

# PROGUARD FILTRATION SYSTEMS



## 2000 SERIES

### *Tubular Backwash Filtration System for Liquids*

The ProGuard 2000 Series tubular backwash filters can be used equally well in either polishing or straining applications where low maintenance, continuous operations are a necessity. Each filter unit is a self-contained, fully assembled filtration system. Tubular backwash filters are designed to remove solids from liquids by capturing the solids on a permanent reusable filter element. At a predetermined pressure differential, the system reverses flow through each element in the filter system, one element at a time, while the other elements continue filtering to provide a continuous operation.

Each filter system consists of individual filter tubes connected in parallel with inlet and outlet headers. Each filter tube is also connected to a drain header for removal of backwashed fluids and contaminants. Automatic or manual backwashing can be accomplished using clean fluid either diverted from the outlet header or from an externally supplied source.

The 2000 Series filter can also be custom designed to an engineering specification and can be readily modified to accommodate special components and accessories, to meet plant design standards, or to meet other customer requested modifications.



**Typical 2000 Series System  
with Automatic (PLC)  
Backwash Control**

### Standard Features

- 2 to 28 filter tubes per bank
- Single sided or Double sided arrangement
- Multiple banks for greater flow capacity
- ASME Code design and stamp available
- Stainless Steel, Carbon Steel or special alloy construction
- Operating pressure up to 350 PSI
- Automatic or Manual backwash capability
- Industry standard Programmable Logic Control (PLC) systems
- Permanent reusable filter media
- 1600 to 1 micron filtration
- Rugged, maintenance free design



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## 2000 Series Standard Construction

The ProGuard 2000 Series filtration systems feature 316 Stainless Steel construction as standard. Other materials such as Carbon Steel or special alloys are available. Each filter tube is an all welded cylindrical housing containing a permanent filter element. The cap is a flat top, swing bolt style closure with a Buna O-ring seal. The inlet and outlet headers come in 4, 6, 8 and 10-inch pipe sizes to handle specific flow rate requirements. The 2000 Series filtration systems are designed in accordance with the ASME code and can be certified with no modification.

The filter and backwash flow is controlled by 2" stainless steel ball valves with reinforced Teflon seals as standard. Other seal materials are available. ProGuard's commercially available ball valves are 2-way, 3-piece construction to eliminate leaks and allow the operator to easily maintain the valve seals. The center ball section of the valves is easily removed for maintenance or replacement.

Automatic backwash control is optional on the 2000 Series filtration system. The standard systems are design for a pressure range of 50 to 350 psi at a maximum of 250°F. Higher pressures and temperatures are available.

## Automatic Backwash

The 2000 Series filtration system features a maintenance free, programmable logic controller (PLC). The PLC allows backwash at a predetermined time, differential pressure or by manual command, and can be interfaced from one filter bank to the next in large systems so that only one start signal is required to clean the whole system. The flexibility of a PLC allows for additional process monitoring functions not available with conventional electrical or pneumatic control systems.

The backwash cycle is always accomplished with the system on-line, allowing continuous operation during cleaning and maintenance. The controller also allows for manual override to facilitate troubleshooting or maintenance, and it can be interfaced with the plant or process controller. The PLC can also be recommended by ProGuard or specified by the customer to help make program changes or upgrades less costly. All control system components are standard name brand industrial items with spare parts available in all metropolitan areas.

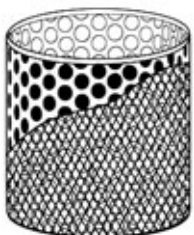
## Filter Media

There are three types of media available for use in the 2000 Series filter systems: Wire Mesh, Fabric and Wedge Wire. All 2000 Series filter elements are 3-1/4" in diameter and come in lengths of 24, 36 or 40 inches for a total surface area between 245 and 410 square inches.

**Wire Mesh:** ProGuard wire mesh is available in ranges from 20 mesh (1/32") to 30 micron and consists of 316 Stainless Steel woven wire cloth supported with a 316 Stainless Steel perforated tube. The wire cloth exhibits excellent solids release characteristics and withstands high differential pressures without deformation. Specially woven wire cloth is also available for filtration below 30 microns in specific applications.

**Fabric:** ProGuard fabric media is available in a variety of natural and synthetic fabrics to assure compatibility with a wide range of fluids with retention capability for particles in the 1 to 250 micron range. Standard fabrics include polypropylene, polyester, nylon and cotton. The fabric media exhibits higher flow rates per unit area than wire screens in the finer micron ranges. Fabric medias are especially suited for applications requiring 1 to 10 micron filtration. The fabric is supported on a 316 Stainless Steel screen and perforated tube. The perforated tube back-up is designed to provide the structural strength required for filtering and backwashing.

**Wedge Wire:** ProGuard wedge wire media is an all 316 Stainless Steel triangular shaped wire wound around vertical supports and is available for retentions of 10 mesh (.063") to 15 microns. The wedge wire media is excellent for highly viscous or abrasive slurries and will withstand very high differential pressures and temperatures.



Wire Mesh



Fabric



Wedge Wire

## Custom Built and Specialized Filtration Systems

In addition to our standard line of high quality filters, ProGuard welcomes the opportunity to design and build filtration systems to meet exact customer specifications. Our in-house design engineering staff will work with you to define and create the customized filter system that works for your specific situation. ProGuard is an ASME authorized pressure vessel manufacturer.

## Test Filter Program

ProGuard offers a unique test program for our customers to evaluate the applicability of tubular backwash filters with a minimal investment of time and money. For information on the Test Filter Program, contact the factory or your local ProGuard representative.



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