

## Data Sheet

# D1 High Power Open Circuit Pumps

## 65/130/145/193/260cc

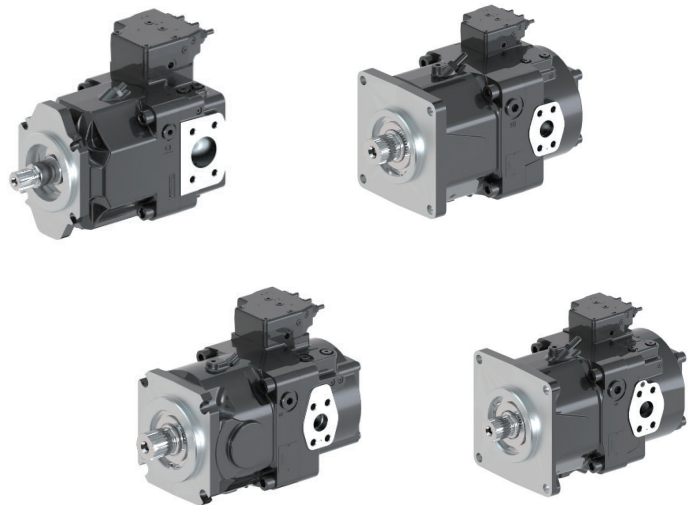


The new D1 pump is a high-pressure, high-performance variable axial piston pump, developed specifically for open-circuit systems in the most extreme application environments. Its robust design makes it an ideal solution for concrete machinery, mining machinery, cranes, drilling machinery, offshore, marine, and oil and gas equipment.

The D1 expands the Danfoss open circuit pump portfolio to include higher hydraulic power product options for customers. It's designed to work seamlessly with the new PVG 128/256 high flow valves, providing OEMs a full hydraulic system portfolio.

The D1 pump is offered with four displacement options (65cc-260cc), a wide range of control options (pressure, load sense, power limiting and displacement controls), output pressure up to 350bar [5000psi] continuously, 400bar [5802psi] intermittently, and an integral charge pump allows the D1 pump to run at speeds up to 2500rpm.

The D1 pump was developed and designed with global expertise, and customers will benefit from the strong local service provided by Danfoss. Danfoss offers technical support through its wide network of local distributors in more than 100 countries.



### Features

- Proven and optimized 9 piston rotating group
- Angled bore cylinderblock design improves self-priming capability
- The spherical valve plate and cylinderblock surface provide stable rotation, thus achieving high efficiency
- Mainstream installation
- Standardized connector interface
- High power density
- Integral charge pump option allows the pump to run at higher speed
- PLUS+1<sup>®</sup> compliant control
- Full power through drive capability
- The electric displacement control features manual override function for diagnosis

### Control options

- NPE0: PC + EDC (without pilot pressure)
- NPE2: PC + EDC (with pilot pressure)
- NPNN: PC
- NPSN: PC + LS
- NPNR: PC + RPC
- NNES: EDC + LS
- TPSN: MTC + PC + LS
- TPE2/TPE5: MTC + PC + EDC
- TPH1: MTC + PC + HDC
- ENSN: ETC + LS

# D1 65/130/145/193/260cc High Power Open Circuit Pumps

## Technical Specifications

Features		Unit	130		145		193	260
			W/O impeller pump	W/ impeller pump	W/O impeller pump	W/ impeller pump	W/impeller pump	W/impeller pump
Displacement		cm <sup>3</sup> [in <sup>3</sup> ]	130 [7.93]	130 [7.93]	145 [8.85]	145 [8.85]	193 [11.78]	260 [15.87]
Available Rotation <sup>1</sup>		CCW [L]	●	●	●	●	●	●
		CW [R]	●	●	●	●	●	●
Weight (approx.)		kg [lbs]	68 [150]	74 [163]	68 [150]	74 [163]	106 [234]	141 [311]
Input Speed	Min.	rpm	500	500	500	500	500	500
	Rated		2200	2500	2200	2500	2500	2300
	Max.		2500	2500	2200	2500	2500	2300
Theoretical Flow		l/min [US gal/min]	286 [76]	325 [86]	319 [84]	363 [96]	483 [128]	598 [158]
System Pressure	Max. Working Pressure <sup>2</sup>	bar [psi]	350 [5076]					
	Max. Pressure		400 [5802]					
Inlet Pressure (Abs)	Min.	bar [psi]	0.8 [11.6]	0.6 [8.7]	0.8 [11.6]	0.6 [8.7]	0.6 [8.7]	0.6 [8.7]
	Max.		30 [435]	2 [29]	30 [435]	2 [29]	2 [29]	2 [29]
Case Pressure (Abs)	Max.	bar [psi]	2 [29]					

<sup>1</sup> Rotation: Counterclockwise (CCW) & Clockwise (CW) directions as viewed from the shaft end of the pump.

<sup>2</sup> Applied pressures above maximum working pressure requires Danfoss application approval. Maximum (peak) pressure is the highest intermittent (t<1s) outlet pressure allowed.

## Technical Specifications

### D1 pump specifications

(Theoretical values, without efficiency and tolerances value rounded)

Features		Unit	65	130		145		193		260
			W/O Impeller	W/O Impeller	W/ Impeller	W/O Impeller	W/ Impeller	W/O Impeller	W/ Impeller	W/ Impeller
Displacement	Maximum	cm <sup>3</sup> [in <sup>3</sup> ]	65 [3.84]	130[7.931]	130 [7.931]	145 [8.85]	145[8.85]	193 [11.78]	193 [11.78]	260[15.87]
	Minimum		0	0	0	0	0	0	0	0
Available Rotation		CCW [L]	●	●	●	●	●		●	●
		CW [R]	●	●	●	●	●	●	●	●
Input speed	Min.	rpm	500	500	500	500	500	500	500	500
	Rated at max. displacement (Vg max.)		2550	2200 <sup>1</sup>	2500 <sup>2</sup>	2200 <sup>1</sup>	2500 <sup>2</sup>	2200 <sup>1</sup>	2500 <sup>1</sup>	2300 <sup>2</sup>
	Maximum at Vg < Vg max. <sup>3</sup>		3000	2500	2500	2200	2500	2500	2500	2300
Flow at max. speed & displacement (n max.& Vg max.)		l/min [US gal/min]	165 [144]	286 [76]	325 [86]	319 [84]	363 [96]	425 [112]	483 [128]	598 [158]
System (working) pressure <sup>4</sup>	Max. Working Pressure	bar [psi]	350 [5076]							
	Max. Pressure		400 [5802]							
Inlet pressure (absolute)	Minimum	bar [psi]	0.8 [11.6]	0.8 [11.6]	0.6 [8.71]	0.8 [11.6]	0.6 [8.7]	0.8 [11.6]	0.6 [8.7]	0.6 [8.7]
	Minimum		30 [435]	30 [435] <sup>5</sup>	2 [29]	30 [435]	2 [29]	30 [435]	2 [29]	2 [29]
Case pressure (absolute)	Maximum above inlet	bar [psi]	1.2 [17.4]							
	Maximum		2 [29]							

**Schematics/Dimensions (mm)**

For other controls, please see D1 Technical Information, BC157786485289.

*D1P 65/130/145 dimensions with control*

Dimensions	Schematic
<p><i>D1P 65 TPSN</i></p>	
<p><i>D1P 65 TPE2</i></p>	
<p><i>D1P 130/145 TPSN (without impeller pump)</i></p>	
<p><i>D1P 130/145 TPSN (with impeller pump)</i></p>	
<p><i>D1P 130/145 with TPE5 (without impeller pump)</i></p>	
<p><i>D1P 130/145 with TPE5 (with impeller pump)</i></p>	

## D1P 193/260 dimensions with control

Dimensions	Schematic
<p><b>D1P 193 with TPE2 (without impeller pump)</b></p>	
<p><b>D1P 193 with TPE2 (with impeller pump)</b></p>	
<p><b>D1P 193 TPSN (without impeller pump)</b></p>	
<p><b>D1P 193 TPSN (with impeller pump)</b></p>	
<p><b>D1P 260 with TPE5</b></p>	
<p><b>D1P 260 TPSN</b></p>	