DESIGN ENVELOPE FIRE | FAQ

File No: 9.808
Date: JANUARY 25, 2024
Supersedes: 9.808
Date: SEPTEMBER 07, 2021

Q1 What are the different modes of operation?

A1 Three modes of operation for Design Envelope Fire
- Principal operating mode or Constant discharge mode- pressure regulated by sensor (discharge, or suction).
- Ancillary operating mode or constant boost mode- sensorless boost pressure control in variable speed.
- The bypass mode or the constant speed mode- through automatic VFD bypass switch.

Q2 How do I guarantee my Design Envelope Fire Pump Unit is silicon-free?

A2 Generally, we do not use any silicone during production. However, for this type of request, we must note it on a shop work order. The only way that we can recognize the requirement is with an NCP. This will alert customer service of the special requirement and we can enter it into our system with the necessary warnings about using silicone lubricants, etc.

Q3 Are there any special installation requirements for a Design Envelope Fire pumps where noise and vibration are a serious concern?

A3 No. The Design Envelope Fire pump ships with mounting brackets installed at the base of the pump. These must be secured to a proper foundation. Fire pump manager will advise if the vibration levels are increasing over time though its diagnostics abilities.

Q4 What material (and type) are the flanges on a Design Envelope Fire pump series 43PF pump?

A4 All Design Envelope Fire casings are Ductile iron 65-45-12 material, the flange rating will be either be 125/125 suction and discharge or 250/250 suction and discharge. There will be no combination flange rating available.

Q5 What material (and type) are the impellers on a Design Envelope Fire pump series 43PF pump?

A5 Design Envelope Fire pump units use stainless steel or Bronze Impeller (Material will be chosen at the manufacturers discretion to optimize performance).

Q6 Can I get a series 43PF pump with special bearings?

A6 No. Special bearings are not available for the Design Envelope Fire pump series. Bearings used in Armstrong's Design Envelope Fire pumps are suitable for the conditions found in most applications.

Q7 Can I get any other packing material?

A7 No, the default packing material is graphite. No special packing material will be provided.

Q8 What is the function of the bypass unit?

A8 The bypass unit is a failsafe backup that will only operate if the VFD fails or during test mode. The power from the Fire pump controller comes to the bypass unit and is then directed to the drive for running the motor and the pump. When operating in the constant discharge mode or the constant boost mode, the drive will be powered via the bypass unit. If the pump is running at constant speed mode, the drive will have no power and the bypass will be engaged and the motor will be powered directly.

Q9 If the DE fire pump goes into Bypass mode (constant speed mode) than how are fire system fittings protected from over pressurization?

A9 If the discharge pressure exceeds the rated pressure of the system, the Main Relief Valve (MRV) installed, relieves excess pressure from the system, thus safeguarding the fittings from over pressurization.

Q10 What is the purpose of Fire pump manager?

A10 A key aspect of the new Design Envelope Fire pumps will be Performance Management Services, targeted and sold specifically to owners and end users, A service to help ensure optimal performance over the entire life of the pump, maintaining efficiency and minimizing unexpected failures. The key features embedded in this service are
- Time stamped reports every time the pump unit runs with Suction pressure
- Boost pressure (calculated and measured)
- Discharge pressure
- Flow
- Power draw
- Current draw
- Line voltage
- Reports can either be viewed on the web page or downloaded as PDF

Q10 What spare parts are available to order along with the pump or without the pump.

A10 You will be able to order parts kit either along with the pump or seperately. The spare parts kit available for order are as appended
- Flush line kit
- Casing gasket kit
- Coupling kit
- Packing ring kit
- Shroud parts
- DEFC parts kit
- DEFC screen kit

Q11 What if any of the major components such as bypass, drive or motor is damaged? Can we order it separately?

A11 No, you cannot order any specific pump component when it is damaged, since it is a factory integrated and tested unit. The unit must be fully replaced as mandated by NFPA20. Any replacement of a component is not possible.

Q12 Why is a Main Relief Valve (MRV) required in Self Regulating Variable speed fire pump unit (DE Fire) installation?

A12 As per NFPA20, Section 4.20.1.3, requires that all Self regulating variable speed fire pump unit must have an Main Relief Valve unit installed in order to protect the fire system fittings from over pressurization and thus saving from any potential damage.

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