



**THEN, NOW, ALWAYS. MOVING FORWARD.**

## **SPECIFICATIONS – CAFSYSTEMS: ECLIPSE™ ES** **Compact Foam Power and Versatility**

The Eclipse ES compressed air foam system is proof enough that you can still get serious power out of a small package. Unmatched in the industry for performance and versatility, the Eclipse ES is available in multiple configurations to fit your needs...we've even developed a smaller version to accommodate lighter-duty chassis trucks. The Eclipse ES is available in the following configurations:

### **S100 Series Fire Pump**

End-suction design crafted with a C20 Series transmission and ratings of 2000 GPM (7570 L/min) and 200 CFM (5.6 m<sup>3</sup>/min).

### **CX Series Fire Pump** (for lighter-duty chassis trucks)

End suction design crafted with a C20 Series transmission and ratings of 1250 GPM (4700 L/min) and 200 CFM (5.6 m<sup>3</sup>/min).

### **TC20 Series PTO**

PTO version of the aluminum C20 Series transmission, which allows a remotely mounted PTO-driven fire pump to be used.



### **S100 Pump Specifications (Up to 2000 GPM):**

#### **Pump Body:**

Cast in ductile iron. Double-stripping edge volute minimizes radial forces at all flow rates.

#### **Intake:**

8 inch (200 mm) Victaulic®

#### **Discharge:**

5 inch ANSI flange

#### **Impeller:**

Bronze, flame-plated impeller, balanced mechanically and hydraulically for vibration-free operation.

#### **Impeller Shaft and Seal:**

Stainless steel shaft and impeller nut with spring-loaded mechanical shaft seal. Self-adjusting mechanical seal eliminates leakage and routine maintenance.

#### **Wear Rings:**

Bronze labyrinth-type (reverse-flow) replaceable wear rings increase pump life and keep maintenance costs to a minimum.

#### **V-ring:**

Located on the impeller shaft between mechanical seal and transmission oil seal, the V-ring provides added protection by keeping water and foreign matter out of the bearings.

#### **Oil Seals:**

Single lip, spring-loaded design for lubrication seal and additional bearing protection from dirt and water

### **CX Pump Specifications (Up to 1250 GPM):**

#### **Pump Body:**

Two-piece, vertically-split, high-tensile, close-grained gray iron or bronze (optional).

#### **Impeller:**

Bronze impeller, double-hubbed to eliminate axial thrust, and accurately balanced for vibration-free running. Impellers with flame-plated hubs for extreme wear resistance are optional.

#### **Impeller Shaft:**

Stainless steel, precisely ground to size, and polished under shaft seal. Supported by oil lubricated ball bearings.

#### **Wear Rings:**

Replaceable bronze wear rings to increase pump life and keep maintenance costs at a minimum.

#### **Bearings:**

All bearings are oil or grease lubricated, ball-type, located outside the pump casting to accurately align and support the impeller shaft assembly. Ball bearings are deep-groove type designed to carry both radial and axial thrust.

#### **Shaft Seal:**

Self-adjusting mechanical seal eliminates leakage and routine maintenance.

#### **Intake Fittings (Choice of the following):**

Type	Model	Sizes
Victaulic® Intake	CXV	6 inch

Note: 6 inch threaded intake available with 2-1/2 inch or 3 inch auxiliary intake ports.

### **Industry-Leading Sales and Support**

When you purchase Waterous equipment, not only do you get quality products, you get quality service. Our expert service technicians are the best in the business and they are always happy to answer any service questions you might have.

#### **Sales/Applications Assistance**

Phone: 651-450-5234 (Press 3)  
pumpsales@waterousco.com

#### **Service Assistance**

Phone: 651-450-5200  
Fax: 800-488-1228  
service@waterousco.com

# SPECIFICATIONS – CAFSYSTEMS: ECLIPSE™ ES

## Compressed Air Foam System

### Air Compressor

The air compressor is an oil-flooded, rotary screw type sized to supply a minimum of 200 CFM of free air at a minimum of 125 P.S.I.G.

### Pneumatic Modulating Inlet Valve

The air compressor is controlled by the pneumatic modulation inlet valve mounted on the air end. The pneumatic modulating inlet valve controls air delivery while maintaining constant pressure.

### Auto Sync Balancing System

Automatically maintains the air pressure within +/- 5% of the water pump pressure throughout the pressure range. The Auto Sync Balancing System is located on the operator's panel and allows for the following modes:

- Automatic - Air pressure matched to water pressure
- Fixed - Air pressure defaults to manual setting on compressor mounted control valve. (Factory set at 150 P.S.I.G.)
- Unload - Air pressure reduced to 40 P.S.I.G. for standby operations

### Air Compressor Drive

The compressor is driven off the back of a standard Waterous pump transmission. The compressor drive is engaged with a pneumatic activated "hot shift" clutch. Power is transferred via a synchronous drive "toothed belt" with an adjustable tensioner. The system is designated to operate the air end at rated capacity when the fire pump is developing 130 to 140 P.S.I.G. in a "no flow" state.

### Clutch

High speed with HICO friction facings and shielded bearings

### Air Compressor Oil System

A spin-on, full-flow oil filter unit and a thermostatic valve are all part of the system to control oil flow to the cooler. Oil lines are routed in braided hose conforming to SAE 100R1 standards for hydraulic hose.

### Modular Air/Oil Separator Unit

Replacement elements for the oil filter and separator are available.

### Air Compressor Cooling System

The air compressor is cooled by the Waterous fire pump, utilizing an all copper and brass shell and tube heat exchanger. When the fire pump is operating, water flows through the heat exchanger while an in-line removable strainer, on the water inlet side, prevents clogging. The system maintains oil temperature within 160° to 225°.

### Air Controls and Instruments

The following controls and instruments are to be located on the operator's panel:

- Air compressor clutch engagement switch with "ON" indicator light
- Auto Sync compressor controls (Auto/Fixed/Unload) with engraved instruction plate
- Air compressor temperature gauge with warning light and audible alarm (warning light and alarm not supplied by Waterous)
- CAF system air pressure gauge (not supplied by Waterous)

### Separately Mounted Foam Manifolds (Optional)

Foam manifolds are constructed of heavy cast iron. The manifold is a fully integrated assembly with foam injector port, flow meter mount and high-flow, low-loss, spring-assisted check valve to prevent back-flow of foam concentrate or foam solution into the pump.

### Foam Management System - AQUIS (Optional)

A fully automatic electronic direct foam injection system is furnished and installed. The system is capable of Class A foam concentrates and most Class B foam concentrates. The system includes the following:

### Digital Electronic Control Display

Located on the pump operator's panel, the electronic control display enables the operator to perform the following functions:

- Provide push-button control of foam proportioning rates from 0.1% to 1%, in 0.1% increments; 3% and 6%
- Show current flow-per-minute of water
- Show total volume of water discharged during and after foam operations are completed
- Show total amount of foam concentrate used
- Show which foam supply tank is in use
- Perform setup and calibrate functions for the microcontroller
- Flash a "low concentrate" warning when the foam concentrate tank(s) run(s) low
- Flash an "error" warning with associated code in the event of an electronic malfunction
- Provide a manual back-up mode, controlled by the operator

### 12 or 24-Volt Electric Motor

A 12 or 24-volt electric motor driven Comet positive displacement foam concentrate pump, rated at 3 GPM @ 150 psi (11.3 l/min @ 10 bar) or 6 GPM @ 150 psi (22.6 l/min @ 10 bar) and with operating pressures up to 450 psi (32 bar).

For more information on the AQUIS Foam Systems, see Specification Sheets F-2809 or F-2810.

### Operation Instruction

Up to three day of CAFS operation and maintenance instruction shall be provided. The instruction shall take place at the user's facility within 30 days of apparatus delivery.

### Transmission Specifications – C20 Series (used with S100 and CX Series pumps) PTO Specifications – TC20 Series

**Housing:** High-strength aluminum, three-piece horizontally split

**CXC20 Drive Ratios:** 1.58, 1.69, 1.79, 1.88, 1.97, 2.03, 2.27, 2.46

**S100C20 Drive Ratios:** 1.79, 1.88, 1.97, 2.03, 2.27, 2.46

**TC20 P.T.O. Drive Ratios:** 1.58, 1.69, 1.79, 1.88, 2.03, 2.27

**Shafts:** Drive line shafts made from alloy steel forgings, hardened and ground to size.

### Drive and Driven Sprockets

Made of steel. All sprockets are hardened and have ground bores.

### Drive Chain

Morse HV®\*\* high strength involute form chain.

### Bearings

Anti-friction ball bearings give support to all shaft. Bearings are oil splash lubricated, completely separated from the water being pumped, and protected by a V-ring and oil seals.

### Passive Lubrication System

Passive lubrication system that eliminates the need for a separate oil pump.

### Shift Mechanism

Constant-mesh, two-position sliding collar that engages all teeth simultaneously. In-cab controlled pneumatic shift or an optional electric shift. A patented internal locking mechanism provides a positive lock in PUMP or ROAD position.

### Accessories and Optional Equipment - Transmissions

For detailed information about these accessories, request each specification sheet by number.

### Power Shift

Pneumatic shift is standard and an electric power shift is optional. These power shifts allow the operator to shift to ROAD or PUMP position by actuating a simple switch or valve. Electric indicating lights signal completion of shift from ROAD to PUMP. See Power Shift, F-1154.

### Driveline End Yokes

1710, 1810 and 140 Life Series End Yokes

### Electronic Tachometer Sensor

Monitors driveline rotational speed.

\*\*Registered trade name of Emerson Power Transmission Corporation.

### Accessories and Optional Equipment - Pumps

#### Primer:

Select an electric driven rotary vane priming system. Primer can be factory installed to your C20 Series pump transmission.

#### Pressure Control Systems:

##### Discharge Relief Valve - Separately Mounted

Simple ON-OFF control permits placing the system in or out of operation in seconds. See Relief Valve, F-897.

##### Intake Relief Valves - Separately Mounted

The Waterous intake relief valve is designed to dump excess pressure from the inlet side of the pump. See Intake Relief Valves, F-2192.

#### Discharge Valves:

Waterous quarter-turn, 2-1/2 inch and 3-1/2 inch ball type discharge valves or a 4 inch ANSI flanged discharge valve. Chrome-plated brass ball and hydraulically-balanced seal assembly standard. See Discharge Valves, F-1161.