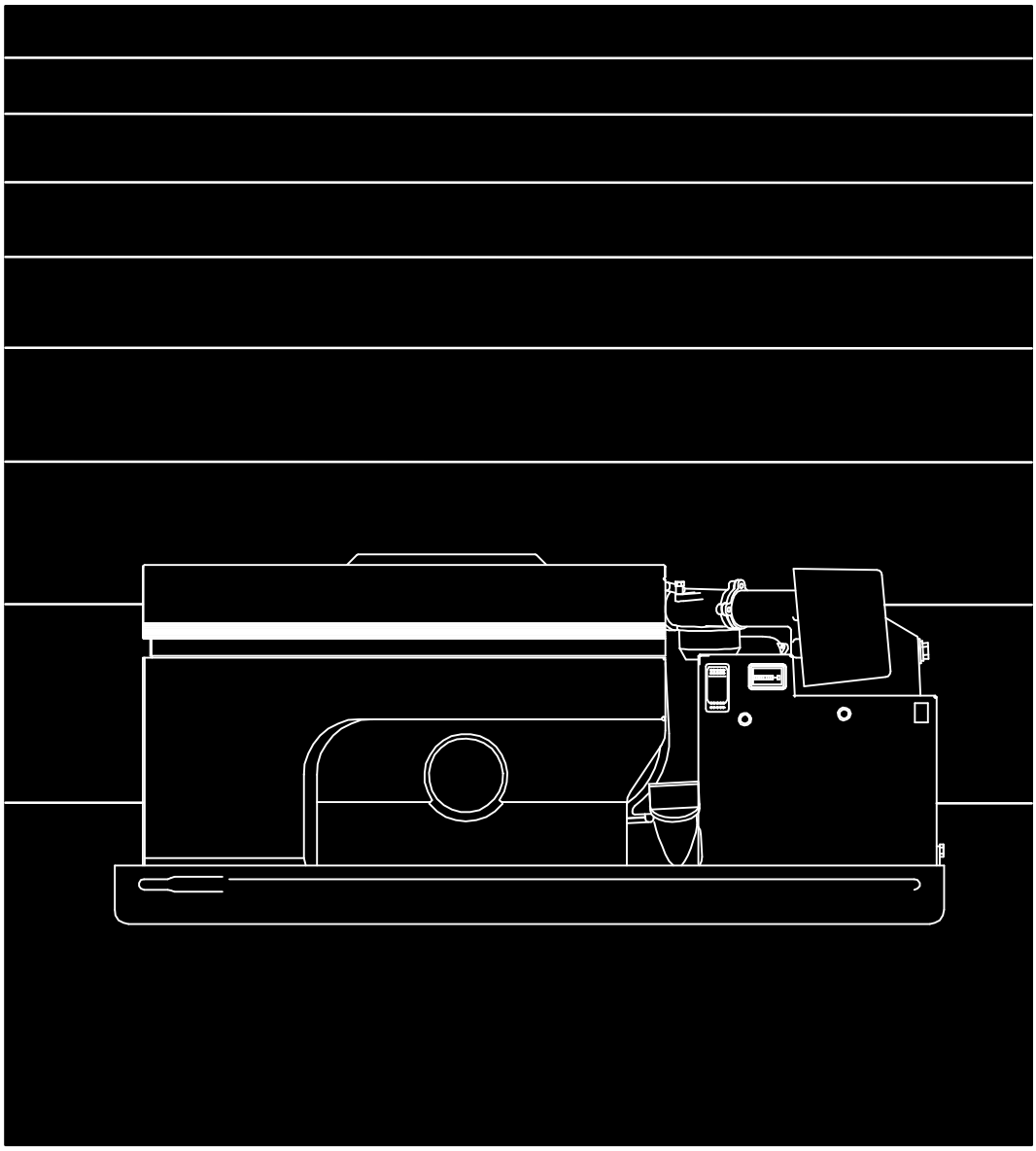
Service Manual

TGHAA



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Safety Precautions

Thoroughly read the OPERATOR'S MANUAL before operating the genset. Safe operation and top performance can be obtained only when equipment is operated and maintained properly.

The following symbols in this manual alert you to potential hazards to the operator, service person and equipment.

⚠ DANGER ***alerts you to an immediate hazard which will result in severe personal injury or death.***

⚠WARNING ***alerts you to a hazard or unsafe practice which can result in severe personal injury or death.***

⚠ CAUTION ***alerts you to a hazard or unsafe practice which can result in personal injury or equipment damage.***

Electricity, fuel, exhaust, batteries and moving parts present hazards which can result in severe personal injury or death.

GENERAL PRECAUTIONS

- Keep ABC fire extinguishers handy.
- Make sure all fasteners are secure and torqued properly.
- Keep the genset and its compartment clean. Excess oil and oily rags can catch fire. Dirt and gear stowed in the compartment can restrict cooling air.
- Before working on the genset, disconnect the negative (**-**) battery cable at the battery to prevent starting.
- Use caution when making adjustments while the genset is running—hot, moving or electrically live parts can cause severe personal injury or death.
- Used engine oil has been identified by some state and federal agencies as causing cancer or reproductive toxicity. Do not ingest, inhale, or contact used oil or its vapors.
- Do not work on the genset when mentally or physically fatigued or after consuming alcohol or drugs.
- Carefully follow all applicable local, state and federal codes.

GENERATOR VOLTAGE IS DEADLY!

- Generator output connections must be made by a qualified electrician in accordance with applicable codes.
- The genset must not be connected to the public utility or any other source of electrical power. Connection could lead to electrocution of utility workers and damage to equipment. An approved switching device must be used to prevent interconnections.
- Use caution when working on live electrical equipment. Remove jewelry, make sure clothing and shoes are dry and stand on a dry wooden platform.

FUEL IS FLAMMABLE AND EXPLOSIVE

- Keep flames, cigarettes, sparks, pilot lights, electrical arc-producing equipment and switches and all other sources of ignition well away from areas where fuel fumes are present and areas sharing ventilation.
- Fuel lines must be secured, free of leaks and separated or shielded from electrical wiring.
- Leaks can lead to explosive accumulations of gas. Natural gas rises when released and can accumulate under hoods and inside housings and buildings. LPG sinks when released and can accumulate inside housings and basements and other below-grade spaces. Prevent leaks and the accumulation of gas.

ENGINE EXHAUST IS DEADLY!

- Learn the symptoms of carbon monoxide poisoning in this manual.
- The exhaust system must be installed in accordance with the genset Installation Manual.
- Do not use engine cooling air to heat a room or compartment.
- Make sure there is ample fresh air when operating the genset in a confined area.

BATTERY GAS IS EXPLOSIVE

- Wear safety glasses and do not smoke while servicing batteries.
- When disconnecting or reconnecting battery cables, always disconnect the negative (**-**) battery cable first and reconnect it last to reduce arcing.

MOVING PARTS CAN CAUSE SEVERE PERSONAL INJURY OR DEATH

- Do not wear loose clothing or jewelry near moving parts such as PTO shafts, fans, belts and pulleys.
- Keep hands away from moving parts.
- Keep guards in place over fans, belts, pulleys, etc.

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Introduction

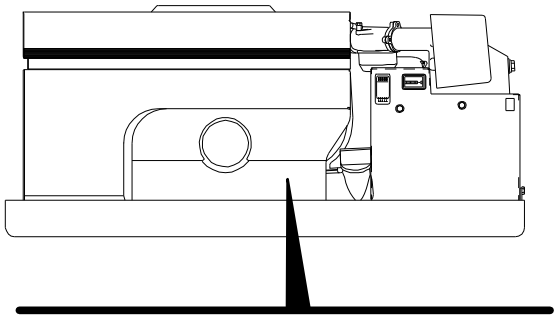
This is the Service Manual for the Series TGHAA generator sets (gensets). Read and carefully observe all of the instructions and precautions in this manual. For quick reference, this manual includes *Operation* and *Periodic Maintenance*, which are also covered in the Operator's Manual.

See the Parts Catalog for part identification numbers. Genuine Onan® replacement parts are recommended for best results. When contacting Onan for parts, service or product information, be ready to provide the model number and the serial number, both of which appear on the genset nameplate. See Figure 1.

⚠WARNING ***Improper service or parts replacement can lead to severe personal injury or death and to damage to equipment and property. Service personnel must be qualified to perform electrical and mechanical service.***

⚠WARNING ***Unauthorized modifications or replacement of fuel, exhaust, air intake or speed control system components that affect engine emissions are prohibited by law in the State of California.***

See the Installation Manual for important recommendations concerning the installation and for a list of the installation codes and standards for safety which may be applicable. Figure 2 is an illustration of a typical genset installation. Figures 85 and 86 are typical genset outline drawings.



NAMEPLATE WITH TYPICAL MODEL AND SERIAL NUMBER DATA

IMPORTANT ENGINE INFORMATION

Onan®

CUMMINS POWER GENERATION
1400 73rd Ave. NE
Minneapolis, MN 55432

Model No: **5.6TGHAA11381C** Made in U.S.A.

S/N: **A960123456**

		PH:
AC Volts:	kVA:	kW:
Amps:	Pf:	RPM:
Fuel:	Hz:	Bat:
Options:	Wiring Diagram:	

Insulation - NEMA Class F Ambient 40°C

THIS ENGINE MEETS U.S. EPA PH1 AND 1995-1999 CALIFORNIA EMISSION REGULATIONS FOR ULGE ENGINES

VN5980U1C2RA **980 cc**

REFER TO OPERATOR'S MANUAL FOR MAINTENANCE SPECIFICATIONS AND ADJUSTMENTS.

99-2495 URC

FIGURE 1. TYPICAL NAMEPLATE

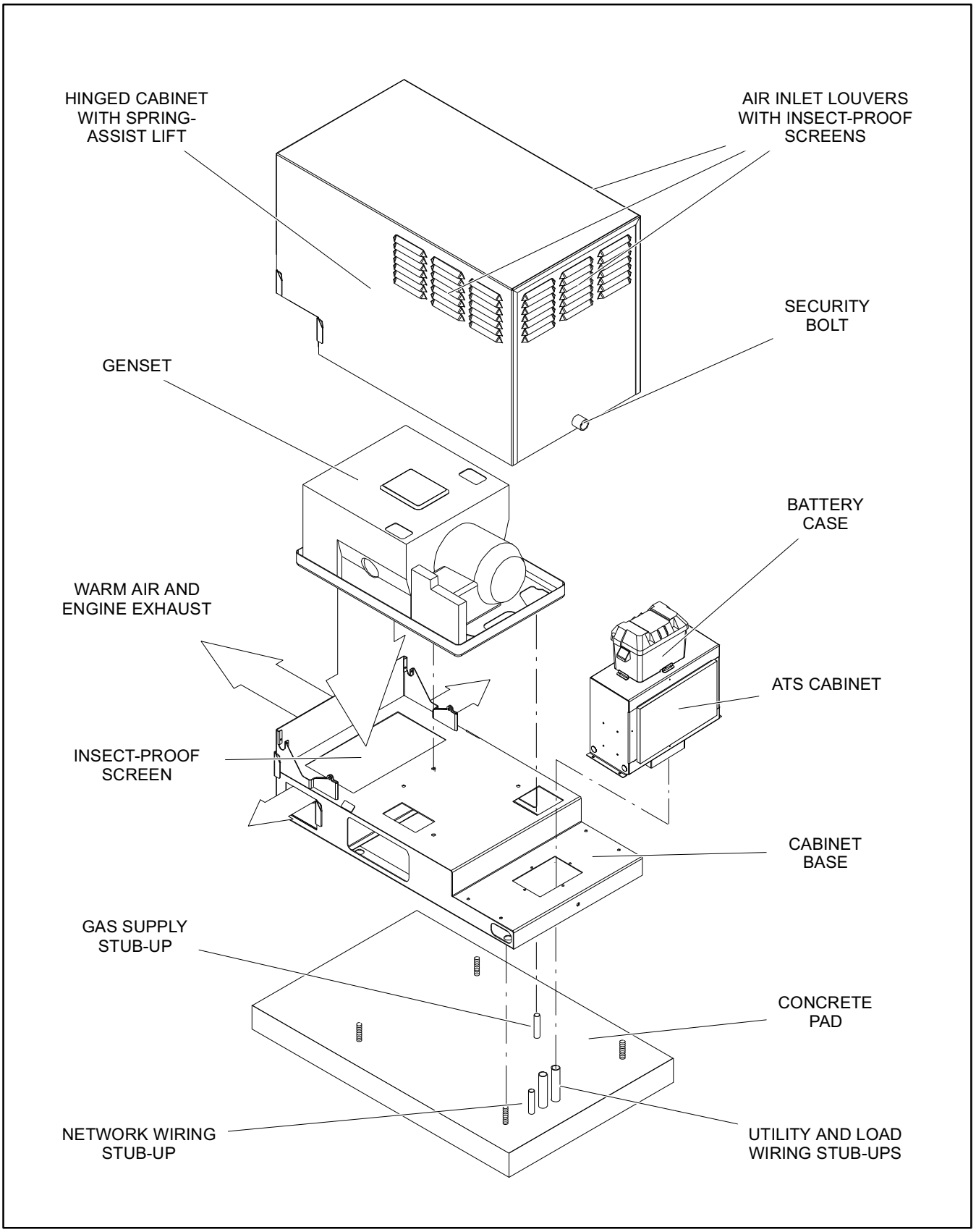


FIGURE 2. TYPICAL INSTALLATION IN AN OUTDOOR HOUSING ON A CONCRETE PAD

Specifications

GENERATOR: 4-Pole Revolving Field, Self-Excited, 1-Phase, Microcontroller Regulated			
Frequency / Speed	60 Hertz / 1800 RPM		50 Hertz / 1500 RPM
Fuel	Natural Gas	LPG	LPG
Rated Power	5.6 kW	6.0 kW	5.0 kW
Voltage	120/240 or 120 volts		230 volts
Circuit Breaker Rating	2-Pole, 25 amps		
FUEL CONSUMPTION:	Natural Gas	LPG	LPG
No-load Half-load Full-load	55 ft^3/h (1.6 m^3/h) 73 ft^3/h (2.1 m^3/h) 120 ft^3/h (3.4 m^3/h)	2.2 lb/h (1.0 Kg/h) 3.5 lb/h (1.6 Kg/h) 5.5 lb/h (2.5 Kg/h)	2.0 lb/h (0.9 Kg/h) 3.2 lb/h (1.4 Kg/h) 5.0 lb/h (2.3 Kg/h)
ENGINE: Opposed 2-Cylinder, 4-Cycle Spark-Ignited, Side-Valve, Air Cooled, Microcontroller Governed			
Bore	3.653 inch (90 mm)		
Stroke	3.000 inch (76 mm)		
Displacement	60 $inch^3$ (980 cc)		
Compression Ratio	7.0 : 1		
Min Crankcase Vacuum	10 inch (254 mm) WC (water column)		
Min Cylinder Compression Test Pressure	75 psi (517 kPa)		
Oil Capacity (with filter)*	3.5 quart (3.3 liter)		
Intake Valve Clearance (Cold)	0.005 inch (0.13 mm)		
Exhaust Valve Clearance (Cold)	0.013 inch (0.33 mm)		
Spark Plug Gap	0.025 inch (0.64 mm)		
Spark Plug Tightening Torque	8 lb-for (10 N-m)		
Ignition Timing (electronic ignition)	15° BTDC (non-adjustable)		
Natural Gas Supply Pressure	6-13 inch (152-330 mm) WC (water column)		
LPG Supply Pressure (vapor)	9-13 inch (229-330 mm) WC (water column)		
Gas Supply Connection	3/8 inch NPT		
CONTROL AND CRANKING SYSTEM:			
Nominal Battery Voltage	12 volts		
Battery Cranking Capacity	450 amps down to 0° F (-17° C) 650 amps down to -20° F (-29° C)		
Battery Charging Output	10 amps		
Fuse F1 (control B+ input)	7.5 amps		
Fuse F2 (starter solenoid)	7.5 amps		
Fuse F3 (carburetor de-icer)	25 amps		

* See *Periodic Maintenance* for oil filling instructions.