

Annulus Operated Reversing Valve (AORV)

The AORV is a single shot circulating valve giving unrestricted flow between tubing and annulus. Once open, the tool is retained in this position by a lock ring and cannot be reclosed.

Specifications:

Working pressure	15,000 psi/103.42 Mpa
Working temperature (See note 1)	350°F/175°C
OD (in/mm)	5" / 127mm
ID (in/mm)	2.25"/57.2mm
Upper thread connection	3 3/4" Stub Acme, 6 TPI
Lower thread connection	3 3/4" Stub Acme, 6 TPI
Tensile strength	350,000lbf/155,600daN
Tensile strength at max working pressure	30,000lbf/13,345daN
Tool length (in/mm)	41.4in/1052mm
Tool weight (lbs/kg)	250 lbs/ 133 kg
Service condition	H2S per Nace MR-01-75

Note 1: Working temperature can be increased by changing sealing configuration as follows:

- Up to 400°F/204°C – Standard elastomers and premium back-up rings.
- Up to 450°F/232°C – Premium elastomers and premium back-up rings.

Operation:

The AORV is opened by applied annulus pressure, bursting a high-accuracy rupture disc ($\pm 2\%$ of the disc's rupture rating). The pressure acts on an unbalanced piston, forcing the mandrel to the open position. The mandrel is then locked in the open position by the locking mechanism.

