

AMIAD "SAF4500" SELF CLEANING FILTER  
4" THRU 8" STANDARD SIZES  
SAF4500 FILTER SPECIFICATIONS

Furnish \_\_\_\_ Amiad automatic electric "SAF4500" filter(s), with \_\_\_\_ inch inlet and outlet 150# raised face flange connections. The unit(s) shall continuously filter \_\_\_\_\_ GPM through a \_\_\_\_\_ micron screen.

**Operation Description**

The water flows into the filter body and through the stainless steel coarse filter element (10,000-micron) outside in, keeping large debris from entering the fine screen. Once water flows through the coarse screen, the water enters the stainless steel fine filter element inside out, allowing the dirt to accumulate on the inside surface of the element. A Differential Pressure Switch (DPS) senses the pressure differential across the filter as filter cake builds up on the element. The DPS shall signal the control panel to initiate the cleaning cycle of the filter when the filter cake causes a pressure differential of 7 PSI. The DPS shall have an easy to read "Pointer & dial" gauge and switch mechanism. During the flushing cycle, there will be no interruption of flow and with a clean screen the filter will lose less than 2 PSI at the maximum flow rate. The filter operation and flushing shall be controlled and monitored by an electrical mechanical control panel (PLC is available as an option). The control panel, and its related circuitry, shall be housed in a wall-mounted NEMA 4 rated enclosure.

**Cleaning Mechanism:**

The filter cleaning mechanism will consist of a spiral moving suction scanner, constructed of a 316 stainless steel assembly. By opening a 2" flush valve the scanner will create high efficiency suction force on each of the four cleaning nozzles. The nozzle head distance from the screen surface shall be adjustable to maximize cleaning efficiency during the flushing cycle. The flushing flow rate will not exceed 66 GPM at 30 PSI. The cleaning cycle will be completed in 20 seconds or less. During that time, the four nozzles will cover the total area of the screen. The minimum pressure required for flushing shall be 35 PSI.

**Driving Mechanism:**

The suction scanner will be driven by a 1/4-hp electric motor that is connected to the suction scanner through a threaded shaft that travels inside a threaded bearing. The movement created by the electric motor will cause the scanner to move in a spiral motion at a speed of 24 RPM (@440vac/60Hz). The control of the scanner, by the electric motor, will be limited by two normally closed limit switches and monitored by the control panel.

## **Filtration Element**

The filter element shall be of a patented construction of a combination of wedge and weave wire screens, consisting of four layers, fabricated together in order to achieve both greater open area and mechanical strength. The collective screen shall be made of 316L stainless steel. The screen's external support will be constructed of wedge-wire for mechanical strength. The fine weaved-wire screen shall be sandwiched (protected) between two 3000-micron weaved-wire additional layers. The total surface area of the screen will be 700 sq./in. and will be able to withstand an internal / external pressure differential of 150 PSI without any damage. The micron ratings of the screen elements shall be available from 500 to 10 with complete interchangeability in the same body.

## **Housing Construction**

The filter housing shall be of high-grade carbon steel (#37.2), zinc-phosphate dipped and can be either coated with multi layer epoxy / polyester or with a rubber coating for seawater applications. The body may also be manufactured of 316 stainless steel for more corrosive applications. The maximum operating pressure of the body is 150 PSI and a maximum operating temperature of 140° F. The filter body shall have the capability to accept filter elements with varying micron degrees (500 to 10-micron), of a weave-wire design, and that are totally interchangeable in the same body.

## **Control System**

The filter control system will consist of either an electrical mechanical control panel or a PLC control system that will control all aspects of the filter operation, including monitoring the DPS, controlling the flush valve, and operating the electric motor and limit switches. In addition, the following options are available as built-in features of the control panel that will allow it to:

- A. Be connected to a central control system
- B. Trigger an alarm system
- C. Open an automatic by-pass system
- D. Start a booster pump – PLC model
- E. Close a valve and initiate a power flush – PLC model

**The filter shall conform to international quality code: ISO-9001**