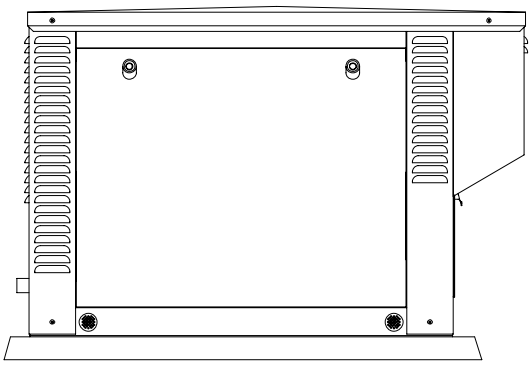
SENTRY-PRO POWER SYSTEMS

By Gillette Generators, Inc.

MODEL

SPV-80

AIR COOLED LPG/NG, RESIDENTIAL STANDBY GEN-SET



KW POWER RATINGS RANGE

Model SERIES		MAXIMUM 150ºC RISE		STANDBY 125ºC RISE		PRIME 105ºC RISE	
	HZ	LPG	N.G.	LPG	N.G.	LPG	N.G.
SPV-80	60	8.0	7.0	7.5	6.5	6.0	5.0
	50	6.5	5.5	6.0	5.0	5.0	4.0

STANDARD FEATURES

- All generator sets are USA prototype built and thoroughly tested. Production models are USA factory built and 100% load tested.
- All generator sets will accept 100% rated load in one step, per NFPA-110.
- All generators are UL-1446 certified.
- Capacitor load compensated (CLC) voltage regulation for ±5% is standard on all gen-sets.
- Mechanical engine governor incorporates a special actuator, which allows precise 5% frequency regulation, from no load to full load.
- A brushless rotating field generator design with shunt wound excitation system and available at a broad range of voltages.
- Solid state, digital microprocessor logic and ultra-bright LED, annunciation display for different engine and generator functions, plus automatic fault shutdowns; high temp., over-crank, over-speed, under-speed, low oil, and low battery.
- The heavy duty, rugged dry fueled engine is capable of delivering rated power at 3600 RPM (60 HZ) or 3000 RPM (50 HZ).
- All generator set control systems components and accessories provide a 2-year limited warranty at time of initial start-up. Optional extended warranties are available. Generators and engines are governed by separate warranties.
- "OPEN" Generator Sets: There is no enclosure, so gen-set must be placed within a weather protected area, un-inhabited by humans or animals, with proper ventilation. Flexible exhaust hose is supplied loose for final exhaust pipe installation system, furnished by installer.
- "STANDARD" Housing: Full weather protection and average sound attenuation for normal applications.
- "SUPER-SILENT" Housing: Full weather protection and superior sound attenuation for specific low noise applications. (See "Sound Level" chart).

GENERATOR RATINGS

GENERATOR MODEL	VOLTAGE		PH	HZ	LIQUID PROPANE GAS FUEL						NATURAL GAS FUEL					
					150°C RISE MAXIMUM RATING		125°C RISE STANDBY RATING		105°C RISE PRIME RATING		150°C RISE MAXIMUM RATING		125°C RISE STANDBY RATING		105°C RISE PRIME RATING	
	L-N	L-L			KW/KVA	AMP	KW/KVA	AMP	KW/KVA	AMP	KW/KVA	AMP	KW/KVA	AMP	KW/KVA	AMP
SPV-80-1-1	120	240	1	60	8/8	33	7.5/7.5	31	6/6	25	7/7	29	6.5/6.5	27	5/5	21
SPV-80-3-2	120	208	3	60	8/10	28	7.5/9.4	26	6/7.5	21	7/8.8	24	6.5/8	23	5/6	17
SPV-80-3-3	120	240	3	60	8/10	24	7.5/9.4	23	6/7.5	28	7/8.8	21	6.5/8	20	5/6	15
SPV-80-3-4	277	480	3	60	8/10	12	7.5/9.4	11	6/7.5	9	7/8.8	11	6.5/8	10	5/6	8
SPV-80-3-5	127	220	3	60	8/10	26	7.5/9.4	25	6/7.5	20	7/8.8	23	6.5/8	21	5/6	16
SPV-80-1-1-5	110	220	1	50	6.5/6.5	30	6/6	27	5/5	23	5.5/5.5	25	5/5	23	4/4	18
SPV-80-3-2-5	110	220	3	50	6.5/8	21	6/7.5	20	5/6	16	5.5/6.8	18	5/6	16	4/5	13
SPV-80-3-3-5	219	380	3	50	6.5/8	12	6/7.5	11	5/6	9	5.5/6.8	10	5/6	9	4/5	7
SPV-80-3-4-5	240	415	3	50	6.5/8	11	6/7.5	10	5/6	8	5.5/6.8	9	5/6	8	4/5	6
SPV-80-3-5-5	231	400	3	50	6.5/8	12	6/7.5	11	5/6	9	5.5/6.8	10	5/6	9	4/5	7

RATINGS: All single phase gen-sets are rated at unity (1.0) power factor. All three phase gen-sets are rated at .8 power factor. "MAXIMUM RATINGS" are for short period running, not exceeding 1 hour. "STANDBY RATINGS" are strictly for gen-sets that are used for back-up emergency power to a failed normal utility power source. This standby rating allows varying loads, with no overload capability, for the entire duration of utility power outage. "PRIME RATINGS" are strictly for gen-sets that provide the prime source of electric power, where normal utility power is unavailable or unreliable. A 10% overload is allowed for a total of 1 hour, within every 12 hours of operation. All gen-set power ratings are based on temperature rise measured by resistance method as defined by MIL-STD 705C and IEEE STD 115, METHOD 6.4.4. All generators have class H (180°C) insulation system on both rotor and stator windings. All factory tests and KW/KVA charts shown above are based on 150°C (maximum), 125°C (standby), and 105°C (prime) R/R winding temperature, within a maximum 35°C ambient condition. Generators operated at maximum power ratings will not exceed the temperature rise limitation for class H insulation system, as specified in NEMA MG1-22.40. Specifications & ratings are subject to change without prior notice.

APPLICATION AND ENGINEERING DATA FOR MODEL SPV-80

GENERATOR SPECIFICATIONS

Type ..... 2 Pole, 3600 RPM, revolving field design
Exciter ..... Brushless, shunt excited
Voltage Regulator ..... Capacitor load compensated (CLC)
Voltage Regulation ..... ±5%, No load to full load
Frequency ..... 60 HZ (50 HZ available)
Frequency Regulation ..... 5% (3 cycles, no load to full load)
Unbalanced Load Capability ..... 100% of nameplate rating
Motor Starting 1½ HP, Code G w/ 35% Dip on specific voltages
Total Stator and Rotor Insulation ..... Class H, 180°C
Temperature Rise ..... 150°C R/R, maximum rating @ 35°C amb.
..... 125°C R/R, standby rating @ 35°C amb.
..... 105°C R/R, prime rating @ 35°C amb.
Bearing ..... 1, Pre-lubed and sealed
Power Leads ..... 4 Leads for dedicated single phase
..... Optional 3 Leads for dedicated three phase
Coupling ..... Direct taper shaft
Total Harmonic Distortion ..... Max 6½% (MIL-STD705B)
Telephone Interference Factor ..... Max 250 (NEMA MG1-22)
Deviation Factor ..... Max 5% (MIL-STD 405B)
Alternator ..... Self ventilating and drip-proof
Ltd. Standby Warranty ..... 24 Months or 1000 hrs., first to occur
Ltd. Prime Warranty ..... 12 Months or 500 hrs., first to occur

GENERATOR FEATURES

- Full alternator protection with solid state microprocessor, based controller, for automatic shutdown protection.
- Automatic voltage regulation by capacitor load compensation (CLC) design, yielding ±5% from no load to full load.
- Alternator power ratings are based on temperature rise, measured by resistance method, as defined in MIL-STD 705C and IEEE STD 115, Method 6.4.4.
- Power ratings will not exceed temperature rise limitation for class H insulation as per NEMA MG1-22.40.
- Insulation resistance to ground, exceeds 1.5 meg-ohm.
- Stator receives 3000 V. hi-potential test on main windings, and rotor windings receive a 3000 V. hi-potential test, as per MIL-STD 705B.
- All windings are subjected to "surge" testing to confirm winding integrity and consistency with dielectric voltage withstand test per UL2200.39.
- Full copper windings with UL-1446 listing on all alternators.
- All gen-sets are prototyped and production tested.
- Full load testing on all engine-alternator sets, before shipping.
- Harmful harmonic distortions over 10% in generator power will harm digital loads. Our distortions are only 6%.

ENGINE SPECIFICATIONS AND APPLICATIONS DATA

ENGINE

Manufacturer ..... Vanduard Motors
Model and Type ..... 303447, 4 cycle
Aspiration ..... Naturally
Cylinder Arrangement ..... V-Twin, 2 cylinder
Displacement Cu. In. (cm^3) 29.3 (480)
Bore x Stroke In. (mm.) ..... 2.62 x 2.6 (68 x 66)
Compression Ratio 8:1
Main Bearings & Style ..... Ball
Cylinder Head ..... Aluminum
Crankshaft ..... Forged Steel
Exhaust Valve ..... Hardened for dry fuel use
Governor ..... Mechanical
Frequency Reg. (steady state) ..... ±5%
Air Cleaner ..... (1) Replaceable main Paper element
..... (1) Replaceable secondary dry-type foam element
Oil Filter ..... (1), Replaceable spin-on
Ltd. Standby Warranty ..... 24 Months or 1000 hrs., first to occur
Ltd. Prime Warranty ..... 12 months or 500 hrs., first to occur

Speed	60 HZ	50 HZ
Rated RPM	3600	3000
Max Power, bhp Standby / LPG	14.5	11.5
Max Power, bhp Prime / LPG	13.0	10.0
Max Power, bhp Standby / Nat. Gas	12.5	9.5
Max Power, bhp Prime / Nat. Gas	11.0	8.5

FUEL SYSTEM

Type ..... LPG or NAT. GAS, vapor withdrawal
Fuel Pressure (kpa), in. H_2O .... (1.74-2.74), 7"-15" water column
Secondary Fuel Regulator ..... LPG or NG vapor system
Auto Fuel Lock-Off Solenoid ..... (2) Solenoids on each set
..... For back-up safety shut-down

FUEL CONSUMPTION

	LP GAS: FT^3/HR (M^3/HR)	60 HZ	50 HZ
STDBY	100% LOAD	45 (1.28)	37 (1.0)
	75% LOAD	33 (.96)	26 (.74)
	50% LOAD	21 (.59)	17 (.48)
PRIME	100% LOAD	41 (1.11)	33 (.96)
	75% LOAD	29 (.80)	23 (.66)
	50% LOAD	18 (.52)	14 (.40)
LPG = 2500 BTU X FT^3/HR = Total BTU/HR			

	NAT. GAS: FT^3/HR (M^3/HR)	60 HZ	50 HZ
STDBY	100% LOAD	101 (2.88)	81 (2.32)
	75% LOAD	70 (2.0)	56 (1.60)
	50% LOAD	46 (1.30)	37 (1.0)
PRIME	100% LOAD	90 (2.60)	73 (2.0)
	75% LOAD	63 (1.76)	50 (1.44)
	50% LOAD	41 (1.11)	33 (.96)
NG = 1000 BTU X FT^3/HR= Total BTU/HR			

LPG CONVERSION: 8.50 FT^3 = 1 LB. ; 36.4 FT^3 = 1 GAL.

OIL SYSTEM

Type ..... Full Pressure
Oil Pan Capacity qt. (L) 1.6 (1.5)
Oil Pan Capacity W/ filter & oil cooler qt. (L) 2.0 (1.89)

ELECTRICAL SYSTEM

Ignition System ..... Electronic
Eng. Alternator:
Ground ..... Negative
Volts DC 12
Max. Amp Output 10
Recommended Battery: . 12 VDC, 55 Amp/Hr, Size BCI# 21R or 26R (8½"lg X 7"wi X 8¾"hi), type "T", "L", or "X" terminals.
Minimum Cold-Cranking amps at 0°F (-17.8°C) : ..... 500 CCA
Eng. Starter Motor ..... 12 VDC

COOLING SYSTEM

Air cooled by generator and engine suction fans. A maximum 33 CFM cooling intake air is needed for proper engine cooling.

EXHAUST SYSTEM

Residential type muffler with 47 CFM exhaust flow and an exhaust back pressure at 3600 RPM full load, of 44" water column.

ENGINE CLASS AND EMISSION LIMITS

If an engine is not handheld (trimmer, blower, etc.) and is greater than or equal to 225cc displacement, it is a Class II engine. Following are maximum emission levels for CARB & EPA Class II engines.

CALIFORNIA TIER 1 (GRAMS / HP-HOUR)

CLASS	DISPLACEMENT	$HC+NO_X$	CO
II	16 HP = 570 CC	10	350

USA EPA PHASE 1 (GRAMS / KILOWATT HOUR)

CLASS	DISPLACEMENT	$HC+NO_X$	CO
II	16 HP = 570 CC	13.4	519

1 HORSEPOWER = .746 KW 1 KW = 1.341 HORSEPOWER

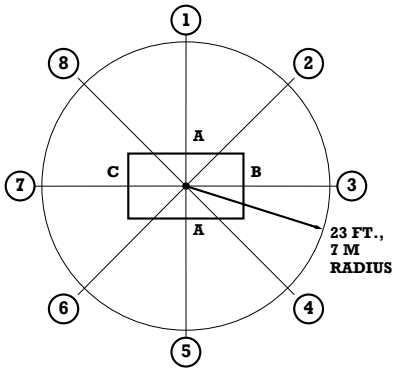
DERATING FACTORS

Engine horse power ratings meet SAE J1349 test codes. Reduce 3.5% for each 100 feet, over 328 feet above seal level and 1% for every 10°F (5.65°C) rise, above 77°F (25°C). Generator specifications are in accordance with ASA, NEMA, and IEEE standards.

ACOUSTIC DATA

A= Access Doors,
B= Engine End cool air
C= Generator End hot air & exhaust exit

Note: All tests are full load operation in standard weather with Open (no enclosure), Standard Enclosure, or Super-Silent Enclosure.



Model SPV-80 O-Open (no enclosure)

Position	1	2	3	4	5	6	7	8
dB(A)	70	69	71	69	70	72	74	72

Model SPV-80 E-Standard Enclosure

Position	1	2	3	4	5	6	7	8
dB(A)	66	66	68	65	66	69	70	69

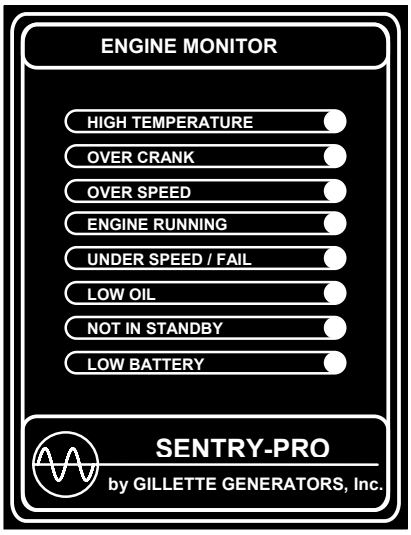
Model SPV-80 S-Super-Silent Enclosure

Position	1	2	3	4	5	6	7	8
dB(A)	63	63	64	63	63	65	67	66

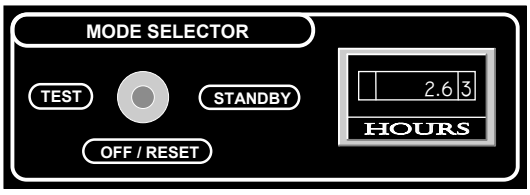
STANDARD ENCLOSURE FEATURES

- Rust-free "Galvaneel" steel housing.
- Baked-on power coat paint, having UV protection and 1000 hr. salt spray deterioration test per UL standards.
- Interior sound damping preventing metal "ringing".
- Interior sound absorbing foam throughout enclosure.
- Full service access doors on both sides of enclosure.
- Hot muffler is concealed inside enclosure.
- Full steel base for firm-rigid mounting.
- Polymer mounting pad is furnished for easier and faster installations.

ENGINE MONITOR & OPERATION MODE FOR RESIDENTIAL STANDBY GENERATOR SETS



These sets use standard (2) wire start interfacing fully compatible with any dry contact start-stop system that might be installed on ATS, remote start-stop control panels, Trace inverters for controlling solar power battery arrays, etc. The start-stop signal on such equipment is utilized by the gen-set to initialize a (4) second countdown before the gen-set actually begins its first crank cycle, to avoid start-ups due to momentary power outages.



These standby gen-sets are "stand-alone" units which can work with any type ATS system or any other type sensing device, using (2) wire start-stop interfacing.

Standard features of SPV series standby sets are:

Solid State Digital Microprocessor providing automatic engine start-stop; auto shutdown for low oil, high temperature, over speed, under speed, engine fail, engine crank failure (after 3 failed crank attempts); battery charge fail; a "not in standby mode" warning indicator and a built-in (4) second engine start delay and (2) minute engine cool down delay. Timer cycles can be disabled in the field if application requirements so dictate. The "Mode Selector" switch serves (3) functions: A "Test" position (causing the gen-set to start and run indefinitely, without ATS switching the load); a "Standby" position (the system is ready to start automatically, whenever utility power fails); and an "Off/Reset" position (the engine can not start under any condition, so this is the service position and reset position when any fault is corrected). The "Engine Monitor" has (8) highly visible LED annunciators for all conditions. When mode switch is placed in "Standby" all (8) LED's will flash (3) times serving as a lamp test. The panel also includes a mainline circuit breaker and run time meter.

STANDARD AND OPTIONAL FEATURES FOR MODEL SPV-80

CONTROL PANEL:

SPV Series, automatic start-stop engine controller, utilizing solid state digital microprocessor with (8) ultra-bright LED annunciators. Panel also has main line circuit breaker, run time meter, and mode selector switch with "Test", "Standby", or "Off/Reset" positions.

ENGINE:

Full flow air cleaner and oil filter • full pressure oil system with separate oil cooler • spin-on oil filter • residential muffler • 12 VDC battery charging alternator • vibration isolators • secondary dry fuel regulator with (2) dry fuel lock-off solenoids • overhead valve Vangaurd engine

GENERATOR:

AC generator with capacitor regulation system • single bearing • brushless design • class H, 180°C insulation system • self ventilated, drip proof construction

ELECTRICAL:

Battery tray • battery cables • battery hold down straps • and 3-stage, float type 2 amp automatic battery charger

SUPPORT:

Operation, maintenance, and installation instructions
Call 1-800-777-9639 or Fax 1-574-262-1840
E-mail : sales@gillettegenerators.com
Web : www.gillettegenerators.com

OPTIONAL FEATURES & ACCESSORIES

- ☐ Remote annunciator
- ☐ 3 Phase winding
- ☐ 3 Phase ATS system
- ☐ 1 Phase ATS system
- ☐ Open (no enclosure) for special applications
- ☐ Super-Silent housing w/ special sound deadening foam
- ☐ "Resonator" muffler adding to existing residential muffler, to reduce high pitch exhaust tones
- ☐ Crankcase oil heater for faster cold weather starts
- ☐ All aluminum weather housing

DIMENSIONAL OVERVIEW PRINT FOR MODEL SPV-80

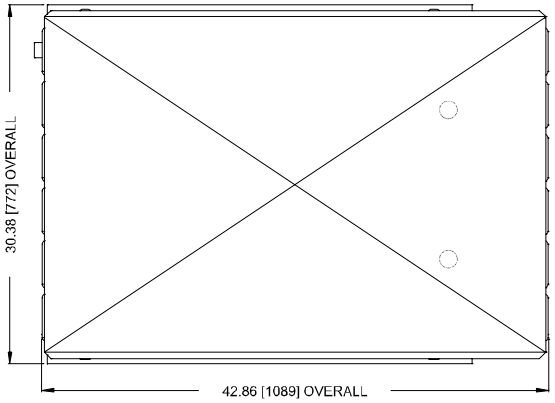
DRAWING NOT TO SCALE & DIMENSIONS = IN [MM]

LIFTING HOLES:
HAVE VENTED PLASTIC HOLE PLUGS INSTALLED, AFTER REMOVING PLUGS FOR LIFT RODS, REMEMBER TO REINSTALL PLUGS.

DRY FUEL CONNECTION:
LPG OR NAT. GAS CONNECTION IS LOCATED ON THE ENGINE END PANEL AS SHOWN. THERE IS A 3/4" THREADED PIPE WITH COUPLER FOR CONNECTION.

ELECTRICAL CONNECTION:
THERE ARE TWO KNOCK-OUT HOLES ON THE RIGHT HAND SIDE OF GENERATOR END. BOTH HOLES ARE FOR 3/4" CONDUIT. ALSO, THERE ARE TWO HOLES IN FRAME INSIDE CONNECTION BOX, WHICH CAN BE USED FOR STUB-UP WIRING.

TOP VIEW



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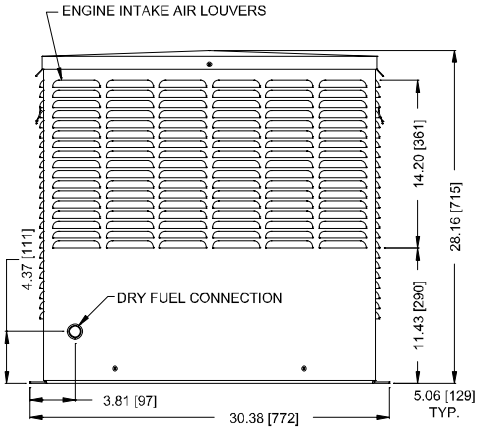
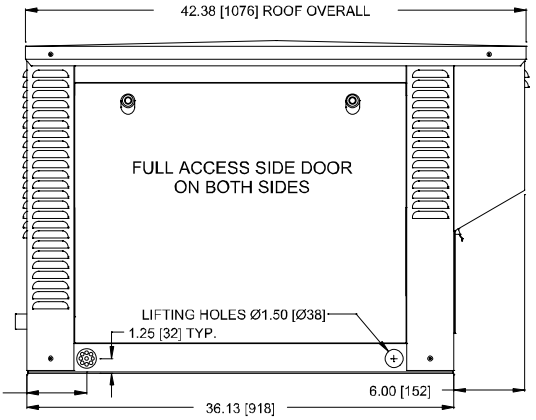
INSPECTION PANEL:
THIS PANEL IS HERE TO HELP WITH INITIAL INSTALLATION AND QUICK ACCESS TO GENERATOR END FOR REPAIR INSPECITON. DO NOT REMOVE PANEL WHILE UNIT IS HOT OR RUNNING.

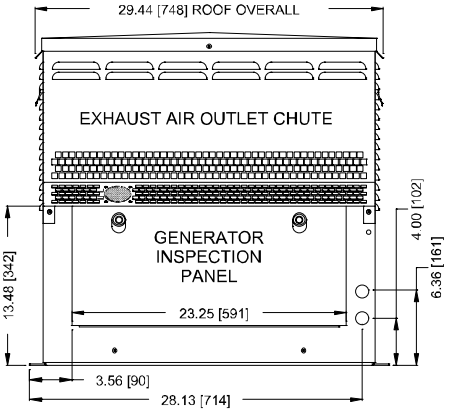
EXHAUST CHUTE:
LOCATED IN THIS CHUTE, IS THE EXHAUST PIPE OF MUFFLER PLEASE KEEP CLEAR WHILE UNIT IS RUNNING OR HOT. DO NOT INSTALL UNIT WHERE THE EXHAUST MAY COME INTO CONTACT WITH FLAMMABLE OBJECTS.



ENGINE END VIEW



SIDE VIEW



GENERATOR END VIEW

DIMENSIONS AND WEIGHTS

	Open Set	Standard Enclosure	Super-Silent Enclosure
Length in (cm)	36 (91)	43 (109)	43 (109)
Width in (cm)	31 (79)	31 (79)	31 (79)
Height in (cm)	24 (61)	28 (71)	28 (71)
Net Weight lbs (kg)	265 (120)	380 (172)	405 (184)
Ship Weight lbs (kg)	315 (143)	430 (195)	450 (204)

DISTRIBUTED BY: