

# 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 <sup>3</sup> /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: Zipper Manifold to Frac Tree or Trunk Line



## The challenge

Conventional treating iron requires about 50 hammer union connections—and potential leak paths—between the manifold and the frac tree.

The rigidity and ID of the flow iron constrain the rig-up, typically resulting in dozens of tight turns and multiple parallel paths that create friction pressure losses in the fluid stream and increase your hydraulic horsepower requirements.

## The solution



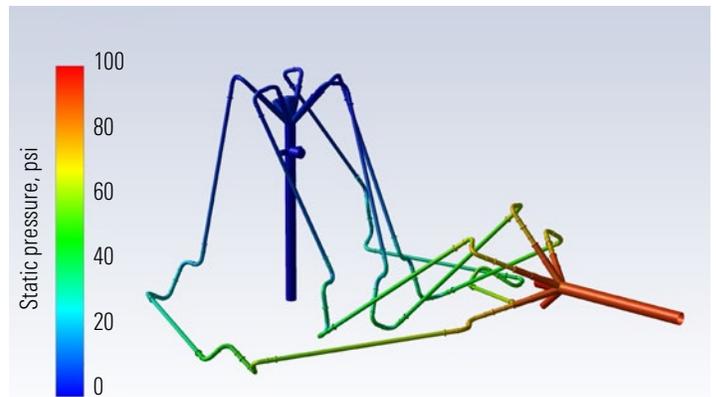
MonoFlex dual-connection fracturing fluid delivery technology requires just two connections, which accelerates rig-up and eliminates leak-related NPT as well as HSE risks.



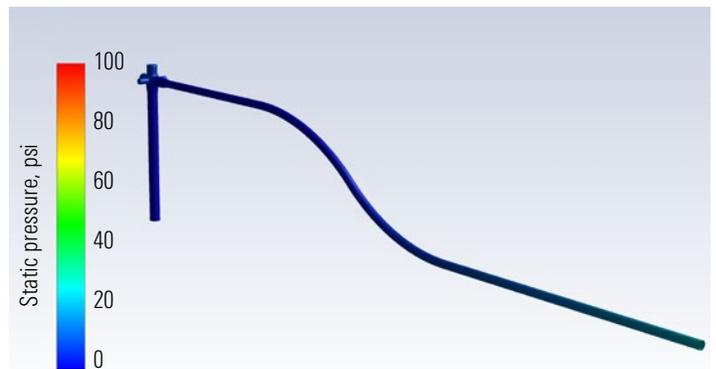
The flexibility of the 4- to 6-in MonoFlex technology easily accommodates vertical and horizontal misalignments between the frac tree and the manifold, leaving a less complicated wellsite.



By eliminating sharp turns and multiple flow paths, MonoFlex technology limits friction losses by 2% to 4%, typically reducing hydraulic horsepower requirements while still accommodating flow rates up to 160 bbl/min.



*Friction losses and turbulent flow in conventional frac iron increase your hydraulic horsepower requirements.*



*Linear flow through MonoFlex technology limits friction losses, reducing hydraulic horsepower requirements.*

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