



## **Odin® Mongoose 46/23 Specification<sup>i</sup>**

This model provides a “self-contained” gasoline powered “slide-in” type Compressed Air Foam System (CAFS). The CAFS shall be designed to fit into the back of a standard length and width pick-up truck or fire service body.

The CAFS shall be designed to discharge water only, air only, foam solution only or compressed air foam from the same discharge outlet. In addition, the consistency of the compressed air foam (expansion ratio), wet/dry shall be fully adjustable.

### **Engine**

The engine shall be a Kawasaki, 2 Cylinder, 4 Cycle gasoline fueled, pressure lubricated engine. It shall develop 31 hp at 3600 rpm. It shall be digital fuel injected liquid cooled, choke free. It shall have a 15-amp charge coil, 12VDC electric start. It shall be equipped with a dry cartridge air filter and a muffler. The fuel pump is a high pressure electric fuel pump.

### **Water Pump**

The water pump shall be a *Darley* 2BE single-stage centrifugal pump with a vertically split aluminum case. It shall have replaceable bronze impeller and seal rings on a stainless steel shaft. The pump seal shall be of a mechanical design.

### **Air Compressor**

The air compressor shall be of the encapsulated screw type, designed and installed to supply a minimum of 50 cfm @ 125 psi (1416 L/min @ 8.6 b) of free air at maximum engine rpm. The compressor air/oil receiver shall be built and designed by the compressor manufacturer.

**\*Manufacturer approved for Flows of 40 cfm @ 150 psi.**

All air-lines shall be rated to a minimum of 250 psi (17.24 b). All control air fittings shall be of brass or chrome construction. Stainless steel or brass check valves shall be utilized at air injection points to prevent water/solution back-flow into air-lines.

### **Foam Concentrate Proportioner**

The automatic foam proportioner shall be the *Darley Fast Foam 50*. It shall be provided and installed to inject foam concentrate into all foam discharges. The proportioner shall automatically meter the correct percentage of foam concentrate, based on current flow, into the water stream. A check valve shall be provided ahead of the foam injection point to prevent foam solution back-flow. The concentrate pump shall be a 12VDC, electrically driven, positive displacement pump. The concentrate pump shall be rated to flow ½ gpm @ 150psi (1.89L/min @ 10.3b). The proportioner on/off switch, ratio controls, operating instructions and low concentrate warning light shall be mounted on the pump panel.

For sustained operation of the injection system, it may be necessary to operate the vehicles main engine for adequate voltage.

### **Drive System**

The water pump is directly driven off the engine crankshaft. The air compressor is belt driven off the engine crankshaft to the side of the engine. They shall be driven via a dry *Gates Polychain*<sup>®</sup> drive system. The complete drive system shall have a 2,000 hour rated service life and shall be designed and rated for the imposed speed and load.

### **Electrical System**

All electrical equipment installed by the manufacturer shall conform to current automotive electrical system standards and the requirements of the applicable NFPA apparatus standards. The wiring shall be individually and

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<sup>i</sup>Specifications are subject to change and improvements without notice.

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permanently color and function coded. The installation shall meet SAE Standard J1128 in its latest edition for GXL or SXL temperature rating.

All exposed wiring shall run in loom with a minimum of 280°F (137.8°C) rating. All wiring loom shall be properly supported and attached to frame members along the entire run. At any point where wire or looms must pass through metal, rubber grommets shall be installed to protect the wire from abrasion.

The main low voltage electrical terminal block and circuit breaker panel shall be provided behind the pump operator's panel in a location providing easy service access.

The electrical connections shall be made using heat shrink and/or weatherproof connectors. All electrical circuits shall be protected with automatic reset circuit breakers or fuses.

**Priming System**

A Darley 12 VDC electric, oil-less, rotary-vane priming system shall be utilized. The primer is capable of priming the water pump through 20' of hard suction hose with a 10' lift. Primer controls and instruction plate shall be mounted on the operator's panel.

**Plumbing, Hoses and Lines**

All piping shall be stainless steel. Uses of grooved end pipe couplings are required for flexibility and movement of system components on mobile equipment. Hydraulic hoses will only be used for air injection lines and not control air lines. Flexible piping may be used where applicable. Check valves are required throughout the system to maintain integrity and shall be placed so that the air, water foam and foam solution do not inadvertently mix. Drain cocks shall be provided on the water pump to prevent freeze damage.

**Tank to Pump**

There shall be a 2.5" tank to pump suction valve fitted in the module and controlled from the operator's panel.

**Inlets**

A 2½" NH male suction inlet with cap and lanyard shall be provided on the operator's panel.

**Water Only Outlet**

There shall be one 2½" water only discharge with valve operator push pull provided on the control panel.

**CAF Outlet**

There shall be one (1) CAF mix point. There shall be a 1½" NH Male CAF outlet on the panel, controlled by the single mix point. A swing check valve shall be installed on the mix point to prevent foam from back flowing into the pump. The CAF mix point controls shall be grouped together on the panel with easy to read calibration marks laser cut into the panel. The mix point foam solution valve shall be an Akron 1 ½" self-locking, swing-out valve.

**Direct Tank Fill**

A separate valve with a 2½" NH female swivel connection and plug shall be provided and controlled at the operator's panel for "direct tank fill" operations with a pressurized water source.

**Tank Refill**

A 1½" tank refill line with a 1½" valve and flexible, reinforced wire-braid, hydraulic hose shall be provided.

**Module Frame**

The module frame shall be constructed of aluminum and designed for rigorous fire service use. Main structure will use 1.5" square wall 6061 grade tubing, ¼" thick wall. The structure will be rectangular in shape to facilitate the full cover lid and sides.



**Lid**

The lid shall be computer cut, ventilated, diamond plate aluminum with stainless steel hinge and pneumatic gas shock lift struts. The bracing of the lid will sustain the weight of 250 lbs on the module lid when closed. Two snap latches will be incorporated to fasten the lid shut.

**Corrosion Resistance Treatments**

Dielectric tape (laminating type UHMW) is used through out the construction of the module for dissimilar metal contact surfaces. This will include, but not be limited to control panel to frame, engine mounts to frame, and solution injection unit to frame.

All SS screws, which secure the SS panel to the aluminum frame, will be treated with dielectric liquid. The majority of fasteners throughout the module will be SS. All electrical ground connections to the frame will be treated with dielectric silicone compound. Wire ends will have waterproof and corrosion resistant shrink tube, adhesive lined type terminals and connectors. All electrical plugs in the module will be environmentally sealed *Deutsch* type. The entire surface of the electric fuse / connection box will be treated with a urethane seal coat, to seal out moisture.

**Control Panel**

The control panel shall be laser cut, 16 gauge brushed stainless steel with special powder coat infusion on the face. The instruments, indicators and controls that are located on the control panel shall be positioned in a logical manner and clearly marked to provide for simple and easy operation. Color association is used for the handles to specific discharges. The following items shall be mounted on the control panel:

1. LOFA engine control module
  - a. Hour meter
  - b. Tachometer
  - c. Ignition switch
  - d. Battery charge light
  - e. Diagnostic light
  - f. Low oil pressure light
  - g. Engine High Temperature light
  - h. Low water pressure light
  - i. High compressor temperature light
2. Throttle
3. Fast foam 50 control
4. Primer control
5. CAF valve lever
6. Air valve
7. Operating instructions
8. CAF discharge
9. Water only push pull
10. Water only discharge
11. Water pressure gauge
12. Air pressure gauge
13. Water level gauge
14. Tank to pump Valve
15. Tank refill valve
16. Suction Inlet
17. Direct tank fill valve
18. Direct tank fill pipe
19. Pump drain
20. Compressor Alarm
21. Compressor Overheat light
22. Compressor oil level sight gauge



**Labels**

All controls, inlets and discharges shall be clearly labeled. The labels shall comply with applicable NFPA standards.

**Testing**

The completed unit shall undergo a manufacturer’s run-in test prior to delivery. The engine, pump and air compressor shall be operated for a minimum period of six (6) hours, during which time the test operator shall monitor and record the functions and performance of each system component. Compressed air foam shall be produced during the test.

This testing shall be performed to ensure proper system operation and performance prior to shipment. The manufacturer shall provide written certifications that the tested unit meets all performance criteria contained herein (NFPA). Water flow performance shall be tested in accordance with NFPA 1911. Airflow performance shall be measured with a temperature and pressure compensated air flow meter.

**Manuals**

One (1) copy of the *Operation and Maintenance Manual* and a CD copy shall be provided to the purchaser with each unit. This manual shall include detailed instructions in the operation and maintenance of the overall unit, engine, water pump, air compressor and foam proportioner.

**Dimensions**

Length	36” + 6” gap required for air flow
Width	47 ¼”
Height	33”
Weight	850 lbs

**Performance**

Water Pump	250 gpm @ 40psi 120 gpm @ 100 psi
Air Compressor	50 cfm @ 125 psi
Simultaneous Flow (NFPA)	46 gpm & 23 cfm @ 125 psi
Simultaneous Flow	80 gpm & 40cfm @ 100 psi
Engine Horsepower	31hp @ 3600 rpm

**Warranty<sup>ii</sup>**

Engine	1 year
Compressor	1 year
Water Pump	3year/3000 hours
Chemical Injector	1 year
Water Tank	Lifetime

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<sup>ii</sup> Covered by the original manufacturer’s warranty.



All fabrication and materials are warranted for a period of two (2) years barring accidents, abuse or negligence. Excluding from warranty are all consumables and parts subject to routine replacement. We will repair or assist in the repair or replacement of the product in its entirety.

### **Mongoose Options**

The list of options, which follow, can be added to the standard module according to your specifications and needs of operation. These options are not included in the base price of the module.

#### **Water Tank**

The water tank shall be rectangular in configuration and shall have a capacity based on the chassis GVW. The tank shall be constructed of ½” polypropylene sheet. All joints and seams are to be nitrogen welded.

The tank cover shall be constructed of ½” polypropylene and shall incorporate hold-downs to assist in keeping the cover rigid under fast filling conditions. The cover shall have a combination vent and manual fill tower. The tower shall have a hinged cover and a ¼” thick polypropylene screen.

There shall be two (2) standard tank outlets; one for the tank to pump suction line and one for the tank fill line. An anti-swirl plate shall be installed at the tank-to-pump outlet. A manufacturer’s warranty shall be included for the tank.

A polypropylene foam reservoir shall be provided as an integral part of the booster tank and shall contain a low-level sensor in the bottom of the tank to signal when the foam reservoir needs to be filled. The tank shall be plumbed to supply the foam proportioner pump with a minimum ¾” hose (size varies per customer specifications).

The tank shall include all fittings, adapters, senders, switches and hoses necessary for tank to module connections.

#### **Skid Frame and Water/Foam Tank**

An aluminum weldment sub-frame shall be provided to support the entire slide-in module, with the base constructed of 2” x 4” x ¼” tubing. The sub frame shall be strong enough to support the weight of the booster tank and pumping equipment while in the apparatus and during loading and unloading and shall be utilized as a base mount for the engine, compressor and pump. Square tubing uprights with angled gussets shall extend up from the rear of the sub frame for attachment of the full width operator’s panel. Provisions shall be incorporated in the sub frame to facilitate using a forklift for loading and unloading of the unit.

The tank shall be bolted to the skid frame with stainless steel hardware through full width integral flange mounts at the front and rear. The water tank shall be completely removable without dismounting the skid unit.

#### **Discharge Valve**

The discharge valve shall be a 1½” ball valve mounted on the control panel CAF outlet.

#### **Suction Valve**

A 2.5” gated hydrant type suction valve, with 2.5” male NST threads and cap will be attached to the 2.5” male NST chrome suction intake.

#### **Sides**

The sides shall be computer cut, ventilated, diamond plate aluminum.

#### **Economy Hose Reel**

The hose reel shall be of painted steel construction with fairleads and electric rewind, installed with 100’ of 1” red rubber hose with one 1” plastic ball valve and ¾” tip. The hose reel shall be mounted on top of the water tank and shall have a straight swivel inlet.



**CAF Hose reel**

The hose reel shall be of aluminum and alloy construction with fairleads and electric rewind, installed with 100' of 1" *Niedner* HotStop hose with one 1" metal pistol grip ball valve and tip. The hose reel shall be mounted on top of the water tank and shall have a straight swivel inlet.

<b>Odin® Mongoose</b>	<b>Engine Driven C.A.F.S.</b>
<b>Standard Equipment</b>	
<ul style="list-style-type: none"> <li>• Engine – Kawasaki 31 hp, Liquid Cooled, V-Twin, Gasoline Powered, 12 VDC Electric Start</li> <li>• Control Panel – Illuminated Laser Cut, Brushed Stainless Steel Panel with infused powder coat painted labels, Foam Injection System Controls Installed</li> <li>• Air Compressor – encapsulated screw, Manufacturer approved for Flows of 40 cfm @ 150 psi.</li> </ul>	<ul style="list-style-type: none"> <li>• Pump System – Darley Model 2BE with One (1) Fully Adjustable 1½" CAF Discharge Mix Point, 2½" Water Discharge, 2½" Direct Tank Fill, 2½" NPT Suction Inlet, Darley 12V Primer, 2½" Water and Air Pressure Gauges, Pump Drain Valve, Stainless Steel Plumbing</li> <li>• Frame – Lightweight Aluminum</li> <li>• Foam Proportioner System – Darley Fast Foam 50 Class "A" Foam Proportioner</li> </ul>
<b>Options</b>	
250/15 gallon Water/Foam Poly Tank with Tank Kit, Installed on Full Poly Skid Frame (Larger tanks – Price on Request)	
250/15 gallon Water/Foam Poly Tank (Shipped Loose) with Tank Kit – All Fittings, Boots, Clamps, Pipes, and Tank Mount Rubber Necessary to Connect the Module to a Water/Foam Tank (Larger tanks – Price on Request)	
1½" Discharge Valve with 1½" NH Chrome Adapter <i>(Necessary for Multiple Discharge Points)</i>	
2½" Suction valve <i>(Gated hydrant type)</i>	
Sides – Ventilated, Precision Computer Cut <i>(2 each)</i>	
Economy Hose Reel - Painted Steel Construction, Installed with 100' of 1" Red Rubber Hose, 1" Plastic Ball Valve and ¾" Tip.	
CAF Hose Reel – Aluminum, Installed with 100' of 1" Niedner Hose, 1" Pistol Grip Ball Valve and Tip	
Fuel Tank – 6 Gallon Fuel Tank and Mounting Bracket Assembly <i>(shipped loose)</i>	
Foam Level gauge	