

BroadShear[®] off-center tool joint shear rams

Improves certainty in shearing performance while reducing rig time and HSE risk, and enables regulatory compliance

Applications

BroadShear[®] off-center tool joint shear rams constitute the industry's only shear ram technology that reliably cuts everything from off-center tool joints to wireline, including tool joint hardbanding—drillstring components previously considered unshearable.

How it improves wells

The ability to shear drillpipe inside a BOP has long been a regulatory requirement. In a dangerous kick situation, the subsea controls trigger a defined sequence of functions, including shearing the drillpipe. Operators must be confident that the shear rams inside the BOP will shear the pipe and allow the rig to disconnect and move off site.

BroadShear rams shear casing diameters up to 16 in, as well as tool joints, hardbanding, and wireline. Tool joints can even be sheared off-center. With these advances, more drillstring components can be sheared than ever before.

How it works

In a series of rigorous tests, a single set of BroadShear rams successfully sheared various drillstring components seven times. These tests included shearing through the pin or box, hardbanding, and off-center components. These tests are some of the toughest shear tests performed in the industry.

The shearing action of the BroadShear ram is similar to SuperShear[®] casing shear rams, but with added capacity. BroadShear rams use a different connection from SuperShear rams so they are not directly retrofittable with SuperShear ram bonnets. However, upgrade kits are available to adapt existing SuperShear ram bonnets to the BroadShear ram.

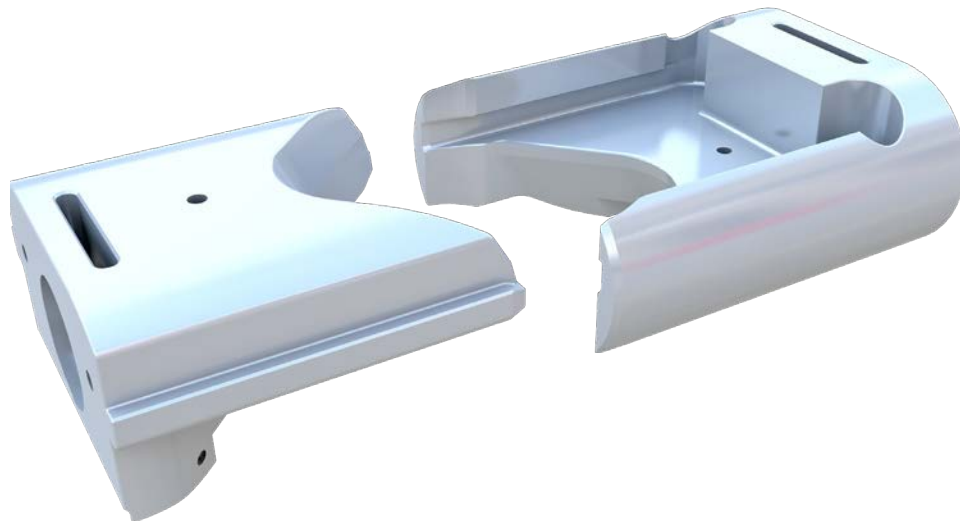
What it replaces

Conventional shear rams.

In 2016, the Bureau of Safety and Environmental Enforcement (BSEE) released its new Well Control Rule, which requires that a subsea BOP system must have the following mechanisms and capabilities:

- A mechanism coupled with each shear ram to position the entire pipe completely within the area of the shearing blade and ensure shearing will occur any time the shear rams are activated. This mechanism cannot be another ram BOP or annular preventer, although those can be used during a planned shear. The mechanism must be installed no later than May 1, 2023.
- An ability to mitigate compression of the pipe stub between the shearing rams when both shear rams are closed.
- Enhanced metallurgy for improved strength and control
- Compatible with
 - TL* offshore ram-type BOP or EVO* compact offshore ram-type BOP
 - other Cameron subsea solutions using the BroadShear ram with SPRA* subsea pressure reduction assembly, resulting in an improved BOP system with reduced accumulators.

BroadShear rams are already capable of shearing in compliance with this rule.



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