



VMAC Multifunction Power Systems – Bid Specifications

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All specifications are subject to change without notice.

MULTIFUNCTION – AIR COMPRESSOR, and WELDER/GENERATOR/BATTERY BOOSTER/CHARGER, and/or PTO/HYDRAULIC PUMP, and/or COLD CLIMATE PROTECTION - Diesel Engine Driven, Standalone, Above Deck Mounted, Multifunction Power System with Engine Standby Mode.

The Multifunction will come as a complete multi-power system with all components/functions described within. Certain components/functions may be customized to suit the application. Customizable components/functions include the Generator, which includes Boosting/Charging and Welding capabilities, the Power Takeoff Port, which may include an optional Hydraulic Pump, Cold Climate Protection, and Fuel Supply options, which include either a Fuel Tank or Fuel Pump.

Air Compressor:

Air End: The Air End will be a belt-driven, oil injected, rotary screw capable of 100% duty cycle, and providing up to 45 CFM and 175 psi of air power. A high temperature cut off sensor is integrated with the compressor unit. The compressor is equipped with a low profile integrated air inlet control and minimum pressure check valve. Air compressor output will be to ASME standards.

Air/Oil Separator Tank: The Air/Oil Separator tank will be a horizontal tank, mounted within the enclosure of the Multifunction system. Material will be of high-grade aluminum material and will include a spin-on coalescing oil separator element and a replaceable spin on 25-micron oil filter with safety bypass feature. The air discharge will pass through a minimum pressure check valve and be protected by a 200 psi pressure relief valve.

Heat Exchanger: The Heat Exchanger will be a liquid-to-liquid cooler that is integrated with the engine cooling system.

Warranty: The Compressor Air End will include a manufacturer lifetime warranty.



AC/DC Generator/Welder (Option):

The AC/DC generator/welder option will be capable of producing 8kW of continuous output and will have one 30A, 240V, 60Hz three phase circuit (w/wo receptacles), and two 20A, 120V, 60Hz single phase circuit (w/wo receptacles).

Booster/Charger: The generator will consist of DC battery boosting and charging functions as well as other DC loads with 12V, 24V, 36V, and 48V selectable with a max output of 300A.

Welder: The welder will be integrated into the generator and will have CC mode for SMAW and GTAW (stick/TIG welding), and will have 60% duty cycle at 190A DC output or 35% duty cycle at 250A DC output.

AC Generator (Option):

The AC generator option will be capable of producing 10kW of continuous output and will have one 30A, 240V, 60Hz single phase circuit with terminal strip, and two 20A, 120V, 60Hz single phase circuit with terminal strip.

Power Takeoff Port:

The Power Takeoff will be an SAE 'A' port, capable of 35 ft-lbs of continuous torque and 2,800 RPM output.

Hydraulic Pump (optional): The optional hydraulic pump will bolt onto the Power Takeoff Port. Choose from 5 GPM at 3500 PSI (max), 8 GPM at 3500 PSI (max), or 10 GPM at 3500 PSI (max).

Cold Climate Protection:

Cold climate protection will include 110V AC cold climate heaters that are built into the package allowing the Multifunction to operate in ambient temperatures below -10oC (14oF).

Fuel Supply Options:

Fuel supply may be supplied by one of two options, the truck's fuel tank with a fuel pump or Multifunction-mounted fuel tank.

Fuel Pump (optional): The optional fuel pump will be a 12V activated diesel fuel priming transfer pump.

Fuel Tank (optional): The optional 7 gallon fuel tank will come equipped with low fuel shut-off sensor and fuel gauge.



Engine:

The air compressor will be powered by a 3-cylinder diesel, naturally aspirated, Tier Four Final Compliant, liquid cooled, 23.5 HP engine. The engine will include an automated glow plug control.

Digital Control System:

A 12 volt digital control box with LCD display will be included that will show system hours, service reminders and safety/functional messages. The control system will integrate with the diesel engine to automatically start and stop the engine in response to air usage. Adjustable settings within the control system to include delay to stand-by, air use rate, restart pressure, system pressure, auto-restart disable and system top up pressure. Compressor, welder, generator and engine over-temperature shutdown, failed temperature probe, fan control, high idle activation and error messages will all be controlled by the control system. The digital control system will also monitor engine temperature and automatically restart the engine if the temperature drops too low. The digital control system will also monitor battery voltage and restart the engine if the voltage drops below a minimum threshold.

Throttle Control:

Throttle controller will have a 2 speed control and will automatically modulate engine RPM with air demand.

Package:

The overall package size will be no greater than 23" (w) x 33"(l) x 29" (h) – with optional fuel tank adding 5" to the length. Total wet weight will not exceed 570lbs. The sheet metal enclosure will be aluminium. All sheet metal is to be powder coated.

Safety Features:

The Multifunction system will include an LED safety light and alarm to notify the user that the system is in standby mode. An alarm will be included to notify the user that the diesel engine and air compressor are about to re-start. The system will be protected by a 200 psi pressure relief valve. The control system includes compressor, welder, generator and engine over-temperature shutdown.

Installation:

Installation of the Multifunction system must only be completed by the factory authorized distributor of the Multifunction manufacturer.