

# 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 liquid fractions 0 – 100%
- Liquid rates up to 2660 m<sup>3</sup>/d (16,730 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 <i>kPa</i> )								
		100	150	200	250	300	350	400	450	500
<b>SUCTION (psig <i>kPa</i>)</b>	<b>10</b>	<b>133</b>	<b>123</b>	<b>93</b>	<b>70</b>	<b>53</b>	<b>48</b>			
	70	3.8	3.5	2.6	2.0	1.5	1.4			
	<b>20</b>	<b>198</b>	<b>187</b>	<b>144</b>	<b>112</b>	<b>86</b>	<b>81</b>			
	140	5.6	5.3	4.1	3.2	2.4	2.3			
	<b>30</b>	<b>265</b>	<b>254</b>	<b>227</b>	<b>179</b>	<b>144</b>	<b>113</b>			
	210	7.5	7.2	6.4	5.1	4.1	3.2			
	<b>40</b>	<b>331</b>	<b>322</b>	<b>290</b>	<b>230</b>	<b>183</b>	<b>145</b>			
	280	9.4	9.1	8.2	6.5	5.2	4.1			
	<b>50</b>	<b>397</b>	<b>389</b>	<b>357</b>	<b>279</b>	<b>233</b>	<b>178</b>			
	345	11.2	11.0	10.1	7.9	6.6	5.1			
	<b>75</b>	<b>563</b>	<b>554</b>	<b>536</b>	<b>420</b>	<b>332</b>	<b>263</b>	<b>247</b>		
	520	15.9	15.7	15.1	11.9	9.4	7.5	7.0		
	<b>100</b>		<b>720</b>	<b>711</b>	<b>643</b>	<b>510</b>	<b>411</b>	<b>334</b>	<b>312</b>	
700		20.3	20.1	18.2	14.4	11.6	9.4	8.8		
<b>150</b>			<b>1044</b>	<b>1034</b>	<b>931</b>	<b>732</b>	<b>595</b>	<b>486</b>	<b>450</b>	
1035			29.5	29.2	26.3	20.7	16.8	13.7	12.7	
<b>200</b>				<b>1367</b>	<b>1358</b>	<b>1204</b>	<b>952</b>	<b>777</b>	<b>637</b>	
1380				38.6	38.4	34.0	26.9	22.0	18.0	

Projected Performance based on 2500 ft, gas density .66, temp 68°F. Flow rates in **m<sup>3</sup>/d** e<sup>3</sup>m<sup>3</sup>/d  
 Liquids volume reduces gas throughput proportionally as a percentage of swept volume

Hyd. Pump Pressure Range	Maximum Flow		Maximum ΔP	
	m <sup>3</sup> /d	bpd	psi	kPa
<b>Very High</b>	1360	8,550	350	2413
<b>High</b>	1750	11,010	270	1861
<b>Medium</b>	2180	13,710	220	1517
<b>Low</b>	2660	16,730	170	1172