

# Cummins Onan Generators

**RV Sales Team**

2017

Ross Fischer



Cummins **Onan**



RV Generator  
Handbook



Performance you rely on.™

## RV Handbook Review: (F-1123)

- Safety
- Load Management
- Electrical
- Preventing Generator Issues
- Basic Service Tips
- Auto Gen Start

# Safety (p. 5 & 6)



## Important Safety Precautions for Your Generator

- Do not operate the generator with a faulty exhaust system
- If your RV bottoms out, inspect generator exhaust system for damage
- Always disable auto start systems while refueling, servicing and storing
- Never sleep with generator running unless you have a carbon monoxide detector that is working properly
- Don't store anything in the generator compartment
- Perform all service and maintenance work with the generator engine off and the negative battery cable disconnected
- Listen for changes in sound, noise or vibration from your generator *and investigate WHY!*

## CO Detectors



- Take them seriously
- Make sure they work
  - All current models have expiration dates
- One can have a CO issue even if your engine or generator isn't running – possibly your neighbor or when you're in heavy traffic
- Reference the Handbook for this and other safety precautions

## Exhaust Extensions (p. 6)



- Onan does ***not*** recommend any modifications to the exhaust system
- Potential issues with Vertical Extensions
  - Damage to generator exhaust system
  - Excessive back pressure
  - Safety if roof vents are open
- Improper installation can create a safety hazard.
- Tailpipe / Exhaust should have no load placed on pipe, and must be free to 'shake'
- With today's newer emission engines, gasoline and diesels, the exhaust temperatures are hotter, even when lightly loaded



# Exhaust Extension Examples

# Exhaust Extensions



# Exhaust Extensions



# Exhaust Extensions



# Exhaust Extensions



# Exhaust Extensions



# Exhaust Extensions



# Exhaust Extensions



# Exhaust Extensions



# Determining Which Cummins Onan Generator Model You Own (p. 9)



- Each generator has a nameplate affixed
- It identifies which service parts are required for your generator
- Take a **photo** of this and record in your handbook
- Model/Spec/Serial Number (Example: 4KYFA26100P / A140621102)





# Nameplate Locations (p. 10)



RV QG 2500 LP/2800



RV QG 3600 LP/4000



RV QG 5500/7000



RV QD 3200  
(Need to remove Service Door)



RV QD 6000-8000



RV QD 10000/12500



## Starting and Stopping Procedures (p. 11)



- Before starting, good practice to turn off air conditioners and large electrical loads especially in cold weather
  - Note: Most transfer switches take care of this
- Prime by holding Stop - All Quiet Diesels and current 2.8KW – 7.0KW gasoline sets
  - Recommended if generator has not been operated in several days
  - Early models of the 2.8 and 4.0 did not have this feature
- To Start – Press and hold Start at the Control Panel or at the set
  - Quiet Diesel: Auto pre-heat flash, then crank/start
  - If unit doesn't start, don't over-crank.... 20 seconds/then 2 minute wait
- Let the Generator warm up before applying loads
  - If equipped with a Automatic Transfer Switch, some delay is incorporated
- To Stop – Press Stop (Do not need to hold down)
  - Good practice to remove loads and let generator run for 3-5 minutes before stopping

## Breaking in a New Generator (p. 12)



- Check oil level
- 50% load for 2 hours and then 75% load for 2 hours
- To reduce oil consumption and improve engine longevity
- Initial oil change at 20-50 hours depending on model



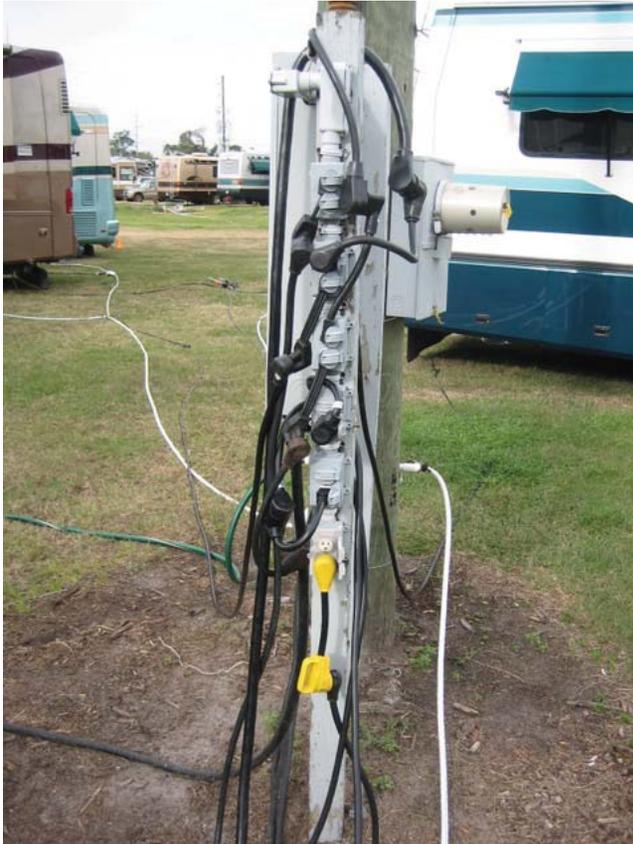
# How to Prevent most Service Issues

## Exercising Your Generator (p. 12)



- Recommendation of 2 hours once every month @ 50% load
  - Up to full rated load if practical
    - Use space heaters to apply loads (1500W each)
    - BE SAFE
- Why is this necessary?
  - Lubrication and expel moisture
  - Helps avoid fuel varnishing in the carburetor, and decarbon of diesels
- Run AC while traveling
- What if I don't?
  - Increased service issues
  - Poor performance
  - Hard Starting or not starting
  - Inability to run loads in coach
  - Upset spouse (because "I told you to")

# Load Management



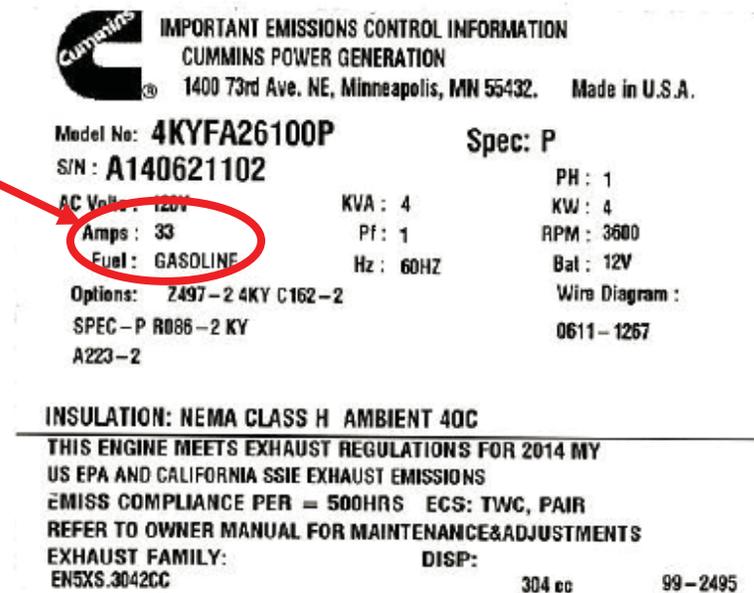
#1 Issue  
Load Management

*"Keeping the  
breaker from flipping"*

# Load Management



- Look at the amps on the nameplate on your generator



## Understanding Shore Power vs Generator Volts x Amps = Watts (p. 13)



- 30 amp = 30 amps, 120 Volts
  - Most Class C with a 4KY with 30A circuit breaker
- 50 amp = 50 amps, 240 Volts = 12,000 Watts
  - L-L = 240V
  - L-N = 120V and there are two hot lines
- Generators are rated at 120V
  - RV QG 4000 = 33 amps, 120 volts = 4000 Watts
  - RV QG 5500 = 46 amps, 120 volts = 5500 Watts
  - RV QD 6000 = 50 amps, 120 volts = 6000 Watts
  - RV QD 8000 = 66.7 amps, 120 volts = 8000 Watts
  - RV QD 10,000 = 83.3 amps, 120 volts = 10,000 Watts

# Shore Power (p. 14)



30-Amp RV Receptacle  
(120 V) — 3,600 watts



50-Amp RV Receptacle  
(240 V) — 12,000 Watts

# Load Management



- Load Management is the systematic process of assuring your generator can supply the power (kW) needed to power your electrical needs
  
- Two things make the lights go out
  - 1) Overloading the generator
  - 2) Overloading the circuit breaker(s)
    - Example: 8 QD w/35 amp 2 pole breaker
  
- What you need to know
  - 1) Determine the 'rating' of your generator
  - 2) Determine the total loads in your coach
  - 3) Account for hidden loads
  - 4) Understand your operating environment
  
- Even though the breaker trips, (lights go out) the generator keeps running in many situations



# Load Management



## Determine the rating of your system

- Every generator has circuit breakers that may limit the current below the nameplate rating
  - 8QD is rated for 66.7 amps continuous
    - Has two 35 amp circuits (Double pole single throw)
    - Capacity of each circuit breaker is 35amps
- Every coach has a breaker panel inside as well which breaks each circuit from the generator into smaller (fewer amp) circuits
  - Ex. 15amp / 20amp
- Before resetting any circuit breaker turn off and reduce loads
- Generator will continue to run even if circuit breakers trip
- Generator will usually only shut down on dead short, or if operating conditions have reduced output 'capacity'
  - Look for fault code

# Load Management (p. 15)



## Determining The Load in your Coach

Common Power Requirements		
Appliance	Average Required Wattage	Amps
Air Compressor (1 hp)	900-1800	7.5-15
Air Conditioner	1200-2400	10-20
Battery Charger	Up to 3000	6-28
Blender	450-700	3.3-5.8
Broiler	1400-1700	11.6-14
Broom/Vacuum	1000-1440	8.3-12
CD/mp3 Player and Speakers	85	0.7
Coffeepot	900-1200	7.5-10
Computer	60-270	0.5-2.25
Laptop	20-50	0.16-0.41
Converter	500-1000	4-8
Curling Iron	20-50	0.16-0.41
Dishwasher	1200-2400	10-20
Drill	250-1000	2-8
Electric Blanket	60-100	0.5-0.8
Fan	10-175	0.08-1.45
Flat Iron	40-80	0.3-0.6

Common Power Requirements		
Appliance	Average Required Wattage	Amps
Frying Pan/Wok	1000-1350	8-11.25
Game Console	19-200	0.16-1.6
Hair Dryer	1200-1875	10-15.6
Iron	1000-1800	8-15
Light Bulbs	13-100	0.1-0.8
Microwave/Convection Oven	750-1100	6.25-9.2
Radio	50-200	0.4-1.6
Refrigerator	400-1000	3.3-8
Shaver	15-20	0.12-0.16
Space Heater	750-1500	6.25-12.5
Stove	900-2500	7.5-20.8
Television	43-600	0.35-5
Toaster	800-1400	6.6-11.6
VCR/DVD/Blu-ray Player	6-30	0.05-0.25
Washer/Dryer	350-500/1800-5000	3-4/15-42
Water Heater	1000-1500	8-12.5
Water Pump	250-1100	2-9.16

## Load Management (p. 16)



### Things that effect the available power

- Altitude
  - Altitude derates 3.5% for every 1000 ft
    - Approximately 16% in Denver
      - » *A 5.5kw genset turns into 4.6kw*
    - Altitude adjustment on Gasoline sets
    - Don't change any other settings
- Temperature
  - Temperature derate 1% for every 10 deg F over 77° F.
- Nameplate rating is set at 500' altitude and 77° F. at air inlet
- Don't forget hidden loads

# Load Management



- Either manually or automatically
  - You are usually the load manager - Manual
  - Some coaches have load management built in
    - Turns loads on and off based on total watts used
  
- Do not forget the hidden loads (p. 17)
  - Battery Chargers can pull up to 28 amps
    - Turn charge rate down when more power is needed for coach living comforts
    - All modern three stage battery chargers go to Bulk charge when first turned on – **Very high amps.**
  - 120V / LP Water Heaters
  - Refrigerator

## Load Management



### Manage your Loads!

- Overloading a generator will cause:
  - Circuit Breaker tripping
  - Overheating of the generator
  - Low Voltage conditions
  - High oil consumption
  - Decreased generator life

# Electrical

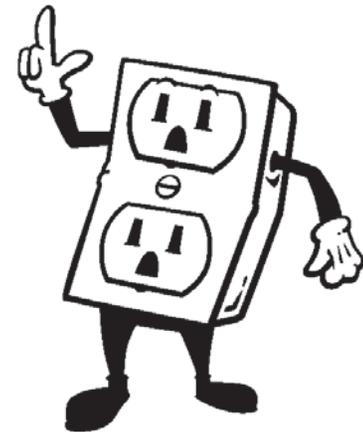


## Transfer Switch

- Transfer switch prevents shore power and generator power from 'mixing'
- Either Manual or automatic
  - Most newer coaches are automatic
  - If you have to plug your shore power cord into a box, this is a manual system, common on some Class C and Towables
- We recommend unplugging the shore cord before running the generator
- Generator power is usually primary power
  - Depends on Coach Manufacturer
- If generator is running, breakers are on, but no power in the coach, you likely have a Transfer Switch issue



# Frequently Asked Questions



## FAQ



- **References in the Handbook (p. 20 – 24)**
- Does my generator charge my batteries?
  - No, not directly. The generator produces the AC power to another device that converts our AC power to DC power. This DC power in turn will charge your batteries.
- Why does my generator stop at ~1/4 tank of fuel?
  - Most Coach Manufacturers position the pick up tube in the fuel tank to only draw fuel for the generator down to ¼ of a tank, in order to keep the main engine capable of getting you to the next fuel station!

# FAQ



## Generator Operation

- Q: Once the generator is started, should it continue to run for a certain length of time?
- A: Ideally, Cummins Onan Gensets should run for a minimum of 45 minutes to give them a chance to warm up. Once warmed up, running your generator for five-minute intervals should be fine. Remember to turn on some appliances so the generator works while it's running. Running it for more than 45 minutes at no load only burns fuel unnecessarily and adds costly maintenance.

## FAQ



- Q: Is it practical to power the roof air conditioner with my generator while traveling on the road?
- A: Yes, that is what a generator is for, mobile electrical power. In fact, it can help economize your vehicle fuel because the generator uses less fuel. Plus, it gives you an opportunity to exercise your generator. Any appliance that can run in a stationary position can also be powered while driving.  
Avoid running your generator while traveling in a heavy downpour or adverse weather conditions. Most of our generators are bottom breathers and there is a possibility of water ingestion.

## FAQ



- Q: How do I avoid overheating? How do I minimize heat or environmental conditions on my generator?
- A: Be aware of what is packed in the generator compartment. Make sure there are no restrictions in air flow, into or out of the generator by proximity of surrounding objects. Also be aware of environmental conditions such as the direction of wind.

# FAQ



- Q: Can I run an RV generator in a National Park?
- A: All Cummins Onan generators built since 2000 are quieter than National Park sound level requirements. (Most parks have quiet time between the hours of 10<sup>PM</sup> and 7<sup>AM</sup>.)

# Routine Maintenance

## Generator Models



Cummins Onan RV QG 2800 / Microlite



Cummins Onan RV QG 2800

# Routine Maintenance

## Generator Models



Cummins Onan RV QG 4000 / Microquiet



Cummins Onan RV QG 5500 – 7000 / Marquis Gold

# Routine Maintenance

Generator Models



Cummins Onan RV QD 6000 - 8000



Cummins Onan RV QD 10.000 & 12.500



Cummins Onan RV QD 3200



# Routine Maintenance (p. 27)



**Power  
Systems**

Model	Service Intervals - Repeat Every						
	Monthly	50 Hrs	150 Hrs	250 Hrs	450 Hrs	500 Hrs	1000 Hrs
<b>RV QG GASOLINE/LP*</b>							
Clean & Check Battery & Connections	X*3						
Clean Spark Arrester		X*5					
Change Oil/Oil Filter			X*1-4				
Change Air Filter			X*2,5				
Replace Spark Plugs					X*5		
Change Fuel Filter					X*5		
Schedule Cummins Onan Service Center Tune-up					X*6		
<b>RV QD (Diesel)</b>							
Clean & Check Battery & Connections	X*3						
Clean Spark Arrester			X*4,5				
Change Oil/Oil Filter (All Except QD)			X*1				
Change Oil/Oil Filter (QD 3200/10000/12500)				X*1-4			
Change Oil/Oil Filter (QD 5500/6000/7500/8000 and HQD 810/1218)			X*1-4,9				
Change Air Filter						X*2,5	
Flush Coolant System (Quiet Diesel)							X*6
Change Fuel Filter (Quiet Diesel)						X*5	

\*RV QG 2500 LP RM/2800 RM/2500 LP/2800/3600 LP 4000

\*\*RV QG 5500 LP/5500/5500 EVAP/5500 EFI/6500 LP/7000/7000 EVAP/7000 EFI

- 1) As a part of engine break-in, change the engine oil after the first 20-50 hours of operation.
- 2) Perform more often when operating in dusty environments.
- 3) Perform more often when operating in hot weather.
- 4) Perform at least once a year.
- 5) Perform sooner if engine performance deteriorates.

6. Must be performed by a qualified mechanic (Cummins Authorized RV Service and Parts Dealer)
7. As part of engine break-in, change engine oil after first 50 hours of operation.
8. Perform at least once every five years.
9. Perform every 75 hours when using high-sulfur fuel (typically found only in the Middle East).

Note: Perform a general inspection and check oil daily per maintenance schedule in operator's manual.

# Routine Maintenance



## MAINTENANCE INTERVALS ARE ONLY GUIDELINES

- Maintenance intervals may need to be shortened if:
  - You are operating in high ambient temps
  - You are operating at extended high loads
  - You are operating in a dusty environment
  - You level your motorhome, and bring the genset closer to the ground
  
- Bring Spare filters
  - They can spoil a trip
    - Oil, Air, Fuel, and water pump belt
  - Air filters are not washable

## Routine Maintenance



Air Cleaner  
Caused shut down  
at 50 hours of use.

## Fuel (p. 29 & 30)



- **Gasoline**

- No more than 10% ethanol
- Not more than 5% methanol
- **E-85 is not approved!**

- LP - Clean HD-5 grade liquid propane gas in a mixture of at least 90% propane

- Diesel

- ASTM-2-D or ASTM -1 D < 32F

- **B20 Bio Diesel**

- Requires the generator to have an additional fuel/water separator
  - Long-term storage = oxidation and/or mold growth
- Bio-diesel up to 5%. (Recommend install fuel/water separator)
- RV QD 3200 is only approved for 5% biodiesel

# Routine Maintenance

## Oil (p. 30)



- Reference the Handbook for correct Ratings and Viscosity Grades
- Check level daily or every 8 hours of operating time
- Synthetic oil
  - Okay on gasoline/LP Cummins Onan generators after initial break-in
  - Not approved on diesel product
  - Do not extend the published oil change intervals
- Fill level
  - KV/KVD/KVC/HGJBB = Do not screw in the Dipstick
  - Balance of gensets = Screw in the Dipstick

# Routine Maintenance

## Coolant (p. 31)

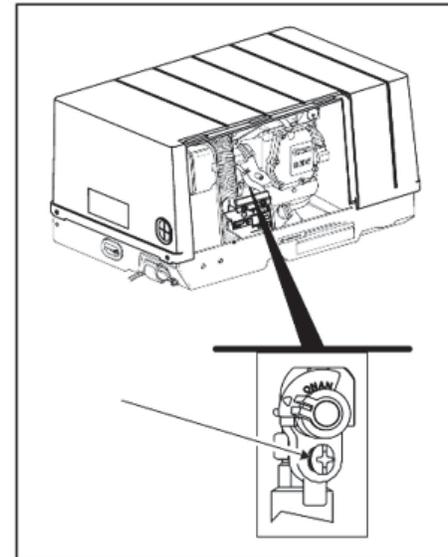


- Recommend 50/50 mix of ethylene glycol coolant
- Kubota does not recommend propylene glycol coolant
  - Heat Rejection
- Kubota does not recommend use of any rust inhibitors or additives
- Replace the coolant every 1000 hours or every 2-5 years depending on model
- Clean soft water

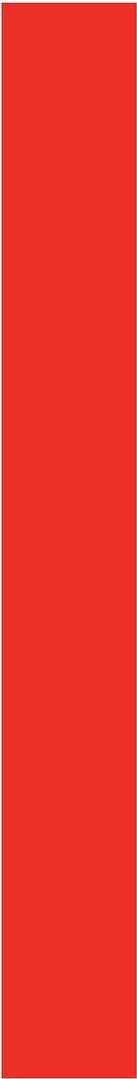
# Reduce the Risk of Fuel Vanishing (p. 31 & 32)



- Fresh Fuel
- Exercise it every 30 days
- Fuel preservative
  - OnaFresh
  - Sta-Bil
- Drain the carburetor bowl
  - Let the generator cool down



Carburetor Float Bowl Drain Valve



# Routine Maintenance

## Lubrication



- Only where the manual indicates
- Oil attracts dirt
- Do not lubricate the grommets on the RV QG 5500 - 7000 door

# Service Center Resources (p. 35)



**Power  
Systems**

## Reading Fault Codes: Gasoline 2.8 – 7.0 (not KVs)

- Reference Operators Manual
- Read at Start/Stop Indicator Light
- Three Blinks = Service Fault
  - Press STOP once to see secondary code
  - Two digit code 1,2,3, or 4 blinks, a brief pause and then 1-9 blinks
    - blink-blink-blink – pause -- blink-blink-blink-blink-blink-blink = Fault 36
- Four Blinks = Exceeded Crank Time
- Restoring Fault Code Blinking by pressing STOP 3 times within 5 seconds. Last fault will be displayed even if the condition that caused the shutdown has been corrected.

# Service Center Resources



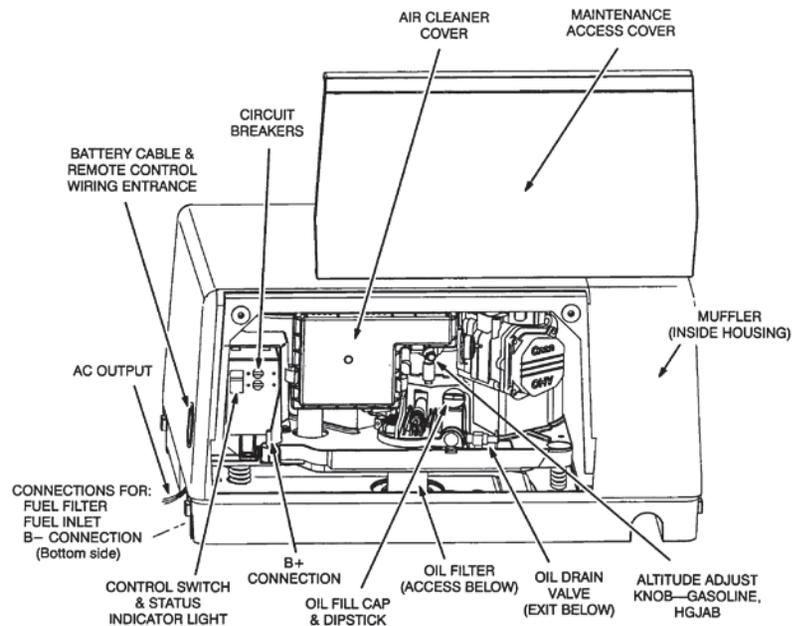
## Reading Fault Codes: Quiet Diesel (except RV QD 3200)

- Reference Operators Manual
- Read at Start/Stop Indicator Light
- One Blink = Shut down due to High Temperature
- Two Blinks = Shut down on low oil pressure
- Three Blinks = Service Fault
  - Press STOP once to see secondary code
  - Two digit code 1,2,3, or 4 blinks, a brief pause and then 1-9 blinks
- Restoring Fault Code Blinking by pressing STOP 3 times within 5 seconds. Last fault will be displayed even if the condition that caused the shutdown has been corrected.

# Routine Maintenance

## Identifying Service Items & Locations

RVQG 5500/7000



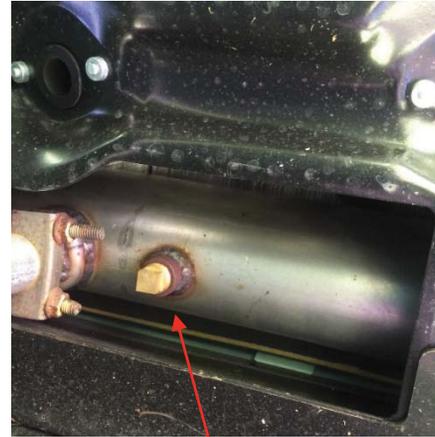
*Sample diagrams of your generator can be found on pages 36-45 in the Handbook.*

# Spark Arrester



RV QG 2500/2800

(Requires removing tailpipe  
to access screen)



RV QG 3600 LP/4000

# Spark Arrester



RV QG 5500/7000



RV QD 3200

# Spark Arrester



RV QD 6000 - 8000

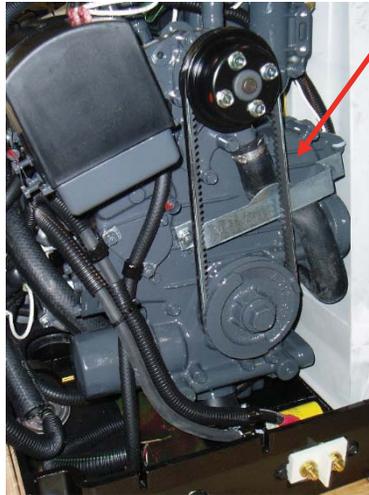


RV QD 10000 - 12500

## Other Key Maintenance Considerations



- RV QD water pump belt
  - 5 years / 1,000 hours

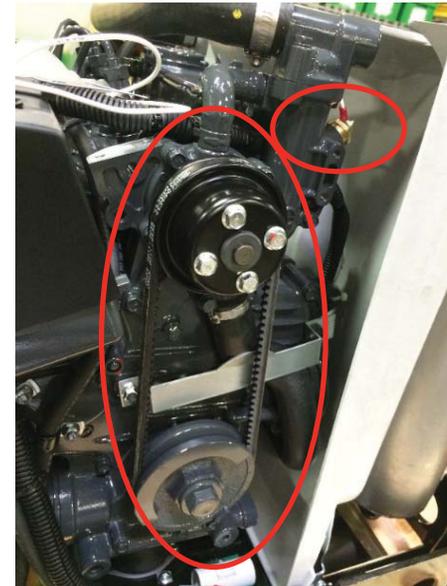


- Part Number 511-0235 (RV QD 6000/8000) or 511-0219 (RV QD 10,000/12.500) (verify your spec)
- Less than \$20 for the belt

# Other Key Maintenance Considerations



- Temperature sensor on both QD (6000 and 8000)
- RV QD water pump belt
  - 5 years / 1,000 hours
  - Part Number 511-0235 (verify yours)
  - ~ \$10 Belt



## Other Key Maintenance Considerations



- How to clean your generator (compressed air, wipe it down, etc.)
  - Water and Electricity do NOT mix.

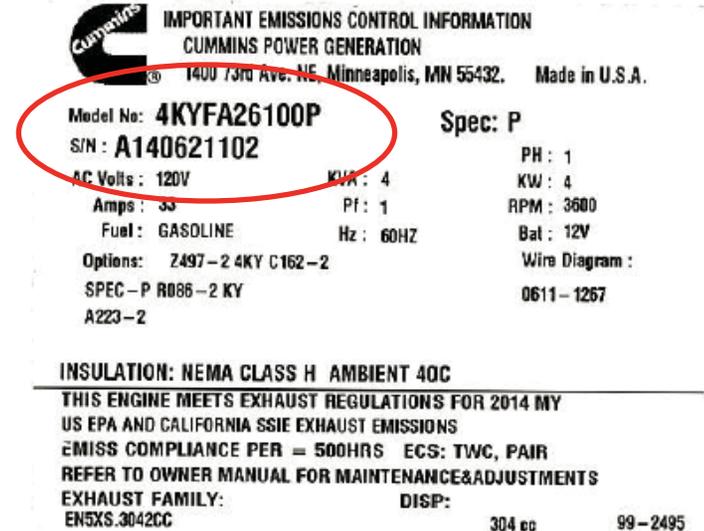


# Service Center Resources



## In Need of Service?

- Maintenance parts in Handbook (p. 49-53)
- Nameplate Information
- Model/Spec/Serial Number (Example: 4KYFA26100P / A140621102)



## Service Center Resources (p. 54)



### In Need of Service?

- Where to Find It
  - Dealer Directory
  - Call: 1-800-CUMMINS (1-800-286-6467)
  - On Line: [power.cummins.com/sales-service-locator](http://power.cummins.com/sales-service-locator)
  
- Get fault code and prepare to provide it to the service location



# Service Center Resources



Where to look for help? Cummins Onan – Internet

[power.cummins.com/rv](http://power.cummins.com/rv)

[www.cumminsonanastore.com](http://www.cumminsonanastore.com)

RV Technical Documents

Available Online – [power.cummins.com/rv](http://power.cummins.com/rv)

Product Specifications

Downloaded from [power.cummins.com/rv](http://power.cummins.com/rv)

Handbook pages 60-63

# Service Center Resources



- Replacement Manuals? (p. 26)
  - [cumminsonanstore.com](http://cumminsonanstore.com)
  
- Owner's Handbook
  - Local Onan Dealer or Distributor
  - [cumminsonanstore.com](http://cumminsonanstore.com)
  
- Replacement – Service Parts
  - Dealer/Distributor directory
  - <http://power.cummins.com/sales-service-locator>
  - [cumminsonanstore.com](http://cumminsonanstore.com) and [funroads.com](http://funroads.com) – Green Label Parts



# Common Service Issues



- Most Common
  - Fuel vaporization
  - Engine Oil Level
  - Battery Connections - Clean & Tight
  - Below a quarter tank
  - Overloading the Generator
  - Gasoline storage/stabilization
- LP → Mud Daubers in the LP Regulator vent line.
- High pitch or rattling on 6000/7500/8000 Quiet Diesel → Loose air cleaner cover.
- Broken flex coupling/exhaust elbows due to improper exhaust components

# Service Center Resources



## Cummins Onan Warranty

- Warranty Start Date
  - The day the set was purchased by its original owner.
- Limited 3 Year or 2,000 hours
- 90 Day Adjustment Period
- Available 5 Year Warranty
- What is not covered?
  - Problems caused by improper maintenance or misuse of the generator even if they occur during the warranty period. Example: **Carburetor varnishing.**

## Auto Generator Start Systems (p. 56)



- AGS – Auto Generator Start
- Charge batteries at pre-determined state of discharge
  - How Long to Charge varies with:
    - Allowed Discharge Point
    - Capacity in Amp/hrs
    - Quiet time settings
    - Battery Condition
    - Charge Rate
- Air Conditioning Demand
- Make sure unit is in Auto before leaving
  - All units have safety input and time out functions



# Auto Generator Start Systems



## Disable Auto Start

- Disable for Servicing of Generator or any part of the electrical system
- When re-fueling
- Motorhome is out of use
  - We don't want the generator starting up while it's in storage due to the exhaust
  - Many auto-starts require validation after 30 days



Your Questions?

Thank You!

# Common Questions



- Why does my 7.5 QD only have one 30 amp breaker?
  - Why does it keep blowing?
- Should I exercise my generator?
- What is my maintenance interval?
- Is it O.K. to use synthetic oil?

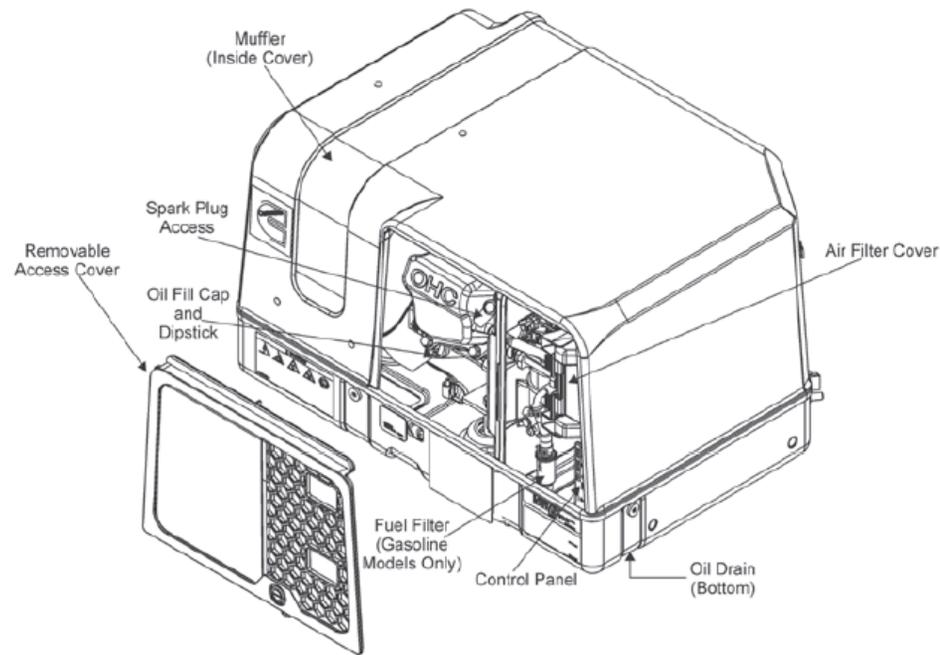
## Cooling



- All Cummins Onan generators require fresh cool air to run.
- The area under and around the genset should be left clean and unobstructed.
- Do not dig a hole to level the coach.

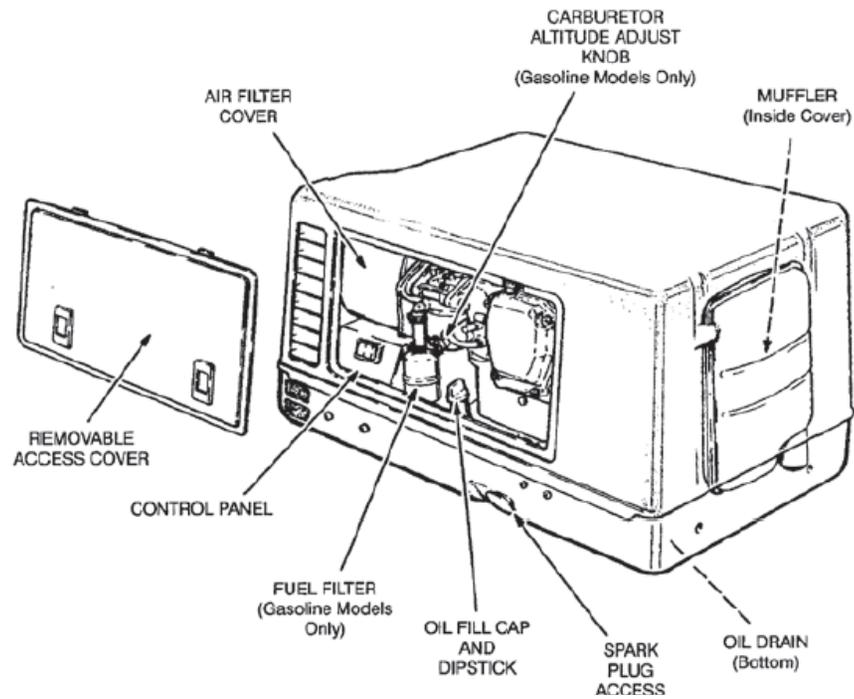
# RV Service Diagrams

RV QG 2800/2500 (HGJBB)



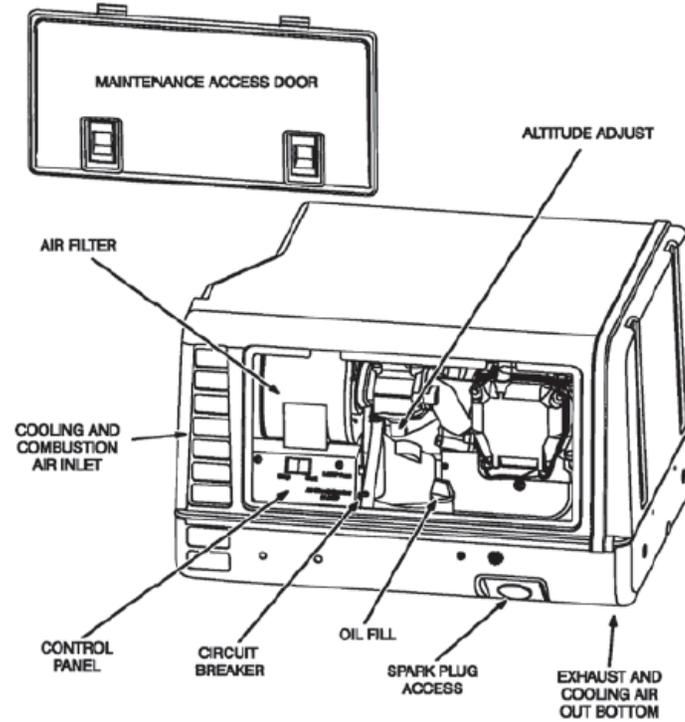
# RV Service Diagrams

RV QG 2800/2500 (KV)  
MicroLite™



# RV Service Diagrams

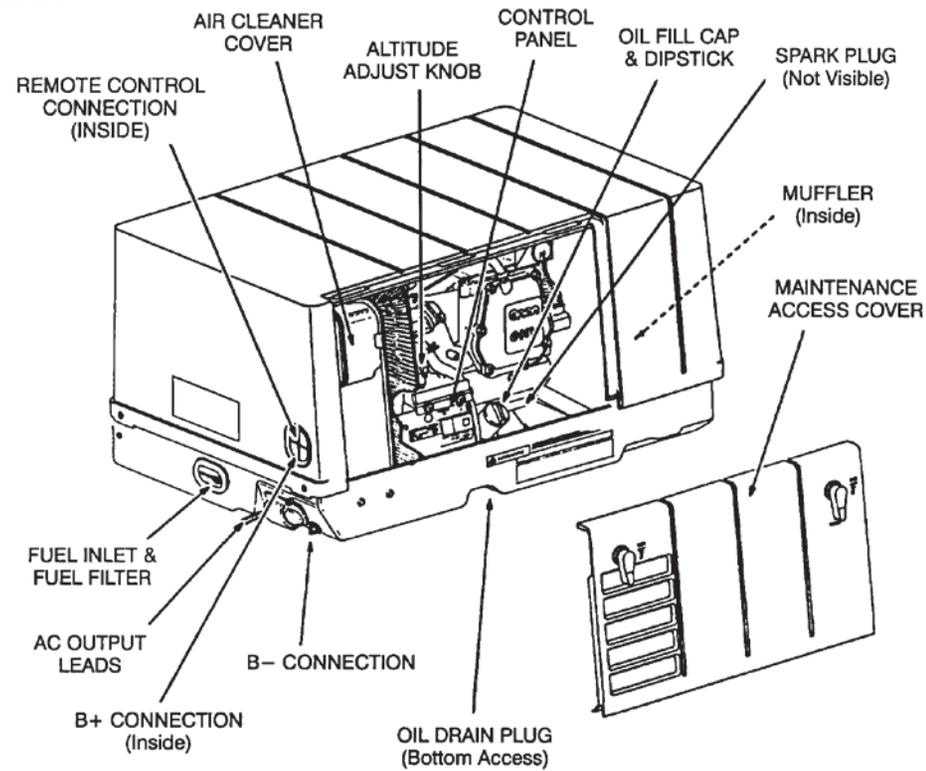
RV QG 2800/2500 RM (KVD)



# RV Service Diagrams



RVQG4000/3600  
MicroQuiet™



# RV Service Diagrams

RVQG4000/3600  
MicroQuiet™

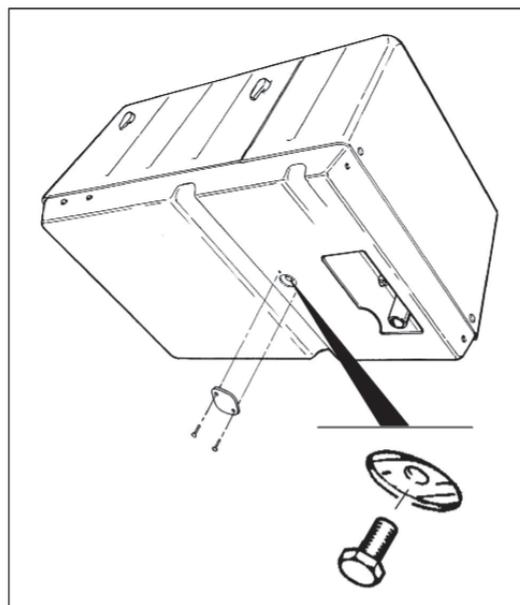
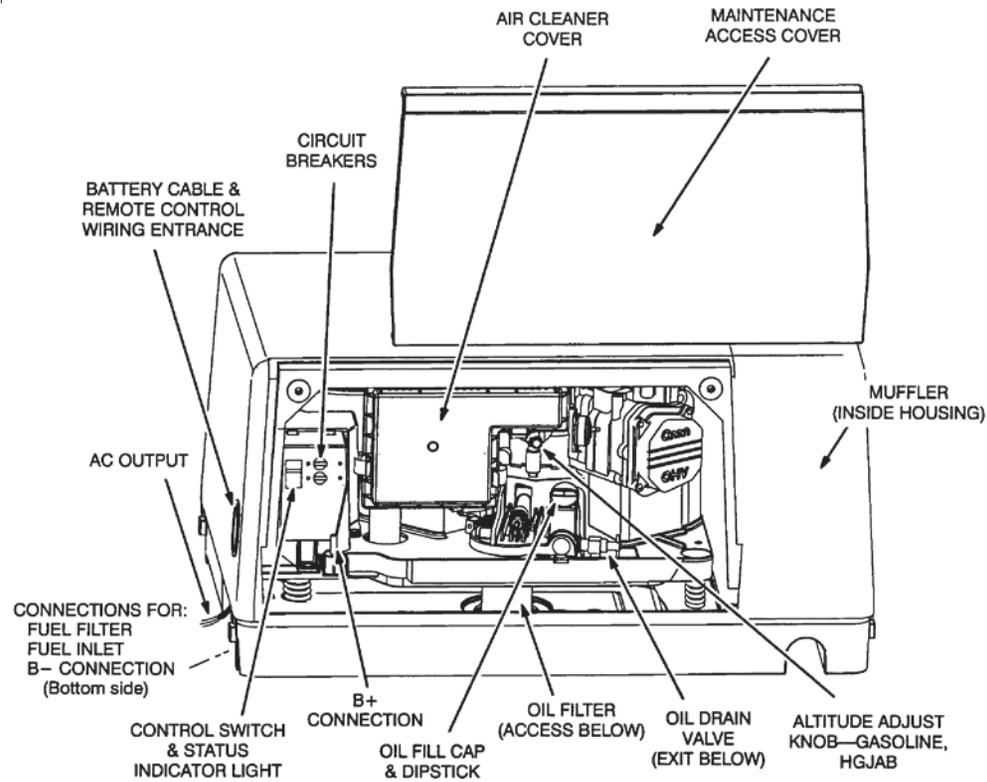


FIGURE 7. OIL DRAIN PLUG

# RV Service Diagrams

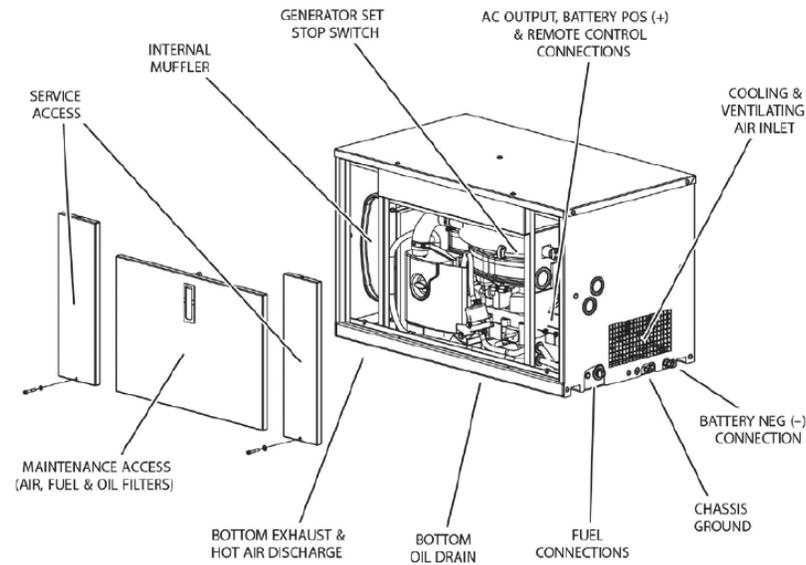
RVQG 5500/7000

Marquis Platinum™ / Marquis Gold™



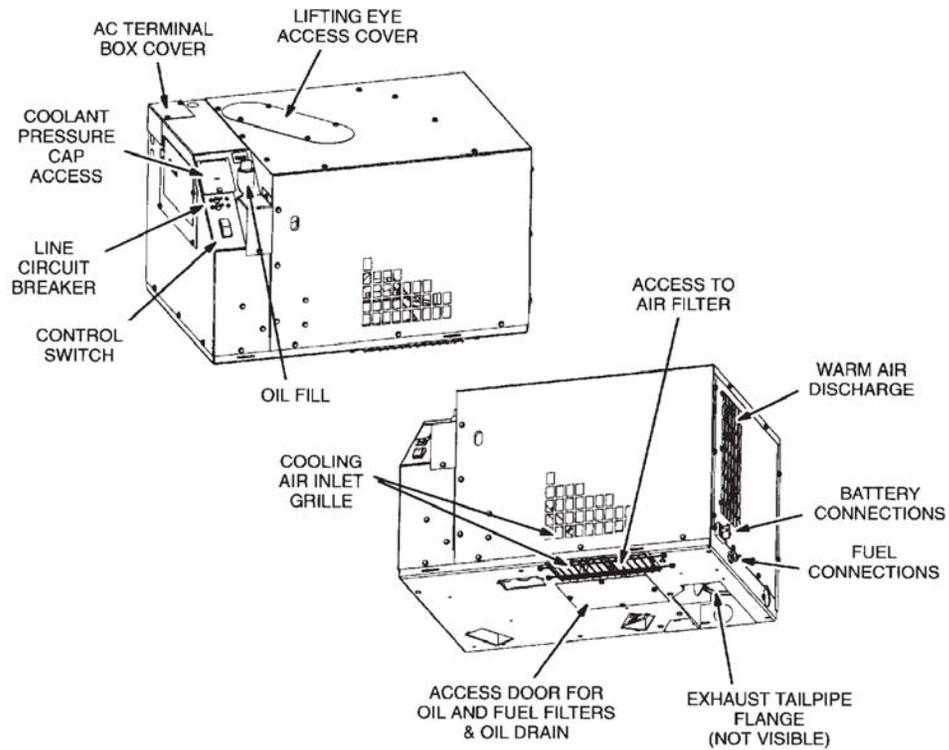
# RV Service Diagrams

RVQD 3200  
Quiet Diesel™ 3200



# RV Service Diagrams

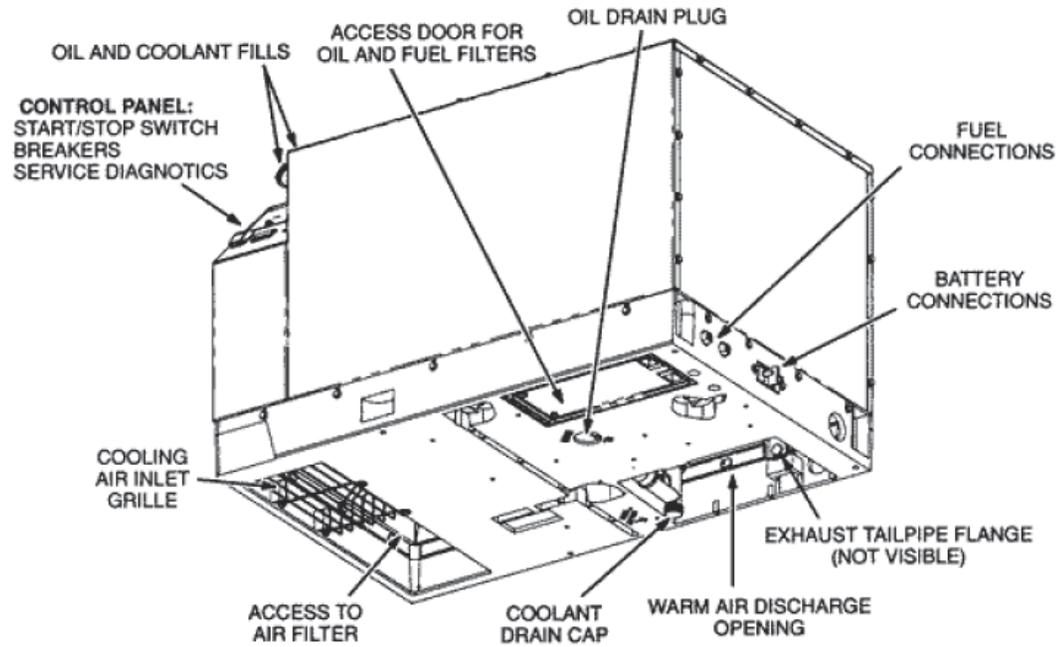
RVQD 5000  
Quiet Diesel™ 5500



# RV Service Diagrams



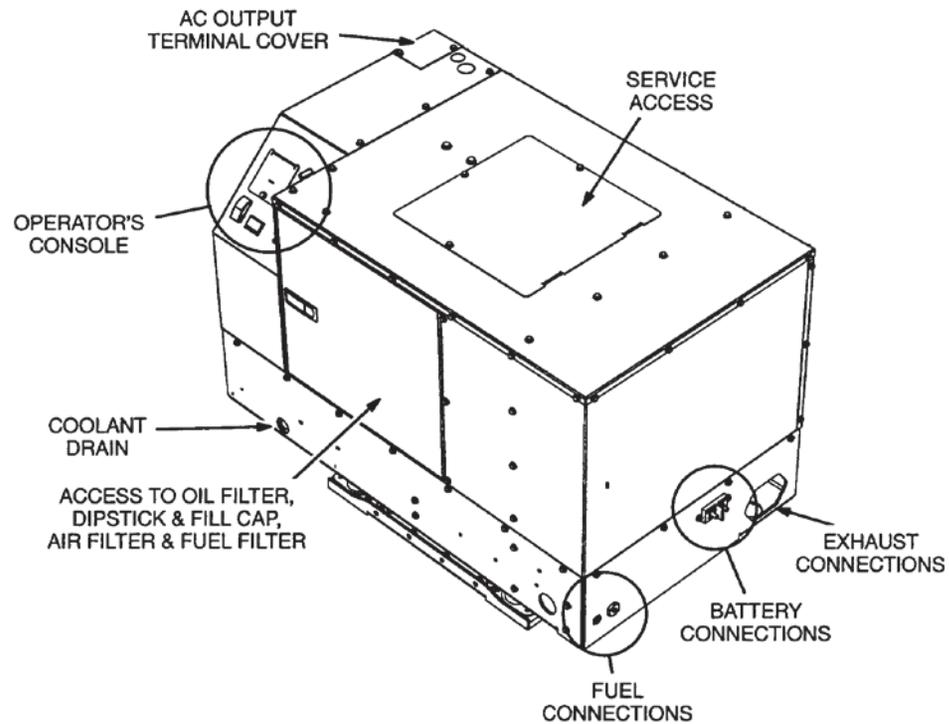
RVQD 6000/7500/8000  
Quiet Diesel™



# RV Service Diagrams



RVQD 10000/12500  
Quiet Diesel™



# Service Intervals



<b>Model</b>	1 <sup>st</sup> Oil Change	Change Oil Every	Air Filter	Fuel Filter	Spark Plug	Clean Spark Arrestor
HGJBB	20	150	150	500	500	150
KV	20	100	150	500	500	?
KY	20	150	150	450	450	50
HGJAB	20	150	150	500	500	50
HDZAA	20	250	500	500	-	250
HDKAH\K	50	150	500	500	-	150
HDKCA\B	50	250	500	500	-	250

Per Operator Manuals as of 5-21-2013

# Routine Maintenance

## Oil Capacities – Gas & LP



<b>Model</b>	<b>Quarts</b>
HGJBB	0.63
KV/KVD - MicroLite	1
KY/KYD - MircoQuiet	1.6
HGJAB – Marquis Gold	2
HGJAA – Marquis Platinum	2
HGJAC – Emerald Advantage	2
BGE\M – Emerald\Marquis	3.5
NHE\M – Emerald\Marquis	3.5

# Routine Maintenance

## Oil Capacities – Diesel



<b>Model</b>	<b>Quarts</b>
HDZAA – 3200 Quiet Diesel	1.1
HDKBA - 5500 Quiet Diesel	2
HDKAH\J\K – 6000\7500\8000 Quiet Diesel	3
HDKCA\B – 10,000\12,500 Quiet Diesel	5.9
HDCAA\B - 10,000\12,500 Quiet Diesel	6.7
HDKAG	5
DKC	4
DKD	4
DKG	5

## Routine Maintenance Coolant Capacities



<b>Model</b>	<b>Quarts</b>
HDKBA - 5500 Quiet Diesel	2.5
HDKAH\JK – 6000\7500\8000 Quiet Diesel	4.2
HDKCA\B – 10,000\12,500 Quiet Diesel	6.6
HDCAA\B - 10,000\12,500 Quiet Diesel	6.1
HDKAG	5
DKC	4
DKD	4
DKG	4.5