

# TRAC Series Annular Control Systems

Annular control, surface-controlled, rod piston safety valves with working pressures to 5,000 psi [34,475 kPa]

## APPLICATION

- Sweet to moderately corrosive environments from 40 degF to 300 degF [4 degC to 149 degC]

## BENEFITS

- Reduces pressure obstructions and simplifies slickline operations.
- Readily adapts to most large-bore packers.
- Facilitates dual-zone production and provides an annular path for injection gas flow.
- Allows fewer potential leak paths.
- Reduces problems associated with solids and scale deposition.

## FEATURES

- Straight-through bore design
- Large annular flow
- Isolation of tubing flow from annular flow at the valve
- Minimum number of seals
- Optimal geometry and clearance between sliding components

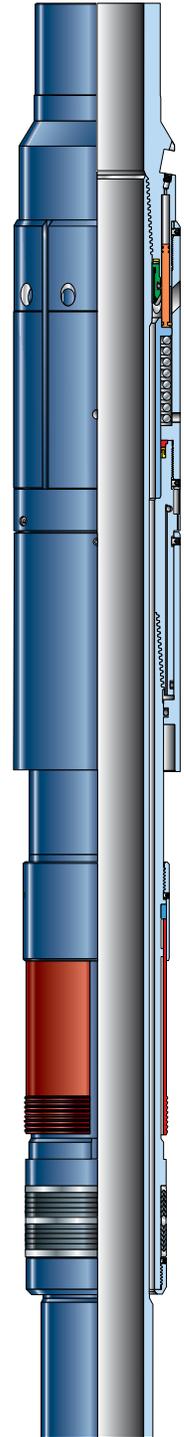
The Camco\* high-performance TRAC series surface-controlled, subsurface safety valves are used in gas- and water-injection applications or in dual-zone applications to control annular flow. These valves control injection and produced well fluids to minimize the loss of produced fluids and reduce the danger resulting from loss of injection gas or well fluids. By isolating the tubing flow from the annular flow, the TRAC series valves provide a high degree of well protection and facilitate dual-zone production with both annular and tubing flow. TRAC series valves also provide an annular path for injection gas.

The TRAC series valves use a patented rod-piston actuation system for deeper setting depths. The rod-piston system provides superior performance, predictable operation, decreased friction, and a reduced hydraulic area. The large, straight-through bore design facilitates slickline operations and reduces obstructions that could decrease pressure. The large annular flow area is adaptable for use with most large-bore packers.

These valves are commonly used with Schlumberger HAP series packers. These innovative mudline packers are specifically matched for annular control safety system requirements and feature dramatically improved hanging-weight capacity. They offer protection to the uppermost portion of the casing annulus and give exceptional performance when large amounts of weight must be supported.

The AC-HD packer can also be used with the TRAC valve to give a more cost-effective solution where high hanging weights are not required.

Selected models of the TRAC series include the packer setting mechanism that allows one-trip installation on the production string. TRAC series valves without the setting function can be adapted to most large-bore packers, retrievable or permanent.



TRAC-4 safety valve.

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## OPERATION

When used in gas lift installations, all TRAC series valves are installed in the tubing string directly above a packer. The packer and the optional lower ported landing nipple can be installed in the well on a work string. The valve seats and locks in the upper portion of the packer and can be unlocked and retrieved independently of the packer. Each valve has an extension tube that extends through the packer. The extension tube seats directly below the ports in the lower ported nipple ID or includes a tubing connection for direct installation in the production string. The area between the extension tube OD, the packer, and the safety valve ID forms the annular flow path.

### Open

When the valve is opened, injection gas flow enters through ports in the valve, travels down the annular flow path through the packer, and exits into the casing annulus below the packer. Production flow travels upward through the static extension tube and the center of the valve.

### Close

If hydraulic control line pressure is released, the spring-loaded flow tube moves upward to contact the concentric hard and soft seat and shuts in the annular flow.

## Engineering Data for TRAC Series Annular Control Systems

Tubing Size <sup>†</sup> (in [mm])	Valve Type	Max. OD (in [mm])	Standard Polished Bore (in [mm])	Working Pressure (psi [kPa])
2.875 [73.0]	TRAC-3	4.500 [114.3]	2.375 [60.3]	3,000 [20,685]
3.500 [88.9]	TRAC-1	5.875 [149.2]	2.812 [71.4]	5,000 [34,475]
	TRAC-2	6.241 [158.5]	2.875 [73.0]	
4.500 [114.3]	TRAC-4-STD	8.326 [211.5]	3.883 [98.6]	
			5.500 [139.7]	

<sup>†</sup> The engineering data provided illustrate the scope of this product offering and are not all inclusive. Additional sizes and pressure ratings are available upon request.

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