

The IPI Inflation Dump Valve is designed to permit deflation of a water inflated packer regardless of the static water level in the borehole.

Water inflation of packers offers several benefits in certain applications, for example:

- a) To give an indication of borehole diameter, the volume of fluid used to inflate the packer is recorded and compared to calibration curves which relate volume to diameter.
- b) To maintain packer pressure over an extended period without the usual topping up which is required for gas inflation due to rubber permeability.
- c) To prevent over-expansion into a cavity or washout by monitoring inflation fluid volume.
- d) To provide a self compensating inflation system. This function is due to the incompressibility of the water which ensures that the packer inflation pressure increases in response to increases in the applied pressure.

Under normal circumstances, these advantages are only available where there is sufficient static head in the borehole to ensure packer deflation. The IPI Inflation Dump Valve overcomes this problem by ensuring that packer inflation fluid is dumped downhole, immediately above the packer.

It operates by means of a second control tube which supplies pressurized gas to the top of the dump valve to keep it closed during inflation. To deflate, this line is vented which allows the valve to open subsequently dumping the packer inflation fluid.

Through the astute balancing of differential areas a low gas pressure is used to operate even at very high packer inflation pressures.

