SMART POWER HYDRAULIC GENERATOR

One (1) Smart Power Systems®, Model XR-4.5 Direct Connect®, 4500-watt hydraulic generator shall be provided. The generator is designed specifically for mounting on top of the vehicle, at the specified location. If required, the generator can be easily separated into its three major components (tray assembly, cooler/fan assembly, and reservoir) for customized mounting locations.

The installation of the generator shall be designed for continuous operation without overheating and undue stress on components. The generator tray assembly shall be delivered with the cooler/fan assembly mounted such that 100% of the hot air is exhausted vertically. No exceptions.

The generator system shall be provided with a digital meter display in compliance with NFPA 1900. The CCC (Command and Control Center) meter panel display shall be an interactive operator control center, equipped with Smart Touch® solid state buttons, with displays for voltage, frequency, amperage, total running hours, service reminders, operator warnings, system faults and diagnostics.

The generator and the Command Control Center both shall be 100% American made in the same manufacturing facility. No exceptions.

Package & Features

The unit shall come equipped with a generator tray assembly (which includes the generator, hydraulic motor, cooler, fan, electronics package, 10-micron spin-on fluid filter and reservoir), an axial piston hydraulic pump with pressure compensated control, and CCC digital meter panel display with all required wiring harnesses.

The generator shall have the following features (no exceptions):

- Severe duty generator with EG43 Marine grade winding overcoat with
- IP23 protection.
- Class H winding insulation 180°C temperature rating
- Smart Start engagement to reduce mechanical stress
- Precise voltage and frequency control
- Automatic Purge feature based on hydraulic pressure
- Automatic Cold Start Protection to warm hydraulic fluid during cold weather
- Automatic Alert and Shut Down Overheat Protection
- Automatic Alert and Shut Down Low Fluid Protection

- Automatic Alert and Shut Down Over-Current Protection
- Visual Service Reminders, Prognostics & Diagnostics

The generator electrical enclosure, the oil cooler/fan module, the hydraulic fluid reservoir and other structural components shall have a Zinc protective coating and a black powder coat finish. No exceptions.

The generator tray assembly shall be delivered with the cooler/fan assembly mounted such that the hot air is exhausted vertically through the top of the assembly.

An NFPA compliant aluminum grate will be attached over top of the assembly to provide a non-slip walking surface.

The body of the generator tray assembly (including reservoir) shall be 24" long x 16.5" wide x 19.5" high, weighing approximately 280 pounds.

Digital Meter Display Gauge

The Command Control Center (CCC) digital meter display shall be in compliance with NFPA 1900. The CCC shall be an interactive operator control center, equipped with Smart Touch® solid state buttons, with super bright red LED displays for:

- Voltage (VAC)
- Frequency (Hz)
- Dual Current Display (Amps)
- System Hydraulic Pressure (PSI)
- Running Time Display (Hours)
- Service Reminders
- Operator's Warnings
- System Faults
- Prognostics & Diagnostics
- Selectable 120/240volt output

The CCC shall be permanently mounted on the face of the remote mount junction box, located in a plane facing the operator, and shall be constructed in weatherproof integral enclosure/bezel.

Remote Junction Box

An injection molded polycarbonate thermoplastic enclosure with matching weatherproof cover shall be provided. The junction box shall have enhanced UV inhibitors to protect it against outdoor weathering. The cover shall have a captive oil-resistant gasket to provide a positive seal. The junction box shall be approximately 13.5" long x 11.5" wide x 5.19" deep. Two (2) 20Amp/120Volt twist lock receptacles, one (1) 30amp/240volt twist lock receptacle and the generator digital display gauge shall be recessed mounted in the hinged cover. One (1) 15' 12volt harness for the digital display gauge and one (1) 15' 4-wire main feed harness shall be provided with the correct corresponding plugs to connect to the generator. No exceptions.

SAE J1939 Multiplexing Capability

The generator shall have the capability to interface with the apparatus multiplexing system, with all generator prognostic, diagnostic, control and display features accessed from any of the multiplexing system display screen(s) on the vehicle. It shall constantly monitor the performance and condition of the generator and provide real-time data to the vehicle's multiplexing system. The J1939 messages must originate from the generator's integrated ECU (electronic control unit) to ensure the highest performance and reliability. No Exceptions.

Prognostics and Diagnostics

The generator system shall be equipped with diagnostic capabilities which are monitored by the operator through the CCC digital display meter panel and or the vehicle's multiplexing display screen.

Some of the Diagnostics Features include:

- Overheating Warning
- System Service Reminders
- Low Fluid Warning
- No PTO Engagement Indication
- Low DC Input Voltage Alert
- Cooling Fan Problem Alerts
- Over Current Warning

All diagnostic codes that are stored on the generator ECU shall be retrievable from either the CCC and/or the multiplex system display screen (if applicable). No external device shall be required to access the ECU. No Exceptions.

Chassis Transmission Drive

The hydraulic pump shall be driven by the chassis transmission mounted power take off (PTO).

Generator Operation

The output of the generator shall be controlled by an integral, patented, solid state Electronic Control Unit. The ECU shall be connected directly to the NFPA 1900 required digital instrumentation display.

The generator shall be operable in stationary mode and/or when driving, utilizing the standard soft start system for engagement at any speed.

The generator shall be engaged by a lighted control switch or through the multiplex system in the cab.

Ratings and Capacity

Rating:	4500 watts continuous
Volts:	120/240 volts

Phase:	Single, 4 wire
Frequency:	60 Hz
Amperage:	37 amps @ 120 volts or 18 amps @ 240 Volts
Receptacles (3):	• Two (2) L5-20RW (120volt / 20Amp) • One (1) L14-30RW (240volt / 30Amp)
Engine speed at engagement:	Standard soft start feature allows for any speed engagement
Pump (28cc) speed operation range:	880 to 3120 RPM
Generator Speed:	3600 RPM

Testing

The generator shall be tested in accordance with all current NFPA 1900 standards and requirements.

All ratings and capacities shall be derived utilizing current NFPA 1900 test parameters.

Warranty

The generator system and the CCC digital meter panel shall be sole source manufactured and covered by a standard **6 year/2,000 hour** fully transferable parts and labor warranty from the manufacturer. No exceptions.