

## General

Midship or rear mounted multi-pressure fire pumps. Main castings in aluminium.  
Performance range 2000-7750LPM at up to 45BAR.

### Special note:

When preparing the specifications for your new fire apparatus, assure that the use of a GODIVA pump by incorporating these pump specifications as written. No competitive pump can match GODIVA construction or performance.

### Pump construction

1. The pump shall be of a size and design to mount on the chassis of a commercial or custom truck, and have the low-pressure capacity of \_\_\_\_\_ LPM at 10 BARS at a lift of 3 meters. The high-pressure capacity shall be 400 LPM at 40 BARS.
2. The entire pump shall be manufactured and dynamometer tested at the pump manufacturer's factory.
3. The pump shall be driven by the truck chassis engine through a PTO. The engine and PTO shall provide sufficient horsepower and RPM to enable the pump to meet and exceed the specified performance.
4. The entire pump, both suction and discharge passages shall be hydrostatically tested. The pump shall be fully tested at the pump manufacturer's factory and be free from hydraulic pulsation and vibration.
5. The high-pressure pump body, impeller and cover plate shall be of BS approved stainless steel. The low-pressure volute shall be high strength corrosion resistant aluminium alloy, all other castings, shall be of BS approved aluminium alloy. Pumps utilizing castings made of other materials are not acceptable.
6. The pump body shall be vertically split, for easy removal of impellers, wear rings, sealing gland assembly and pump bearing housing rear oil seal, from the pump without disturbing the mounting of the pump in the chassis. It must also be possible to remove all these items without disturbing the volute, manifolds and associated pipe work.
7. The pump shall have no more than two impellers and be capable of simultaneous multi-pressure operation. Both impellers shall be mounted on a single pump shaft, multi-shaft designs are not acceptable.
8. The pump low-pressure impeller shall be made of BS approved aluminum alloy and hard anodized to resist wear and be a mixed flow design, accurately machined and statically balanced. The impeller shall be of sufficient size and design to provide ample reserve capacity.
9. The high-pressure impeller shall be of a regenerative type design accurately machined. Designs with multiple high-pressure impellers are not acceptable.
10. The low-pressure impeller clearance rings shall be of Polymer plastic and easily renewable.
11. Both impellers shall be keyed to the pump shaft and locked in place by a suitable locking system.
12. The pump shaft is to be rigidly supported by rolling element bearings for minimum deflection and end float. Shaft end float shall be controlled by the bearings and shall not be adjustable. The shaft shall be made from BS approved stainless steel. An outboard shaft stabilizer bearing is not acceptable.
13. The water seal shall be a self-adjusting mechanical type, incorporating a stationary spring-loaded hard carbon ring running against a rotating silicon carbide seat. The seal shall be pre-loaded during pump assembly and shall require no maintenance or adjustments during its life. The spring must be located on the dry side of the seal. Packing glands or grease seals are not acceptable.
14. The pump shall have an internal pressure relief system to ensure the high pressure cannot exceed 55 bar over normal operating speed ranges.

15. The pump shall include a thermal relief system to ensure that pump water temperature cannot exceed 48°C. A high temperature version, that ensures the pump water cannot exceed 80°C, shall also be available.
16. Upon shut down the high pressure stage shall automatically drain into the low pressure stage from where the whole unit can be drained via a single point.
17. A filter shall be installed before the high-pressure stage that shall be easily accessible for cleaning from the suction tube end of the unit.
18. The valve handle controlling the high-pressure stage shall be easily accessible from the suction tube end of the unit.
19. When high pressure is not required low-pressure water must be automatically available at the high-pressure discharge outlets.
20. If piston primers are fitted these must be internally actuated, via an electromagnetic clutch, and must automatically re-engage when pressure is lost. The primer mechanism must be located inside the bearing housing for protection and lubricated by sitting in an oil bath. Manual operation is possible.
21. The pump shall be fitted with an electronic tachometer sensor.

#### **Drive unit construction**

- a) The bearing housing as well as the pump shall be constructed at the pump manufacturer's factory.
- b) Pump bearing housing shall be of sufficient size to withstand the torque of the engine during fire fighting operations.
- c) The bearings and shaft shall be oil lubricated. To ensure that the pump can be operated at any angle up to 20° in any direction a suitable mechanical oil distribution system shall be provided.
- d) The pump shaft shall be sealed with oil seals to keep road dirt and water out of the bearing housing.