



The **ORIO™ 3D Toe Sleeve** is a metering sliding sleeve which is run near the toe of a horizontal well. The toe sleeve allows the casing to be tested to surface pressures up to 15,000 psi. Once the rupture disk pressure has been reached, the sleeve will open after a predetermined amount of time. This gives enough time for a casing pressure test to be performed. Once opened, high injection rate can be established to facilitate subsequent plug and perf operations.

The unique and patented three-layer design keeps all the moving parts encapsulated and protected from the well-bore environment. This ensures that the sleeve, once activated, is always fully open.

The ORIO Toe Sleeve utilizes a rupture disk and an atmospheric chamber to precisely control the initiation pressure. Proprietary debris management system and metering device control the opening time and pressure. Temperature, annular pressure and cement do not affect the opening pressure of the tool.

### Features and Customer Benefits

- Allows casing tests in excess of 15,000 psi
- Hydraulically opens at or below the casing test at a predetermined time and or pressure
- The unique and patented three-layer design keeps all the moving parts encapsulated and protected from the well-bore environment
- Proprietary debris management system and metering device precisely control the opening time and pressure
- Shouldered connections allow for rotation while running in the hole or during cementing operations
- Compatible with heavy-duty cement wiper plugs



Casing Size (inches)	4-1/2"	5-1/2"	5-1/2" Big Bore
Assembly Number	T1049-45-000	T1049-55-001	T1049-55-000
OD (inches)	5.630	6.755	7.380
ID (inches)	3.495	4.245	4.605
Length (inches)	48	49	48
Max Rupture Disk (psi)	18,000	18,000	18,000
Flow Port Area (in sq)	9.734	15.988	16.085
Torque (ft-lbs)	25,000	30,000	32,900