

**Specifications  
 for NDS20 Series**

Description ..... Pressure-Summation Unloading Gear Pumps  
 Combined Flow Range ..... To 98 GPM Per Section (370.9 LTR.)  
 Displacements .... To 9.10 C.I.R. Each Section(149.12 CC's/REV.)  
 Maximum Pressure to ..... 2500 PSI (172 BAR)  
 Maximum Speed to ..... 2500 RPM  
 Rotation ..... A or C  
 Bearings ..... Journal  
 Construction ..... Aluminum

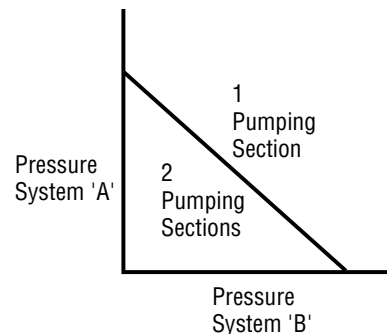
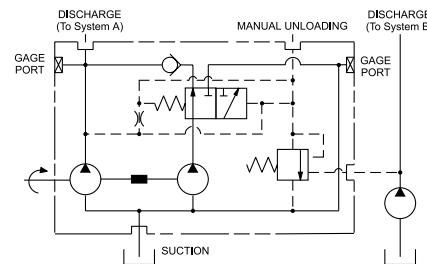


**Tandem Pump with Pressure-Summation  
 Unloading Valve**

The NDS pump system is essentially the same as the NSH system, except the unloading pressure signal is the summation of the internal pressure, plus an external pressure from another pumping system. The NDS system is useful in limiting the horsepower withdrawn from the prime mover in a multiple pump circuit system.

If System B is operating at minimum pressure, then the NDS circuit (System A) can operate at a high pressure-high flow before unloading the rear pumping section.

If System B is operating at high pressure, then the NDS circuit (System A) would unload the rear pumping section at a lower pressure to avoid overloading the engine. This relationship can be seen in the chart which illustrates the unloading characteristics for the NDS system, when used in conjunction with another hydraulic pump (system B).



**Performance Data Per Section**

Pump Model	Section Size	Displacement/Revolution (Theoretical)					Maximum Pressure		Maximum Speed
		US Gallons	Cubic Inches	Liters	Cubic Centimeters	Imperial Gallons	PSI	BAR	
NDS20	150	.0131	3.02	.0496	49.849	.0108	2500	172	2500
NDS20	200	.0175	4.04	.0662	66.204	.0146	2500	172	2500
NDS20	250	.0219	5.06	.0829	82.919	.0182	2500	172	2500
NDS20	300	.0262	6.05	.0992	99.142	.0218	2500	172	2500
NDS20	350	.0306	7.07	.1158	115.857	.0255	2500	172	2500
NDS20	400	.0350	8.08	.1325	132.408	.0292	2500	172	2500
NDS20	450	.0394	9.10	.1491	149.123	.0328	2500	172	2500

All data based on SAE 10W oil at 150°F. Available with Viton® Seals.



**CAUTION:** "Inlet vacuum" should not exceed 5" Hg at normal operating speed and temperature. Operation of pumps in excess of 5" Hg requires factory approval.

**Dimensional Data**

MOUNTING DIMENSIONS								
FRONT SECTION SIZE	REAR SECTION SIZE	CONN. SIZE	DISCHARGE FRONT SECTION HOLE DIA.	MOUNTING DIMENSIONS			SHIPPING WEIGHTS	
				A	B	C	lbs.	kgs.
20150	—150	1"	23.6 (.93)	91.4 (3.60)	179.5 (7.07)	322.0 (12.68)	56	20.9
	—200	1"	23.6 (.93)	91.4 (3.60)	179.5 (7.07)	343.9 (13.54)	57	21.3
	—250	1"	23.6 (.93)	91.4 (3.60)	179.5 (7.07)	353.8 (13.93)	58	21.7
	—300	1"	23.6 (.93)	91.4 (3.60)	179.5 (7.07)	361.1 (14.22)	60	22.4
	—350	1"	23.6 (.93)	91.4 (3.60)	179.5 (7.07)	351.2 (13.83)	62	23.1
	—400	1"	23.6 (.93)	91.4 (3.60)	179.5 (7.07)	358.3 (14.11)	64	23.9
	—450	1"	23.6 (.93)	91.4 (3.60)	179.5 (7.07)	365.7 (14.40)	66	24.6
20200	—150	1-1/2"	30.2 (1.19)	95.2 (3.75)	202.4 (7.97)	344.9 (13.58)	58	21.7
	—200	1-1/2"	30.2 (1.19)	95.2 (3.75)	202.4 (7.97)	366.7 (14.44)	59	22.0
	—250	1-1/2"	30.2 (1.19)	95.2 (3.75)	202.4 (7.97)	376.3 (14.83)	60	22.4
	—300	1-1/2"	30.2 (1.19)	95.2 (3.75)	202.4 (7.97)	383.7 (15.11)	62	23.1
	—350	1-1/2"	30.2 (1.19)	95.2 (3.75)	202.4 (7.97)	373.8 (14.72)	64	23.9
	—400	1-1/2"	30.2 (1.19)	95.2 (3.75)	202.4 (7.97)	381.0 (15.00)	66	24.6
	—450	1-1/2"	30.2 (1.19)	95.2 (3.75)	202.4 (7.97)	388.3 (15.29)	68	25.4
20250	—150	1-1/2"	30.2 (1.19)	101.6 (4.00)	209.5 (8.25)	352.0 (13.86)	59	21.7
	—200	1-1/2"	30.2 (1.19)	101.6 (4.00)	209.5 (8.25)	373.6 (14.71)	60	22.4
	—250	1-1/2"	30.2 (1.19)	101.6 (4.00)	209.5 (8.25)	383.7 (15.11)	62	23.1
	—300	1-1/2"	30.2 (1.19)	101.6 (4.00)	209.5 (8.25)	390.9 (15.39)	64	23.9
	—350	1-1/2"	30.2 (1.19)	101.6 (4.00)	209.5 (8.25)	381.0 (15.00)	66	24.6
	—400	1-1/2"	30.2 (1.19)	101.6 (4.00)	209.5 (8.25)	388.1 (15.28)	68	25.4
	—450	1-1/2"	30.2 (1.19)	101.6 (4.00)	209.5 (8.25)	395.4 (15.57)	70	26.1
20300	—150	1-1/2"	30.2 (1.19)	105.1 (4.14)	216.9 (8.54)	359.4 (14.15)	60	22.4
	—200	1-1/2"	30.2 (1.19)	105.1 (4.14)	216.9 (8.54)	381.0 (15.00)	64	23.9
	—250	1-1/2"	30.2 (1.19)	105.1 (4.14)	216.9 (8.54)	391.1 (15.40)	66	24.6
	—300	1-1/2"	30.2 (1.19)	105.1 (4.14)	216.9 (8.54)	398.2 (15.68)	68	25.4
	—350	1-1/2"	30.2 (1.19)	105.1 (4.14)	216.9 (8.54)	388.3 (15.29)	70	26.1
	—400	1-1/2"	30.2 (1.19)	105.1 (4.14)	216.9 (8.54)	395.4 (15.57)	72	26.9
	—450	1-1/2"	30.2 (1.19)	105.1 (4.14)	216.9 (8.54)	402.8 (15.86)	74	27.6
20350	—150	1-1/2"	30.2 (1.19)	110.4 (4.35)	224.0 (8.82)	366.5 (14.43)	62	23.1
	—200	1-1/2"	30.2 (1.19)	110.4 (4.35)	224.0 (8.82)	388.1 (15.28)	64	23.9
	—250	1-1/2"	30.2 (1.19)	110.4 (4.35)	224.0 (8.82)	398.2 (15.68)	66	24.6
	—300	1-1/2"	30.2 (1.19)	110.4 (4.35)	224.0 (8.82)	405.3 (15.96)	70	26.1
	—350	1-1/2"	30.2 (1.19)	110.4 (4.35)	224.0 (8.82)	395.4 (15.57)	72	26.9
	—400	1-1/2"	30.2 (1.19)	110.4 (4.35)	224.0 (8.82)	402.5 (15.85)	74	27.6
	—450	1-1/2"	30.2 (1.19)	110.4 (4.35)	224.0 (8.82)	409.9 (16.14)	76	28.4
20400	—150	1-1/2"	34.7 (1.37)	110.4 (4.35)	231.1 (9.10)	373.6 (14.71)	64	23.9
	—200	1-1/2"	34.7 (1.37)	110.4 (4.35)	231.1 (9.10)	395.2 (15.56)	66	24.6
	—250	1-1/2"	34.7 (1.37)	110.4 (4.35)	231.1 (9.10)	405.3 (15.96)	68	25.4
	—300	1-1/2"	34.7 (1.37)	110.4 (4.35)	231.1 (9.10)	412.4 (16.24)	70	26.1
	—350	1-1/2"	34.7 (1.37)	110.4 (4.35)	231.1 (9.10)	402.5 (15.85)	72	26.9
	—400	1-1/2"	34.7 (1.37)	110.4 (4.35)	231.1 (9.10)	409.7 (16.13)	76	28.4
	—450	1-1/2"	34.7 (1.37)	110.4 (4.35)	231.1 (9.10)	417.0 (16.42)	78	29.1
20450	—150	1-1/2"	34.7 (1.37)	118.3 (4.66)	238.5 (9.39)	381.0 (15.00)	66	24.6
	—200	1-1/2"	34.7 (1.37)	118.3 (4.66)	238.5 (9.39)	402.5 (15.85)	68	25.4
	—250	1-1/2"	34.7 (1.37)	118.3 (4.66)	238.5 (9.39)	412.7 (16.25)	70	26.1
	—300	1-1/2"	34.7 (1.37)	118.3 (4.66)	238.5 (9.39)	419.8 (16.53)	74	27.6
	—350	1-1/2"	34.7 (1.37)	118.3 (4.66)	238.5 (9.39)	409.9 (16.14)	76	28.4
	—400	1-1/2"	34.7 (1.37)	118.3 (4.66)	238.5 (9.39)	417.0 (16.42)	78	29.1
	—450	1-1/2"	34.7 (1.37)	118.3 (4.66)	238.5 (9.39)	424.4 (16.71)	80	29.9

SAE 4-BOLT CONNECTOR PORTS					
Size	F	G	H	J	K
1"	12.9 (.51)	26.1 (1.03)	26.1 (1.03)	52.3 (2.06)	3/8-16NC
1-1/2"	17.7 (.70)	35.5 (1.40)	34.7 (1.37)	69.8 (2.75)	1/2-13NC
2-1/2"	25.4 (1.00)	50.8 (2.00)	44.4 (1.75)	88.9 (3.50)	1/2-13NC

**Dimensional Data**

Inch equivalents for millimeter dimensions are shown in (\*\*).

