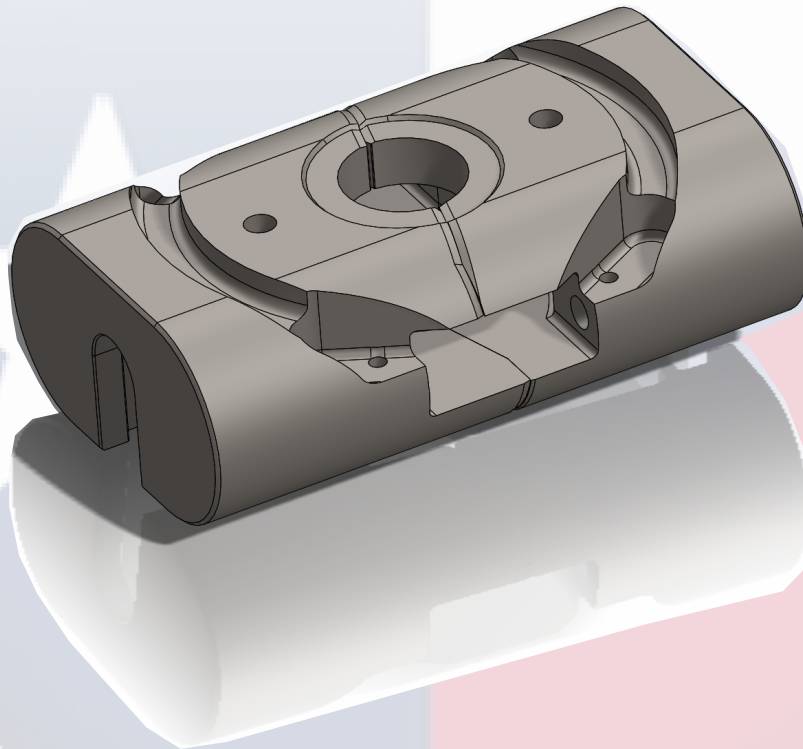


BOP Products Rams

B.O.P. Products specializes in a wide variety of Series 700 Rams.

B.O.P. Products provides the most comprehensive range of BOP rams and ram packers in the industry for managing well control events, including rams for shearing high-strength casing and drill collars, variable bore sealing, and high-temperature applications. Our ram packers use proprietary elastomer technologies that help to improve performance, extend service life, reduce downtime, and lower operating costs. BOP Rams, or ram blocks, consist of four common types: pipe, blind, shear and blind shear; and are offered for mid to large bore, high pressure BOPs.

Series 700 Pipe Rams

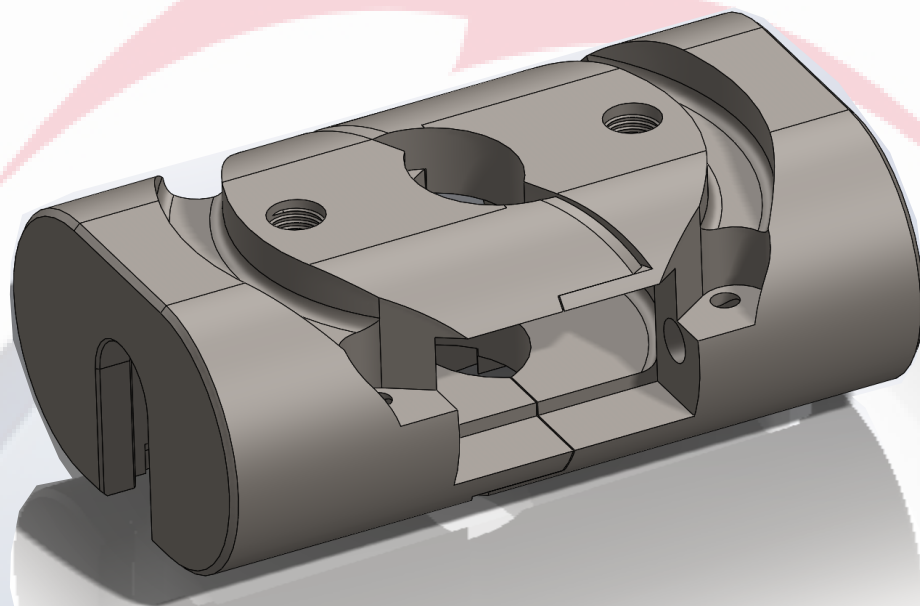


Pipe rams are available for use in B.O.P. Products Series 700 (U) BOPs to fit all commonly used sizes of tubing, drill pipe, drill collar or casing within the ranges in the charts on this page and the next page. B.O.P. Products pipe rams include the following features:

- BOP Products pipe rams are self-feeding and incorporate a large reservoir of packer rubber to ensure a long-lasting seal under all conditions.
- Ram packers lock into place and are not dislodged by well flow.
- All BOP Products pipe rams are suitable for H2S service per NACE MR-01-75.
- B.O.P. Products top seals are standard for all Series 700 BOP pipe rams from 7-1/16" through 18-3/4" sizes.
- BOPRAM 350 packers and top seals are available for high temperature service and for service in which concentrations of H2S are expected

BOP Products Rams

Series 700 Variable Bore Rams



One set of B.O.P. Products Variable Bore Rams (VBRs) seals on several sizes of pipe or hexagonal kelly. Variable bore rams are available in the size ranges listed in the chart below. All rams listed are suitable for H2S service per NACE MR-01-75.

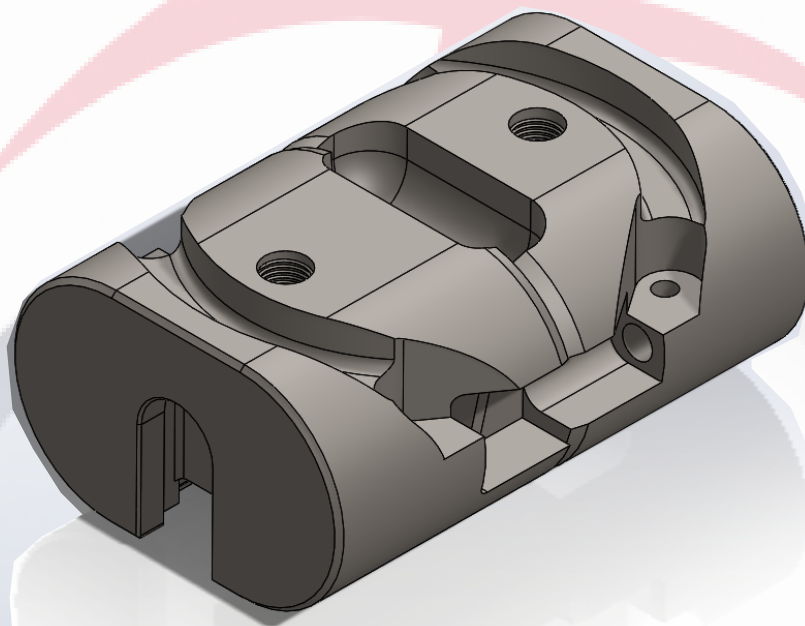
BOPRAM top seals are standard for all U BOP variable bore rams.

BOPRAM packers are available in most sizes. All packers are standard elastomer material.

The variable bore ram inserts rotate inward when the rams are closed so the steel provides support for the rubber which seals against the pipe.

BOP Products Rams

Series 700 Shear Rams



- B.O.P. Products Shearing Blind Rams (SBRs) shear the pipe in the hole, then bend the lower section of sheared pipe to allow the rams to close and seal. SBR's can be used as blind rams during normal drilling operations.
- The Dual Shearing Blind Ram (DS) can cut larger diameter tubulars or multiple tubing strings regardless of their orientation to the centerline of the ram. A blade seal between the upper and lower faces eliminates the need for moving pipe after shearing.
- The Interlocking Shear Ram (ISR) is available for the Series 700 (U) BOP. The ISR ram provides an improved shearing capacity alternative to the standard SBR ram, and should only be used when the standard rams cannot handle the desired shearing load. Since the geometry of the ISR ram incorporates a "V" shape and is designed as wide as possible, it can shear multiple strings and drill pipe as large as 6-5/8" OD. Also, ISR rams do not have to fold over the lower fish. This means less force is required to shear and, by leaving the fish open, kill mud can be pumped down the severed drill string. The interlocking mechanism incorporated in the ISR means that these rams can be utilized in an oversized cavity without fear of a leak at low wellbore pressures.

Features of SBR's, DS, and ISR rams include:

- Large frontal area on the blade face seal reduces pressure on the rubber and increases service life.
- B.O.P. Products SBRs can cut pipe numerous times without damage to the cutting edge.
- The single-piece body incorporates an integrated cutting edge.
- BOP Products top seals are standard for all U BOP shearing blind rams through 18-3/4".
- H2S SBRs are available for critical service applications and include a blade material of hardened high alloy suitable for H2S service.
- The B.O.P. Products shearing blind ram has a single-piece body with an integrated cutting edge.