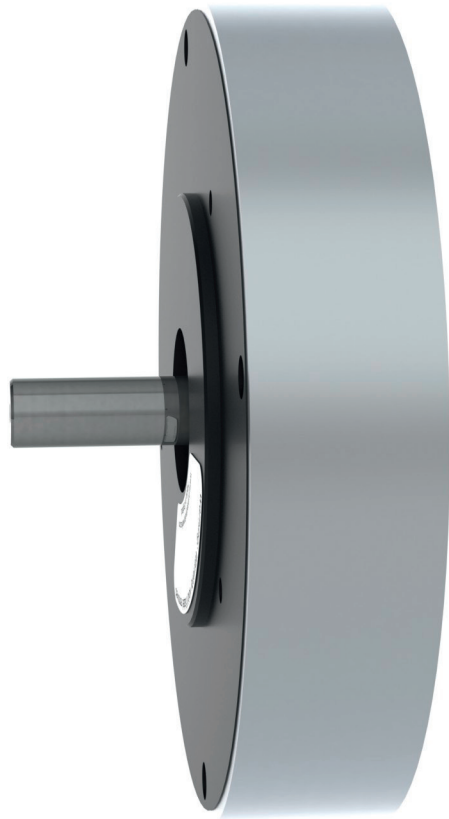


Printed Motor Works



Pancake Motor Range





Printed Motor Works are a UK manufacturer of compact electric motors and motor gearboxes providing complete solutions for motion control applications. The company is focused on two strategic areas:

Pancake Motors

Founded in 1963, we are Europe's largest manufacturer of flat brushed DC pancake electric motors and motor gearboxes. As the world's leading authority on the design and manufacture of pancake motors we continue to explore new areas of application for this unique motor design.

Compact BLDC Motors

We are considered a world leader in the design and manufacture of compact brushless DC electric motors for the industrial, aerospace & defence, medical, marine and other specialist markets. Our experience spans from compact motors for operating door systems to in-wheel motors for large commercial vehicles.

We have an active policy of total quality control and management throughout the company. We are ISO 9001:2008 certified by BSI British Standards.

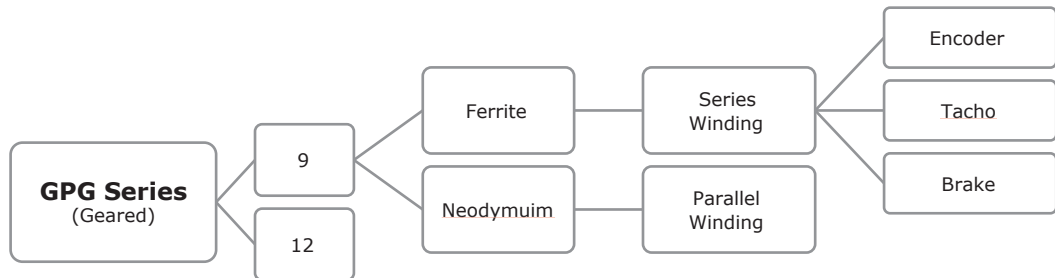
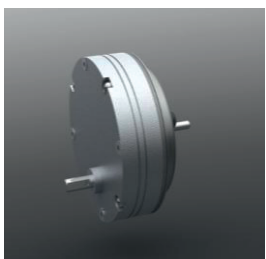
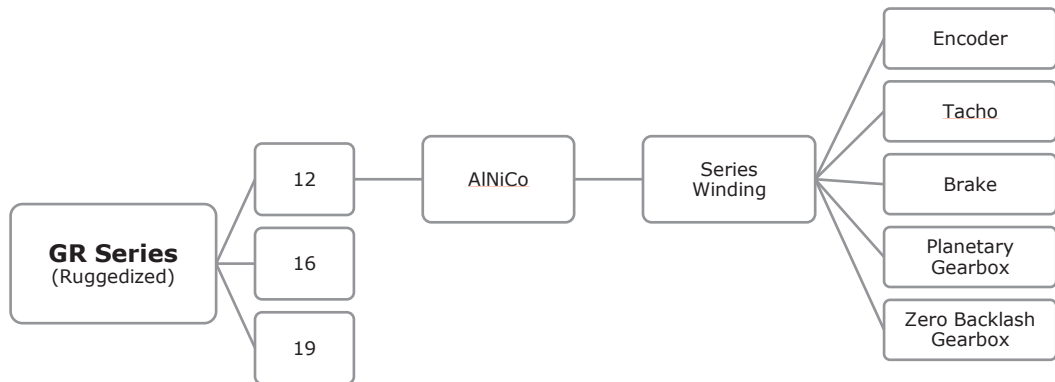
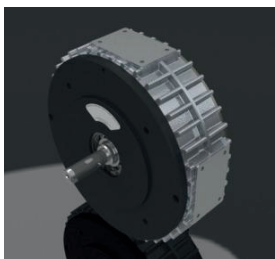
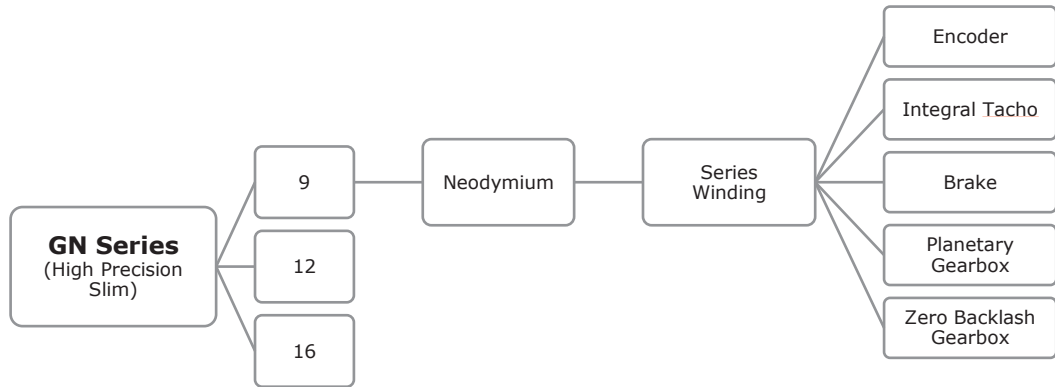
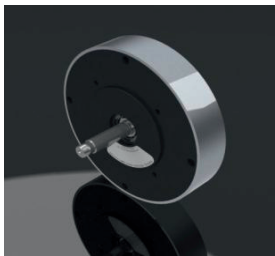
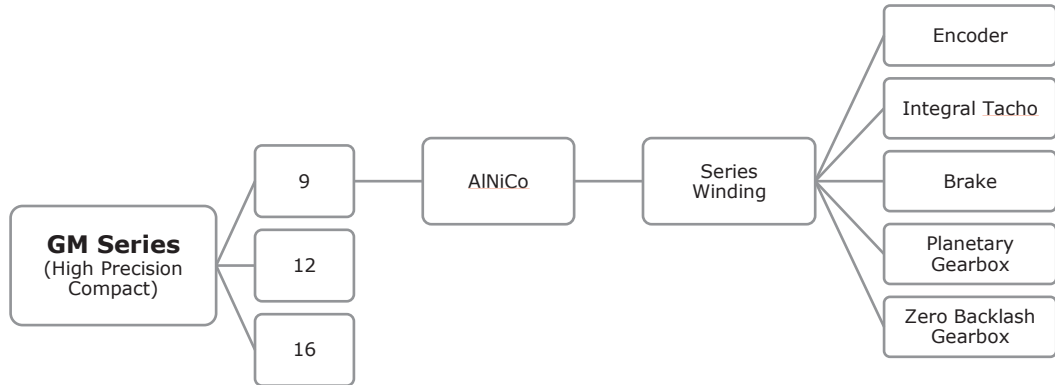
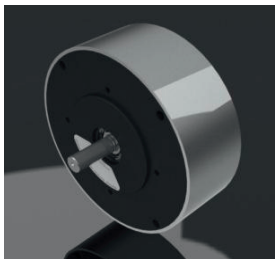
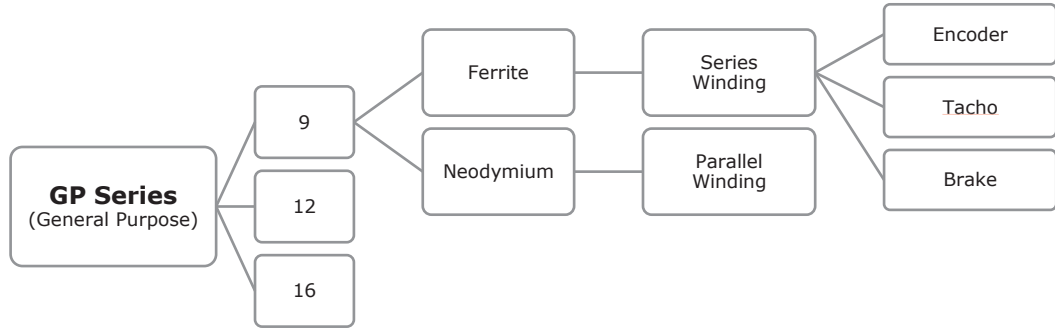
Printed Motor Works is a name that is synonymous with quality products, proven reliability and superior performance.



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140

Pancake Motor Guide

Motor Series Armature ϕ (cm) Magnet Material Armature Winding Ancillaries



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140

GP Series

Peak Torque **100 to 1700Ncm**
 Cont. Torque **10 to 170 Ncm**
 Power **38 to 533 Watts**
 Speed **1 to 6000rpm**

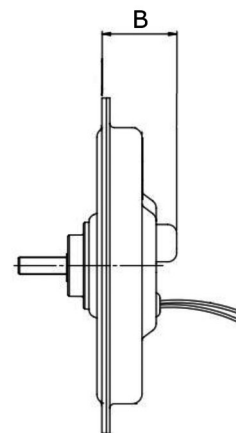
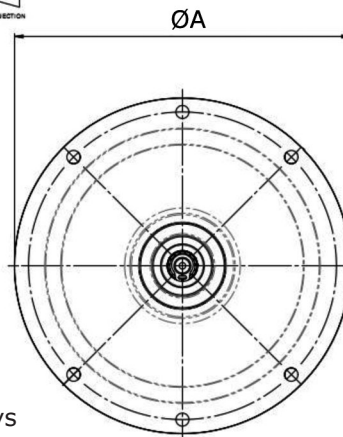


The Printed Motor Works GP series is a totally enclosed DC motor in an ultra slim pancake profile. Incorporating flat armature technology, these pancake motors can provide a cost effective servo capability and are ideal for general purpose applications. Two variants of magnet are available for 9cm, 12cm, and 16cm armature diameters: standard ferrite (GPM) and high-power neodymium magnets (GPN). There are also two variants of armature winding for each size: a parallel low resistance (LR) winding which offers more speed, and a standard series winding which offers more torque.

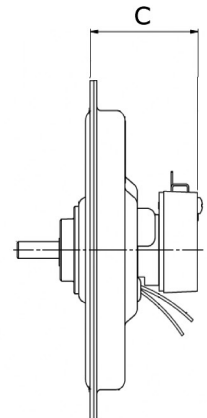
Motor	Power	Torque	Speed	Voltage	Current	Cont. Stall	Diameter	Depth	Depth +
	P	T	N	V	I	Current	A	B	Encoder
	Watt	Ncm	RPM	Volt	Amp	Amp	mm	mm	C
GPM9LR	39	10	3705	9.0	11.7	6.6	120	26.0	44.0
GPM9	41	13	3000	14.5	6.9	4.5	120	26.0	44.0
GPN9LR	75	25	2887	12.0	11.4	6.5	120	26.0	44.0
GPN9	94	30	3000	22.5	6.9	4.5	120	26.0	44.0
GPM12LR	64	20	3050	12.0	10.8	6.5	152	30.0	46.0
GPM12	110	35	3000	23.5	7.6	5.0	152	30.0	46.0
GPN12LR	190	48	3810	24.0	11.0	7.0	152	30.0	46.0
GPN12	200	64	3000	37.5	7.3	5.0	153	30.0	46.0
GPM16LR	221	73	2905	24.0	13.4	8.0	215	35.6	51.6
GPM16	300	96	3000	43.3	9.3	6.0	215	35.6	51.6
GPN16LR	324	100	3102	36.0	11.7	8.0	215	35.6	51.6
GPN16	553	170	3000	75.8	8.4	5.7	215	35.6	51.6

Specific benefits

- Low profile
- Zero cogging
- Rapid acceleration
- Low inertia
- High instantaneous torque
- High peak torque
- No torque drop-off at speed
- Ultra slow creep capability
- Wide speed range
- Low inductance
- Long brush life
- Design options include custom shaft, encoders, gearboxes and pulleys
- Available as an open motor for full application integration



Standard Motor



Encoder Option



Printed Motor Works

Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
 Email: sales@printedmotorworks.com Tel: +44 1420 594 140

GP Series

Applications

Servo mechanisms, motion control, industrial robots, CNC machining, printing machinery, centrifuges, logistics solutions, medical mobility, medical scanners, flight simulators, marine autopilots and high ambient temperature ventilation.

Markets

Industrial automation, automotive, medical, life sciences, aerospace & defence, printing, logistics, instrumentation, test and measurement, oil & gas and offshore marine.

Design Modifications

- Encoders
- Timing pulleys
- Long leads
- Tri-rated cable
- Open/kit option
- Customised shafts
- EMC suppression
- Connectors
- Rated for operation in 150°C ambient
- Mounting customisation

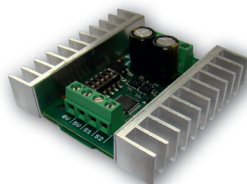
Standard Encoder Options

Motor	Counts per Rev. CPR	Channels	Type	Supply Voltage V
GPM9	500	A + B + Index	Optical	+ 5
GPN9	500	A + B + Index	Optical	+ 5
GPM12	500	A + B + Index	Optical	+ 5
GPN12	500	A + B + Index	Optical	+ 5
GPM16	500	A + B + Index	Optical	+ 5
GPN16	500	A + B + Index	Optical	+ 5

Note: Standard Option also applies to LR versions. Other resolutions and differential/line driver output versions available on request.

Suggested Drives

PWM24/10 PWM24/25



Basic motor speed control

6-30Vdc for basic speed control applications. 10Amp and 25Amp with single and twin axis control.

JUNUS



General speed control applications

20-180Vdc for velocity and torque control with 6 digital I/O. 5Amp - 30Amp variants, RS232 communication.

ACCELNET



General servo applications

20-180Vdc for velocity, torque and position control with 11 digital I/O and encoder feedback. 5Amp - 36Amp variants, RS232 and macro communication.

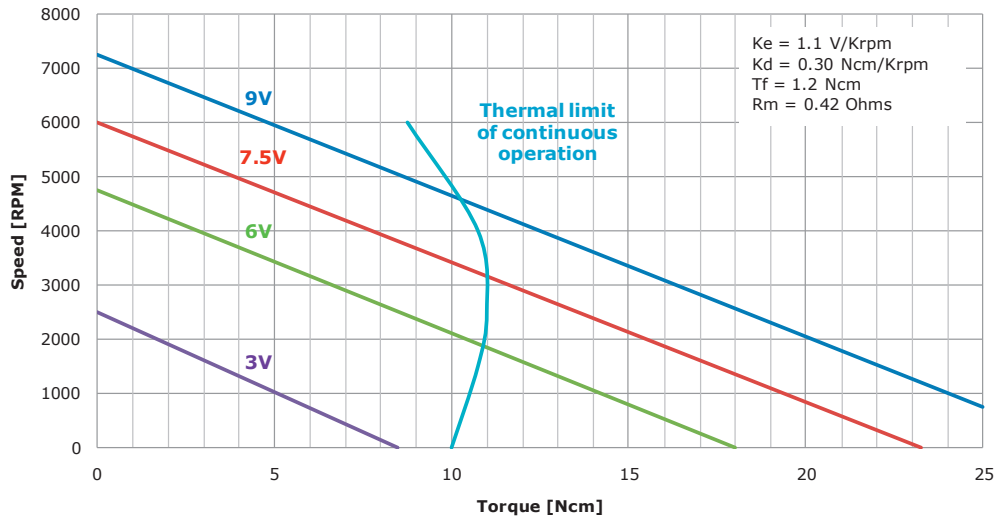


Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140

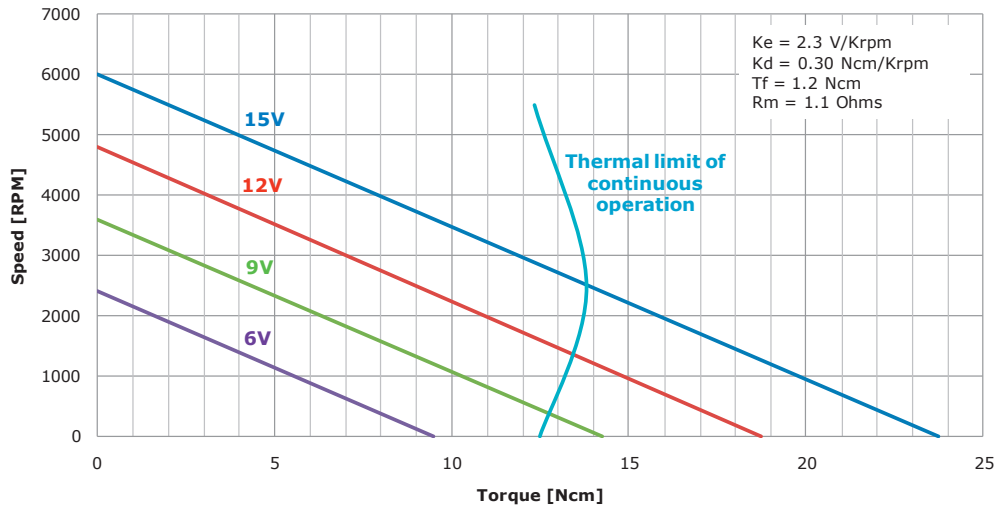
GP Series

GP Series

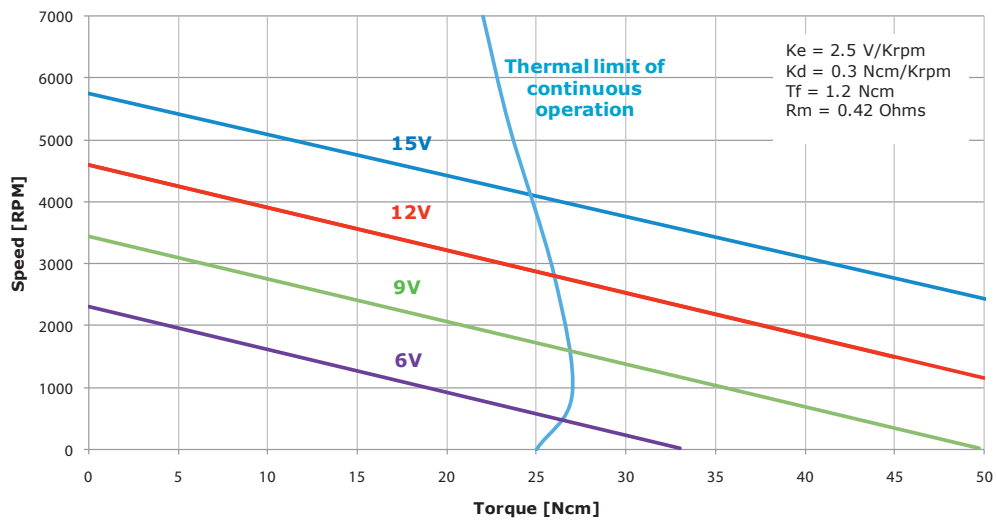
GPM9LR



GPM9



GPN9LR



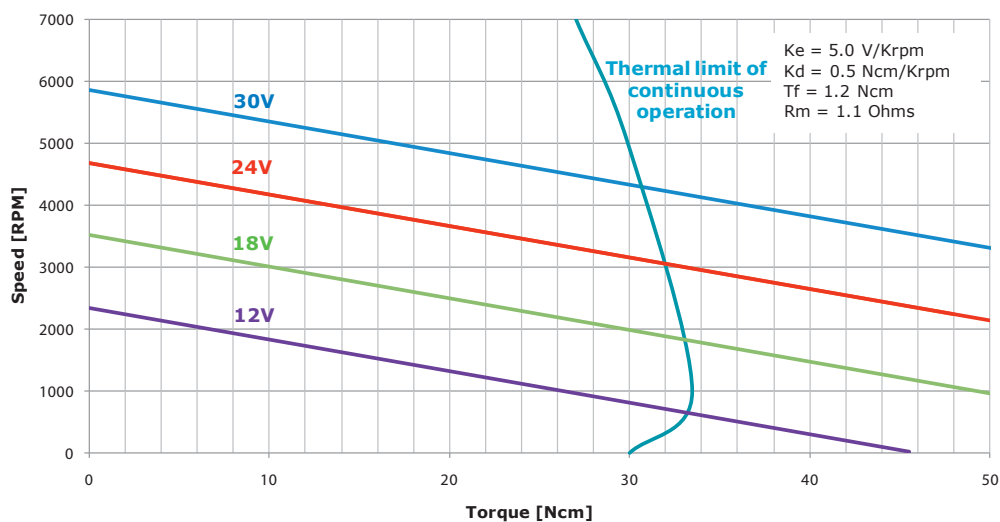
NOTE: The above voltages are examples, not a predefined maximum or minimum.
 Due to ongoing product improvements data is subject to change without notice.



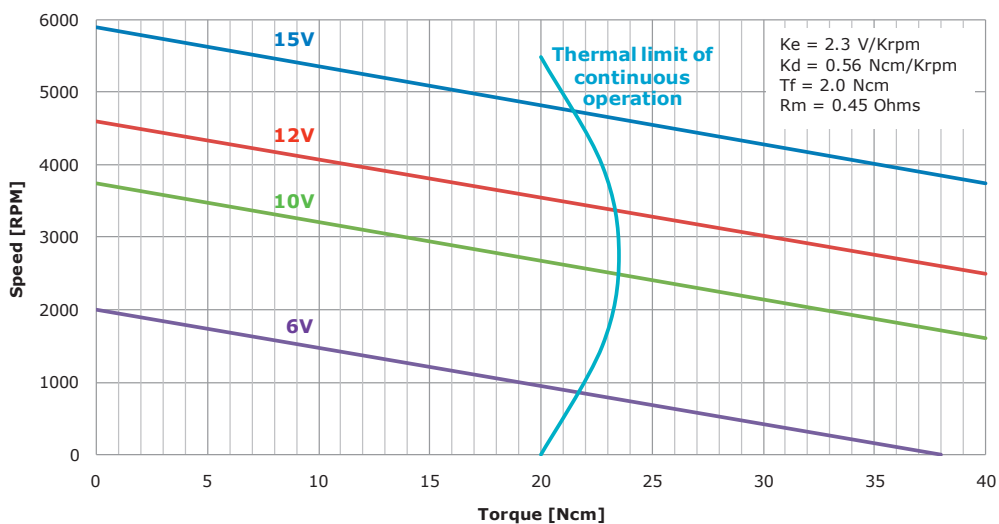
Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
 Email: sales@printedmotorworks.com Tel: +44 1420 594 140

GP Series

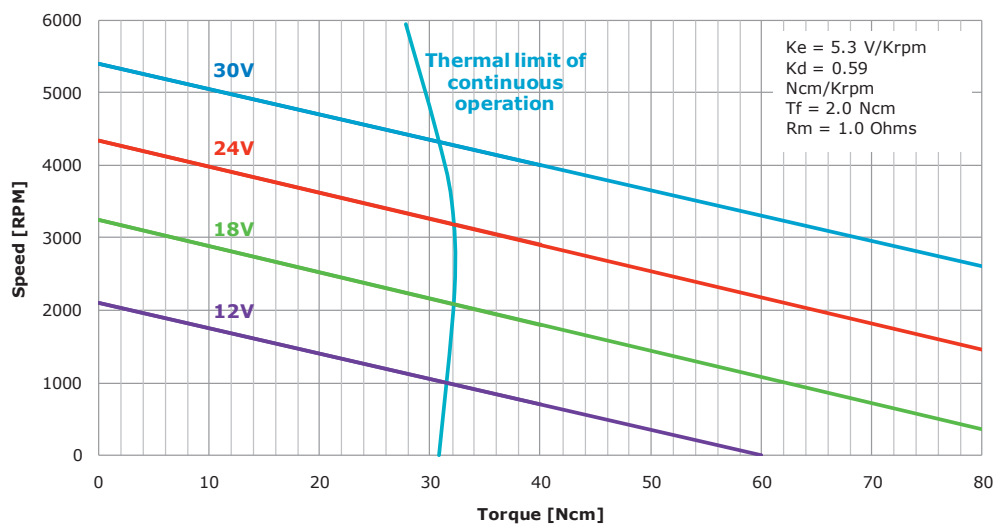
GPN9



GPM12LR



GPM12



NOTE: The above voltages are examples, not a predefined maximum or minimum. Due to ongoing product improvements data is subject to change without notice.

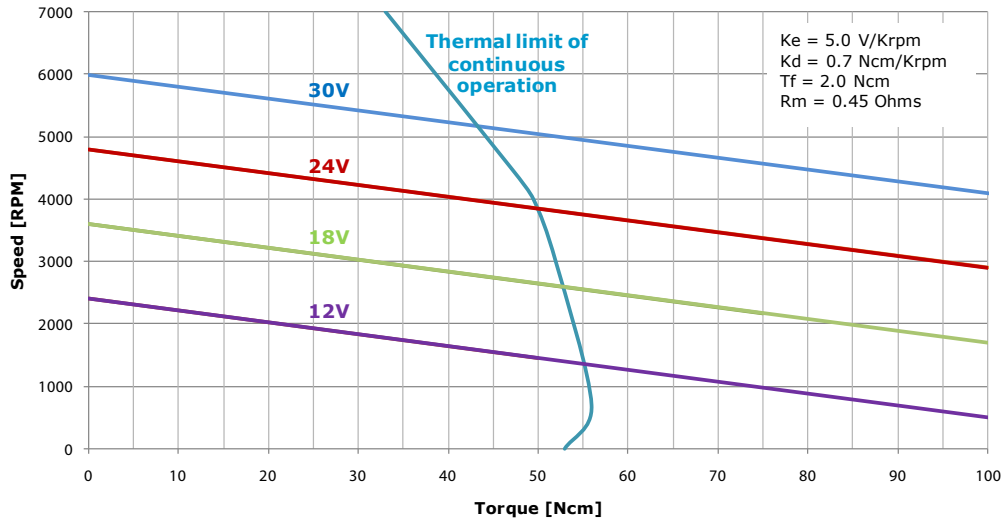


Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140

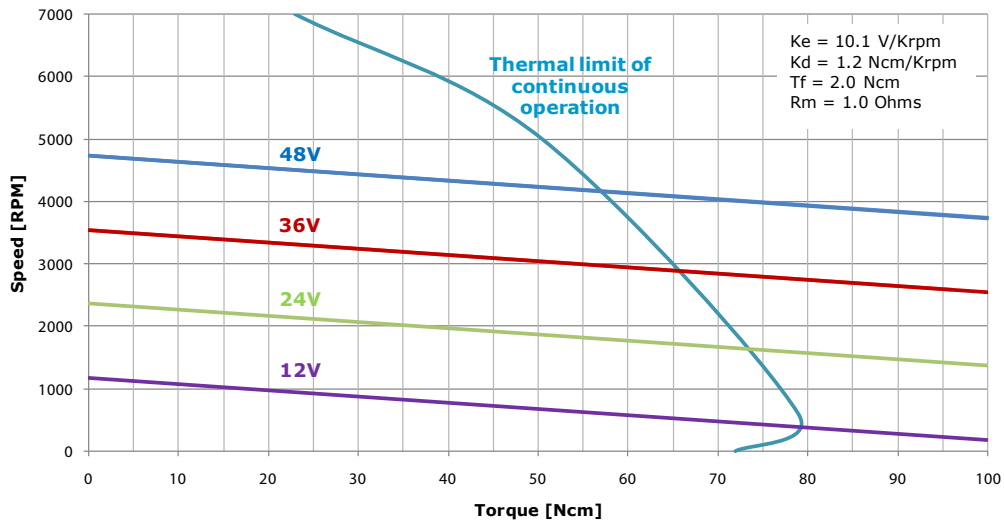
GP Series

GP Series

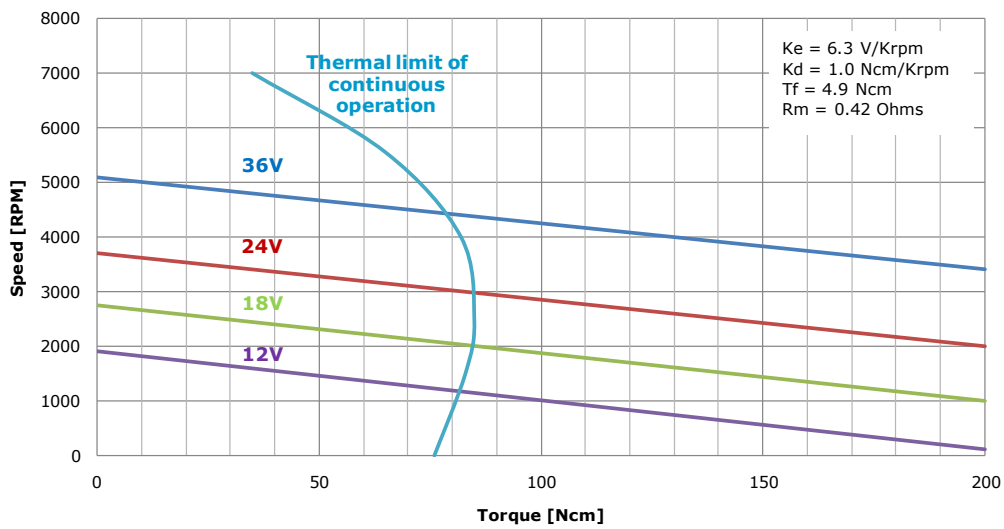
GPN12LR



GPN12



GPM16LR



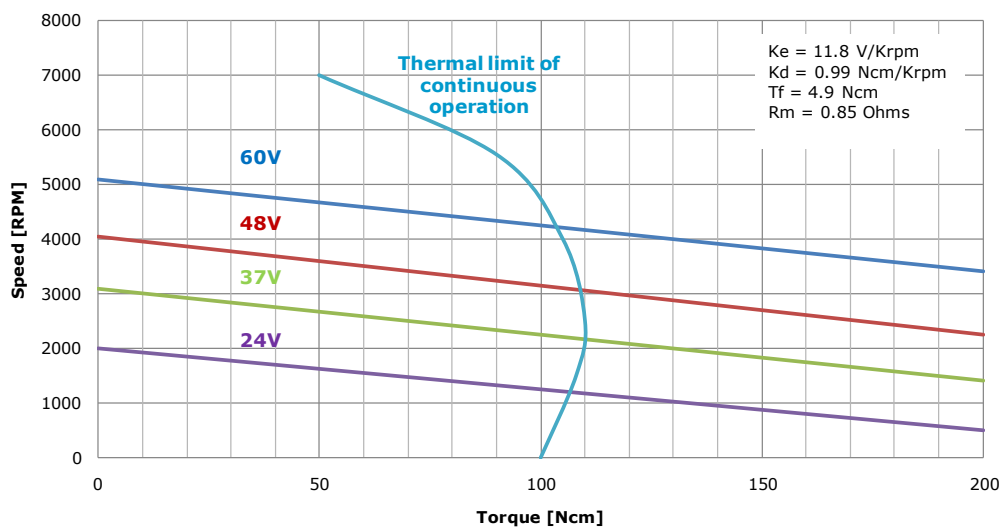
NOTE: The above voltages are examples, not a predefined maximum or minimum. Due to ongoing product improvements data is subject to change without notice.



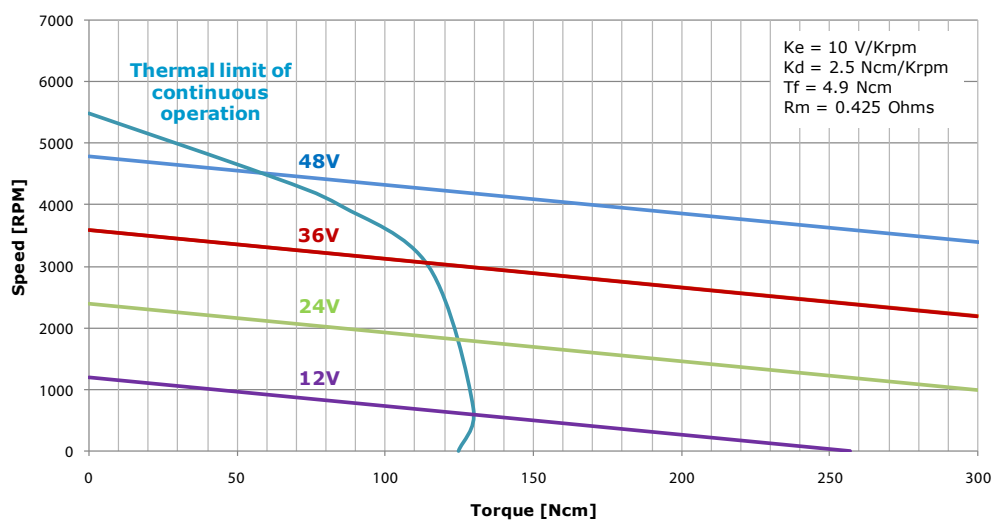
Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
 Email: sales@printedmotorworks.com Tel: +44 1420 594 140

GP Series

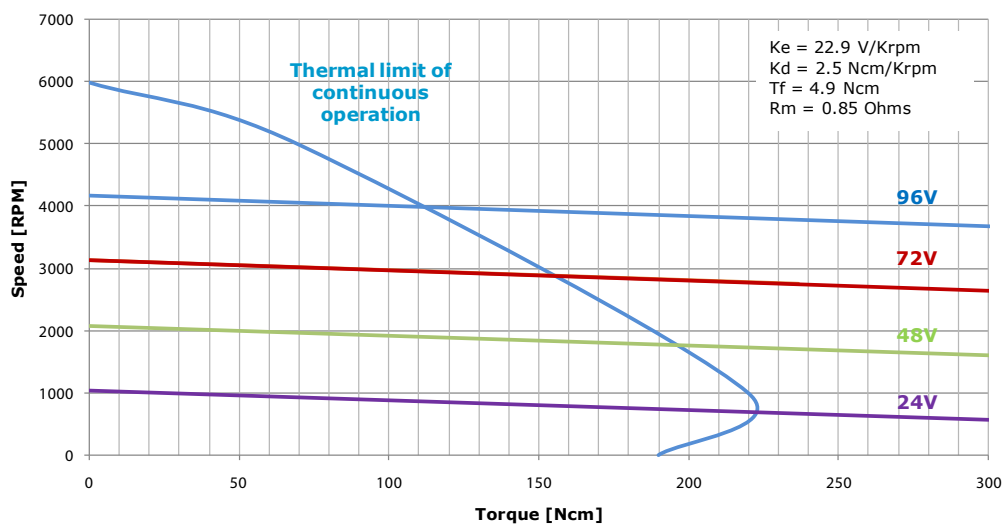
GPM16



GPN16LR



GPN16



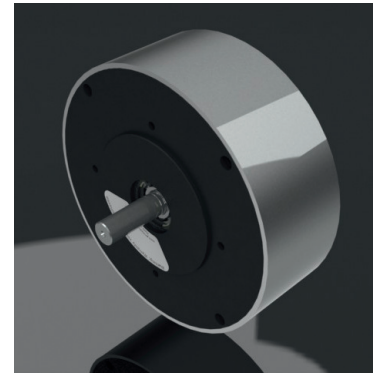
NOTE: The above voltages are examples, not a predefined maximum or minimum. Due to ongoing product improvements data is subject to change without notice.



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
 Email: sales@printedmotorworks.com Tel: +44 1420 594 140

GM Series

Peak Torque **360 to 3200 Ncm**
 Cont. Torque **36 to 320 Ncm**
 Power **113 to 1000 Watts**
 Speed **<1 to 6000 rpm**

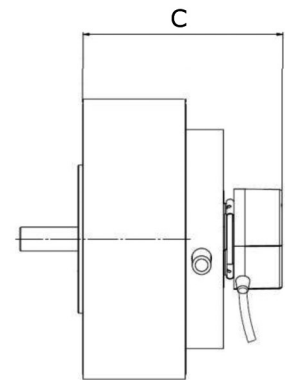
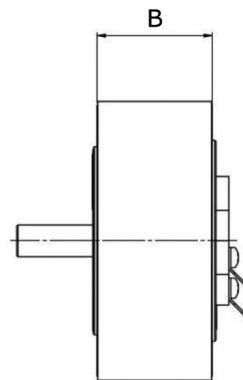
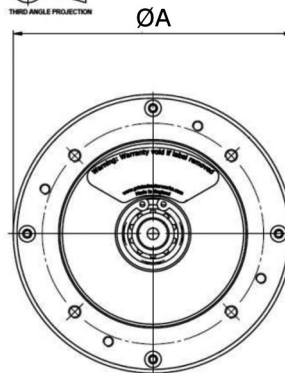


The Printed Motor Works GM series is the original printed armature motor. Extremely powerful and accurate, the GM range brings all the benefits of printed armature technology to industrial applications. Higher torque 'H' versions offer more torque for the same package and weight. Low voltage versions are available for vehicle applications (details on application). The GM range is available with a host of options such as: encoders, imperial mounting, adaptors, gearboxes, tachos, resolvers and with custom mounting plates & shafts.

Motor	Power	Torque	Speed	Voltage	Current	Cont. Stall Current	Diameter	Depth	Depth + Encoder
	P	T	N	V	I	IS	A	B	C
	Watt	Ncm	RPM	Volt	Amp	Amp	mm	mm	mm
GM9	113	36	3000	24.1	8.7	6.8	111	46.0	88.5
GM9H	179	57	3000	31.9	8.6	6.8	111	57.0	99.5
GM12	284	91	3000	43.4	8.8	8.1	142	52.5	101.5
GM12H	396	126	3000	62.7	7.9	8.1	142	70.0	119.0
GM16	704	227	3000	82.7	11.0	9.2	187.2	61.0	110.0
GM16H	890	284	3000	125.7	8.5	9.8	187.2	73.0	122.0

Specific benefits

- High peak torque output
- Zero cogging
- Low inertia
- Rapid acceleration
- Stable up to high temperatures
- High instantaneous torque
- Long brush life
- Controllable with servo amplifiers
- Design options include custom shaft, encoders, tachometers, gearboxes and pulleys



Standard Motor

Encoder Option



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
 Email: sales@printedmotorworks.com Tel: +44 1420 594 140

GM Series

Applications

Servo mechanisms, motion control, industrial robots, CNC machining, printing machinery, logistics solutions, medical mobility, medical scanners, flight simulators, marine autopilots and high ambient temperature ventilation, valve actuators and scientific instrumentation.

Markets

Industrial automation, medical, life sciences, aerospace & defence, printing, logistics, instrumentation, test and measurement, oil & gas and offshore marine.

Design Modifications

- Encoders
- Timing pulleys
- Long leads
- Tri-rated cable
- US mounting configuration
- Customised shafts
- EMC suppression
- Connectors
- Rated for operation in 150°C ambient

Standard Encoder Options

Motor	Counts per Rev. CPR	Channels	Type	Supply Voltage V
GM9	5000	A + B + I + Complementary	Optical	+ 5 - 24
GM9H	5000	A + B + I + Complementary	Optical	+ 5 - 24
GM12	5000	A + B + I + Complementary	Optical	+ 5 - 24
GM12H	5000	A + B + I + Complementary	Optical	+ 5 - 24
GM16	5000	A + B + I + Complementary	Optical	+ 5 - 24
GM16H	5000	A + B + I + Complementary	Optical	+ 5 - 24

Suggested Drives

JUNUS



General speed control applications

20-180Vdc for velocity and torque control with 6 digital I/O. 5Amp - 30Amp variants, RS232 communication.

ACCELNET



General servo applications

20-180Vdc for velocity, torque and position control with 11 digital I/O and encoder feedback. 5Amp - 36Amp variants, RS232 and macro communication.

XENUS



Advanced servo control

110-230Vac for camming, gearing, position, velocity and torque control with 16 digital I/O and multiple feedback options. A stand alone motion control device with CANopen and RS232 communication protocols.



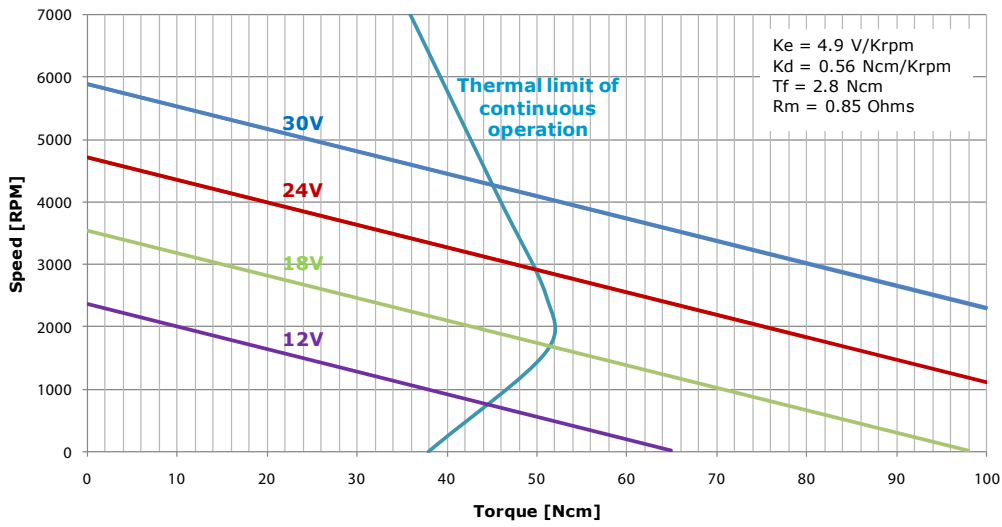
Printed Motor Works

Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140

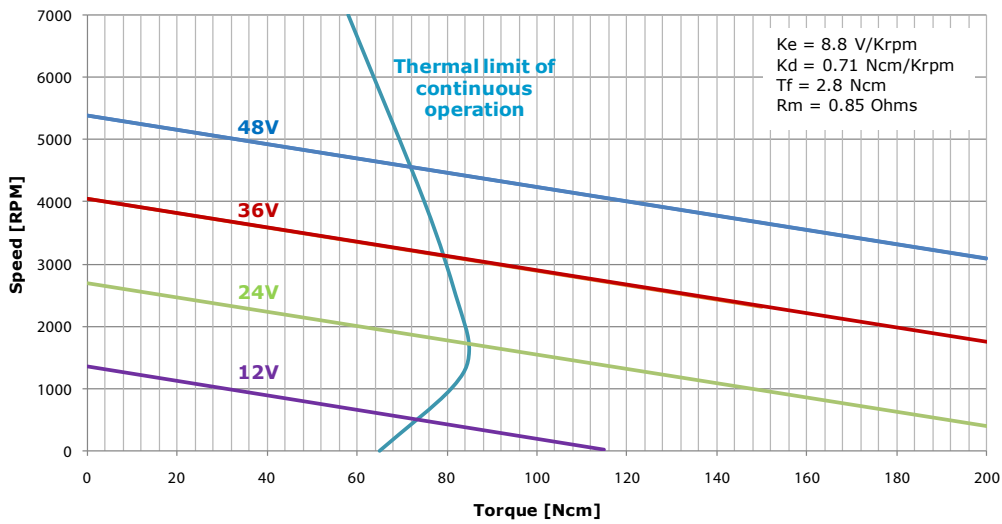
GM Series

GM Series

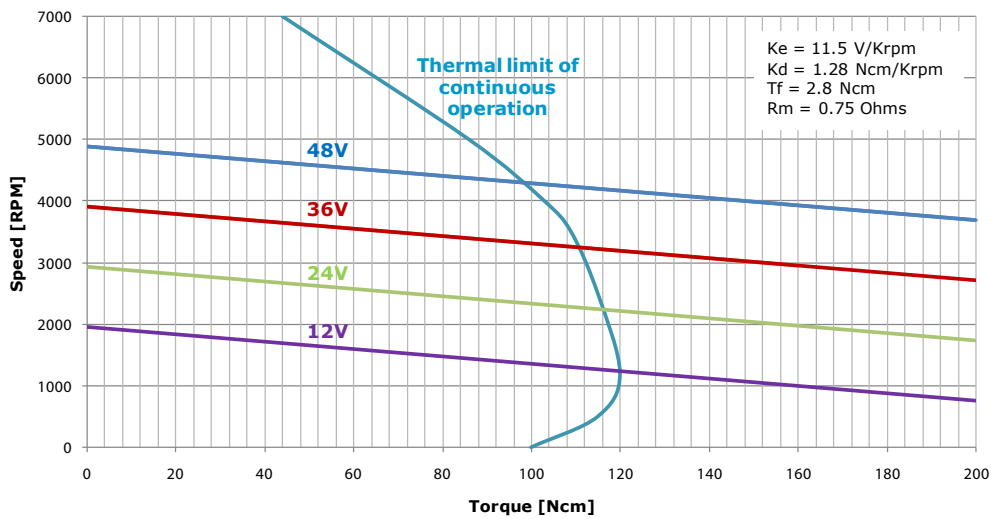
GM9



GM9H



GM12



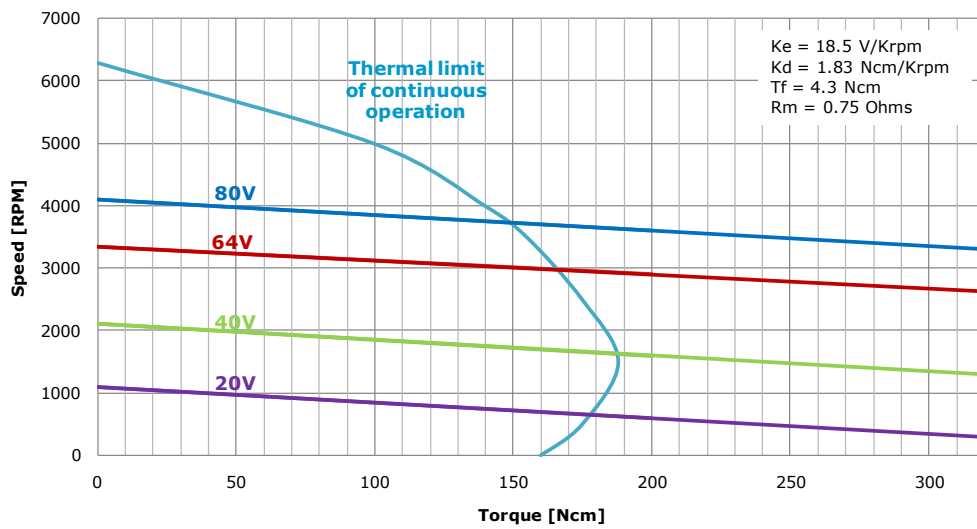
NOTE: The above voltages are examples, not a predefined maximum or minimum.
Due to ongoing product improvements data is subject to change without notice.



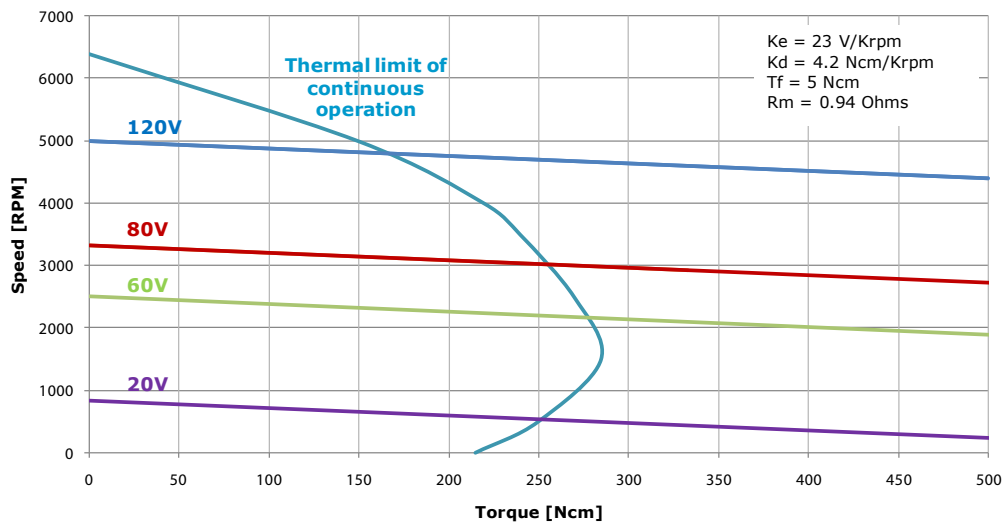
Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140

GM Series

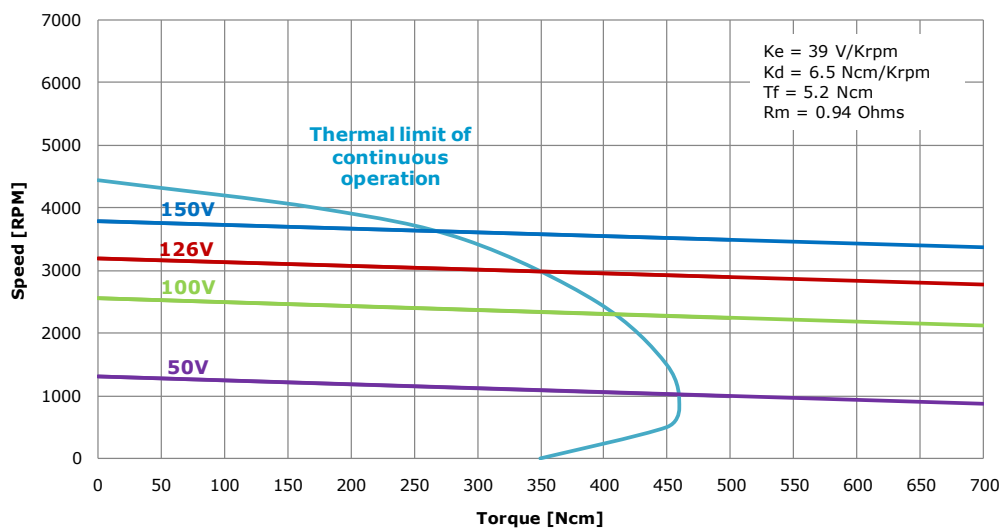
GM12H



GM16



GM16H



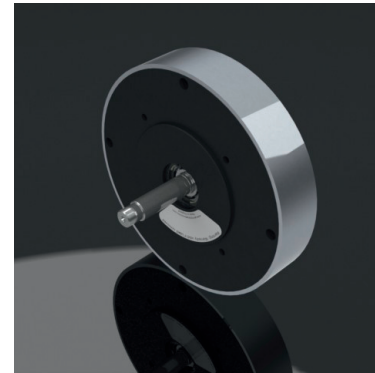
NOTE: The above voltages are examples, not a predefined maximum or minimum. Due to ongoing product improvements data is subject to change without notice.



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
 Email: sales@printedmotorworks.com Tel: +44 1420 594 140

GN Series

Peak Torque	490 to 2550 Ncm
Cont. Torque	49 to 255 Ncm
Power	140 to 800 Watts
Speed	<1 to 6000 rpm

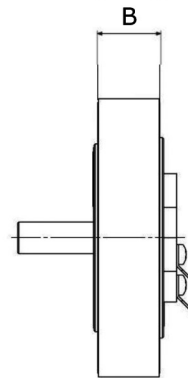
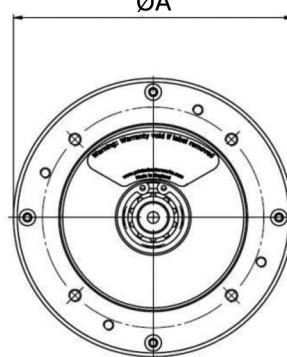


The Printed Motor Works GN series is an exceptionally powerful and extremely accurate range of servo motors that provide all the advantages of the printed armature with the thin profile made possible by using rare earth magnet materials. The GN series is suitable for all types of industrial automation, robotics and scientific applications. GN motors are available in 3 sizes GN9, 12 and 16.

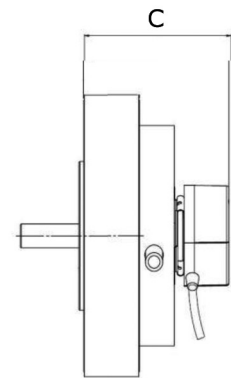
Motor Ratings	Power	Torque	Speed	Voltage	Current	Cont. Stall Current	Diameter	Depth	Depth + Encoder
	P Watt	T Ncm	N RPM	V Volt	I Amp	IS Amp	A mm	B mm	C mm
GN9	154	49	3000	30	7.8	7.8	110	34.0	50.0
GN12	344	110	3000	49	9.2	8.9	140	25.8	41.8
GN16	800	255	3000	100	9.4	8.0	188	26.0	42.0

Specific benefits

- High peak torque output
- Zero cogging
- Low inertia
- Rapid acceleration
- High instantaneous torque
- Long brush life
- Controllable with servo amplifiers
- Design options include custom shaft, encoders, tachometers, gearboxes and pulleys



Standard Motor



Encoder Option



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
 Email: sales@printedmotorworks.com Tel: +44 1420 594 140

GN Series

Applications

Servo mechanisms, motion control, industrial robots, CNC machining, printing machinery, logistics solutions, medical mobility, medical scanners, flight simulators, marine autopilots and high ambient temperature ventilation, valve actuators and scientific instrumentation.

Markets

Industrial automation, medical, life sciences, aerospace & defence, printing, logistics, instrumentation, test and measurement, oil & gas and offshore marine.

Design Modifications

- Encoders
- Timing pulleys
- Long leads
- Tri-rated cable
- Customised shafts
- EMC suppression
- Connectors
- US mounting configuration

Standard Encoder Options

Motor	Counts per Rev. CPR	Channels	Type	Supply Voltage V
GN9	5000	A + B + I + Complementary	Optical	+ 5 - 24
GN12	5000	A + B + I + Complementary	Optical	+ 5 - 24
GN16	5000	A + B + I + Complementary	Optical	+ 5 - 24

Suggested Drives

JUNUS



General speed control applications

20-180Vdc for velocity and torque control with 6 digital I/O. 5Amp - 30Amp variants, RS232 communication.

ACCELNET



General servo applications

20-180Vdc for velocity, torque and position control with 11 digital I/O and encoder feedback. 5Amp - 36Amp variants, RS232 and macro communication.

XENUS



Advanced servo control

110-230Vac for camming, gearing, position, velocity and torque control with 16 digital I/O and multiple feedback options. A stand alone motion control device with CANopen and RS232 communication protocols.



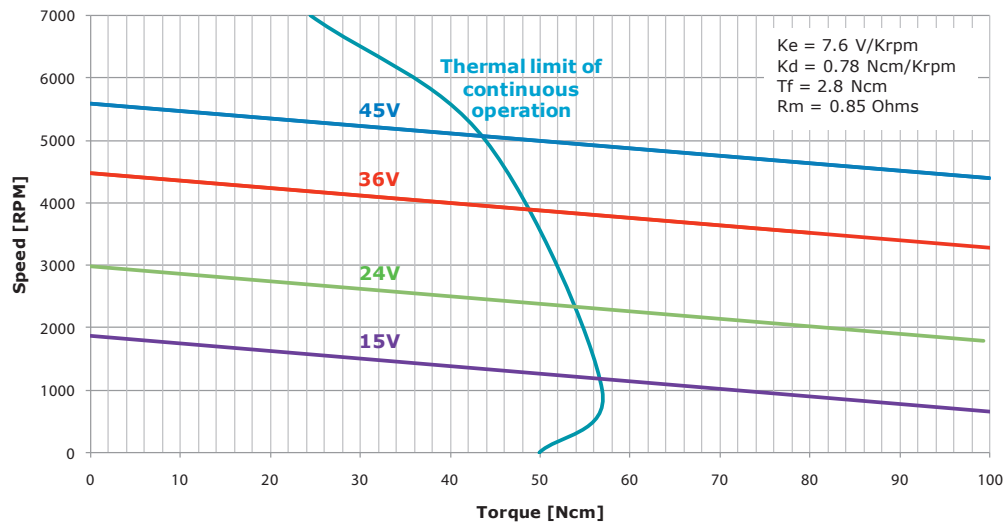
Printed Motor Works

Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140

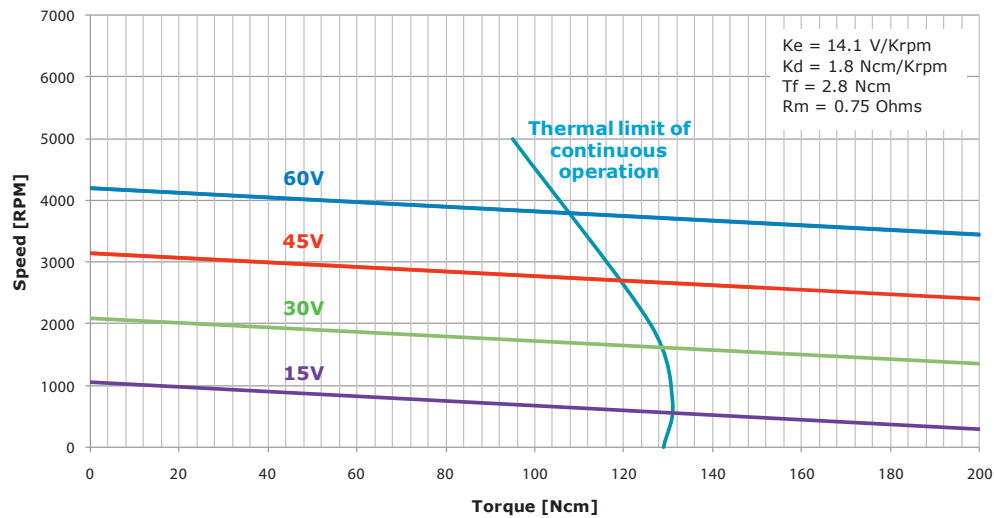
GN Series

GN Series

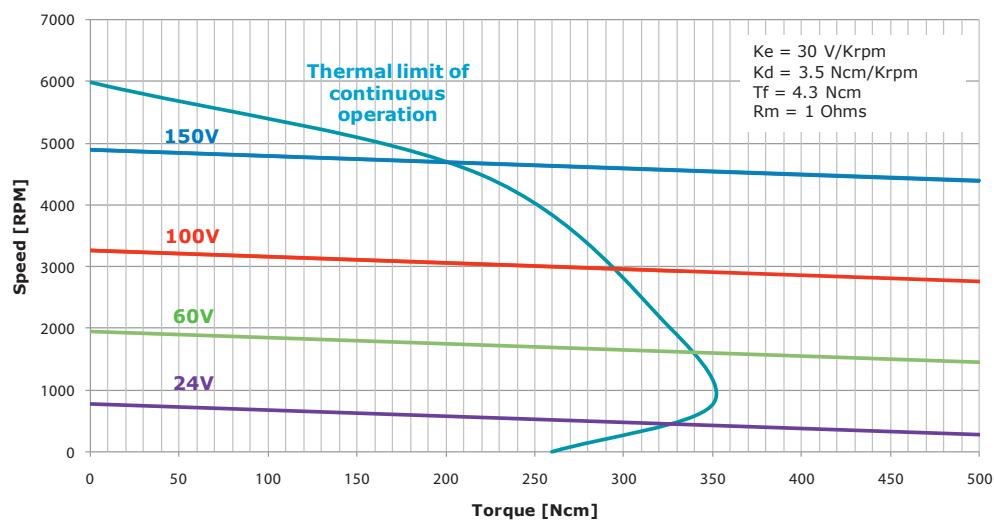
GN9



GN12



GN16



NOTE: The above voltages are examples, not a predefined maximum or minimum.
Due to ongoing product improvements data is subject to change without notice.



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140

GR Series

Peak Torque **1334 to 3200 Ncm**
 Cont. Torque **133.4 to 320 Ncm**
 Power **420 to 1000 Watts**
 Speed **<1 to 6000 rpm**

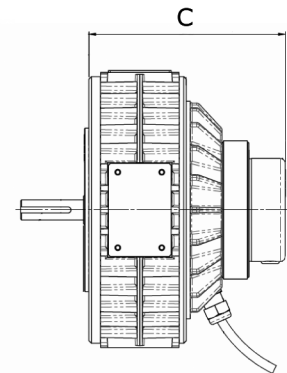
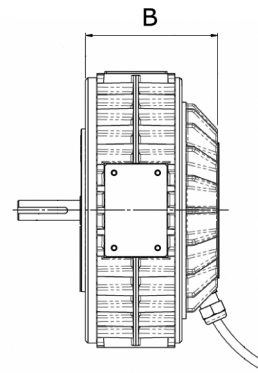
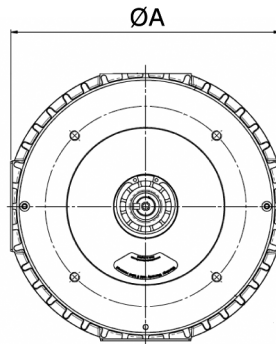


The Printed Motor Works GR series is an exceptionally powerful and extremely accurate range of servo motors that provide all the advantages of the printed armature with an extremely robust motor case for industrial automation and scientific applications. GR motors include air cooling ports, with removable covers, for use with external cooling fans to increase the thermal limit of continuous operation. GR motors are available in 3 sizes GR12, 16 and 19.

Motor Ratings	Power	Torque	Speed	Voltage	Current	Cont. Stall Current	Diameter	Depth	Depth + Tacho
	P	T	N	V	I	IS	A	B	C
	Watt	Ncm	RPM	Volt	Amp	Amp	mm	mm	mm
GR12	420	133	3000	64	8.4	5.0	142	70.0	148
GR16	1050	334	3000	129	9.5	5.7	187	87.5	159
GR19	1000	320	3000	83	14.5	8.6	230	107.5	157

Specific benefits

- High peak torque output
- Zero cogging
- Low inertia
- Rapid acceleration
- Stable up to high temperatures
- High instantaneous torque
- Long brush life
- Controllable with servo amplifiers
- Design options include custom shaft, encoders, tachometers, gearboxes and pulleys



Standard Motor

Tacho Option



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
 Email: sales@printedmotorworks.com Tel: +44 1420 594 140

GR Series

Applications

Servo mechanisms, motion control, industrial robots, CNC machining, printing machinery, logistics solutions, medical mobility, medical scanners, flight simulators, marine autopilots and high ambient temperature ventilation, valve actuators and scientific instrumentation.

Markets

Industrial automation, medical, life sciences, aerospace & defence, printing, logistics, instrumentation, test and measurement, oil & gas and offshore marine.

Design Modifications

- Encoders
- Timing pulleys
- Tacho output voltage
- Tri-rated cable
- US mounting configuration
- Customised shafts
- EMC suppression
- Connectors
- Rated for operation in 150°C ambient
- Protective covers

Standard Tacho Options

Motor	Output Voltage Gradient V/KRPM	Output Tolerance %	Voltage Ripple %	Rotor Inertia g/cm ²
GR12	3	+5 -0	5	350
GR16	3	+5 -0	5	350
GR19	3	+5 -0	5	350

Suggested Drives

JUNUS



General speed control applications

20-180Vdc for velocity and torque control with 6 digital I/O. 5Amp - 30Amp variants, RS232 communication.

ACCELNET



General servo applications

20-180Vdc for velocity, torque and position control with 11 digital I/O and encoder feedback. 5Amp - 36Amp variants, RS232 and macro communication.

XENUS



Advanced servo control

110-230Vac for camming, gearing, position, velocity and torque control with 16 digital I/O and multiple feedback options. A stand alone motion control device with CANopen and RS232 communication protocols.

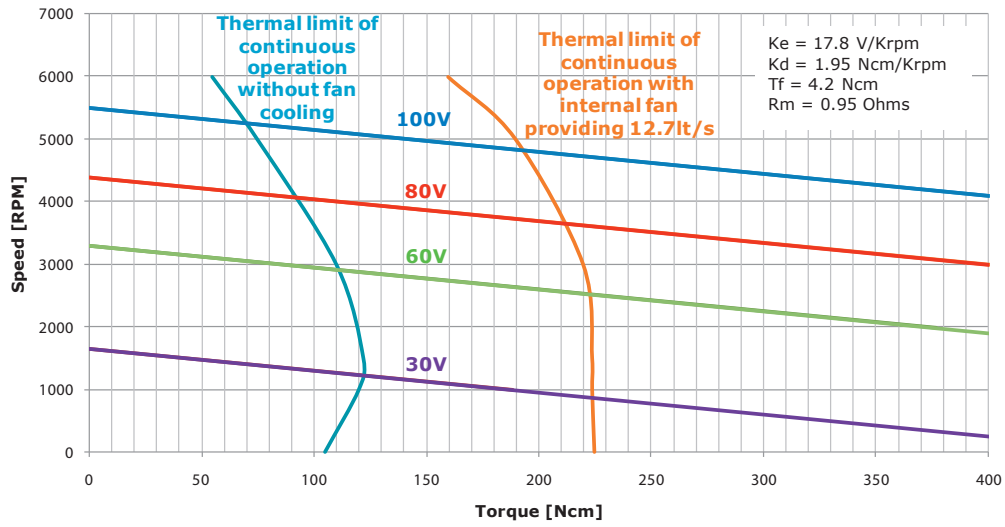


Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140

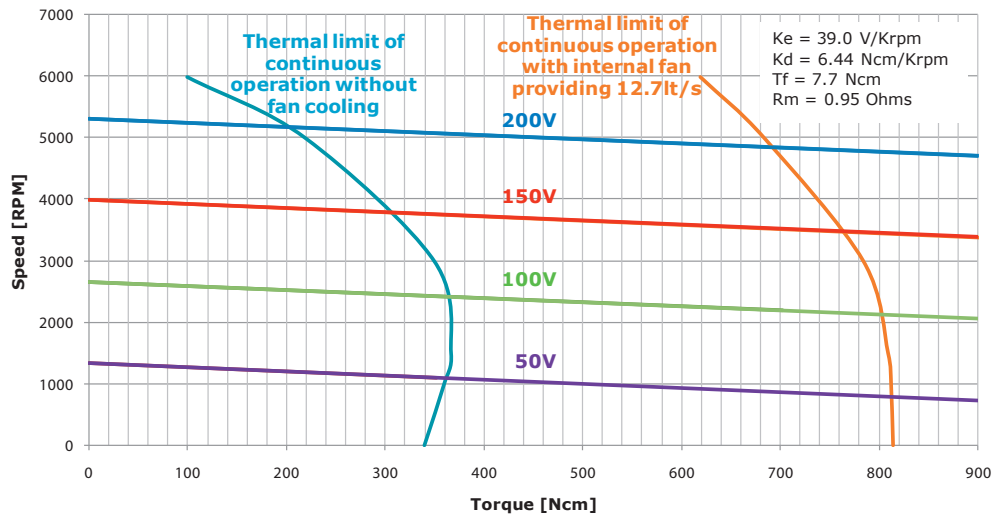
GR Series

GR Series

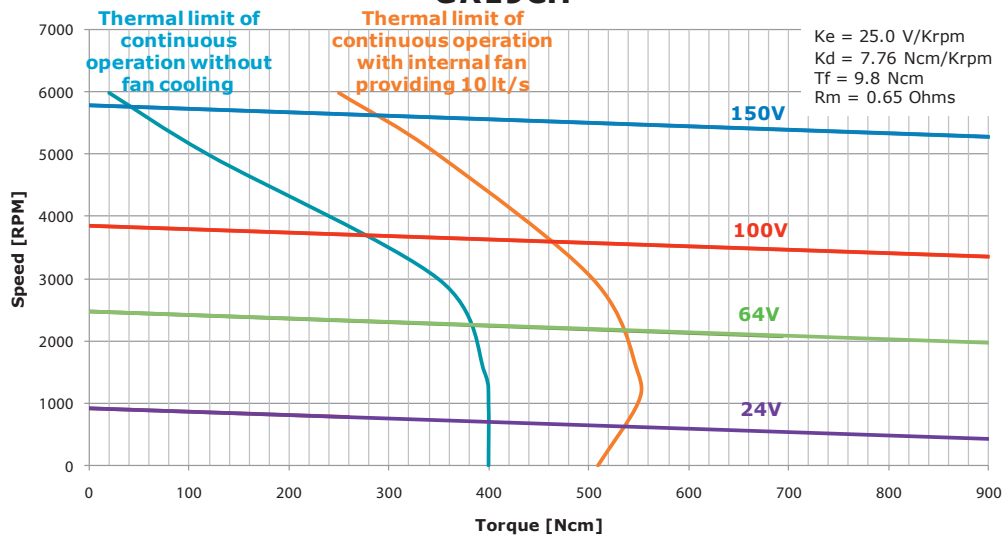
GR12CH



GR16CH



GR19CH



NOTE: The above voltages are examples, not a predefined maximum or minimum. Due to ongoing product improvements data is subject to change without notice.



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140

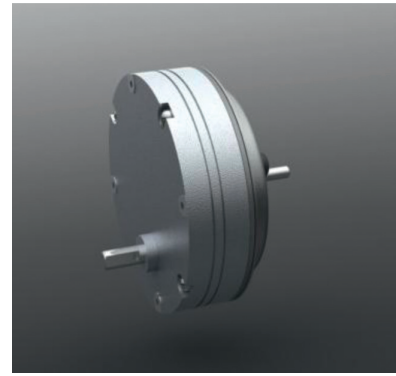


Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140

GPG9 Series

Torque	39 Nm
Ratios	80:1 to 150:1
Speed	<0.1 to 88 rpm

The Printed Motor Works GPG9 series offers a selection of gear reduction ratios for the GP9 motors. These gear motors offer high torque in a compact axial package and use spur gears to reduce speed and efficiently increase the torque of the 9cm pancake motors. Each unit comes with gearbox and motor fully assembled.



Motor	Gear Ratio (value : 1)	150	80
GPG9F	Continuous (Nm)	17	9
	Current (Amp)	6.9	6.9
	Speed (RPM) @ 24v	34	64
	Speed (RPM) @ 12v	27	50
GPG9N	Continuous (Nm)	39	21
	Current (Amp)	6.9	6.9
	Speed (RPM) @ 36v	31	58
	Speed (RPM) @ 24v	23	44
GPG9FLR	Continuous (Nm)	13	7
	Current (Amp)	11.7	11.7
	Speed (RPM) @ 24v	47	88
	Speed (RPM) @ 12v	30	56
GPG9NLR	Continuous (Nm)	32	17
	Current (Amp)	11.4	11.4
	Speed (RPM) @ 24v	27	50
	Speed (RPM) @ 12v	19	36

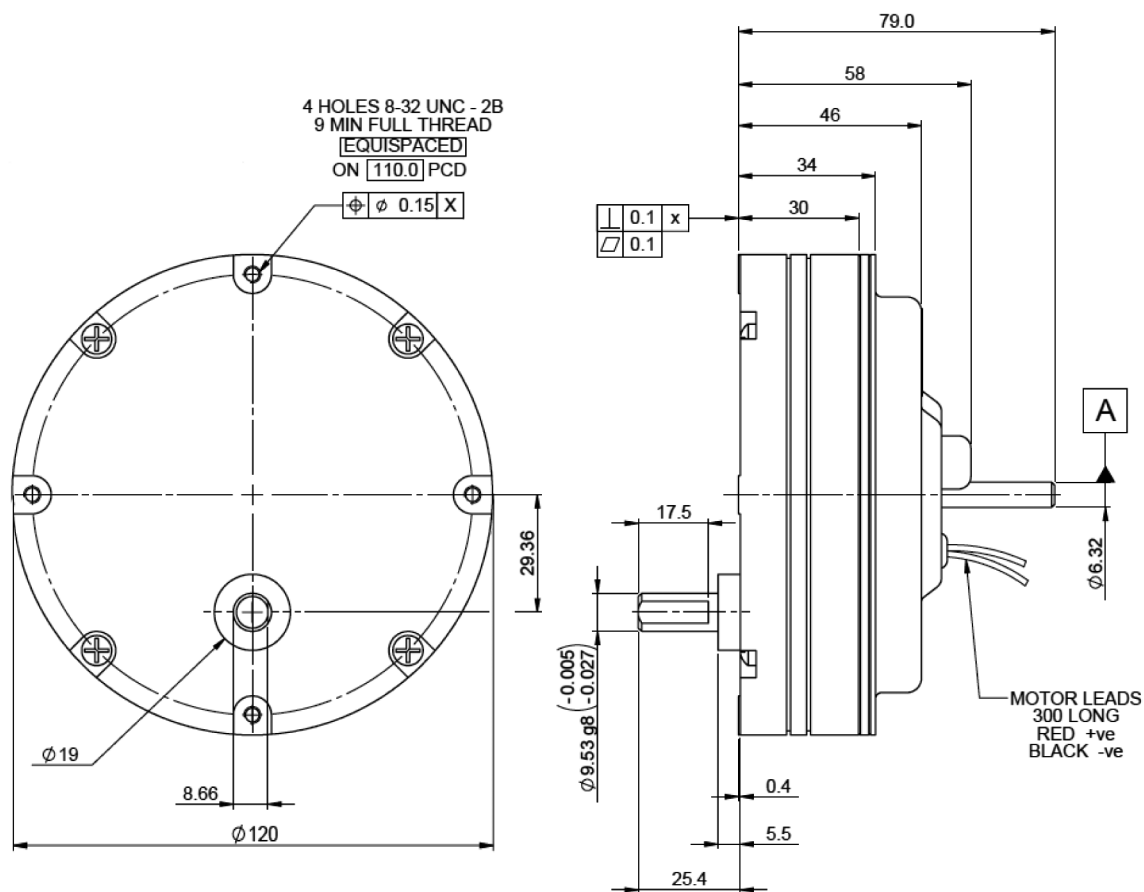
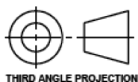
Specific benefits

- High peak torque output
- Zero cogging
- Low inertia
- Rapid acceleration
- Stable up to high temperatures
- High instantaneous torque
- Long brush life
- Controllable with servo amplifiers
- Design options include custom shaft, encoders and pulleys



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140

GPG9 Series



All dimensions in mm

Applications

Biomedical analysis, inspection systems, X-Y tables, wheel drive, automatic door actuators, general automation, advertising screens, weld wire feed, seat elevation adjustment, turret drive.

Markets

Industrial automation, medical, life sciences, aerospace & defence, printing, logistics, instrumentation, test and measurement, oil & gas and offshore marine.

Design Modifications

- Encoders
- Timing pulleys
- Tri-rated cable
- Customised shafts
- EMC suppression
- Connectors

Standard Encoder Options

Motor	Counts per Rev. CPR	Channels	Type	Supply Voltage V
GPG9F	500	A + B + Index	Optical	+ 5
GPG9N	500	A + B + Index	Optical	+ 5
GPG9FLR	500	A + B + Index	Optical	+ 5
GPG9NLR	500	A + B + Index	Optical	+ 5



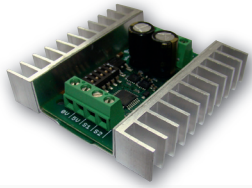
Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140

GPG9 Series

Suggested Drives

PWM24/10

PWM24/25



Basic motor speed control

6-30Vdc for basic speed control applications. 10Amp and 25Amp with single and twin axis control.

JUNUS



General speed control applications

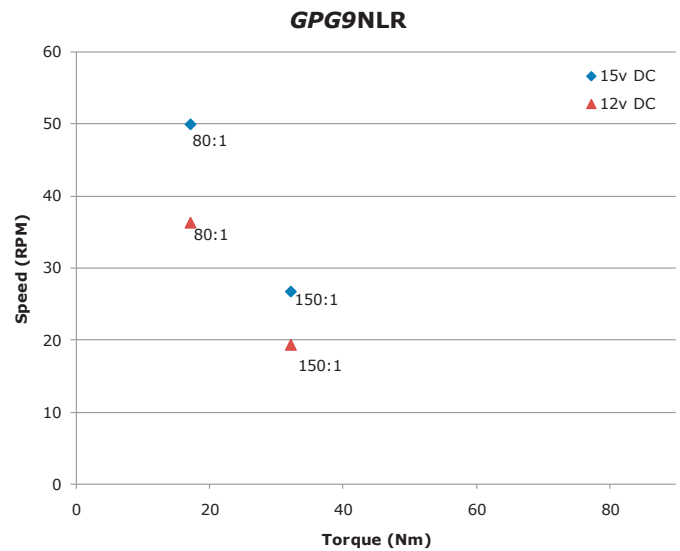
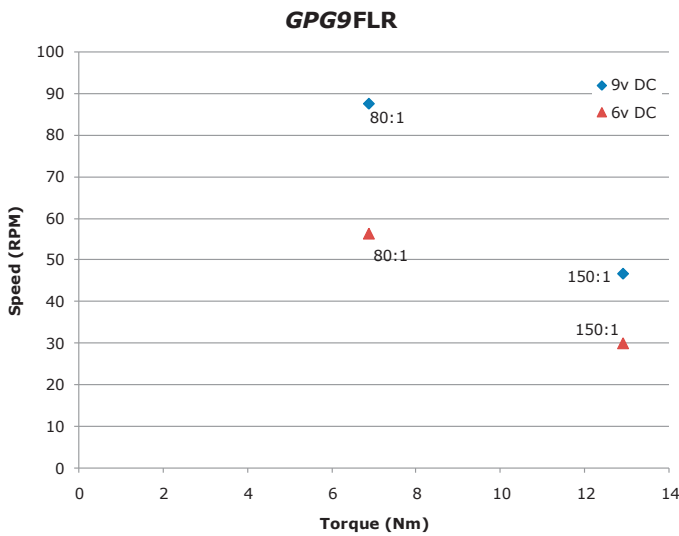
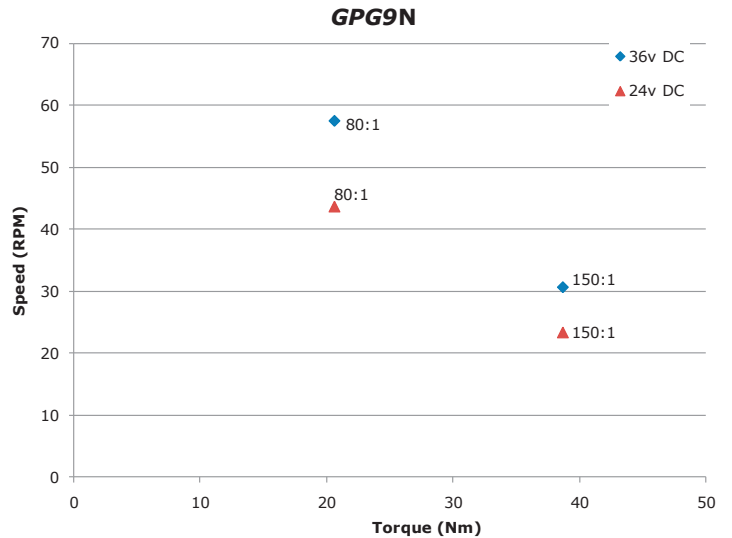
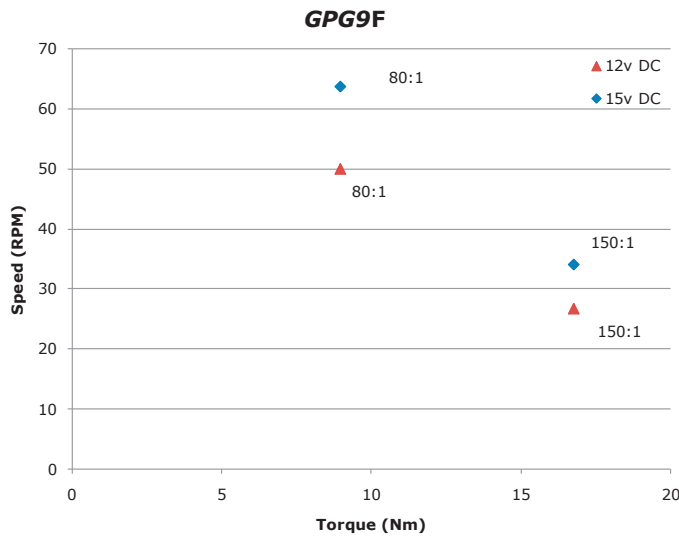
20-180Vdc for velocity and torque control with 6 digital I/O. 5Amp - 30Amp variants, RS232 communication.

ACCELNET



General servo applications

20-180Vdc for velocity, torque and position control with 11 digital I/O and encoder feedback. 5Amp - 36Amp variants, RS232 and macro communication.



NOTE: The above voltages are examples, not a predefined maximum or minimum. Due to ongoing product improvements data is subject to change without notice.



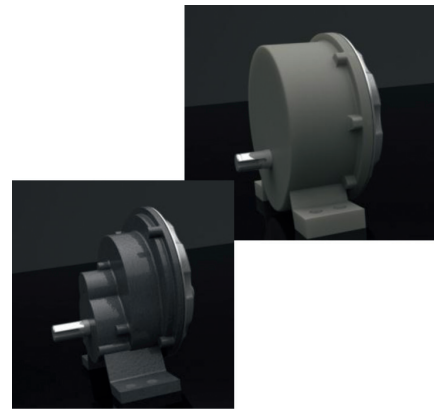
Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
 Email: sales@printedmotorworks.com Tel: +44 1420 594 140



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140

GPG12 Series

Peak Torque **17 Nm to 1134 Nm**
 Cont. Torque **49 to 255 Ncm**
 Ratios **10:1 to 206:1**
 Speed **<0.1 to 500 rpm**



The Printed Motor Works GPG12 series offers a wide range of gear reduction ratios for the GP12 motors. Offering high torque in a compact axial package, each unit has foot mounting capability and uses a combination of bevel and planetary gears to reduce the speed and efficiently increase the torque of the 12cm pancake motor. Each unit comes with gearbox and motor fully assembled.

Motor	Gear Ratio (value : 1)	206	120	80	60	40	25	12	10
GPGM12	Continuous (Nm)	71	41	28	21	14	9	4	3
	Current (Amp)	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
	Speed (RPM) @ 24v	15	25	38	50	75	120	250	300
	Speed (RPM) @ 12v	7	13	19	25	38	60	125	150
GPGN12	Continuous (Nm)	133	77	52	39	26	16	8	6
	Current (Amp)	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
	Speed (RPM) @ 36v	15	25	38	50	75	120	250	300
	Speed (RPM) @ 24v	10	17	25	33	50	80	167	200
GPGM12LR	Continuous (Nm)	35	21	14	10	7	4	2	2
	Current (Amp)	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
	Speed (RPM) @ 24v	24	42	63	83	125	200	417	500
	Speed (RPM) @ 12v	12	21	31	42	63	100	208	250
GPGN12LR	Continuous (Nm)	87	51	34	25	17	11	5	4
	Current (Amp)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
	Speed (RPM) @ 24v	17	30	45	60	90	144	300	360
	Speed (RPM) @ 12v	9	15	23	30	45	72	150	180

Specific benefits

- High peak torque output
- Zero cogging
- Low inertia
- Rapid acceleration
- Stable up to high temperatures
- High instantaneous torque
- Long brush life
- Controllable with servo amplifiers
- Design options include custom shaft, encoders and pulleys



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
 Email: sales@printedmotorworks.com Tel: +44 1420 594 140

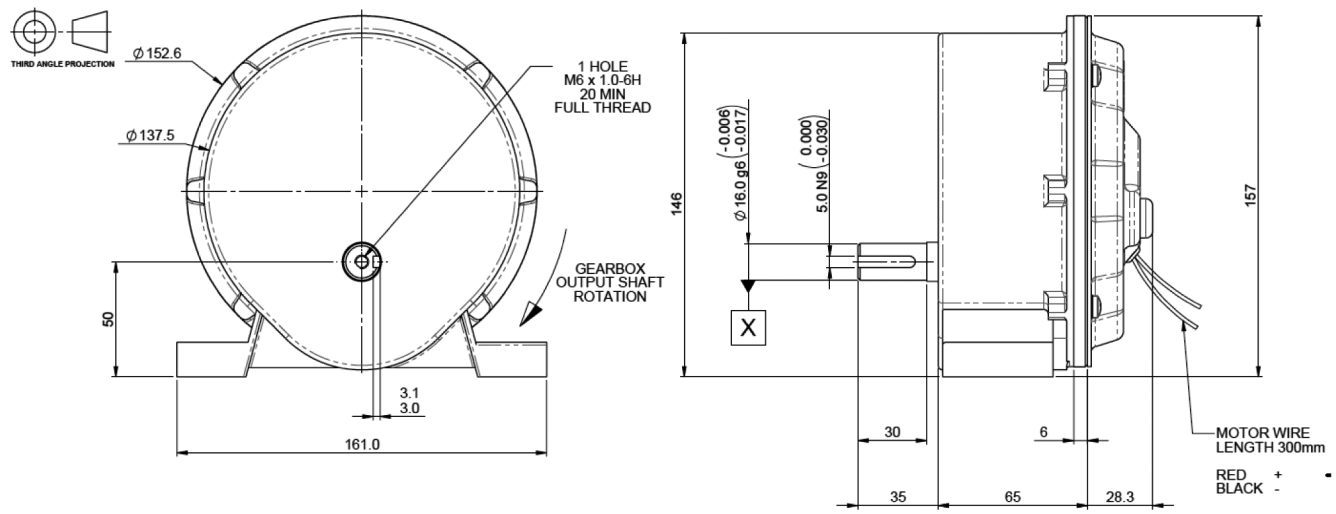
GPG12 Series

We have two designs for the GPG series depending on the ratio you require.

Please see the table below for the various ratios and the corresponding design.

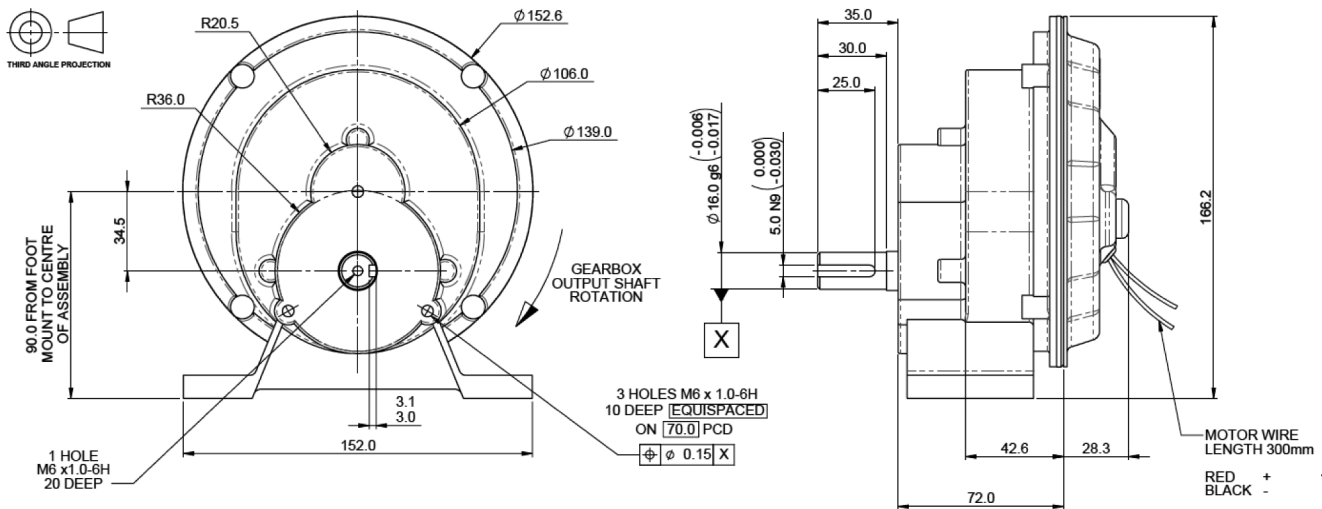
Design A	12:1, 40:1, 60:1, 80:1, 120:1, 206:1
Design B	10:1, 25:1

Design A



All dimensions in mm

Design B



All dimensions in mm



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
 Email: sales@printedmotorworks.com Tel: +44 1420 594 140

GPG12 Series

Applications

Biomedical analysis, inspection systems, X-Y tables, wheel drive, automatic door actuators, general automation, advertising screens, weld wire feed, seat elevation adjustment, turret drive.

Markets

Industrial automation, medical, life sciences, aerospace & defence, printing, logistics, instrumentation, test and measurement, oil & gas and offshore marine.

Design Modifications

- Encoders
- Timing pulleys
- Tri-rated cable
- Customised shafts
- EMC suppression
- Connectors

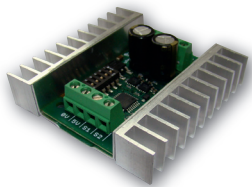
Standard Encoder Options

Motor	Counts per Rev. CPR	Channels	Type	Supply Voltage V
GPGM12	500	A + B + Index	Optical	+ 5
GPGN12	500	A + B + Index	Optical	+ 5
GPGM12LR	500	A + B + Index	Optical	+ 5
GPGN12LR	500	A + B + Index	Optical	+ 5

Suggested Drives

PWM24/10

PWM24/25



Basic motor speed control

6-30Vdc for basic speed control applications. 10Amp and 25Amp with single and twin axis control.

JUNUS



General speed control applications

20-180Vdc for velocity and torque control with 6 digital I/O. 5Amp - 30Amp variants, RS232 communication.

ACCELNET



General servo applications

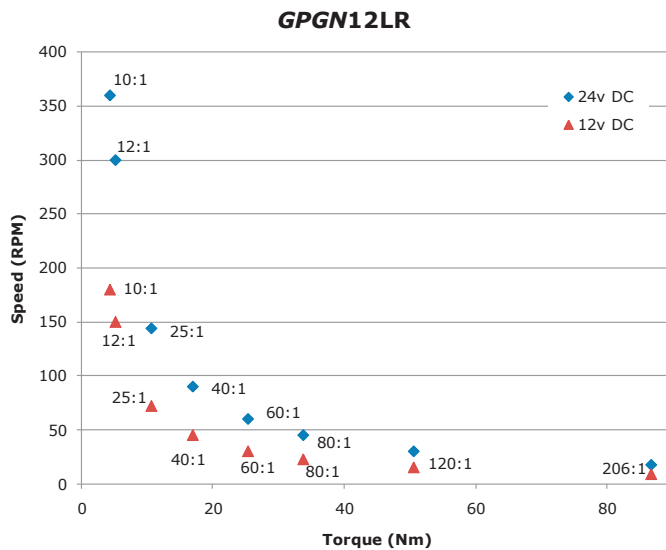
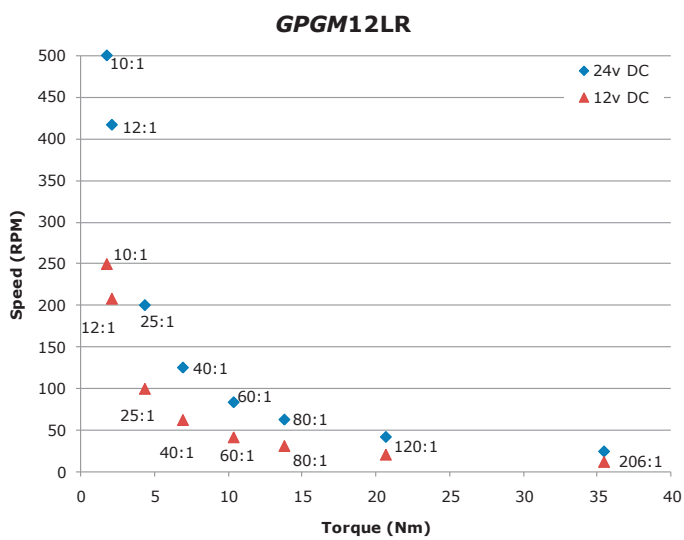
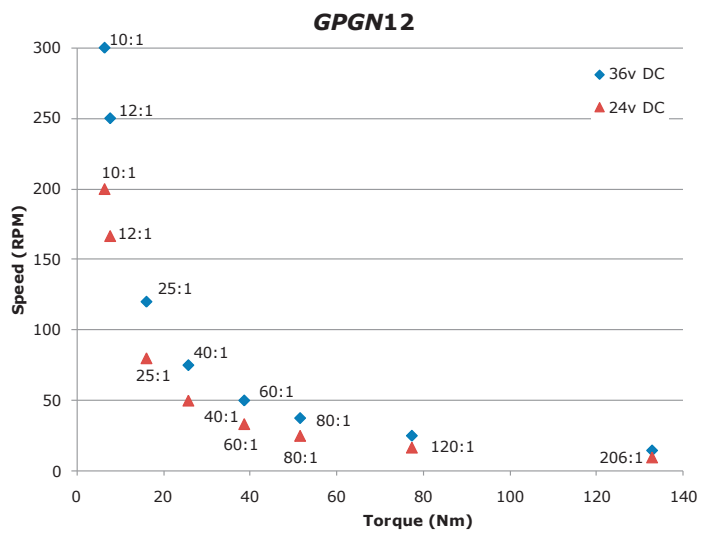
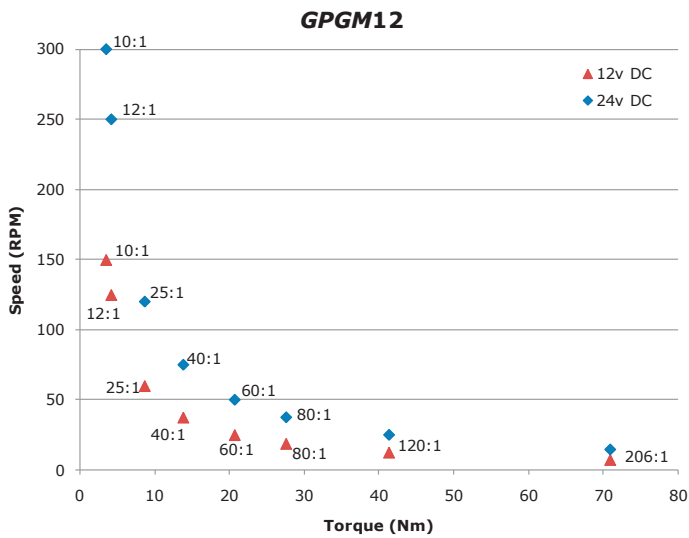
20-180Vdc for velocity, torque and position control with 11 digital I/O and encoder feedback. 5Amp - 36Amp variants, RS232 and macro communication.



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
 Email: sales@printedmotorworks.com Tel: +44 1420 594 140

GPG12 Series

Ratio	Drive train details	Backlash(degrees)	Arc mins	Radial Load (Kg)
206:1	Steel Gear	0.24±0.05°	15.0	230
120:1	Steel Gear	0.49±0.05°	29.4	230
80:1	Steel Gear	0.11±0.05°	6.6	230
60:1	Steel Gear	0.91±0.05°	54.6	230
40:1	Steel Gear	0.45±0.05°	27.0	230
25:1	Steel Gear(Planetary)	0.46±0.05°	27.6	230
12:1	MC Nylon Gear	0.12±0.05°	7.2	230
10:1	MC Nylon Gear(Planetary)	0.46±0.05°	27.6	230



NOTE: The above voltages are examples, not a predefined maximum or minimum.
Due to ongoing product improvements data is subject to change without notice.



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140



Printed Motor Works Limited, Newman Lane, Alton, Hampshire GU34 2QW, United Kingdom
Email: sales@printedmotorworks.com Tel: +44 1420 594 140