

SURGICAL CONDUIT LEAK TESTING

ABSTRACT

Systems, devices, and methods for leak testing surgical conduit grafts or valved conduits such as aortic-valved conduits with a pressurized gas such as air. Air is non-destructive and especially useful for leak testing conduits that have coatings or sealants that may be functionally impacted when exposed to fluids such as water or saline. Open ends of the conduit are clamped and sealed, and a pressurized gas introduced into an inner lumen thereof. A change in mass flow rate is measured to quantify the leakage. One end of a tubular conduit may be clamped to a fixed manifold, and the opposite end to a manifold slidably mounted to accommodate any conduit elongation when pressurized. The clamping and sealing structure may be pneumatic and/or mechanical, and complementary contoured clamp members may be used to seal a scalloped external sealing ring of an aortic conduit.

Fig. 1