

MonoFlex

Dual-connection fracturing fluid delivery technology

MonoFlex* dual-connection fracturing fluid delivery technology, the pioneer in flexible, erosion-resistant fracturing fluid delivery, has been improving fracturing efficiency and economics since 2017.

A **safer and more reliable** alternative to conventional treating iron, MonoFlex technology delivers fracturing fluid in **any part of the fracturing operations**, from the frac pumps through manifolds, trunk lines, instrumentation skids, and into the frac tree. The technology can be used on the pumpdown side, for perforating operations, as well.



Layered protection helps extend the lifetime of flexible, erosion-and damage-resistant MonoFlex technology, as compared with conventional iron solutions.

Specifications

Nominal Diameter, in	2	2.7	3	4	5	6
Max. injection rate, bbl/min [m ³ /min]	13 [2.1]	24 [3.8]	30 [4.8]	65 [10.3]	110 [17.5]	155 [24.6]

Various bore sizes with 15,000-psi [103.4-MPa] maximum working pressure and temperature range from -40 to 158 degF [-40 to 70 degC].



Save time

MonoFlex technology reduces the number of connections required, accelerating rig-up and eliminating NPT of tightening leaky connections. Its erosion-resistant design also minimizes the time required for inspection, maintenance, and repair.



Increase flow rate

Smooth, flexible material eliminates swivels and the resulting friction pressure losses, improving hydraulic horsepower efficiency and enabling increased flow rates. More linear flow also limits tortuosity, turbulence, and erosion, which extends unit lifetime.



Reduce HSE risks

Limit exposure to HSE risks from leaky or poorly matched hammer unions. Eliminate trip hazards from complex iron rig-ups.

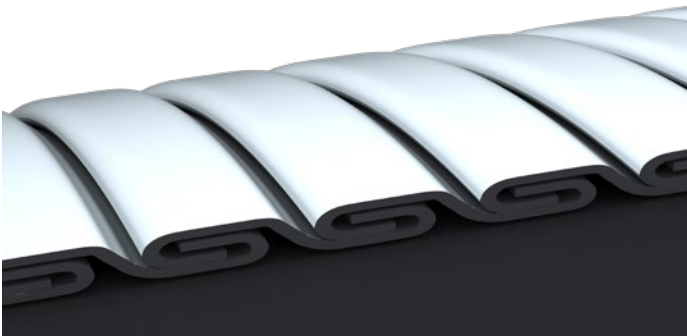
MonoFlex Technology: Frac Pumps to Frac Manifold



The challenge

Conventional treating iron typically requires 10 to 15 hammer union connections, including four swivel elbows to ensure flexibility between a frac pump and the manifold. In addition to extending rig-up time, each connection is a leak path: Cameron analysis of 12 months of fracturing operations in West Texas determined that 19% of leaks during hydraulic fracturing operations occurred between the pumps and the manifold.

Typical lifetime of conventional flow iron for this application is less than 2 years.



Interlocking protection plates prevent damage to the MonoFlex technology while leaving it flexible enough to accommodate your wellsite requirements.

The solution



MonoFlex dual-connection fracturing fluid delivery technology requires just two connections, simplifying the flow path to create a more linear fluid transition into the manifold inlets. The smooth flow path through the MonoFlex technology limits friction losses, enabling you to deliver higher pump rates through a comparable internal diameter.



You can customize MonoFlex technology with diameters from 2 to 3 in as well as your preferred length and end connections. A repairable hard cover protects the technology from physical damage.



The life expectancy of the small-bore MonoFlex technology is 3 to 4 years, about double that of conventional flow iron, which reduces your total cost of ownership.

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