



## Technical data for SEP3NN

SEP3NN pump model		Frame size				
		022	026	033	038	044
Displacement	cm <sup>3</sup> /rev [in <sup>3</sup> /rev]	22.1 [1.35]	26.2 [1.60]	33.1 [2.02]	37.9 [2.32]	44.1 [2.69]
Peak pressure	bar [psi]	230 [3350]	230 [3350]	230 [3350]	230 [3350]	200 [2910]
Rated pressure		210 [3045]	210 [3045]	210 [3045]	210 [3045]	180 [2610]
Minimum speed	min <sup>-1</sup> (rpm)	1000	1000	1000	1000	800
Maximum speed		3000	3000	3000	2800	2600
Weight	kg [lb]	5.7 [12.57]	5.8 [12.79]	6.1 [13.45]	6.2 [13.67]	6.4 [14.11]
Moment of inertia of rotating components	x 10 <sup>-6</sup> kg·m <sup>2</sup> [x 10 <sup>-6</sup> lbf·ft <sup>2</sup> ]	198 [4698]	216 [5126]	246 [5873]	294.2 [6981]	312.2 [7408]
Theoretical flow at maximum speed	l/min [US gal/min]	66.3 [17.5]	78.6 [20.8]	99.3 [26.2]	113.7 [30.0]	132.3 [35.0]

## Technical data for SNP3NN

SNP3NN pump model		Frame size									
		022	026	033	038	044	048	055	063	075	090
Displacement	cm <sup>3</sup> /rev [in <sup>3</sup> /rev]	22.1 [1.35]	26.2 [1.60]	33.1 [2.02]	37.9 [2.32]	44.1 [2.69]	48.3 [2.93]	55.1 [3.36]	63.4 [3.87]	74.4 [4.54]	88.2 [5.38]
Peak pressure	bar [psi]	270 [3910]	270 [3910]	270 [3910]	270 [3910]	270 [3910]	250 [3625]	250 [3625]	230 [3350]	200 [2910]	170 [2465]
Rated pressure		250 [3625]	250 [3625]	250 [3625]	250 [3625]	250 [3625]	230 [3350]	230 [3350]	210 [3045]	180 [2610]	150 [2175]
Minimum speed	min <sup>-1</sup> (rpm)	800	800	800	800	800	800	800	600	600	600
Maximum speed		3000	3000	3000	3000	3000	3000	2500	2500	2500	2500
Weight	kg [lb]	6.8 [15.0]	6.8 [15.0]	7.2 [15.8]	7.3 [16.1]	7.5 [16.5]	7.6 [16.8]	7.8 [17.3]	8.1 [17.9]	8.5 [18.7]	8.9 [19.6]
Moment of inertia of rotating components	x 10 <sup>-6</sup> kg·m <sup>2</sup> [x 10 <sup>-6</sup> lbf·ft <sup>2</sup> ]	198 [4698]	216 [5126]	246 [5838]	267,2 [6340]	294,2 [6891]	312,2 [7408]	342,3 [8123]	378,3 [8977]	426,4 [10118]	486,5 [11545]
Theoretical flow at maximum speed	l/min [US gal/min]	66.3 [17.5]	78.6 [20.8]	99.3 [26.2]	113.7 [30.0]	132.3 [35.0]	144.9 [38.3]	137.8 [36.4]	158.5 [41.8]	186 [49.1]	220.5 [58.3]

### ! Caution

The rated and peak pressure mentioned are for pumps with flanged ports only. When threaded ports are required a de-rated performance has to be considered. To verify the compliance of an high pressure application with a threaded ports pump apply to a Turolla representative.



Product code **SNP3NN/063RN01BAP1CDCANNNN/NNNNN**  
 Model code

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
□□□□□□	□□□□	□	□	□□	□□	□□	□□	□□	□□	□	□	□□□□	□	□

### A Family

<b>SEP3NN</b>	Low Cost Gr3 Pump
<b>SNP3NN</b>	Std Gr3 Pump

### B Displacement

<b>022</b>	22,1 cc
<b>026</b>	26,2 cc
<b>033</b>	33,1 cc
<b>038</b>	37,9 cc
<b>044</b>	44,1 cc
<b>048</b>	48,3 cc
<b>050</b>	50 cc special
<b>055</b>	55,2 cc
<b>063</b>	63,4 cc
<b>075</b>	74,4 cc
<b>090</b>	88,2 cc

### C Rotation

<b>L</b>	Left rotation
<b>R</b>	Right rotation

### D Project version

<b>N</b>	Std Version of Project
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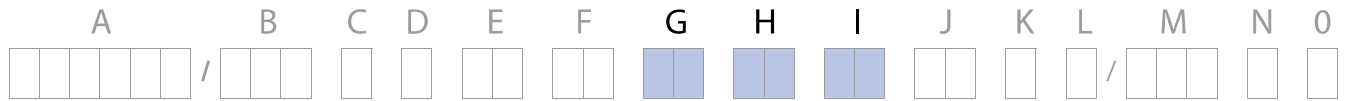
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## E Mounting flange

Code	Description (Type of flange • Type of drive gear • Preferred ports for configuration)
<b>01</b>	European four bolt flange (98,4x128,1) - Pilot Ø50,8
<b>02</b>	European four bolt flange (98,4x137) - Pilot Ø50,8
<b>03</b>	European four bolt flange (114,3x149,5) - Pilot Ø60,3
<b>06</b>	German four bolt flange (102,0x145,0) - Pilot Ø105
<b>07</b>	SAE B-Pilot Ø101,6+2 holes
<b>08</b>	SAE C-Pilot Ø127+4 holes
<b>09</b>	SAE A-Pilot Ø82,55+2 holes
<b>91</b>	Outrigger bearing with European four bolt flange Pilot Ø50,8 -Taper 1:8 M14x1,5 key 4x7,5
<b>D7</b>	SAE B-Pilot Ø101,6+2 holes+special for double shaft seal - Special

## F Drive gear

<b>AA</b>	Taper 1:5-M16x1,5-Key 5	<b>GB</b>	Parallel Ø22,225xL25,4-Key 6,375x6,375x25,4+thd hole:1/4-20UNC-2B
<b>BA</b>	Taper 1:8-M14x1,5-Key 4	<b>GC</b>	Parallel Ø22,225xL25,4-Key 6,375x6,375x25,4+thd hole:5/16-18UNC-2B - Special
<b>BB</b>	Taper 1:8-M16x1,5-Key 4,79	<b>SA</b>	SAE J498-13T-16/32-SAE B
<b>BC</b>	Taper 1:8-5/8-18UNF-2A-Key 6,375	<b>SB</b>	SAE J498-13T-16/32-SAE A (for flange 09)
<b>BD</b>	Taper 1:8-M14x1,5-Key 4 + thd hole M8 - Special	<b>RA</b>	SAE J498-14T-12/24-SAE C-4 bolt (for flange 08)
<b>BP</b>	Taper 1:8-5/8-18UNF-2A-Key 6,375 with NUT & WASHER (for SAE B flange)	<b>SH</b>	SAE J498-15T-16/32-SAE B - Special
<b>CA</b>	Tang 8xØ22,2 - Special		
<b>DA</b>	DIN 5482 B22x19 L=24 (for flange 01)		
<b>DD</b>	DIN 5482 B28x25 L28 (for flange 06)		
<b>FA</b>	Parallel Ø20-Key 5x5 L30 (for flange 01-02)		
<b>FB</b>	Parallel Ø22-Key 5x5 L40 (for flange 03)		
<b>GA</b>	Parallel Ø22,225 x L25,4-Key 6,375x6,375 L25,4		

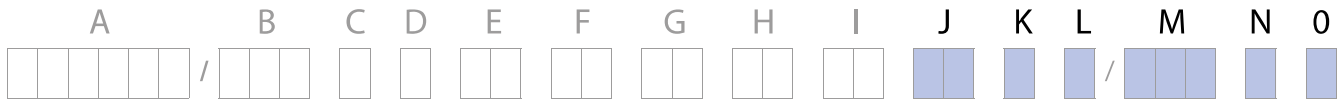


## G Rear cover

**P1** Standard cover for pump

## H Inlet size I Outlet size

<b>A1</b>	18,5x22,23x47,63x3/8-16UNC		<b>H8</b>	M27x2-ISO6149	
<b>A3</b>	25x26,19x52,37x3/8-16UNC		<b>H9</b>	M33x2-ISO6149	
<b>A4</b>	31x30,18x58,72x7/16-14UNC		<b>F5</b>	BSP 3/4 GAS	
<b>A5</b>	37,5/27x35,71x69,85x1/2-13UNC		<b>F6</b>	BSP 1 GAS	
<b>B7</b>	20x40xM6		<b>F7</b>	BSP 1-1/4 GAS	
<b>BA</b>	18x55xM8		<b>M5</b>	25x52,37x26,19xM10	
<b>BB</b>	27x55xM8		<b>M6</b>	31x30,18x58,72xM10	
<b>BC</b>	36/27x55xM8		<b>M7</b>	37,5x35,71x69,85xM12	
<b>C7</b>	20x40xM8		<b>MF</b>	25x52,37x26,19xM8 deep12 Horiz	
<b>CA</b>	27x51xM10		<b>MG</b>	25/20x52,37x26,19xM10(=) - Special	
<b>CD</b>	36x62xM10		<b>MH</b>	31x30,18x58,72xM10 deep18 (=)	
<b>CZ</b>	27x51xM10(2 Vert.Holes)		<b>MN</b>	31x30,18x58,72xM10 deep12 (=)	
<b>G7</b>	20x40x5/16-18UNC - Special		<b>MR</b>	37,5x35,71x69,85xM12 deep20 (=)	
<b>GA</b>	27x51x3/8-16UNC - Special				
<b>E5</b>	7/8-14UNF				
<b>E6</b>	1-1/16-12UN				
<b>E8</b>	1-5/16-12UN				
<b>E9</b>	1-5/8-12UN				
<b>EA</b>	1-7/8-12UN				



## J Ports positions & Special body

<b>NN</b>	Std from catalogue
<b>ZZ</b>	Port type Bx-Bx in the center of the body

## K Seals

<b>N</b>	Standard NBR seals
<b>D</b>	NBR seals + VITON shaft seal with dust lip
<b>I</b>	Two opposite shaft seal

## L Screws

<b>N</b>	Std burnished screws
<b>B</b>	Anticorrosion screws

## M Set valve

<b>NNN</b>	No valve
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## N Type mark

<b>N</b>	Standard Turolla Marking
<b>A</b>	Standard Turolla Marking+Customer Code
<b>Z</b>	Without Marking

## O Mark position

<b>N</b>	Std Marking position (on top)
<b>A</b>	Special Marking position on the bottom



## Product Options

### Shaft, flange, and port configurations

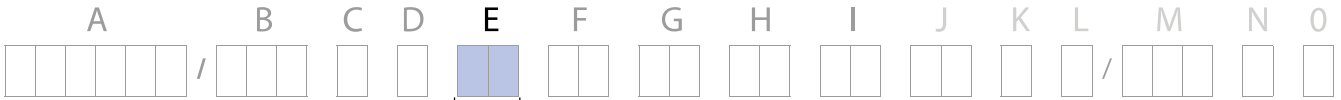
Pump	Code	Flange	Shaft	Port
<b>SEP3NN</b> <b>SNP3NN</b>	<b>01BA</b>	pilot Ø 50.8 mm [2.0 in] European 01, 4-bolt	<b>1:8 tapered</b>	<b>European flanged port + pattern</b>
<b>SNP3NN</b>	<b>02BA</b>	pilot Ø 50.8 mm [2.0 in] European 02, 4-bolt	1:8 tapered	European flanged port + pattern
<b>SNP3NN</b>	<b>03BB</b>	pilot Ø 60.3 mm [2.374 in] European 03, 4-bolt	1:8 tapered	European flanged port + pattern
<b>SNP3NN</b>	<b>06AA</b>	pilot Ø 105 mm [4.133 in] German, 4-bolt	1:5 tapered	German std ports port X pattern
<b>SNP3NN</b>	<b>06CA</b>	pilot Ø 105 mm [4.133 in] German, 4-bolt	Tang 8 x Ø 22,2	German std ports port X pattern
<b>SEP3NN</b> <b>SNP3NN</b>	<b>01FA</b>	pilot Ø 50.8 mm [2.0 in] European 01, 4-bolt	Ø 20 mm [0.787 in] parallel	European flanged port + pattern
<b>SNP3NN</b>	<b>02FA</b>	pilot Ø 50.8 mm [2.0 in] European 02, 4-bolt	Ø 20 mm [0.787 in] parallel	European flanged port + pattern
<b>SNP3NN</b>	<b>03FB</b>	pilot Ø 60.3 mm [2.374 in] European 03, 4-bolt	Ø 22 mm [0.866 in] parallel	European flanged port + pattern
<b>SEP3NN</b> <b>SNP3NN</b>	<b>07GA</b>	pilot Ø 101.6 mm [4.0 in] SAE B, 2-bolt	Ø 22.225 mm [0.875 in] parallel	Vertical four bolt flanged port
<b>SNP3NN</b>	<b>01DA</b>	pilot Ø 50.8 mm [2.0 in] European 01, 4-bolt	Splined shaft 13T - m 1.60 DIN 5482-B22x19	European flanged port + pattern
<b>SNP3NN</b>	<b>02DA</b>	pilot Ø 50.8 mm [2.0 in] European 02, 4-bolt	Splined shaft 13T - m 1.60 DIN 5482-B22x19	European flanged port + pattern



## Mounting flanges

Turolla offers many types of industry standard mounting flanges. This table shows order codes for each available mounting flange and its intended use:

Flange availability



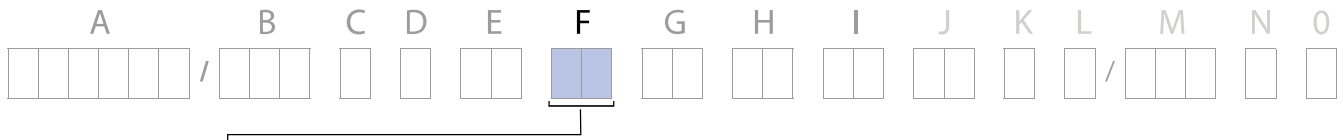
Code	Description
<b>01</b>	European 50.8 mm [2.0 in] 4-bolt
<b>02</b>	European 50.8 mm [2.0 in] 4-bolt
<b>03</b>	European 60.3 mm [2.374 in] 4-bolt
<b>06</b>	German 105 mm [4.134 in] 4-bolt
<b>07</b>	SAE B 2-bolt
<b>08</b>	SAE C 4-bolt
<b>09</b>	SAE A 2-bolt



### Shaft options

Direction is viewed facing the shaft. Group 3 pumps are available with a variety of splined, parallel, and tapered shaft ends. Not all shaft styles are available with all flange styles.

Shaft availability and nominal torque capability



Shaft		Mounting flange code with maximum torque in Nm [lb-in]								
Code	Description	01	02	03	06	07	08	09	D7	
AA	Taper 1:5-M16x1,5-Key 5				300					
BA	Taper 1:8-M14x1,5-Key 4	350	350							
BB	Taper 1:8-M16x1,5-Key 4,79			500						
BC	Taper 1:8-5/8-18UNF-2A-Key 6,375					300				
BD	Taper 1:8-M14x1,5-Key 4 + thd hole M8 - Special					300				
BP	Taper 1:8-5/8-18UNF-2A-Key 6,375 with NUT & WASHER (for SAE B flange)					300				
CA	Tang 8xØ22,2 - Special				90					
DA	DIN 5482 B22x19 L=24 (for flange 01)	290	290							
DD	DIN 5482 B28x25 L28 (for flange 06)				450					
FA	Parallel Ø20-Key 5x5 L30 (for flange 01-02)	210	210							
FB	Parallel Ø22-Key 5x5 L40 (for flange 03)			300						
GA	Parallel Ø22,225 x L25,4-Key 6,375x6,375 L25,4					230				
GB	Parallel Ø22,225xL25,4-Key 6,375x6,375x25,4+thd hole:1/4-20UNC-2B					230				
GC	Parallel Ø22,225xL25,4-Key 6,375x6,375x25,4+thd hole:5/16-18UNC-2B - Special					230				
SA	SAE J498-13T-16/32-SAE B					270			270	
SB	SAE J498-13T-16/32-SAE A (for flange 09)							270		
RA	SAE J498-14T-12/24-SAE C-4 bolt (for flange 08)						400			
SH	SAE J498-15T-16/32-SAE B - Special					400				

Turolla recommends mating splines conform to SAE J498 or DIN 5482. Turolla external SAE splines have a flat root side fit with circular tooth thickness reduced by 0.127 mm [0.005 in] in respect to class 1 fit. Dimensions are modified to assure a clearance fit with the mating spline.

**Caution**

Shaft torque capability may limit allowable pressure. Torque ratings assume no external radial loading. Applied torque must not exceed these limits, regardless of stated pressure parameters. Maximum torque ratings are based on shaft torsional fatigue strength.







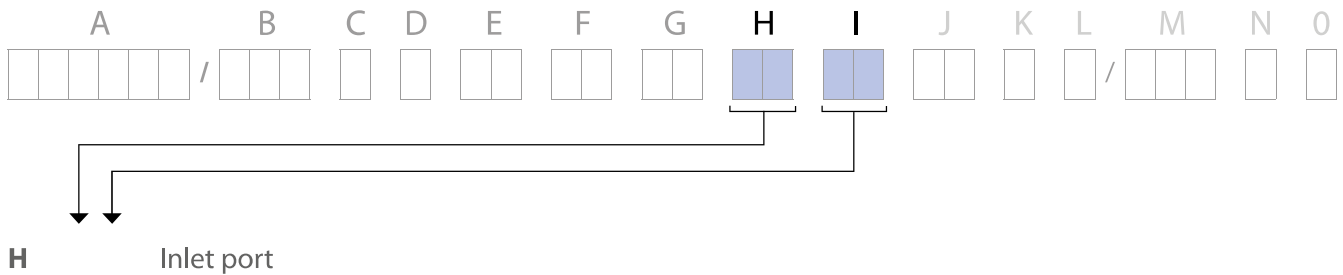
## Port configurations

Various port configurations are available on Group 3 pumps. They include:

- European standard flanged ports
- German standard flanged ports
- Gas threaded ports (BSPP)
- O-Ring boss (following SAE J1926/1 [ISO 11926-1] UNF threads, standard)

A table of dimensions is on the next page.

Available port configurations



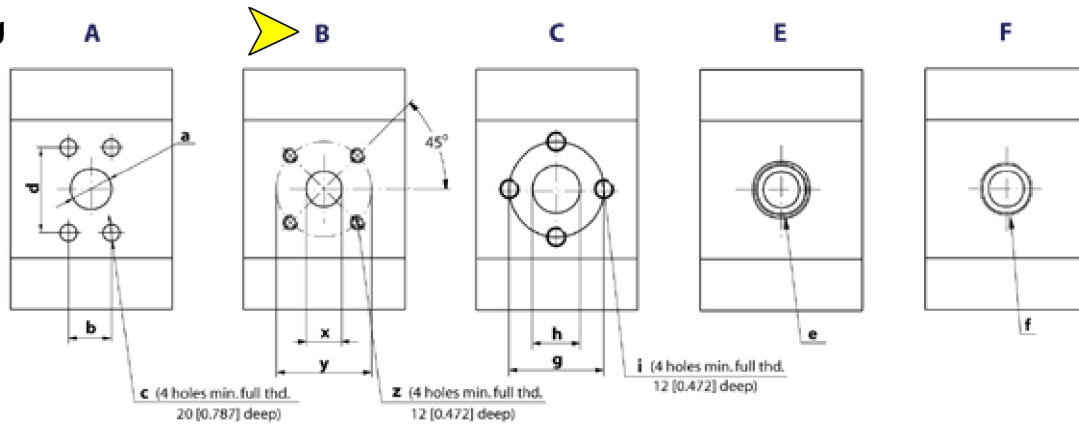
Code	Description	
A2	8,5x22,23x47,63x 3/8 -16UNC	SAE flanged port
A3	25x26,19x52,37x 3/8 -16UNC	
A4	31x30,18x58,72x 7/16 -14UNC	
A5	37,5/27x35,7x69,85x 1/2 -13UNC	
B7	20x40xM6	
BA	18x55xM8	Flanged port with thd holes in X pattern
BB	27x55xM8	
BC	36/27x55xM8	
C3	13,5x30xM6	
C7	20x40xM8	Flanged port with thd holes in + pattern
CA	27x51xM10	
CD	36x62xM10	
E6	1 1/16-12UN	Thd SAE O-ring boss port
E8	1 5/16-12UN	
E9	1 7/8-12UN	
EA	1 7/8-12UN	
F5	3/4 GAS	Threaded GAS (BSPP)
F6	1 GAS	
F7	1 1/4 GAS	

I Outlet port

For code letters and descriptions see [the table above](#).



Porting



Ports dimensions

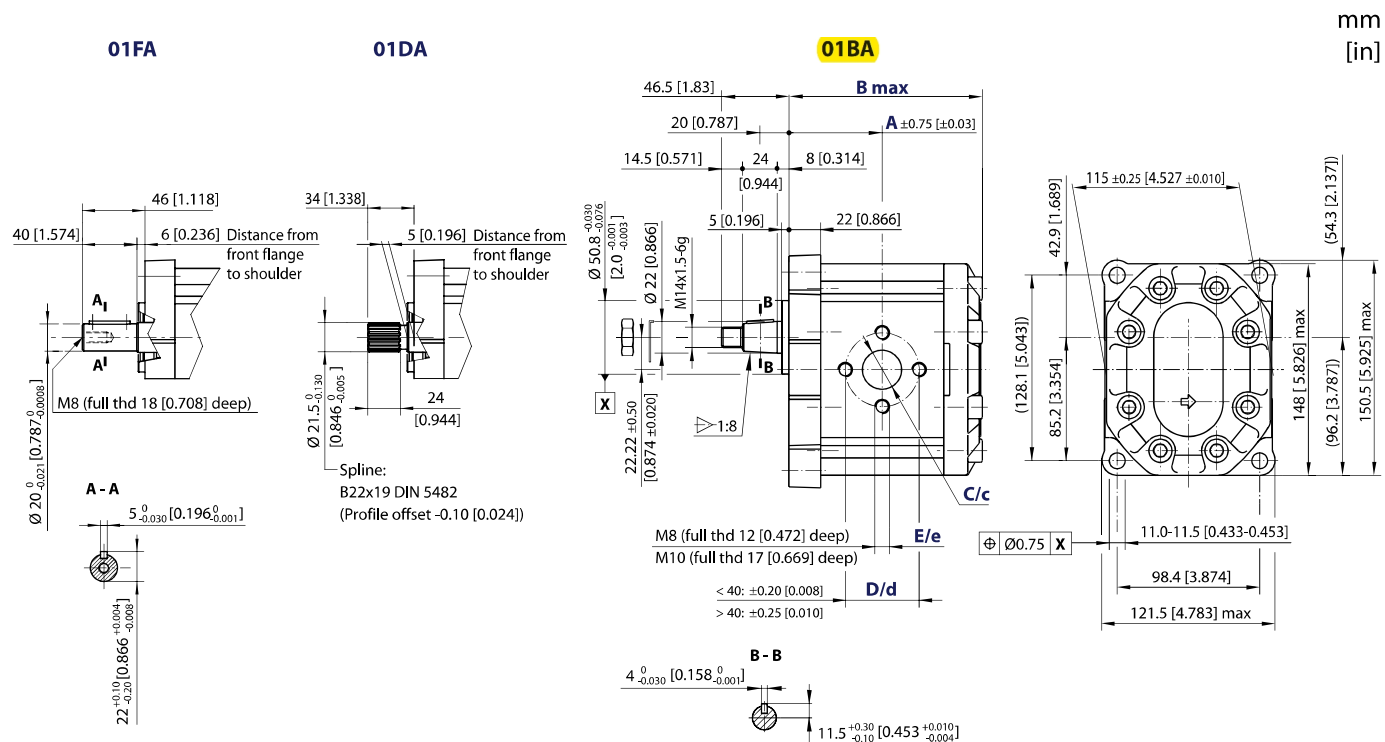
Port type													
Dimensions		a	b	d	c	x	y	z	g	h	i	e	f
022	Inlet	25.4 [1.000]	26.19 [1.031]	52.37 [2.062]	3/8-16UNC-2B	27 [1.063]	55 [2.165]	M8	40 [1.575]	20 [0.787]	M8	1 5/16-12UN-2B	3/4 Gas (BSPP)
	Outlet	19.1 [0.752]	22.23 [0.875]	47.63 [1.875]	3/8-16UNC-2B	18 [0.709]	55 [2.165]	M8	40 [1.575]	20 [0.787]	M8	1 1/16-12UN-2B	3/4 Gas (BSPP)
026	Inlet	25.4 [1.000]	26.19 [1.031]	52.37 [2.062]	3/8-16UNC-2B	27 [1.063]	55 [2.165]	M8	40 [1.575]	20 [0.787]	M8	1 5/16-12UN-2B	3/4 Gas (BSPP)
	Outlet	19.1 [0.752]	22.23 [0.875]	47.63 [1.875]	3/8-16UNC-2B	18 [0.709]	55 [2.165]	M8	40 [1.575]	20 [0.787]	M8	1 1/16-12UN-2B	3/4 Gas (BSPP)
033	Inlet	31.8 [1.252]	30.18 [1.188]	58.72 [2.312]	7/16-14UNC-2B	27 [1.063]	55 [2.165]	M8	51 [2.008]	27 [1.063]	M10	1 5/8-12UN-2B	1 Gas (BSPP)
	Outlet	25.4 [1.000]	26.19 [1.031]	52.37 [2.062]	3/8-16UNC-2B	18 [0.709]	55 [2.165]	M8	40 [1.575]	20 [0.787]	M8	1 5/16-12UN-2B	3/4 Gas (BSPP)
038	Inlet	31.8 [1.252]	30.18 [1.188]	58.72 [2.312]	7/16-14UNC-2B	27 [1.063]	55 [2.165]	M8	51 [2.008]	27 [1.063]	M10	1 5/8-12UN-2B	1 Gas (BSPP)
	Outlet	25.4 [1.000]	26.19 [1.031]	52.37 [2.062]	3/8-16UNC-2B	18 [0.709]	55 [2.165]	M8	40 [1.575]	20 [0.787]	M8	1 5/16-12UN-2B	3/4 Gas (BSPP)
044	Inlet	31.8 [1.252]	30.18 [1.188]	58.72 [2.312]	7/16-14UNC-2B	27 [1.063]	55 [2.165]	M8	51 [2.008]	27 [1.063]	M10	1 5/8-12UN-2B	1 Gas (BSPP)
	Outlet	25.4 [1.000]	26.19 [1.031]	52.37 [2.062]	3/8-16UNC-2B	18 [0.709]	55 [2.165]	M8	51 [2.008]	27 [1.063]	M10	1 5/16-12UN-2B	1 Gas (BSPP)
048	Inlet	31.8 [1.252]	30.18 [1.188]	58.72 [2.312]	7/16-14UNC-2B	27 [1.063]	55 [2.165]	M8	51 [2.008]	27 [1.063]	M10	1 5/8-12UN-2B	1 Gas (BSPP)
	Outlet	25.4 [1.000]	26.19 [1.031]	52.37 [2.062]	3/8-16UNC-2B	18 [0.709]	55 [2.165]	M8	51 [2.008]	27 [1.063]	M10	1 5/16-12UN-2B	1 Gas (BSPP)
055	Inlet	38.1 [1.500]	35.71 [1.406]	69.85 [2.750]	1/2-13UNC-2B	27 [1.063]	55 [2.165]	M8	51 [2.008]	27 [1.063]	M10	1 7/8-12UN-2B	1 Gas (BSPP)
	Outlet	31.8 [1.252]	30.18 [1.188]	58.72 [2.312]	7/16-14UNC-2B	18 [0.709]	55 [2.165]	M8	51 [2.008]	27 [1.063]	M10	1 5/8-12UN-2B	1 Gas (BSPP)
063	Inlet	38.1 [1.500]	35.71 [1.406]	69.85 [2.750]	1/2-13UNC-2B	36 [1.417]	55 [2.165]	M8	62 [2.441]	36 [1.417]	M10	1 7/8-12UN-2B	1 1/4 Gas (BSPP)
	Outlet	31.8 [1.252]	30.18 [1.188]	58.72 [2.312]	7/16-14UNC-2B	27 [1.063]	55 [2.165]	M8	51 [2.008]	27 [1.063]	M10	1 5/8-12UN-2B	1 Gas (BSPP)
075	Inlet	38.1 [1.500]	35.71 [1.406]	69.85 [2.750]	1/2-13UNC-2B	36 [1.417]	55 [2.165]	M8	62 [2.441]	36 [1.417]	M10	1 7/8-12UN-2B	1 1/4 Gas (BSPP)
	Outlet	31.8 [1.252]	30.18 [1.188]	58.72 [2.312]	7/16-14UNC-2B	27 [1.063]	55 [2.165]	M8	51 [2.008]	27 [1.063]	M10	1 5/8-12UN-2B	1 Gas (BSPP)
090	Inlet	38.1 [1.500]	35.71 [1.406]	69.85 [2.750]	1/2-13UNC-2B	36 [1.417]	55 [2.165]	M8	62 [2.441]	36 [1.417]	M10	1 7/8-12UN-2B	1 1/4 Gas (BSPP)
	Outlet	31.8 [1.252]	30.18 [1.188]	58.72 [2.312]	7/16-14UNC-2B	27 [1.063]	55 [2.165]	M8	51 [2.008]	27 [1.063]	M10	1 5/8-12UN-2B	1 Gas (BSPP)



# Dimensions

## SNP3NN – 01FA, 01DA, 01BA / SEP3NN – 01BA

The drawing shows the SNP3NN standard porting for 01FA, 01DA and 01BA. The configurations 01FA and 01BA are available for the SEP3NN.



SNP3NN – 01FA, 01BA, 01DA and SEP3NN – 01FA, 01BA dimensions

Frame size	022	026	033	038	044	048	055	063	075	090	
Dimension	A	63 [2.480]	64.5 [2.539]	67 [2.637]	68.8 [2.708]	71 [2.795]	72.5 [2.854]	75 [2.952]	78 [3.07]	82 [3.228]	87 [3.425]
	B	132.5 [5.216]	135.5 [5.334]	140.5 [5.531]	144 [5.669]	148.5 [5.846]	151.5 [5.964]	156.5 [6.161]	162.5 [6.397]	170.5 [6.712]	180.5 [7.106]
Inlet	C	20 [0.787]		27 [1.063]			36 [1.417]				
	D	40 [1.575]		51 [2.007]			62 [2.441]				
	E	M8		M10			M10				
Outlet	c	20 [0.787]			27 [1.063]						
	d	40 [1.575]			51 [2.001]						
	e	M8			M10						

The SEP3NN overall length is 12 mm [0.472 in] less than the SNP3NN for the whole range of displacements (22.1 to 44.1 cm<sup>3</sup>/rev [1.35 to 2.69 in<sup>3</sup>/rev]).

### Model code examples and maximum shaft torque

Flange/drive gear	Model code example	Maximum shaft torque
01DA	SNP3NN/075LN01DAP1CDCANNNN/NNNNN	290 N·m [2566 lb·in]
01FA	SNP3NN/033RN01FAP1CAC7NNNN/NNNNN	210 N·m [1858 lb·in]
01BA	SNP3NN/022RN01BAP1C7C7NNNN/NNNNN	350 N·m [3097 lb·in]

For further details on ordering, see [Model Code](#), pages 8 - 11.