

FLOW RATES

HIGH PRESSURE BALL VALVES

All PIRTEK ball valves are full flow designs. A ball valve should never be used as a flow regulating device - i.e it should always be either fully open or fully closed. As such, a ball valve can be treated as simply part of the conduit in which it is installed. It is common practice to treat hydraulic components such as ball valves as an equivalent length of straight pipe to allow for turbulence associated with entrance and exit losses.

Catalog Section D details recommended flow velocities for a wide range of hydraulic conduits, but the flow nomograph (Fig.1) and selector graph (Fig. 2) below may be helpful for less rigorous assessments. For information concerning the empirical formulas and design charts that form the basis of hydraulic flow theory, refer to the PIRTEK Technical Catalog.

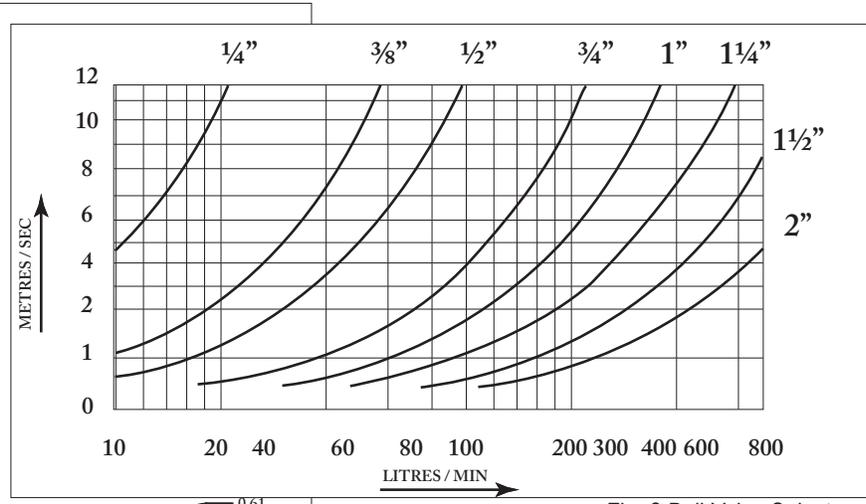
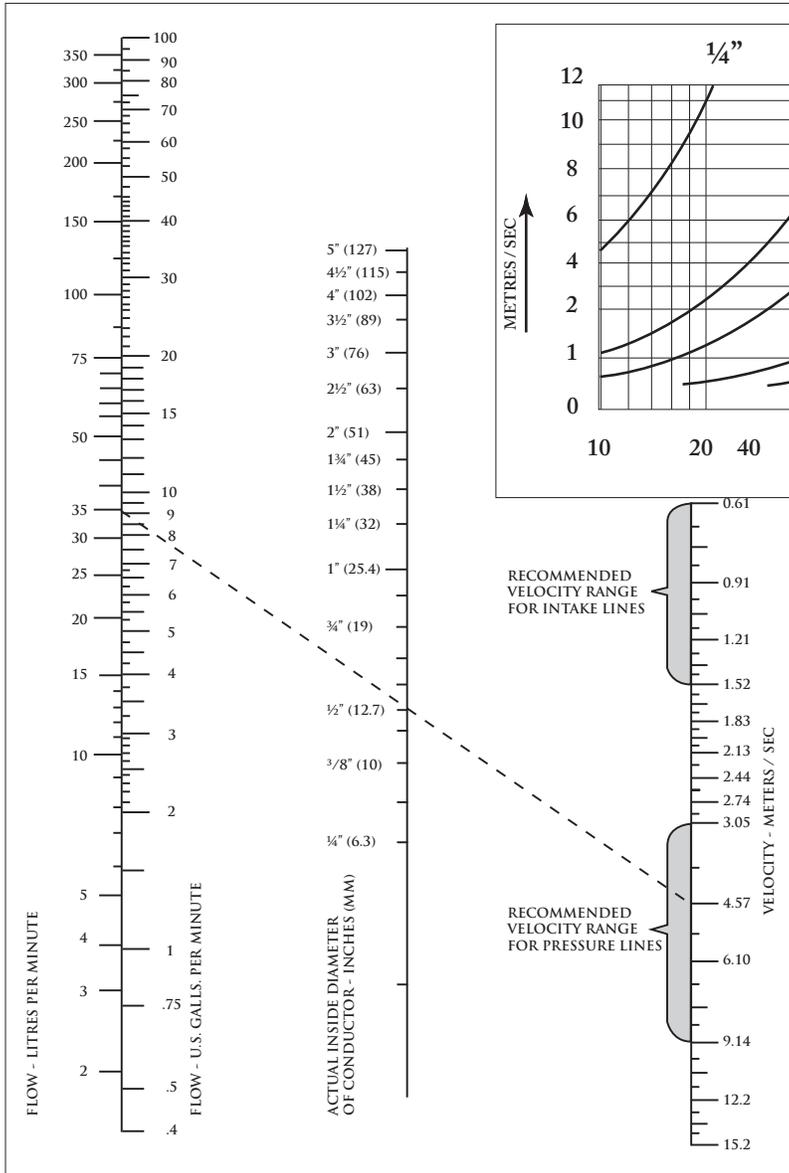


Fig. 2 Ball Valve Selector

Fig.1 Flow Nomograph



This page is part of a complete catalog containing technical and safety data. All data must be reviewed when selecting a product. PIRTEK reserves the right to change technical specifications without notice.



The functional requirements of a hydraulic system will determine whether the system needs to be closed or open (with or without a valve or connection to external componentry).

In the case of open systems, the external connection is often accomplished by means of quick disconnect couplings.

Many solutions have been developed to meet specific system requirements. Some typical problems that may need to be addressed when choosing a coupling include:

- Fluid loss when connecting / disconnecting
- Severe impulses and vibrations
- Danger of system contamination
- Difficulty in connecting / disconnecting due to residual pressures.
- System sensitivity to pressure losses by way of flow restrictions
- A need for some swivel capability in the coupling when depressurized
- Development of pressure on either or both sides of a coupling, even when disconnected.

Added to these are the more common considerations such as:

- Fluid compatibility with seals and componentry
- Physical compatibility between the male and female couplers. (PIRTEK do not recommend mixing couplers of different manufacturers, or even of different age, due to potential malfunction caused by spring pressure variations, wear etc.)
- Operating pressures and temperatures.
- Type of valve (poppet or ball). A poppet type uses a machined, self aligning valve that incorporates an elastomer to provide a positive seal upon disconnection, with no low pressure leakage, and generally providing a higher flow capability than a ball type. The ball type by contrast uses a metal to metal seal that is simple, rugged, and resistant to seat damage through contamination.
- Protective plugs / caps are recommended in plug or screw form (depending on type), to minimise system contamination.

6002P

Steel push-pull breakaway coupling to ISO-A Standard. 1/2" only.



19

4000

Widely popular steel coupling commonly known as agricultural interchange.



20

6000

ISO 7241-A steel coupler with NPT



21

F6600

ISO 7241-B industrial interchange steel coupler with NPT thread.



22

SF6600

ISO 7241-B industrial interchange stainless steel coupler with NPT thread.



23

7000 / 7200

Flat face steel coupling with NPT, UNO and BSP threads. Low spillage & contamination.



24-25

8000

Screw to connect steel coupler with NPT thread. Resists vibration.



26

9000/9500

Full flow coupling suited to trucking and hydraulic equipment applications



27-28

9800

Screw to connect brass wing style coupler with NPT thread.



29

2000 / 3000

Screw to connect steel coupler with NPT thread. For hydraulic tools.



30

SJ1 / SJ9

Steel bodied swivel joints to reduce twist in hose assemblies. Steel bodied inline check valve, NPT threads.



30-31