

Protector™ Series

Diesel Generator Set

INCLUDES:

- Two Line LCD Multilingual Digital Evolution™ Controller (English/Spanish/French/Portuguese) with external viewing window for easy indication of generator status and breaker position.
- Isochronous Electronic Governor
- Sound Attenuated Aluminum Enclosure
- Smart Battery Charger
- UV / Ozone Resistant Hoses
- ±1% Voltage Regulation
- Five Year Limited Warranty

Not for sale in US/CA

Standby Power Rating

Model RD012 - 12 kVA 50 Hz
 Model RD016 - 16 kVA 50 Hz
 Model RD024 - 30 kVA 50 Hz
 Model RD040 - 50 kVA 50 Hz



QUIET-TEST.



*Assembled in the USA using domestic and foreign parts

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 TORSIONALTESTED
 - ✓ 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 ±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.

12 • 16 • 30 • 50 kVA

GENERAC®

application and engineering data

GENERATOR SPECIFICATIONS

Type	Synchronous
Rotor Insulation Class	H (12 & 16 kVA) or F (30 & 50 kVA)
Stator Insulation Class	H
Telephone Interference Factor (TIF)	< 50
Alternator Output Leads 1-Phase	Three wire
Alternator Output Leads 3-Phase	Six wire
Bearings	Single Sealed Cartridge
Coupling	Direct, Flexible Disc
Excitation System	Direct

VOLTAGE REGULATION

Type	Electronic
Sensing	Single Phase
Regulation	± 1%
Features	Adjustable Voltage & Gain

GOVERNOR SPECIFICATIONS

Type	Electronic Isochronous
Steady State Regulation	± 0.25%

ELECTRICAL SYSTEM

Battery Charge Alternator	50 Amp (12 & 16 kVA), 65 Amp (30 kVA), 70 Amp (50 kVA)
Static Battery Charger	2 Amp
Recommended Battery (battery not included)	Group 27F, 700 CCA Group 31, 925 CCA batteries can also be used with 30kVA units
System Voltage	12 Volts

ALTERNATOR SPECIFICATIONS

<p>Revolving field heavy duty generator Directly connected to the engine Operating temperature rise 120 °C (248 °F) above a 40 °C (104 °F) ambient Class H insulation is NEMA rated Class F insulation is NEMA rated All models fully prototype tested</p>

ENCLOSURE FEATURES

Aluminum weather protective enclosure	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 and maximize sound dampening.
Small, compact, attractive	Makes for an easy, eye appealing installation.
SAE	Sound attenuated enclosure ensures quiet operation.

ENGINE SPECIFICATIONS: 12 & 16 kVA

Make	Mitsubishi
Model	In-line
Cylinders	4
Displacement (Liters)	2.505
Bore (mm / in)	88 / 3.46
Stroke (mm / in)	103 / 4.06
Compression Ratio	22:1
Intake Air System	Naturally Aspirated
Cylinder Head Type	Cast Iron OHV
Piston Type	Aluminum

ENGINE SPECIFICATIONS: 30 kVA

Make	Perkins
Model	In-line
Cylinders	4
Displacement (Liters)	2.216
Bore (mm / in)	84 / 3.30
Stroke (mm / in)	100 / 3.94
Compression Ratio	23.3:1
Intake Air System	Turbocharged / Aftercooled
Cylinder Head Type	Cast Iron OHV
Piston Type	Aluminum

ENGINE SPECIFICATIONS: 50 kVA

Make	Generac
Model	In-line
Cylinders	4
Displacement (Liters)	3.4
Bore (mm / in)	98 / 3.86
Stroke (mm / in)	113 / 4.45
Compression Ratio	18.5:1
Intake Air System	Turbocharged / Aftercooled
Cylinder Head Type	Cast Iron OHV
Piston Type	Aluminum

ENGINE LUBRICATION SYSTEM

Oil Pump Type	Gear
Oil Filter Type	Full flow spin-on canister
Crankcase Capacity (liters / quarts)	6.5 / 6.87 – 12 & 16 kVA 10.6 / 11.2 – 30 kVA 7 / 7.4 – 50 kVA

ENGINE COOLING SYSTEM

Water Pump	Pre-lubed, self-seating
Fan Speed (rpm)	1980 – 12 & 16 kVA 1650 – 30 kVA 1700 – 50 kVA
Fan Diameter (mm / in)	460 / 18.11 (12 & 16 kVA) 457.2 / 18 (30 kVA) 559 / 22 (50 kVA)
Fan Mode	Pusher

FUEL SYSTEM

Fuel Type	Ultra Low Sulfur Diesel Fuel
Fuel Pump Type	Mechanical Engine Driven Gear
Injector Type	Mechanical
Fuel Supply Line (mm / in)	7.94 / 0.31 (ID)
Fuel Return Line (mm / in)	N/A – 12 & 16 kVA 4.76 / 0.19 (ID) – 30 kVA 7.94 / 0.31 (ID) – 50 kVA
Fuel Specification	ASTM
Fuel Filtering (microns)	6 – 12 & 16 kVA 25 – 30 kVA 10 – 50 kVA

TANK SPECIFICATIONS

Total Size (liters/gallons)	170.3 / 45 – 12 & 16 kVA 257.4 / 68 – 30 & 50 kVA
Usable Size (liters/gallons)	151.4 / 40 – 12 & 16 kVA 230.9 / 61 – 30 & 50 kVA
Run Time @ 1/2 Load (hrs)	38.1 – 12 kVA 38.8 – 16 kVA 44.5 – 30 kVA 26.5 – 50 kVA

WEIGHTS AND DIMENSIONS

Model	Weight (kg / lb)	Dimensions (L x W x H) (cm / in)
12 kVA	622 / 1372	158 x 78 x 124 / 62 x 31 x 49
16 kVA	622 / 1372	158 x 78 x 124 / 62 x 31 x 49
30 kVA	783 / 1726	195 x 89 x 147 / 77 x 35 x 57
50 kVA	886 / 1953	195 x 89 x 141 / 77 x 35 x 55

12 • 16 • 30 • 50 kVA**application and engineering data****GENERATOR OUTPUT VOLTAGE / KVA - 50 HZ**

		kVA (standby)	Amp (standby)	kVA (Prime)	Amp (Prime)	CB Size
RD012	110/220 V, 1Ø, 1.0 pf	12	55	9.6	44	60
RD016	110/220 V, 1Ø, 1.0 pf	16	73	12.8	58	80
RD024	110/220 V, 1Ø, 1.0 pf	24	109	19.2	87	125
	231/400 V, 3Ø, 0.8 pf	30	43	19.2	35	50
RD040	110/220 V, 1Ø, 1.0 pf	40	182	32	146	200
	231/400 V, 3Ø, 0.8 pf	50	72	32	58	80

SURGE CAPACITY IN AMPS

		Voltage Dip @ < 0.4 pf	
		15%	30%
RD012	120/240 V, 1Ø	53	129
	120/208 V, 3Ø	37	90
	120/240 V, 3Ø	32	78
RD016	120/240 V, 1Ø	87	211
	120/208 V, 3Ø	59	143
	120/240 V, 3Ø	51	124
RD024	120/240 V, 1Ø	66	168
	120/208 V, 3Ø	59	144
	277/480 V, 3Ø	26	64
RD040	120/240 V, 1Ø	69	189
	120/208 V, 3Ø	90	218
	120/240 V, 3Ø	78	189
	277/480 V, 3Ø	36	87

ENGINE FUEL CONSUMPTION

		L/hr	gal/hr
		25% of rated load	2.27
RD012	50% of rated load	3.22	0.85
	75% of rated load	4.16	1.10
	100% of rated load	5.53	1.46
	25% of rated load	2.9	0.77
RD016	50% of rated load	3.90	1.03
	75% of rated load	5.53	1.46
	100% of rated load	7.46	1.97
	25% of rated load	3.67	0.97
RD024	50% of rated load	5.19	1.37
	75% of rated load	7.46	1.97
	100% of rated load	10.49	2.77
	25% of rated load	4.6	1.22
RD040	50% of rated load	7.33	1.94
	75% of rated load	10.42	2.75
	100% of rated load	13.56	3.58

12 • 16 • 30 • 50 kVA

ENGINE COOLING

	12 kVA	16 kVA	30 kVA	50 kVA
Air flow (inlet air including alternator and combustion air in cfm/cmm)	2353 / 67	2353 / 67	2530 / 72	2353 / 67
System coolant capacity (liters/gal)	11.4 / 3.0	11.4 / 3.0	9.5 / 2.5	10.6 / 2.8
Heat rejection to coolant (BTU per hr/MJ per hr)	95,220 / 100.5	95,220 / 100.5	128,638 / 135.7	109,000 / 115
Maximum operation air temperature on radiator (°C / °F)	50 / 122			
Maximum ambient temperature (°C / °F)	50 / 122			

COMBUSTION REQUIREMENTS

	12 kVA	16 kVA	30 kVA	50 kVA
Flow at rated power (cmm / cfm)	2.4 / 86.3	2.4 / 86.3	2.5 / 88	3.53 / 124

SOUND EMISSIONS

Sound output in dB(A) at 7 m (23 ft) with generator in exercise mode*	65
Sound output in dB(A) at 7 m (23 ft) with generator operating at normal load*	70

EXHAUST

	12 kVA	16 kVA	30 kVA	50 kVA
Exhaust flow at rated output (cmm/cfm)	2.8 / 98.88	2.8 / 98.88	8.4 / 296.6	7.36 / 260
Exhaust temperature at rated output (°C / °F)	482 / 900	482 / 900	499 / 930	554 / 1030

ENGINE PARAMETERS

Rated Synchronous RPM	1500			
HP at rated kVA	29.5	29.5	40.9	63

POWER ADJUSTMENT FOR AMBIENT CONDITIONS

Temperature Deration 3% for every 5 °C above 25 °C or 1.7% for every 5 °F above 77 °F
 Altitude Deration (12, 30, and 50 kVA) 1% for every 100 m above 915 m or 3% for every 1000 ft above 3000 ft
 Altitude Deration (16 kVA) 1% for every 100 m above 305 m or 3% for every 1000 ft above 1000 ft

CONTROLLER FEATURES

2-Line Plain Text Multilingual LCD Display Simple user interface for ease of operation.
 Mode Buttons: Auto Automatic Start on Utility failure. Programmable 7 day exerciser.
 Manual Start with starter control, unit stays on. If utility fails, transfer to load takes place.
 Off Stops unit. Power is removed. Control and charger still operate.
 Ready to Run/Maintenance Message Standard
 Engine Run Hours Indication Standard
 Programmable start delay between 2-1500 seconds Standard (programmable by dealer only)
 Utility Voltage Loss/Return to Utility Adjustable From 140-171 V / 190-216 V
 Future Set Capable Exerciser/Exercise Set Error Warning Standard
 Run/Alarm/Maintenance Logs 50 Events Each
 Engine Start Sequence Cyclic cranking: 16 sec on, 7 rest (90 sec maximum duration)
 Starter Lock-out Starter cannot re-engage until 5 seconds after engine has stopped.
 Smart Battery Charger Standard
 Charger Fault/Missing AC Warning Standard
 Low Battery/Battery Problem Protection and Battery Condition Indication Standard
 Automatic Voltage Regulation with Over and Under Voltage Protection Standard
 Under-Frequency/Overload/Stepper Overcurrent Protection Standard
 Safety Fused/Fuse Problem Protection Standard
 Automatic Low Oil Pressure/High Oil Temperature Shutdown Standard
 Overcrank/Overspeed (@ 72 Hz)/RPM Sense Loss Shutdown Standard
 High Engine Temperature Shutdown Standard
 Internal Fault/Incorrect Wiring Protection Standard
 Common External Fault Capability Standard
 Field Upgradeable Firmware Standard

12 • 16 • 30 • 50 kVA

operating data

D2.2L G22 Single Wall (1 of 2)

SHT	REV	A	WINDSHIELD VERSION	A.4
2.2L				

SERVICE ITEM	NOTES:
OIL FILL CAP	1. MINIMUM RECOMMENDED CONCRETE PAD SIZE: 194 (4'7") WIDE X 226 (6'9") LONG. REFERENCE INSTALLATION GUIDE SUPPLIED WITH UNIT.
OIL FILTER	
OIL DRAIN HOSE	2. FOR CONCRETE PAD GUIDELINES, SIDES OF THE GENERATOR FOR MAINTENANCE AND SERVICING, THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH CURRENT APPLICABLE NFPA 37 AND NFPA 70 STANDARDS AS WELL AS ANY OTHER FEDERAL, STATE, OR LOCAL REQUIREMENTS.
COOLANT RECOVERY BOTTLE	3. CONTROL PANEL / CIRCUIT BREAKER INFORMATION: - SEE SPECIFICATION SHEET OR OWNERS MANUAL FOR ADDITIONAL INFORMATION THROUGH CUSTOMER ACCESS ASSEMBLY DOOR ON REAR OF GENERATOR.
RADIATOR FILL CAP ACCESS	4. REMOVE THE REAR TANK AND REAR ENCLOSURE COVER PANEL TO ACCESS THE REAR TANK AND BATTERY CHARGER. REFER TO THE OWNERS MANUAL FOR THE REMOVAL AND REINSTALLATION PROCEDURES.
AIR CLEANER ELEMENT	5. CENTER OF GRAVITY AND WEIGHT MAY CHANGE DUE TO UNIT OPTIONS.
FAN BELT	6. ENGINE SERVICE CONNECTIONS. - SEE SPECIFICATION SHEET OR OWNERS MANUAL FOR ADDITIONAL INFORMATION THROUGH CUSTOMER ACCESS ASSEMBLY DOOR ON REAR OF GENERATOR.
BATTERY	7. BOTTOM OF GENERATOR SET MUST BE ENCLOSED TO PREVENT PEST INTRUSION AND AIR DUCTS MUST BE INSTALLED TO PROVIDE FOR COOLING AIR FLOW.

REFERENCE OWNERS MANUAL FOR PENDING REPLACEMENT PART LISTINGS

RIGHT SIDE	LEFT SIDE
WEIGHT DATA WITH EMPTY BASKETANK (SEE NOTE 5)	WEIGHT DATA WITH FULL BASKETANK (SEE NOTE 5)
GENERATOR (N/A) 176 (1726)	GENERATOR (N/A) 176 (1726)
WITH WOODEN SHIPPING SKID 192 (1826)	WITH WOODEN SHIPPING SKID 192 (1826)
WEIGHT (KGS) (LBS)	WEIGHT (KGS) (LBS)
DIMENSIONS (MM) (INCH)	DIMENSIONS (MM) (INCH)

NOTES:

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- CONTROL PANEL / CIRCUIT BREAKER INFORMATION:
- SEE SPECIFICATION SHEET OR OWNERS MANUAL FOR ADDITIONAL INFORMATION THROUGH CUSTOMER ACCESS ASSEMBLY DOOR ON REAR OF GENERATOR.
- REMOVE THE REAR TANK AND REAR ENCLOSURE COVER PANEL TO ACCESS THE REAR TANK AND BATTERY CHARGER. REFER TO THE OWNERS MANUAL FOR THE REMOVAL AND REINSTALLATION PROCEDURES.
- CENTER OF GRAVITY AND WEIGHT MAY CHANGE DUE TO UNIT OPTIONS.
- ENGINE SERVICE CONNECTIONS.
- SEE SPECIFICATION SHEET OR OWNERS MANUAL FOR ADDITIONAL INFORMATION THROUGH CUSTOMER ACCESS ASSEMBLY DOOR ON REAR OF GENERATOR.
- BOTTOM OF GENERATOR SET MUST BE ENCLOSED TO PREVENT PEST INTRUSION AND AIR DUCTS MUST BE INSTALLED TO PROVIDE FOR COOLING AIR FLOW.
- REFER TO THE OWNERS MANUAL FOR LIFTING WARNINGS.
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- MOUNTING BOLTS OR STUDS TO CONCRETE PAD SHALL BE 5/8-11 GRADE 5 (USE STANDARD SAE TONGUE SPECS)

TOP VIEW

173 (6.8) EXHAUST OUTLET

146 (5.8) EXHAUST OUTLET

674 (26.4) CENTER OF GRAVITY

687 (26.9) DOOR WIDTH TYP

LEFT SIDE VIEW

1463 (57.2) OVERALL HEIGHT

688 (26.9) OVERALL WIDTH

RIGHT SIDE VIEW

324 (12.7) TYP

182 (7.2) TYP

1292 (50.9) TYP

1954 (76.9) OVERALL LENGTH RIGHT SIDE VIEW

LIFTING PROVISIONS (4 PLACES) SEE NOTES 8 AND CENTER OF GRAVITY DIMENSIONS

REAR VIEW

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1463 (57.2) OVERALL HEIGHT

688 (26.9) OVERALL WIDTH

1954 (76.9) OVERALL LENGTH RIGHT SIDE VIEW

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INSTALLATION DRAWING

ISSUE DATE: 07/2017

CAGE NO: N/A

SCALE: 0.050

WT-KG: SEE ABOVE

SHEET: 1 of 2

DRAWING CREATED FROM PROENGINEER 3D FILE. ECO MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

ISSUE DATE: 07/2017

CAGE NO: N/A

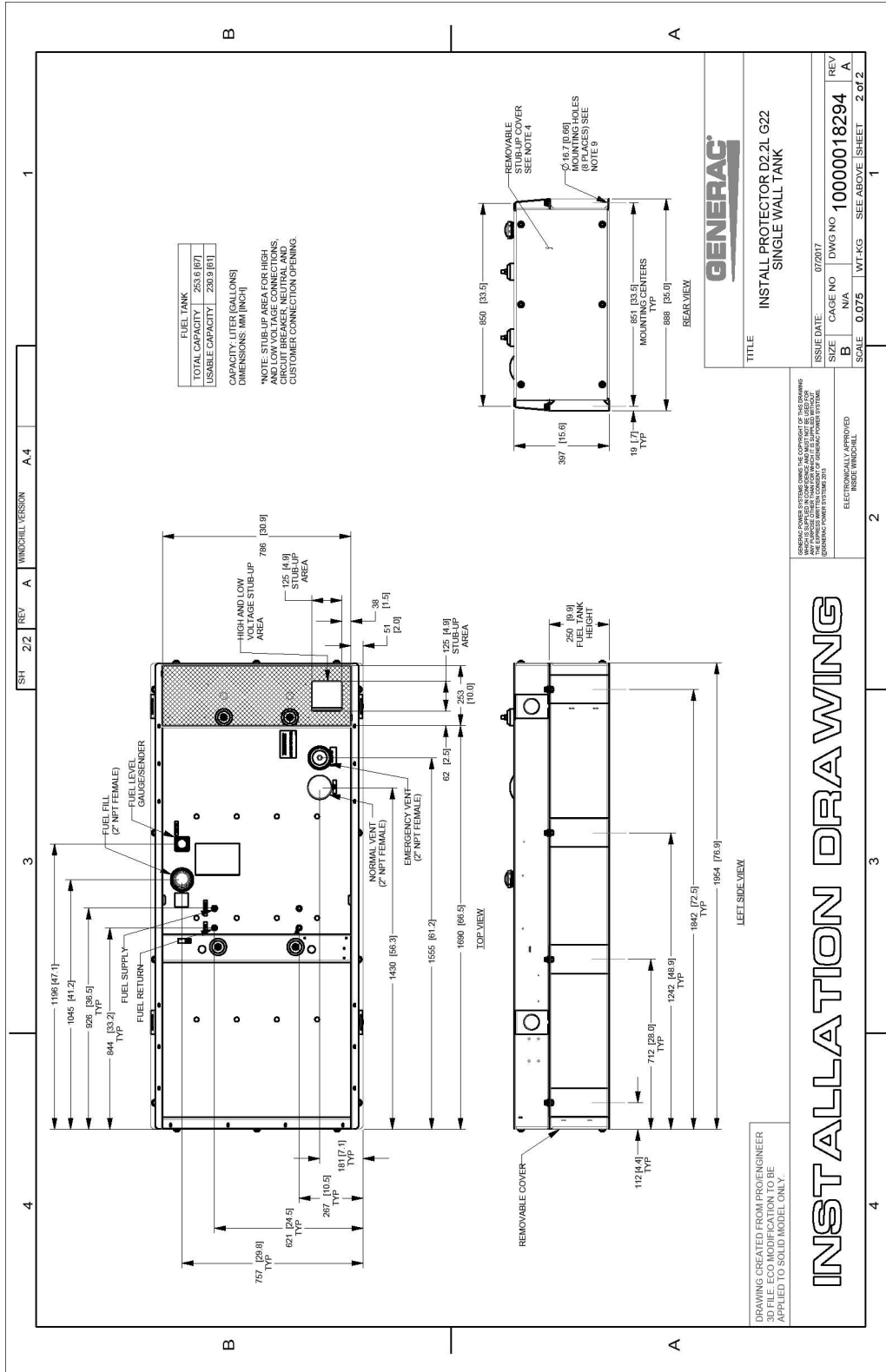
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WT-KG: SEE ABOVE

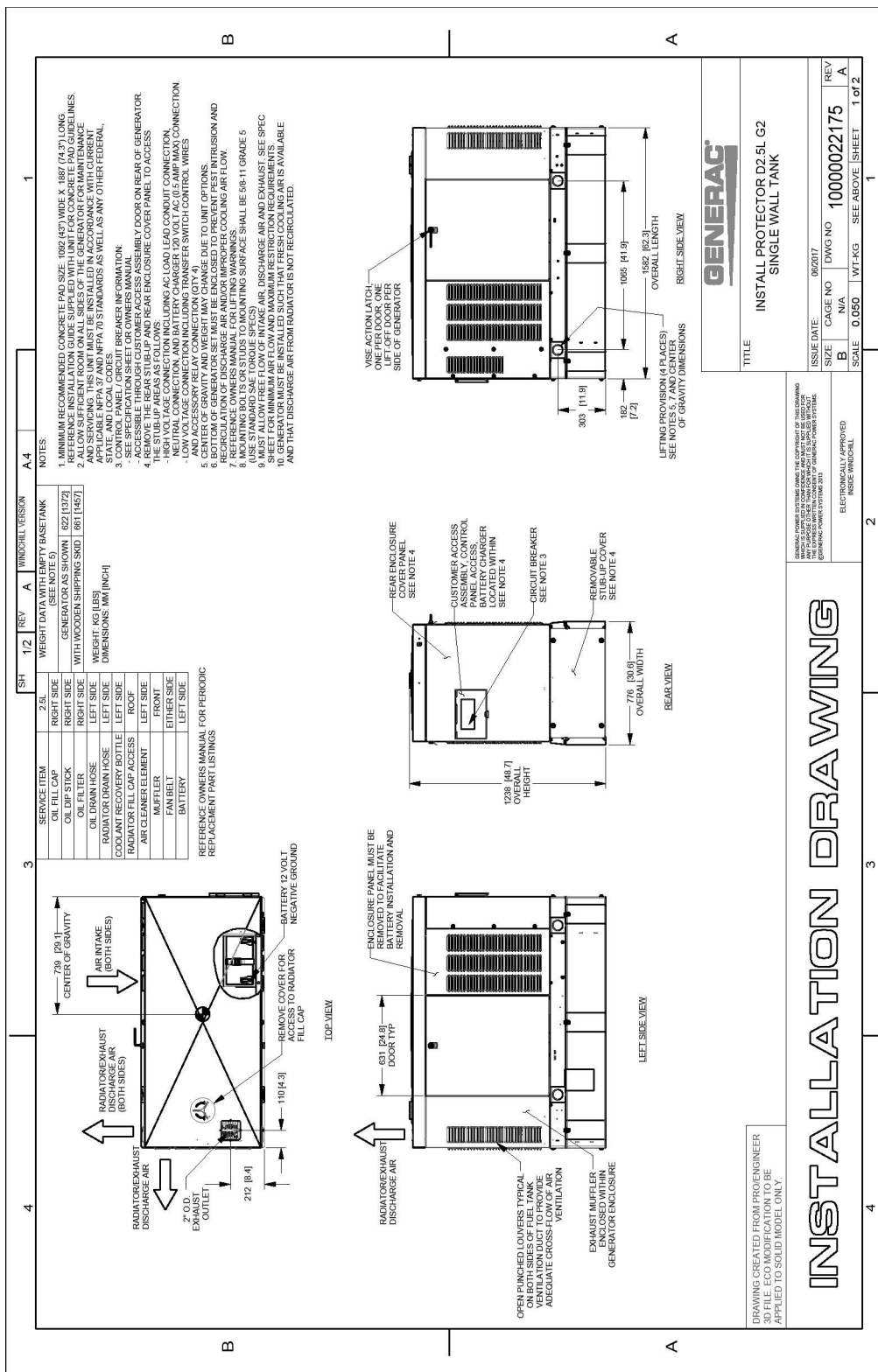
SHEET: 1 of 2

12 • 16 • 30 • 50 kVA

D2.2L G22 Single Wall (2 of 2)



D2.5L G22 Single Wall (1 of 2)



12 • 16 • 30 • 50 kVA

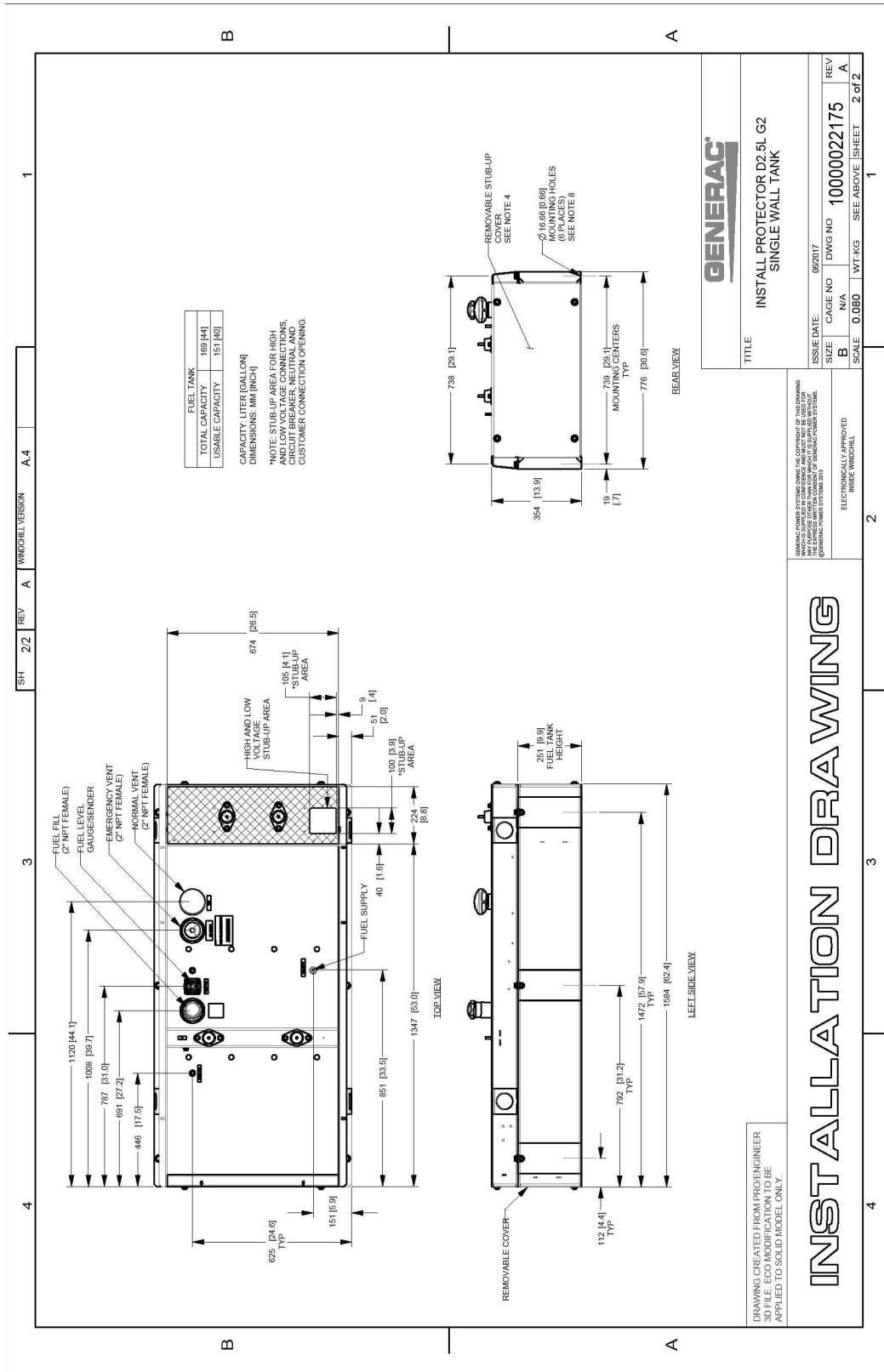
D2.5L G22 Single Wall (2 of 2)

GENERAC

operating data

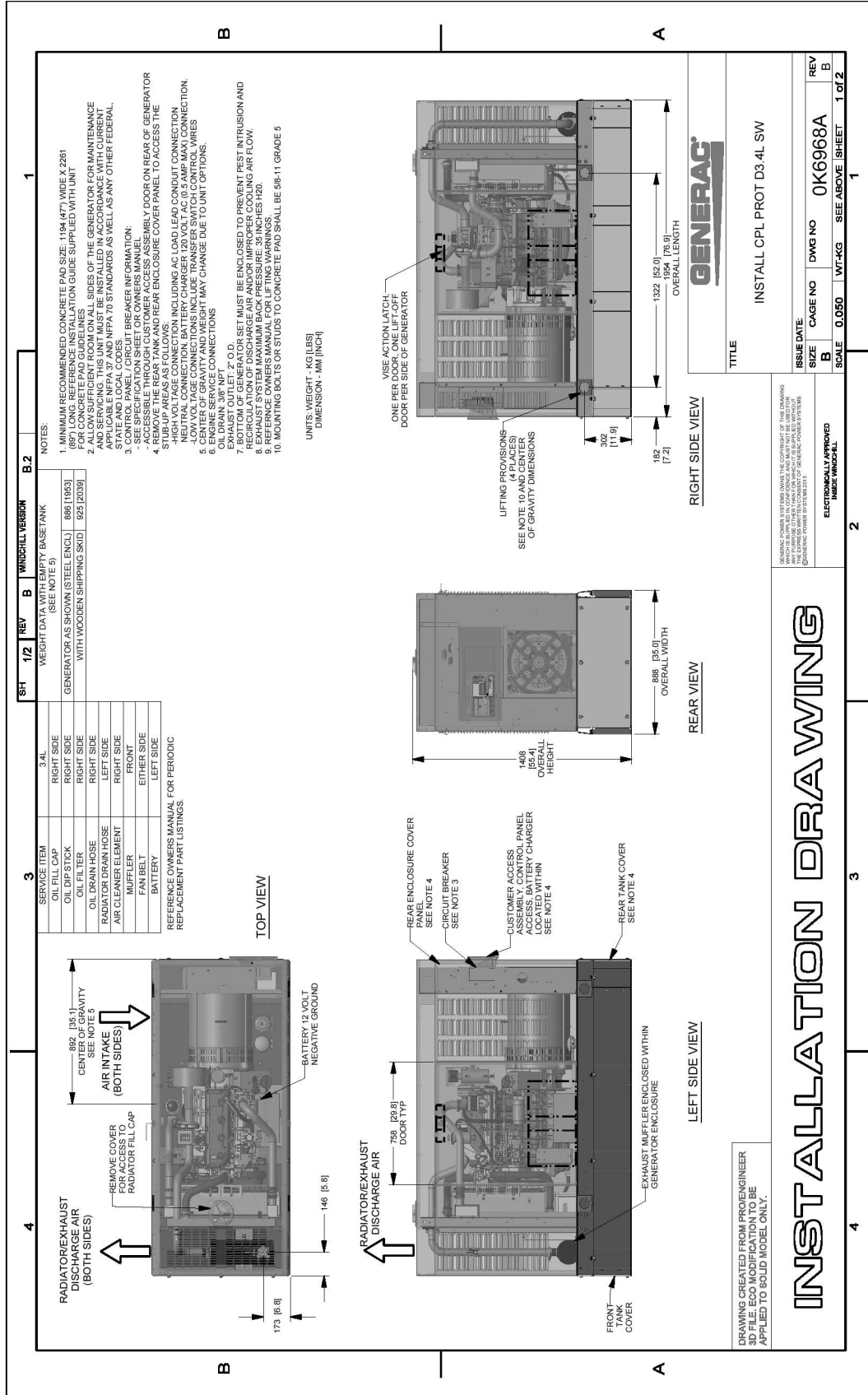
Protector™

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12 • 16 • 30 • 50 kVA

D3.4L Single Wall (1 of 2)



SH	1/2	REV	B	WHICHILL VERSION	B.2	1
WEIGHT DATA WITH EMPTY BASE/TANK (SEE NOTE 5)						
GENERATOR AS SHOWN (STEEL ENCL) 898 [1953]						
WITH WOODEN SHIPPING SKID 925 [2039]						

SERVICE ITEM	3.4L
OIL FILL CAP	RIGHT SIDE
OIL DIP STICK	RIGHT SIDE
OIL FILTER	RIGHT SIDE
OIL DRAIN HOSE	RIGHT SIDE
RADIATOR DRAIN HOSE	LEFT SIDE
AIR CLEANER ELEMENT	RIGHT SIDE
MUFFLER	FRONT
FAN BELT	EITHER SIDE
BATTERY	LEFT SIDE

REFERENCE OWNERS MANUAL FOR PERIODIC REPLACEMENT PART LISTINGS

ISSUE DATE:	SIZE:	CAGE NO:	DWG NO:	WT-KG:	SEE ABOVE:	ISHEET:	REV:
B	B	0.050	0K6968A			1	B

TITLE: INSTALL CPL PROT D3.4L SW

1

2

3

4

12 • 16 • 30 • 50 kVA

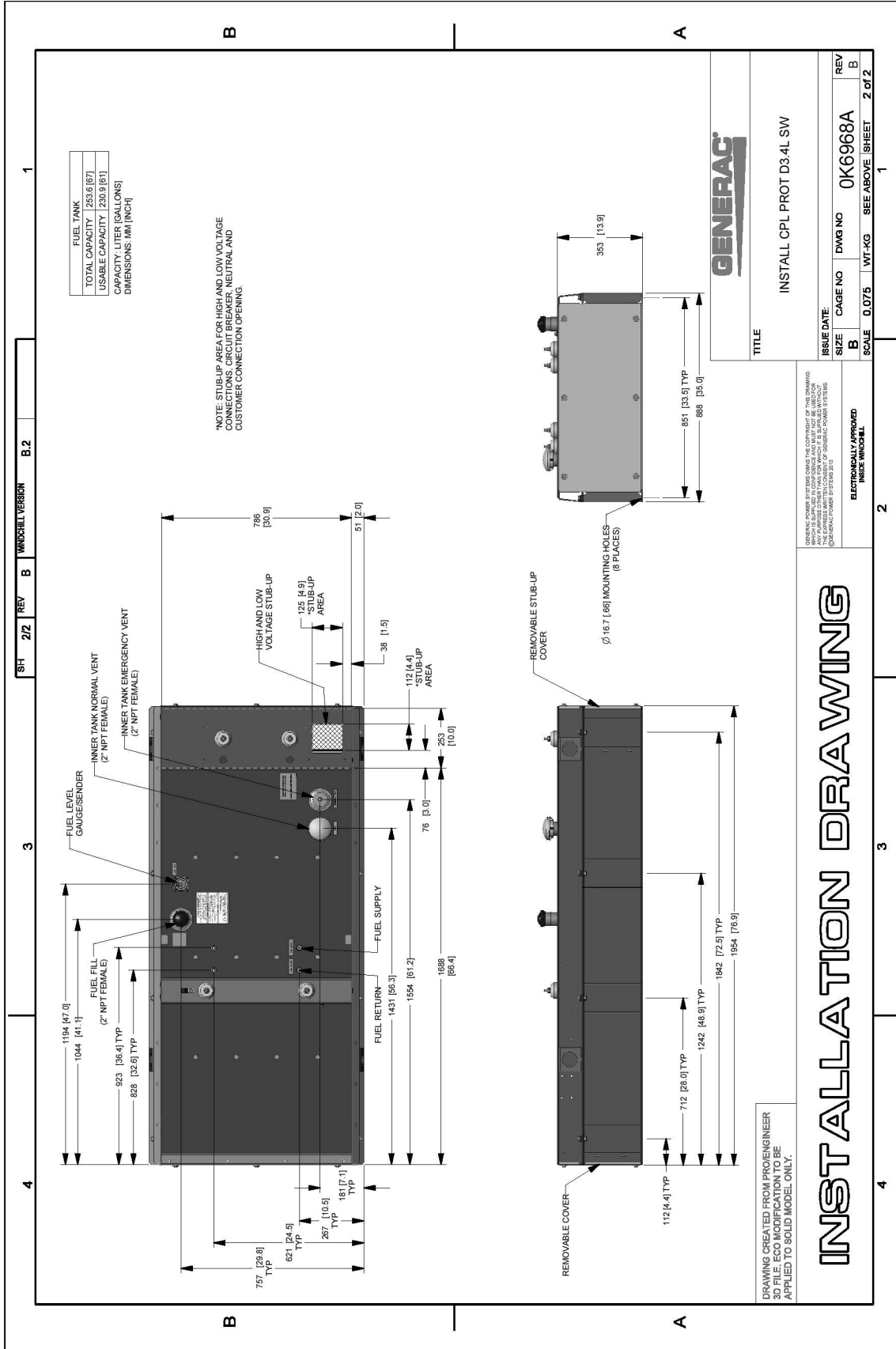
GENERAC[®]

operating data

D3.4L Single Wall (2 of 2)

Protector[™]

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12 • 16 • 30 • 50 kVA

GENERAC

available accessories

Model #	Product	Description
G006504-0	90% Fuel Level Alarm	The 90% fuel level alarm alerts the fuel fill operator when the tank reaches a 90% fill level by sounding an audible alarm and triggering an LED warning light.
G006505-0—12 & 16 kVA G006506-0—30 & 50 kVA	Tank Risers	Tank risers are required in some municipalities to help avoid potential base tank corrosion caused by mounting on rough surfaces.
G006507-0	Fuel Fill Drop Tube	A powder coat painted, steel fuel fill drop tube is required in some municipalities to prevent sparking due to static electricity buildup, which can be caused by the fuel dropping into the tank from the fill area. Using a drop tube also results in submerged filling, which increases the fuel delivery flow rate and reduces vapors, foam and potential tank evaporation.
G007660-0—12 & 16 kVA G007661-0—30 kVA G006516-0—50 kVA	Stainless Steel Fuel Lines	Some municipalities require the use of stainless steel fuel lines instead of the standard hoses provided with the diesel generator products. These stainless steel lines are fire resistant for additional safety.
G006510-0	E-Stop	E-stop allows for immediate fuel shutoff and generator shutdown in the event of an emergency.
G006512-0	Lockable Fuel Cap	The cast iron, lockable fuel cap provides the ability to lock the fuel system to prevent unwanted fuel tampering or fuel siphoning.
G007640-0—12 & 16 kVA G007641-0—30 kVA G006570-0—50 kVA	Maintenance Kits	The Protector Maintenance Kits offer all the hardware necessary to perform complete maintenance on Generac Protector generators.
G007653-0—12 & 16 kVA G007654-0—30 kVA G006558-0—50 kVA	Cold Weather Kits	Recommended for generators installed in regions where the temperature regularly falls below 32 °F (0 °C). The Cold Weather Kits consist of a block heater with all necessary mounting hardware and a battery warmer with a thermostat built into the battery wrap.
G005703-0	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.