d-Solve Nozzle

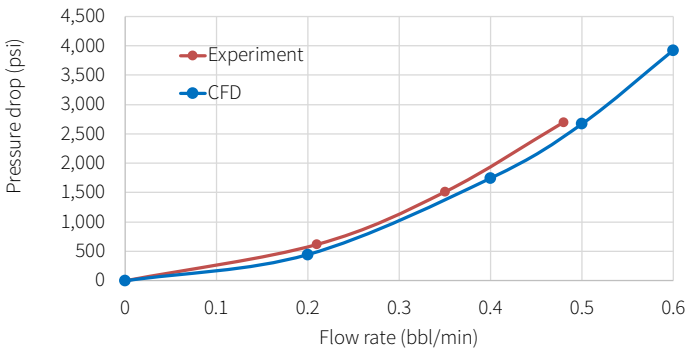
d-Solve™ nozzles bring advanced dissolving technology to optimize your lower completion performance.

Multiple nozzles are installed as part of the liner base pipe, screen completions eliminate wash pipe requirements for circulation and allow full customization based on the stimulation design. Our d-Solve nozzle features were designed using computational fluid dynamics (CFD) modeling, real-world flow testing, and high precision dissolving technology. (The charts below show pressure drops across different sized nozzles at different flow rates based on CFD and actual experiments.)

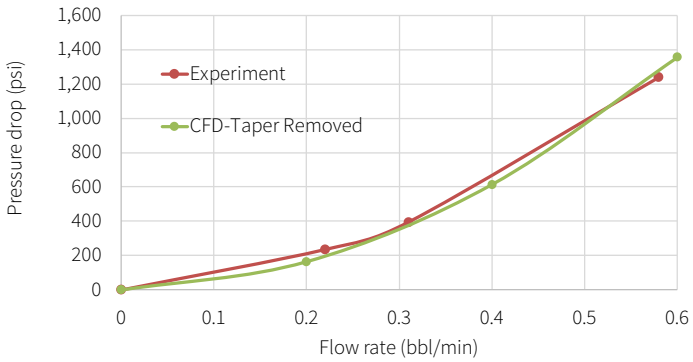
Each nozzle is equipped with an integral dissolving insert that was meticulously tested far beyond any requirements. The inserts don't dissolve until exposure to a known fluid for a particular timeframe.

The nozzles maintain casing integrity during lower completion installations, allowing the setting for hydraulic-activated devices. They then provide access to the reservoir for stimulation and production operations once the timeframe is reached.

3-mm Nozzle: Pressure Drop vs. Flow Rate



4-mm Nozzle: Pressure Drop vs. Flow Rate



Features and benefits

- Allows circulation through the entire liner during installation
- Nozzle inserts dissolve only when exposed to a known fluid
- Reaction is brine concentration-independent
- Nozzles are installed as part of the base pipe, making it fully scalable
- Fully compatible with acid stimulations and production flowback
- Dissolving inserts can be tailored for specific applications
- Holds enough internal pressure to allow for setting hydraulic-activated devices

Applications

- Pre-perforated liners
- Screen completions
- Areas where delayed reservoir access is desirable
- Full scalability technology can be deployed to any completion design
- Acid stimulations