

**Specifications
 for NSHD20 Series**

Description..... Flow-Sensing and Pressure-Sensing
 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.)

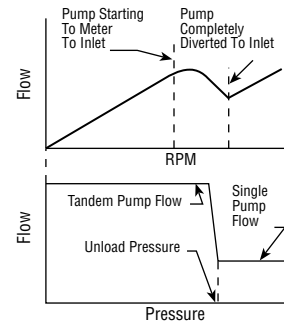
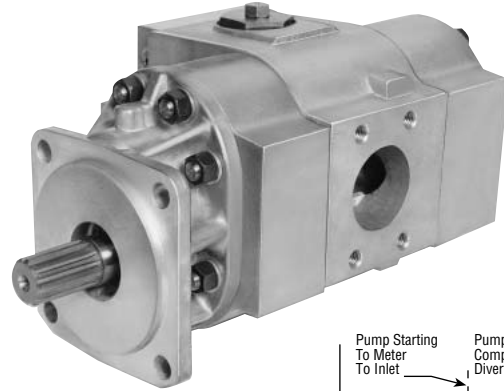
Maximum Pressure to 2500 PSI (172 BAR)

Maximum Speed to 2500 RPM

Rotation A or C

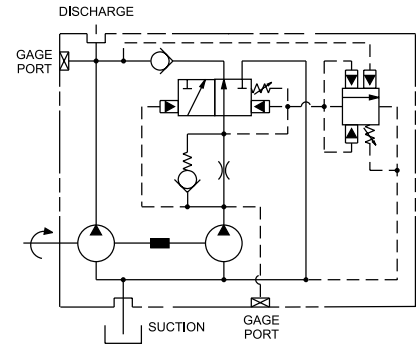
Bearings..... Journal

Construction Aluminum



**Tandem Pump with Flow-Sensing and
 Pressure-Sensing Unloading Valve**

This system consists of a tandem pump and an unloading valve. The unloading valve is actuated by either a flow signal (pump speed) or a pressure signal, thus combining the features of the NST and NSH systems into a single system.



Performance Data Per Section

Pump Model	Section Size	Displacement/Revolution (Theoretical)					Maximum Pressure		Maximum Speed RPM
		US Gallons	Cubic Inches	Liters	Cubic Centimeters	Imperial Gallons	PSI	BAR	
NSHD20	150	.0131	3.02	.0496	49.849	.0108	2500	172	2500
NSHD20	200	.0175	4.04	.0662	66.204	.0146	2500	172	2500
NSHD20	250	.0219	5.06	.0829	82.919	.0182	2500	172	2500
NSHD20	300	.0262	6.05	.0992	99.142	.0218	2500	172	2500
NSHD20	350	.0306	7.07	.1158	115.857	.0255	2500	172	2500
NSHD20	400	.0350	8.08	.1325	132.408	.0292	2500	172	2500
NSHD20	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 FRNT. SCTN. HOLE DIA.					SHIPPINGWEIGHTS	
				A	B	C	D	lbs.	kgs.
20150	—150	1"	23.6 (.93)	91.4 (3.60)	179.5 (7.07)	322.0 (12.68)	133.8 (5.27)	56	20.9
	—200	1"	23.6 (.93)	91.4 (3.60)	179.5 (7.07)	343.9 (13.54)	133.8 (5.27)	57	21.3
	—250	1"	23.6 (.93)	91.4 (3.60)	179.5 (7.07)	353.8 (13.93)	133.8 (5.27)	58	21.7
	—300	1"	23.6 (.93)	91.4 (3.60)	179.5 (7.07)	361.1 (14.22)	133.8 (5.27)	60	22.4
	—350	1"	23.6 (.93)	91.4 (3.60)	179.5 (7.07)	351.2 (13.83)	133.8 (5.27)	62	23.1
	—400	1"	23.6 (.93)	91.4 (3.60)	179.5 (7.07)	358.3 (14.11)	133.8 (5.27)	64	23.9
	—450	1"	23.6 (.93)	91.4 (3.60)	179.5 (7.07)	365.7 (14.40)	133.8 (5.27)	66	24.6
20200	—150	1-1/2"	30.2 (1.19)	95.2 (3.75)	202.4 (7.97)	344.9 (13.58)	156.7 (6.17)	58	21.7
	—200	1-1/2"	30.2 (1.19)	95.2 (3.75)	202.4 (7.97)	366.7 (14.44)	156.7 (6.17)	59	22.0
	—250	1-1/2"	30.2 (1.19)	95.2 (3.75)	202.4 (7.97)	376.3 (14.83)	156.7 (6.17)	60	22.4
	—300	1-1/2"	30.2 (1.19)	95.2 (3.75)	202.4 (7.97)	383.7 (15.11)	156.7 (6.17)	62	23.1
	—350	1-1/2"	30.2 (1.19)	95.2 (3.75)	202.4 (7.97)	373.8 (14.72)	156.7 (6.17)	64	23.9
	—400	1-1/2"	30.2 (1.19)	95.2 (3.75)	202.4 (7.97)	381.0 (15.00)	156.7 (6.17)	66	24.6
	—450	1-1/2"	30.2 (1.19)	95.2 (3.75)	202.4 (7.97)	388.3 (15.29)	156.7 (6.17)	68	25.4
20250	—150	1-1/2"	30.2 (1.19)	101.6 (4.00)	209.5 (8.25)	352.0 (13.86)	163.8 (6.45)	59	21.7
	—200	1-1/2"	30.2 (1.19)	101.6 (4.00)	209.5 (8.25)	373.6 (14.71)	163.8 (6.45)	60	22.4
	—250	1-1/2"	30.2 (1.19)	101.6 (4.00)	209.5 (8.25)	383.7 (15.11)	163.8 (6.45)	62	23.1
	—300	1-1/2"	30.2 (1.19)	101.6 (4.00)	209.5 (8.25)	390.9 (15.39)	163.8 (6.45)	64	23.9
	—350	1-1/2"	30.2 (1.19)	101.6 (4.00)	209.5 (8.25)	381.0 (15.00)	163.8 (6.45)	66	24.6
	—400	1-1/2"	30.2 (1.19)	101.6 (4.00)	209.5 (8.25)	388.1 (15.28)	163.8 (6.45)	68	25.4
	—450	1-1/2"	30.2 (1.19)	101.6 (4.00)	209.5 (8.25)	395.4 (15.57)	163.8 (6.45)	70	26.1
20300	—150	1-1/2"	30.2 (1.19)	105.1 (4.14)	216.9 (8.54)	359.4 (14.15)	171.1 (6.74)	60	22.4
	—200	1-1/2"	30.2 (1.19)	105.1 (4.14)	216.9 (8.54)	381.0 (15.00)	171.1 (6.74)	64	23.9
	—250	1-1/2"	30.2 (1.19)	105.1 (4.14)	216.9 (8.54)	391.1 (15.40)	171.1 (6.74)	66	24.6
	—300	1-1/2"	30.2 (1.19)	105.1 (4.14)	216.9 (8.54)	398.2 (15.68)	171.1 (6.74)	68	25.4
	—350	1-1/2"	30.2 (1.19)	105.1 (4.14)	216.9 (8.54)	388.3 (15.29)	171.1 (6.74)	70	26.1
	—400	1-1/2"	30.2 (1.19)	105.1 (4.14)	216.9 (8.54)	395.4 (15.57)	171.1 (6.74)	72	26.9
	—450	1-1/2"	30.2 (1.19)	105.1 (4.14)	216.9 (8.54)	402.8 (15.86)	171.1 (6.74)	74	27.6
20350	—150	1-1/2"	30.2 (1.19)	110.4 (4.35)	224.0 (8.82)	366.5 (14.43)	178.3 (7.02)	62	23.1
	—200	1-1/2"	30.2 (1.19)	110.4 (4.35)	224.0 (8.82)	388.1 (15.28)	178.3 (7.02)	64	23.9
	—250	1-1/2"	30.2 (1.19)	110.4 (4.35)	224.0 (8.82)	398.2 (15.68)	178.3 (7.02)	66	24.6
	—300	1-1/2"	30.2 (1.19)	110.4 (4.35)	224.0 (8.82)	405.3 (15.96)	178.3 (7.02)	70	26.1
	—350	1-1/2"	30.2 (1.19)	110.4 (4.35)	224.0 (8.82)	395.4 (15.57)	178.3 (7.02)	72	26.9
	—400	1-1/2"	30.2 (1.19)	110.4 (4.35)	224.0 (8.82)	402.5 (15.85)	178.3 (7.02)	74	27.6
	—450	1-1/2"	30.2 (1.19)	110.4 (4.35)	224.0 (8.82)	409.9 (16.14)	178.3 (7.02)	76	28.4
20400	—150	1-1/2"	34.7 (1.37)	110.4 (4.35)	231.1 (9.10)	373.6 (14.71)	185.4 (7.30)	64	23.9
	—200	1-1/2"	34.7 (1.37)	110.4 (4.35)	231.1 (9.10)	395.2 (15.56)	185.4 (7.30)	66	24.6
	—250	1-1/2"	34.7 (1.37)	110.4 (4.35)	231.1 (9.10)	405.3 (15.96)	185.4 (7.30)	68	25.4
	—300	1-1/2"	34.7 (1.37)	110.4 (4.35)	231.1 (9.10)	412.4 (16.24)	185.4 (7.30)	70	26.1
	—350	1-1/2"	34.7 (1.37)	110.4 (4.35)	231.1 (9.10)	402.5 (15.85)	185.4 (7.30)	72	26.9
	—400	1-1/2"	34.7 (1.37)	110.4 (4.35)	231.1 (9.10)	409.7 (16.13)	185.4 (7.30)	76	28.4
	—450	1-1/2"	34.7 (1.37)	110.4 (4.35)	231.1 (9.10)	417.0 (16.42)	185.4 (7.30)	78	29.1
20450	—150	1-1/2"	34.7 (1.37)	118.3 (4.66)	238.5 (9.39)	381.0 (15.00)	192.7 (7.59)	66	24.6
	—200	1-1/2"	34.7 (1.37)	118.3 (4.66)	238.5 (9.39)	402.5 (15.85)	192.7 (7.59)	68	25.4
	—250	1-1/2"	34.7 (1.37)	118.3 (4.66)	238.5 (9.39)	412.7 (16.25)	192.7 (7.59)	70	26.1
	—300	1-1/2"	34.7 (1.37)	118.3 (4.66)	238.5 (9.39)	419.8 (16.53)	192.7 (7.59)	74	27.6
	—350	1-1/2"	34.7 (1.37)	118.3 (4.66)	238.5 (9.39)	409.9 (16.14)	192.7 (7.59)	76	28.4
	—400	1-1/2"	34.7 (1.37)	118.3 (4.66)	238.5 (9.39)	417.0 (16.42)	192.7 (7.59)	78	29.1
	—450	1-1/2"	34.7 (1.37)	118.3 (4.66)	238.5 (9.39)	424.4 (16.71)	192.7 (7.59)	80	29.9

Dimensional Data

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

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

