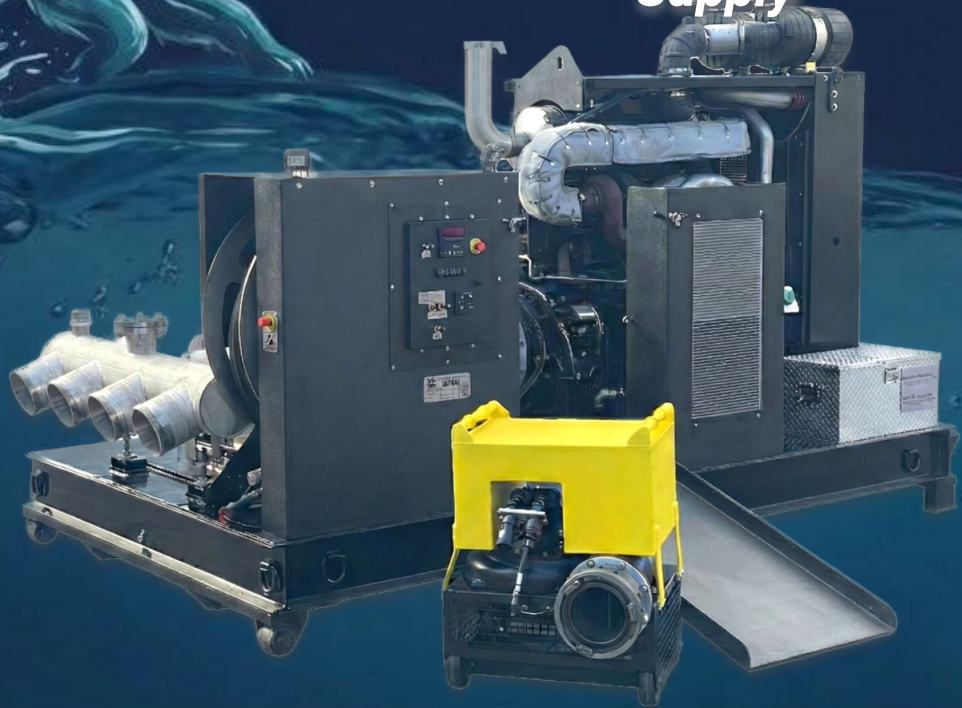




BEAR 4000 PUMPING SYSTEM

COMBINED BOOST & HYDRAULIC SUBMERSIBLE PUMPING SYSTEM

*The Ultimate
High-Volume Water
Supply*



- 4000 GPM (15142 LPM) @ 150 PSI (10.3 Bar) Rating
- Saltwater corrosion-proof carbon fiber pump construction
- Integrated floating submersible pump
- No priming or drafting required
- Access more water, including remote impounded water sources

www.kasepumps.com



About the Bear



The Bear 4000 Pumping System is a single engine, dual pumping module integrating a main centrifugal boost pump in addition to a hydraulically powered floating submersible pumping system. With a rated performance of 4000 GPM (15142 LPM) @ 150 PSI (10.3 Bar), the Bear is a primary mobile high-volume emergency water supply system.

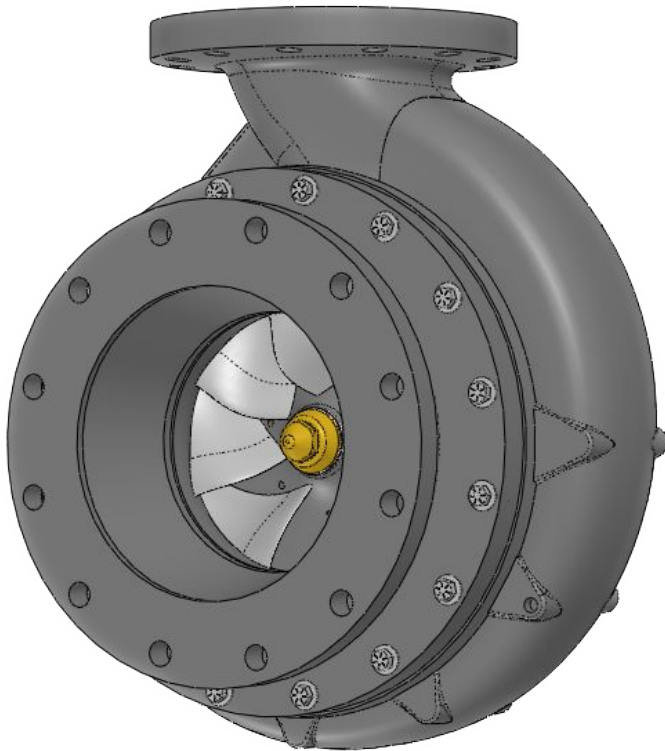
The Ro-Ro (Roll-on, Roll-off) skid mounted power unit (also available in trailer form) can be transported by a standard cable drag or hook-arm truck with a minimum 20,000 lb (9072 kg) payload capacity. With its standard 100 ft (30 m) hydraulic umbilical, the Bear has considerable versatility to access open water sources that a typical fire pumper or draft pump cannot reach.

The Bear 4000 uses the 120818CL carbon-fiber high-pressure transfer pump along with the SP4 floating submersible pump. Using the latest advancements in structural composite technology to achieve an ultra-lightweight design, the SP4 is physically manageable by two emergency responders. The Bear is well suited in supplying high-pressure, high-volume water to downstream emergency apparatus, dewatering flooded infrastructure and pumping brine solutions and contaminated fluids such as chemical and oil spills.

- Simple push-button operation
- Saltwater Corrosion Proof Carbon Fiber Pump Components
- Single-engine platform
- Standard Ro-Ro configuration
- 100ft (30 m) hydraulic umbilical to access remote water sources
- MADE IN THE USA

- **Emergency Water Supply**
- **High-volume Water Transfer**
- **Dewatering (Flood mitigation)**

BEAR POWER SYSTEM AND MAIN PUMP SPECIFICATIONS



120818CL High-Pressure Transfer Pump

- NFPA rated to 6500 GPM
- Carbon-fiber body and impeller
- High-Efficiency Double-Volute, Single-Suction, Closed Impeller Design
- Stainless Steel Shaft
- Stainless Steel Mechanical Seal
- 12" Suction / 8" Discharge

POWER UNIT

- Unregulated: FPT 700 HP (522 kW)
- Tier 3: Deere 684 HP (510 kW)
- Tier 4/EuroV:
 - Deere 684 HP (510 kW)
 - FPT 690 HP (515 kW)
 - Scania 770 HP (574 kW) **+10%**

Performance Boost

- Diesel Cap.: 180 Gal (681 L) fuel tank
- 4-Hour run-time at 100% load
- Flexadrive PTO (or equivalent) with integrated Logan clutch (or equivalent)

RO-RO SKID

- Dimensions
 - Length: 196.2" (4984 mm)
 - Width: 92.7" (2355 mm)
 - Height: 106.8" (2712 mm)
- Welded Steel Skid
- Total system weight: ~18,000 lbs (8165 kg)
- Exterior LED spot lighting

CONTROL SYSTEM

- Rugged Plus+1 Control screen
 - IP67 sealed physical buttons
 - Monitor and control engine and hydraulic power systems
- Multi-mode Operation
 - Boost Mode
 - Submersible Mode
 - Combined Mode
 - Engine Service Mode
- Emergency Stop
- IP65 Enclosure Rating
- "Smart Charger" Technology
- PLC system controls activation of clutch and hydraulic swash plate engagement

BEAR HYDRAULIC SYSTEMS SPECIFICATIONS



HYDRAULIC POWER SYSTEM

- Closed-loop hydraulic system with Danfoss (or equivalent) variable 100 cc (or greater) hydrostatic pump, direct-mounted to the Flexadrive and driven by the diesel engine supplying hydraulic power to the source pump
- Hydraulic oil filtration system with trouble indication on main control panel
- Mounted desiccant filter with visual depletion color indicator
- Eco-friendly biodegradable hydraulic fluid
- 18.5 gallon (70 L) hydraulic tank

HYDRAULIC HOSE REEL

- Standard 100 ft (30 m) hydraulic umbilical
- Steel braided reinforced hydraulic line with Nylon abrasion resistant cover
- Quick connect hydraulic fittings for submersible pump

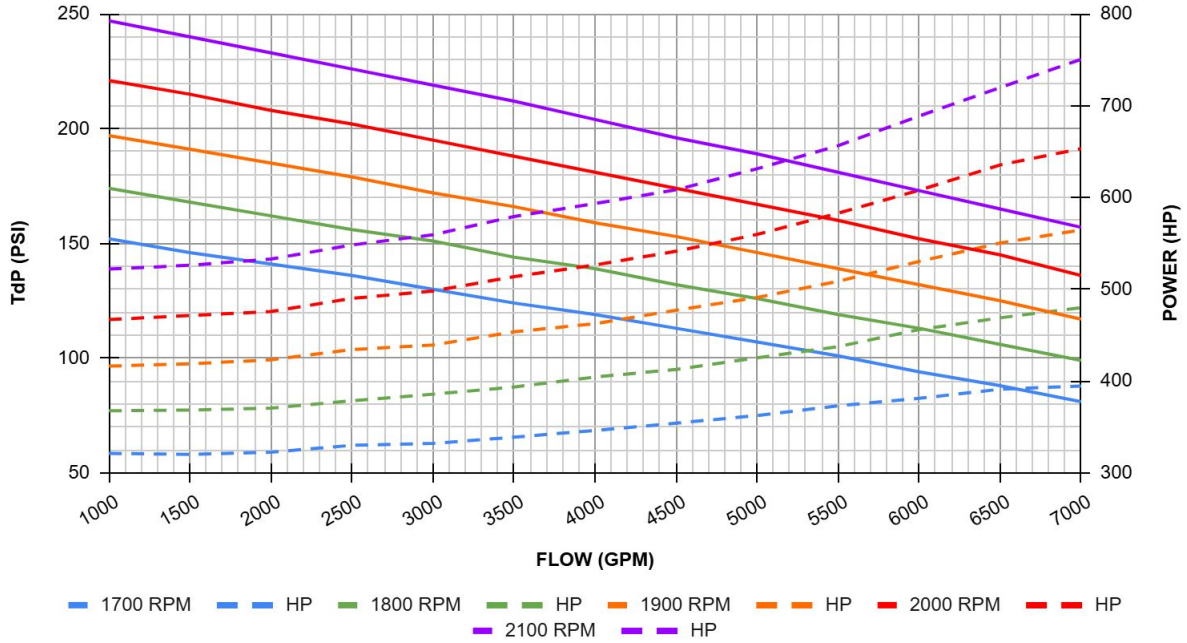
SP4 Submersible Pump

The Bear uses the SP4 submersible pump, a carbon fiber-reinforced polymer composite pump. With strength comparable to steel, the SP4 casing and impeller are corrosion-proof in saltwater and provide an ultra- lightweight design.

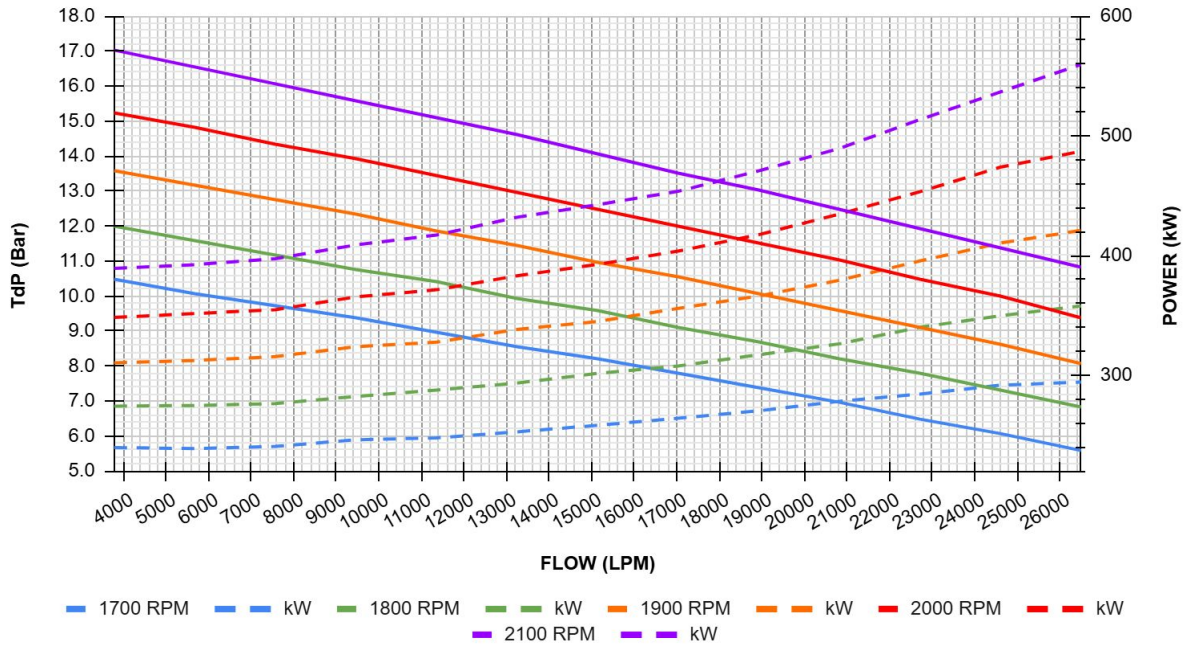
- Floating source pump with 90 or 125 cc Hydra-Leduc motor
- Draft (water level) Requirement (36" / 914 mm)
- Discharge: 8" 3-lug Storz or 12" 4-lug Storz
- Pump Materials and Design
 - *Impeller:* Carbon fiber reinforced polymer with integrated stainless steel (304 or 316) shaft sleeve.)
 - *Casing, Motorplate, Suctionplate:* Carbon fiber reinforced polymer
 - *Source pump skid base and integral strainer:* powder coated aluminum
 - *Pontoon:* Molded fiberglass or polyethylene or formed aluminum. Back-filled with expanded polyurethane foam

BEAR PERFORMANCE

120818CL Performance Chart (Customary)

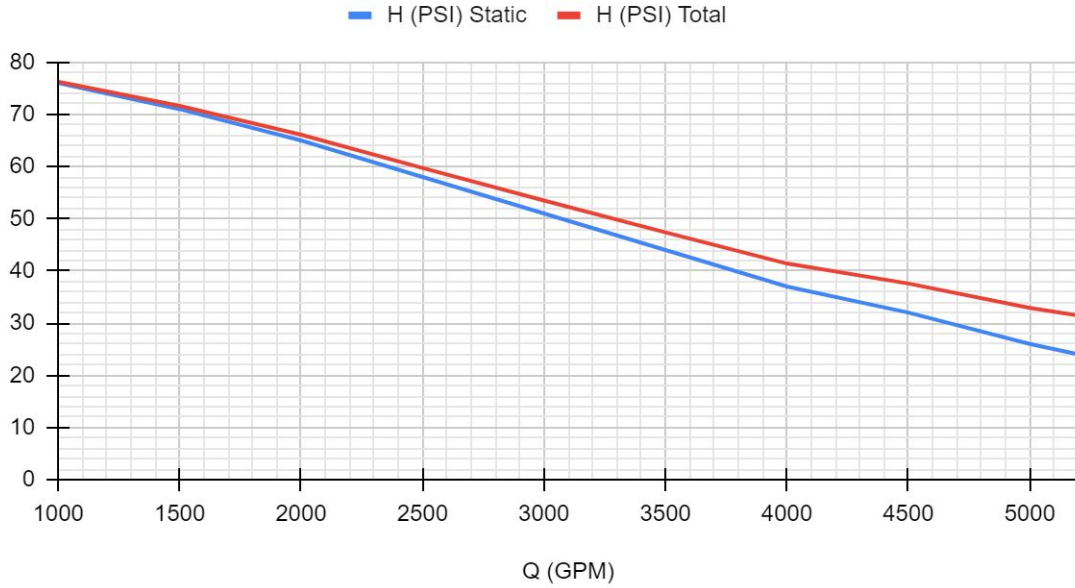


120818CL Performance Chart (Metric)

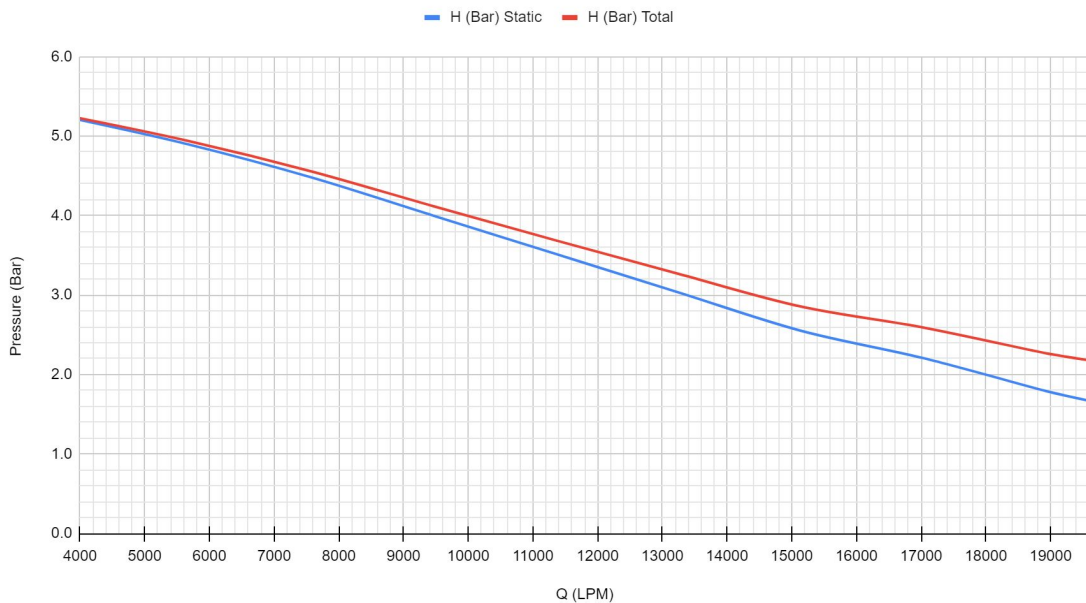


BEAR PERFORMANCE

SP4V9 Performance

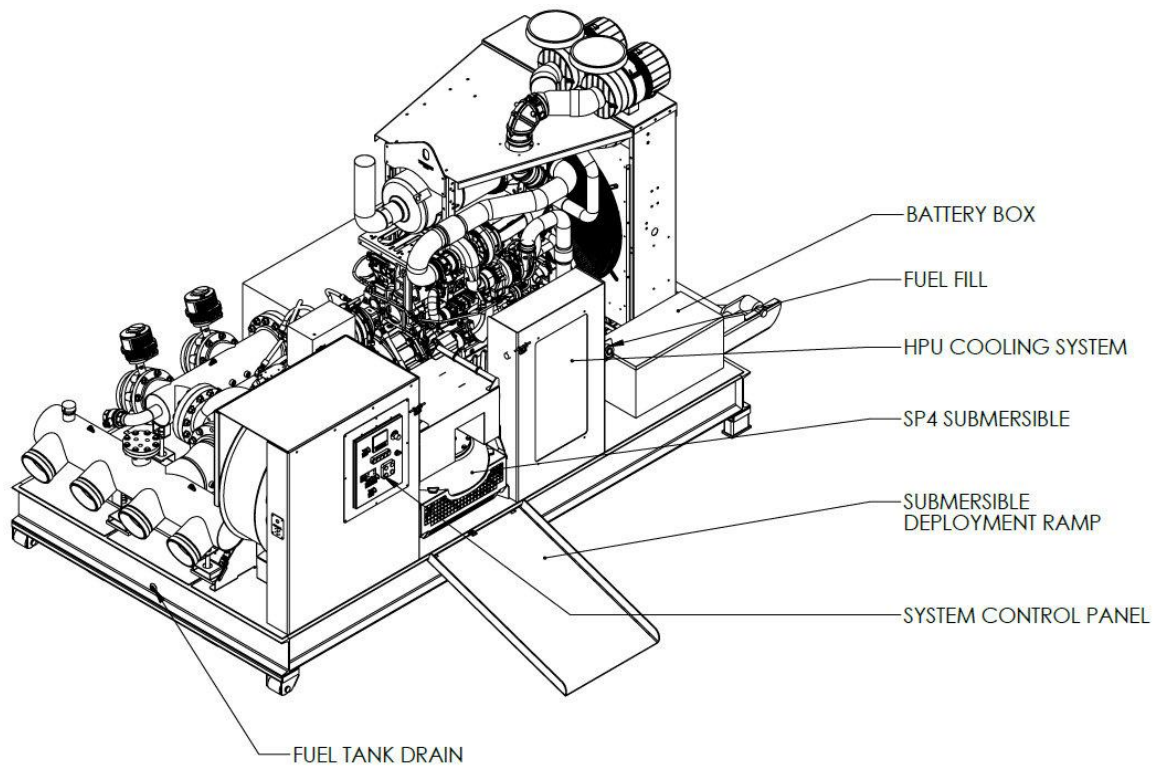
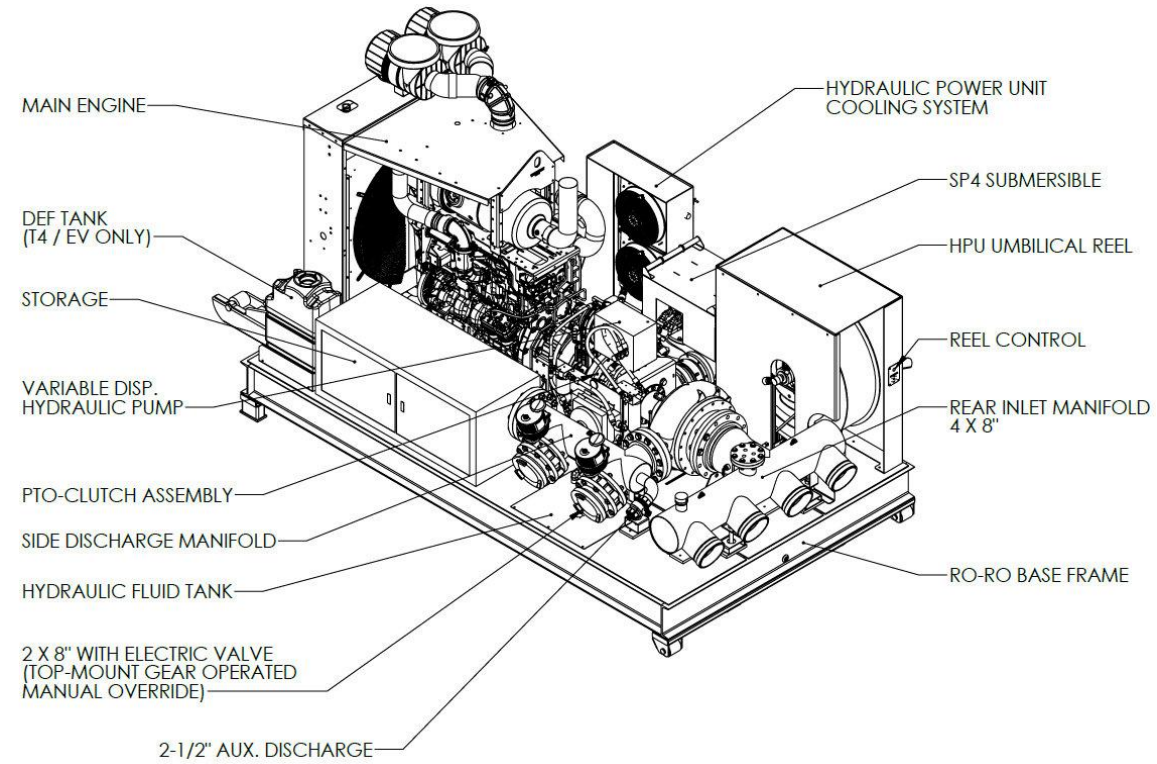


SP4V9 Performance (Metric)

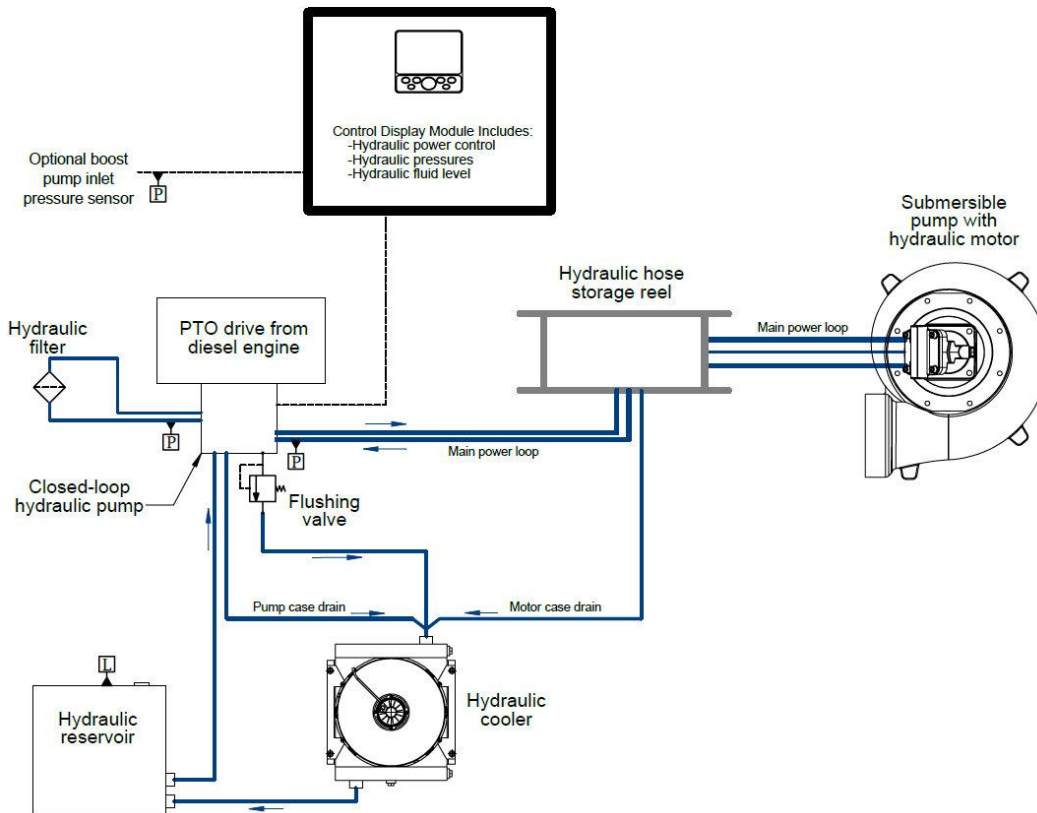


The above performance curves are **estimated**. Performance is rated at the discharge of the pump. The submersible pump performance is particularly affected by the type of hose, length of hose, elevation gain as well turns and other connection points. Additionally, hydraulic fluid temperature and maintenance will affect pump performance. Pumping mode (combined) may automatically limit power available, reducing maximum available performance. Final pump testing will be verified before system completion.

BEAR PUMP SPECIFICATIONS



BEAR PUMP SPECIFICATIONS



Closed-loop Hydraulic System Overview

The closed-loop hydraulic system uses a variable-displacement (hydrostatic) hydraulic pump. In a closed-loop system, the fluid flows from the hydraulic pump to the hydraulic motor (which drives the submersible water pump), and back to the hydraulic pump. In the closed-loop system, some fluid is continuously flushed from the loop. This flushed fluid is cooled and sent to the reservoir, and fresh filtered fluid is drawn from the reservoir to keep the loop filled.

With a variable-displacement hydraulic pump, hydraulic flow rate can be varied based on demand. The maximum hydraulic flow that can be produced is determined by both the pump size and the speed at which the pump is currently being driven. By varying an electrical signal to the pump, the hydraulic flow can be varied anywhere between zero and the maximum flow rate. This allows for the pump to be continuously coupled to the PTO, even when not in use.

The control system shows the user important information about the hydraulic system such as the two important hydraulic pressures (charge and loop), as well as the current hydraulic power setting (0 to 100% hydraulic flow rate). The buttons on the controller are used to adjust that hydraulic power.

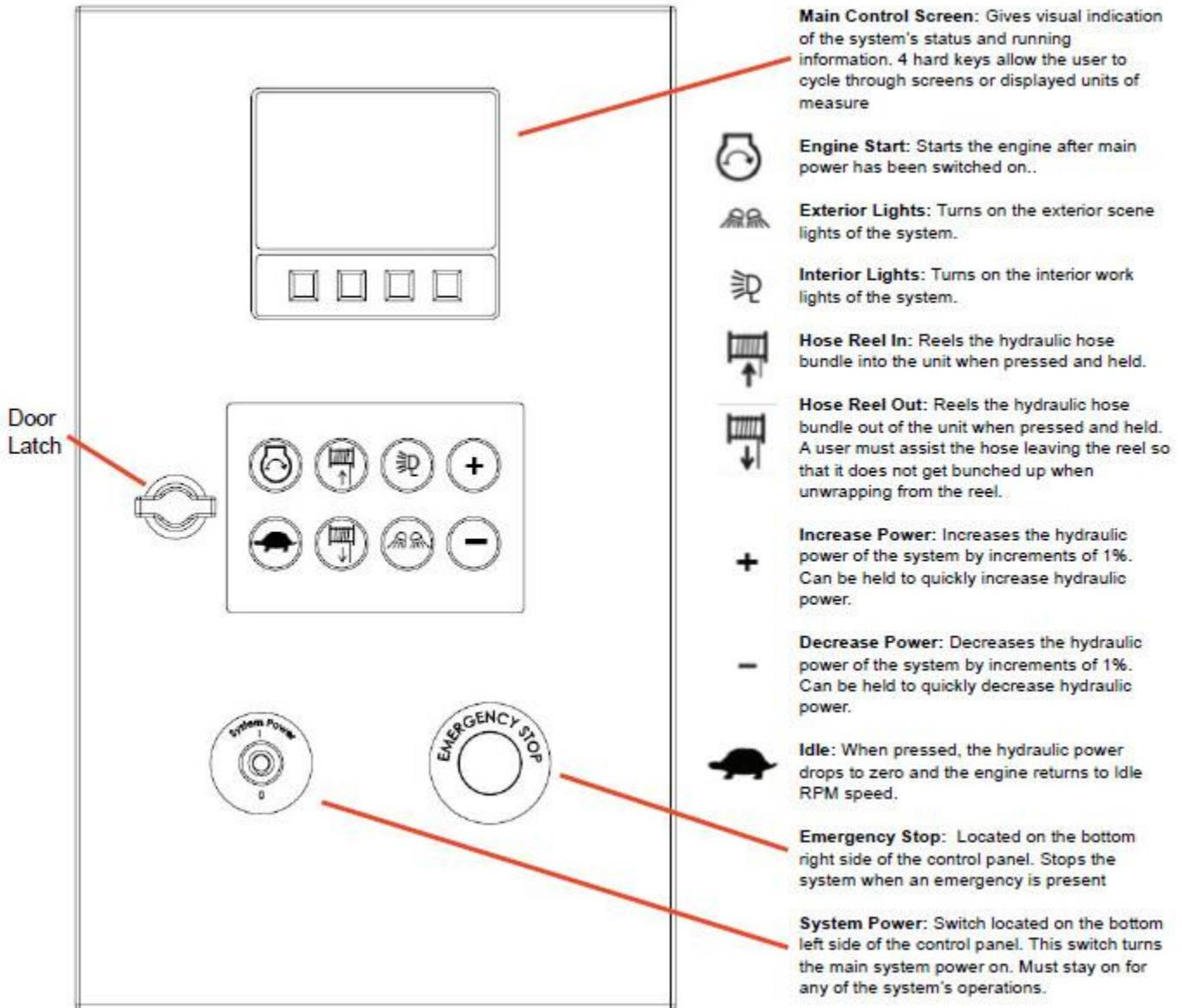
In “Combined Mode”, a pressure transducer senses the inlet pressure to the boost pump. The hydraulic system automatically adjusts itself to always maintain sufficient water pressure at the boost pump inlet to prevent cavitation, allowing the user to control the overall system output without having to interact with both pumping systems independently.

BEAR CONTROL SYSTEM

SIMPLE TO DEPLOY & SIMPLE TO OPERATE

The Otter uses a modern rugged control system with simple up/down operation. The operator only needs to set select the pump mode and the desired power level the control system handles the rest.

- IP65 Sealed Control Enclosure
- Day/Night High Visibility
- Single Button Operation



BEAR CONTROL SYSTEM

MAIN SCREEN DISPLAY

| Main Screen | | |
|---------------|----------|--------------------|
| Power: | 0 | |
| | | RPM: 0 |
| | | Eng. Temp(F): -40 |
| | | Oil P (PSI): 0 |
| | | Eng. Load(%): 0 |
| | | Battery (V): 0.0 |
| | | Fuel Level(%): 100 |
| | | Hyd. Level(%): 100 |
| | | DEF Level (%): 0 |
| | | DEF Temp (F): -40 |
| Main | Data | Units |

Power: Indicates the current power level of the combined hydraulic and engine subsystem. 0-100

RPM: Keeps the user updated on the live RPM of the system.

Temp: Gives the user a live readout of the temperature of the engine.

Oil: Keeps the user updated on the psi of the Engine Oil

Fuel level: Keeps a live update on the fuel level of the system. This will blink red when the level falls below 25 percent

Hyd. Level: Keeps a live update on the Hydraulic fluid level of the system. This will blink red when the level falls below 70 percent as a warning to fill the tank when possible.

Eng. Load: Current engine load of the system.

DEF Level: Current level of Def Fluid (For Tier 4 Units Only)

DEF Temp: Current value of Def Temperature (For Tier 4 Units Only)

Battery (V): Battery voltage of the system.

Engine Hours: Accumulated hours of the system.

Fuel Rate : Fuel rate that the system is consuming.

Oil Pressure : Oil pressure of the system.

Hyd. Pressures:

- **Power:** Indicates the hydraulic pressure of the power loop of the system
- **Charge:** Indicates the hydraulic pressure of the charge loop of the system

| Data Screen | | |
|---------------|------|-----------------------|
| Eng. Load(%): | 0 | Hyd. Pressures |
| Battery (V): | 0.0 | Power(PSI): 0 |
| Eng. Hours: | 0 | Charge(PSI): 0 |
| Fuel Rt(G/H): | 0.0 | |
| Oil P (PSI): | 0 | |
| Target RPM: | 0 | |
| RPM: | 0 | |
| Power: | 0 | |
| Hyd. Power: | 0 | |
| | | DEF Level (%): 0 |
| | | DEF Temp (F): -40 |
| Main | Data | Units |