

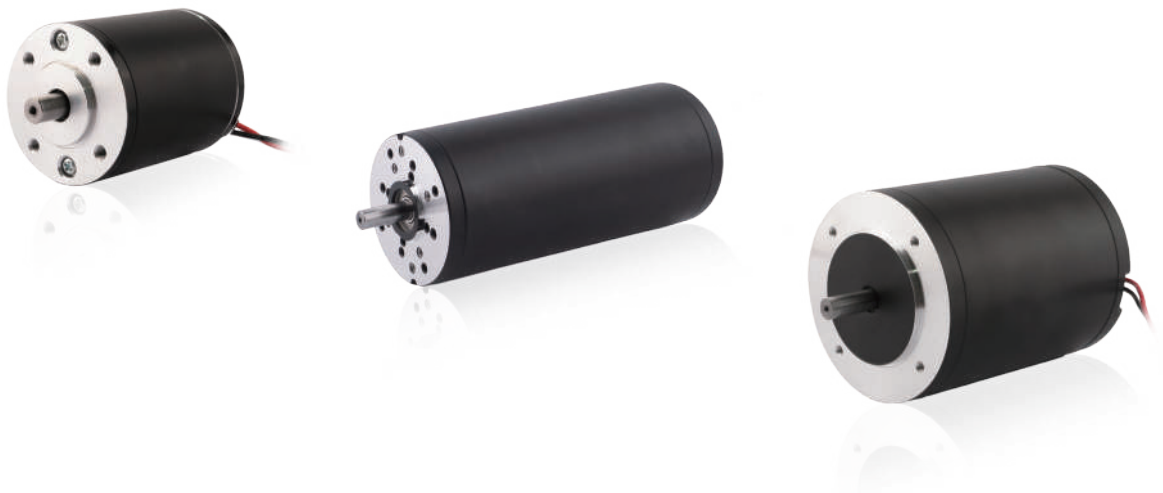
D Brush DC Motor

Modar' Brush DC Motors have low mechanical loss, high power conversion efficiency but relatively save energy. The speed of Brush DC motor can quickly respond to change of voltage and meet the requirements of high speed and high precision control.

Brush DC Motor's torque is proportional to the current, it has very good starting performance.

Modar' Brush DC Motors can be designed by Ferrite, Aluminium, Nickel Cobalt, Rare Earth magnet or Permanent Magnet. Also Modar' can adopt two different brushes as Graphite or Metal Graphite.

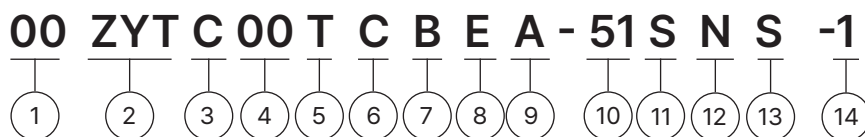
In addition, Modar' can customize Brush DC Motors in various ways with gearbox, encoder or Modar' also can design Brush DC linear actuators for wide applications.



Part number construction	D-2
42 mm	D-3
50 mm	D-5
63 mm	D-7
80 mm	D-9
Accessories and Options	D-11



Part Number Construction



① Motor Size

Motor Size(mm)	42	50	63	80
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② Product Name

ZYT = Slotted Brushed DC Motor (Ferrite)
 ZY = Slotted Brushed DC Motor (Aluminum nickel cobalt)
 ZYN = Slotted Brushed DC Motor (Rare earth)
 LY = Permanent magnet DC torque motor

③ Motor Shape

C = Circular Type
 S = Square Type

④ Motor Length

Unit : mm
 when the length involves decimal points, use "_" instead

⑤ Motor Casing

L = Aluminum
 T = Stainless steel / Iron
 X = No housing

⑥ Brush Type

C = Graphite brush
 P = Metal graphite brush

⑦ Option

EKX = Encoder (X = Encoder Resolution)
 B = Brake
 GX = Gearbox (X = Gear Ratio)
 Note: When Options are not single,
 please use in alphabetical order for example, "BEG"

⑧ Structure

E = External type
 N = Non-Captive type
 C = Electric Cylinder (Captive) type
 K = Kaptive type

⑨ Lead Screw Code

Please refer to lead screw code selection table

⑩ Screw Length / Stroke

Kaptive = stroke distance
 Non-captive = total length of screw
 External = screw extension length from
 the mounting flange

⑪ Screw Surface Treatment

T = Teflon coating
 S = Standard (No teflon coating)

⑫ End Machining

M = Metric
 U = UNC
 S = Smooth
 C = Customize
 N = None

⑬ Nut Style

S = Standard flange nut
 A = Anti-backlash nut
 C = Customized nut

⑭ Customer Sequence Number

Example

Part Number	42ZYT C100-1
Description	Brush DC Ferrite Motor Circular type Motor length 100mm Customization No.1



42mm Series

42ZYTC85-1 Brush DC Motor has 24V Rated voltage of DC Motor and it can run at Max. 3,150RPM.

It can generate 57mN.m of rated torque and customized with gearbox and also designed as various linear actuators.



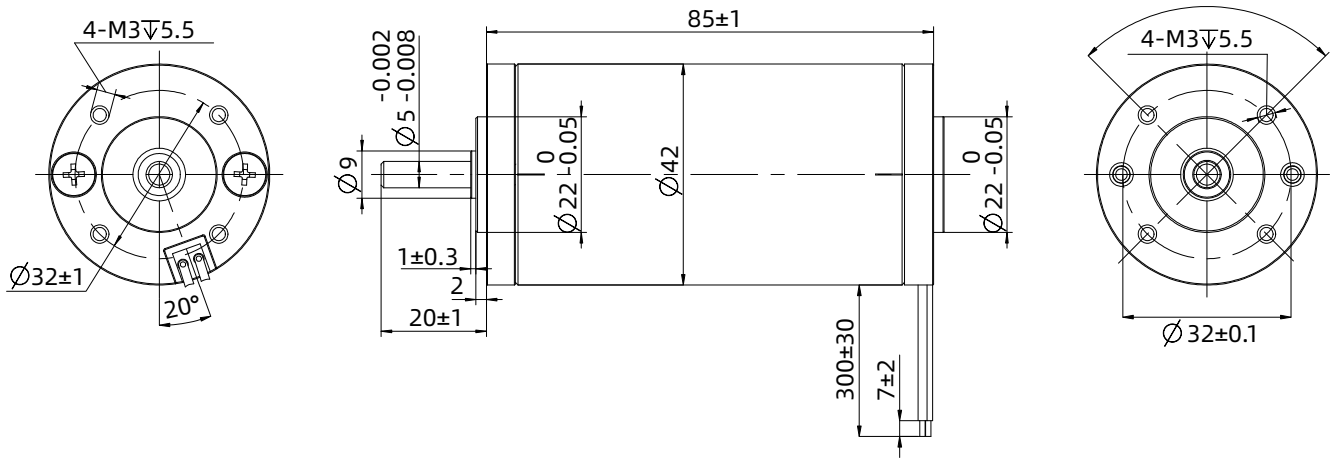
Motor Characteristics

Motor part number	42ZYTC85-1	
Rated voltage	V	24
Rated torque	mN·m	57
Rated speed	RPM	3150
Rated current	A	1.45
No-load speed	RPM	4000
No-load current	A	0.3
Rated power	W	19
Stall torque	mN·m	256
Stall current	A	5.5
Torque constant	mNm/A	64.5
Back emf constant	V/Krpm	6.7
Terminal resistance	Ω	4.65
Terminal inductance	mH	3
Rotor inertia	g·cm ²	110
Starting torque	mN·m	20
Noise (ambient noise 20dB, test distance 1m)	dB	<50
Life span	H	>2500
Insulation resistance	-	100M Ω/250V
Duty cycle	-	S1
Motor weight	Kg	0.43

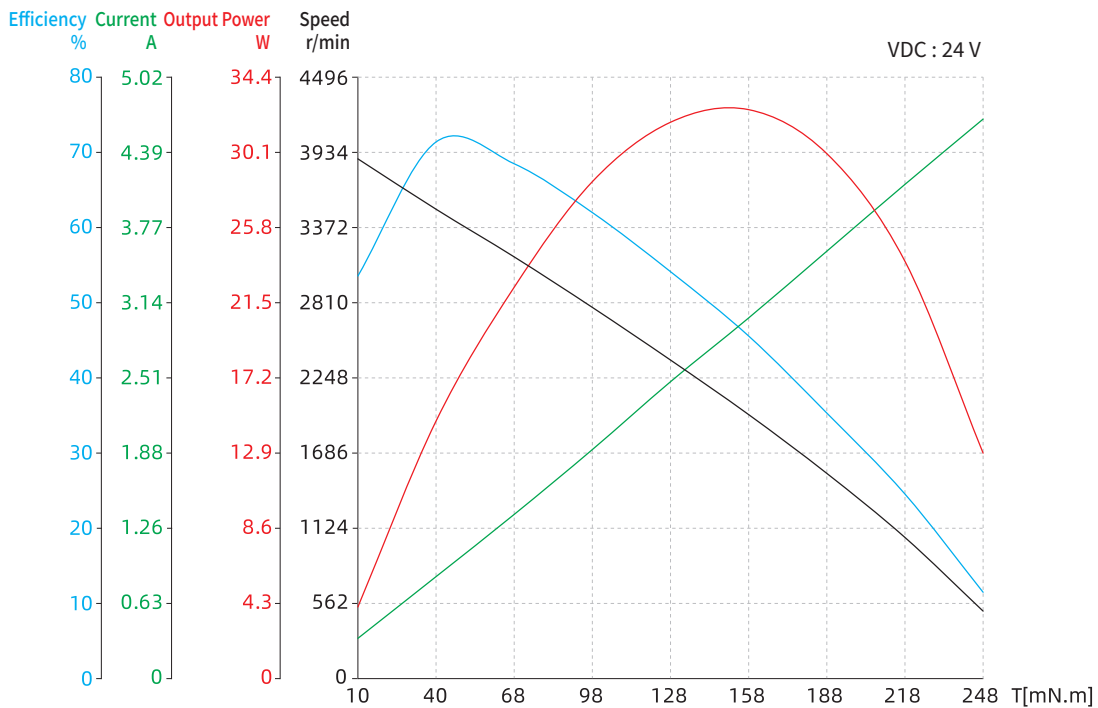


42mm Series

Dimensional Drawings



Torque Performance Curves



50mm Series

50ZYTC60-1 Brush DC Motor has 24V Rated voltage of DC Motor and it can run at Max. 1,700RPM.

It can generate 22.5mN.m of rated torque and customized with gearbox and also designed as various linear actuators.



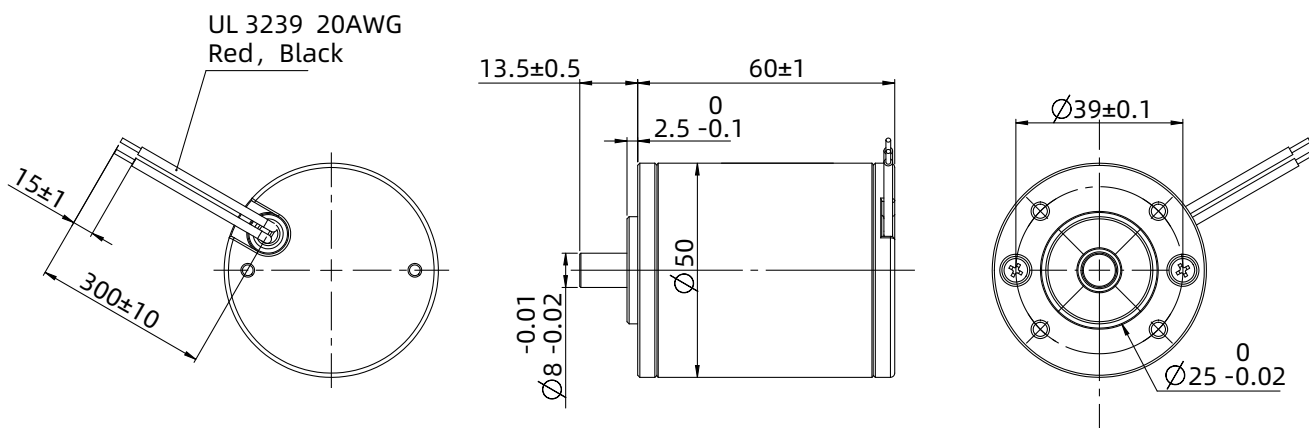
Motor Characteristics

Motor part number	50ZYTC60-1	
Rated voltage	V	24
Rated torque	mN·m	22.5
Rated speed	RPM	1700
Rated current	A	0.5
No-load speed	RPM	2300
No-load current	A	0.2
Rated power	W	4
Stall torque	mN·m	80
Stall current	A	1.1
Torque constant	mNm/A	86.4
Back emf constant	V/Krpm	9.05
Terminal resistance	Ω	20.2
Terminal inductance	mH	11
Rotor inertia	g.cm ²	130
Starting torque	mN·m	32
Noise (ambient noise 20dB, test distance 1m)	dB	<48
Life span	H	>2500
Insulation resistance	-	100M Ω/250V
Duty cycle	-	S1
Motor weight	Kg	0.38

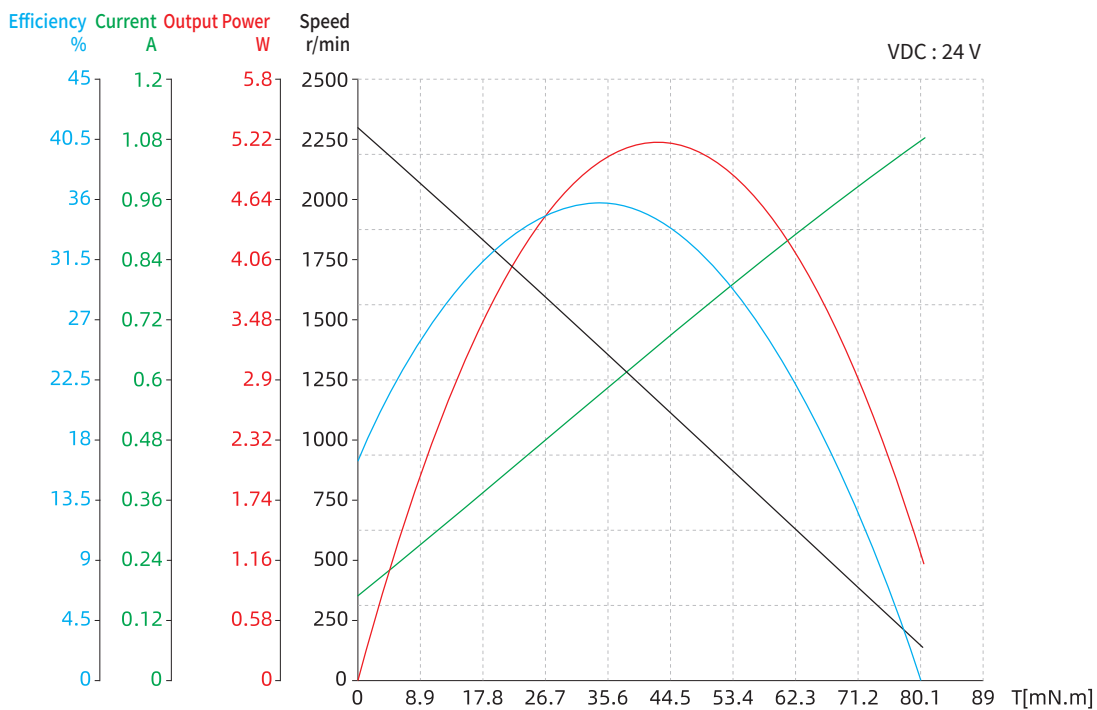


50mm Series

Dimensional Drawings



Torque Performance Curves



63mm Series

63ZYT125-1 Brush DC Motor has 24V Rated voltage of DC Motor and it can run at Max. 3,200RPM.

It can generate 0.27N.m of rated torque and customized with gearbox and also designed as various linear actuators.



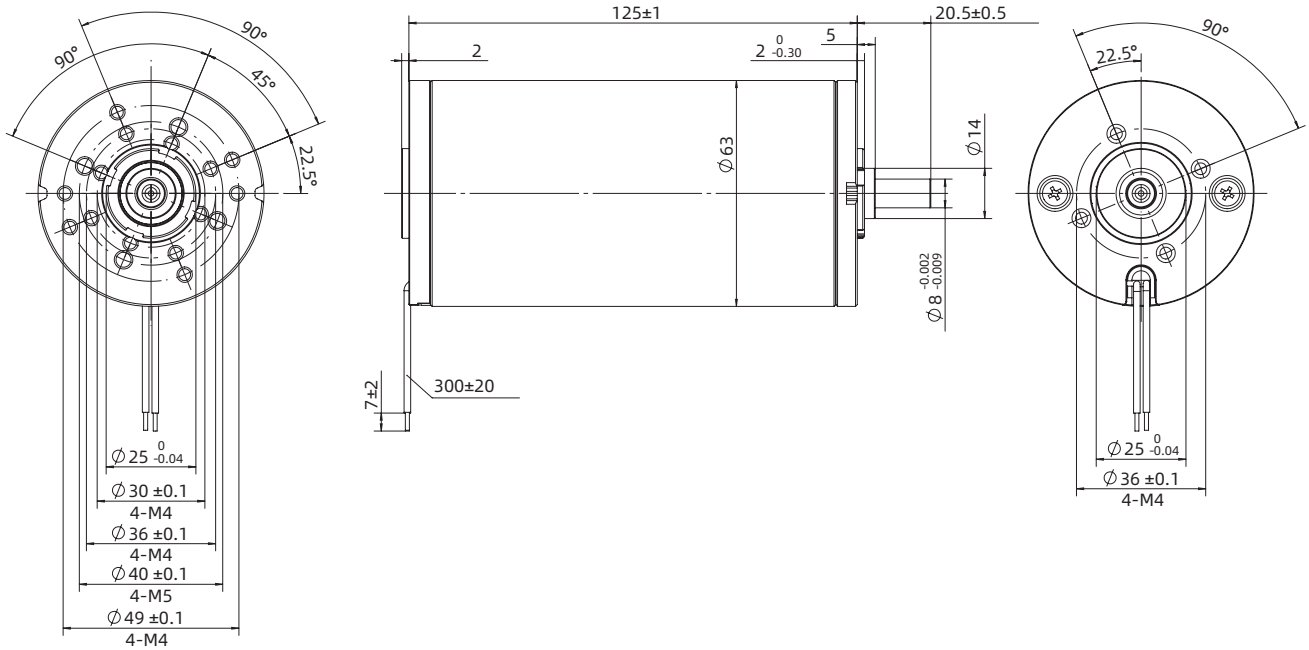
Motor Characteristics

Motor part number	63ZYT125-1	
Rated voltage	V	24
Rated torque	N·m	0.27
Rated speed	RPM	3200
Rated current	A	6.0
No-load speed	RPM	3650
No-load current	A	1.0
Rated power	W	90
Stall torque	N·m	1.6
Stall current	A	29
Torque constant	mNm/A	62
Back emf constant	V/Krpm	6.01
Terminal resistance	Ω	0.82
Terminal inductance	mH	1.6
Rotor inertia	kg.cm ²	0.8
Starting torque	mN·m	42
Noise (ambient noise 20dB, test distance 1m)	dB	<50
Life span	H	>3000
Insulation resistance	-	100M Ω/250V
Duty cycle	-	S1
Motor weight	Kg	1.6

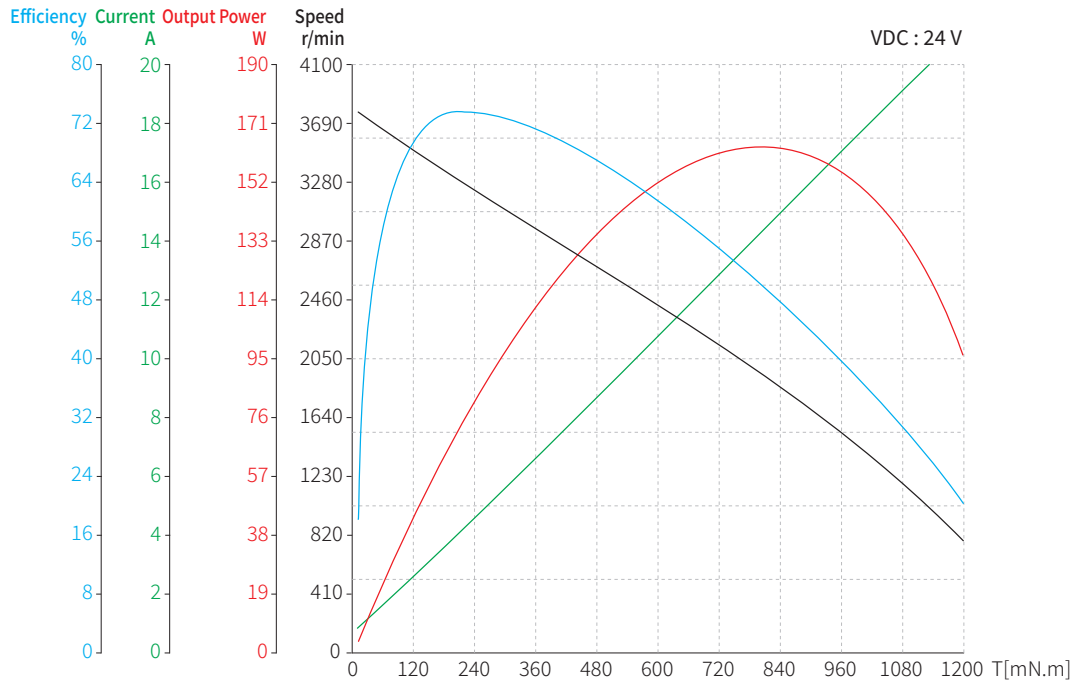


63mm Series

Dimensional Drawings



Torque Performance Curves



80mm Series

80ZYTC102-1 Brush DC Motor has 24V Rated voltage of DC Motor and it can run at Max. 2,500RPM.

It can generate 0.25N.m of rated torque and customized with gearbox and also designed as various linear actuators.



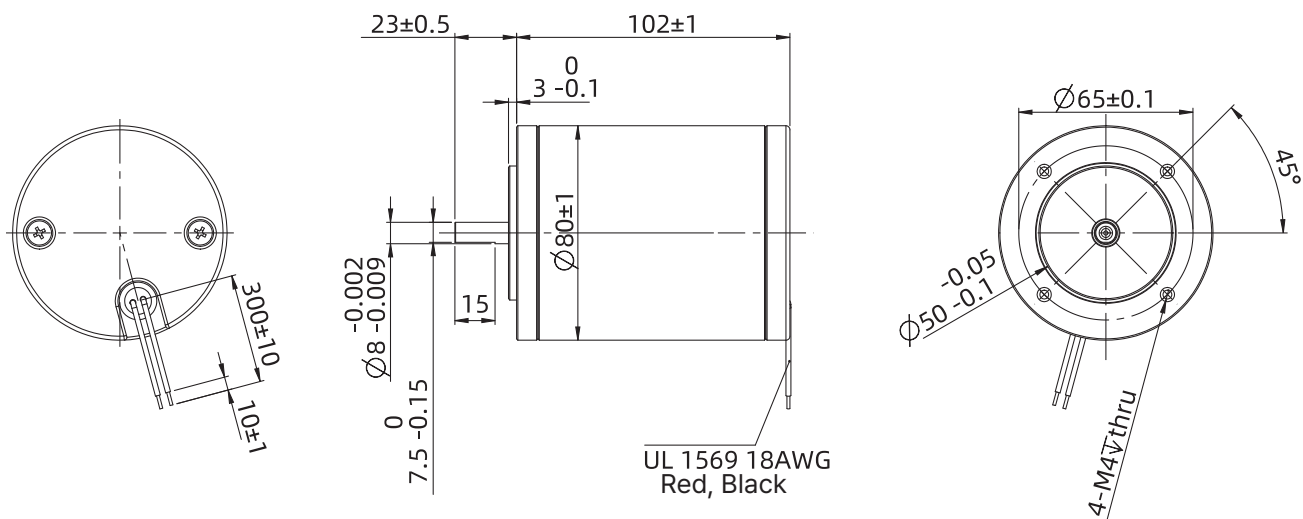
Motor Characteristics

Motor part number	80ZYTC102-1	
Rated voltage	V	24
Rated torque	N·m	0.25
Rated speed	RPM	2500
Rated current	A	4.5
No-load speed	RPM	3200
No-load current	A	0.6
Rated power	W	65
Stall torque	N·m	1.2
Stall current	A	19
Torque constant	mNm/A	61
Back emf constant	V/Krpm	6.4
Terminal resistance	Ω	1.3
Terminal inductance	mH	1.8
Rotor inertia	kg.cm ²	1.6
Starting torque	mN·m	52
Noise (ambient noise 20dB, test distance 1m)	dB	<50
Life span	H	>3000
Insulation resistance	-	100M Ω/250V
Duty cycle	-	S1
Motor weight	Kg	1.7

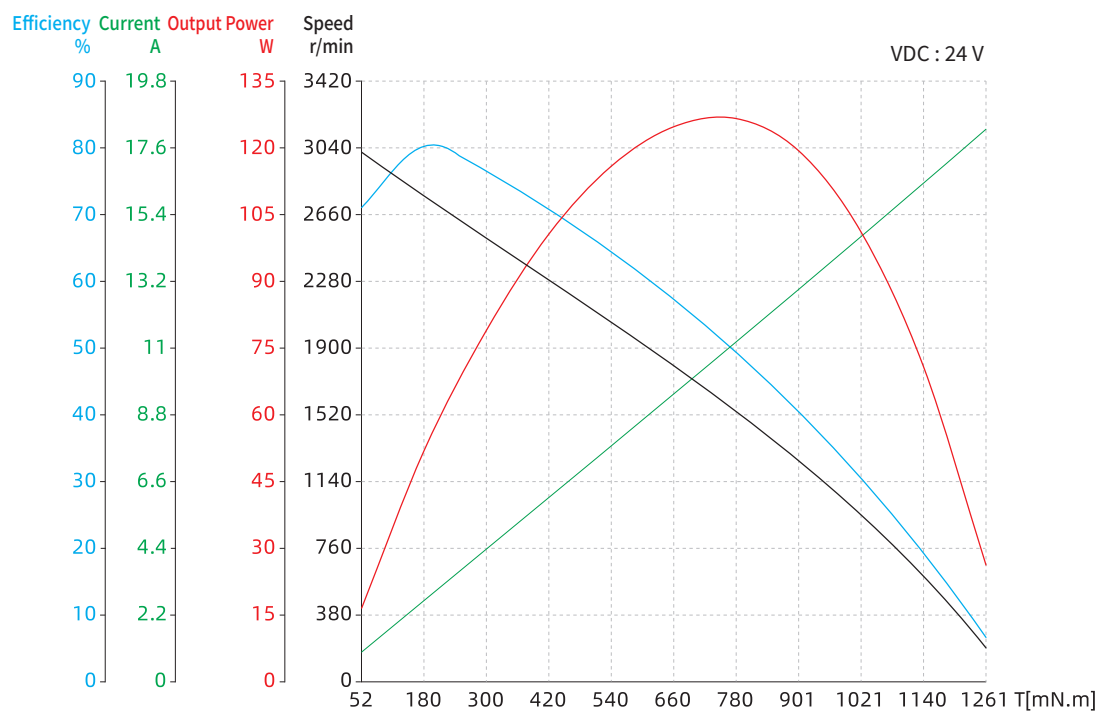


80mm Series

Dimensional Drawings



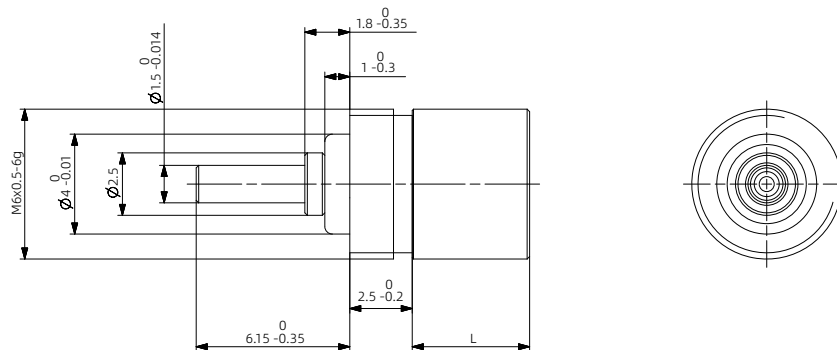
Torque Performance Curves



Accessories and Options

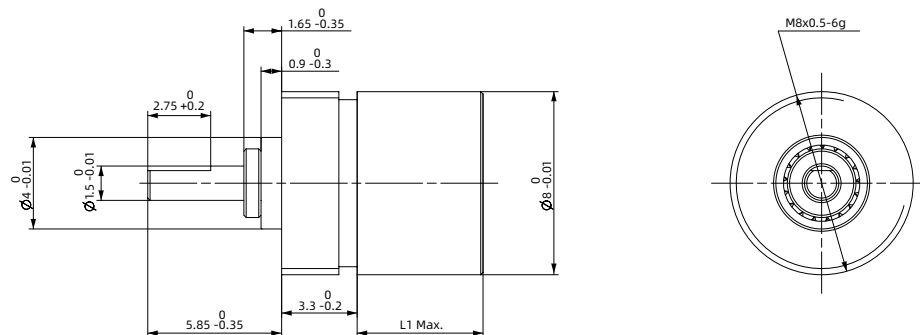
Precision planetary gearbox

6PGX



Stage	-	Stage 1	Stage 2	Stage 3
Gear ratio	X : 1	3.9	15	57
Max. backlash	°	1.8	2.0	2.2
Max. continuous output power	W	0.65	0.4	0.2
Max. peak output power	W	0.8	0.5	0.25
Max. continuous input speed	rpm	20000	20000	20000
Max. peak input speed	rpm	25000	25000	25000
Max. continuous torque	N·m	0.002	0.005	0.01
Max. peak torque	N·m	0.005	0.01	0.02
Max. efficiency	%	88	77	68
Weight	g	1.6	2	2.4
Gearbox length L	mm	4.7	7.2	9.7

8PGX

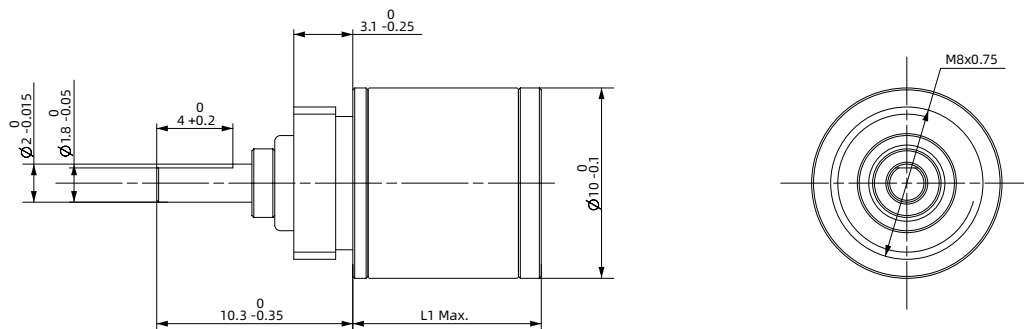


Stage	-	Stage 1	Stage 2	Stage 3
Gear ratio	X : 1	4	16	64
Max. backlash	°	1.8	2.0	2.2
Max. continuous output power	W	0.84	0.52	0.4
Max. peak output power	W	1.05	0.65	0.5
Max. continuous input speed	rpm	14000	14000	14000
Max. peak input speed	rpm	20000	20000	20000
Max. continuous torque	N·m	0.01	0.02	0.06
Max. peak torque	N·m	0.015	0.03	0.09
Max. efficiency	%	90	81	72
Weight	g	2.6	3.2	3.8
Gearbox length L	mm	5.5	8.1	10.7



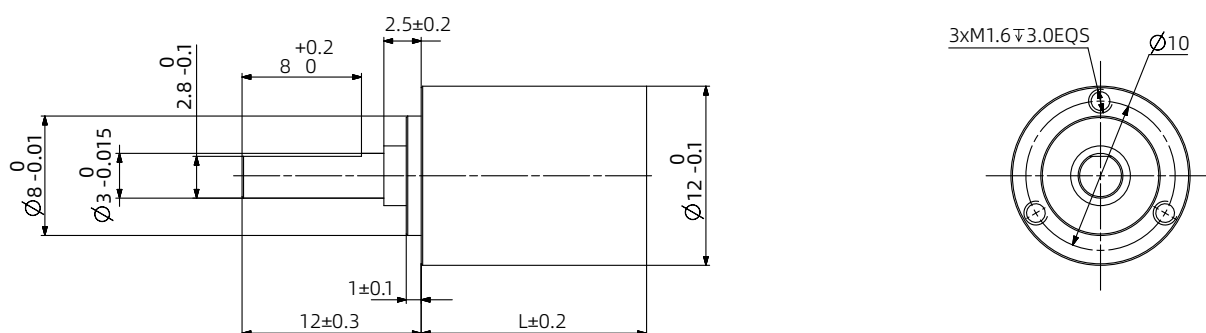
Accessories and Options

10PGX



Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	4.25	18	77	326
Max. backlash	°	1.5	1.8	2.0	2.2
Max. continuous output power	W	1.6	1.2	1.0	0.4
Max. peak output power	W	2	1.5	1.3	0.5
Max. continuous input speed	rpm	14000	14000	14000	14000
Max. peak input speed	rpm	18000	18000	18000	18000
Max. continuous torque	N·m	0.01	0.03	0.10	0.15
Max. peak torque	N·m	0.02	0.05	0.15	0.2
Max. efficiency	%	90	81	73	65
Weight	g	6.8	7.3	7.8	8.3
Gearbox length L	mm	10.1	13.6	17.1	20.6

12PGX

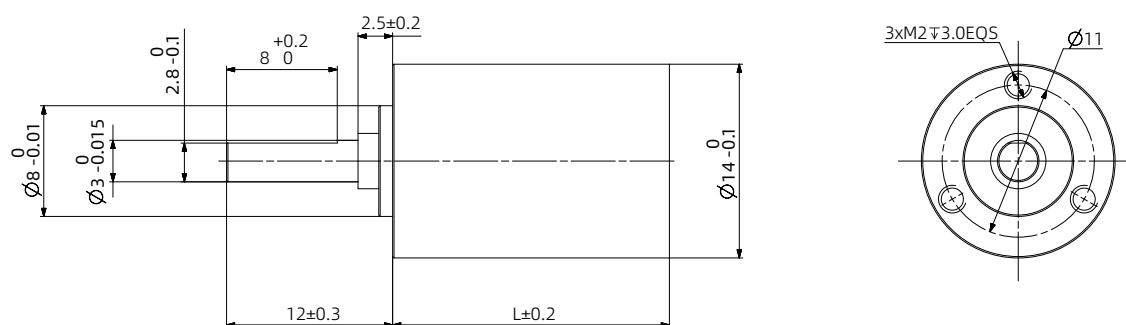


Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	4.3	18.4	79	337
Max. backlash	°	1.2	1.5	1.8	2.1
Max. continuous output power	W	2.0	1	0.5	0.25
Max. peak output power	W	2.5	1.25	0.65	0.3
Max. continuous input speed	rpm	16000	16000	16000	16000
Max. peak input speed	rpm	20000	20000	20000	20000
Max. continuous torque	N·m	0.08	0.11	0.14	0.17
Max. peak torque	N·m	0.1	0.14	0.18	0.21
Max. efficiency	%	90	80	75	65
Weight	g	9	12	15	18
Gearbox length L	mm	11.3	15.1	18.9	22.7



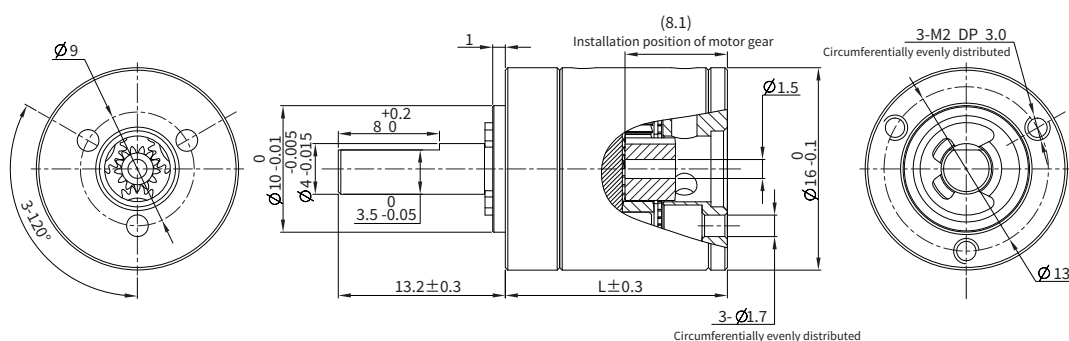
Accessories and Options

14PGX



Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	4.3	18.4	79	337
Max. backlash	°	1.1	1.3	1.45	1.7
Max. continuous output power	W	4.0	2.0	1.0	0.4
Max. peak output power	W	5.0	2.5	1.25	0.5
Max. continuous input speed	rpm	14000	16000	16000	16000
Max. peak input speed	rpm	18000	20000	20000	20000
Max. continuous torque	N·m	0.16	0.2	0.25	0.3
Max. peak torque	N·m	0.2	0.25	0.31	0.38
Max. efficiency	%	90	80	75	65
Weight	g	11	15	19	23
Gearbox length L	mm	11.8	16.1	20.4	24.7

16PGX

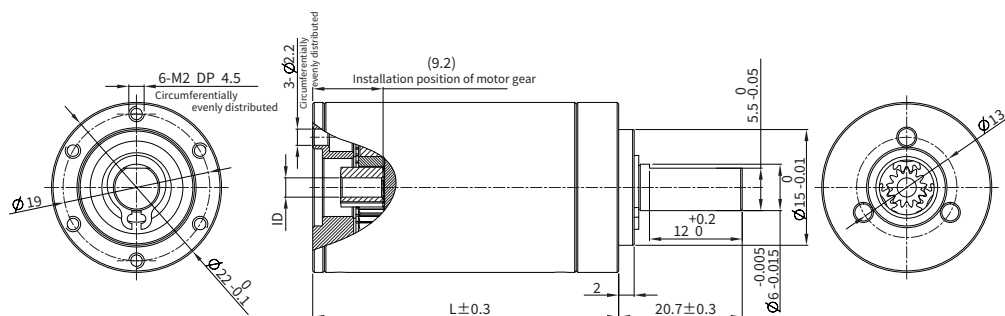


Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	3.9, 5.3	16, 21, 28	62, 83, 111, 150	243, 326, 439, 590, 794
Max. backlash	°	1.0	1.2	1.3	1.4
Max. continuous output power	W	6.5	3.2	1.6	0.6
Max. peak output power	W	8.0	4.0	2.0	0.75
Max. continuous input speed	rpm	12000	14000	14000	14000
Max. peak input speed	rpm	15000	18000	18000	18000
Max. continuous torque	N·m	0.2	0.25	0.35	0.45
Max. peak torque	N·m	0.25	0.35	0.45	0.55
Max. efficiency	%	90	80	75	65
Weight	g	25	31	37	42
Gearbox length L	mm	18.7	25.5	30.2	42



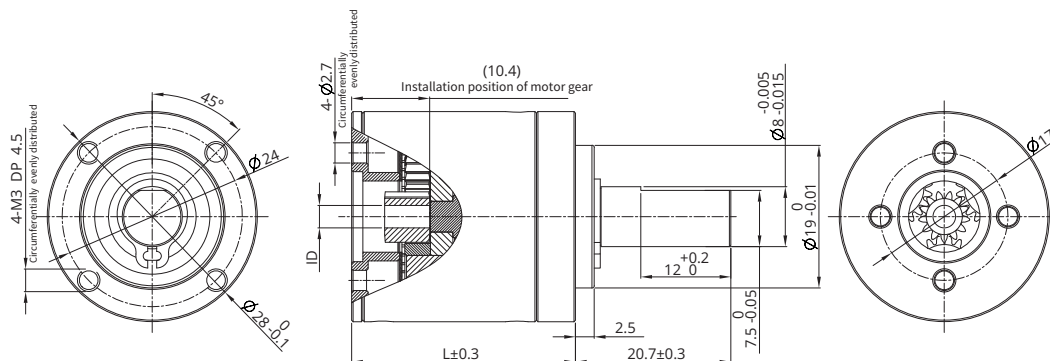
Accessories and Options

● 22PGX



Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	3.9, 5.3	16, 21, 28	62, 83, 111, 150	243, 326, 439, 590, 794
Max. backlash	°	0.85	1.05	1.2	1.35
Max. continuous output power	W	24	12	6.0	1.6
Max. peak output power	W	30	15	7.5	2.0
Max. continuous input speed	rpm	8000	10000	10000	10000
Max. peak input speed	rpm	10000	12500	12500	12500
Max. continuous torque	N·m	0.5	0.7	1.2	1.5
Max. peak torque	N·m	0.6	0.9	1.5	1.9
Max. efficiency	%	90	81	74	66
Weight	g	59	83	97	112
Gearbox length L	mm	22.3	33	39.6	46.3

● 28PGX

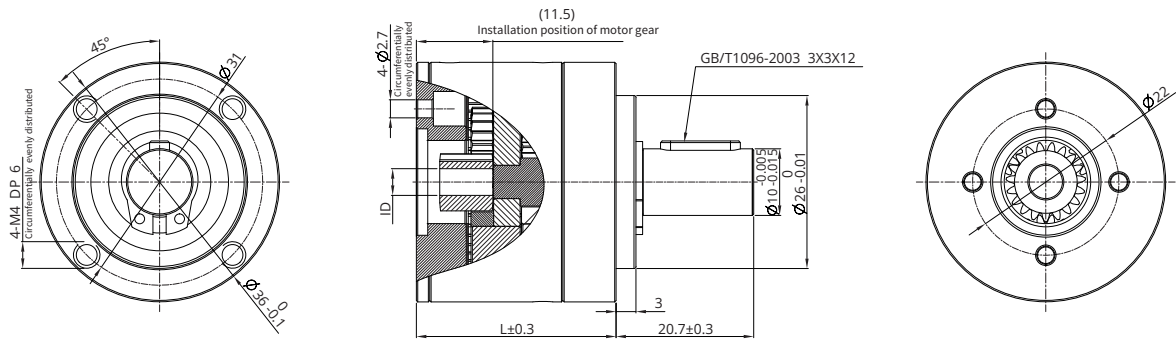


Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	3.9, 5.3	16, 21, 28	62, 83, 111, 150	243, 326, 439, 590, 794
Max. backlash	°	0.5	0.6	0.7	0.75
Max. continuous output power	W	100	50	25	8.0
Max. peak output power	W	125	62	31	10
Max. continuous input speed	rpm	6000	7000	7000	7000
Max. peak input speed	rpm	7500	8750	8750	8750
Max. continuous torque	N·m	1.25	2.9	5.0	5.0
Max. peak torque	N·m	1.6	3.6	6.3	6.3
Max. efficiency	%	90	81	72	65
Weight	g	103	150	174	198
Gearbox length L	mm	24.2	36.9	43.5	50.2



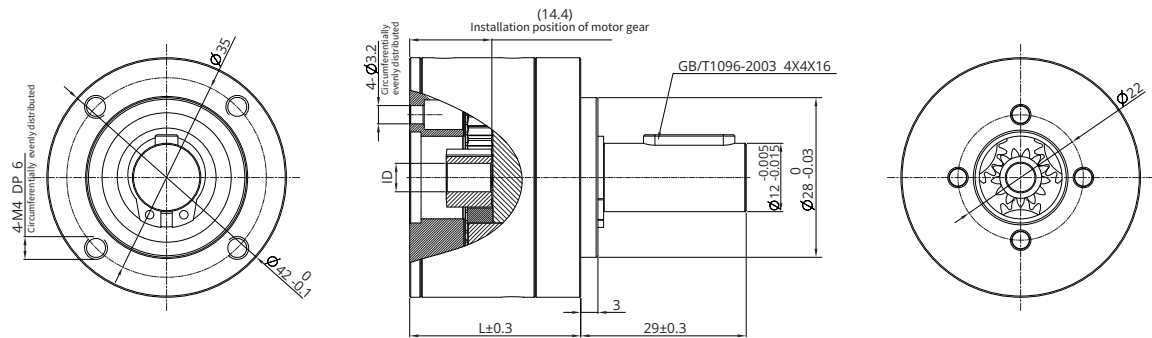
Accessories and Options

36PGX



Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	3.9, 5.3	16, 21, 28	62, 83, 111, 150	243, 326, 439, 590, 794
Max. backlash	°	0.5	0.6	0.7	0.8
Max. continuous output power	W	185	90	45	15
Max. peak output power	W	230	115	60	19
Max. continuous input speed	rpm	6000	6000	6000	6000
Max. peak input speed	rpm	7500	7500	7500	7500
Max. continuous torque	N·m	2.3	5.4	9.3	9.3
Max. peak torque	N·m	2.9	6.8	11.6	11.6
Max. efficiency	%	90	80	72	65
Weight	g	156	238	277	315
Gearbox length L	mm	30	44.7	51.3	58

42PGX



Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	3.9, 5.3	16, 21, 28	62, 83, 111, 150	243, 326, 439, 590, 794
Max. backlash	°	0.3	0.4	0.5	0.6
Max. continuous output power	W	480	200	85	20
Max. peak output power	W	600	250	106	25
Max. continuous input speed	rpm	6000	6000	6000	6000
Max. peak input speed	rpm	7500	7500	7500	7500
Max. continuous torque	N·m	3.0	7.5	15	15
Max. peak torque	N·m	4.5	11.3	22.5	22.5
Max. efficiency	%	90	81	72	64
Weight	g	252	405	476	544
Gearbox length L	mm	36.1	54.9	63.6	72.4

