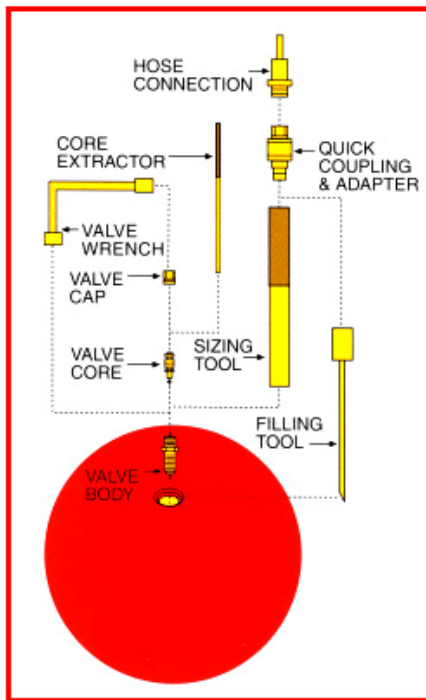


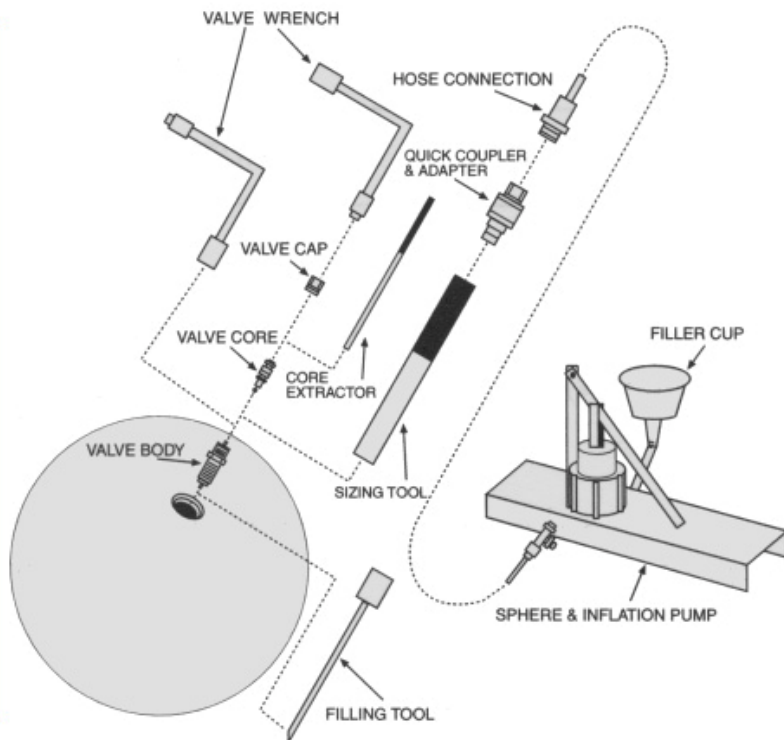
Sphere Pump Filling & Sizing

A **sphere pump (Fig 1)** is recommended to properly inflate a Girard sphere. The pump is easy to operate by placing the appropriate fluid in the filling cup, attaching the hose to the valve body in the sphere, and manually pressing the handle. The pump and attachments are available from Girard Industries.

(Fig 1)



(Fig 2)



(Fig 2) Valve Wrench: The small end fits the valve cap and the large end fits the hex on the valve body.

Step 1 - Remove Valves

Remove valve caps and depress valve core to assure that no pressure is inside the sphere.

Step 2 - Inspect Valves

Remove both valves. Be sure that the valve cores are tight and the stems are seating properly. Replace the valve cap and reinstall one of the valve bodies and valve caps. Use the core extractor to remove or tighten the stem if necessary. Do not install second valve at this time.

Step 3 - Fill Sphere with Liquid

Attach the filling tool to the pump hose and insert into the sphere through the valve hole. Fill the cup on the inflation pump with the liquid you have decided to use (water, glycol, water and glycol) and pump the liquid into the sphere until the sphere is full, i.e., liquid is running out of the valve hole. Continue to refill the filler cup until the sphere is full.

When the sphere appears to be full, it is important to make sure there are no air pockets trapped in the sphere cavity. If the sphere is small enough to pick up, gently bump it on a hard surface. Watch to see if the liquid in the valve hole settles into the sphere. If it does, pump in more liquid and again bump the sphere. Repeat until the liquid remains outside the sphere cavity.

If the sphere is too large to pick up, tap it on the side with something which will not damage the surface of the sphere. It is important that all of the air pockets be removed and replaced with liquid.

Step 4 - Install Other Valve

Make sure that the sphere is completely filled with liquid and there are no remaining air pockets. Reinstall the valve body, first making sure that the valve stem is tight and seating properly. Leave the cap off. The sphere is now ready to be sized to the predetermined diameter.

Sizing the Sphere

Screw the sizing tool down over the valve body and attach the pump hose. Pump liquid into the sphere until it expands to the proper diameter. Replace the cap with the small end of the valve wrench.

The sphere is now ready for use. In the case of pipelines, each time the sphere is loaded into a launching barrel the valve wrench should be used to make certain that both the valve body and the cap are secure.

The Sphere Pump

Before storing or using the sphere pump again, be certain to remove any pressure build-up in the pump hose by simply inserting the filling tool into the quick coupler on the end of the hose. Keep the filling tool pointed away from you. Operate pump handle a few strokes to remove any remaining fluid.