

# Clamp Quick-Connect System

Faster, more reliable high-pressure connection for frac hoses

**Pressure:**

Up to 15,000 psi [103 MPa]

**Temperature:**

-20 to 250 degF [-29 to 121 degC]

**Pump rate:**

Up to 20 bbl/min [3.2 m<sup>3</sup>/m]

## Applications

- Onshore unconventional wells
- Frac pumping operations

## How it improves wells

Replacing inherently weak conventional hammer unions as the primary connection for frac iron and high-pressure hoses with the 3-in clamp quick-connect system (CCS30) brings numerous benefits:

- Rapid setup time of 20 s or less for the clamp quick-connect system on each end of frac hoses—including correction of up to 15° misalignment between the two parts to be connected—reduces hose makeup time by 75% compared with that required for the hammer unions.
- Field-verified robust performance slashes the risk of NPT due to connection wear, fatigue, or separation due to vibration. HSE issues resulting from hammer union failure are also avoided, protecting people from injury and equipment from damage.
- Installation of the CCS30 is safer because a conventional torque wrench is used to achieve a specific predetermined torque value, eliminating injuries resulting from using a sledge hammer during hammer union installation and improperly set connections.
- Faster line disconnection and subsequent reconnection of pumps to maintain or replace them greatly reduces the downtime.

## How it works

The clamp quick-connect system is a 3-in connector for 2-, 2.7-, and 3-in small-bore frac hoses that connect the pump trucks to the missile. The hub adapter option enables connection to any pump union type.

## Additional information

The CCS30 is a fast connection or union that was adapted to onshore frac operations from an innovative subsea operations application. The CCS30 uses a single-bolt setup that enables setting or unsetting the clamp in a few seconds using a standard torque wrench. Designed to withstand vibration and the loads originated by the dynamics of frac operations, the highly reliable system provides a proprietary wear-resistant metal-to-metal seal and includes a secondary locking component that eliminates the risk of possible backing up of the lead screw.

## Misalignment correction

Compared with the hammer union, the CCS30 can correct for some misalignment. For hammer union connections makeup, the two parts to be connected must be perfectly aligned to engage the male-female threads. The quick-connect clamp allows up to 15° of misalignment between the two components to be connected because the CCS30 grabs and pulls the hubs into place.

## Secondary barrier when disconnected

The CCS30 includes a blind cap for use as a secondary barrier when the frac hoses are disconnected from the clamp. This prevents fluid release to the atmosphere in the event that upstream isolation valves are leaking.



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