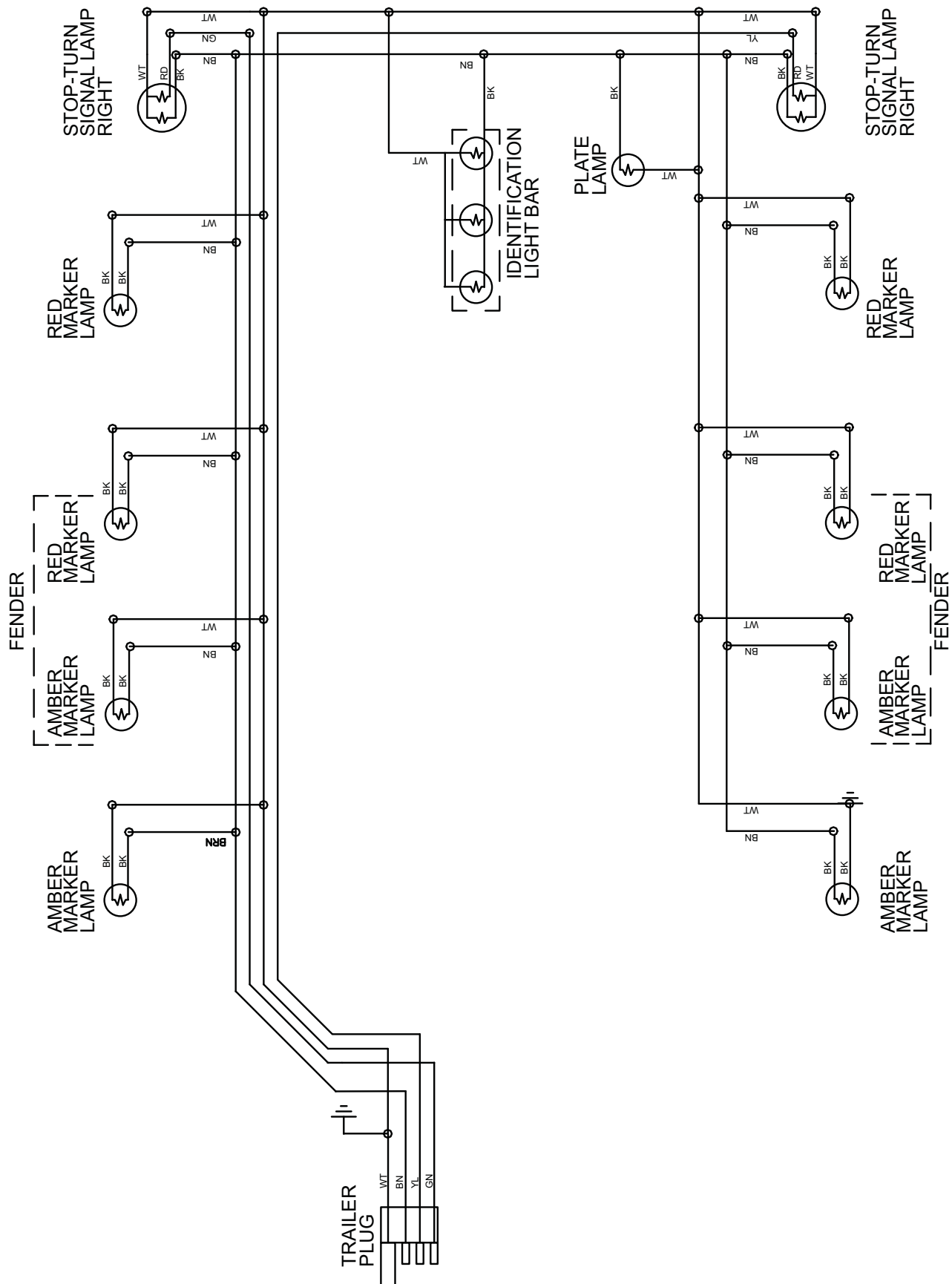


NOTE:

1. CABLES TO CONTROL BOX MAY CONTAIN 1, 2 OR 3 WIRES DEPENDING ON THE MODEL AND VOLTAGE.
2. APPLIES TO ALL 12 LEAD GENERATORS TO BE HARD WIRED IN GEN BOX.

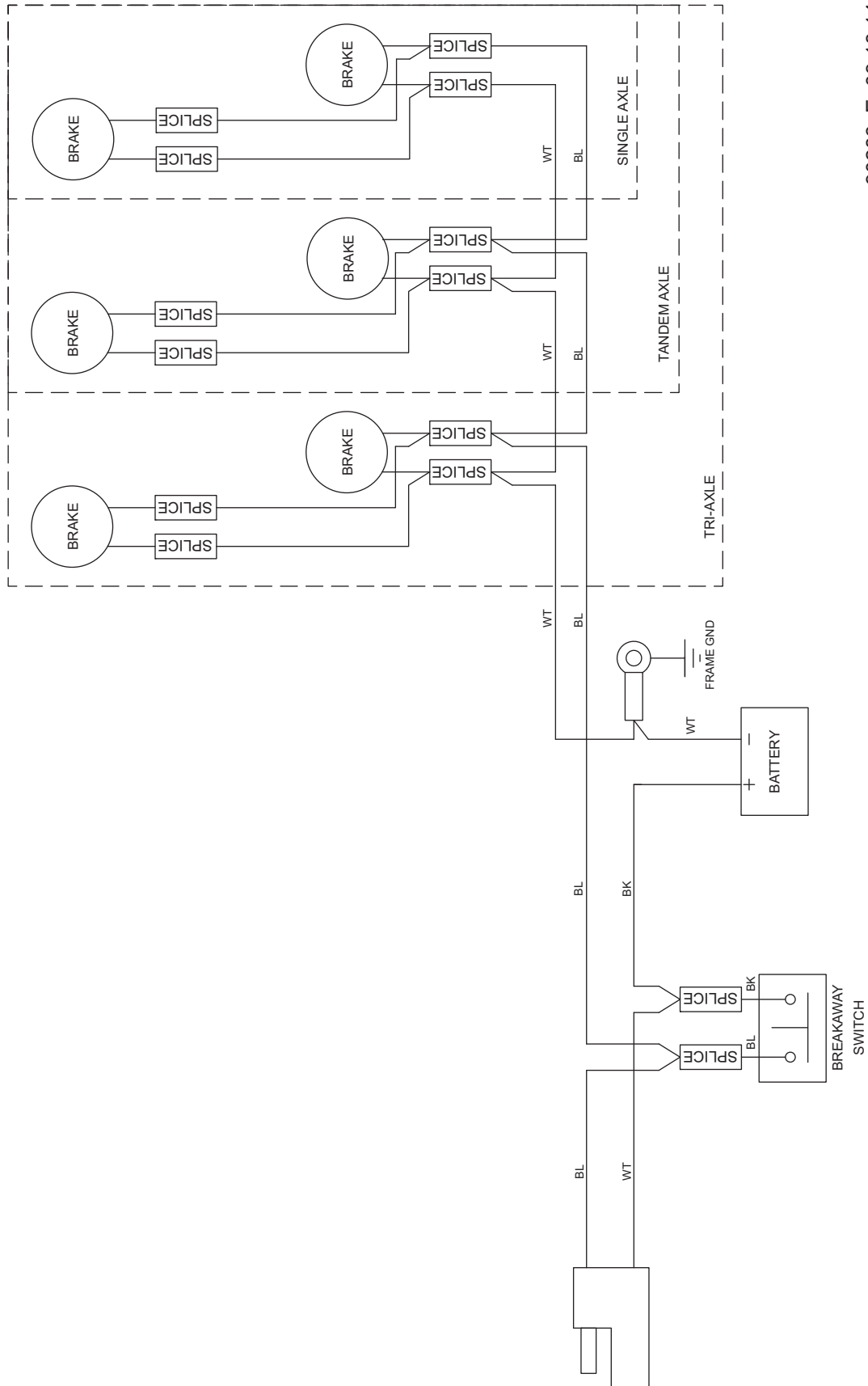
90302_A_11.06.12

TRAILER LIGHTS WIRING DIAGRAM



60386_A_02.14.14

WIRING HARNESS - ELECTRIC BRAKE OPTION



SERVICE LOG

OIL GRADE AND TYPE: _____ BRAND: _____

COOLANT MIXTURE: _____ BRAND: _____

[illegible][illegible][illegible]

REV: B
PART NO: 33722
05.01.14