

Guardian® Series

GENERAC®

GUARDIAN® SERIES Standby Generators Liquid-Cooled Gas Engine

Guardian® Series

1 of 9

INCLUDES:

- Two Line LCD Tri-Lingual Digital Nexus™ Controller
- Isochronous Electronic Governor
- Sound Attenuated Enclosure
- Closed Coolant Recovery System
- Smart Battery Charger
- UV/Ozone Resistant Hoses
- $\pm 1\%$ Voltage Regulation
- Natural Gas or LP Operation*
- 2 Year Limited Warranty
- UL 2200 Listed

*Note: 25-45 kW units are field convertible between natural gas or LP. 60 kW units are built per fuel requirement and are not convertible.

Standby Power Rating

Model QT025 (Steel - Bisque) - 25 kW 60 Hz

Model QT030 (Steel - Bisque) - 30 kW 60 Hz

Model QT045 (Steel - Bisque) - 45 kW 60 Hz

Model QT060 (Steel - Bisque or Aluminum - Gray) - 60 kW 60 Hz



QUIET-TEST™

Meets EPA Emission Regulations
25, 30 & 45 kW CA/MA emissions compliant
60 kW not for sale in CA/MA

FEATURES

- **INNOVATIVE DESIGN & PROTOTYPE TESTING** are key components of GENERAC'S success in "IMPROVING POWER BY DESIGN." But it doesn't stop there. Total commitment to component testing, reliability testing, environmental testing, destruction and life testing, plus testing to applicable CSA, NEMA, EGSA, and other standards, allows you to choose GENERAC POWER SYSTEMS with the confidence that these systems will provide superior performance.
- **TEST CRITERIA:**
 - ✓ PROTOTYPE TESTED
 - ✓ SYSTEM TORSIONAL TESTED
 - ✓ NEMA MG1-22 EVALUATION
 - ✓ MOTOR STARTING ABILITY
- **SOLID-STATE, FREQUENCY COMPENSATED VOLTAGE REGULATION.** This state-of-the-art power maximizing regulation system is standard on all Generac models. It provides optimized FAST RESPONSE to changing load conditions and MAXIMUM MOTOR STARTING CAPABILITY by electronically torque-matching the surge loads to the engine. Digital voltage regulation at $\pm 1\%$.
- **SINGLE SOURCE SERVICE RESPONSE** from Generac's extensive dealer network provides parts and service know-how for the entire unit, from the engine to the smallest electronic component.
- **GENERAC TRANSFER SWITCHES.** Long life and reliability are synonymous with GENERAC POWER SYSTEMS. One reason for this confidence is that the GENERAC product line includes its own transfer systems and controls for total system compatibility.

GENERAC®



25 • 30 • 45 • 60 kW**application & engineering data****GENERATOR SPECIFICATIONS**

Type	Synchronous
Rotor Insulation Class	H
Stator Insulation Class	H
Telephone Interference Factor (TIF)	<50
Alternator Output Leads 1-Phase	4 wire
Alternator Output Leads 3-Phase	6 wire
Bearings	Sealed Ball
Coupling	Flexible Disc
Excitation System	Direct

VOLTAGE REGULATION

Type	Electronic
Sensing	Single Phase
Regulation	± 1%

GOVERNOR SPECIFICATIONS

Type	Electronic
Frequency Regulation	Isochronous
Steady State Regulation	± 0.25%

ELECTRICAL SYSTEM

Battery Charge Alternator	12 Volt 15 Amp-25 & 30 kW 12 Volt 30 Amp-45 & 60 kW
Static Battery Charger	2 Amp
Recommended Battery	Group 26, 525CCA
System Voltage	12 Volts

GENERATOR FEATURES

Revolving field heavy duty generator Directly connected to the engine Operating temperature rise 120 °C above a 40 °C ambient Class H insulation is rated at 150 °C rise at 25 °C ambient All models fully prototyped tested
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ENCLOSURE FEATURES

Steel weather protective enclosure with aluminum roof (all models) or aluminum weather protective enclosure (available on 60 kW only)	Ensures protection against mother nature. Electrostatically applied textured epoxy paint for added durability.
Enclosed critical grade muffler	Quiet, critical grade muffler is mounted inside the unit to prevent injuries.
Small, compact, attractive	Makes for an easy, eye appealing installation.
SAE	Sound attenuated enclosure ensures quiet operation.

ENGINE SPECIFICATIONS: 25 & 30 kW

Make	Generac
Model	In-line
Cylinders	4
Displacement (Liters)	1.5
Bore (in/mm)	3.05/77.4
Stroke (in/mm)	3.13/79.5
Compression Ratio	11:1
Intake Air System	Naturally Aspirated
Lifter Type	Hydraulic

ENGINE SPECIFICATIONS: 45 & 60 kW

Make	Generac
Model	In-line
Cylinders	4
Displacement (Liters)	2.4
Bore (in/mm)	3.41/86.5
Stroke (in/mm)	3.94/100
Compression Ratio	9.5:1
Intake Air System	Naturally Aspirated (45 kW) or Turbocharged/Aftercooled (60 kW)
Lifter Type	Hydraulic

ENGINE LUBRICATION SYSTEM

Oil Pump Type	Gear
Oil Filter Type	Full flow spin-on cartridge
Crankcase Capacity (qt/l)	4/3.8

ENGINE COOLING SYSTEM

Type	Closed
Water Pump	Belt driven
Fan Speed (rpm)	2484 - 25 & 30 kW 1865 - 45 kW 2100 - 60 kW
Fan Diameter (in/mm)	17.7/449.6 (25 & 30 kW) or 22/558.8 (45 & 60 kW)
Fan Mode	Pusher (25 & 30 kW) or Puller (45 & 60 kW)

FUEL SYSTEM

Fuel Type	Natural gas, propane vapor
Carburetor	Down Draft
Secondary Fuel Regulator	Standard
Fuel Shut Off Solenoid	Standard
Operating Fuel Pressure	5-14" water column/9-26 mm HG

25 • 30 • 45 • 60 kW

operating data

GENERATOR OUTPUT VOLTAGE/kW - 60 Hz

		kW LPG	Amp LPG	kW Nat. Gas	Amp Nat. Gas	CB Size (Both)
QT025	120/240 V, 1Ø, 1.0 pf	25	104	25	104	125
	120/208 V, 3Ø, 0.8 pf	25	87	25	87	100
	120/240 V, 3Ø, 0.8 pf	25	75	25	75	90
QT030	120/240 V, 1Ø, 1.0 pf	30	125	30	125	150
	120/208 V, 3Ø, 0.8 pf	30	104	30	104	125
	120/240 V, 3Ø, 0.8 pf	30	90	30	90	100
QT045	120/240 V, 1Ø, 1.0 pf	45	188	45	188	200
	120/208 V, 3Ø, 0.8 pf	45	156	45	156	175
	120/240 V, 3Ø, 0.8 pf	45	135	45	135	150
	277/480 V, 3Ø, 0.8 pf	45	68	45	68	80
QT060	120/240 V, 1Ø, 1.0 pf	60	250	60	250	300
	120/208 V, 3Ø, 0.8 pf	60	208	60	208	250
	120/240 V, 3Ø, 0.8 pf	60	180	60	180	200
	277/480 V, 3Ø, 0.8 pf	60	90	60	90	100

SURGE CAPACITY IN AMPS

		Voltage Dip @ < .4 pf	
		15%	30%
QT025	120/240 V, 1Ø	86	209
	120/208 V, 3Ø	84	204
	120/240 V, 3Ø	73	177
QT030	120/240 V, 1Ø	109	264
	120/208 V, 3Ø	109	264
	120/240 V, 3Ø	94	229
QT045	120/240 V, 1Ø	61	153
	120/208 V, 3Ø	64	160
	120/240 V, 3Ø	55	139
	277/480 V, 3Ø	29	72
QT060	120/240 V, 1Ø	95	237
	120/208 V, 3Ø	100	251
	120/240 V, 3Ø	87	218
	277/480 V, 3Ø	42	105

ENGINE FUEL CONSUMPTION

		Natural Gas		Propane	
		(ft³/hr)	(m³ /hr)	(gal/hr)	(l/hr)
QT025	Exercise cycle	60	1.7	0.7	2.5
	25% of rated load	220	6.3	2.9	9.1
	50% of rated load	297	8.4	3.3	12.3
	75% of rated load	362	10.3	4	15
	100% of rated load	430	12.2	4.7	17.8
QT030	Exercise cycle	60	1.7	0.7	2.5
	25% of rated load	240	6.8	2.6	10
	50% of rated load	320	9.1	3.5	13.3
	75% of rated load	400	11.4	4.4	16.6
	100% of rated load	492	14	5.4	20.4
QT045	Exercise cycle	65	1.8	0.7	2.6
	25% of rated load	210	6	2.3	8.6
	50% of rated load	380	10.8	4.2	15.7
	75% of rated load	545	15.5	5.9	22.4
	100% of rated load	730	20.7	8	30.1
QT060	Exercise cycle	123	3.5	1.34	5.1
	25% of rated load	267	7.6	2.7	10.5
	50% of rated load	483	13.7	5	19
	75% of rated load	672	19.1	7	26.5
	100% of rated load	862	24.5	9	33.9

Note: **Fuel pipe must be sized for full load.**

For Btu content, multiply gal/hr x 90950 (LP) or ft³/hr x 1000 (NG)

For megajoule content, multiply l/hr x 25.35 (LP) or m³/hr x 37.26 (NG)

Refer to "Emissions Data Sheets" for maximum fuel flow for EPA and SCAQMD permitting purposes.

STANDBY RATING: Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046-1. Design and specifications are subject to change without notice.

25 • 30 • 45 • 60 kW

operating data

ENGINE COOLING

	25 kW	30 kW	45 kW	60 kW
Air flow (inlet air including alternator and combustion air in cfm/cmm)	2490/70.5	2490/70.5	2725/77.2	3280/92.9
System coolant capacity (gal/liters)	2/7.6	2/7.6	3/11.4	2.5/9.5
Heat rejection to coolant (BTU per hr/MJ per hr)	112,000/118.2	135,000/142.4	193,000/203.6	270,000/284.9
Maximum operation air temperature on radiator (°C/°F)	60/150			
Maximum ambient temperature (°C/°F)	50/140			

COMBUSTION REQUIREMENTS

Flow at rated power (cfm/cmm)	62/1.8	72/2	144/4.1	180/5.1
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SOUND EMISSIONS

Sound output in dB(A) at 23 ft (7 m) with generator in exercise mode*	59	59	61	65
Sound output in dB(A) at 23 ft (7 m) with generator operating at normal load*	72	73	73	72

*Sound levels are taken from the front of the generator. Sound levels taken from other sides of the generator may be higher depending on installation parameters.

EXHAUST

Exhaust flow at rated output (cfm/cmm)	203/5.7	237/6.7	420/11.9	494/14
Exhaust temperature at muffler outlet (°C/°F)	593/1100	610/1130	593/1100	566/1050

ENGINE PARAMETERS

Rated Synchronous rpm	3600
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POWER ADJUSTMENT FOR AMBIENT CONDITIONS

Temperature Deration	3% for every 10 °C above 25 °C or 1.65% for every 10 °F above 77 °F
Altitude Deration (25, 30 & 45 kW)	1% for every 100 m above 183 m or 3% for every 1000 ft above 600 ft
Altitude Deration (60 kW)	1% for every 100 m above 915 m or 3% for every 1000 ft above 3000 ft

CONTROLLER FEATURES

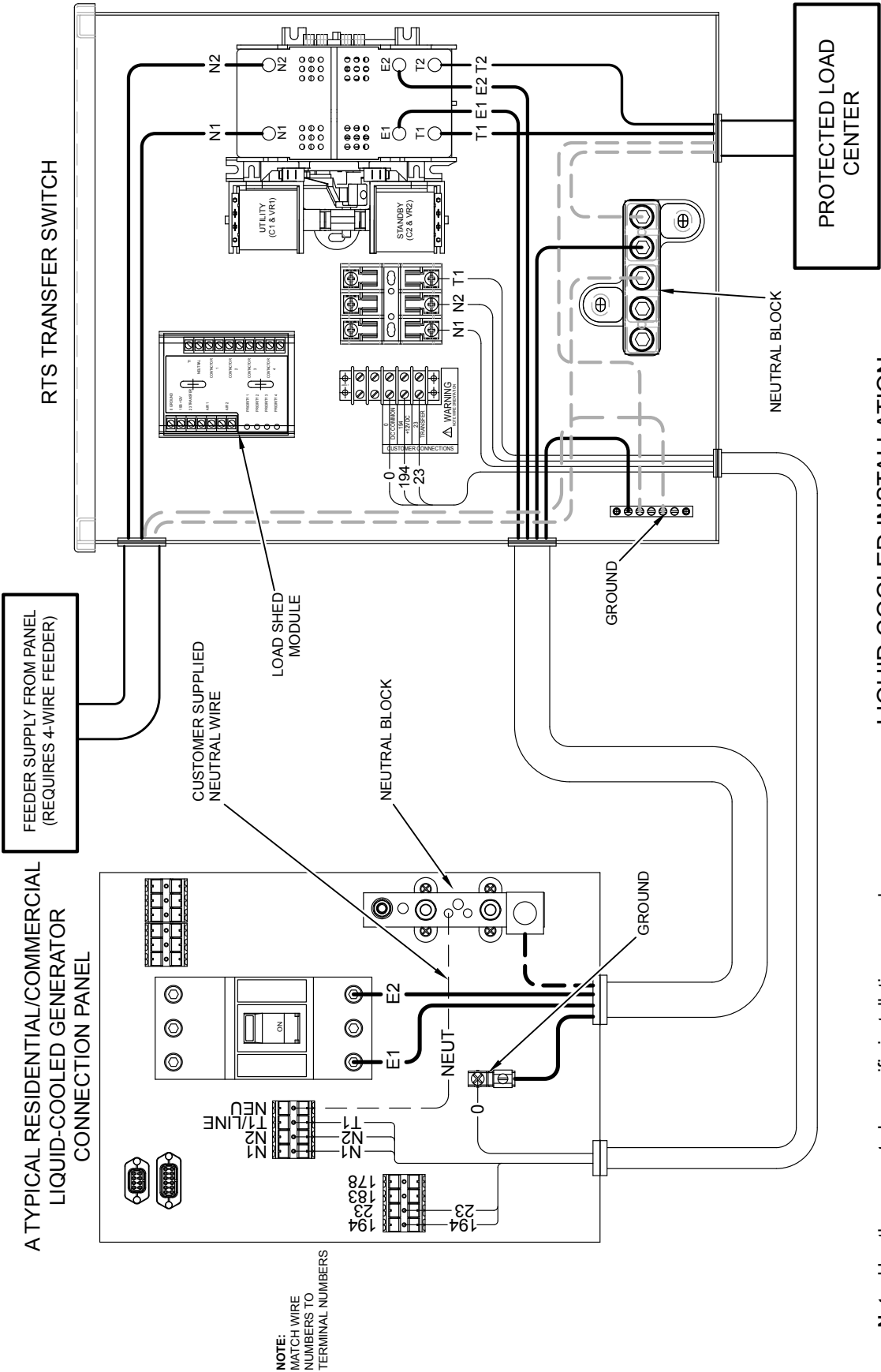
2-Line Plain Text LCD Display	Simple user interface for ease of operation.
Mode Switch: Auto	Automatic Start on Utility failure. 7 day exerciser
Off	Stops unit. Power is removed. Control and charger still operate.
Manual	Start with starter control, unit stays on. If utility fails, transfer to load takes place.
Programmable start delay between 10-30 seconds	Standard
Engine Start Sequence	Cyclic cranking: 16 sec on, 7 rest (90 sec maximum duration)
Engine Warm-up	5 sec
Engine Cool-Down	1 min
Starter Lock-out	Starter cannot re-engage until 5 sec after engine has stopped.
Smart Battery Charger	Standard
Automatic Voltage Regulation with Over and Under Voltage Protection	Standard
Automatic Low Oil Pressure Shutdown	Standard
Overspeed Shutdown	Standard, 72 Hz
High Temperature Shutdown	Standard
Overcrank Protection	Standard
Safety Fused	Standard
Failure to Transfer Protection	Standard
Low Battery Protection	Standard
50 Event Run Log	Standard
Future Set Capable Exerciser	Standard
Incorrect Wiring Protection	Standard
Internal Fault Protection	Standard
Common External Fault Capability	Standard
Governor Failure Protection	Standard

25 • 30 • 45 • 60 kW
available accessories

Model #	Product	Description
006175-0 - 25 & 30 kW 005630-0 - 45 & 60 kW	Cold Weather Kit	If the temperature regularly falls below 32 °F (0 °C), install a cold weather kit to maintain optimal battery temperature. Kit consists of battery warmer with thermostat built into the wrap.
006174-0 - 25 & 30 kW 005616-0 - 45 & 60 kW	Extreme Cold Weather Kit	Recommended where the temperature regularly falls below 32 °F (0 °C) for extended periods of time. For liquid cooled units only.
005621-0	Auxiliary Transfer Switch Contact Kit	The auxiliary transfer switch contact kit allows the transfer switch to lock out a single large electrical load you may not need. Not compatible with 60 kW models.
005651-0	Base Plug Kit	Add base plugs to the base of the generator to keep out debris.
005703-0 - Bisque 005704-0 - Gray	Paint Kit*	If the generator enclosure is scratched or damaged, it is important to touch-up the paint to protect from future corrosion. The paint kit includes the necessary paint to properly maintain or touch-up a generator enclosure.
006176-0 - 25 & 30 kW 006172-0 - 45 kW 006171-0 - 60 kW	Scheduled Maintenance Kit	The Liquid-Cooled Scheduled Maintenance Kits offer all the hardware necessary to perform complete maintenance on Generac liquid-cooled generators.
005928-0	Wireless Remote	Completely wireless and battery powered, Generac's wireless remote monitor provides you with instant status information without ever leaving the house.
006199-0	PMM Starter Kit	The PMM Starter Kit consists of a 24 VAC, field installed transformer that enables the use of the 24 VAC Power Management Modules (PMMs) and one PMM. The standard controller (without starter kit) can control two HVAC loads with no additional hardware. Not compatible with pre-wired switches.
006186-0	Power Management Module (50 Amps)	Power Management Modules are used in conjunction with the Smart Switch to increase its power management capabilities. It gives the Smart Switch additional power management flexibility not found in any other transfer switch. Not compatible with pre-wired switches. Note: PMM Starter Kit required.
006463-1	Mobile Link™	Generac's Mobile Link allows you to check the status of your generator from anywhere that you have access to an Internet connection from a PC or with any smart device. You will even be notified when a change in the generator's status occurs via e-mail or text message. Note: Harness Adapter Kit required.
006478-0	Harness Adapter Kit	The Harness Adapter Kit is required to make liquid-cooled units compatible with Mobile Link™.

* Note: Bisque kits are used in conjunction with steel enclosures. Gray kits are used in conjunction with aluminum enclosures (available on 60 kW units only).

25 • 30 • 45 • 60 kW



Note: Use the generator's specific installation manual and wiring diagrams to verify generator wiring connections, as they may differ slightly from illustration.

LIQUID COOLED INSTALLATION

REFERENCE OWNERS MANUAL FOR PERIODIC REPLACEMENT PART LISTINGS



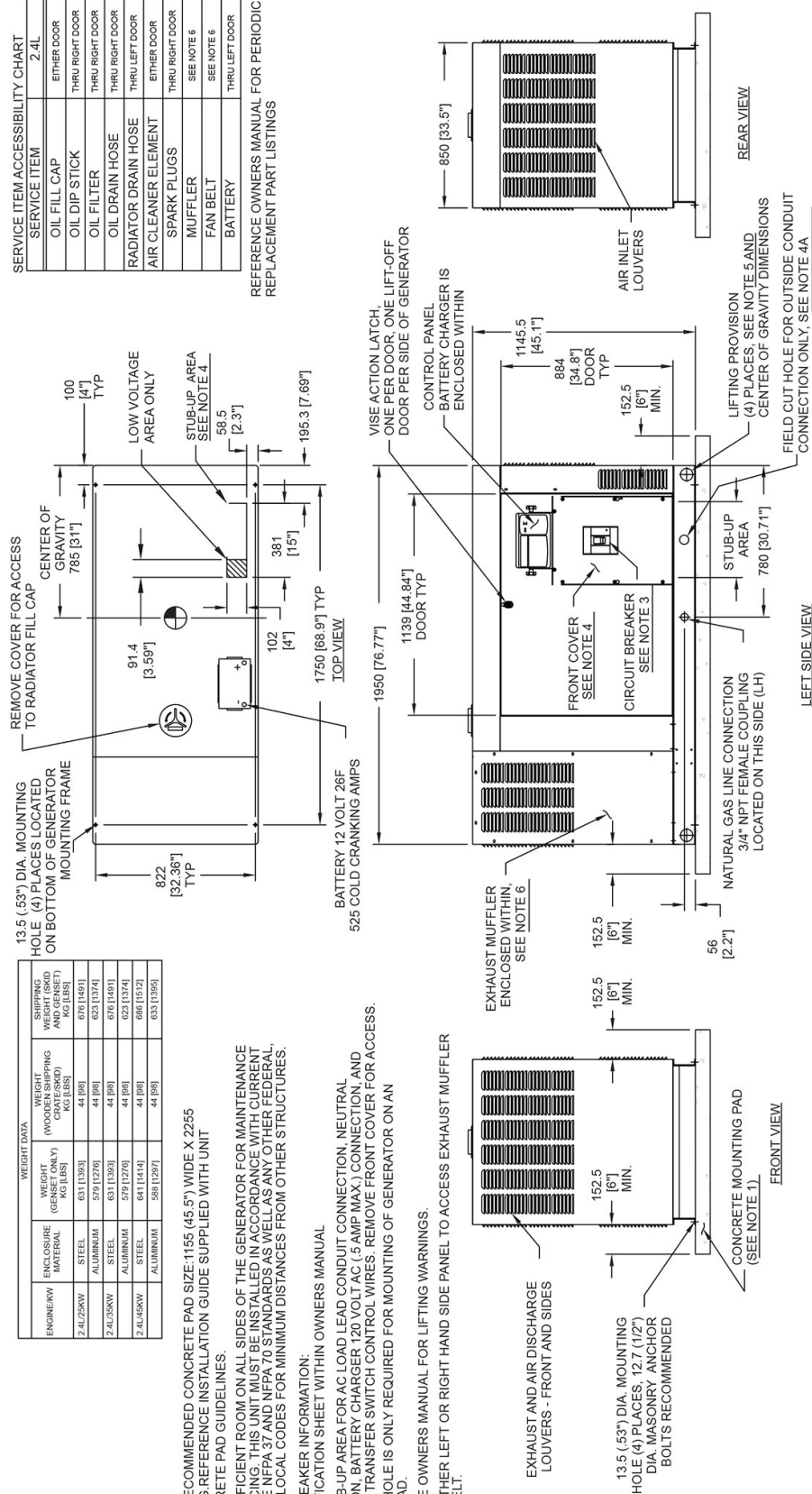
WEIGHT DATA				
ENGINE/KW	ENCLOSURE MATERIAL	WEIGHT (GENSET ONLY) KG [LBS]	WEIGHT (WOODEN SHIPPING CRATES/GENSET) KG [LBS]	SHIPPING WEIGHT (SKID AND GENSET) KG [LBS]
54.25KW	STEEL	379 [835]	30 [66]	409 [901]

6) REMOVE ENCLOSURE TO ACCESS EXHAUST MUFFLER.

45 kW

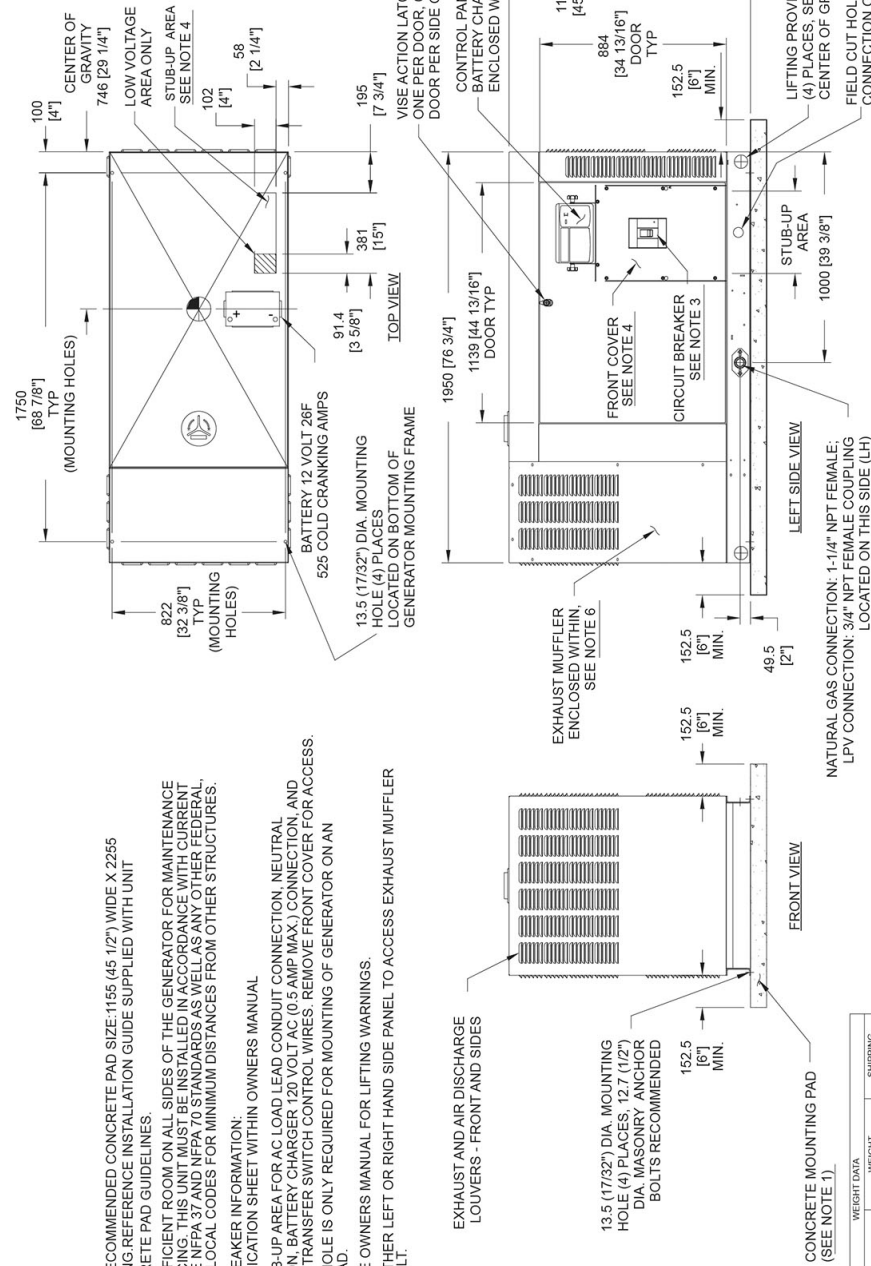
SERVICE ITEM ACCESSIBILITY CHART	
SERVICE ITEM	2.4L
OIL FILL CAP	ETHER DOOR
OIL DIP STICK	THRU RIGHT DOOR
OIL FILTER	THRU RIGHT DOOR
OIL DRAIN HOSE	THRU RIGHT DOOR
RADIATOR DRAIN HOSE	THRU LEFT DOOR
AIR CLEANER ELEMENT	ETHER DOOR
SPARK PLUGS	THRU RIGHT DOOR
MUFFLER	SEE NOTE 6
FAN BELT	SEE NOTE 6
BATTERY	THRU LEFT DOOR

6) REMOVE EITHER LEFT OR RIGHT HAND SIDE PANEL TO ACCESS EXHAUST MUFFLER AND FAN BELT.



SERVICE ITEM ACCESSIBILITY CHART	
SERVICE ITEM	2.4L
OIL FILL CAP	THRU RIGHT DOOR
OIL DIP STICK	THRU RIGHT DOOR
OIL FILTER	THRU LEFT DOOR
OIL DRAIN HOSE	THRU LEFT DOOR
RADIATOR DRAIN HOSE	THRU LEFT DOOR
AIR CLEANER ELEMENT	THRU LEFT DOOR
SPARK PLUGS	THRU LEFT DOOR
MUFFLER	SEE NOTE 6
FAN BELT	SEE NOTE 6
BATTERY	THRU LEFT DOOR

REFERENCE OWNERS MANUAL FOR PERIODIC
REPLACEMENT PART LISTINGS



WEIGHT DATA		SHIPPING WEIGHT (WOOD CRATE, SKID AND GENSET)	
ENCLOSURE MATERIAL	WEIGHT (GENSET ONLY) KG (LBS)	WEIGHT (WOOD CRATE, SKID AND GENSET) KG (LBS)	WEIGHT (WOOD CRATE, SKID AND GENSET) KG (LBS)
STEEL	654 [1441]	44 [98]	699 [1539]
ALUMINUM	600 [1324]	44 [98]	645 [1422]