



Technical data

The table below 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							
		6,0*	8,0	011	014	017	019	022	025
Displacement	cm ³ /rev [in ³ /rev]	6.0 [0.36]	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]
SNM2NN (bidirectional 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 [3045]	180 [2610]	160 [2320]
Outlet back pressure		250 [3625]	250 [3625]	250 [3625]	250 [3625]	230 [3335]	210 [3045]	180 [2610]	160 [2320]
Minimum speed	min ⁻¹ (rpm)	700	700	700	700	500	500	500	500
Maximum speed		4000	4000	4000	4000	4000	3500	3500	3500
SNU2NN (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 [3045]	180 [2610]	160 [2320]
Minimum speed	min ⁻¹ (rpm)		600	600	600	500	500	500	500
Maximum speed			3500	3500	3500	3000	3000	3000	2500
SKU2NN (unidirectional motor)									
Peak pressure	bar [psi]	-	280 [4060]	280 [4060]	280 [4060]	260 [3770]	230 [3335]	200 [2900]	175 [2815]
Rated pressure			250 [3625]	250 [3625]	250 [3625]	230 [3335]	210 [3045]	180 [2610]	160 [2320]
Minimum speed	min ⁻¹ (rpm)		600	600	600	500	500	500	500
Maximum speed			3500	3500	3500	3000	3000	3000	2500
All (SNM2NN, SNU2NN, SKU2NN)									
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 lb·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]
Theoretical flow at maximum speed	l/min [US gal/min]	24 [6.3]	33.6 [8.9]	43.2 [11.4]	50.4 [13.3]	50.4 [13.3]	57.6 [15.2]	68.4 [18.0]	75.6 [20.0]

1 kg·m² = 23.68 lb·ft²

* Before choosing this frame size, please apply to Turolla technical department.

⚠ Caution

The rated and peak pressure mentioned are for motors 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 Model Code

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

SEM2DN	Low Cost Gr2 Bidir.Motor-int.drain
SEM2NL	Low Cost Gr2 Bidirec.Motor-vert.drain
SEM2NN	Low Cost Gr2 Bidirec.Motor
SHM2GL	Hi.Press.Gr2 Bid.Mot.+Antic.Check Val-Vert.drain
SHM2IN	Hi.Press.Gr2 Bidir.Motor+Int.drain RV
SHM2NL	Hi.Press.Gr2 Bidirec.Motor-Vert.drain
SHM2NN	Hi.Press. Gr2 Bidirec.Motor
SHU2GN	Hi.Press. Gr2 Unidir.Motor+Anticav.Check valve
SHU2NN	High Press. Gr2 Unidir.Motor
SKU2NN	Big shaft GR2 Unidir.Motor
SNM2DN	Gr2 Bidir.Motor-Int.Drain
SNM2FL	Gr2 Bidir.Motor+Break.Valve-Vert.drain-Special
SNM2FN	Gr2 Bidir.Motor+Break.Valve-Special
SNM2GC	Gr2 Bidir.Motor+Anticav.Check Val.-Ax.drain
SNM2GL	Gr2 Bidir.Motor-Anticav.Check Val.-vert.drain
SNM2GN	Gr2 Bidir.Motor-Anticav.Check Valve
SNM2IL	Gr2 Bidir.Motor+Int.drain RV-Vert.drain

SNM2IN	Gr2 Bidir.Motor+Int.drain RV
SNM2JN	Gr2 Bid.Motor+Int.drain RV+Anticav.Check Valve
SNM2NC	Gr2 Bidir.Motor-Cover Ports-Ax.drain
SNM2NL	Gr2 Bidir.Motor-Vert.drain
SNM2NN	Gr2 Bidir.Motor
SNM2SN	Gr2 Bidir.Motor+by-pass electric valve-Special
SNU2EN	Gr2 Unidir.Motor+Ext.drain RV
SNU2GN	Gr2 Unidir.Motor+Anticav.Check Valve
SNU2GC	Gr2 Unidir.Motor-In./Out. on Cover+Anticav.Check Valve
SNU2IN	Gr2 Unidir.Motor+Int.drain RV
SNU2JN	Gr2 Unidir.Motor+Int.drain RV+Anticav.Check Valve
SNU2NC	Gr2 Unidir.Motor-In.-Out.on cover
SNU2NN	Gr2 Unidir.Motor
SNU2QN	Gr2 Unid.Motor-Ext.drain RV+Anticav.Check Valve
SNU2TN	Gr2 Unidir.Motor-Break.Valve as Anticav.Valve-Special

B Displacement

5,5	5,5 cc -Special
6,0	6,0 cc -Special
8,0	8,4 cc
9,0	9,0 cc -Special
9,5	9,5 cc -Special

011	10,8 cc
012	12,0 cc -Special
014	14,4 cc
017	16,8 cc
019	19,2 cc

021	21,0 cc -Special
022	22,8 cc
025	25,2 cc



C Rotation

B	Bidirectional
L	Unidirectional Left hand
R	Unidirectional Right hand

D Project version (value representing a change to the initial project)

N	Std Version of Project
2	Std Big-Shaft - Special Unbalanced
4	Precharged seal on cover-Special heavy-duty applications
6	Short version - Special

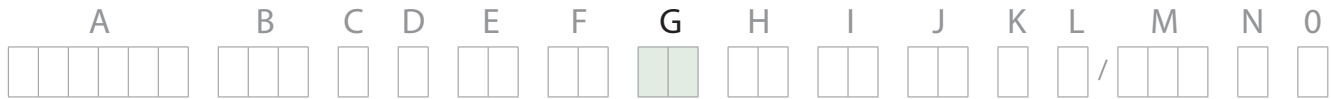
E Mounting flange

01	pilot Ø36,5+4 holes
02	pilot Ø80+4 holes
03	pilot Ø52+O-ring+4 holes through body
04	pilot Ø50+2 holes through body
05	pilot Ø50+2 holes through body
06	SAE A pilot Ø82,55+2 holes
B2	pilot Ø80+4 holes+special shaft seal slot - Special
L5	pilot Ø52 spigot Diameter+O-Ring+4 holes through body - Special
Q2	pilot Ø80+4 holes+fastening holes Ø10,5mm- Special
91	Outrigger Bearing Type 01+taper shaft 1:8-M12x1,25-Key4
92	Outrigger Bearing Type 02+taper shaft 1:5-M12x1,25-Key3
94	Outrigger Bearing Type 04+taper shaft 1:5-M12x1,25-Key3
9A	Outrigger Bearing Type 01+taper shaft 1:8-M12x1,25-Key3.2
9D	Outrigger Bearing Type 01+parallel shaft Ø15-Key4
9F	Outrigger Bearing Type 02+taper shaft 1:5-M14x1,5-Key4+special shaft seal RZB
9G	Outrigger Bearing Type 04+taper shaft 1:5-M12x1,25-Key3 + 4 M10 assembly thd holes "HELI-COIL- Special
9H	Outrigger Bearing Type 06+taper shaft 1:8-M12x1,25-Key4
9J	Outrigger Bearing Type 06 with parallel shaft Ø3/4 (Ø19.05 mm)
9L	Outrigger Bearing Type 01 parallel shaft Ø22 pilot Ø50,8
9M	Outrigger Bearing Type 01 parallel shaft Ø18 pilot Ø36,5



F Drive gear

AA	Taper 1:5-M12x1,25-Key 3
AC	Taper 1:5-M14x1,5-Key 4
AD	Taper 1:5-M12x1,25-Key 3-Drive - Special for Version 6
B1	Taper 1:8-M12x1,25-Key 4/6 lowered
BA	Taper 1:8-M12x1,25-Key 4
BB	Taper 1:8-M12x1,25-Key 4/3,2
BJ	Taper 1:8-M12x1,25-Key 4/3 black steel
CA	Tang 8x17,8xL6,5 FR03
CF	Tang 8x Ø17,46xL9,6-Special
DA	Spline DIN 5482 B17x14-L10
DB	Spline DIN 5482 B17x14-L14
DL	Spline DIN 5482 B17x14-L14+rear spline DIN 5482 17x14-L14 SC32..._2 - Special
EC	Spline DIN 5480 W20x1,25x14-9g - Special
FA	Parallel Ø15-L30+Key 4x25
GA	Parallel SAE Ø15,875-L23,8-Key 4x18
GB	Parallel SAE Ø15,875-L50,8-Key 4x40
GC	Parallel SAE Ø17,46-L24,4-Key 3/16x3/16xL20 - Special
SA	Spline SAE J498-9T-16/32
SB	Spline SAE J498-11T-16/32 -Special only for Version 2
SE	Spline SAE J498-9T-16/32+M6 thd hole
SF	Spline SAE J498-9T-16/32-reinforced fillet
SG	Spline SAE J498-11T-16/32-Special only for Version 2
SI	Spline SAE J498-11T-16/32-Special only for Version 2
TC	Spline SAE 13T-20/40-Special



G Rear cover

C7	Cover for unidirec. motors front SAE ports: Inlet 3/4-16UNF-2B;Outlet 3/4-16UNF-2B
E1	Cover for unidirectional motors with relief valve - external drain 3/8 Gas
E6	Cover for unidirectional motors with Relief Valve ext.drain 3/4-16UNF-2B
F1	Cover motor per braking valve and drain 1/4 Gas
F6	Cover motor per braking valve and drain 9/16-18UNF-2B
G1	Cover motor front ports:Inlet 1/2 G;Outlet 1/2 G;Drain 1/4 G
G6	Cover motor front ports:Inlet 7/8-14UNF;Outlet 7/8-14UNF;Drain 9/16-18UNF
I1	Cover for unidirectional motors with RV
J1	Cover motor per braking valve with drain in vertical axis 1/4 G
J6	Cover motor per braking valve with side drain in vertical axis 9/16-18UNF-2B
L1	Cover motor-drain in vertical axis 1/4 Gas
L3	Cover motor-drain in vertical axis 1/4 Gas for flange typo 03
L6	Cover motor-drain in vertical axis 9/16-18UNF-2B
L7	Cover motor-drain at 22° left 7/16-20UNF-2B
L8	Cover motor-drain in horizontal axis 9/16-18UNF-2B drain left
LC	Cover motor-drain in horizontal axis 1/4 Gas right side
LD	Cover motor-drain in horizontal axis 1/4 Gas left side
LE	Cover motor-drain in horizontal axis M12x1,25 ISO 6149
LF	Cover motor-drain in horizontal axis M12x1,5 right side
LH	Cover motor-drain in horizontal axis 9/16-18UNF-2B drain right

LS	Cover motor-drain at 22° left 7/16-20UNF-2B drive gear side
LT	Cover motor-drain in vertical axis 1/4 Gas for flange typo 03 drive gear side
LX	Cover motor-drain in vertical axis 9/16-18UNF-2B drive gear side
LZ	Cover motor-drain in vertical axis 1/4 Gas drive gear side
M1	Std cover motor drain 1/4 Gas driven side
M3	Std cover motor drain 1/4 Gas for flange typo 03
M4	Std cover motor drain 9/16-18UNF-2B for flange typo 03
M6	Std cover motor drain 9/16-18UNF-2B
M7	Std cover motor-drain 1/4 Gas drive side
M8	Special intermediate motor flange typo 01-drain 1/4 Gas - Special
P1	Std cover for unidirectional motors
P3	Std cover for unidirectional motors for flange typo 03
S1	Cover motor-Electric-piloted distributor+by-pass-drain vert.1/4 G-In-Out 1/2 G - Special
T1	Cover motor per braking valve used as anti-cavitation valve internal drain - Special
v1	Cover motor per RV with drain 1/4 Gas
v2	Cover motor per RV with drain vertical axis 1/4 Gas driven side
v6	Cover motor per RV with drain 9/16-18UNF-2B
v7	Cover motor per RV with drain vertical axis 9/16-18UNF-2B driven side



H Inlet size I Outlet size

NN	Without inlet	
B3	13,5x30xM6 in X	
B5	15x35xM6	
B6	15x40xM6	
B7	20x40xM6	
BB	27x55xM8	
C2	12x26xM5	
C3	13,5x30xM6	
C4	15x35xM6 DXK(+)	
C5	13,5x40xM8	
C6	20x40xM6 DXK(+)	
C7	20x40xM8	
C8	23,5x40xM8	
CS	13,5x30xM6 (2 holes)	
CV	20x40xM8 (2 holes at 30°)	
CX	20x40xM8 (2 holes)	
CY	20x40xM8 (3 holes)	
D4	M16x1,5	
D5	M18x1,5	
D7	M22x1,5	
D9	M26x1,5	
E3	9/16-18UNF	
E4	3/4-16UNF	
E5	7/8-14UNF	
E6	1-1/16-12UN	
E8	1-5/16-12UN	

F3	3/8 GAS	
F4	1/2 GAS	
F5	3/4 GAS	
F6	1 GAS	
H5	M18x1,5-ISO6149	
H7	M22x1,5-ISO6149	
H8	M27x2-ISO6149	
H9	M33x2-ISO6149	
M1	12x17,48x38,1xM6	
M2	12x17,48x38,1xM8	
M3	18,5x17,48x38,1xM8	
M5	25/20x52,37x26,19xM10	
MB	12x38,1x17,48xM8(=)	
MC	18,5x47,63x22,23xM6(=)	
MD	18,5x47,63x22,23xM8(=)	
ME	18,5x47,63x22,23xM10(=)	
MG	25/20x52,37x26,19xM10(=)	
MH	31/25x58,72x30,18xM10(=)	

J Ports Pos & Spec Body

NN	Std from catalogue
YY	Port Bx-Bx with flange SAE-A; off-set to rear cover
EU	Dist. from front flange=58,5 - Special
F9	Dist. from front flange=69 - Special
PL	Inlet port Left position looking gear drive from front flange

PR	Inlet port Right position looking gear drive from front flange
TD	Nr.4 milling D.27 tigh.16 flange side - Special
TE	Nr.4 milling D.27 tigh.20 flange side - Special
ZZ	Port Bx-Bx in the center of the body - Option



K Seals

N	Standard NBR seals
B	VITON seals (only for unidirectional motors)
D	VITON shaft seal with dust lip (type BABSL)
F	VITON seals except for shaft seal - Special
X	NBR seals+Dust Cover
Y	VITON seals + Dust Cover
Z	VITON shaft seal + Dust Cover

L Screws

N	Std burnished screws
A	Zinc plated screws
C	Galvanized nuts - Special

M Set valves

NNN	No valve
V**	not defined-pressure no setting :oil ISO VG68-45°

N Type of mark

N	Standard Turolla Marking
A	Standard Turolla Marking+Customer Code-Special
Z	Without Marking

O Mark position

N	Std Marking position (on top)
A	Special Marking position on the bottom



Flange, shaft and port configurations

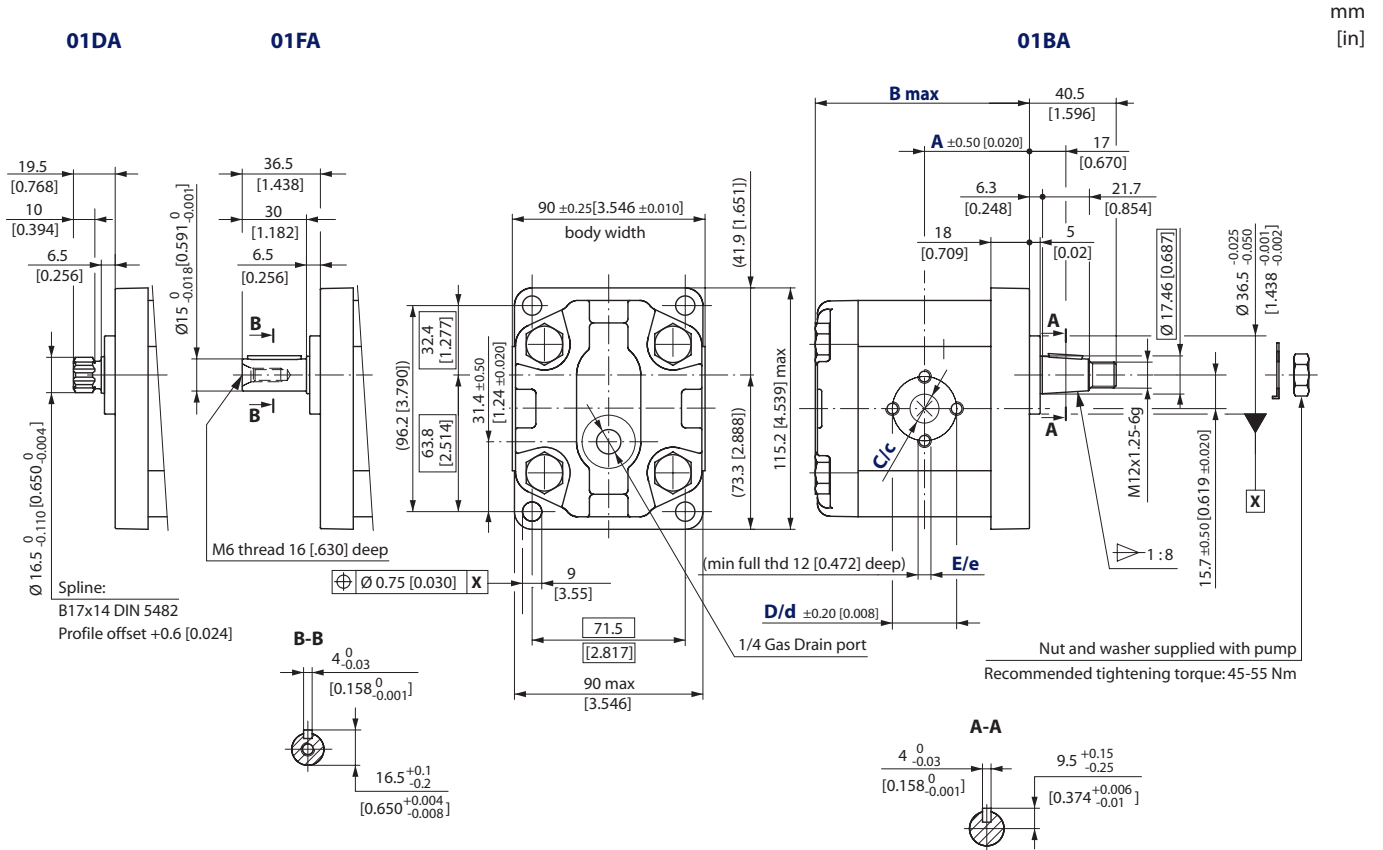
Flange, shaft and port configurations for SNM2NN and SNU2NN motors

Code	Flange	Shaft	Port
01BA	European 01, 4-bolts pilot Ø 36.5 mm [1.44 in]	1:8 tapered	European in + pattern
02AA	European 02, 4-bolts pilot Ø 80 mm [3.15 in]	1:5 tapered	German standard in X pattern
04AA/ 05AA	German PTO 2-bolts pilot Ø 50 mm [1.97 in]	1:5 tapered	German standard in X pattern
01FA	European 01, 4-bolts pilot Ø 36.5 mm [1.44 in]	Ø 15 mm [0.59 in] parallel	European in + pattern
06GA	SAE A pilot Ø 82.55 mm [3.25 in]	Ø 15.7 mm [0.625 in] parallel	Threaded SAE O-ring boss port
01DA	European 01, 4-bolts pilot Ø 36.5 mm [1.44 in]	9-teeth splined $m = 1.60, \alpha = 30^\circ$ DIN 5482-B17x14	European in + pattern
02DB	European 02, 4-bolts pilot Ø 80 mm [3.15 in]	9-teeth splined $m = 1.60, \alpha = 30^\circ$ DIN 5482-B17x14	German standard in X pattern
04DB/ 05DB	German PTO 2-bolts pilot Ø 50 mm [1.97 in]	9-teeth splined $m = 1.60, \alpha = 30^\circ$ DIN 5482-B17x14	German standard in X pattern
06SA	SAE A pilot Ø 82.55 mm [3.25 in]	SAE 9-teeth splined	Threaded SAE O-ring boss port
03CA	Turolla tang pilot Ø 52 mm [2.066 in]	Turolla standard tang	German standard in X pattern



Dimensions

SNM2NN, SNU2NN – 01DA, 01FA and 01BA Standard porting drawing for 01DA, 01FA and 01BA



For unidirectional motors no case drain hole into the rear cover.

Bidirectional motors dimensions – 01DA, 01FA and 01BA

Frame size	6,0*	8,0	011	014	017	019	022	025
Dimension	A	45 [1.771]	49 [1.929]	52 [2.047]	56 [2.204]	59 [2.322]		
	B	93.5 [3.681]	97.5 [3.838]	101.5 [3.996]	107.5 [4.232]	111.5 [4.389]	121.5 [4.783]	125.5 [4.940]
Inlet/Outlet	C/c	13.5 [0.531]			20 [0.787]		23.5 [0.925]	
	D/d	30 [1.181]			40 [1.58]			
	E/e	M6			M8			

* Before choosing this frame size, please apply to Turolla technical department.

For unidirectional SNU2NN dimensions, see [SNU2NN ports](#), page 40.

Model code examples and maximum shaft torque

Flange/drive gear	Model code example	Maximum shaft torque
01DA	SNM2NN/8,0BN01DAM1C3C3NNNN/NNNNN	90 N·m [797 lb·in]
01FA	SNM2NN/022BN01FAM1C7C7NNNN/NNNNN	90 N·m [797 lb·in]
01BA	SNM2NN/017BN01BAM1C7C7NNNN/NNNNN	150 N·m [1328 lb·in]

For further details on ordering, see [Model Code](#), pages 30-35.