

YASKAWA

External Drive Axis Packages

for MOTOMAN Robots with YRC1000 Controller

YRC1000



YRC1000 External Axes Drives

As a leading developer and manufacturer of robots, servomotors and controllers, Yaskawa is able to cover a very large part of the in-house value creation chain.

Not only are our robot motors perfectly tailored to our controllers but our external axes come from the same single source. Both the external

axes and the robot axes can easily be controlled by our YRC1000 controller.

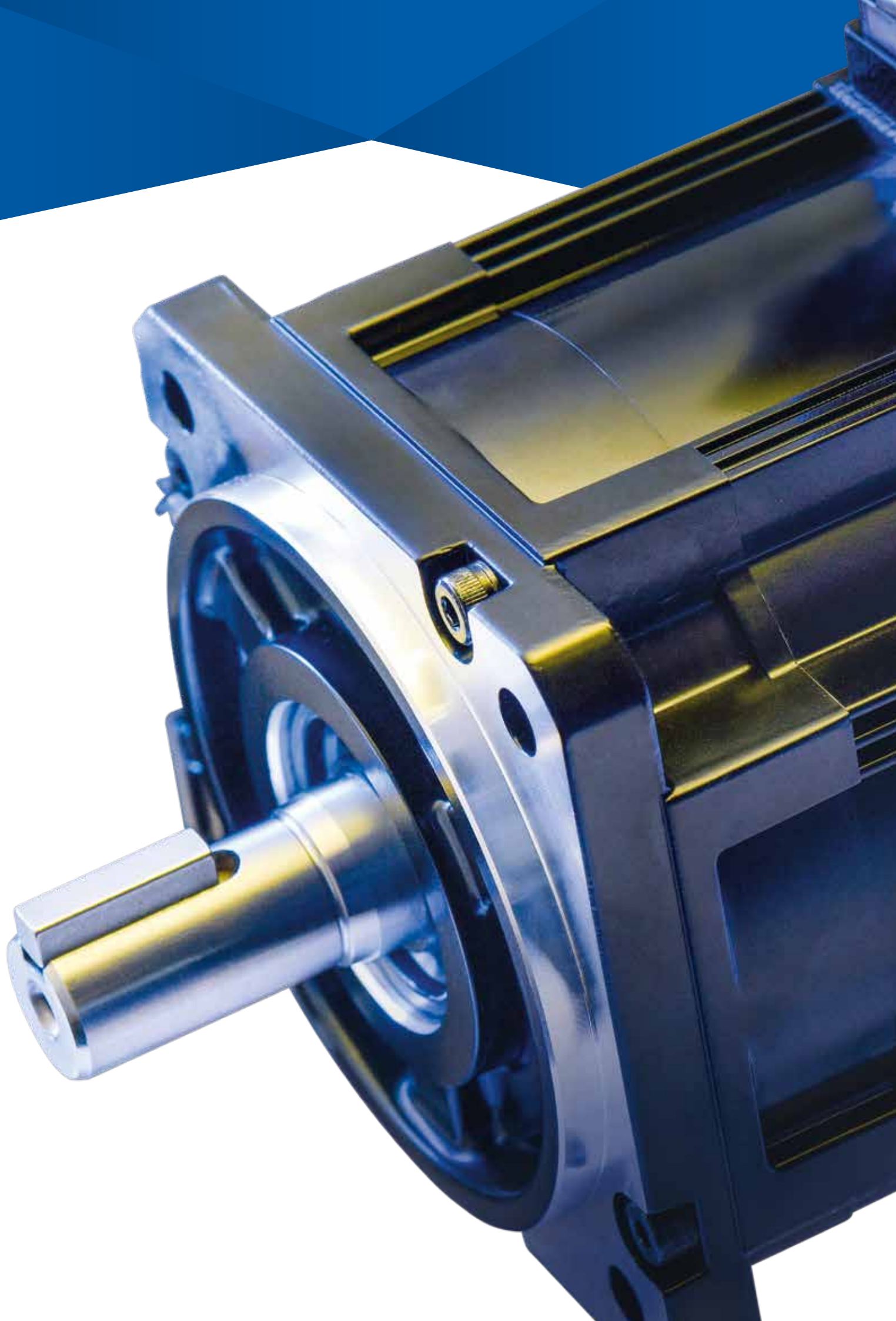
Experience the ease with which our components can be integrated and the way in which they blend harmoniously into your overall installation.

The cable package consists of power and signal cables, available in lengths of 3 – 30 m in 3 m increments. Optionally with external axis disconnection for 1 – 3 external axes in YRC1000 controller.

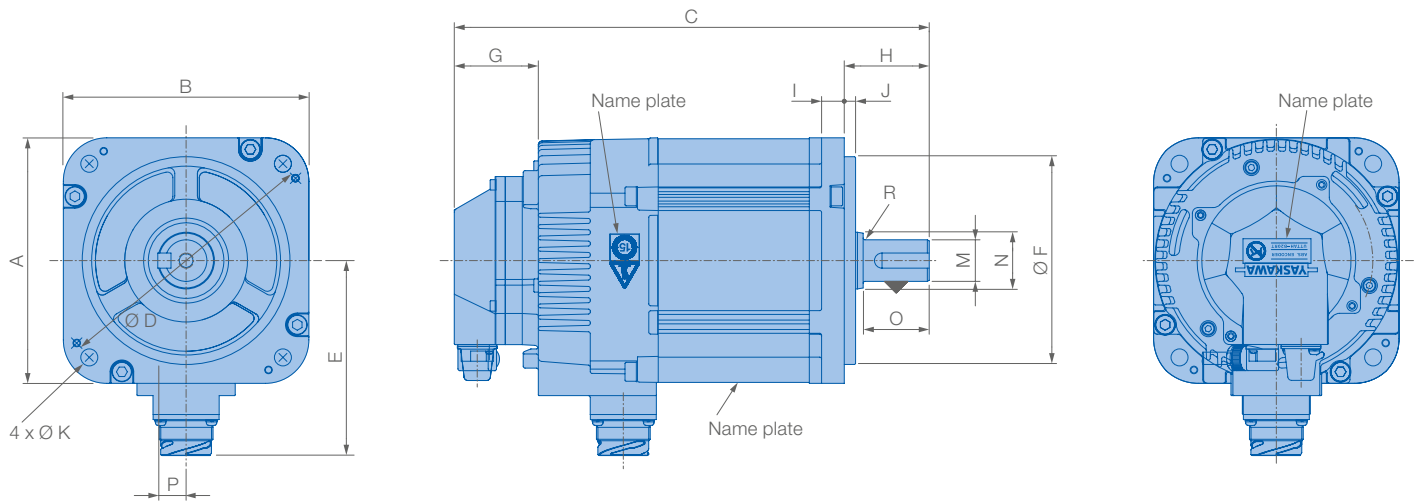
KEY BENEFITS

- Fully integrated additional robot axis
- Compatible with multi-synchronous operation
- Power categories from 0.1 up to 5.5 kW
- Functional unit consisting of SGM7 servomotor, servo/control package as well as power and signal cables
- Up to 3 servo packages can be integrated in the YRC1000 controller in standard configuration





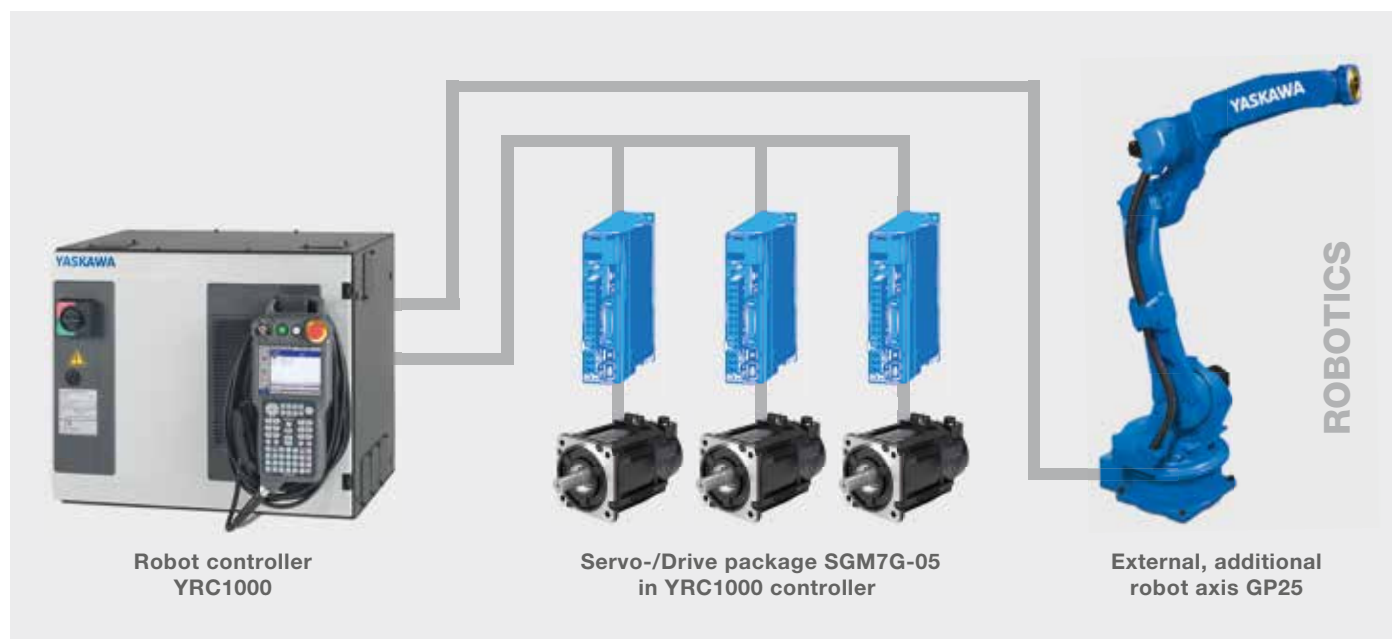
Example:
SGM7G-20APK-YR1



Technical Data/Parameters SGM7 Servomotors

Technical Data	Models					
	1	2	3	4	5	6
	SGM7A-01APK-YR11	SGM7J-01APK-YR11	SGM7J-02APK-YR11	SGM7J-04APK-YR11	SGM7G-05APK-YR11	SGM7G-05APK-YR21
SAP	186772	186765	186762	186750	186825	195078
A/B [mm]	60 x 60	40 x 40	60 x 60	60 x 60	130 x 130	130 x 130
C [mm]	86.6	122	125.5	144	198	198
D [mm]	63.3	46	70	70	145	145
E [mm]	42.5	20	30	30	82	82
F [mm]	50 (h7)	30 (h7)	50 (h7)	50 (h7)	110 (h7)	110 (h7)
G [mm]	11.5	18.3	18.3	18.3	36	36
H [mm]	6.6	20	25	25	42	42
I [mm]	6	5	6	6	12	12
J [mm]	3	2.5	3	3	5	5
K [mm]	5.5	4.3	5.6	5.6	9	9
M [mm]	8 (h6)	8 (h6)	14 (h6)	14 (h6)	14 (h6)	14 (h6)
N [mm]	10	10	20	20	23	23
O [mm]	6	11	13	15	25	25
P [mm]	—	—	—	—	9	9
R (radius) [mm]	0.4	0.4	0.4	0.4	1	1
Feather key	—	—	—	—	DIN 6885-B 5 x 5 x 20	DIN 6885-B 5 x 5 x 20
Threaded hole Thread depth [mm]	M4 x 10	M4 x 10	M4 x 10	M5 x 14	M5 x 15	M5 x 15

Set-up

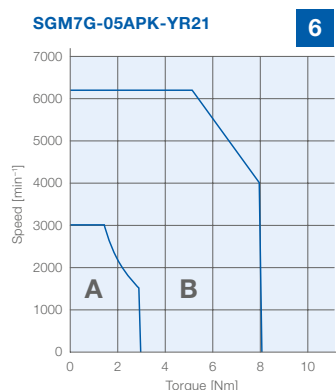
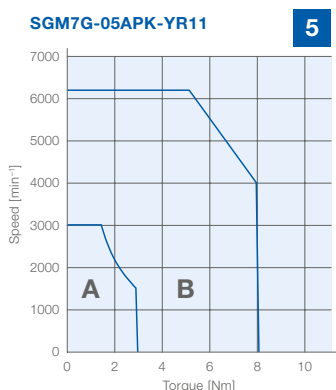
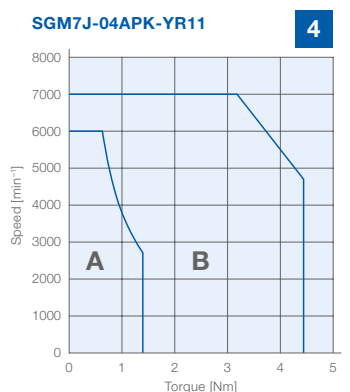
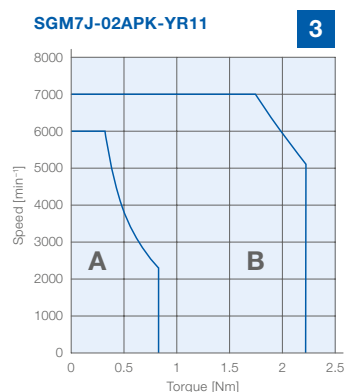
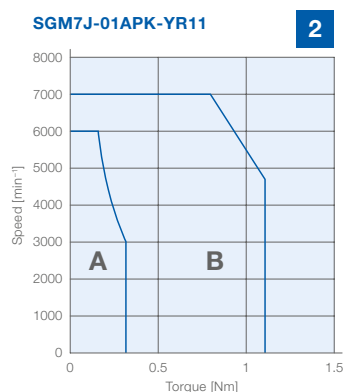
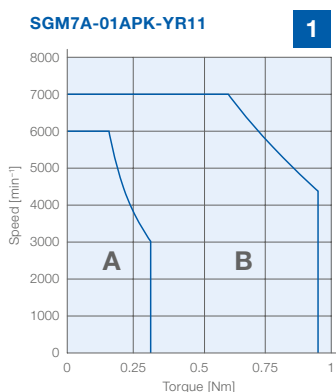


Models							
7	8	9	10	11	12	13	14
SGM7G-09APK-YR11	SGM7G-13APK-YR11	SGM7G-20APK-YR11	SGM7G-30APK-YR11	SGM7G-37APK-YR11	SGM7G-44APK-YR11	SGM7G-44APK-YR21	SGM7G-55APK-YR11
186828	192010	195859	194182	194184	197032	195858	197142
130 x 130	130 x 130	130 x 130	180 x 180	180 x 180	180 x 180	180 x 180	180 x 180
223	234	252	271	283	364	295	403
145	145	145	200	200	200	200	200
82	104	104	134	134	134	134	150
110 (h7)	110 (h7)	110 (h7)	114.3 (0/-0.025)	114.3 (0/-0.025)	114.3 (0/-0.025)	114.3 (0/-0.025)	114.3 (0/-0.025)
36	36	45	37	37	37	37	37
47	45	45	63	63	63	63	92
12	12	12	18	18	18	18	18
5	6	6	3.2	3.2	3.2	3.2	3.2
9	9	9	13.5	13.5	13.5	13.5	13.5
17 (h6)	22 (h6)	22 (h6)	28 (h6)	28 (h6)	28 (h6)	28 (h6)	38 (h6)
23	29	29	44	44.6	44.6	44.6	44
30	35	35	51	51	51	51	88.8
32	14	14	17	17	17	17	22
1	1	1	1	2	2	2	1
DIN 6885-B 5 x 5 x 25	DIN 6885-B 8 x 7 x 35	DIN 6885-B 8 x 7 x 35	DIN 6885-B 8 x 7 x 40	DIN 6885-B 8 x 7 x 40	DIN 6885-B 8 x 7 x 40	DIN 6885-B 8 x 7 x 40	DIN 6885-B 10 x 8 x 60
M6 x 16	M6 x 15	M8 x 20	M8 x 20	M8 x 20	M8 x 20	M8 x 20	M10 x 30

Technical Data SGM7 Servomotors

Technical Data	Models						
	1	2	3	4	5	6	
	SGM7A-01APK-YR11	SGM7J-01APK-YR11	SGM7J-02APK-YR11	SGM7J-04APK-YR11	SGM7G-05APK-YR11	SGM7G-05APK-YR21	
Rated power ^{1) 3)}	[kW]	0.1	0.1	0.2	0.4	0.45	0.45
Nominal torque ^{1) 3)}	[Nm]	0.318	0.318	0.83	1.4	2.86	2.86
Continuous max. tourque	[Nm]	0.318	0.318	0.83	1.4	2.94	2.94
Rated speed ^{1) 3)}	[min ⁻¹]	3000	3000	2300	2700	1500	1500
Nominal current ^{1) 3)}	[A eff.]	0.78	0.85	2	2.8	7.3	7.3
Rated power	[kW/s]	7.22	13.8	20.9	32.5	9.7	9.7
Nominal angle acceleration	[Rad/s²]	22700	43200	25200	23200	3400	3400
Peak torque	[Nm]	0.955	1.11	2.23	4.46	8	8
Peak current	[A eff.]	2.6	3.1	5.8	9.3	19.6	19.6
Max. speed	[min ⁻¹]	7000	7000	7000	7000	6200	6200
Moment of inertia [kg x m² x 10 ⁻⁴]		0.14	0.0735	0.329	0.603	8.42	8.42
Torque constant	[Nm/A eff.]	0.453	0.413	0.444	0.544	0.444	0.444
Temperature class		B	B	B	B	F	F
Input voltage	[V]	200	200	200	200	200	200
Holding torque motor brake	[Nm]	0.318	0.318	0.83	1.4	2.9	4.3
Input voltage motor brake	[DC V]	24	24	24	24	24	24
Heat sink	[mm]	Al 250 x 250 x 6	Al 200 x 200 x 6	Al 250 x 250 x 6	Al 250 x 250 x 6	Fe 400 x 400 x 20	Fe 400 x 400 x 20

Diagram Speed ^{1) 2)}/Torque

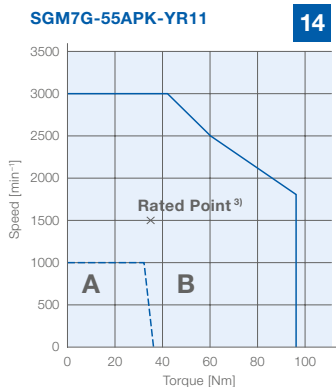
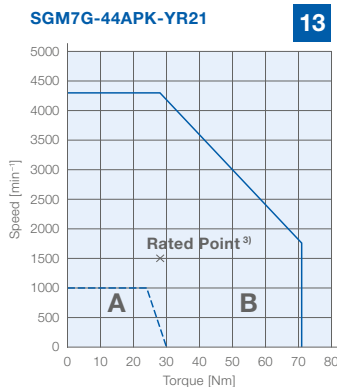
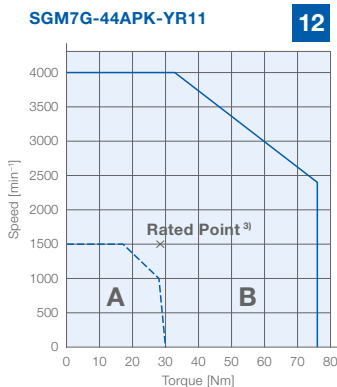
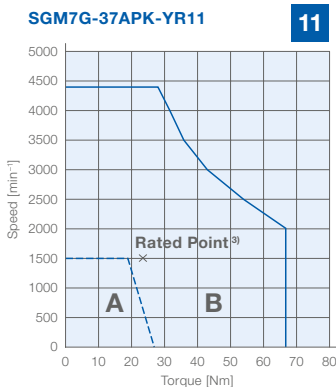
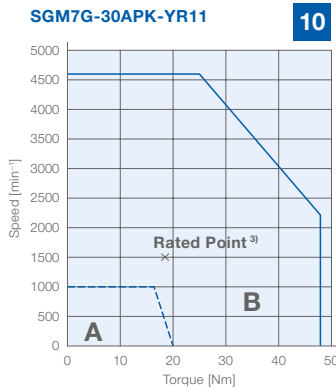
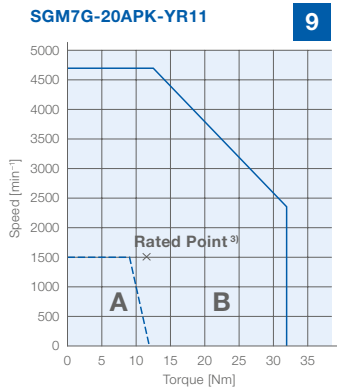
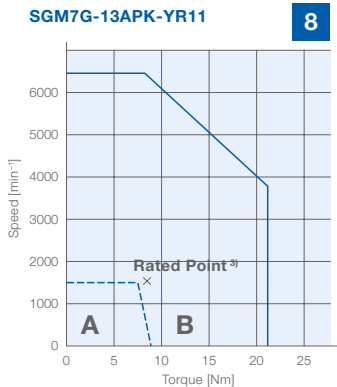
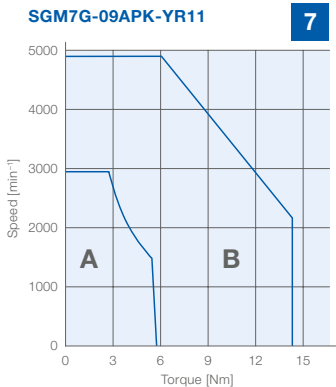


A: Continuous duty zone
B: Intermittent duty zone

Note:

- 1) The Torque-Speed characteristic are for operation in combination with a SERVOPACK when the temperature of the armature winding is 100°C.
- 2) The rated torque is the continuous allowable torque value at the ambient temperature of 45°C with an heat sink.
- 3) Continuous duty zone of this motor is limited to the dotted line on left figure due to allowable temperature of each part of the motor.

Models							
7	8	9	10	11	12	13	14
SGM7G-09APK-YR11	SGM7G-13APK-YR11	SGM7G-20APK-YR11	SGM7G-30APK-YR11	SGM7G-37APK-YR11	SGM7G-44APK-YR11	SGM7G-44APK-YR21	SGM7G-55APK-YR11
0.85	1.3	1.8	2.9	3.7	4.4	4.4	5.5
5.39	8.34	11.5	18.5	23.5	28.4	28.4	35
5.68	8.83	12	19.8	27	30.1	30.1	36.1
1500	1500	1500	1500	1500	1500	1500	1500
6.9	13.8	16.4	22.2	22.8	25.6	27.6	24.7
20.9	35.9	52.7	63.4	85	55.6	106.8	84.5
3880	4300	4580	3430	3620	1960	3760	2410
14.2	21	32	48	67	76	71	96
17	35	47	60.5	68	68	71	67
5000	6000	4700	4600	4400	4000	4300	3000
13.9	19.4	25.1	54	65	145	75.5	145
0.859	0.647	0.748	0.859	1.09	1.18	1.09	1.51
F	F	F	F	F	F	F	F
200	200	200	200	200	200	200	200
8	12.7	19.6	28.4	43.1	43.1	43.1	74
24	24	24	24	24	24	24	24
Fe 400 x 400 x 20	Fe 400 x 400 x 20	Fe 400 x 400 x 20	Fe 550 x 550 x 30	Fe 550 x 550 x 30	Fe 550 x 550 x 30	Fe 550 x 550 x 30	Fe 550 x 550 x 30



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All drawing dimensions in mm.
Technical data may be subject to change without previous notice.
Please request detailed drawings at robotics@yaskawa.eu.

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