

FULL FLOW CAGE

APPLICATIONS

- All kinds of sucker rod pumps
- Standing and Traveling valves

BENEFITS & FEATURES

- Up to 41% reduction in ball rattle compared to 3-hole cages
- Up to 25 % reduction in pressure drop compared to 3-hole cages
- Better flow for sand and other solids compared to 3-hole cages
- Available in different raw materials: Steel, Stainless, Monel, Brass and Hard Lined

The Ellis Full Flow Cages are available in traveling valve (C13F), standing valve (C14F), double valve (C18F) and compression cage (C19F) applications. It replaces the traditional 3-hole cages. Full Flow Cages have an open flow through the cage unlike 3-hole cages. This helps in reducing the ball rattle up to 41% and the pressure drop up to 25% as the fluid flows through the cage. Excessive ball rattle can beat out the cage causing premature failure. Ellis Full Flow Cage is carefully designed to reduce ball rattle by cupping the ball while preventing the ball from getting stuck in the cage. Reduced pressure drop results in lesser gas breakout into the pump intake. The open flow design provides a better flow for sand and solids than a 3-hole cage.

Ellis Manufacturing has developed an in-house flow loop to test the performance of diverse types of cages currently used in the sucker rod pump industry. A comparative study was performed between 3-hole and full flow cages. The data revealed less ball rattle and lower pressure drop in the Ellis Full Flow Cages compared to 3-hole cages at a given flow rate (gpm).



PERFORMANCE DATA FOR 2-1/2 STANDING VALVE CAGE

FLOW RATE gpm (bpd)	ELLIS 2-1/2 FULL FLOW SV		ELLIS 2-1/2 3-HOLE SV	
	1-3/8 BALL	1-3/8 BALL	1-3/8 BALL	1-3/8 BALL
2 (68.6)	73.5	74.3	11	14
3 (102.9)	74.7	76	10	13
4 (137.1)	72.3	76.1	10	11
6 (205.7)	46.3	72.8	6	8
8 (274.3)	46.9	76.5	13	14
10 (342.9)	47.8	80.3	20	21
12 (411.4)	49.1	82.9	29	29
13.55 (464.6)	50.2	85.1	39	39

Maximum flow through 2-1/2 full flow and 3-hole cage is 13.55 gpm (464.6 bpd)

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