



Preferred Specifications

Document Number	Issue Date	Rev. Date
F-2913	10/20	08/21

Waterous Worry-Free Pump Package

A. Pump (CM, CS, CSU or CMU Pumps Only)

The pump shall be of two-piece construction and shall comply with all applicable requirements of the latest standards for automotive fire apparatus of the National Fire Protection Association, NFPA No. 1901, and shall have a rated capacity of 750 to 1250 GPM (CM, CS) 1250 to 2250 GPM (CMU, CSU). The Pump shall be free from objectionable pulsation and vibration under all normal operating conditions.

1. Pump Body

The pump body shall be close-grained, gray iron and can be horizontally split in two sections for easy removal of the impeller assembly. All passageways are carefully matched to assure the very best hydraulic flow characteristics.

2. Discharge Manifold

The discharge manifold shall be cast as an integral part of the pump body assembly and shall provide at least four full 3-1/2 inch openings for ultimate flexibility in providing various discharge outlets for maximum efficiency, and shall be located as follows:

- One outlet on the right side of the pump body
- One outlet on the left side of the pump body
- One outlet on the front of the pump body
- One outlet directly on top of the pump discharge manifold

3. Impeller

The impellers shall be bronze and be balanced both mechanically and hydraulically for vibration-free operation.

a. Flame Plating (Standard on the CMU, CSU, optional on the CM, CS)

The impellers shall have flame plated hubs to assure maximum pump life and efficiency despite the presence of abrasive particles, such as fine sand, in the water being pumped.

4. Wear Rings

The wear rings shall be bronze and shall be easily replaceable to restore original pump efficiency and eliminate the need for replacing the entire pump casing due to wear.

5. Impeller Shaft

The impeller shaft shall be heat-treated stainless steel that is ground at all critical areas and polished under packing. It shall allow separation of the transmission from the pump without disassembling either component.

6. Anti-Friction Bearings

The impeller shaft shall be supported at each end by oil or grease lubricated anti-friction ball bearings for rigid and precise support. Bearings shall be protected from water and sediment by suitable seal housings, flinger rings, and oil seals. No sleeve type bearings shall be used.

7. Seal Housings

The seal housings on packed pumps shall be equipped with braided flexible graphite rings held in place by a split bronze gland which is fully removable and adjustable. There shall be an option with self-adjusting, spring-loaded, maintenance-free, mechanical shaft seals.

8. Pump Transmission

The transmission case shall be made of an aluminum case (C20, K or PA Transmission). The pump transmission shall be rigidly attached to the pump body assembly and be of latest design incorporating a high strength, involute tooth form chain drive or gear drive capable of operating at high speeds to provide smooth, quiet transfer of power. The shift engagement shall be accomplished by a free-sliding collar to maintain ROAD or PUMP position.

a. Pump Shift (C20 Only)

The pump shift shall be pneumatically operated and shall use a standard automotive air valve to control a double-action, air-shift cylinder. The in-cab control valve shall include a detent lock to prevent accidental shifting.

B. Worry-Free Included Components

1. Intake Relief Valve

The intake relief valve shall be a non-piloted intake relief valve and shall be installed on the pump by the pump manufacturer. The pilot valve shall allow adjustment from 50 P.S.I.G. to 250 P.S.I.G through a smooth turning adjustment knob. The relief valve shall be constructed of corrosion-resistant materials and require no maintenance.

2. Overheat Protection Manager (OPM)

The Waterous Overheat Protection Manager (OPM) shall act as a safety device by releasing hot water from the discharge area of the pump to the ground. The OPM shall consist of a valve that opens when the water in the pump reaches 140° F (60° C) and a warning light on the pump panel that is triggered by a thermal switch when the water in the pump reaches 180° F (82° C).

3. Magnesium Anodes

Magnesium anodes are normally mounted on the pump intake piping, but they may also be installed in the discharge piping if no intake mounting locations were available. Physical mounting of the anode may be via an NPT tap or bolt-on flange.

4. Conditional 7-Year and TPP-5 Warranty (No Cost)

WATEROUS shall warrant, to the original Buyer only, that products manufactured by WATEROUS will be free from defects in material and workmanship under normal use and service for a period of seven (7) years from the date the product is first placed in service, or seven and one-half (7-1/2) years from the date of shipment by WATEROUS, whichever period shall be the first to expire. In addition, Waterous offers at **NO COST**, the Total Protection Package, for remedies (a) or (b) on the TPP-5 Warranty Certificate (F-2893) WATEROUS further agrees for a period of five (5) years from the date the product is first placed in service, or five and one-half (5-1/2) years from the date of shipment by Waterous, whichever period shall be the first to expire, to furnish the labor required to dismantle and reinstall the product where located at Buyer's premises or, at WATEROUS' option, to reimburse Buyer for its reasonable and accountable costs of such labor.

C. Worry-Free Accessories - Must choose at least one of the following items:

NOTE: All accessories selected from the list below will be covered by the 7-Year Conditional Parts Warranty and the TPP-5 Labor Warranty.

1. AQUIS Foam Proportioner

AQUIS Foam Proportioner shall be of one of the following models:

- AQUIS 1.5 – Class A Foam, 1.5 GPM Foam Pump (see Preferred Spec F-2846)
- AQUIS 3.0 – Class A & B Foam, 3.0 GPM Foam Pump (see Preferred Spec F-2847)
- AQUIS 6.0 – Class A & B Foam, 6.0 GPM Foam Pump (see Preferred Spec F-2848)

2. Three (3) Waterous Discharge Valves

Waterous Discharge Valves shall be a ball-type valve constructed of iron available in the following sizes:

- 2-1/2 in. Standard (2-1/8 in. diameter ball opening) (53.98 mm), manual or electric
- 2-1/2 in. Full Flow (2-1/2 in. diameter ball opening) (63.50 mm), manual or electric
- 3-1/2 in. (3 in. diameter ball opening) (76.20 mm), manual or electric

3. Waterous Discharge Relief Valve

Waterous Discharge Relief Valve shall provide pump pressure control by keeping a uniform load on the engine with a continuous range of pressure control from 90 to 300 psi (6.2 to 20.7 bar). The automatic system consists of the relief valve, mounted between pump discharge and pump intake and a pilot valve mounted on the pump operator's panel.

4. Waterous Tank-To-Pump Valve

Waterous Tank-To-Pump Valve shall be true 3-1/2", full-flow valve that allows water flow from the vehicle's tank to the vehicle's pump. Valve shall be constructed of a 3-1/2" chrome-plated bronze ball with spring-loaded seal assembly and a patented floating seal design. Shall be available with 3-1/2" angle compensated, 4" non-angle compensated or 4" angle compensated hose flanges, the valve easily allows flows of 750 GPM from the tank. The valve shall be operated manually or with an optional 12 or 24 volt electric rotary actuator.

5. Waterous Auto-Tank Fill

Waterous Auto-Tank Fill System shall maintain tank water level between 50 and 80 % of capacity. System shall be able to be calibrated for any shape or size tank. System shall allow operator interaction while Auto Tank Fill System is in operation. Shall consist of Pressure Transducer, Tank Level Display, Electric Valve Position Control, Auto Tank Fill Selector Switch (Green LED indicates Auto Tank Fill Mode) and Cables. Electric-Actuated Ball Valve (sold separately).