

How Girard Polly-Pigs Work

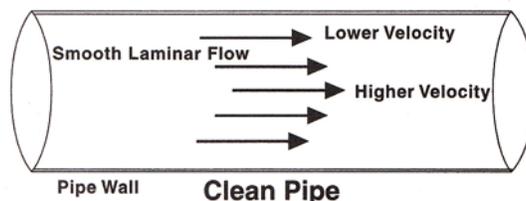
- **Open Cell Polyurethane Foam Construction**
- **Light, Medium or Heavy Density Foam**
- **Tough Polyurethane Coatings**
- **Steel, Plastic, or Nylon Brushes**

The Girard Polly-Pig is constructed of open cell polyurethane foam of various densities and is available with various types of external coatings. Although each pig has a specific application, some are interchangeable according to the user's preference within certain parameters.

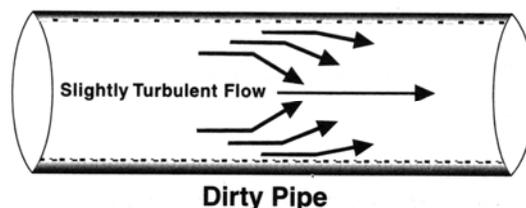
The Girard Polly-Pig is molded of polyurethane foam material of light, medium, or heavy density. Its bullet shape is designed to aid in traversing fittings and valves. Concave ends are available for bi-directional service. The length of the pig is approximately twice its diameter to reduce the possibility of the pig tumbling in the pipeline. The diameter of the Polly-Pig is larger than the inside diameter of the pipe. This is done to exert a frictional drag between the foam pig and pipe wall. Pigs can be ordered to any custom size requirements.

Polly-Pigs have a concave base plate with a 90A durometer polyurethane coating. This provides a maximum rear sealing surface for the propelling forces of the fluids or gases being used. Swabs or bare pigs, which have only the bases coated, are normally used in drying or batching operations. Special double-nose or double-dished pigs are used in bi-directional service.

The exterior coatings on the foam bodies consist of criss-cross type spirals of 90A durometer polyurethane. These spirals add strength and give greater wiping and scraping action as compared with bare foam. Girard manufactures two types of criss-cross pigs: the original pattern and the patented "Turning Pattern." Wire brushes, silicon carbide, or plastic bristles can be embedded in these polyurethane spirals to add maximum scraping or brushing action.



Laminar flow occurs in the above manner when pipes are clean. The type of pipe (carbon steel, stainless steel, cast iron, polyethylene, etc.) or fluid has no effect. Low flow velocities allow the solids to drop out of the fluid stream and begin to adhere to the walls of the pipe.

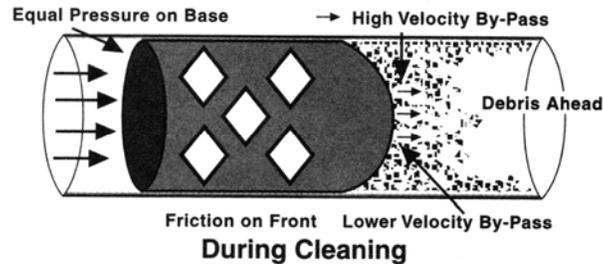


Turbulent flow occurs in dirty pipes containing uneven deposits. Wavy deposits as small as 1/32" (soft or hard) can cause flow to be reduced by one third. PVC, fiberglass, metal, non-ferrous and lined pipes can suffer this problem.



Choked Down Pipe

Extremely turbulent flow occurs in pipelines that contain large buildups such as tuberculation. Cast iron and steel pipes often develop stalactite/stalagmite types of growths. At this point the flow changes from laminar to turbulent, reducing flow and increasing pumping pressures.



The cleaning action of the Girard Polly-Pig is created by the frictional drag provided by the oversize diameter. In addition, the pressure created by the fluid on the rear of the pig compresses the pig longitudinally. This increases the frictional drag on the walls of the pipe and the pig's scraping action.

Some fluid passes around and through the foam body creating a high velocity, low volume jetting bypass. This bypass flushes debris ahead of the pig, suspending some of the debris in solution and sweeping it out of the line.