

# Multiphase Transfer Pump (MPTP)



Compact Compression's Multiphase Transfer Pump (MPTP) is directly descended from the ground-breaking HCG Compressor, several of which have been employed in multiphase pumping service. Its principle of operation is very similar to the HCG Compressor with several key enhancements to product design and materials to increase performance, reliability and serviceability for multiphase pumping applications.

The MPTP is specifically designed for use at a satellite or header where production from multiple wells is collected. The resulting drop in line pressure allows the wells feeding into the MPTP to produce more.

The MPTP costs less than installing individual compressors on each well, has more throughput with less peak power demand and has a lower service cost than an HCG Compressor in multiphase service.

Separate pumps, compressors, separators, flares and process control systems at satellites can be eliminated with the MPTP. It can replace aging and maintenance intensive field infrastructure, reducing field OPEX. Lead times for new equipment, turnaround time for repairs and maintenance, capital costs and operating expenses are an order of magnitude less compared to typical twin-screw multiphase pumping systems.

## Applications

- Multiphase fluid transfer
- Group emulsion header boosting
- Field production optimization

## Standard Features

- Capable of 100% liquid fractions instantaneously.
- Average liquid rates up to 532 m<sup>3</sup>/d (3345 bpd)
- Maximum  $\Delta P$  up to 2415 kPa (350 psi)
- Handles wide range of API gravity & viscosity
- 100% turndown capability
- No minimum liquid volume required through pump
- Highly tolerant of entrained solids
- Extremely robust intake and discharge valve design
- Optimized power utilization
- Seals can be easily replaced on site
- No additional lifting equipment required for servicing
- Superior user interface – web browser HMI

## Benefits

- Decreases flowline pressure at wellhead
- Reduces head and power requirements for downhole pumps
- Eliminates the need for separate pumps and compressors at satellite facilities
- Eliminates flaring from separator vessels at satellites
- Low capital and operating cost
- Very quick turnaround for repair and maintenance

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# Performance Chart (Preliminary)

		DISCHARGE PRESSURE (psig kPag)																
		100 700	150 1035	200 1380	250 1725	300 2070	350 2420	400 2760	450 3100	500 3450	550 3790	600 4135	650 4480	700 4825	750 5170	800 5515	850 5860	
10 70	103	123	93	70	53	48												
		3.8	2.6	2.0	1.5	1.4												
	20 140	198	144	112	86	81												
		5.6	4.1	3.2	2.4	2.3												
	30 210	265	227	179	144	113												
		7.5	6.4	5.1	4.1	3.2												
	40 280	331	290	230	183	145												
		9.4	8.2	6.5	5.2	4.1												
	50 345	397	357	279	233	178	170											
		11.2	10.1	7.9	6.6	5.1	4.8											
75 520	563	536	420	332	263	247												
	15.9	15.1	11.9	9.4	7.5	7.0												
100 700		720	643	510	411	334	312											
		20.3	18.2	14.4	11.6	9.4	8.8											
150 1035			1044	1034	931	732	595	486	450									
			29.5	29.2	26.3	20.7	16.8	13.7	12.7									
200 1380				1367	1358	1218	963	786	637	596								
				38.6	38.4	34.4	27.2	22.2	18.0	16.8								
250 1725					1710	1700	1497	1187	966	799	730							
					48.3	48.0	42.3	33.5	27.3	22.6	20.6							
300 2070						2037	2027	1801	1409	1143	947	867						
						57.5	57.3	50.9	39.8	32.3	26.8	24.5						
350 2420							2363	2354	2076	1627	1323	1098	1001					
							66.8	66.5	58.6	46.0	37.4	31.0	28.3					
400 2760								2690	2681	2346	1843	1500	1253	1134				
								76.0	75.7	66.3	52.1	42.4	35.4	32.0				
450 3100									3017	3008	2655	2056	1685	1401	1265			
									85.2	85.0	75.0	58.1	47.6	39.6	35.7			
500 3450										3344	3335	2944	2296	1860	1549	1393		
										94.5	94.2	83.2	64.9	52.6	43.8	39.4		

Projected Performance based on 2500 ft, gas density .66, temp 68°F. Flow rates in mscfd e³m³/d  
 Liquids volume reduces gas throughput proportionally as a percentage of swept volume

Hyd. Pump	Recommended Maximum Liquid Flow		Maximum ΔP	
	Pressure Range	m3/d	bpd	psi
Very High	276	1735	350	2413
High	350	2200	270	1861
Medium	436	2742	220	1517
Low	532	3345	170	1172