Sand-Jet Perforator

Weatherford's sand-jet perforator (SJP) is designed to perforate casing and cement using abrasive-laden slurry to extend a cavity into the reservoir. The tool can be used independently to jet perforations or combined with a mechanical set packer to perform multiple functions in a single trip. The SJP provides perforations with no skin effect or formation damage; therefore, breakdown pressures for fracture initiation are reduced, leading to more effective stimulation treatments.

The SJP does not require explosives and is ideal for perforating operations where well conditions prohibit the use of electric-line-conveyed guns. The tool can be run with jointed pipe or coiled tubing and can be used on new oil and gas wells and in existing zones that require reperforation where the buildup of sediment caused by flowing oil decreases production.

Applications

- Perforation and reperforation of horizontal and vertical wells
- Perforation and treatment of coalbed-methane wells
- Nonexplosive perforation operations
- Chemical treatment of zones with plugs and thru-tubing packers

Features, Advantages and Benefits

- SJP can be run with jointed pipe or coiled tubing, enhancing operational flexibility.
- Increased vertical permeability in horizontal applications provides additional production capability, enhancing operational efficiency.
- SJP produces burr-free perforations, reducing casing damage, tool wear, and injection pressures associated with perforation friction.
- Tools can be customized for specific casing sizes and phasing to meet customer requirements, providing operational flexibility.
- SJP has no depth or temperature limitations, enabling operations in high-temperature, high-pressure (HTHP) environments.

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Specifications

Casing Size (in./*mm*)	Tool Gauge OD (in./*mm*)	Tool Body OD (in./*mm*)	Jet Quantity & Phasing	Connections		Jet Nozzle Size (in./*mm*)	
				Type	Size (in./*mm*)		
2-7/8 *73.0*	2-1/8 *54.0*	2-1/8 *54.0*	9 jets, 3 at 120°	MT	1-1/2 *38.1*	1/8 *0.125*	3/16 *0.188*
3-1/2 *88.9*	2-5/8 *66.7*	2-1/8 *54.0*	9 jets, 3 at 120°				
4-1/2 *114.3*	3-1/2 *88.9*	3 *76.2*	9 jets, 3 at 120° 8 jets, 2 at 180° 7 jets, 6/ft at 60°	WTS-8	2-3/8 *60.3*		
5-1/2 *139.7*	4-1/4 *108.0*	3 *76.2*	9 jets, 3 at 120° 8 jets, 2 at 180° 7 jets, 6/ft at 60°				
7 *177.8*	6 *152.4*	3 *76.2*	9 jets, 3 at 120° 8 jets, 2 at 180° 7 jets, 6/ft at 60°				