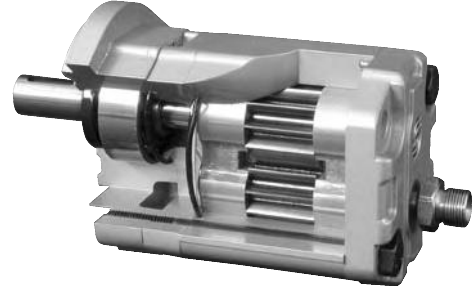


MOTOR DESIGN**SNM2**

SNM2 is the Group 2 bi-directional motor available in the whole displacements range from 6 up to 25 cm³/rev [from 0.37 up to 1.538 in³/rev].

Configurations include European and SAE flanges and shafts (CO01, CI01, SC01, CO02, SC02, FR03, CO04/05, SC04/05, CI06, SC06).

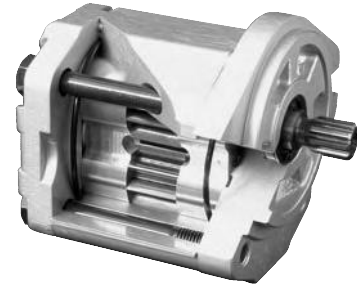
SNM2 CI96 (cut-away)

F005 214

SNU2

SNU2 is the Group 2 uni-directional motor available in the displacements range from 8 up to 25 cm³/rev [from 0.513 up to 1.538 in³/rev]. The SNU2 motor construction is derived from the correspondent pump SNP2.

Configurations include European and SAE flanges and shafts (CO01, CI01, SC01, CO02, SC02, FR03, CO04/05, SC04/05, CI06, SC06).

SNU2 SC06 (cut away)

F005 030

SKU2

SKU2 is the Group 2 uni-directional motor available in the displacements range from 8 up to 25 cm³/rev [from 0.513 up to 1.538 in³/rev]. The SKU2 motor construction is derived from the correspondent pump SKP2.

Configurations includes SAE flange and shaft only (SC06).

TECHNICAL DATA

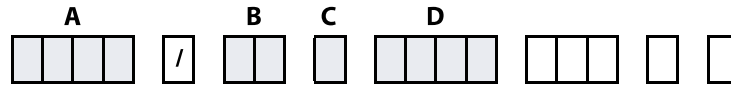
This table details the technical data for Group 2 gear motors based on the model and displacement configuration.

Technical data for Group 2 gear motors

		Frame size							
		6*	8	11	14	17	19	22	25
Displacement	cm ³ /rev [in ³ /rev]	6.0 [0.360]	8.4 [0.513]	10.8 [0.659]	14.4 [0.879]	16.8 [1.025]	19.2 [1.171]	22.8 [1.391]	25.2 [1.538]
SNM2 (a standard, bi-directional motor)									
Peak pressure	bar [psi]	280 [4060]	280 [4060]	280 [4060]	280 [4060]	260 [3770]	230 [3335]	200 [2900]	180 [2610]
Rated pressure		250 [3625]	250 [3625]	250 [3625]	250 [3625]	230 [3335]	210 [3000]	180 [2610]	160 [2300]
Back pressure		250 [3625]	250 [3625]	250 [3625]	250 [3625]	230 [3335]	210 [3000]	180 [2610]	160 [2300]
Minimum speed	min ⁻¹ (rpm)	700	700	700	700	500	500	500	500
Maximum speed		4000	4000	4000	4000	4000	3500	3500	3500
SNU2 (a standard, unidirectional motor)									
Peak pressure	bar [psi]	-	280 [4060]	280 [4060]	280 [4060]	260 [3770]	230 [3335]	200 [2900]	180 [2610]
Rated pressure			250 [3625]	250 [3625]	250 [3625]	230 [3335]	210 [3000]	180 [2610]	160 [2320]
Minimum speed	min ⁻¹		600	600	600	500	500	500	500
Maximum speed	(rpm)		3500	3500	3500	3000	3000	3000	2500
SKU2 (a standard, unidirectional motor)									
Peak pressure	bar [psi]	-	280 [4060]	280 [4060]	280 [4060]	250 [3625]	250 [3625]	230 [3335]	200 [2900]
Rated pressure			250 [3625]	250 [3625]	250 [3625]	230 [3335]	230 [3335]	210 [3000]	190 [2755]
Minimum speed	min ⁻¹		700	700	700	500	500	500	500
Maximum speed	(rpm)		3500	3500	3500	3000	3000	3000	2500
All									
Weight	kg [lb]	2.4 [5.3]	2.5 [5.5]	2.7 [5.5]	2.9 [6.3]	3.0 [6.5]	3.1 [6.7]	3.2 [7.0]	3.3 [7.3]
Moment of inertia of rotating components	x 10 ⁻⁶ kg·m ² [x 10 ⁻⁶ lbf·ft ²]	26.5 [629]	32.4 [769]	38.4 [911]	47.3 [1122]	53.3 [1265]	59.2 [1405]	68.1 [1616]	74.1 [1758]

* Before choosing this frame size, please apply to Sauer-Danfoss technical department.

MODEL CODE



A Type

Code	Description
SNM2	Bidirectional gear motor
SNU2	Unidirectional gear motor
SKU2	Unidirectional gear motor
SNM2I.	Unidirectional gear motor with integrated relief valve (internal drain)
SNM2G.	Unidirectional gear motor with anti-cavitation check valve
SNM2J.	Unidirectional gear motor with integrated relief valve and anti-cavitation check valve

B Displacement

Code	Description	SNM2	SNU2	SKU2	SNM2I.	SNM2G.	SNM2J.
6	6.0 cm ³ /rev [0.360 in ³ /rev]	●	●	●	●	●	●
8	8.4 cm ³ /rev [0.513 in ³ /rev]	●	●	●	●	●	●
11	10.8 cm ³ /rev [0.659 in ³ /rev]	●	●	●	●	●	●
14	14.4 cm ³ /rev [0.879 in ³ /rev]	●	●	●	●	●	●
17	16.8 cm ³ /rev [1.025 in ³ /rev]	●	●	●	●	●	●
19	19.2 cm ³ /rev [1.171 in ³ /rev]	●	●	●	●	●	●
22	22.8 cm ³ /rev [1.391 in ³ /rev]	●	●	●	●	●	●
25	25.2 cm ³ /rev [1.538 in ³ /rev]	●	●	●	●	●	●

C Direction of rotation

Code	Description	SNM2	SNU2	SKU2	SNM2I.	SNM2G.	SNM2J.
D	Right (Clockwise)	●	●	●	●	●	●
S	Left (Counterclockwise)		●	●	●	●	●

D Shaft/Mounting flange/Port configuration

Code	Description	SNM2	SNU2	SKU2	SNM2I.	SNM2G.	SNM2J.
CO01	1:8 tapered shaft/European 01 4-bolt flange /European flanged ports	●	●	-	●	●	●
CO02	1:5 tapered shaft/European 02 4-bolt flange /German standard ports	●	●	-	●	●	●
CO04/ CO05	1:5 tapered shaft/German engine PTO 2-bolt flange/German standard ports	●	●	-	●	●	●
CI01	Parallel shaft 15 mm [0.591 in]/European 01 4-bolt flange/European flanged ports	●	●	-	●	●	●
CI06	Parallel shaft 15.875 mm [0.625 in]/SAE A flange/Threaded SAE O-ring boss ports	●	●	-	●	●	●
SC01	DIN splined shaft/European 01 4-bolt flange/European flanged ports	●	●	-	●	●	●
SC02	DIN splined shaft/European 02 4-bolt flange /German standard ports	●	●	-	●	●	●
SC04/ SC05	DIN splined shaft/German engine PTO 2-bolt flange/German standard ports	●	●	-	●	●	●
SC06	SAE splined shaft/SAE A flange/Threaded SAE O-ring boss ports	●	●	●	●	●	●
FR03	Sauer-Danfoss tang shaft/Sauer-Danfoss tang drive/German standard ports	●	●	-	●	●	●

Legend:	
●	= Standard
○	= Optional
-	= Not Available

MODEL CODE
 (continued)



E Variant code (3-letter code describes variants to standard configuration)

F Version (value representing a change to the initial project)

Code	Description
0	Initial project [*LEAVE BLANK]
1÷9 or A÷Z	It should be reserved to Sauer-Danfoss

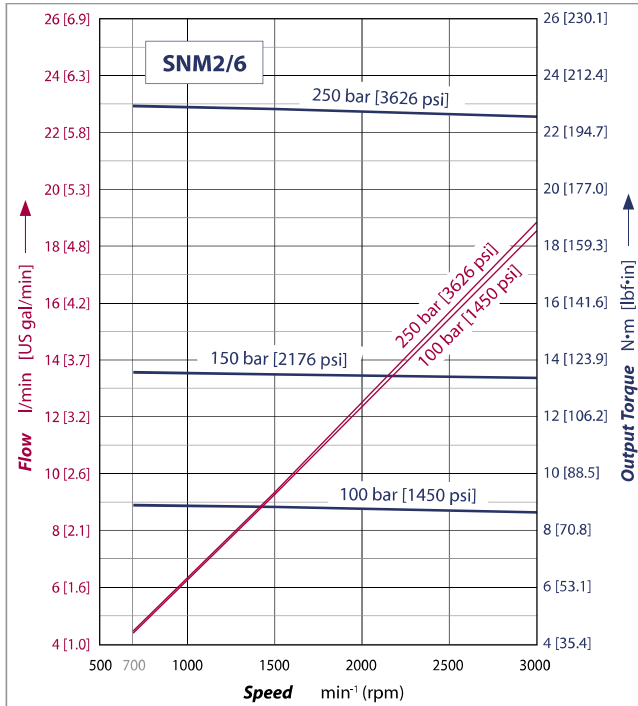
G Port type (if other than standard)

Code	Description
0	Standard port for the flange type specified [*LEAVE BLANK]
B	Flanged port with threaded holes in X pattern (German standard ports), centered on the body
C	Flanged port with threaded holes in + pattern (European standard ports)
D	Threaded metric port
E	Threaded SAE O-ring boss port
F	Threaded Gas port (BSP)
G	Flanged port with threaded holes in X pattern (German standard ports), offset from center of body

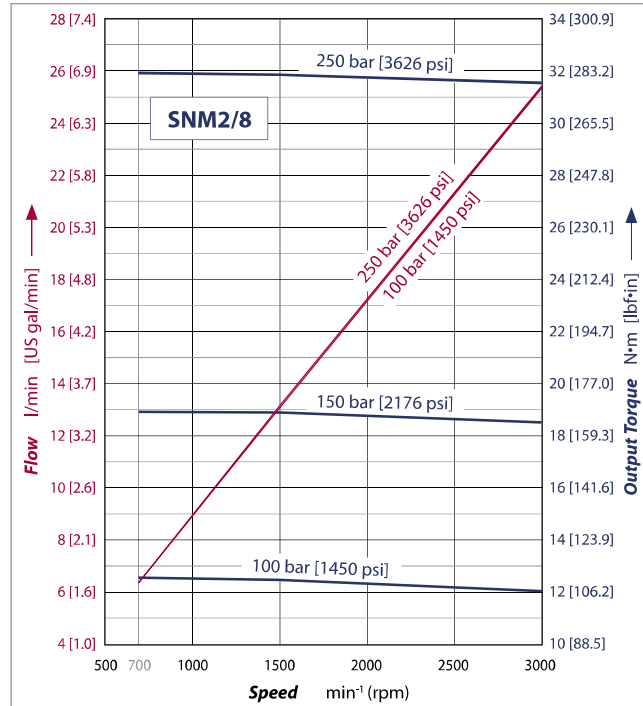
MOTOR PERFORMANCE GRAPHS

The graphs on the next few pages provide typical output flow and input power for Group 2 motors at various working pressures. Data were taken using ISO VG46 petroleum / mineral based fluid at 50 °C [122 °F] (viscosity = 28 mm²/s [132 SUS]).

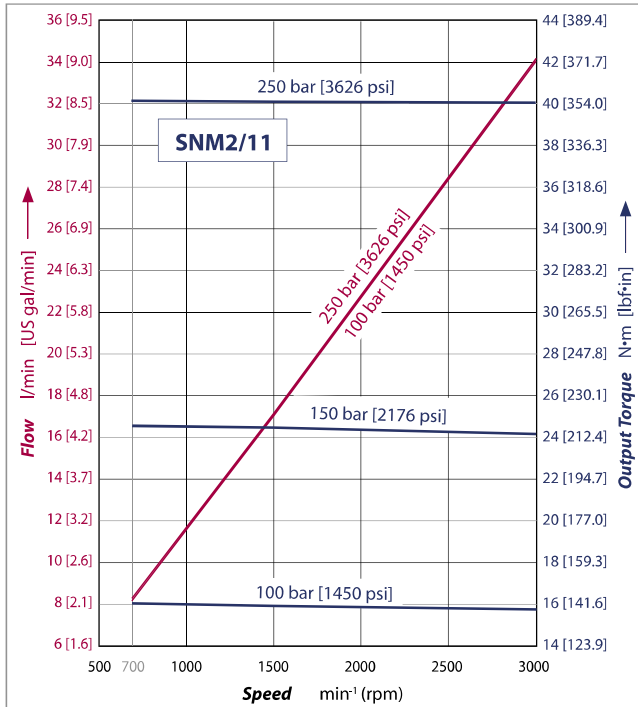
SNM2/6 motor performance graph



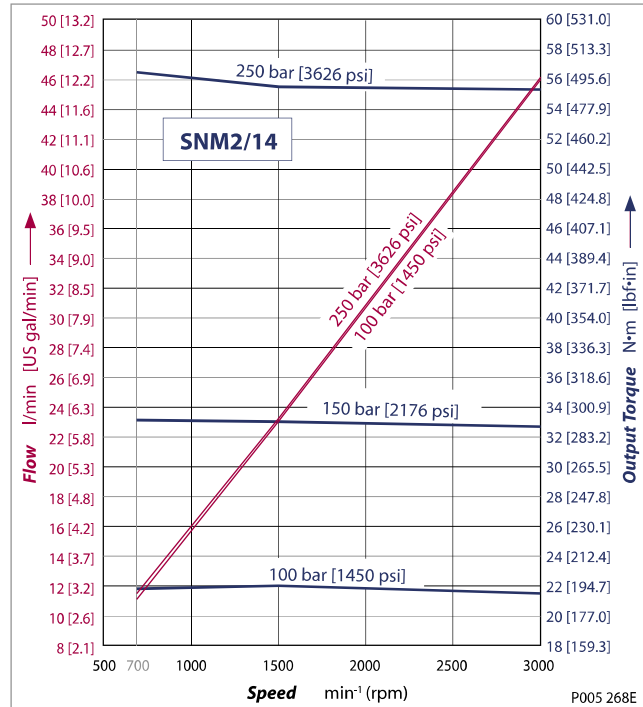
SNM2/8 motor performance graph



SNM2/11 motor performance graph



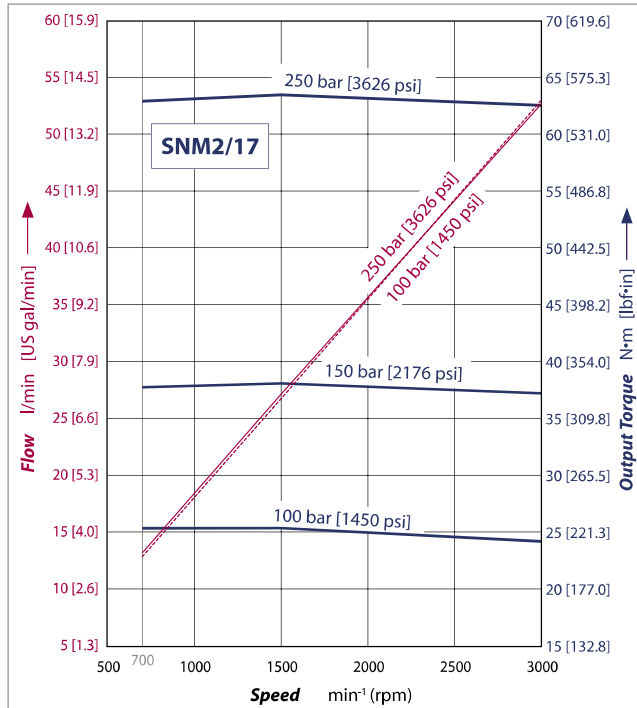
SNM2/14 motor performance graph



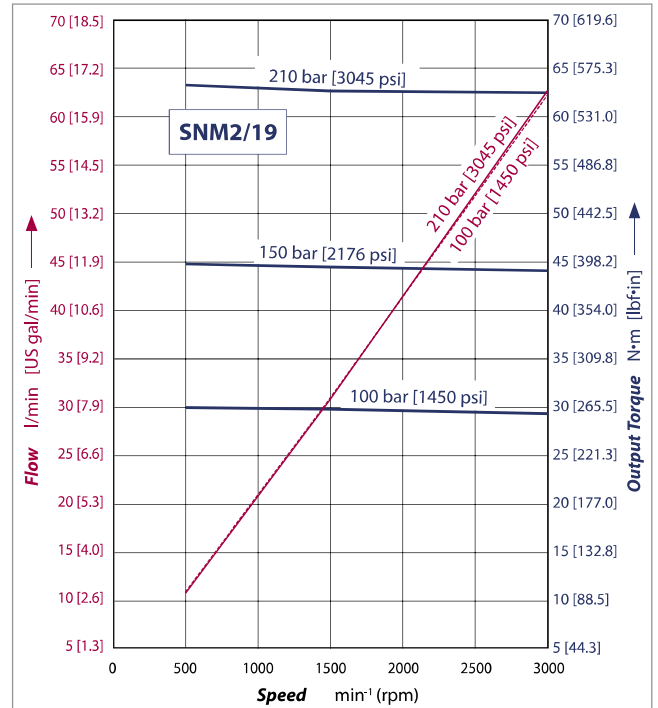
P005 268E

MOTOR PERFORMANCE GRAPHS (continued)

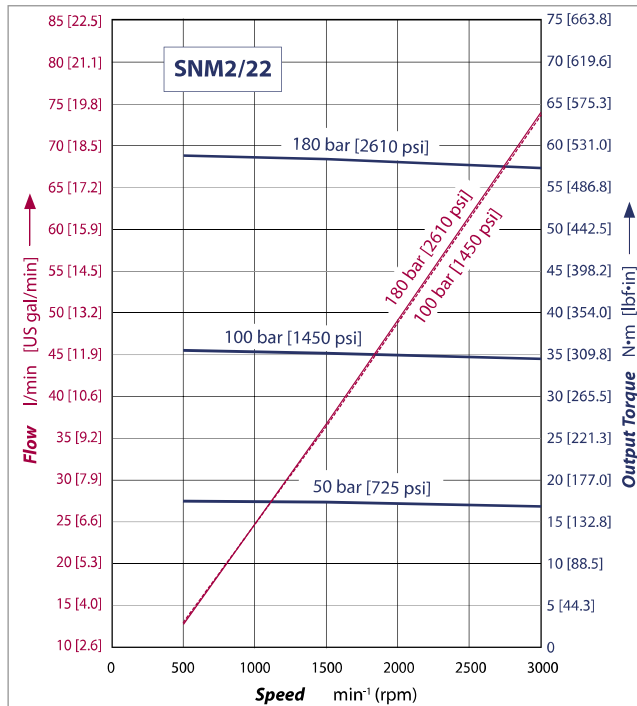
SNM2/17 motor performance graph



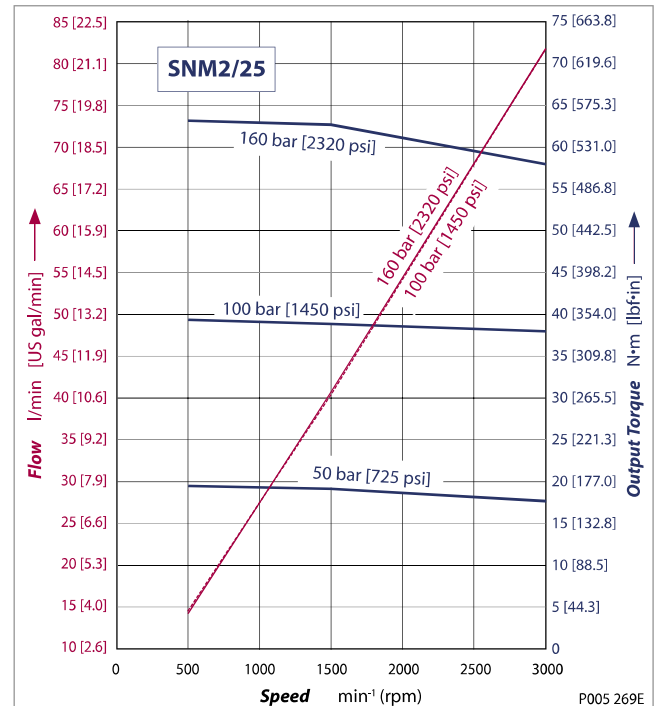
SNM2/19 motor performance graph



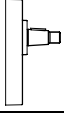
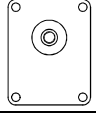
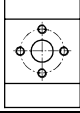

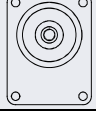
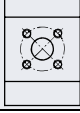
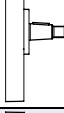
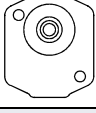
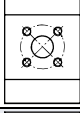
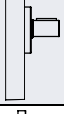
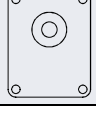
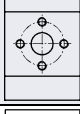
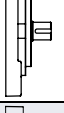
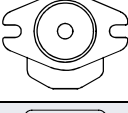
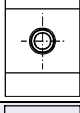
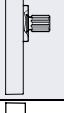
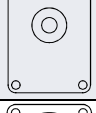
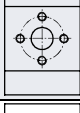

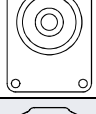
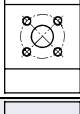

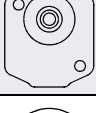
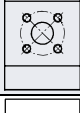
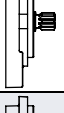
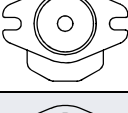
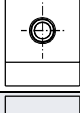
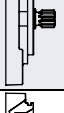
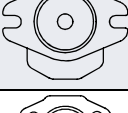
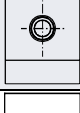
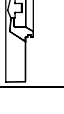
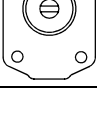
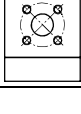
SNM2/22 motor performance graph



SNM2/25 motor performance graph



SHAFT, FLANGE, AND PORT CONFIGURATIONS

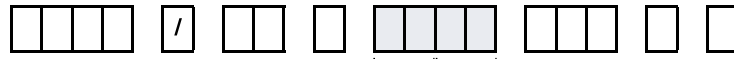
Pump	Code	Shaft	Flange	Port
SNM2 SNU2	CO01	1:8 tapered 	36.5 mm [1.438 in] pilot Ø European 01 4-bolt 	European flanged port + pattern 
SNM2 SNU2	CO02	1:5 tapered 	80.0 mm [3.150 in] pilot Ø European 02 4-bolt 	German std ports port X pattern 
SNM2 SNU2	CO04/05	1:5 tapered 	50 mm [1.969 in] pilot Ø German PTO 2-bolt 	German std ports port X pattern 
SNM2 SNU2	CI01	Ø 15 mm [0.591 in] parallel 	36.5 mm [1.438 in] pilot Ø European 01 4-bolt 	European flanged port + pattern 
SNM2 SNU2	CI06	Ø 15.7 mm [0.625 in] parallel 	SAE A 82.55 mm [3.250 in] Ø pilot 	Threaded SAE O-ring boss port 
SNM2 SNU2	SC01	9-teeth splined m = 1.60, α = 30° DIN 5482-B17x14 	36.5 mm [1.438 in] pilot Ø European 01 4-bolt 	European flanged port + pattern 
SNM2 SNU2	SC02	9-teeth splined m = 1.60, α = 30° DIN 5482-B17x14 	80.0 mm [3.150 in] pilot Ø European 02 4-bolt 	German std ports port X pattern 
SNM2 SNU2	SC04/05	9-teeth splined m = 1.60, α = 30° DIN 5482-B17x14 	50 mm [1.969 in] pilot Ø German PTO 2-bolt 	German std ports port X pattern 
SNM2 SNU2	SC06	9-teeth splined SAE A 	SAE A 82.55 mm [3.250 in] Ø pilot 	Threaded SAE O-ring boss port 
SKU2	SC06	11-teeth splined SAE A 	SAE A 82.55 mm [3.250 in] Ø pilot 	Threaded SAE O-ring boss port 
SNM2 SNU2	FR03	Sauer-Danfoss standard tang 	52 mm [2.066 in] pilot Ø, Sauer- Danfoss tang drive 	German std ports port X pattern 

SHAFT OPTIONS

Group 2 motors are available with a variety of splined, parallel, and tapered shaft ends. Not all shaft styles are available with all flange styles.

Valid combinations and nominal torque ratings are shown *in the table below*.

Shaft availability and torque capability



Shaft		Mounting flange code with maximum torque in N•m [lbf•in]					
Code	Description	01	02	03	04	05	06
CO	Taper 1:5	–	140 [1239]	–	140 [1239]	140 [1239]	–
CO	Taper 1:8	150 [1328]	–	–	–	–	–
SC	DIN spline B17x14	90 [797]	130 [1151]	–	130 [1151]	130 [1151]	–
SC	SAE spline 9T 16/32p	–	–	–	–	–	75 [646]
CI	Parallel 15 mm [0.591 in]	90 [797]	–	–	–	–	–
CI	Parallel 15.875 mm [0.625 in]	–	–	–	–	–	80 [708]
FR	Sauer-Danfoss Tang	–	–	70 [620]	–	–	–

Recommended mating splines for Group 2 splined output shafts should be in accordance with SAE J498 or DIN 5482. Sauer-Danfoss external SAE splines are flat root side fit with circular tooth thickness reduced by 0.127 mm [0.005 in] in respect to class 1 fit. The external DIN splines have an offset increased by 0.1 mm [0.004 in.] These dimensions are modified in order to assure a clearance fit with the mating spline.

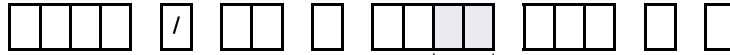
Other shaft options may exist. Contact your Sauer-Danfoss representative for availability.

⚠ 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.

MOUNTING FLANGES

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



Flange code	Intended use
01	European Ø 36.5 mm [Dia 1.438 in] four-bolt
02	German PTO Ø 80 mm [Dia 3.150 in] four-bolt
03	Sauer-Danfoss Tang drive Ø 52 mm [Dia 2.066 in]
04/05	German engine PTO Ø 50 mm [Dia 1.969 in] two-bolt
06	SAE A flange Ø 82.55 mm [Dia 3.250 in] two-bolt

PORT CONFIGURATIONS

Standard port configurations

This table lists standard porting offered with each mounting flange:



Code	Description	Standard on
C	Flanged port with threaded holes in + pattern (European standard)	01 flange
G	Flanged port with threaded holes in X pattern (German standard), offset from the center of the body	02, 03, 04/05 flanges
E	Threaded SAE O-ring boss port	06 flange

Nonstandard port configurations

Each mounting flange comes with a standard port style. The code is only required when ordering nonstandard ports.

Various port configurations are available on Group 2 motors. 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)

The tables of dimensions are on the next pages.

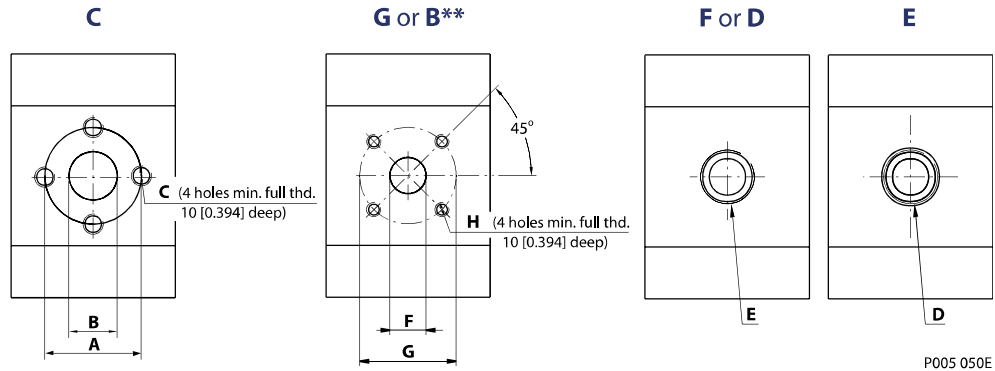
This table lists a few nonstandard port configuration codes:



Code	Description
B	Flanged port with threaded holes in X pattern (German standard), centered on the body
C	Flanged port with threaded holes in + pattern (European standard)
D	Threaded metric port
E	Threaded SAE O-ring boss port
F	Threaded GAS (BSPP)
G	Flanged port with threaded holes in X pattern (German standard), offset from the center of the body

**SNM2, SNM2G, AND
 SNM2J. PORTS**

The illustration below shows ports for bi-directional motors.



P005 050E

Bi-directional motor ports dimensions

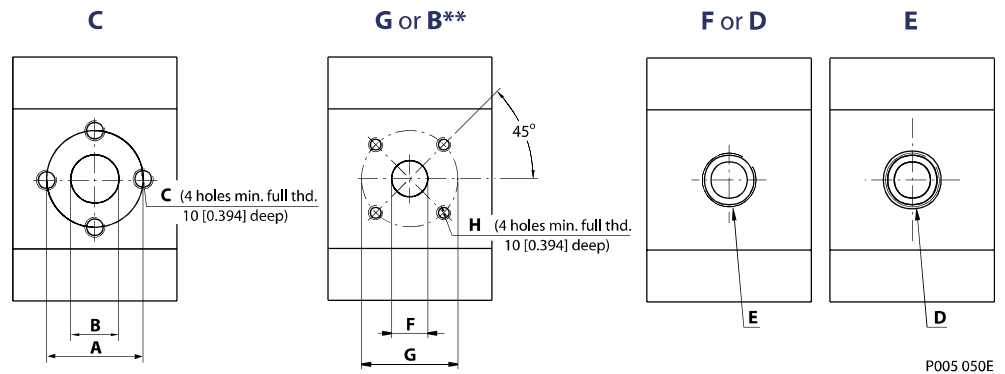
Model code*		C			G or B**			F or D		E
Standard port for flange code		01			02/03/04/05			nonstandard		06
Type (displacement)		B	A	C	F	G	H	E		D
6	Inlet/Outlet	13.5 [0.531]	30 [1.181]	M6	15 [0.591]	35 [1.378]	M6	1/2 Gas (BSPP)	M22x1.5	7/8-14UNF-2B
8	Inlet/Outlet	13.5 [0.531]	30 [1.181]	M6	15 [0.591]	35 [1.378]	M6	1/2 Gas (BSPP)	M22x1.5	7/8-14UNF-2B
11	Inlet/Outlet	13.5 [0.531]	30 [1.181]	M6	15 [0.591]	35 [1.378]	M6	1/2 Gas (BSPP)	M22x1.5	7/8-14UNF-2B
14	Inlet/Outlet	20.0 [0.787]	40 [1.575]	M8	15 [0.591]	35 [1.378]	M6	1/2 Gas (BSPP)	M22x1.5	7/8-14UNF-2B
17	Inlet/Outlet	20.0 [0.787]	40 [1.575]	M8	15 [0.591]	35 [1.378]	M6	1/2 Gas (BSPP)	M22x1.5	7/8-14UNF-2B
19	Inlet/Outlet	20.0 [0.787]	40 [1.575]	M8	20 [0.787]	40 [1.575]	M6	3/4 Gas (BSPP)	M26x1.5	1 1/16-12UNF-2B
22	Inlet/Outlet	20.0 [0.787]	40 [1.575]	M8	20 [0.787]	40 [1.575]	M6	3/4 Gas (BSPP)	M26x1.5	1 1/16-12UNF-2B
25	Inlet/Outlet	23.5 [0.925]	40 [1.575]	M8	20 [0.787]	40 [1.575]	M6	3/4 Gas (BSPP)	M26x1.5	1 1/16-12UNF-2B
Drain		1/4 Gas (BSPP)							9/16-18UNF-2B	

* Mark only if desired porting is nonstandard for the flange code selected. Otherwise, mark ' '

** Port B is in the center of the body. Port G is offset from the center of the body.

SNU2, SKU2 PORTS

The illustration below shows ports for uni-directional motors.



P005 050E

Uni-directional motor ports dimensions

Model code*		C			G**			B**			F	E
Standard port for flange code		01			02/03/04/05			nonstandard (ports centered on body)			nonstandard	06
Type (displacement)		B	A	C	F	G	H	F	G	H	E	D
6	Outlet	13.5 [0.531]	30 [1.181]	M6	15 [0.591]	40 [1.575]	M6	15 [0.591]	40 [1.575]	M6	1/2 Gas (BSPP)	1 1/16-12UNF-2B
	Inlet	13.5 [0.531]	30 [1.181]	M6	15 [0.591]	35 [1.378]	M6	15 [0.591]	35 [1.378]	M6	1/2 Gas (BSPP)	7/8-14UNF-2B
8	Outlet	13.5 [0.531]	30 [1.181]	M6	20 [0.787]	40 [1.575]	M6	20 [0.787]	40 [1.575]	M6	1/2 Gas (BSPP)	1 1/16-12UNF-2B
	Inlet	13.5 [0.531]	30 [1.181]	M6	15 [0.591]	35 [1.378]	M6	15 [0.591]	35 [1.378]	M6	1/2 Gas (BSPP)	7/8-14UNF-2B
11	Outlet	13.5 [0.531]	30 [1.181]	M6	20 [0.787]	40 [1.575]	M6	20 [0.787]	40 [1.575]	M6	3/4 Gas (BSPP)	1 1/16-12UNF-2B
	Inlet	13.5 [0.531]	30 [1.181]	M6	15 [0.591]	35 [1.378]	M6	15 [0.591]	35 [1.378]	M6	1/2 Gas (BSPP)	7/8-14UNF-2B
14	Outlet	20.0 [0.787]	40 [1.575]	M6	20 [0.787]	40 [1.575]	M6	20 [0.787]	40 [1.575]	M6	3/4 Gas (BSPP)	1 1/16-12UNF-2B
	Inlet	13.5 [0.531]	30 [1.181]	M6	15 [0.591]	35 [1.378]	M6	15 [0.591]	35 [1.378]	M6	1/2 Gas (BSPP)	7/8-14UNF-2B
17	Outlet	20.0 [0.787]	40 [1.575]	M6	20 [0.787]	40 [1.575]	M6	20 [0.787]	40 [1.575]	M6	3/4 Gas (BSPP)	1 1/16-12UNF-2B
	Inlet	13.5 [0.531]	30 [1.181]	M6	15 [0.591]	35 [1.378]	M6	15 [0.591]	35 [1.378]	M6	1/2 Gas (BSPP)	7/8-14UNF-2B
19	Outlet	20.0 [0.787]	40 [1.575]	M6	20 [0.787]	40 [1.575]	M6	20 [0.787]	40 [1.575]	M6	3/4 Gas (BSPP)	1 1/16-12UNF-2B
	Inlet	13.5 [0.531]	30 [1.181]	M6	15 [0.591]	35 [1.378]	M6	15 [0.591]	35 [1.378]	M6	1/2 Gas (BSPP)	7/8-14UNF-2B
22	Outlet	20.0 [0.787]	40 [1.575]	M6	20 [0.787]	40 [1.575]	M6	20 [0.787]	40 [1.575]	M6	3/4 Gas (BSPP)	1 1/16-12UNF-2B
	Inlet	13.5 [0.531]	30 [1.181]	M6	15 [0.591]	35 [1.378]	M6	15 [0.591]	35 [1.378]	M6	1/2 Gas (BSPP)	7/8-14UNF-2B
25	Outlet	23.5 [0.925]	40 [1.575]	M8	20 [0.787]	40 [1.575]	M6	20 [0.787]	40 [1.575]	M6	1 Gas (BSPP)	1 1/16-12UNF-2B
	Inlet	20.0 [0.787]	40 [1.575]	M8	15 [0.591]	35 [1.378]	M6	15 [0.591]	35 [1.378]	M6	3/4 Gas (BSPP)	7/8-14UNF-2B

* Mark only if desired porting is nonstandard for the flange code selected. Otherwise, mark ''

** Port B is in the center of the body. Port G is offset from the center of the body.