

# LEE TECH TALK

## TECHNICAL APPLICATION NEWS BRIEF

### DUAL SEALING A.F.O. PLUGS PROVIDE PRE-CHARGE AND PURGE FUNCTIONS

#### The Challenge

As oil and gas wells continue to operate deeper and deeper within the earth, drilling, completion, and production equipment are subjected to ever increasing hydrostatic pressures. When equipment returns to the surface that pressure may remain within the tool, which would need to be safely purged. In addition, the equipment needs to withstand exposure to a wide range of aggressive wellbore fluids.

#### The Solution

As an expansion of our A.F.O. (axial force only) Plug product line, The Lee Company now offers Dual Sealing A.F.O. Plugs, which incorporate an O-ring with two backup rings capable of venting pressures up to 15,000 psi. Machined out of materials compliant with NACE specification MR0175, Dual Sealing A.F.O. Plugs can easily handle all the typical subsea and downhole fluids and gases.

#### The Benefits

An O-ring with two backup rings allows the Dual Sealing A.F.O. plug to handle high pressure in the open position, regardless of the pressure direction. In the closed position, a metal to metal seal is engaged, providing a leak-tight configuration for pressures up to 56,000 psi. The body and nose are made of MP35N, the O-ring is FKM, and the back-up rings are PEEK. These materials provide exceptional corrosion resistance and sealing performance at temperatures up to 400°F. Designed to be both removable and reusable, the plug features a unique floating nose that self-aligns to allow for threaded holes that are not concentric with the thru-hole. Also, the sealing elements do not rotate during installation, which prevents galling of the seat.



#### Potential Applications

Dual Sealing A.F.O. plugs are found in a wide range of applications. They are often designed into oil and gas equipment wherever hydrostatic pressure can get trapped and needs to be purged.

They are also used as a fill valve for charging pressure vessels prior to deployment and can be used for pressure equalization, where they can easily and safely allow pressure to balance between two pressure circuits, such as the ram chambers in a BOP. Large diameter A.F.O. plugs are also used in gas lift and chemical injection systems.

#### Lee Dual Sealing A.F.O. Plugs

Dual sealing A.F.O. Plugs are a natural extension of our classic A.F.O. design and are available in three thread sizes, 0.312, 0.375, and 0.500 inches. More than 200,000 A.F.O. plugs have been sold since their market introduction over 20 years ago.

#### THE LEE COMPANY

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