

Multiphase Pump

Dynamic performance in high sand and gas environments

APPLICATIONS

- Moderate to deep wells
- Low- to high-fluid-level wells

BENEFITS

- Excellent efficiency in high solution gas and sand-laden fluids
- Increases run life
- Reduces well intervention frequency

FEATURES

- Open-top traveling valve
- Hollow valve rod
- Two-stage traveling valves

The Don-Nan Multiphase Pump packs a powerful punch with design features that enable exceptional performance in wells with high amounts of gas-entrained and sand-laden fluid through a combination of carefully selected components. The design of the Multiphase Pump relies on the principle features that make many of our other specialty pumps excel in their respective applications.

Design

In order to effectively handle gas, the Multiphase Pump relies on a hollow valve rod for increased rigidity compared to a valve rod. In instances of incomplete pump fillage due to gas or sucker rod overtravel, the hollow valve rod is able to prevent buckling at the top of the pump and translate any bending that might occur farther up the rod string, distributing stress throughout the equipment and mitigating damage.

The Multiphase Pump employs two traveling valves; one on the lower end of the traveling assembly and another at the top. Often referred to as a two-stage pump for this valve configuration, it results in two separate compression chambers. The upper valve holds the hydrostatic pressure allowing the lower valve to more easily open, especially in the presence of gas. The upper valve is also an open-top cage which allows fluid to be discharged throughout the stroke length rather than in a single point, eliminating erosion of the tubing from stationary discharge.

An additional benefit of using a hollow valve rod is that sand is contained between the two traveling valves with no ability to re-enter the pump due to the exit point being the open-top traveling valve cage. This drastically reduces the possibility of sand presence between the plunger and barrel.



Multiphase Pump

Multiphase Pump

Dynamic performance in high sand and gas environments



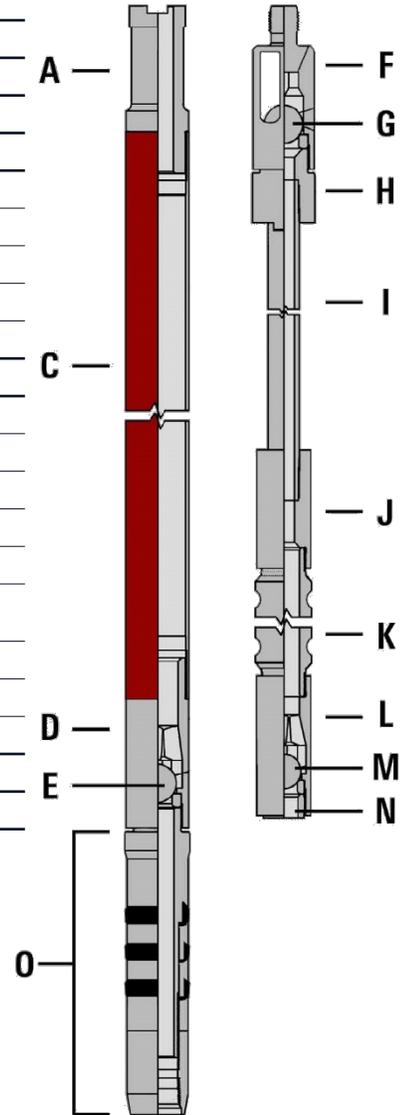
Multiphase Pump Specifications

		Tubing x Pump Bore Size, in					
		2 x 1 1/4	2 x 1 1/2	2 7/8 x 1 3/4	2 7/8 x 1 3/4	2 7/8 x 2	
Description	Item Req.	Part Number					
Stationary Assembly							
Guide	A	GT119	GT129	GT229	GT249	GT249	
Coupling, extension	B	EN2167	-	EN3167	EN4167	-	
Barrel, heavy wall	C	1	BT04207C	BT06207C	BT07207C	BT08207C	BT13207C
Cage, closed barrel	D		CF502	CF522	CF671-2	CF671-3	CF626
Valve, ball and seat	E		047 + 05	047 + 05	048 + 06	048 + 06	048 + 06
Traveling Assembly							
Cage, top open	F		CF441-1	CF441-1	CF641-1	CF641-1	CF641-1
Valve, ball and seat	G		047 + 04	047 + 04	049 + 06	049 + 06	049 + 06
Bushing, hvr to cage	H		BC11	BC21	BC21	BC42	BC42
Hollow Valve Rod	I		PT19-192	PT29-192	PT29-192	PT39-192	PT39-192
Plunger Adapter	J	1	CT1114	CT2124	CT2124	CT4134	CT4144
Plunger, Grooved Body	K		P225M-5	P325M-5	P325M-5	P425M-5	P625M-5
Cage, closed plunger	L		CF211	CF311	CF311	CF411	CF511
Valve, ball and seat	M		042 + 02	044 + 03	044 + 03	046 + 04	047 + 05
Plug, seat (internal)	N		PS221	PS321	HD511-4	HD511-4	HD511-4
Seating Assembly							
API, 3-cup*	O	1	HD422-3	HD422-3	HD511-4	HD511-4	HD511-4

Barrel, barrel extensions, plunger, and valve rod must all be specified in length.

All components may be specified by material and coating type.

*API mechanical-type seating assembly also available.



BUILT TO LAST

Made to Perform

Headquarters

811 Willow Oak Dr,
Missouri City, TX 77489
(281) 495-1100

Midland Campus

3427 E Hwy 158,
Midland, TX 79706
(432) 967-5575

LUFKIN Don-Nan is an API 11AX certified manufacturer for 25 continuous years and counting.

Ref: 09042022

lufkin.com/donnan