

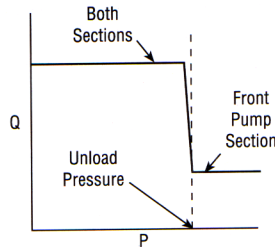
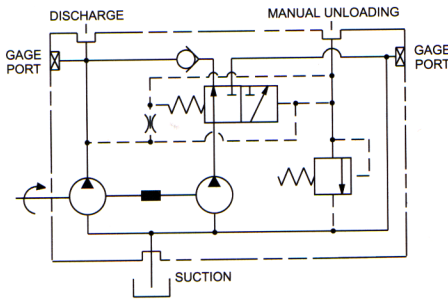
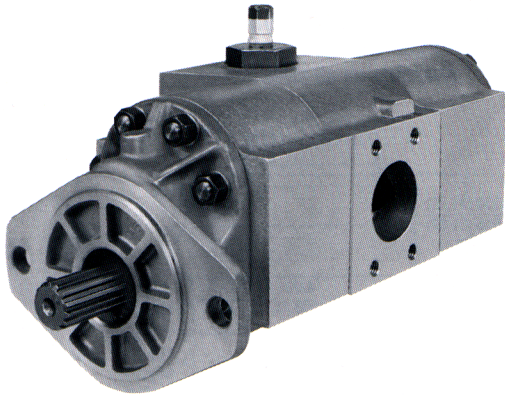
Model NSH20

Description Pressure Sensitive Unloading Gear Pumps
 Combined Flow Range To 197 GPM (745.7 LTR.)
 Displacements To 9.10 IN.³ 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 Sensitive Unloading Valve

The NSH pump system uses an unloading valve to divert the flow from one section of a tandem pump. The system is designed to limit the hydraulic horsepower and thus limit the horsepower taken from the prime mover. Flow is supplied from both pumps at low working pressure and from one pump at high pressure. As the system pressure increases to a predetermined value, a pilot relief valve opens, causing the main spool to divert one pump to the common inlet port. The other pump continues to supply fluid to the system.

When the system pressure decreases to the predetermined value for which it was set, the relief valve closes causing the main spool to divert the flow of the unloaded pump to the system. One section of the pump can be manually unloaded at any time, regardless of system pressure, by venting the manual unload pilot port. An integral solenoid unloading cartridge is available to provide this function if desired.



Performance Data

PUMP MODEL	SECTION SIZE	DISPLACEMENT/REVOLUTION (Theoretical)					MAXIMUM PRESSURE		MAXIMUM SPEED
		US Gallons	Cubic Inches	Liters	Cubic Centimeters	Imperial Gallons	PSI	BAR	RPM
NSH20	150	.0131	3.02	.0496	49.849	.0108	2500	172	2500
NSH20	200	.0175	4.04	.0662	66.204	.0146	2500	172	2500
NSH20	250	.0219	5.06	.0829	82.919	.0182	2500	172	2500
NSH20	300	.0262	6.05	.0992	99.142	.0218	2500	172	2500
NSH20	350	.0306	7.07	.1158	115.857	.0255	2500	172	2500
NSH20	400	.0350	8.08	.1325	132.408	.0292	2500	172	2500
NSH20	450	.0394	9.10	.1491	149.123	.0328	2500	172	2500

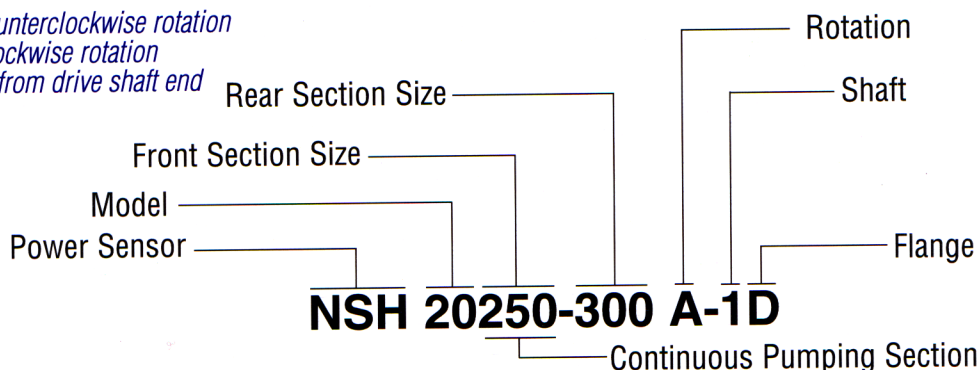
All data based on SAE 10W oil at 150°F.
 Available with Viton Seals for use with phosphate ester based fluid.

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.

When sizing pumps, refer to the performance charts in the back of the catalog to determine the volumetric efficiency and input horsepower requirements.

How To Order

'A' denotes counterclockwise rotation
 'C' denotes clockwise rotation
 When viewed from drive shaft end



Note: Add prefix 'V' to pump model number (VNSH20) when ordering pumps with Viton Seals for use with phosphate ester base fluids.

Shafts Available

<p>1 SAE 'C' 1-1/4" 14 Tooth Flat Root Side Fit Torque limit 655 Lbs. Ft. (888, Nm) "Tandem" Pumps only</p> <p>Spline Data Diametral Pitch 12/24 Pressure Angle 30° No. Of Teeth 14</p>	<p>3 SAE 'C' 1-1/4" Straight Torque limit 655 Lbs. Ft. (888, Nm) Available on all sizes</p>	<p>5 1-1/4" Straight Shaft Torque limit 655 Lbs. Ft. (888, Nm) Available on all sizes</p>
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Mounting Flanges Available

<p>D SAE 'C' 4-Bolt</p>	<p>E SAE 'B' 4-Bolt</p>
<p>F SAE 'C' 2-Bolt</p>	<p>M Pad Mount</p>

Dimensional Data

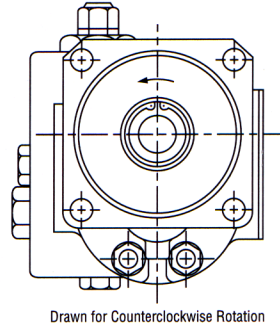
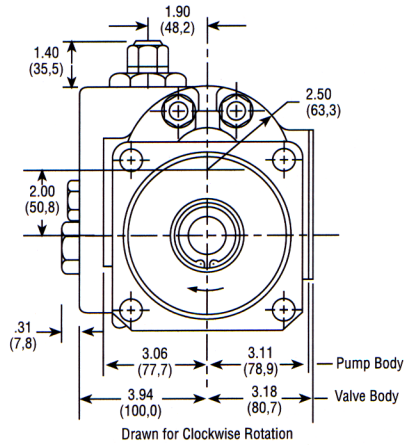
Mounting Dimensions

FRONT SECTION SIZE	REAR SECTION SIZE	DISCHARGE Front Section			SHIPPING WEIGHTS (Approx.)			
		Conn. Size	Hole Dia.	A	B	C	lbs.	kgs.
20150	—150	1"	.93 (23,6)	3.60 (91,4)	7.07 (179,5)	12.68 (322,0)	56	20.9
	—200	1"	.93 (23,6)	3.60 (91,4)	7.07 (179,5)	13.54 (343,9)	57	21.3
	—250	1"	.93 (23,6)	3.60 (91,4)	7.07 (179,5)	13.93 (353,8)	58	21.7
	—300	1"	.93 (23,6)	3.60 (91,4)	7.07 (179,5)	14.22 (361,1)	60	22.4
	—350	1"	.93 (23,6)	3.60 (91,4)	7.07 (179,5)	13.83 (351,2)	62	23.1
	—400	1"	.93 (23,6)	3.60 (91,4)	7.07 (179,5)	14.11 (358,3)	64	23.9
	—450	1"	.93 (23,6)	3.60 (91,4)	7.07 (179,5)	14.40 (365,7)	66	24.6
20200	—150	1-1/2"	1.19 (30,2)	3.75 (95,2)	7.97 (202,4)	13.58 (344,9)	58	21.7
	—200	1-1/2"	1.19 (30,2)	3.75 (95,2)	7.97 (202,4)	14.44 (366,7)	59	22.0
	—250	1-1/2"	1.19 (30,2)	3.75 (95,2)	7.97 (202,4)	14.83 (376,3)	60	22.4
	—300	1-1/2"	1.19 (30,2)	3.75 (95,2)	7.97 (202,4)	15.11 (383,7)	62	23.1
	—350	1-1/2"	1.19 (30,2)	3.75 (95,2)	7.97 (202,4)	14.72 (373,8)	64	23.9
	—400	1-1/2"	1.19 (30,2)	3.75 (95,2)	7.97 (202,4)	15.00 (381,0)	66	24.6
	—450	1-1/2"	1.19 (30,2)	3.75 (95,2)	7.97 (202,4)	15.29 (388,3)	68	25.4
20250	—150	1-1/2"	1.19 (30,2)	4.00 (101,6)	8.25 (209,5)	13.86 (352,0)	59	21.7
	—200	1-1/2"	1.19 (30,2)	4.00 (101,6)	8.25 (209,5)	14.71 (373,6)	60	22.4
	—250	1-1/2"	1.19 (30,2)	4.00 (101,6)	8.25 (209,5)	15.11 (383,7)	62	23.1
	—300	1-1/2"	1.19 (30,2)	4.00 (101,6)	8.25 (209,5)	15.39 (390,9)	64	23.9
	—350	1-1/2"	1.19 (30,2)	4.00 (101,6)	8.25 (209,5)	15.00 (381,0)	66	24.6
	—400	1-1/2"	1.19 (30,2)	4.00 (101,6)	8.25 (209,5)	15.28 (388,1)	68	25.4
	—450	1-1/2"	1.19 (30,2)	4.00 (101,6)	8.25 (209,5)	15.57 (395,4)	70	26.1
20300	—150	1-1/2"	1.19 (30,2)	4.14 (105,1)	8.54 (216,9)	14.15 (359,4)	60	22.4
	—200	1-1/2"	1.19 (30,2)	4.14 (105,1)	8.54 (216,9)	15.00 (381,0)	64	23.9
	—250	1-1/2"	1.19 (30,2)	4.14 (105,1)	8.54 (216,9)	15.40 (391,1)	66	24.6
	—300	1-1/2"	1.19 (30,2)	4.14 (105,1)	8.54 (216,9)	15.68 (398,2)	68	25.4
	—350	1-1/2"	1.19 (30,2)	4.14 (105,1)	8.54 (216,9)	15.29 (388,3)	70	26.1
	—400	1-1/2"	1.19 (30,2)	4.14 (105,1)	8.54 (216,9)	15.57 (395,4)	72	26.9
	—450	1-1/2"	1.19 (30,2)	4.14 (105,1)	8.54 (216,9)	15.86 (402,8)	74	27.6
20350	—150	1-1/2"	1.19 (30,2)	4.35 (110,4)	8.82 (224,0)	14.43 (366,5)	62	23.1
	—200	1-1/2"	1.19 (30,2)	4.35 (110,4)	8.82 (224,0)	15.28 (388,1)	64	23.9
	—250	1-1/2"	1.19 (30,2)	4.35 (110,4)	8.82 (224,0)	15.68 (398,2)	66	24.6
	—300	1-1/2"	1.19 (30,2)	4.35 (110,4)	8.82 (224,0)	15.96 (405,3)	70	26.1
	—350	1-1/2"	1.19 (30,2)	4.35 (110,4)	8.82 (224,0)	15.57 (395,4)	72	26.9
	—400	1-1/2"	1.19 (30,2)	4.35 (110,4)	8.82 (224,0)	15.85 (402,5)	74	27.6
	—450	1-1/2"	1.19 (30,2)	4.35 (110,4)	8.82 (224,0)	16.14 (409,9)	76	28.4
20400	—150	1-1/2"	1.37 (34,7)	4.35 (110,4)	9.10 (231,1)	14.71 (373,6)	64	23.9
	—200	1-1/2"	1.37 (34,7)	4.35 (110,4)	9.10 (231,1)	15.56 (395,2)	66	24.6
	—250	1-1/2"	1.37 (34,7)	4.35 (110,4)	9.10 (231,1)	15.96 (405,3)	68	25.4
	—300	1-1/2"	1.37 (34,7)	4.35 (110,4)	9.10 (231,1)	16.24 (412,4)	70	26.1
	—350	1-1/2"	1.37 (34,7)	4.35 (110,4)	9.10 (231,1)	15.85 (402,5)	72	26.9
	—400	1-1/2"	1.37 (34,7)	4.35 (110,4)	9.10 (231,1)	16.13 (409,7)	76	28.4
	—450	1-1/2"	1.37 (34,7)	4.35 (110,4)	9.10 (231,1)	16.42 (417,0)	78	29.1
20450	—150	1-1/2"	1.37 (34,7)	4.66 (118,3)	9.39 (238,5)	15.00 (381,0)	66	24.6
	—200	1-1/2"	1.37 (34,7)	4.66 (118,3)	9.39 (238,5)	15.85 (402,5)	68	25.4
	—250	1-1/2"	1.37 (34,7)	4.66 (118,3)	9.39 (238,5)	16.25 (412,7)	70	26.1
	—300	1-1/2"	1.37 (34,7)	4.66 (118,3)	9.39 (238,5)	16.53 (419,8)	74	27.6
	—350	1-1/2"	1.37 (34,7)	4.66 (118,3)	9.39 (238,5)	16.14 (409,9)	76	28.4
	—400	1-1/2"	1.37 (34,7)	4.66 (118,3)	9.39 (238,5)	16.42 (417,0)	78	29.1
	—450	1-1/2"	1.37 (34,7)	4.66 (118,3)	9.39 (238,5)	16.71 (424,4)	80	29.9

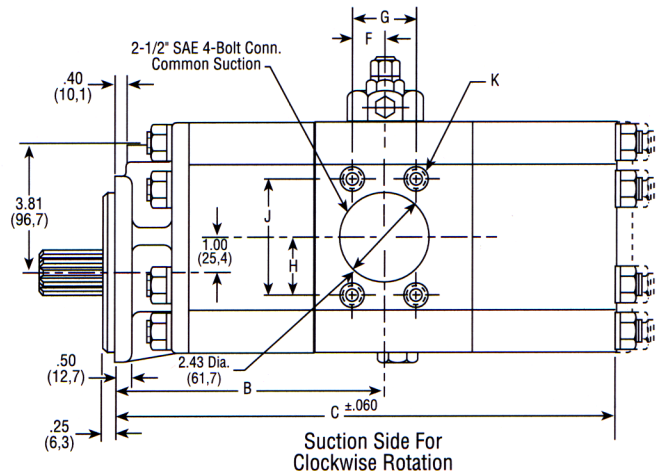
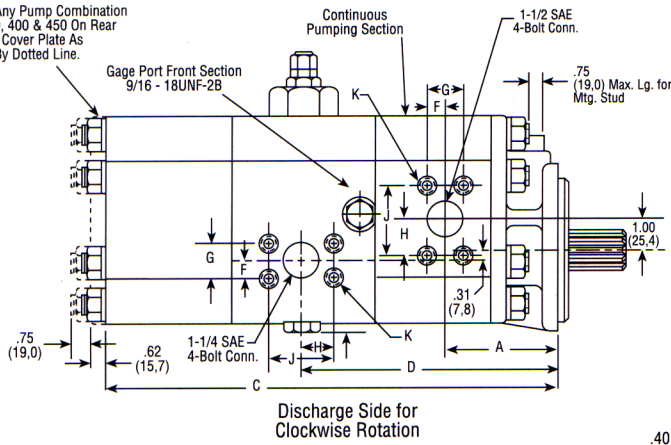
Dimensional Data

SAE 4-Bolt Connector Ports

Size	F	G	H	J	K
1"	.51 (12,9)	1.03 (26,1)	1.03 (26,1)	2.06 (52,3)	3/8-16NC
1-1/2"	.70 (17,7)	1.40 (35,5)	1.37 (34,7)	2.75 (69,8)	1/2-13NC
2-1/2"	1.00 (25,4)	2.00 (50,8)	1.75 (44,4)	3.50 (88,9)	1/2-13NC



E: Any Pump Combination
350, 400 & 450 On Rear
Use Cover Plate As
Shown By Dotted Line.



* These dimensions locate \bar{C} of bolt pattern only

SAE 4-Bolt NPT Connectors are available. See Accessory Section



See "General Product & Safety Information"
on inside front cover of this catalog

