

GGM

AC GEARED MOTOR
DC GEARED MOTOR

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[MODEL CODING SYSTEM]

AC MOTOR

KA 6150 A E — 01

INITIAL		MOTOR Section		Outline SIZE		Additional Function		MOTOR Section		Section
K-SERIES	A	AC MOTOR		6110	□61 X 10t	A	Standard type	J	AC 100V 50/60Hz	No. coding for standard product coding as serial no. except special model
				6115	□61 X 15t	B	BRAKE	U	AC 110V 50/60Hz	
				6120	□61 X 20t	C	CORK BRAKE		AC 115V 50/60Hz	
				6125	□61 X 25t	F	FAN	L	AC 200V 50/60Hz	
				6130	□61 X 30t	P	PIN CLUTCH	C	AC 230V 50/60Hz	
				6140	□61 X 40t	V	PIVOT	E	AC 220V 50/60Hz	
				6150	□61 X 50t					01
										...
										99

DC MOTOR

KD 3429 S 1 — 01

INITIAL		MOTOR Section		External SIZE		RPM		VOLTAGE		Section
K	GGM	D	DC	3429	∅34 X 29L	Q	1000이하	1	DC 12V	No. coding for standard product coding as serial no. except special model
E	ECM	B	BLDC	3448	∅34 X 48L	G	2000	2	DC 24V	
H	HAOSHENG			1230	∅12 X 30L	W	3000	3	DC 90V	
N	NICHIBO			1627	∅16 X 27L	X	4000	4	DC 180V	
N	NIDEC			2419	∅24 X 19L	S	5000	5	DC 220V	
				2531	∅25 X 31L	U	6000	B	DC 2.4V	
				2847	∅28 X 47L	T	7000	C	DC 3V	
				3640	∅36 X 40L	R	8000	A	DC 6V	
				3657	∅36 X 57L	P	9000	P	DC 36V	
				4266	∅42 X 66L	H	11000	9	DC 48V	
				4932	∅49 X 32L	L	12000	D	DC 125V	
						M	13000			01
										...
										99

GEARED MOTOR

KGB

0154

□ □ 6150BU

18

Section
GEAR HEAD NAME
K12
K16
...
...
KWA
KWC

Section
GEAR RATIO
0003
0005
...
...
2700
3240

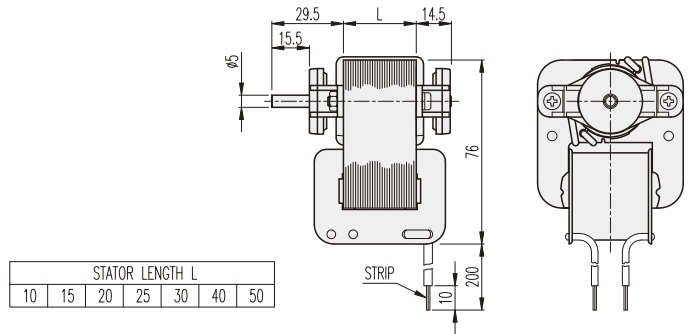
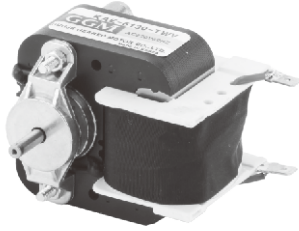
Section
Coding as the outline size of motor.
KD3429S1
NB3640S2
...
...
KA6130BU
KA6140AE

Section
No coding for standard product Coding as R&D serial no. for special model coding as serial no for other special & sample model
01
02
...
...
17
18

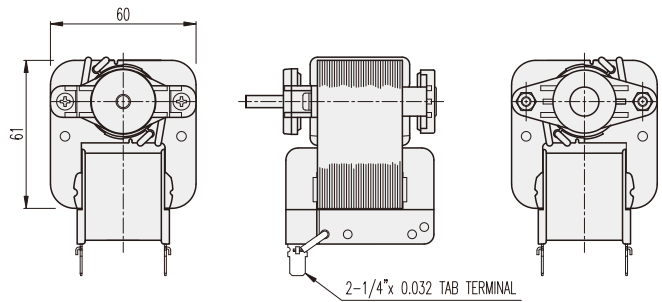
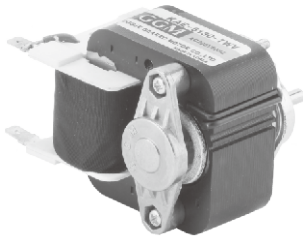
KA□-61□□-TYPE

DIMENSIONS

KA61□□ GENERAL TYPE SERIES



KA61□□ PIVOT TYPE SERIES



MOTOR PERFORMANCE DATA

MODEL	KA6120AU		KA6130AU		KA6140AU		KA6150AU	
VOLTAGE(V)	110AC		110AC		110AC		110AC	
FREQ. (Hz)	50	60	50	60	50	60	50	60
OUTPUT (W)	1.9	1.8	3.7	3.3	4.5	4.1	5.8	5.2
NO LOAD SPEED (rpm)	2850	3450	2850	3450	2850	3450	2850	3450
NO LOAD CURRENT (A)	0.28	0.22	0.35	0.30	0.37	0.32	0.45	0.40
START TORQ. (gf•cm)	55	35	90	60	110	80	150	120
STALL TORQ. (gf•cm)	95	65	153	120	187	145	255	200
RATED TORQ. (gf•cm)	77	60	150	110	182	137	235	174
RATED SPEED (rpm)	2400	2900	2400	2900	2400	2900	2400	2900
RUNNING TIME	CONTINUITY							

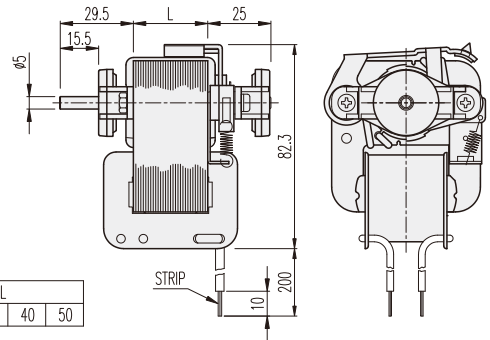
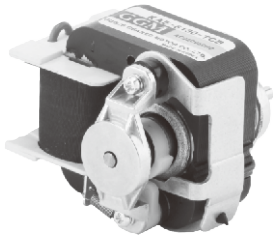
MOTOR PERFORMANCE DATA

MODEL	KA6120AE		KA6130AE		KA6140AE		KA6150AE	
VOLTAGE(V)	220AC		220AC		220AC		220AC	
FREQ. (Hz)	50	60	50	60	50	60	50	60
OUTPUT (W)	1.9	1.8	3.7	3.3	4.5	4.1	5.8	5.2
NO LOAD SPEED (rpm)	2850	3450	2850	3450	2850	3450	2850	3450
NO LOAD CURRENT (A)	0.14	0.11	0.18	0.15	0.19	0.16	0.23	0.20
START TORQ. (gf•cm)	55	35	90	60	110	80	150	120
STALL TORQ. (gf•cm)	95	65	153	120	187	145	255	200
RATED TORQ. (gf•cm)	77	60	150	110	182	137	235	174
RATED SPEED (rpm)	2400	2900	2400	2900	2400	2900	2400	2900
RUNNING TIME	CONTINUITY							

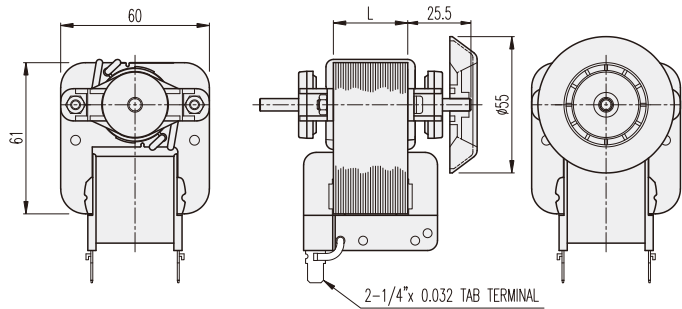
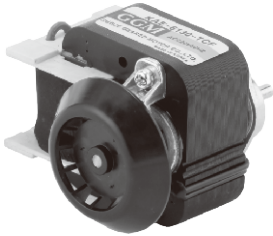
KA□-61□□-TYPE

DIMENSIONS

KA61□□ BRAKE TYPE SERIES



KA61□□ FAN TYPE SERIES



MOTOR PERFORMANCE DATA

MODEL	KA6120AU		KA6130AU		KA6140AU		KA6150AU	
	110AC		110AC		110AC		110AC	
FREQ. (Hz)	50	60	50	60	50	60	50	60
OUTPUT (W)	2.5	2.9	4.6	5	6.4	6.8	8.5	9.1
NO LOAD SPEED (rpm)	2850	3450	2850	3450	2850	3450	2850	3450
NO LOAD CURRENT (A)	1.4	1	2.1	1.50	2.3	1.8	3	2.40
START TORQ. (gf•cm)	90	70	170	145	240	195	300	255
STALL TORQ. (gf•cm)	130	115	320	300	400	350	520	480
RATED TORQ. (gf•cm)	101	97	186	137	260	229	345	305
RATED SPEED (rpm)	2400	2900	2400	2900	2400	2900	2400	2900
RUNNING TIME	5 MIN.							

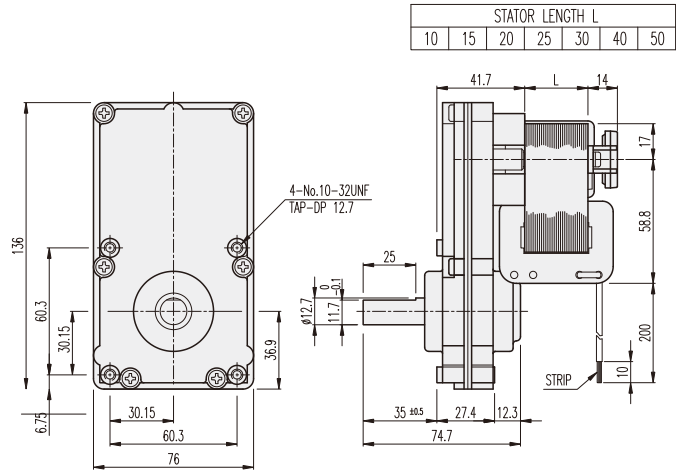
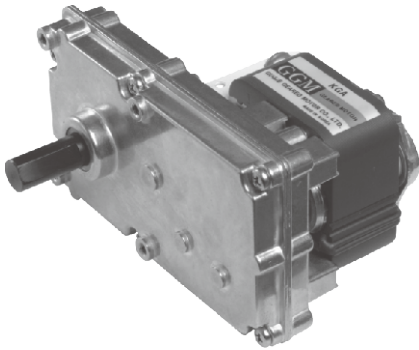
MOTOR PERFORMANCE DATA

MODEL	KA6120AE		KA6130AE		KA6140AE		KA6150AE	
	220AC		220AC		220AC		220AC	
FREQ. (Hz)	50	60	50	60	50	60	50	60
OUTPUT (W)	2.5	2.9	4.6	5	6.4	6.8	8.5	9.1
NO LOAD SPEED (rpm)	2850	3450	2850	3450	2850	3450	2850	3450
NO LOAD CURRENT (A)	0.7	0.5	1.1	0.7	1.2	0.9	1.5	1.20
START TORQ. (gf•cm)	90	70	170	145	240	195	300	255
STALL TORQ. (gf•cm)	130	115	320	300	400	350	520	480
RATED TORQ. (gf•cm)	101	97	186	137	260	229	345	305
RATED SPEED (rpm)	2400	2900	2400	2900	2400	2900	2400	2900
RUNNING TIME	5 MIN.							

KGA-TYPE

DIMENSIONS

KGA SERIES



AT MAXIMUM EFFICIENCY (KGA-□□□ - KA61□□)

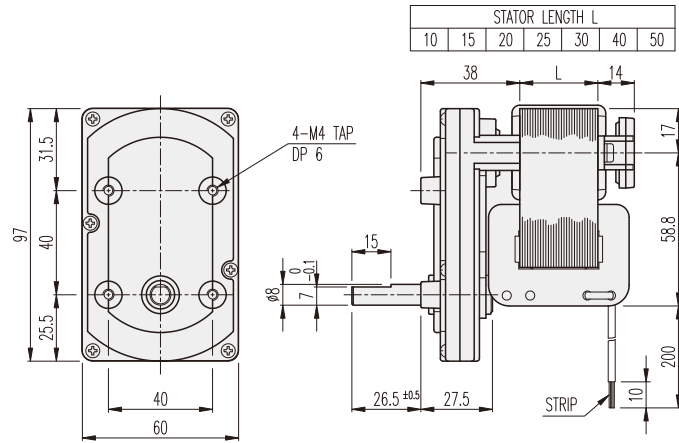
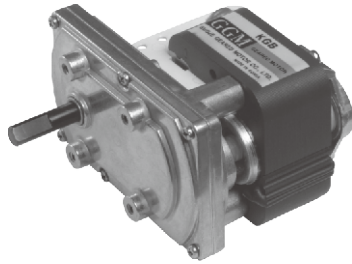
GEAR RATIO	MOTOR		KA6120□□				KA6130□□				KA6140□□				KA6150□□			
			50		60		50		60		50		60		50		60	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/460	5.2	23.2	6.3	18.0	5.2	45.2	6.3	33.2	5.2	50	6.3	50	5.2	50	6.3	50		
1/998	2.4	50	2.9	39.2	2.4	50	2.9	50	2.4	50	2.9	50	2.4	50	2.9	50		

* Above data is based on general type of shaded pole motor appliad.
 * These gear ratios are same rotation direction with motor.

KGB-TYPE

DIMENSIONS

KGB SERIES



AT MAXIMUM EFFICIENCY (KGB-□□□-KA61□□)

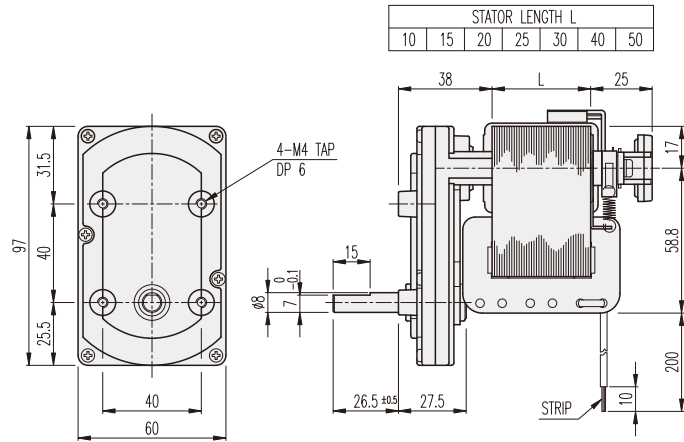
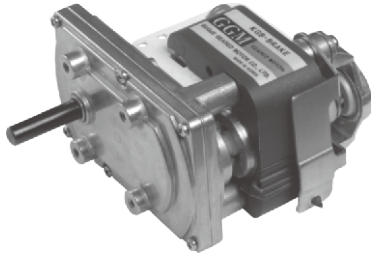
GEAR RATIO	MOTOR		KA6120□□				KA6130□□				KA6140□□				KA6150□□			
			50		60		50		60		50		60		50		60	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/010	240	0.6	290	0.4	240	1.1	290	0.8	240	1.3	290	1	240	1.7	290	1.3		
1/015	160	0.8	193.3	0.7	160	1.6	193.3	1.2	160	2	193.3	1.5	160	2.6	193.3	1.9		
1/021	114.3	1.2	138.1	0.9	114.3	2.3	138.1	1.7	114.3	2.8	138.1	2.1	114.3	3.6	138.1	2.7		
1/027	88.9	1.5	107.4	1.2	88.9	3	107.4	2.2	88.9	3.6	107.4	2.7	88.9	4.6	107.4	3.4		
1/036	66.7	2	80.6	1.6	66.7	3.9	80.6	2.9	66.7	4.8	80.6	3.6	66.7	6.2	80.6	4.6		
1/043	55.8	2.4	67.4	1.9	55.8	4.7	67.4	3.4	55.8	5.7	67.4	4.3	55.8	7.4	67.4	5.5		
1/047	51.1	2.6	61.7	2.1	51.1	5.1	61.7	3.8	51.1	6.2	61.7	4.7	51.1	8.1	61.7	6		
1/055	43.6	3.1	52.7	2.4	43.6	6	52.7	4.4	43.6	7.3	52.7	5.5	43.6	9.4	52.7	7		
1/060	40	3.4	48.3	2.6	40	6.6	48.3	4.8	40	8	48.3	6	40	10.3	48.3	7.6		
1/075	32	4.2	38.7	3.3	32	8.2	38.7	6	32	10	38.7	7.5	32	12.8	38.7	9.5		
1/086	27.9	4.8	33.7	3.8	27.9	9.4	33.7	6.9	27.9	11.4	33.7	8.6	27.9	14.7	33.7	10.9		
1/100	24	5.6	29	4.4	24	10.9	29	8	24	13.3	29	10	24	17.1	29	12.7		
1/115	20.9	6.5	25.2	5	20.9	12.6	25.2	9.2	20.9	15.3	25.2	11.5	20.9	19.7	25.2	14.6		
1/126	19	7.1	23	5.5	19	13.8	23	10.1	19	16.7	23	12.6	19	20	23	16		
1/131	18.3	7.4	22.1	5.7	18.3	14.3	22.1	10.5	18.3	17.4	22.1	13.1	18.3	20	22.1	16.6		
1/154	15.6	8.6	18.8	6.7	15.6	16.8	18.8	12.3	15.6	20	18.8	15.4	15.6	20	18.8	19.5		
1/172	14	9.7	16.9	7.5	14	18.8	16.9	13.8	14	20	16.9	17.2	14	20	16.9	20		
1/215	11.2	12.1	13.5	9.4	11.2	20	13.5	17.2	11.2	20	13.5	20	11.2	20	13.5	20		
1/300	8	15.2	9.7	11.8	8	20	9.7	20	8	20	9.7	20	8	20	9.7	20		
1/380	6.3	19.2	7.6	15	6.3	20	7.6	20	6.3	20	7.6	20	6.3	20	7.6	20		
1/408	5.9	20	7.1	16.1	5.9	20	7.1	20	5.9	20	7.1	20	5.9	20	7.1	20		
1/532	4.5	20	5.5	20	4.5	20	5.5	20	4.5	20	5.5	20	4.5	20	5.5	20		
1/673	3.6	20	4.3	20	3.6	20	4.3	20	3.6	20	4.3	20	3.6	20	4.3	20		
1/825	2.9	20	3.5	20	2.9	20	3.5	20	2.9	20	3.5	20	2.9	20	3.5	20		

* Above data is based on general type of shaded pole motor applied.
 * color gear ratios are same rotation direction with motor.
 * The standard is F-TYPE.

KGB-BRAKE TYPE

DIMENSIONS

KGB BRAKE SERIES



AT MAXIMUM EFFICIENCY (KGB-□□□-KA61□□)

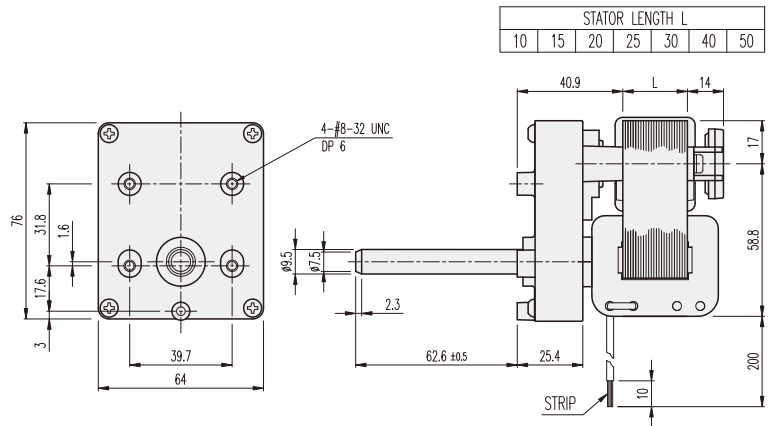
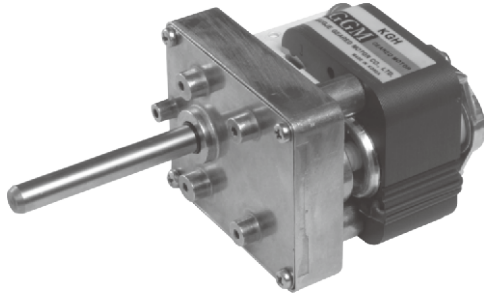
GEAR RATIO	MOTOR		KA6120□□		KA6130□□				KA6140□□				KA6150□□					
			50		60		50		60		50		60		50		60	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/010	240	0.7	290	0.7	240	1.4	290	1	240	1.9	290	1.7	240	2.5	290	2.2		
1/015	160	1.1	193.3	1.1	160	2	193.3	1.5	160	2.8	193.3	2.5	160	3.8	193.3	3.3		
1/021	114.3	1.5	138.1	1.5	114.3	2.8	138.1	2.1	114.3	4	138.1	3.5	114.3	5.3	138.1	4.7		
1/027	88.9	2.0	107.4	1.9	88.9	3.7	107.4	2.7	88.9	5.1	107.4	4.5	88.9	6.8	107.4	6		
1/036	66.7	2.7	80.6	2.5	66.7	4.9	80.6	3.6	66.7	6.8	80.6	6	66.7	9.1	80.6	8		
1/043	55.8	3.2	67.4	3	55.8	5.8	67.4	4.3	55.8	8.2	67.4	7.1	55.8	10.8	67.4	9.6		
1/047	51.1	3.5	61.7	3.3	51.1	6.4	61.7	4.7	51.1	8.9	61.7	7.8	51.1	11.8	61.7	10.5		
1/055	43.6	4	52.7	3.9	43.6	7.5	52.7	5.5	43.6	10.4	52.7	9.1	43.6	13.8	52.7	12.2		
1/060	40	4.4	48.3	4.2	40	8.1	48.3	6	40	11.4	48.3	10	40	15.1	48.3	13.3		
1/075	32	5.5	38.7	5.3	32	10.2	38.7	7.5	32	16.3	38.7	12.5	32	18.9	38.7	16.7		
1/086	27.9	6.3	33.7	6.1	27.9	11.7	33.7	8.6	27.9	19	33.7	14.3	27.9	20	33.7	19.1		
1/100	24	7.4	29	7.1	24	13.6	29	10	24	20	29	16.6	24	20	29	20		
1/115	20.9	8.5	25.2	8.1	20.9	15.6	25.2	11.5	20.9	20	25.2	19.1	20.9	20	25.2	20		
1/126	19	9.3	23	8.9	19	17.1	23	12.6	19	20	23	20	19	20	23	20		
1/131	18.3	9.6	22.1	9.3	18.3	17.8	22.1	13.1	18.3	20	22.1	20	18.3	20	22.1	20		
1/154	15.6	11.3	18.8	10.9	15.6	20	18.8	15.4	15.6	20	18.8	20	15.6	20	18.8	20		
1/172	14	12.7	16.9	12.2	14	20	16.9	17.2	14	20	16.9	20	14	20	16.9	20		
1/215	11.2	15.8	13.5	15.2	11.2	20	13.5	20	11.2	20	13.5	20	11.2	20	13.5	20		
1/300	8	19.9	9.7	19.1	8	20	9.7	20	8	20	9.7	20	8	20	9.7	20		
1/380	6.3	20	7.6	20	6.3	20	7.6	20	6.3	20	7.6	20	6.3	20	7.6	20		
1/408	5.9	20	7.1	20	5.9	20	7.1	20	5.9	20	7.1	20	5.9	20	7.1	20		
1/532	4.5	20	5.5	20	4.5	20	5.5	20	4.5	20	5.5	20	4.5	20	5.5	20		
1/673	3.6	20	4.3	20	3.6	20	4.3	20	3.6	20	4.3	20	3.6	20	4.3	20		
1/825	2.9	20	3.5	20	2.9	20	3.5	20	2.9	20	3.5	20	2.9	20	3.5	20		

* Above data is based on general type of shaded pole motor applied.
 * color gear ratios are same rotation direction with motor.
 * The standard is F-TYPE.

KGH-TYPE

DIMENSIONS

KGH SERIES



AT MAXIMUM EFFICIENCY (KGH-□□□-KA61□□)

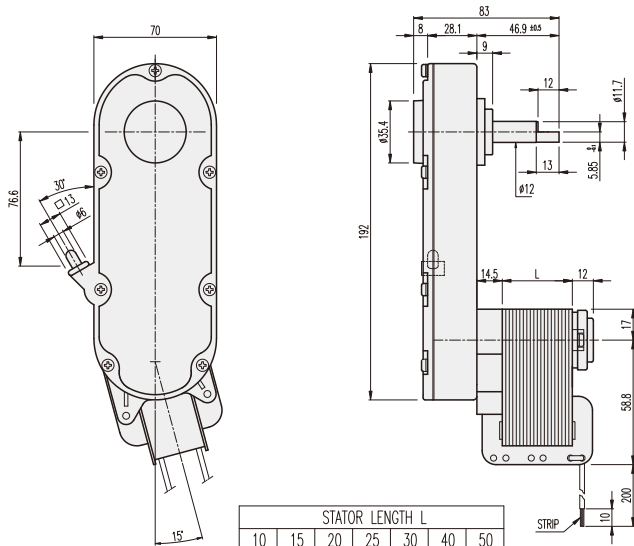
GEAR RATIO	MOTOR		KA6120□□				KA6130□□				KA6140□□				KA6150□□			
			50		60		50		60		50		60		50		60	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/015	160	0.8	193	0.7	160	1.6	193	1.2	160	2	193	1.5	160	2.5	193	1.8		
1/023	104	1.2	126	1	104	2.5	126	1.8	104	3	126	2.3	104	3.9	126	2.8		
1/036	67	2	81	1.6	67	3.9	81	2.9	67	4.8	81	3.6	67	6.1	81	4.5		
1/058	41	2.9	50	2.6	41	6.3	50	4.6	41	7.5	50	5.8	41	9.8	50	7.2		
1/075	32	4.2	39	3.3	32	8.2	39	6	32	9.9	39	7.5	32	12.8	39	9.5		
1/133	18	7.4	22	5.8	18	14.5	22	10.6	18	17.6	22	13.2	18	20	22	16.9		
1/220	11	11.1	13	8.6	11	20	13	15.9	11	20	13	20	11	20	13	20		

- * Above data is based on general type of shaded pole motor appliad.
- * □ color gear ratios are same rotation direction with motor.
- * The standard is F-TYPE.

KGL-TYPE

DIMENSIONS

KGL SERIES



AT MAXIMUM EFFICIENCY (KGL-82-KA61□□)

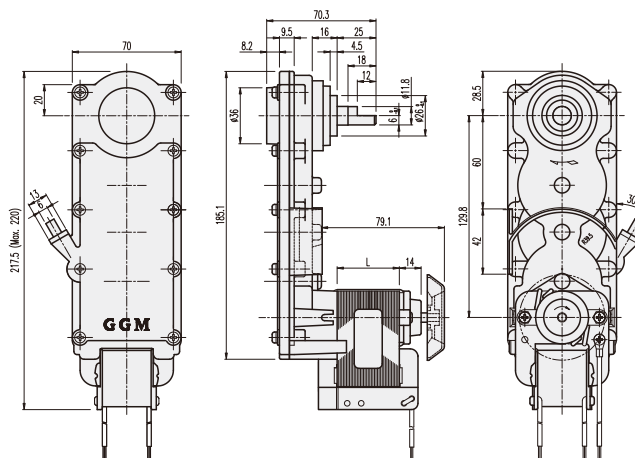
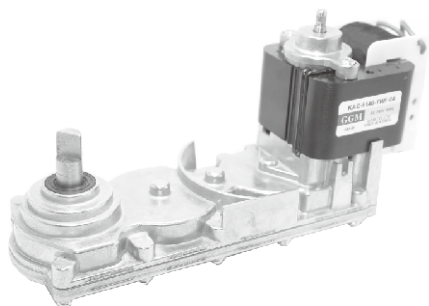
GEAR RATIO	MOTOR		KA6120□□				KA6130□□				KA6140□□				KA6150□□			
			50		60		50		60		50		60		50		60	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/82	29.2	5.7	35.3	4.5	29.2	11.1	35.3	8.1	29.2	13.4	35.3	10.1	29.2	17.3	35.3	12.8		

* Above data is based on general type of shaded pole motor appliad.

KGL2-TYPE

DIMENSIONS

KGL2 SERIES



STATOR LENGTH L						
10	15	20	25	30	40	50

AT MAXIMUM EFFICIENCY (KGL2-□□-KA61□□)

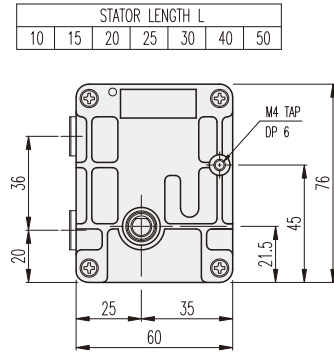
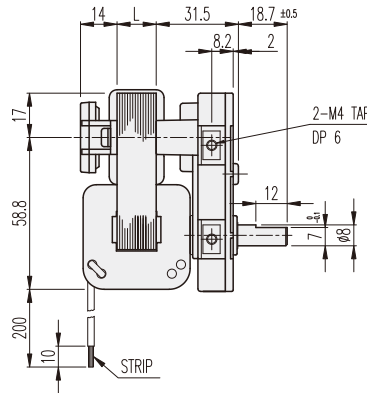
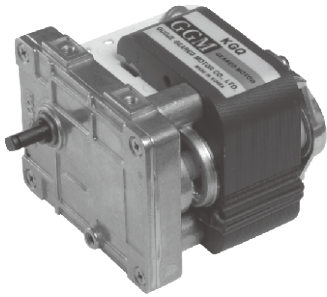
GEAR RATIO	MOTOR		KA6120□□				KA6130□□				KA6140□□				KA6150□□			
			50		60		50		60		50		60		50		60	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/85	28.2	5.9	34.1	4.9	28.2	11.5	34.1	8.4	28.2	13.9	34.1	10.5	28.2	17.9	34.1	13.2		

* Above data is based on general type of shaded pole motor appliad.

KGQ-TYPE

DIMENSIONS

KGQ SERIES



AT MAXIMUM EFFICIENCY (KGQ-□□□-KA61□□)

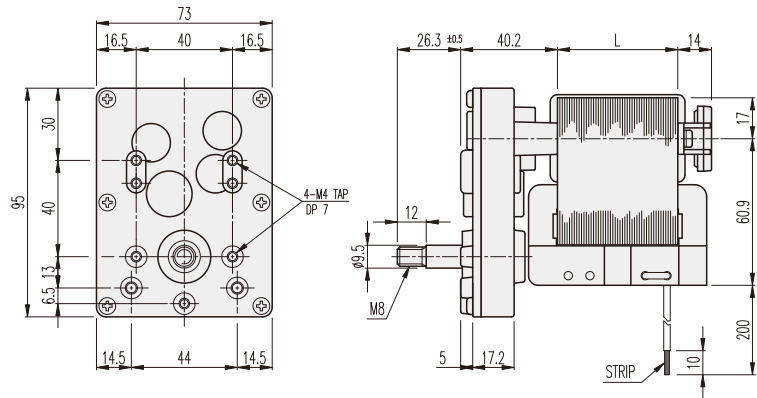
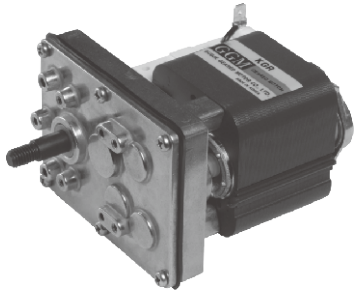
GEAR RATIO	MOTOR		KA6120□□				KA6130□□				KA6140□□				KA6150□□			
			50		60		50		60		50		60		50		60	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/096	25	4.8	30.2	3.8	25	9.4	30.2	6.9	25	11.4	30.2	8.6	25	14.8	30.2	10.9		
1/380	6.3	19.2	7.6	14.9	6.3	20	7.6	20	6.3	20	7.6	20	6.3	20	7.6	20		
1/532	4.5	20	5.4	20	4.5	20	5.4	20	4.5	20	5.4	20	4.5	20	5.4	20		

* Above data is based on general type of shaded pole motor appliad.
 * These gear ratios are same rotation direction with motor.

KGR-TYPE

DIMENSIONS

KGR SERIES



AT MAXIMUM EFFICIENCY (KGR-□□□-KA61□□)

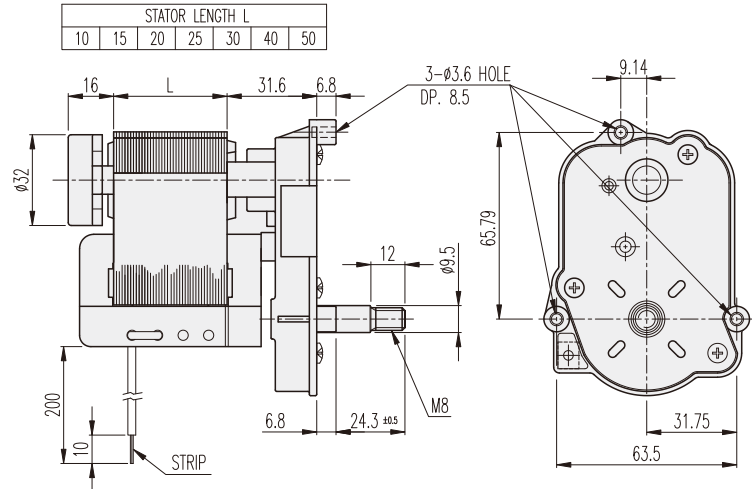
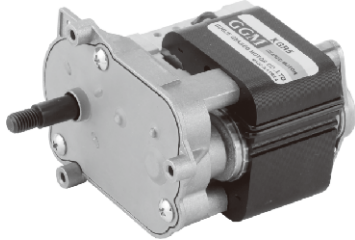
GEAR RATIO	MOTOR		KA6120□□				KA6130□□				KA6140□□				KA6150□□			
			50		60		50		60		50		60		50		60	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/123	19.5	6.2	23.5	4.8	19.5	12.1	23.5	8.9	19.5	14.7	23.5	11	19.5	18.9	23.5	14		
1/136	17.6	6.8	21.3	5.3	17.6	13.3	21.3	9.8	17.6	16.2	21.3	12.2	17.6	20.9	21.3	15.5		
1/192	12.5	9.7	15.1	7.5	12.5	18.9	15.1	13.8	12.5	22.9	15.1	17.2	12.5	29.6	15.1	21.9		

* Above data is based on general type of shaded pole motor applied.
 * color gear ratios are same rotation direction with motor.

KGR5-TYPE

DIMENSIONS

KGR5 SERIES



AT MAXIMUM EFFICIENCY (KGR-□□□-KA61□□)

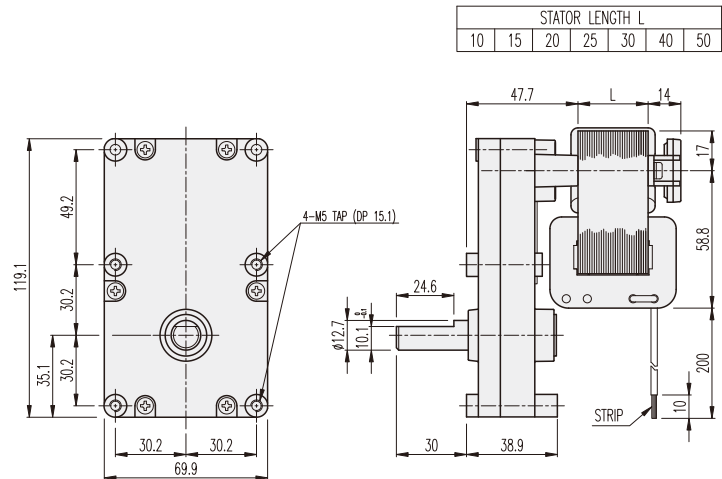
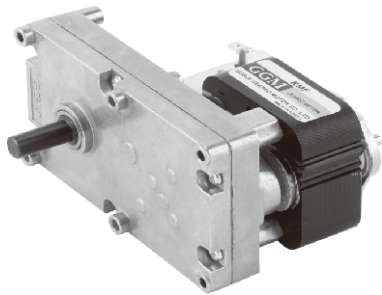
GEAR RATIO	MOTOR		KA6120□□				KA6130□□				KA6140□□				KA6150□□			
			50		60		50		60		50		60		50		60	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/124	19.3	6.2	23.3	4.8	19.3	12.1	23.3	8.9	19.3	14.7	23.3	11	19.3	18.9	23.3	14		
1/192	12.5	9.7	15.1	7.5	12.5	18.9	15.1	13.8	12.5	22.9	15.1	17.2	12.5	29.6	15.1	21.9		

* Above data is based on general type of shaded pole motor applied.
 * These ratios are opposite with motor rotation direction.

KMF-TYPE

DIMENSIONS

KMF SERIES



AT MAXIMUM EFFICIENCY (KMF-□□□□-KA61□□)

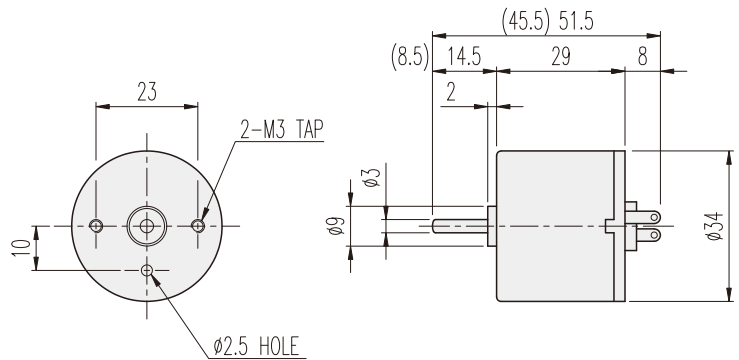
GEAR RATIO	MOTOR		KA6120□□				KA6130□□				KA6140□□				KA6150□□			
			50		60		50		60		50		60		50		60	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/150	17	8.4	20	6.6	17	16.4	20	12	17	20	20	15	17	25.7	20	19		
1/330	7.9	14.5	9.1	11.3	7.9	28.3	9.1	20.8	7.9	30	9.1	25.9	7.9	30	9.1	30		
1/500	5.2	22.3	6.1	17.3	5.2	30	6.1	30	5.2	30	6.1	30	5.2	30	6.1	30		
1/550	4.7	25	5.5	19.5	4.7	30	5.5	30	4.7	30	5.5	30	4.7	30	5.5	30		
1/760	3.4	30	3.9	27.3	3.4	30	3.9	30	3.4	30	3.9	30	3.4	30	3.9	30		
1/850	3	30	3.5	30	3	30	3.5	30	3	30	3.5	30	3	30	3.5	30		
1/940	2.8	30	3.2	30	2.8	30	3.2	30	2.8	30	3.2	30	2.8	30	3.2	30		
1/1410	1.8	30	2.1	30	1.8	30	2.1	30	1.8	30	2.1	30	1.8	30	2.1	30		
1/1740	1.5	30	1.7	30	1.5	30	1.7	30	1.5	30	1.7	30	1.5	30	1.7	30		
1/2250	1.2	30	1.4	30	1.2	30	1.4	30	1.2	30	1.4	30	1.2	30	1.4	30		
1/2360	1.1	30	1.3	30	1.1	30	1.3	30	1.1	30	1.3	30	1.1	30	1.3	30		
1/2610	1	30	1.2	30	1	30	1.2	30	1	30	1.2	30	1	30	1.2	30		
1/3140	0.8	30	1	30	0.8	30	1	30	0.8	30	1	30	0.8	30	1	30		

* Above data is based on general type of shaded pole motor appliad.
 * These ratios are opposite with motor rotation direction.
 * The standard is F-TYPE.

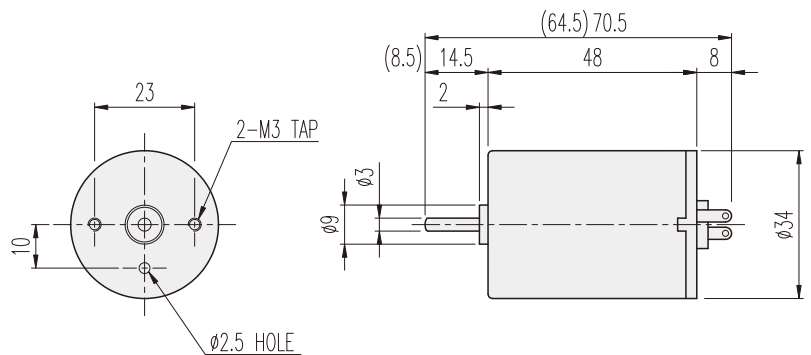
KD□-34□□-TYPE

DIMENSIONS

KD□ -3429 SERIES



KD□ -3448 SERIES

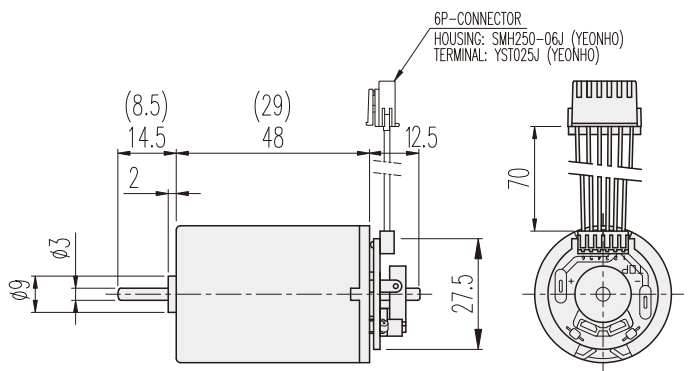


KD□ -3429 & 3448 ENCODER SERIES



6P-CONNECTOR Wire connection contents

No.	Wire connection contents	Remarks
1	DC MOOTR (+) Voltage	In case of supplying power MOTOR CCW-Turning
2	DC MOOTR (-) Voltage	
3	H/SENSOR (+) Voltage	Vcc (+) DC 5 ~ 24V
4	H/SENSOR (-) Voltage	GROUND
5	H/SENSOR #1 OUT	OPEN COLLECTOR MAX. DC 24V -50mA
6	H/SENSOR #1 OUT	



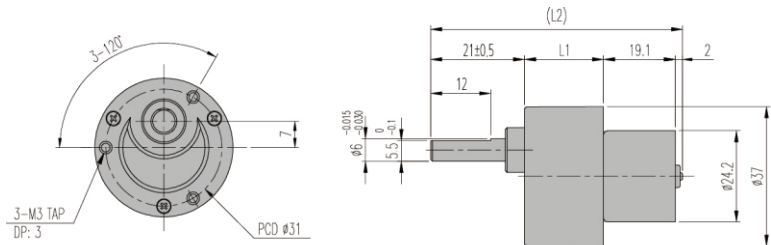
PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.		STALL		WEIGHT (g)	
			mA	rpm	gf-cm	A	rpm	A		gf-cm
KD3429S1		12V	120	5200	40	0.3	4500	1.7	360	90
KD3429S2		24V	70	5200	40	0.2	4500	1	370	
KD3429T1		12V	150	7500	40	0.5	6500	3.8	420	
KD3429T2		24V	80	7500	40	0.2	6500	1.2	320	
KD3429P1		12V	200	9500	80	1	8000	3.8	330	140
KD3429P2		24V	100	9500	40	0.3	8000	2	350	
KD3448S1		12V	150	5200	80	0.5	4500	3.2	830	
KD3448S2		24V	80	5200	80	0.3	4500	2	790	
KD3448T1		12V	220	7500	80	0.7	6500	5	730	
KD3448T2		24V	100	7500	80	0.4	6500	3	700	
KD3448P1		12V	300	9000	80	0.8	8000	5.5	670	
KD3448P2		24V	200	9000	80	0.5	8000	3.5	750	

KGC-TYPE

DIMENSIONS

KGC-2419 BLDC SERIES



GEARHEAD LENGTH

RATIO	L1	L2
1/002 ~ 1/030	21	67.1
1/040 ~ 1/210	29	75.1
1/240 ~ 1/2430	33.7	79.8

BLDC MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			WEIGHT (g)
			mA	rpm	gf-cm	mA	rpm	
NB2419U1		12V	120	6200	25	200	4500	30
NB2419R2		24V	100	8700	18	180	7200	

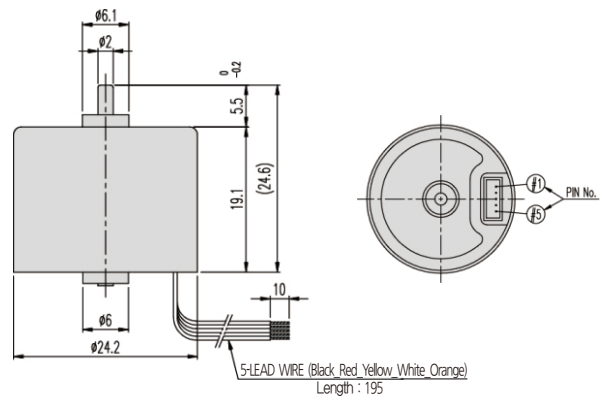
AT MAXIMUM EFFICIENCY

GEAR	MODEL	NB2419U1 DC 12V		NB2419R2 DC 24V	
		rpm	kgf-cm	rpm	kgf-cm
1/002		2250	0.03	3600	0.02
1/003		1500	0.05	2400	0.03
1/005		900	0.08	1440	0.06
1/010		450	0.16	720	0.12
1/015		300	0.22	480	0.16
1/020		225	0.29	360	0.21
1/025		180	0.36	288	0.26
1/030		150	0.44	240	0.31
1/040		112.5	0.52	180	0.38
1/050		90	0.66	144	0.47
1/060		75	0.79	120	0.57
1/070		64.3	0.92	102.9	0.66
1/080		56.3	9.45	90	6.8
1/083		54.2	0.98	86.7	0.71
1/090		50	1.18	80	0.85
1/100		45	1.18	72	0.85
1/120		37.5	1.42	60	1.02
1/150		30	1.77	48	1.28
1/180		25	2.13	40	1.53
1/200		22.5	2.13	36	1.53
1/210		21.4	2.48	34.3	1.79
1/240		18.8	2.55	30	1.84
1/300		15	3.19	24	2.3
1/360		12.5	3.83	20	2.75
1/400		11.3	4.78	18	3.44
1/500		9	4.78	14.4	3.44
1/600		7.5	5.74	12	4.13
1/750		6	6	9.6	5.17
1/900		5	6	8.0	6
1/1080		4.2	6	7	6
1/1350		3.3	6	5.3	6
1/1620		2.8	6	4.4	6
1/2430		1.9	6	3	6

How to connect when speed control is not needed.

No - Color	Pin - Contents	Connection Method
1 - Black	GND	connecting to (-) power
2 - Red	12V	connecting to (+) power
3 - Yellow	1FG	No Use
4 - White	PWM	CW connecting to (-) power
5 - Orange	CW/CCW	Normal Open, CCW connecting to (-) power

* Please be cautious that Motor can be damaged when connected to incorrect power (+) (-).

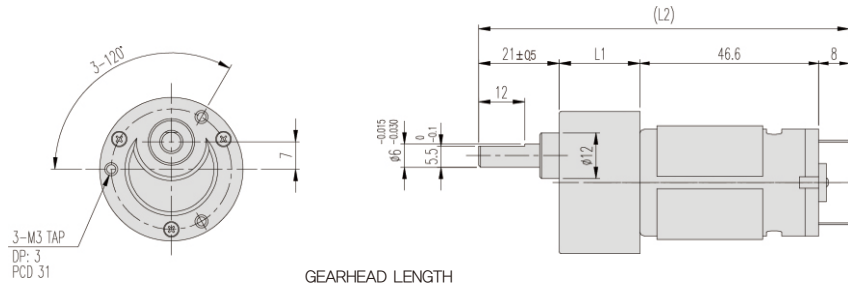


- * color gear ratios are same rotation direction with motor.
- * Proceed function change in motor stop type.
- * Controller for speed control is GUN type.

KGC-TYPE

DIMENSIONS

KGC-2847 SERIES



GEARHEAD LENGTH

RATIO	L1	L2
1/002 ~ 1/030	21	96,6
1/040 ~ 1/210	29	104,6
1/240 ~ 1/2430	33,7	109,3

MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			STALL		WEIGHT (g)
			mA	rpm	gf-cm	A	rpm	A	gf-cm	
ND2847T1		12V	170	7300	90	0.65	6300	5	830	110
ND2847T2		24V	90	7300	110	0.4	6300	2.8	870	

AT MAXIMUM EFFICIENCY

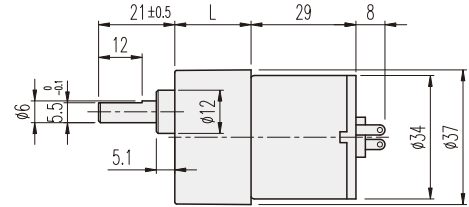
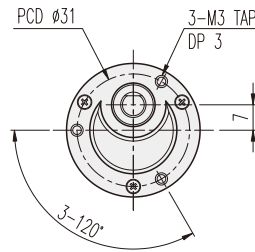
GEAR	MODEL	ND2847T1		ND2847T2	
		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm
1/002		3150	0.12	3150	0.14
1/003		2100	0.17	2100	0.21
1/005		1260	0.29	1260	0.36
1/010		630	0.58	630	0.71
1/015		420	0.79	420	0.96
1/020		315	1.05	315	1.28
1/025		252	1.31	252	2
1/030		210	1.57	210	1.92
1/040		157.5	1.89	157.5	2.31
1/050		126	2.36	126	2.89
1/060		105	2.83	105	3.46
1/070		90	3.31	90	4.04
1/080		78.8	3.4	78.8	4.2
1/083		75.9	3.53	75.9	4.31
1/090		70	4.25	70	5
1/100		63	4.25	63	5
1/120		52.5	5.1	52.5	6
1/150		42	6	42	6
1/180		35	6	35	6
1/200		31.5	6	31.5	6
1/210		30	6	30	6
1/240		26.3	6	26.3	6
1/300		21	6	21	6
1/360		17.5	6	17.5	6
1/400		15.8	6	15.8	6
1/500		12.6	6	12.6	6
1/600		10.5	6	10.5	6
1/750		8.4	6	8.4	6
1/900		7	6	7	6
1/1080		5.8	6	5.8	6
1/1350		4.7	6	4.7	6
1/1620		3.9	6	3.9	6
1/2430		2.6	6	2.6	6

* color gear ratios are same rotation direction with motor.

KGC-TYPE

DIMENSIONS

KGC-3429 SERIES



GEARHEAD LENGTH

RATIO	L
1/002 ~ 1/030	21
1/040 ~ 1/210	29
1/240 ~ 1/2430	33.7

AT MAXIMUM EFFICIENCY (KGC-□□□□-KD3429□□)

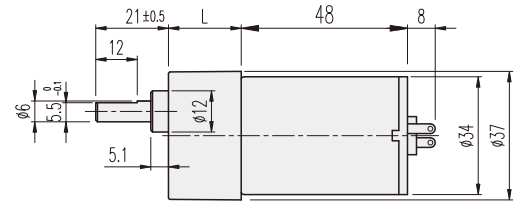
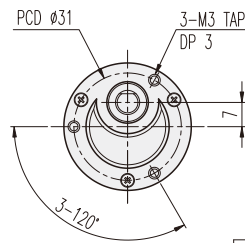
GEAR	MODEL		KD3429S1		KD3429S2		KD3429T1		KD3429T2		KD3429P1		KD3429P2	
			DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/002	2250	0.06	2250	0.06	3250	0.06	3250	0.06	4000	0.13	4000	0.06		
1/003	1500	0.1	1500	0.1	2166	0.1	2166	0.1	2166	0.2	2166	0.1		
1/005	900	0.16	900	0.16	1300	0.16	1300	0.16	1600	0.3	1600	0.16		
1/010	450	0.29	450	0.29	650	0.29	650	0.29	800	0.65	800	0.29		
1/015	300	0.44	300	0.44	433	0.44	433	0.44	533.3	0.87	533.3	0.44		
1/020	225	0.58	225	0.58	325	0.58	325	0.58	400	1.16	400	0.58		
1/025	180	0.7	180	0.7	260	0.7	260	0.7	320	1.46	320	0.7		
1/030	150	0.9	150	0.9	217	0.9	217	0.9	267	1.75	267	0.9		
1/040	112.5	1	112.5	1	163	1	163	1	200	2.1	200	1		
1/050	90	1.3	90	1.3	130	1.3	130	1.3	160	2.6	160	1.3		
1/060	75	1.6	75	1.6	108	1.6	108	1.6	133	3.15	133	1.6		
1/070	64.3	1.65	64.3	1.65	93	1.65	93	1.65	114	3.67	114	1.65		
1/083	54.2	1.95	54.2	1.95	78	1.95	78	1.95	96	3.9	96	1.95		
1/090	50	2.1	50	2.1	72	2.1	72	2.1	89	4.7	89	2.1		
1/100	45	2.3	45	2.3	65	2.3	65	2.3	80	4.7	80	2.3		
1/120	37.5	2.8	37.5	2.8	54	2.8	54	2.8	67	5.7	67	2.8		
1/150	30	3.5	30	3.5	43	3.5	43	3.5	53	6	53	3.5		
1/180	25	4.2	25	4.2	36	4.2	36	4.2	44	6	44	4.2		
1/200	22.5	4.7	22.5	4.7	32.5	4.7	32.5	4.7	40	6	40	4.7		
1/210	21.4	4.9	21.4	4.9	31	4.9	31	4.9	38	6	38	4.9		
1/240	18.7	5.1	18.7	5.1	27	5.1	27	5.1	33	6	33	5.1		
1/300	15	6	15	6	21.6	6	21.6	6	26.7	6	26.7	6		
1/360	12.5	6	12.5	6	18	6	18	6	22.2	6	22.2	6		
1/400	11.2	6	11.2	6	16.2	6	16.2	6	20	6	20	6		
1/500	9	6	9	6	13	6	13	6	16	6	16	6		
1/600	7.5	6	7.5	6	10.8	6	10.8	6	13.3	6	13.3	6		
1/750	6	6	6	6	8.7	6	8.7	6	10.6	6	10.6	6		
1/900	5	6	5	6	7.2	6	7.2	6	8.9	6	8.9	6		
1/1080	4.1	6	4.1	6	6	6	6	6	7.4	6	7.4	6		
1/1350	3.3	6	3.3	6	4.8	6	4.8	6	5.9	6	5.9	6		
1/1620	2.8	6	2.8	6	4	6	4	6	4.9	6	4.9	6		
1/2430	1.8	6	1.8	6	2.7	6	2.7	6	3.3	6	3.3	6		

* color gear ratios are same rotation direction with motor.

KGC-TYPE

DIMENSIONS

KGC-3448 SERIES



GEARHEAD LENGTH

RATIO	L
1/002 ~ 1/030	21
1/040 ~ 1/210	29
1/240 ~ 1/2430	33.7

AT MAXIMUM EFFICIENCY (KGC-□□□□-KD3448□□)

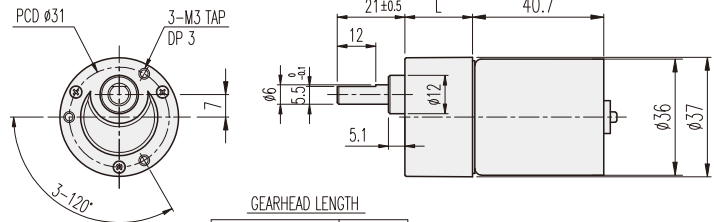
GEAR	MODEL		KD3448S1		KD3448S2		KD3448T1		KD3448T2		KD3448P1		KD3448P2	
			DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/002	2250	0.13	2250	0.13	3250	0.13	3250	0.13	4000	0.13	4000	0.13		
1/003	1500	0.19	1500	0.19	2167	0.19	2167	0.19	2667	0.19	2667	0.19		
1/005	900	0.32	900	0.32	1300	0.32	1300	0.32	1600	0.32	1600	0.32		
1/010	450	0.65	450	0.65	650	0.65	650	0.65	800	0.65	800	0.65		
1/015	300	0.87	300	0.87	433.3	0.87	433.3	0.87	533	0.87	533	0.87		
1/020	225	1.1	225	1.1	325	1.1	325	1.1	400	1.1	400	1.1		
1/025	180	1.4	180	1.4	260	1.4	260	1.4	320	1.4	320	1.4		
1/030	150	1.7	150	1.7	216.6	1.7	216.6	1.7	267	1.7	267	1.7		
1/040	112.5	2.1	112.5	2.1	162.5	2.1	162.5	2.1	200	2.1	200	2.1		
1/050	90	2.6	90	2.6	130	2.6	130	2.6	160	2.6	160	2.6		
1/060	75	3.1	75	3.1	108.3	3.1	108.3	3.1	133	3.1	133	3.1		
1/070	64.3	3.3	64.3	3.3	92.8	3.3	92.8	3.3	114.3	3.3	114.3	3.3		
1/083	54.2	3.9	54.2	3.9	78.3	3.9	78.3	3.9	96.4	3.9	96.4	3.9		
1/090	50	4.2	50	4.2	72.2	4.2	72.2	4.2	88.9	4.2	88.9	4.2		
1/100	45	4.7	45	4.7	65	4.7	65	4.7	80	4.7	80	4.7		
1/120	37.5	5.6	37.5	5.6	54.1	5.6	54.1	5.6	66.7	5.6	66.7	5.6		
1/150	30	6	30	6	43.3	6	43.3	6	53.3	6	53.3	6		
1/180	25	6	25	6	36.1	6	36.1	6	44.4	6	44.4	6		
1/200	22.5	6	22.5	6	32.5	6	32.5	6	40	6	40	6		
1/210	21.4	6	21.4	6	30.9	6	30.9	6	38.1	6	38.1	6		
1/240	18.7	6	18.7	6	27.1	6	27.1	6	33.3	6	33.3	6		
1/300	15	6	15	6	21.6	6	21.6	6	26.7	6	26.7	6		
1/360	12.5	6	12.5	6	18	6	18	6	22.2	6	22.2	6		
1/400	11.2	6	11.2	6	16.2	6	16.2	6	20	6	20	6		
1/500	9	6	9	6	13	6	13	6	16	6	16	6		
1/600	7.5	6	7.5	6	10.8	6	10.8	6	13.3	6	13.3	6		
1/750	6	6	6	6	8.6	6	8.6	6	10.7	6	10.7	6		
1/900	5	6	5	6	7.2	6	7.2	6	8.9	6	8.9	6		
1/1080	4.1	6	4.1	6	6	6	6	6	7.4	6	7.4	6		
1/1350	3.3	6	3.3	6	4.8	6	4.8	6	5.9	6	5.9	6		
1/1620	2.8	6	2.8	6	4	6	4	6	4.9	6	4.9	6		
1/2430	1.8	6	1.8	6	2.6	6	2.6	6	3.3	6	3.3	6		

* color gear ratios are same rotation direction with motor.

KGC-TYPE

DIMENSIONS

KGC-3640 BLDC SERIES



GEARHEAD LENGTH

RATIO	L
1/002 ~ 1/030	21
1/040 ~ 1/210	29
1/240 ~ 1/2430	33.7

BLDC MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			WEIGHT (g)
			mA	rpm	gf-cm	A	rpm	
NB3640S1		12V	500	5300	150	1.2	4500	150
NB3640S2		24V	300	5000	250	0.8	3900	

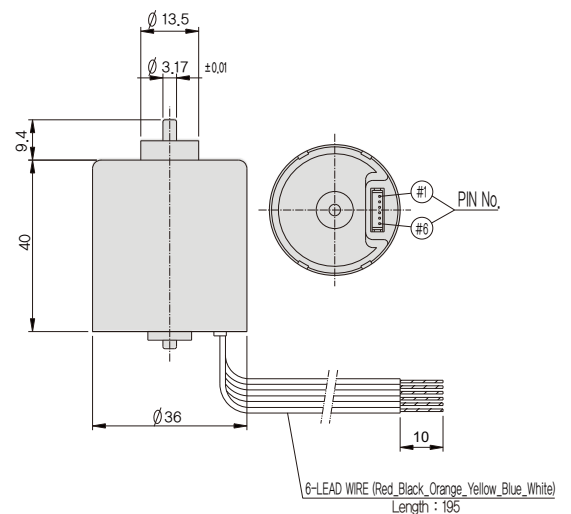
AT MAXIMUM EFFICIENCY (KGC-□□□□-NB3640S□)

GEAR	MODEL	NB3640S1		NB3640S2	
		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm
1/002		2250	0.24	1950	0.4
1/003		1500	0.36	1300	0.6
1/005		900	0.6	780	1
1/010		450	1.2	390	2
1/015		300	1.6	260	2.7
1/020		225	2.2	195	3.6
1/025		180	2.7	156	4.5
1/030		150	3.3	130	5.4
1/040		112.5	3.9	97.5	6
1/050		90	4.9	78	6
1/060		75	5.9	65	6
1/070		64	6	55.7	6
1/083		54	6	47	6
1/090		50	6	43.3	6
1/100		45	6	39	6
1/120		37.5	6	32.5	6
1/150		30	6	26	6
1/180		25	6	21.6	6
1/200		22.5	6	19.5	6
1/210		21.4	6	18.5	6
1/240		18.7	6	16.2	6
1/300		15	6	13	6
1/360		12.5	6	10.8	6
1/400		11.2	6	9.7	6
1/500		9	6	7.8	6
1/600		7.5	6	6.5	6
1/750		6	6	5.2	6
1/900		5	6	4.3	6
1/1080		4.1	6	3.6	6
1/1350		3.3	6	2.8	6
1/1620		2.7	6	2.4	6
1/2430		1.8	6	1.6	6

How to connect when speed control is not needed.

No - Color	Pin - Contents	Connection Method
1 - White	Brake	No Use, (-) connectin Brake
2 - Blue	PWM	connecting to (-) power
3 - Yellow	1FG(6P/R)	No Use
4 - Orange	CW/CCW	Normal Open, CCW connecting to (-) power
5 - Black	GND	connecting to (-) power
6 - Red	24V	connecting to (+) power

* Please be cautious that Motor can be damaged when connected to incorrect power (+) (-).

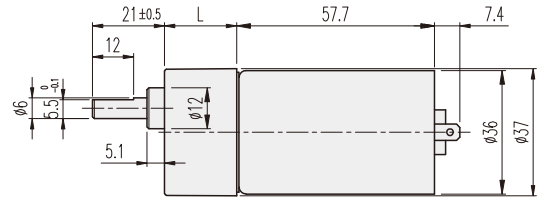
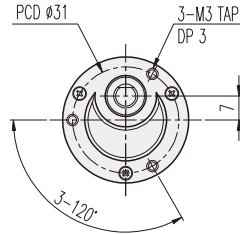


- * color gear ratios are same rotation direction with motor.
- * Proceed function change in motor stop type.
- * Controller for speed control is GUN type.

KGC-TYPE

DIMENSIONS

KGC-3657 SERIES



GEARHEAD LENGTH

RATIO	L
1/002 ~ 1/030	21
1/040 ~ 1/210	29
1/240 ~ 1/2430	33.7

MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			STALL		WEIGHT (g)
			mA	rpm	gf-cm	A	rpm	A	gf-cm	
ND3657U1		12V	300	6000	200	1.5	5000	10	1.6	200
ND3657U2		24V	150	6000	200	0.9	5000	5	1.6	

AT MAXIMUM EFFICIENCY (KGC-□□□□-ND3657U□)

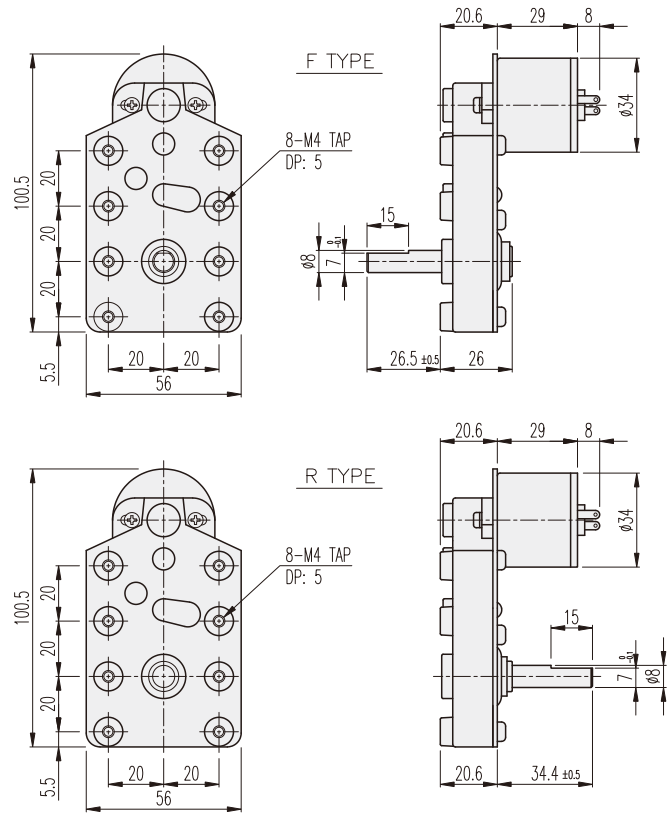
GEAR	MODEL	ND3657U1		ND3657U2	
		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm
1/002		2500	0.3	2500	0.3
1/003		1666	0.5	1666	0.5
1/005		1000	0.8	1000	0.8
1/010		500	1.6	500	1.6
1/015		333	2.1	333	2.1
1/020		250	2.9	250	2.9
1/025		200	3.6	200	3.6
1/030		166	4.3	166	4.3
1/040		125	5.2	125	5.2
1/050		100	6	100	6
1/060		83	6	83	6
1/070		71	6	71	6
1/083		60	6	60	6
1/090		55	6	55	6
1/100		50	6	50	6
1/120		41	6	41	6
1/150		33	6	33	6
1/180		27.7	6	27.7	6
1/200		25	6	25	6
1/210		23.8	6	23.8	6
1/240		20.8	6	20.8	6
1/300		16.6	6	16.6	6
1/360		13.8	6	13.8	6
1/400		12.5	6	12.5	6
1/500		10	6	10	6
1/600		8.3	6	8.3	6
1/750		6.6	6	6.6	6
1/900		5.5	6	5.5	6
1/1080		4.6	6	4.6	6
1/1350		3.7	6	3.7	6
1/1620		3	6	3	6
1/2430		2	6	2	6

* color gear ratios are same rotation direction with motor.

KGE-TYPE

DIMENSIONS

KGE-3429 SERIES



AT MAXIMUM EFFICIENCY (KGE-□□□-KD3429□□)

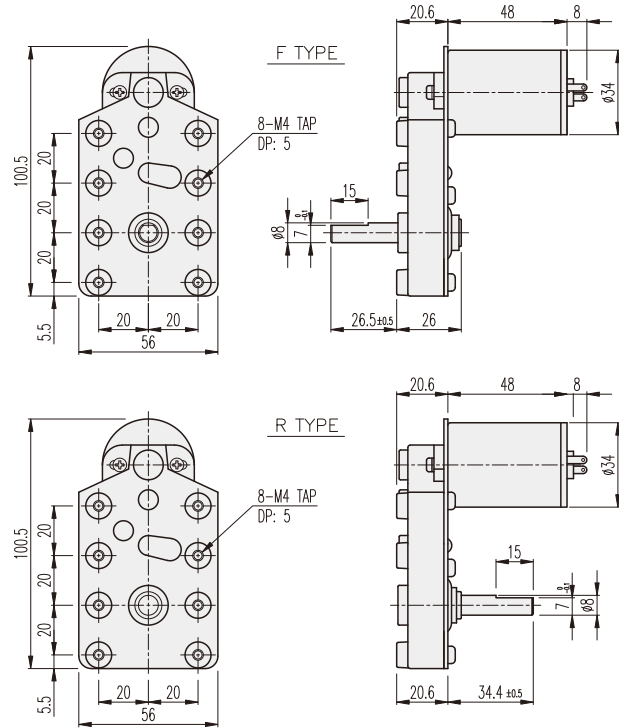
GEAR	MODEL		KD3429S1		KD3429S2		KD3429T1		KD3429T2		KD3429P1		KD3429P2	
			DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/022	205	0.6	205	0.6	295	0.6	295	0.6	364	1.3	364	0.6		
1/034	132	1	132	1	191	1	191	1	235	2	235	1		
1/043	104.7	1.3	104.7	1.3	151	1.3	151	1.3	186	2.5	186	1.3		
1/050	90	1.5	90	1.5	130	1.5	130	1.5	160	2.9	160	1.5		
1/062	72.6	1.8	72.6	1.8	105	1.8	105	1.8	129	3.6	129	1.8		
1/068	66.2	2	66.2	2	95.5	2	95.5	2	117.6	4	117.6	2		
1/083	54.2	2.4	54.2	2.4	78.3	2.4	78.3	2.4	96.4	4.8	96.4	2.4		
1/105	42.9	3	42.9	3	62	3	62	3	76.2	6.1	76.2	3		
1/116	38.8	3.4	38.8	3.4	56	3.4	56	3.4	69	6.8	69	3.4		
1/162	27.8	4.3	27.8	4.3	40	4.3	40	4.3	49.4	8.5	49.4	4.3		
1/182	24.7	4.8	24.7	4.8	35.7	4.8	35.7	4.8	44	9.6	44	4.8		
1/204	22	5.4	22	5.4	31.8	5.4	31.8	5.4	39.2	10.7	39.2	5.4		
1/240	18.8	6.3	18.8	6.3	27.1	6.3	27.1	6.3	33.3	12.6	33.3	6.3		
1/308	14.6	8.1	14.6	8.1	21.1	8.1	21.1	8.1	26	16.2	26	8.1		
1/350	12.9	9.2	12.9	9.2	18.6	9.2	18.6	9.2	22.9	18.4	22.9	9.2		
1/452	10	11.9	10	11.9	14.4	11.9	14.4	11.9	17.7	20	17.7	11.9		
1/615	7.3	16.1	7.3	16.1	10.5	16.1	10.5	16.1	13	20	13	16.1		
1/687	6.5	18	6.5	18	9.5	18	9.5	18	11.6	20	11.6	18		

* color gear ratios are same rotation direction with motor.
 * The standard is F-TYPE.

KGE-TYPE

DIMENSIONS

KGE-3448 SERIES



AT MAXIMUM EFFICIENCY (KGE-□□□-KD3448□□)

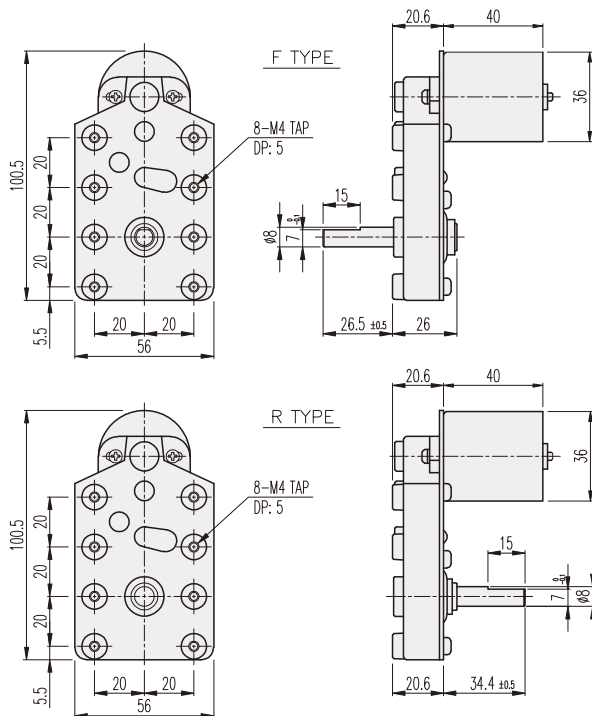
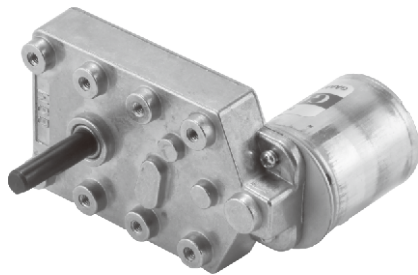
GEAR	MODEL		KD3448S1		KD3448S2		KD3448T1		KD3448T2		KD3448P1		KD3448P2	
			DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/022	205	1.3	205	1.3	295	1.3	295	1.3	364	1.3	364	1.3		
1/034	132	2	132	2	191	2	191	2	235	2	235	2		
1/043	104.7	2.5	104.7	2.5	151	2.5	151	2.5	186	2.5	186	2.5		
1/050	90	2.9	90	2.9	130	2.9	130	2.9	160	2.9	160	2.9		
1/062	72.6	3.6	72.6	3.6	105	3.6	105	3.6	129	3.6	129	3.6		
1/068	66.2	4	66.2	4	95.5	4	95.5	4	117.6	4	117.6	4		
1/083	54.2	4.8	54.2	4.8	78.3	4.8	78.3	4.8	96.4	4.8	96.4	4.8		
1/105	42.9	6.1	42.9	6.1	62	6.1	62	6.1	76.2	6.1	76.2	6.1		
1/116	38.8	6.8	38.8	6.8	56	6.8	56	6.8	69	6.8	69	6.8		
1/162	27.8	8.5	27.8	8.5	40	8.5	40	8.5	49.4	8.5	49.4	8.5		
1/182	24.7	9.6	24.7	9.6	35.7	9.6	35.7	9.6	44	9.6	44	9.6		
1/204	22	10.7	22	10.7	31.8	10.7	31.8	10.7	39.2	10.7	39.2	10.7		
1/240	18.8	12.6	18.8	12.6	27.1	12.6	27.1	12.6	33.3	12.6	33.3	12.6		
1/308	14.6	16.2	14.6	16.2	21.1	16.2	21.1	16.2	26	16.2	26	16.2		
1/350	12.9	18.4	12.9	18.4	18.6	18.4	18.6	18.4	22.9	18.4	22.9	18.4		
1/452	10	20	10	20	14.4	20	14.4	20	17.7	20	17.7	20		
1/615	7.3	20	7.3	20	10.5	20	10.5	20	13	20	13	20		
1/687	6.5	20	6.5	20	9.5	20	9.5	20	11.6	20	11.6	20		

* color gear ratios are same rotation direction with motor.
 * The standard is F-TYPE.

KGE-TYPE

DIMENSIONS

KGE-3640 BLDC SERIES



BLDC MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			WEIGHT (g)
			mA	rpm	gf-cm	A	rpm	
NB3640S1		12V	500	5300	150	1.2	4500	150
NB3640S2		24V	300	5000	250	0.8	3900	

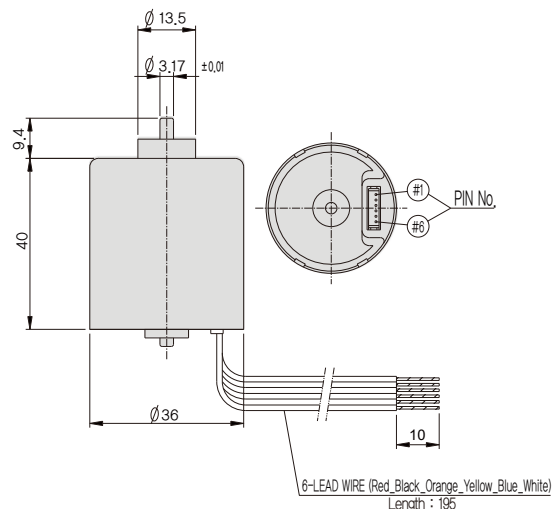
AT MAXIMUM EFFICIENCY (KGE-□□□-NB3640S□)

GEAR	NB3640S1 DC 12V		NB3640S2 DC 24V	
	rpm	kgf-cm	rpm	kgf-cm
1/022	204	2.4	177	4
1/034	132	3.7	114.7	6.2
1/043	104.5	4.7	90.6	7.8
1/050	90	5.4	78	9.1
1/062	72.5	6.7	62.9	11.3
1/068	66	7.4	57.3	12.4
1/083	54	9	46.9	15.1
1/105	42.8	11.4	37.1	19.1
1/116	38.7	12.6	33.6	20
1/162	27.7	15.9	24	20
1/182	24.7	17.9	21.4	20
1/204	22	20	19.1	20
1/240	18.7	20	16.2	20
1/308	14.6	20	12.6	20
1/350	12.8	20	11.1	20
1/452	9.9	20	8.6	20
1/615	7.3	20	6.3	20
1/687	6.5	20	5.6	20

How to connect when speed control is not needed.

No - Color	Pin - Contents	Connection Method
1 - White	Brake	No Use, (-) connectin Brake
2 - Blue	PWM	connecting to (-) power
3 - Yellow	1FG(6P/R)	No Use
4 - Orange	CW/CCW	Normal Open, CCW connecting to (-) power
5 - Black	GND	connecting to (-) power
6 - Red	24V	connecting to (+) power

* Please be cautious that Motor can be damaged when connected to incorrect power (+) (-).

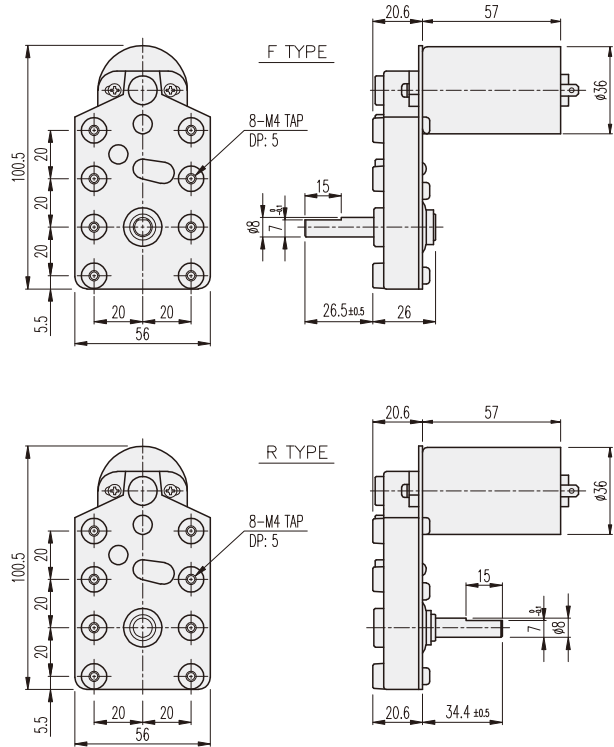
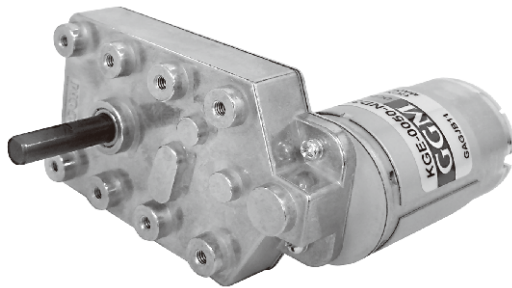


- * [] color gear ratios are same rotation direction with motor.
- * Proceed function change in motor stop type.
- * Controller for speed control is GUN type.
- * The standard is F-TYPE.

KGE-TYPE

DIMENSIONS

KGE-3657 SERIES



MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			STALL		WEIGHT (g)
			mA	rpm	gf-cm	A	rpm	A	gf-cm	
ND3657U1		12V	300	6000	200	1.5	5000	10	1.6	200
ND3657U2		24V	150	6000	200	0.9	5000	5	1.6	

AT MAXIMUM EFFICIENCY (KGE-□□□-ND3657U□)

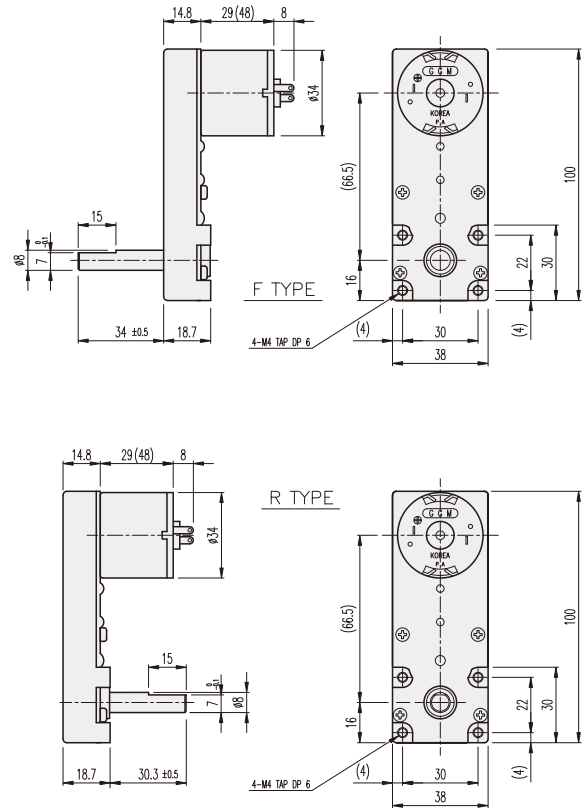
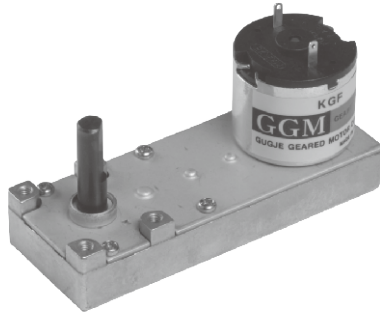
GEAR	MODEL	ND3657U1		ND3657U2	
		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm
1/022		227	3.2	227	3.2
1/034		147	4.9	147	4.9
1/043		116	6.2	116	6.2
1/050		100	7.3	100	7.3
1/062		80	9	80	9
1/068		73	9.9	73	9.9
1/083		60	12.1	60	12.1
1/105		47	15.3	47	15.3
1/116		43	16.9	43	16.9
1/162		30	20	30	20
1/182		27	20	27	20
1/204		24	20	24	20
1/240		20	20	20	20
1/308		16.2	20	16.2	20
1/350		14.2	20	14.2	20
1/452		11	20	11	20
1/615		8.1	20	8.1	20
1/687		7.2	20	7.2	20

* color gear ratios are same rotation direction with motor.
 * The standard is F-TYPE.

KGF-TYPE

DIMENSIONS

KGF-34□□ SERIES



AT MAXIMUM EFFICIENCY (KGF-□□□-KD3429□□)

GEAR	MODEL	KD3429S1		KD3429S2		KD3429T1		KD3429T2		KD3429P1		KD3429P2	
		DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/057		79	1.3	79	1.3	114	1.3	114	1.3	140	2.6	140	1.3
1/100		45	2.4	45	2.4	65	2.4	65	2.4	80	4.8	80	2.4
1/130		34.6	3.1	34.6	3.1	50	3.1	50	3.1	61.5	6.2	61.5	3.1
1/188		23.9	4.4	23.9	4.4	34.6	4.4	34.6	4.4	42.6	8.8	42.6	4.4
1/255		17.6	6	17.6	6	25.5	6	25.5	6	31.4	12	31.4	6

AT MAXIMUM EFFICIENCY (KGF-□□□-KD3448□□)

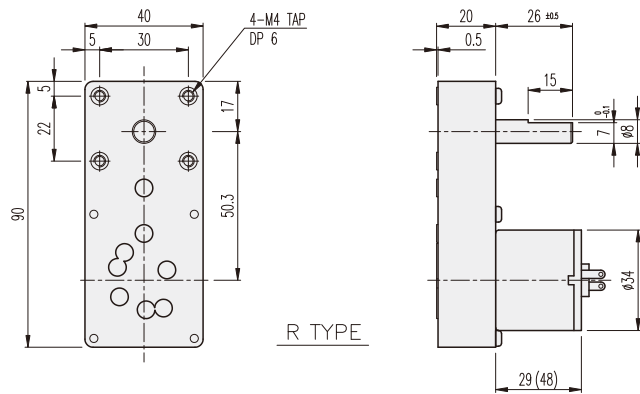
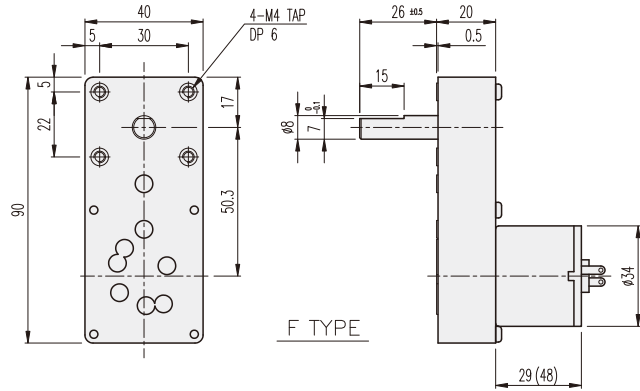
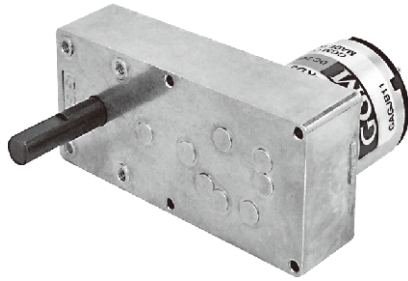
GEAR	MODEL	KD3448S1		KD3448S2		KD3448T1		KD3448T2		KD3448P1		KD3448P2	
		DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/057		79	2.6	79	2.6	114	2.6	114	2.6	140	2.6	140	2.6
1/100		45	4.8	45	4.8	65	4.8	65	4.8	80	4.8	80	4.8
1/130		34.6	6.2	34.6	6.2	50	6.2	50	6.2	61.5	6.2	61.5	6.2
1/188		23.9	8.8	23.9	8.8	34.6	8.8	34.6	8.8	42.6	8.8	42.6	8.8
1/255		17.6	12	17.6	12	25.5	12	25.5	12	31.4	12	31.4	12

* These ratios are opposite with motor rotation direction.
 * The standard is R-TYPE.

KGG-TYPE

DIMENSIONS

KGG SERIES



AT MAXIMUM EFFICIENCY (KGG-□□□-KD3429□□)

GEAR	MODEL	KD3429S1		KD3429S2		KD3429T1		KD3429T2		KD3429P1		KD3429P2	
		DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/078		57.7	2	57.7	2	83	2	83	2	102.5	4	102.5	2
1/101		44.6	2.6	44.6	2.6	64.4	2.6	64.4	2.6	79.2	5.2	79.2	2.6
1/227		19.8	5.4	19.8	5.4	28.6	5.4	28.6	5.4	35.2	6	35.2	5.4
1/512		8.8	6	8.8	6	12.7	6	12.7	6	15.6	6	15.6	6

AT MAXIMUM EFFICIENCY (KGG-□□□-KD3448□□)

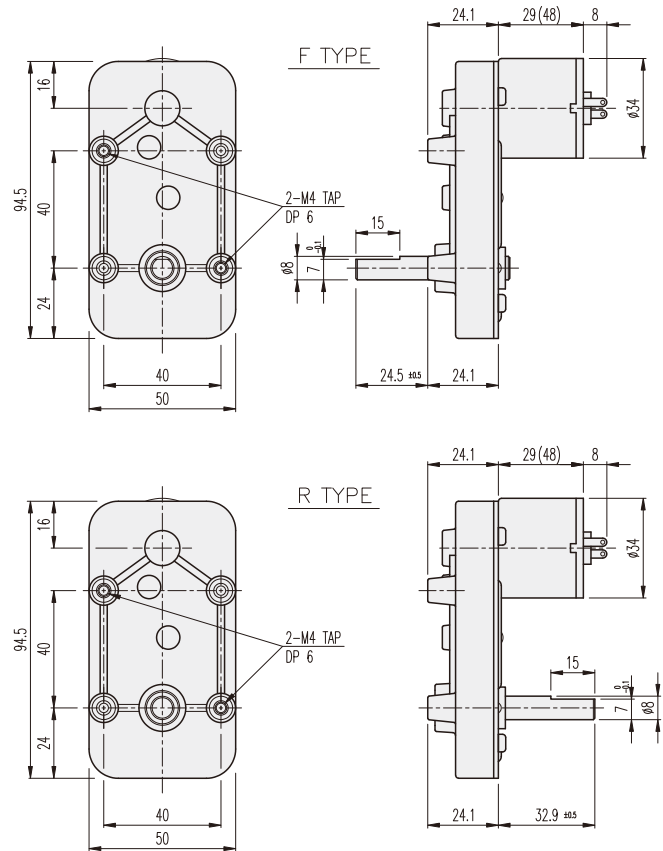
GEAR	MODEL	KD3448S1		KD3448S2		KD3448T1		KD3448T2		KD3448P1		KD3448P2	
		DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/078		57.7	4	57.7	4	83	4	83	4	102.5	4	102.5	4
1/101		44.6	5.2	44.6	5.2	64.4	5.2	64.4	5.2	79.2	5.2	79.2	5.2
1/227		19.8	6	19.8	6	28.6	6	28.6	6	35.2	6	35.2	6
1/512		8.8	6	8.8	6	12.7	6	12.7	6	15.6	6	15.6	6

* color gear ratios are same rotation direction with motor.
 * The standard is F-TYPE.

KGN-TYPE

DIMENSIONS

KGN SERIES



AT MAXIMUM EFFICIENCY (KGN-□□□-KD3429□□)

GEAR	MODEL	KD3429S1		KD3429S2		KD3429T1		KD3429T2		KD3429P1		KD3429P2	
		DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/043		104.7	1.3	104.7	1.3	151	1.3	151	1.3	186	2.5	186	1.3
1/050		90	1.5	90	1.5	130	1.5	130	1.5	160	2.9	160	1.5
1/105		42.9	3	42.9	3	62	3	62	3	76.2	6	76.2	3

AT MAXIMUM EFFICIENCY (KGN-□□□-KD3448□□)

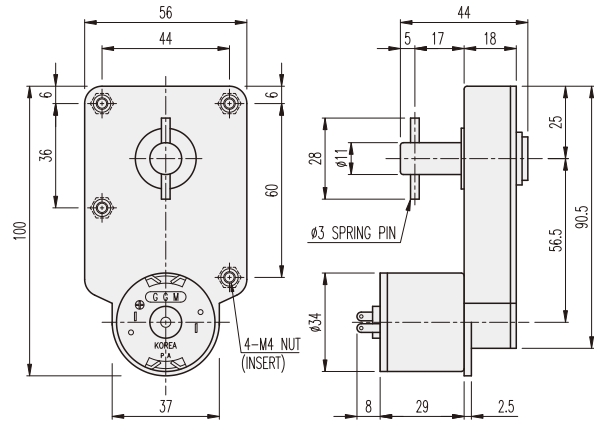
GEAR	MODEL	KD3448S1		KD3448S2		KD3448T1		KD3448T2		KD3448P1		KD3448P2	
		DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/043		104.7	2.5	104.7	2.5	151	2.5	151	2.5	186	2.5	186	2.5
1/050		90	2.9	90	2.9	130	2.9	130	2.9	160	2.9	160	2.9
1/105		42.9	6	42.9	6	62	6	62	6	76.2	6	76.2	6

* These ratios are opposite with motor rotation direction.

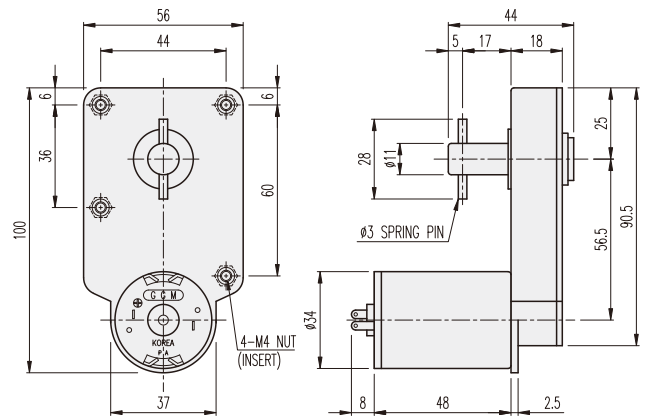
KGP-TYPE(ININSERT)

DIMENSIONS

KGP-3429 SERIES



KGP-3448 SERIES



AT MAXIMUM EFFICIENCY (KGP-□□□-KD3429□□)

GEAR	MODEL	KD3429S1		KD3429S2		KD3429T1		KD3429T2		KD3429P1		KD3429P2	
		DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/062		72.6	1.5	72.6	1.5	104.8	1.5	104.8	1.5	129	3.2	129	1.5
1/116		38.8	2.7	38.8	2.7	56	2.7	56	2.7	69	6	69	2.7

AT MAXIMUM EFFICIENCY (KGP-□□□-KD3448□□)

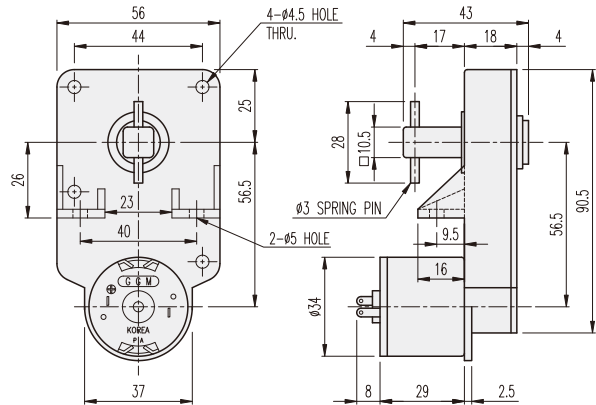
GEAR	MODEL	KD3448S1		KD3448S2		KD3448T1		KD3448T2		KD3448P1		KD3448P2	
		DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/062		72.6	3.2	72.6	3.2	104.8	3.2	104.8	3.2	129	3.2	129	3.2
1/116		38.8	6	38.8	6	56	6	56	6	69	6	69	6

* These gear ratios are same rotation direction with motor.

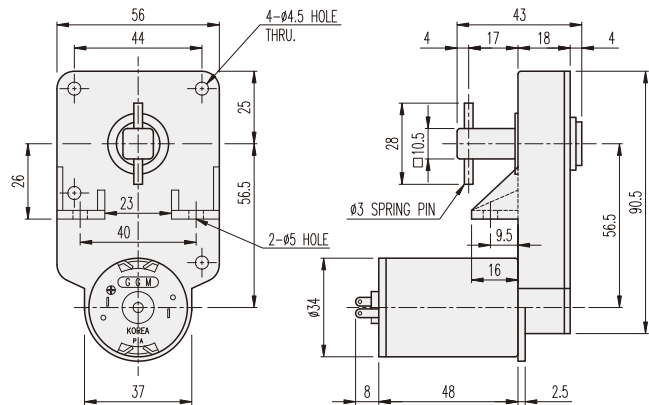
KGP-TYPE(FRANGE)

DIMENSIONS

KGP-3429 SERIES



KGP-3448 SERIES



AT MAXIMUM EFFICIENCY (3429 SERIES)

MODEL	KD3429S1		KD3429S2		KD3429T1		KD3429T2		KD3429P1		KD3429P2	
	DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
GEAR	rpm	kgf.cm	rpm	kgf.cm	rpm	kgf.cm	rpm	kgf.cm	rpm	kgf.cm	rpm	kgf.cm
1/062	72.6	1.5	72.6	1.5	104.8	1.5	104.8	1.5	129	3.2	129	1.5
1/116	38.8	2.7	38.8	2.7	56	2.7	56	2.7	69	6	69	2.7

AT MAXIMUM EFFICIENCY (3448 SERIES)

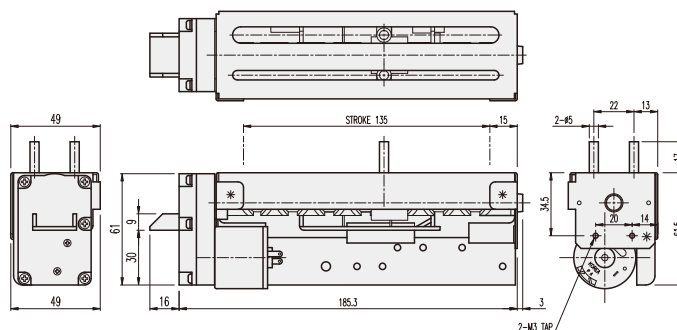
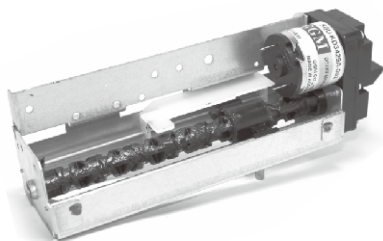
MODEL	KD3448S1		KD3448S2		KD3448T1		KD3448T2		KD3448P1		KD3448P2	
	DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
GEAR	rpm	kgf.cm	rpm	kgf.cm	rpm	kgf.cm	rpm	kgf.cm	rpm	kgf.cm	rpm	kgf.cm
1/062	72.6	3.2	72.6	3.2	104.8	3.2	104.8	3.2	129	3.2	129	3.2
1/116	38.8	6	38.8	6	56	6	56	6	69	6	69	6

* These gear ratios are same rotation direction with motor.

KGU-TYPE

DIMENSIONS

KGU-3429 SERIES



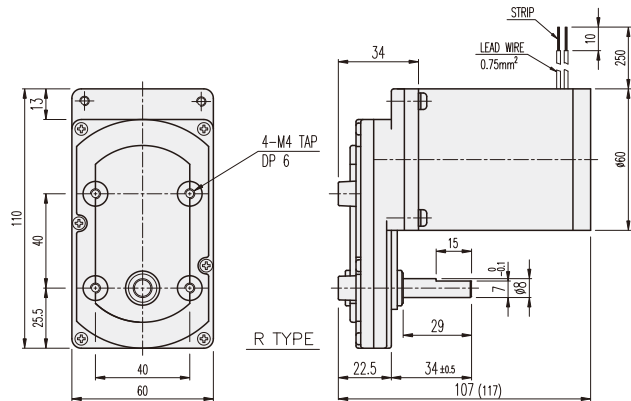
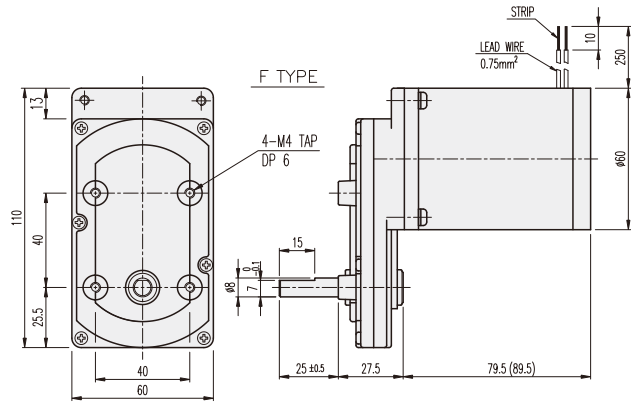
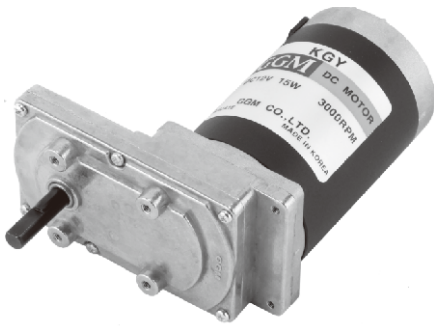
AT MAXIMUM EFFICIENCY (KGU-035-KD3429□□)

MODEL	PART	VOLTAGE (DC)	NO LOAD				AT MAX. EFF.				STALL	
			mA	rpm	L(mm)	CYCLE/min.	kgf-cm	mA	rpm	CYCLE/min.	kgf-cm	A
KD3429S1		12V	150	140	134	10	1	250	126	9	9.2	1.7
KD3429S2		24V	100	140	134	10	1	200	126	9	9.5	1
KD3429T1		12V	200	210	134	14	1	500	168	12	10.8	3.8
KD3429T2		24V	150	210	134	14	1	200	168	12	8.2	1.2
KD3429P1		12V	250	252	134	14	2	1000	210	15	8.5	3.8
KD3429P2		24V	180	252	134	18	1	300	210	15	9	2

KGY-TYPE

DIMENSIONS

KGY SERIES (DC)



MOTOR PERFORMANCE DATA

MODEL	MOTOR		NO LOAD		AT MAX. EFF.			STALL	
	VOLTAGE	OUTPUT(W)	rpm	A	rpm	kgf-cm	A	kgf-cm	A
K6DG15N1	DC 12V	15	3250	0.6	3000	0.49	1.7	3.7	13.5
K6DG15N2	DC 24V	15	3480	0.4	3000	0.5	1.1	4.2	7.5
K6DG15N3	DC 90V	15	3200	0.06	3000	0.49	0.28	3	1.6
K6IG6NC	AC 220V 60Hz	6			1500	0.4	0.11		

* Please refer to catalogue in AC Induction motor for K6IG6NC model as 220V 60Hz induction motor.

* The standard is F-TYPE.

KGY-TYPE

DIMENSIONS

AT MAXIMUM EFFICIENCY (KGY-□□□-K6D(I)G□□)

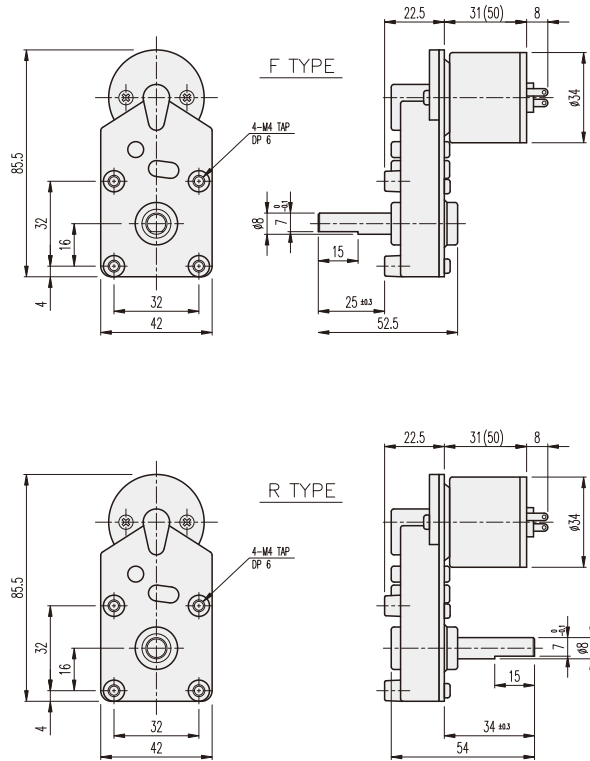
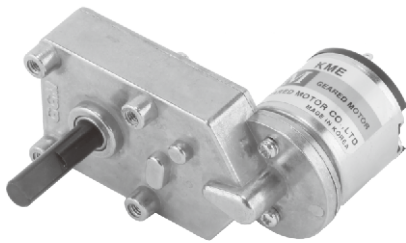
GEAR \ MODEL	K6DG15N1		K6DG15N2		K6DG15N3		K6IG6NC	
	DC 12V-15W		DC 24V-15W		DC 90V-15W		AC 220V 60Hz-6W	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/008	375	2.9	375	2.9	375	2.9	187.5	2.3
1/011	272.7	3.9	272.7	3.9	272.7	3.9	136.4	3.2
1/015	200	5.4	200	5.4	200	5.4	100	4.4
1/021	142.8	7.5	142.8	7.5	142.8	7.5	71.4	6.1
1/027	111.1	9.6	111.1	9.6	111.1	9.6	55.6	7.9
1/031	96.8	11.1	96.8	11.1	96.8	11.1	48.4	9
1/036	83.3	12.9	83.3	12.9	83.3	12.9	41.7	10.5
1/043	69.8	15.4	69.8	15.4	69.8	15.4	34.9	12.5
1/047	63.8	16.8	63.8	16.8	63.8	16.8	31.9	13.7
1/055	54.5	19.6	54.5	19.6	54.5	19.6	27.3	16
1/060	50	20	50	20	50	20	25	17.5
1/075	40	20	40	20	40	20	20	20
1/086	34.9	20	34.9	20	34.9	20	17.4	20
1/100	30	20	30	20	30	20	15	20
1/115	26.1	20	26.1	20	26.1	20	13	20
1/130	23.1	20	23.1	20	23.1	20	11.5	20
1/145	20.7	20	20.7	20	20.7	20	10.3	20
1/165	18.2	20	18.2	20	18.2	20	9.1	20
1/200	15	20	15	20	15	20	7.5	20
1/250	12	20	12	20	12	20	6	20
1/275	10.9	20	10.9	20	10.9	20	5.5	20
1/300	10	20	10	20	10	20	5	20
1/360	8.3	20	8.3	20	8.3	20	4.2	20
1/450	6.7	20	6.7	20	6.7	20	3.3	20
1/550	5.5	20	5.5	20	5.5	20	2.7	20
1/590	5.1	20	5.1	20	5.1	20	2.5	20
1/680	4.4	20	4.4	20	4.4	20	2.2	20
1/740	4.1	20	4.1	20	4.1	20	2	20
1/825	3.6	20	3.6	20	3.6	20	1.8	20

- * color gear ratios are same rotation direction with motor.
- * In above data AC 220V 60Hz 6W motor is applied in GGM 60mm AC induction motor.
- * The standard is F-TYPE.

KME-TYPE

DIMENSIONS

KME-KD34□□ SERIES



AT MAXIMUM EFFICIENCY (KME-□□□-KD3429□□)

GEAR	MODEL	KD3429S1		KD3429S2		KD3429T1		KD3429T2		KD3429P1		KD3429P2	
		DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/022		205	0.6	205	0.6	295	0.6	295	0.6	364	1.3	364	0.6
1/034		132	1	132	1	191	1	191	1	235	2	235	1
1/043		104.7	1.1	104.7	1.1	151	1.1	151	1.1	186	2.5	186	1.1
1/053		84	1.3	84	1.3	122	1.3	122	1.3	150	2.6	150	1.3
1/060		75	1.6	75	1.6	108	1.6	108	1.6	133	3.1	133	1.6
1/067		67.2	1.8	67.2	1.8	97	1.8	97	1.8	119	3.5	119	1.8

* color gear ratios are same rotation direction with motor.

AT MAXIMUM EFFICIENCY (KME-□□□-KD3448□□)

GEAR	MODEL	KD3448S1		KD3448S2		KD3448T1		KD3448T2		KD3448P1		KD3448P2	
		DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/022		205	1.3	205	1.3	295	1.3	295	1.3	364	1.3	364	1.3
1/034		132	2	132	2	191	2	191	2	235	2	235	2
1/043		104.7	2.5	104.7	2.5	151	2.5	151	2.5	186	2.5	186	2.5
1/053		84	2.6	84	2.6	122	2.6	122	2.6	150	2.6	150	2.6
1/060		75	3.1	75	3.1	108	3.1	108	3.1	133	3.1	133	3.1
1/067		67.2	3.5	67.2	3.5	97	3.5	97	3.5	119	3.5	119	3.5

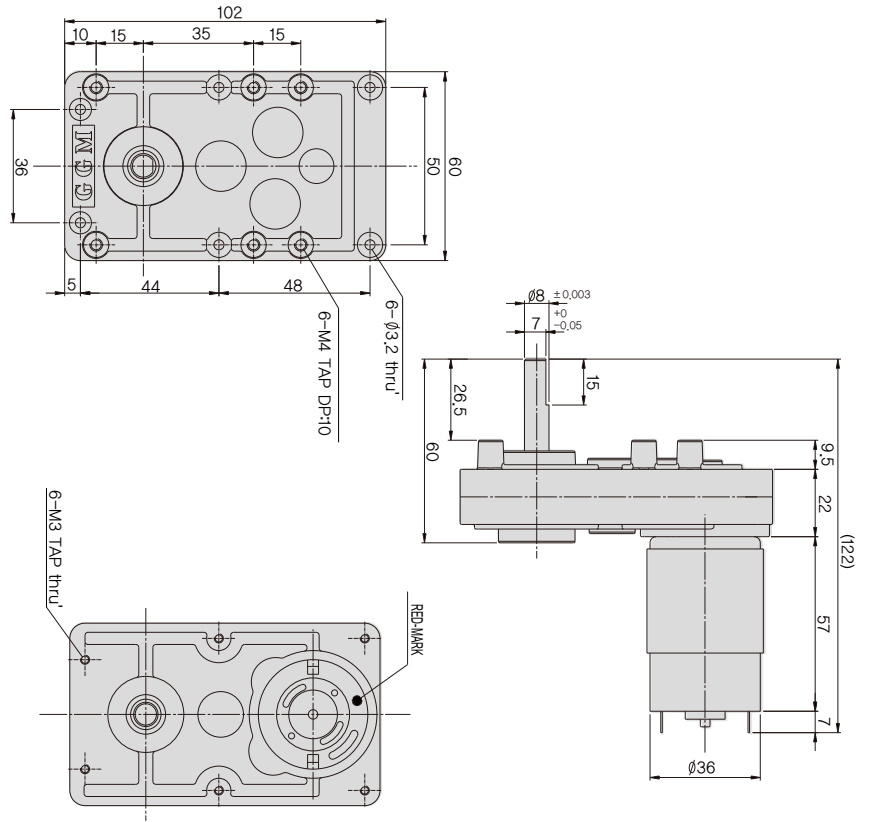
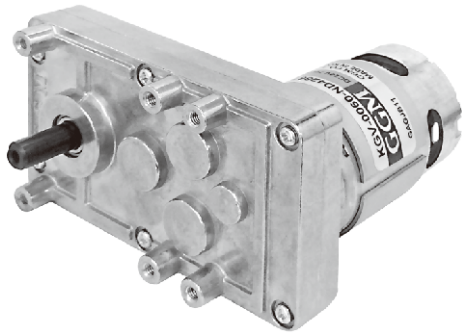
* color gear ratios are same rotation direction with motor.

* The standard is F-TYPE.

KGV-TYPE

DIMENSIONS

KGV-3657 SERIES



MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			STALL	
			mA	rpm	gf-cm	A	rpm	A	kgf-cm
ND3657U1		12V	300	6000	200	1.5	5000	10	1.6
ND3657U2		24V	150			0.9		5	

AT MAXIMUM EFFICIENCY

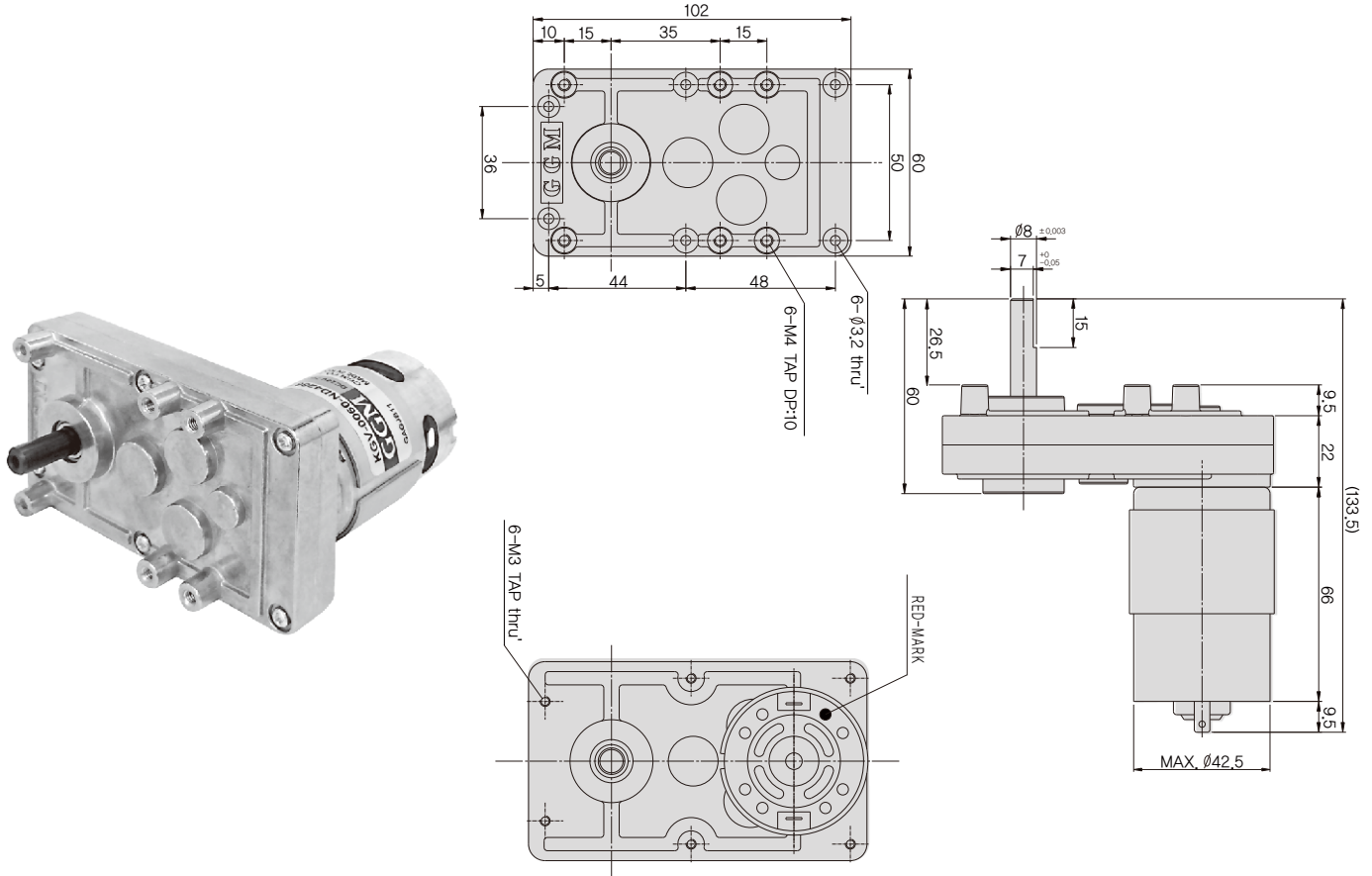
GEAR	MODEL	ND3657U1		ND3657U2	
		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm
1/60		83	6.9	83	6.9
1/90		55	10.4	55	10.4
1/105		47	12	47	12
1/120		41	13.9	41	13.9

* Output shaft rotates CW when connect motor (+) cable to (+) power.

KGV-TYPE

DIMENSIONS

KGV-4266 SERIES



MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.		STALL		
			mA	rpm	gf-cm	A	rpm	A	kgf-cm
ND4266T1		12V	1	7000	520	3.8	5900	24	3.8
ND4266T2		24V	0.5			1.8		13	4.3

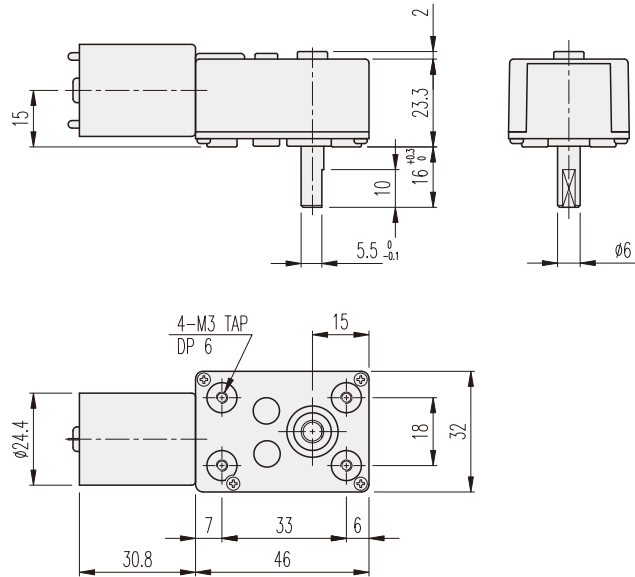
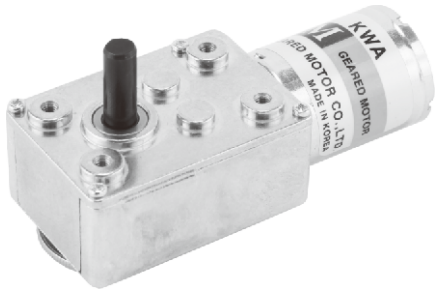
AT MAXIMUM EFFICIENCY

GEAR	MODEL	ND4266T1		ND4266T2	
		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm
1/60		98	18	98	18
1/90		65	20	65	20
1/105		56	20	56	20
1/120		49	20	49	20

* Output shaft rotates CW when connect motor (+) cable to (+) power.

DIMENSIONS

KWA SERIES



MOTOR PERFORMANCE DATA

MOTOR		NO LOAD		AT MAX. EFF.			STALL	
MODEL	VOLTAGE	rpm	mA	rpm	gf-cm	mA	gf-cm	A
ND2531U1	DC 12V	6500	60	5900	17	190	200	1.4
ND2531U2	DC 24V	6600	30	5750	20	100	160	0.55

AT MAXIMUM EFFICIENCY (KWA-□□□□-ND2531U1)

GEAR RATIO	1/76	1/95	1/123	1/150	1/175	1/200	1/255	1/290	
SPEED (rpm)	77.6	62.1	48	39.3	33.7	29.5	23.1	20.3	
TORQ.(kgf-cm)	0.94	1.2	1.5	1.9	2.2	2.5	3.2	3.2	
Output shaft rotation direction	CW							CCW	

GEAR RATIO	1/380	1/650	1/1650
SPEED (rpm)	15.5	9.1	3.6
TORQ.(kgf-cm)	4.2	6	6
Output shaft rotation direction	CCW		CW

AT MAXIMUM EFFICIENCY (KWA-□□□□-ND2531U2)

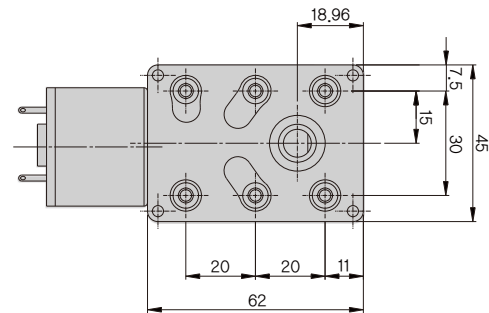
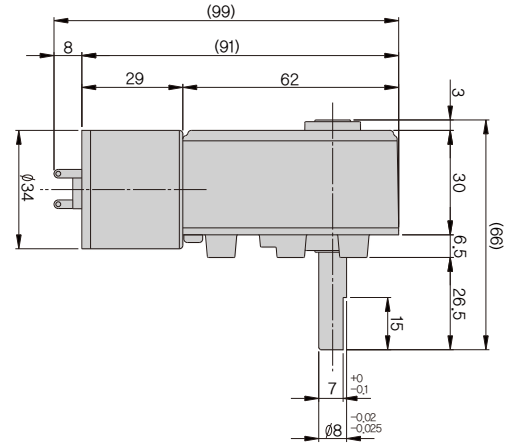
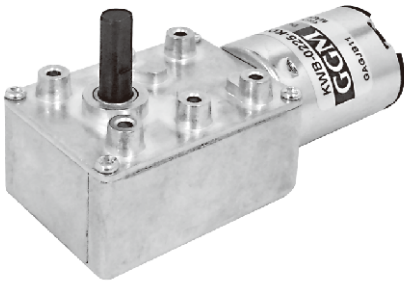
GEAR RATIO	1/76	1/95	1/123	1/150	1/175	1/200	1/255	1/290	
SPEED (rpm)	76	61	47	39.3	33.7	29.5	23.1	20.3	
TORQ.(kgf-cm)	1.1	1.4	1.8	2.2	2.6	2.9	3.7	3.8	
Output shaft rotation direction	CW							CCW	

GEAR RATIO	1/380	1/650	1/1650
SPEED (rpm)	15.5	8.8	3.5
TORQ.(kgf-cm)	5	6	6
Output shaft rotation direction	CCW		CW

* Output shaft rotation direction appears when supply (+)power to (+)terminal of motor.

DIMENSIONS

KWB-3429 SERIES



AT MAXIMUM EFFICIENCY

GEAR	MODEL		KD3429S1		KD3429S2		KD3429T1		KD3429T2		KD3429P1		KD3429P2	
			DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/070	64	1.7	64	1.7	92.8	1.7	92.8	1.7	114	3.4	114	1.7		
1/100	45	2.4	45	2.4	65	2.4	65	2.4	80	4.8	80	2.4		
1/130	34.6	3.1	34.6	3.1	50	3.1	50	3.1	61.5	6.2	61.5	3.1		
1/160	28	3.8	28	3.8	40.6	3.8	40.6	3.8	50	7.6	50	3.8		
1/200	22.5	4.8	22.5	4.8	32.5	4.8	32.5	4.8	40	9.6	40	4.8		
1/260	17.5	6.3	17.5	6.3	25.2	6.3	25.2	6.3	31	12.6	31	6.3		
1/330	13.6	7.2	13.6	7.2	19.6	7.2	19.6	7.2	24.2	14.4	24.2	7.2		
1/400	11.2	8.7	11.2	8.7	16.2	8.7	16.2	8.7	20	17.4	20	8.7		
1/450	10	9.8	10	9.8	14.4	9.8	14.4	9.8	17.7	19.6	17.7	9.8		
1/500	9	10.9	9	10.9	13	10.9	13	10.9	16	20	16	10.9		
1/600	7.5	13.1	7.5	13.1	10.8	13.1	10.8	13.1	13.3	20	13.3	13.1		
1/750	6	14.7	6	14.7	8.6	14.7	8.6	14.7	10.6	20	10.6	14.7		
1/925	4.8	18.2	4.8	18.2	7	18.2	7	18.2	8.6	20	8.6	18.2		
1/1000	4.5	19.6	4.5	19.6	6.5	19.6	6.5	19.6	8	20	8	19.6		

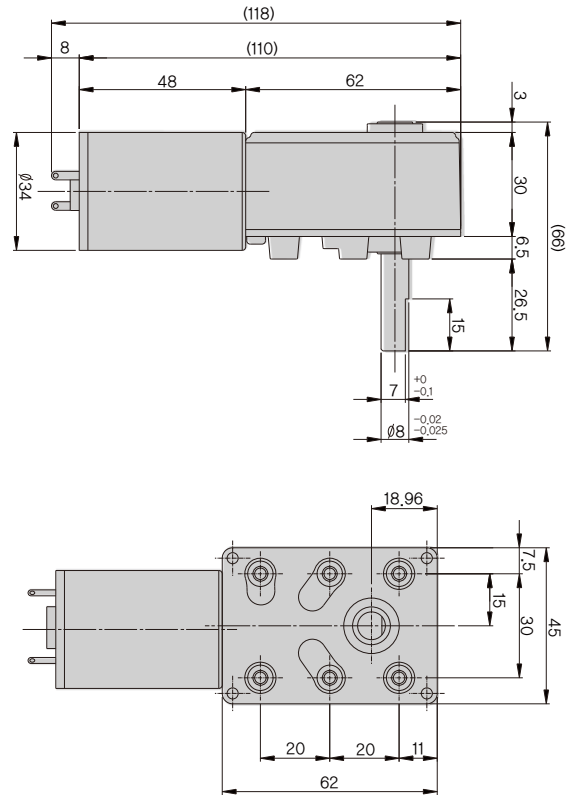
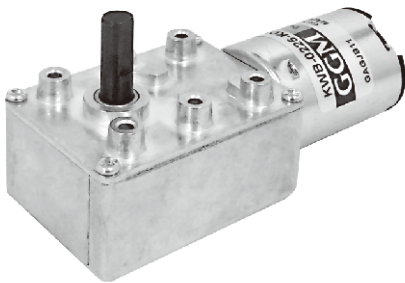
* color gear ratios are same rotation direction with motor.
 * The standard is F-TYPE.
 * R type available.

KWB-TYPE

Worm GEARHEAD

DIMENSIONS

KWB-3448 SERIES



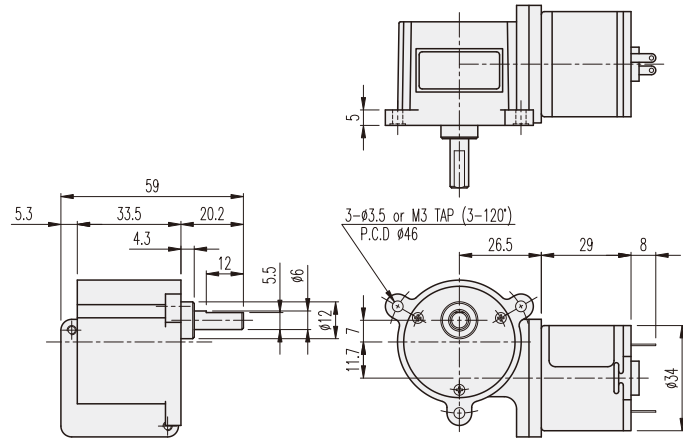
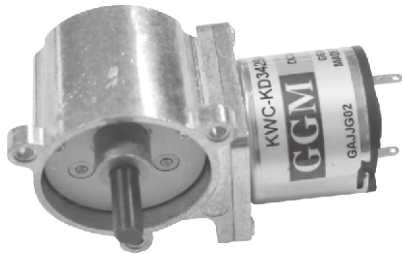
AT MAXIMUM EFFICIENCY

GEAR	MODEL		KD3448S1		KD3448S2		KD3448T1		KD3448T2		KD3448P1		KD3448P2	
			DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/070	64	3.4	64	3.4	92.8	3.4	92.8	3.4	114	3.4	114	3.4		
1/100	45	4.8	45	4.8	65	4.8	65	4.8	80	4.8	80	4.8		
1/130	34.6	6.2	34.6	6.2	50	6.2	50	6.2	61.5	6.2	61.5	6.2		
1/160	28	7.6	28	7.6	40.6	7.6	40.6	7.6	50	7.6	50	7.6		
1/200	22.5	9.6	22.5	9.6	32.5	9.6	32.5	9.6	40	9.6	40	9.6		
1/260	17.5	12.6	17.5	12.6	25.2	12.6	25.2	12.6	31	12.6	31	12.6		
1/330	13.6	14.4	13.6	14.4	19.6	14.4	19.6	14.4	24.2	14.4	24.2	14.4		
1/400	11.2	17.4	11.2	17.4	16.2	17.4	16.2	17.4	20	17.4	20	17.4		
1/450	10	19.6	10	19.6	14.4	19.6	14.4	19.6	17.7	19.6	17.7	19.6		
1/500	9	20	9	20	13	20	13	20	16	20	16	20		
1/600	7.5	20	7.5	20	10.8	20	10.8	20	13.3	20	13.3	20		
1/750	6	20	6	20	8.6	20	8.6	20	10.6	20	10.6	20		
1/925	4.8	20	4.8	20	7	20	7	20	8.6	20	8.6	20		
1/1000	4.5	20	4.5	20	6.5	20	6.5	20	8	20	8	20		

* color gear ratios are same rotation direction with motor.
 * The standard is F-TYPE.
 * R type available.

DIMENSIONS

KWC-3429 SERIES



AT MAXIMUM EFFICIENCY (KWC-□□□□-KD3429□□)

GEAR	MODEL		KD3429S1		KD3429S2		KD3429T1		KD3429T2		KD3429P1		KD3429P2	
			DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/025	180	0.8	180	0.8	260	0.8	260	0.8	320	1.6	320	0.8		
1/030	150	1	150	1	217	1	217	1	267	1.9	267	1		
1/050	90	1.6	90	1.6	130	1.6	130	1.6	160	3.2	160	1.6		
1/060	75	1.75	75	1.75	108	1.75	108	1.75	133	3.5	133	1.75		
1/075	60	2.2	60	2.2	87	2.2	87	2.2	107	4.4	107	2.2		
1/100	45	2.9	45	2.9	65	2.9	65	2.9	80	5.8	80	2.9		
1/125	36	3.6	36	3.6	52	3.6	52	3.6	64	6	64	3.6		
1/150	30	4.4	30	4.4	43	4.4	43	4.4	53	6	53	6		
1/200	22.5	5.2	22.5	5.2	32.5	5.2	32.5	5.2	40	6	40	5.2		
1/250	18	6	18	6	26	6	26	6	32	6	32	6		
1/300	15	6	15	6	21.7	6	21.7	6	26.7	6	26.7	6		
1/375	12	6	12	6	17.3	6	17.3	6	21.3	6	21.3	6		
1/500	9	6	9	6	13	6	13	6	16	6	16	6		
1/600	7.5	6	7.5	6	10.8	6	10.8	6	13.3	6	13.3	6		
1/750	6	6	6	6	8.7	6	8.7	6	10.7	6	10.7	6		
1/900	5	6	5	6	7.2	6	7.2	6	8.9	6	8.9	6		
1/1050	4.3	6	4.3	6	6.2	6	6.2	6	7.6	6	7.6	6		
1/1350	3.3	6	3.3	6	4.8	6	4.8	6	5.9	6	5.9	6		
1/1500	3	6	3	6	4.3	6	4.3	6	5.3	6	5.3	6		

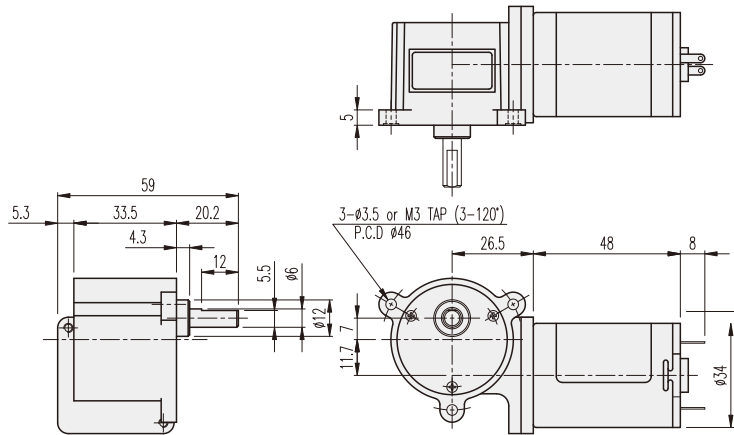
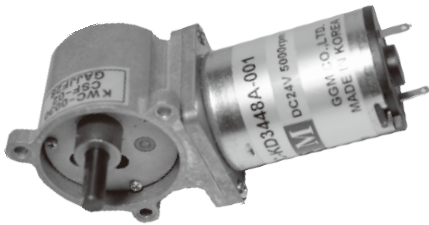
* color gear ratios are CW rotation direction. [when supply (+)power to (+)terminal of motor]

KWC-TYPE

Worm GEARHEAD

DIMENSIONS

KWC-3448 SERIES



AT MAXIMUM EFFICIENCY (KWC-□□□□-KD3448□□)

GEAR	MODEL		KD3448S1		KD3448S2		KD3448T1		KD3448T2		KD3448P1		KD3448P2	
			DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/025	180	1.6	180	1.6	260	1.6	260	1.6	320	1.6	320	1.6		
1/030	150	1.9	150	1.9	217	1.9	217	1.9	267	1.9	267	1.9		
1/050	90	3.2	90	3.2	130	3.2	130	3.2	160	3.2	160	3.2		
1/060	75	3.5	75	3.5	108	3.5	108	3.5	133	3.5	133	3.5		
1/075	60	4.4	60	4.4	87	4.4	87	4.4	107	4.4	107	4.4		
1/100	45	5.8	45	5.8	65	5.8	65	5.8	80	5.8	80	5.8		
1/125	36	6	36	6	52	6	52	6	64	6	64	6		
1/150	30	6	30	6	43	6	43	6	53	6	53	6		
1/200	22.5	6	22.5	6	32.5	6	32.5	6	40	6	40	6		
1/250	18	6	18	6	26	6	26	6	32	6	32	6		
1/300	15	6	15	6	21.7	6	21.7	6	26.7	6	26.7	6		
1/375	12	6	12	6	17.3	6	17.3	6	21.3	6	21.3	6		
1/500	9	6	9	6	13	6	13	6	16	6	16	6		
1/600	7.5	6	7.5	6	10.8	6	10.8	6	13.3	6	13.3	6		
1/750	6	6	6	6	8.7	6	8.7	6	10.7	6	10.7	6		
1/900	5	6	5	6	7.2	6	7.2	6	8.9	6	8.9	6		
1/1050	4.3	6	4.3	6	6.2	6	6.2	6	7.6	6	7.6	6		
1/1350	3.3	6	3.3	6	4.8	6	4.8	6	5.9	6	5.9	6		
1/1500	3	6	3	6	4.3	6	4.3	6	5.3	6	5.3	6		

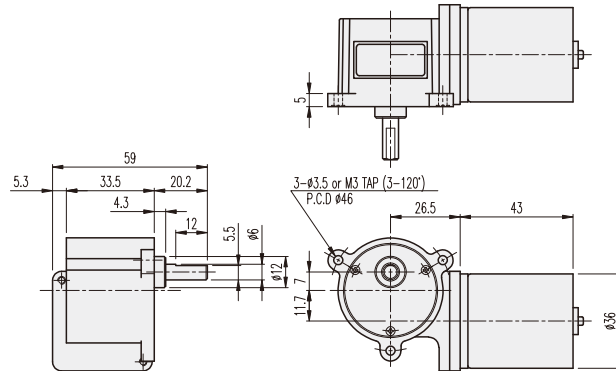
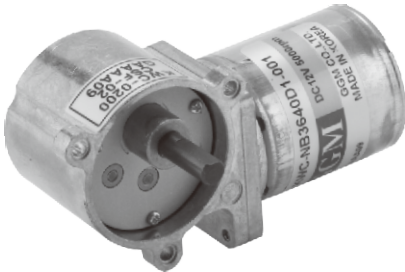
* color gear ratios are CW rotation direction. [when supply (+)power to (+)terminal of motor]

KWC-TYPE

Worm GEARHEAD

DIMENSIONS

KWC-3640 BLDC SERIES



BLDC MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			WEIGHT (g)
			mA	rpm	gf-cm	A	rpm	
NB3640S1		12V	500	5300	150	1.2	4500	150
NB3640S2		24V	300	5000	250	0.8	3900	

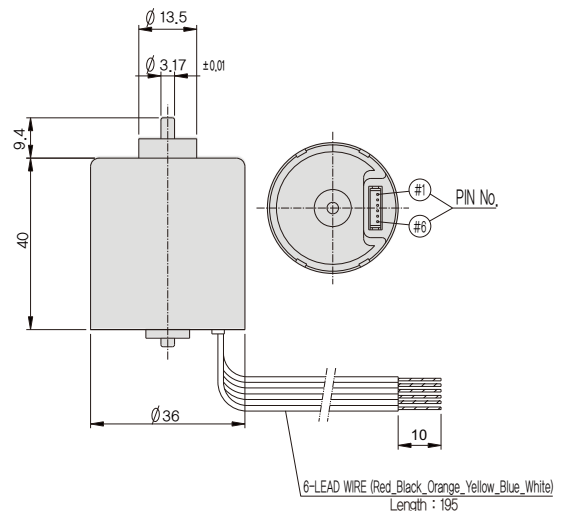
AT MAXIMUM EFFICIENCY (KWC-□□□□-NB3640S□)

GEAR	NB3640S1		NB3640S2	
	DC 12V		DC 24V	
	rpm	kgf-cm	rpm	kgf-cm
1/025	180	3	156	5
1/030	150	3.6	130	6
1/050	90	6	78	6
1/060	75	6	65	6
1/075	60	6	52	6
1/100	45	6	39	6
1/125	36	6	31.2	6
1/150	30	6	26	6
1/200	22.5	6	19.5	6
1/250	18	6	15.6	6
1/300	15	6	13	6
1/375	12	6	10.4	6
1/500	9	6	7.8	6
1/600	7.5	6	6.5	6
1/750	6	6	5.2	6
1/900	5	6	4.3	6
1/1050	4.2	6	3.7	6
1/1350	3.3	6	2.8	6
1/1500	3	6	2.6	6

How to connect when speed control is not needed.

No - Color	Pin - Contents	Connection Method
1 - White	Brake	No Use, (-) connectin Brake
2 - Blue	PWM	connecting to (-) power
3 - Yellow	1FG(6P/R)	No Use
4 - Orange	CW/CCW	Normal Open, CCW connecting to (-) power
5 - Black	GND	connecting to (-) power
6 - Red	24V	connecting to (+) power

* Please be cautious that Motor can be damaged when connected to incorrect power (+) (-).



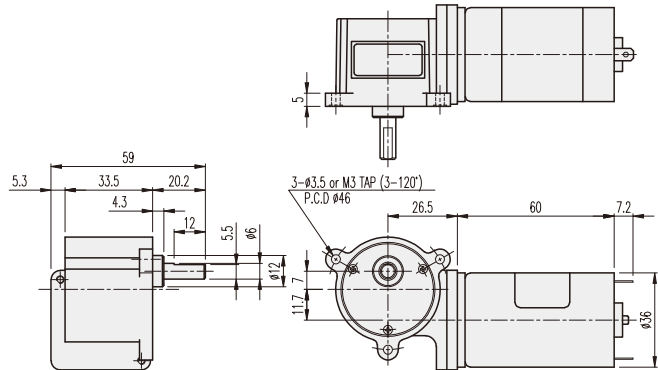
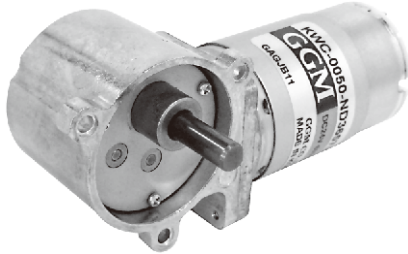
- * [] color gear ratios are CW rotation direction. [when motor rotation direction is CCW]
- * Proceed function change in motor stop type.
- * Controller for speed control is GUN type.

KWC-TYPE

Worm GEARHEAD

DIMENSIONS

KWC-3657 SERIES



MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			STALL		WEIGHT (g)
			mA	rpm	gf-cm	A	rpm	A	kgf-cm	
ND3657U1		12V	300	6000	200	1.5	5000	10	1.6	200
ND3657U2		24V	150	6000	200	0.9	5000	5	1.6	

AT MAXIMUM EFFICIENCY (KWC-□□□□-ND3657U□)

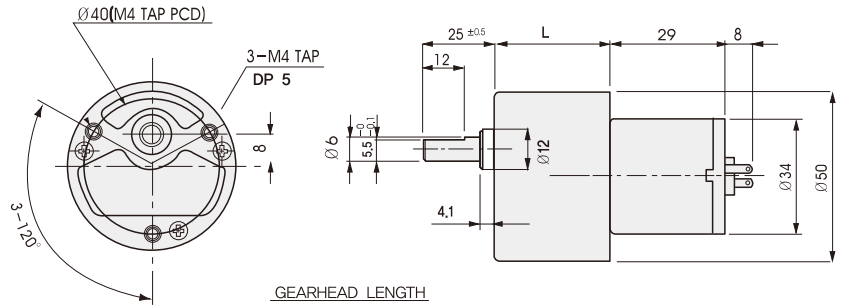
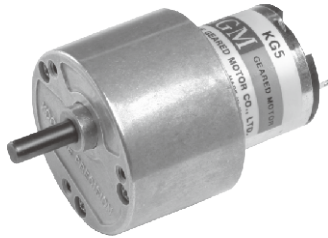
GEAR	MODEL	ND3657U1		ND3657U2	
		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm
1/025		200	4	200	4
1/030		166	4.8	166	4.8
1/050		100	6	100	6
1/060		83	6	83	6
1/075		66	6	66	6
1/100		50	6	50	6
1/125		40	6	40	6
1/150		33	6	33	6
1/200		25	6	25	6
1/250		20	6	20	6
1/300		16.6	6	16.6	6
1/375		13.3	6	13.3	6
1/500		10	6	10	6
1/600		8.3	6	8.3	6
1/750		6.6	6	6.6	6
1/900		5.5	6	5.5	6
1/1050		4.7	6	4.7	6
1/1350		3.7	6	4.7	6
1/1500		3.3	6	3.3	6

* color gear ratios are CW rotation direction. [when supply (+)power to (+)terminal of motor]

KG5-TYPE

DIMENSIONS

KG5-3429 SERIES



GEARHEAD LENGTH

RATIO	L
1/003~1/120	34
1/150~1/3240	46

AT MAXIMUM EFFICIENCY (KG5-□□□□-KD3429□□)

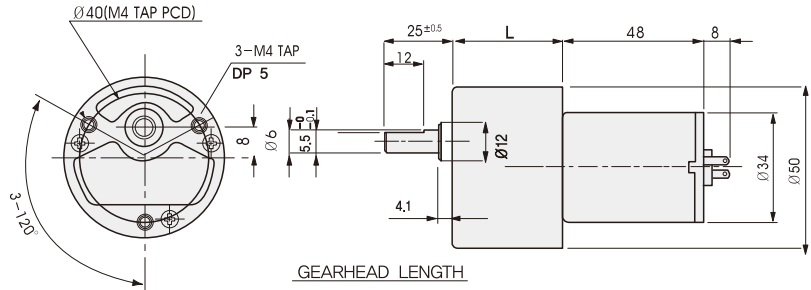
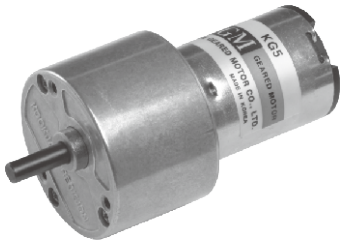
GEAR	MODEL	KD3429S1		KD3429S2		KD3429T1		KD3429T2		KD3429P1		KD3429P2	
		DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/003		1500	0.1	1500	0.1	2167	0.1	2167	0.1	2667	0.2	2667	0.1
1/005		900	0.16	900	0.16	1300	0.16	1300	0.16	1600	0.3	1600	0.16
1/010		450	0.3	450	0.3	650	0.3	650	0.3	800	0.65	800	0.3
1/015		300	0.44	300	0.44	433	0.44	433	0.44	533	0.87	533	0.44
1/020		225	0.58	225	0.58	325	0.58	325	0.58	400	1.2	400	0.58
1/025		180	0.73	180	0.73	260	0.73	260	0.73	320	1.5	320	0.73
1/030		150	0.87	150	0.87	217	0.87	217	0.87	267	1.75	267	0.87
1/040		112.5	1.2	112.5	1.2	162.5	1.2	162.5	1.2	200	2.3	200	1.2
1/050		90	1.3	90	1.3	130	1.3	130	1.3	160	2.6	160	1.3
1/060		75	1.6	75	1.6	108	1.6	108	1.6	133	3.1	133	1.6
1/075		60	2	60	2	87	2	87	2	107	3.9	107	2
1/090		50	2.4	50	2.4	72	2.4	72	2.4	88.9	4.7	88.9	2.4
1/100		45	2.6	45	2.6	65	2.6	65	2.6	80	5.2	80	2.6
1/120		37.5	3.1	37.5	3.1	54.2	3.1	54.2	3.1	66.7	6.3	66.7	3.1
1/150		30	3.5	30	3.5	43.3	3.5	43.3	3.5	53.3	7	53.3	3.5
1/160		28.1	3.8	28.1	3.8	40.6	3.8	40.6	3.8	50	7.5	50	3.8
1/180		25	4.2	25	4.2	36.1	4.2	36.1	4.2	44.4	8.5	44.4	4.2
1/200		22.5	4.7	22.5	4.7	32.5	4.7	32.5	4.7	40	9.4	40	4.7
1/210		21.4	5	21.4	5	31	5	31	5	38.1	9.9	38.1	5
1/240		18.8	5.7	18.8	5.7	27	5.7	27	5.7	33.3	10	33.3	5.7
1/270		16.7	6.4	16.7	6.4	24	6.4	24	6.4	29.6	10	29.6	6.4
1/300		15	7.1	15	7.1	21.7	7.1	21.7	7.1	26.7	10	26.7	7.1
1/360		12.5	8.5	12.5	8.5	18	8.5	18	8.5	22.2	10	22.2	8.5
1/400		11.3	8.5	11.3	8.5	16.3	8.5	16.3	8.5	20	10	20	8.5
1/500		9	10	9	10	13	10	13	10	16	10	16	10
1/600		7.5	10	7.5	10	10.8	10	10.8	10	13.3	10	13.3	10
1/750		6	10	6	10	8.7	10	8.7	10	10.7	10	10.7	10
1/900		5	10	5	10	7.2	10	7.2	10	8.9	10	8.9	10
1/1080		4.2	10	4.2	10	6	10	6	10	7.4	10	7.4	10
1/1250		3.6	10	3.6	10	5.2	10	5.2	10	6.4	10	6.4	10
1/1500		3	10	3	10	4.3	10	4.3	10	5.3	10	5.3	10
1/1800		2.5	10	2.5	10	3.6	10	3.6	10	4.4	10	4.4	10
1/2250		2	10	2	10	2.9	10	2.9	10	3.6	10	3.6	10
1/2700		1.7	10	1.7	10	2.4	10	2.4	10	3	10	3	10
1/3240		1.4	10	1.4	10	2	10	2	10	2.5	10	2.5	10

* color gear ratios are same rotation direction with motor.

KG5-TYPE

DIMENSIONS

KG5-3448 SERIES



GEARHEAD LENGTH

RATIO	L
1/003~1/120	34
1/150~1/3240	46

AT MAXIMUM EFFICIENCY (KG5-□□□□-KD3448□□)

GEAR	MODEL		KD3448S1		KD3448S2		KD3448T1		KD3448T2		KD3448P1		KD3448P2	
	DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V			
	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/003	1500	0.2	1500	0.2	2167	0.2	2167	0.2	2600	0.2	2667	0.2		
1/005	900	0.3	900	0.3	1300	0.3	1300	0.3	1560	0.3	1600	0.3		
1/010	450	0.65	450	0.65	650	0.65	650	0.65	780	0.65	800	0.65		
1/015	300	0.87	300	0.87	433	0.87	433	0.87	520	0.87	533	0.87		
1/020	225	1.2	225	1.2	325	1.2	325	1.2	390	1.2	400	1.2		
1/025	180	1.5	180	1.5	260	1.5	260	1.5	312	1.5	320	1.5		
1/030	150	1.75	150	1.75	217	1.75	217	1.75	260	1.75	267	1.75		
1/040	112.5	2.3	112.5	2.3	162.5	2.3	162.5	2.3	195	2.3	200	2.3		
1/050	90	2.6	90	2.6	130	2.6	130	2.6	156	2.6	160	2.6		
1/060	75	3.1	75	3.1	108	3.1	108	3.1	130	3.1	133	3.1		
1/075	60	3.9	60	3.9	87	3.9	87	3.9	104	3.9	107	3.9		
1/090	50	4.7	50	4.7	72	4.7	72	4.7	87	4.7	88.9	4.7		
1/100	45	5.2	45	5.2	65	5.2	65	5.2	78	5.2	80	5.2		
1/120	37.5	6.3	37.5	6.3	54.2	6.3	54.2	6.3	65	6.3	66.7	6.3		
1/150	30	7	30	7	43.3	7	43.3	7	52	7	53.3	7		
1/160	28.1	7.5	28.1	7.5	40.6	7.5	40.6	7.5	48.8	7.5	50	7.5		
1/180	25	8.5	25	8.5	36.1	8.5	36.1	8.5	43.3	8.5	44.4	8.5		
1/200	22.5	9.4	22.5	9.4	32.5	9.4	32.5	9.4	39	9.4	40	9.4		
1/210	21.4	9.9	21.4	9.9	31	9.9	31	9.9	37.1	9.9	38.1	9.9		
1/240	18.8	10	18.8	10	27	10	27	10	32.5	10	33.3	10		
1/250	18	10	18	10	26	10	26	10	31.2	10	32	10		
1/270	16.7	10	16.7	10	24	10	24	10	28.9	10	29.6	10		
1/300	15	10	15	10	21.7	10	21.7	10	26	10	26.7	10		
1/360	12.5	10	12.5	10	18	10	18	10	21.7	10	22.2	10		
1/400	11.3	10	11.3	10	16.3	10	16.3	10	19.5	10	20	10		
1/500	9	10	9	10	13	10	13	10	15.6	10	16	10		
1/600	7.5	10	7.5	10	10.8	10	10.8	10	13	10	13.3	10		
1/750	6	10	6	10	8.7	10	8.7	10	10.4	10	10.7	10		
1/900	5	10	5	10	7.2	10	7.2	10	8.7	10	8.9	10		
1/1080	4.2	10	4.2	10	6	10	6	10	7.2	10	7.4	10		
1/1250	3.6	10	3.6	10	5.2	10	5.2	10	6.2	10	6.4	10		
1/1500	3	10	3	10	4.3	10	4.3	10	5.2	10	5.3	10		
1/1800	2.5	10	2.5	10	3.6	10	3.6	10	4.3	10	4.4	10		
1/2250	2	10	2	10	2.9	10	2.9	10	3.5	10	3.6	10		
1/2700	1.7	10	1.7	10	2.4	10	2.4	10	2.9	10	3	10		
1/3240	1.4	10	1.4	10	2	10	2	10	2.4	10	2.5	10		

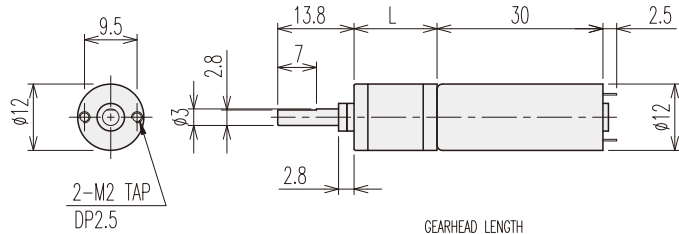
* color gear ratios are same rotation direction with motor.

K12-TYPE

Planetary GEARHEAD

DIMENSIONS

K12-1230 SERIES



GEARHEAD LENGTH			
RATIO	L	RATIO	L
1/4	15	1/256	24.9
1/16	18.3	1/1024	28.2
1/64	21.6	1/4096	31.5

MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			STALL		WEIGHT (g)
			mA	rpm	gf-cm	mA	rpm	A	gf-cm	
ND1230LB		2.4V	130	12500	6	450	10100	1.5	23	13
ND1230LC		3V	80	12500	5.6	340	10300	1.4	25	
ND1230H1		13V	30	11800	5.4	80	8600	0.2	22	

AT MAXIMUM EFFICIENCY (K12-□□□□-ND1230□□)

GEAR	MODEL	ND1230LB		ND1230LC		ND1230H1	
		DC 2.4V		DC 3V		DC 13V	
		rpm	gf-cm	rpm	gf-cm	rpm	gf-cm
1/004		2525	20	2575	18	2150	17
1/016		631	60	643	57	537	55
1/064		157	200	160	183	134	177
1/256		39	600	40	587	33	566
1/1024		9.8	2000	10	1880	8.4	1810
1/4096		2.4	2000	2.5	2000	2.1	2000

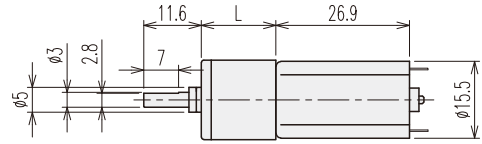
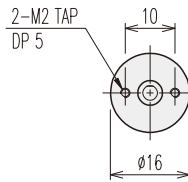
*Gearbox output shaft rotation direction is same direction with motor.

K16-TYPE

Planetary GEARHEAD

DIMENSIONS

K16-1627 SERIES



GEARHEAD LENGTH			
RATIO	L	RATIO	L
1/4	15	1/198 ~ 1/850	26.1
1/14 ~ 1/29	18.7	1/1014 ~ 1/4592	29.8
1/53 ~ 1/157	22.4		

MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			STALL		WEIGHT (g)
			mA	rpm	gf-cm	mA	rpm	mA	gf-cm	
ND1627R1		12V	90	8000	7	110	5900	300	32	16
ND1627M2		24V	60	13500	12	140	9200	360	47.6	

AT MAXIMUM EFFICIENCY (K16-□□□□-ND1627□□)

GEAR	MODEL	ND1627R1		ND1627M2	
		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm
1/004		1461	0.03	2110	0.04
1/014		417	0.07	600	0.12
1/016		365	0.09	528	0.14
1/019		307	0.1	444	0.16
1/029		201	0.15	291	0.25
1/053		110	0.23	159	0.37
1/062		94	0.27	136	0.43
1/072		81	0.31	117	0.49
1/084		69	0.36	100	0.58
1/104		56	0.45	81	0.72
1/128		45	0.55	66	0.88
1/157		37	0.68	53	1.08
1/198		29	0.69	42	1.1
1/231		25	0.81	36	1.3
1/270		21	0.94	31	1.5
1/316		18	1.1	26	1.7
1/370		15	1.3	22	2.1
1/455		13	1.6	18.5	2.5
1/561		10.4	1.96	15	3
1/690		8.5	2.4	12.2	3
1/850		6.9	2.9	9.9	3
1/1014		5.8	3	8.3	3
1/1249		4.7	3	6.7	3
1/1621		3.6	3	5.2	3
1/1996		2.9	3	4.2	3
1/2458		2.4	3	3.4	3
1/3027		1.9	3	2.8	3
1/3728		1.5	3	2.2	3
1/4592		1.2	3	1.8	3

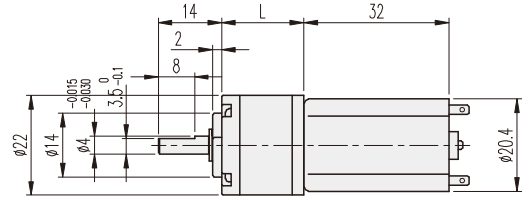
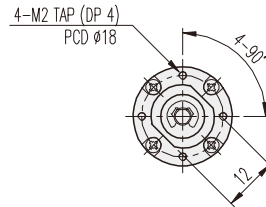
* Gearbox output shaft rotation direction is same direction with motor.

K22-TYPE

Planetary GEARHEAD

DIMENSIONS

K22-2032 SERIES



GEARHEAD LENGTH

RATIO	L	RATIO	L
1/4	14.4	1/198 ~ 1/455	25.35
1/14 ~ 1/19	18.05	1/742 ~ 1/1996	29
1/53 ~ 1/104	21.7		

MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			STALL		WEIGHT (g)
			mA	rpm	gf-cm	mA	rpm	A	gf-cm	
ND2032R1		12V	90	8000	25	250	6400	1	121	32
ND2032P2		24V	55	9000	25	150	7400	0.6	136	

AT MAXIMUM EFFICIENCY (K22-□□□□-ND2032□□)

GEAR	MODEL	ND2032R1		ND2032P2	
		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm
1/004		1600	0.07	1850	0.07
1/014		457	0.2	528	0.2
1/016		400	0.23	462	0.23
1/019		337	0.27	390	0.27
1/053		121	0.6	140	0.6
1/062		103	0.7	119	0.7
1/072		89	0.8	103	0.8
1/084		76	1	88	1
1/104		62	1.2	71	1.2
1/198		32	1.9	37	1.9
1/231		28	2.2	32	2.2
1/270		23.7	2.6	27.4	2.6
1/316		20.2	3	23.4	3
1/370		17.3	3	20	3
1/455		14	3	16.3	3
1/742		8.6	3	10	3
1/1014		6.3	3	7.3	3
1/1249		5.1	3	5.9	3
1/1621		3.9	3	4.6	3
1/1996		3.2	3	3.7	3

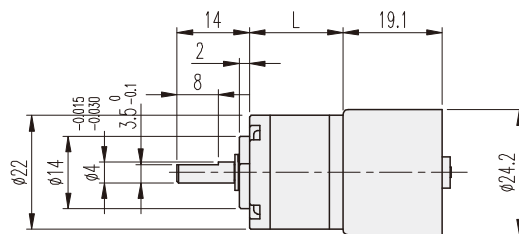
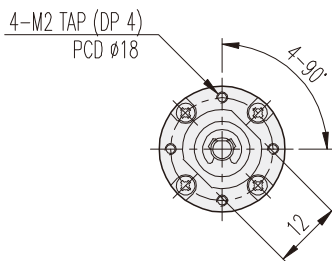
* Gearbox output shaft rotation direction is same direction with motor.

K22-TYPE

Planetary GEARHEAD

DIMENSIONS

K22-2419 BLDC SERIES



GEARHEAD LENGTH

RATIO	L	RATIO	L
1/4	14.4	1/198 ~ 1/455	25.35
1/14 ~ 1/19	18.05	1/742 ~ 1/1996	29
1/53 ~ 1/104	21.7		

BLDC MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			WEIGHT (g)
			mA	rpm	gf-cm	mA	rpm	
NB2419U1		12V	120	6200	25	200	4500	30
NB2419R2		24V	100	8700	18	180	7200	

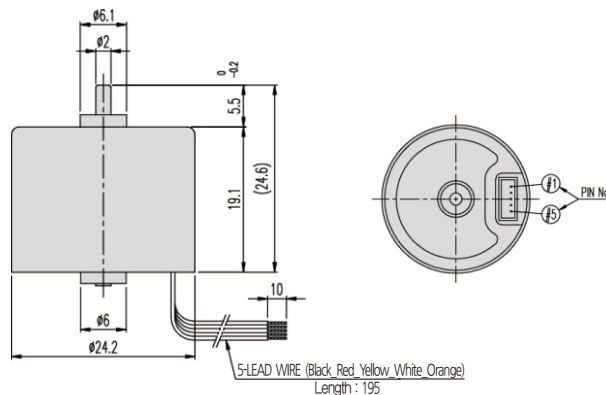
AT MAXIMUM EFFICIENCY (K22-□□□□-NB2419□□)

GEAR	MODEL	NB2419U1		NB2419R2	
		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm
1/004		1125	0.09	1800	0.06
1/014		321	0.29	514	0.2
1/016		281	0.33	450	0.23
1/019		237	0.39	379	0.27
1/053		85	1	136	0.68
1/062		73	1.1	116	0.8
1/072		63	1.3	100	0.93
1/084		54	1.6	86	1.1
1/104		43	1.9	69	1.3
1/198		22.7	3	36	2.3
1/231		19.5	3	31	2.7
1/270		16.7	3	26.7	3
1/316		14.2	3	22.8	3
1/370		12.1	3	19.5	3
1/455		9.9	3	15.8	3
1/742		6	3	9.7	3
1/1014		4.4	3	7.1	3
1/1249		3.6	3	5.7	3
1/1621		2.8	3	4.4	3
1/1996		2.3	3	3.6	3

How to connect when speed control is not needed.

No - Color	Pin - Contents	Connection Method
1 - Black	GND	connecting to (-) power
2 - Red	12V	connecting to (+) power
3 - Yellow	1FG	No Use
4 - White	PWM	CW connecting to (-) power
5 - Orange	CW/CCW	Normal Open, CCW connecting to (-) power

* Please be cautious that Motor can be damaged when connected to incorrect power (+) (-).



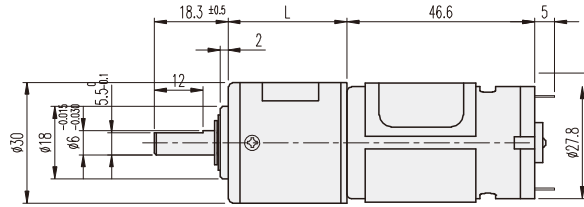
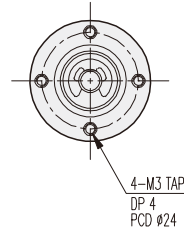
- * Gearbox output shaft rotation direction is same direction with motor.
- * Proceed function change in motor stop type.
- * Controller for speed control is GUN type.

K30-TYPE

Planetary GEARHEAD

DIMENSIONS

K30-2847 SERIES



GEARHEAD LENGTH

RATIO	L
1/005	23.1
1/014 ~ 1/027	29.5
1/051 ~ 1/139	35.9
1/189 ~ 1/721	42.3

MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			STALL		WEIGHT (g)
			mA	rpm	gf-cm	A	rpm	A	gf-cm	
ND2847T1		12V	170	7300	90	0.65	6300	5	830	110
ND2847T2		24V	90	7300	110	0.4	6300	2.8	870	

AT MAXIMUM EFFICIENCY (K30-□□□-ND2847T□)

GEAR	MODEL	ND2847T1		ND2847T2	
		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm
1/005		1260	0.4	1260	0.5
1/014		450	1	450	1.2
1/019		331	1.3	331	1.6
1/027		233	1.9	233	2.4
1/051		123	3	123	4
1/071		88	4.5	88	5.5
1/100		63	6.5	63	8
1/139		45	9	45	11
1/189		33	11	33	12
1/264		23	12	23	12
1/369		17	12	17	12
1/516		12	12	12	12
1/721		8.7	12	8.7	12

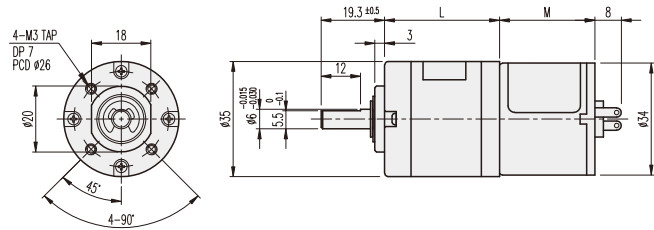
* Gearbox output shaft rotation direction is same direction with motor.

K35-TYPE

Planetary GEARHEAD

DIMENSIONS

K35-3429 & 3448 SERIES



GEARHEAD LENGTH	
RATIO	L
1/005	22.1
1/014 ~ 1/027	28.5
1/051 ~ 1/139	34.9
1/189 ~ 1/721	41.3

MOTOR LENGTH	
MOTOR	M
KM3429 SERIES	29
KM3448 SERIES	48

AT MAXIMUM EFFICIENCY (K35-□□□-KD3429□□)

GEAR	MODEL	KD3429S1		KD3429S2		KD3429T1		KD3429T2		KD3429P1		KD3429P2	
		DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/005		900	0.16	900	0.16	1300	0.16	1300	0.16	1600	0.3	1600	0.16
1/014		321	0.35	321	0.35	464	0.35	464	0.35	571	0.7	571	0.35
1/019		236	0.48	236	0.48	342	0.48	342	0.48	421	1	421	0.48
1/027		166	0.69	166	0.69	240	0.69	240	0.69	296	1.4	296	0.69
1/051		88	1	88	1	127	1	127	1	156	2.1	156	1
1/071		63	1.5	63	1.5	91	1.5	91	1.5	112	2.9	112	1.5
1/100		45	2	45	2	65	2	65	2	80	4.1	80	2
1/139		32	2.8	32	2.8	46	2.8	46	2.8	57	5.7	57	2.8
1/189		23	3.1	23	3.1	34	3.1	34	3.1	42	6.2	42	3.1
1/264		17	4.3	17	4.3	24	4.3	24	4.3	30	8.6	30	4.3
1/369		12	6	12	6	17	6	17	6	21	12	21	6
1/516		8	8.5	8	8.5	12	8.5	12	8.5	15	12	15	8.5
1/721		6	11.8	6	11.8	9	11.8	9	11.8	11	12	11	11.8

AT MAXIMUM EFFICIENCY (K35-□□□-KD3448□□)

GEAR	MODEL	KD3448S1		KD3448S2		KD3448T1		KD3448T2		KD3448P1		KD3448P2	
		DC 12V		DC 24V		DC 12V		DC 24V		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm	rpm	kgf-cm
1/005		900	0.3	900	0.3	1300	0.3	1300	0.3	1600	0.3	1600	0.3
1/014		321	0.7	321	0.7	464	0.7	464	0.7	571	0.7	571	0.7
1/019		236	1	236	1	342	1	342	1	421	1	421	1
1/027		166	1.4	166	1.4	240	1.4	240	1.4	296	1.4	296	1.4
1/051		88	2.1	88	2.1	127	2.1	127	2.1	156	2.1	156	2.1
1/071		63	2.9	63	2.9	91	2.9	91	2.9	112	2.9	112	2.9
1/100		45	4.1	45	4.1	65	4.1	65	4.1	80	4.1	80	4.1
1/139		32	5.7	32	5.7	46	5.7	46	5.7	57	5.7	57	5.7
1/189		23	6.2	23	6.2	34	6.2	34	6.2	42	6.2	42	6.2
1/264		17	8.6	17	8.6	24	8.6	24	8.6	30	8.6	30	8.6
1/369		12	12	12	12	17	12	17	12	21	12	21	12
1/516		8	12	8	12	12	12	12	12	15	12	15	12
1/721		6	12	6	12	9	12	9	12	11	12	11	12

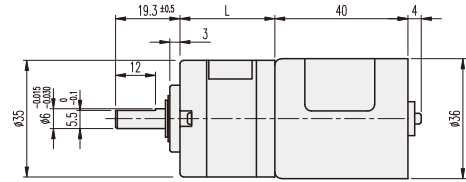
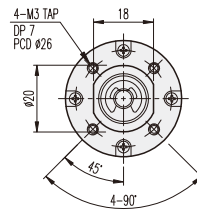
* Gearbox output shaft rotation direction is same direction with motor.

K35-TYPE

Planetary GEARHEAD

DIMENSIONS

K35-3640 BLDC SERIES



GEARHEAD LENGTH

RATIO	L
1/005	22.1
1/014 ~ 1/027	28.5
1/051 ~ 1/139	34.9
1/189 ~ 1/721	41.3

BLDC MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			WEIGHT (g)
			mA	rpm	gf-cm	A	rpm	
NB3640S1		12V	500	5300	150	1.2	4500	150
NB3640S2		24V	300	5000	250	0.8	3900	

AT MAXIMUM EFFICIENCY (K35-□□□-NB3640S□)

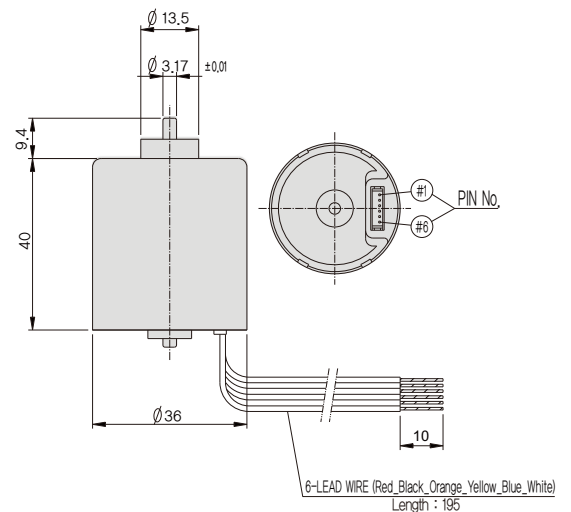
GEAR	MODEL	NB3640S1		NB3640S2	
		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm
1/005		900	0.7	780	1.1
1/014		321	1.7	278	2.9
1/019		237	2.3	205	3.9
1/027		167	3.3	144	5.6
1/051		88	5.5	76	9.5
1/071		63	7.7	55	12
1/100		45	10.8	39	12
1/139		32	12	28	12
1/189		24	12	21	12
1/264		17	12	15	12
1/369		12	12	10.5	12
1/516		8.7	12	7.6	12
1/721		6.2	12	5.4	12

- * Gearbox output shaft rotation direction is same direction with motor.
- * Proceed function change in motor stop type.
- * Controller for speed control is GUN type.

How to connect when speed control is not needed.

No - Color	Pin - Contents	Connection Method
1 - White	Brake	No Use, (-) connectin Brake
2 - Blue	PWM	connecting to (-) power
3 - Yellow	1FG(6P/R)	No Use
4 - Orange	CW/CCW	Normal Open, CCW connecting to (-) power
5 - Black	GND	connecting to (-) power
6 - Red	24V	connecting to (+) power

* Please be cautious that Motor can be damaged when connected to incorrect power (+) (-).

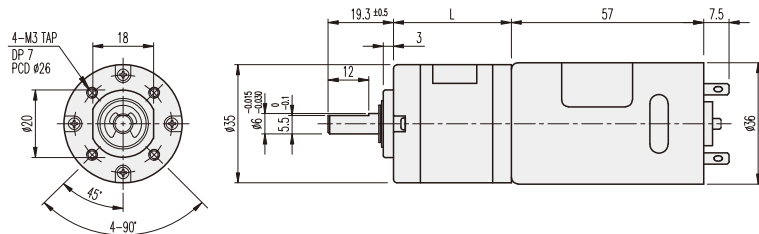
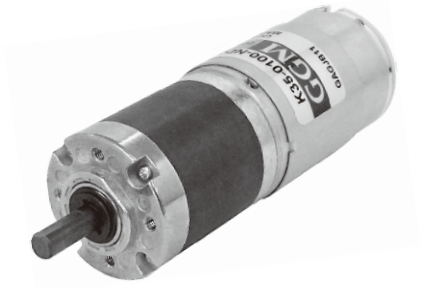


K35-TYPE

Planetary GEARHEAD

DIMENSIONS

K35-3657 SERIES



GEARHEAD LENGTH

RATIO	L
1/005	22.1
1/014 ~ 1/027	28.5
1/051 ~ 1/139	34.9
1/189 ~ 1/721	41.3

MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			STALL		WEIGHT (g)
			mA	rpm	gf·cm	A	rpm	A	kgf·cm	
ND3657U1		12V	300	6000	200	1.5	5000	10	1.6	200
ND3657U2		24V	150	6000	200	0.9	5000	5	1.6	

AT MAXIMUM EFFICIENCY (K35-□□□-ND3657U□)

GEAR	MODEL	ND3657U1		ND3657U2	
		DC 12V		DC 24V	
		rpm	kgf·cm	rpm	kgf·cm
1/005		1000	1	1000	1
1/014		357	2.2	357	2.2
1/019		263	3	263	3
1/027		185	4.2	185	4.2
1/051		98	7.4	98	7.4
1/071		70	10	70	10
1/100		50	12	50	12
1/139		35.9	12	35.9	12
1/189		26.4	12	26.4	12
1/264		18.9	12	18.9	12
1/369		13.5	12	13.5	12
1/516		9.6	12	9.6	12
1/721		6.9	12	6.9	12

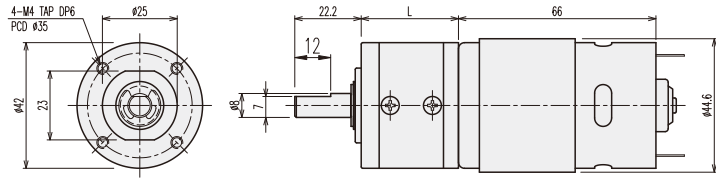
* Gearbox output shaft rotation direction is same direction with motor.

K42-TYPE

Planetary GEARHEAD

DIMENSIONS

K42-4266 SERIES



GEARHEAD LENGTH

RATIO	L	RATIO	L
1/4	32.5	1/212 ~ 1/864	52.6
1/14 ~ 1/24	39.2	1/1062 ~ 1/3600	59.3
1/49 ~ 1/144	45.9		

MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			STALL		WEIGHT (g)
			A	rpm	gf-cm	A	rpm	A	kgf-cm	
ND4266T1		12V	1	7000	520	3.8	5900	24	3.8	350
ND4266T2		24V	0.5	7000	520	1.8	5900	13	4.3	

AT MAXIMUM EFFICIENCY (K42-□□□□-ND4266T□)

GEAR	MODEL	ND4266T1		ND4266T2	
		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm
1/004		1470	1.7	1470	1.7
1/014		420	4.9	420	4.9
1/017		346	5.9	346	5.9
1/024		245	8.4	245	8.4
1/049		120	14	120	14
1/061		96	17	96	17
1/084		70	24	70	24
1/104		57	29	57	29
1/144		41	30	41	30
1/212		28	30	28	30
1/263		22	30	22	30
1/294		20	30	20	30
1/504		11.7	30	11.7	30
1/624		9.4	30	9.4	30
1/720		8.2	30	8.2	30
1/864		6.8	30	6.8	30
1/1062		5.5	30	5.5	30
1/1470		4	30	4	30
1/2500		2.35	30	2.35	30
1/3000		1.96	30	1.96	30
1/3600		1.63	30	1.63	30

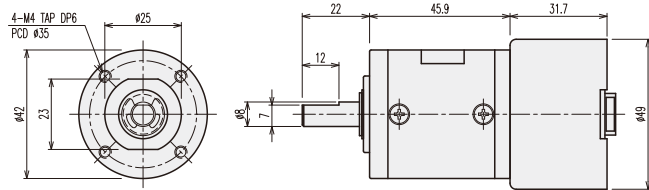
*Gearbox output shaft rotation direction is same direction with motor.

K42-TYPE

Planetary GEARHEAD

DIMENSIONS

K42-4932 BLDC SERIES



GEARHEAD LENGTH

RATIO	L	RATIO	L
1/4	32.5	1/212 ~ 1/864	52.6
1/14 ~ 1/24	39.2	1/1062 ~ 1/3600	59.3
1/49 ~ 1/144	45.9		

BLDC MOTOR PERFORMANCE DATA

MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			WEIGHT (g)
			mA	rpm	gf-cm	A	rpm	
NB4932S2		24V	500	5000	385	1	3800	210

AT MAXIMUM EFFICIENCY (K42-□□□□-NB4932S2)

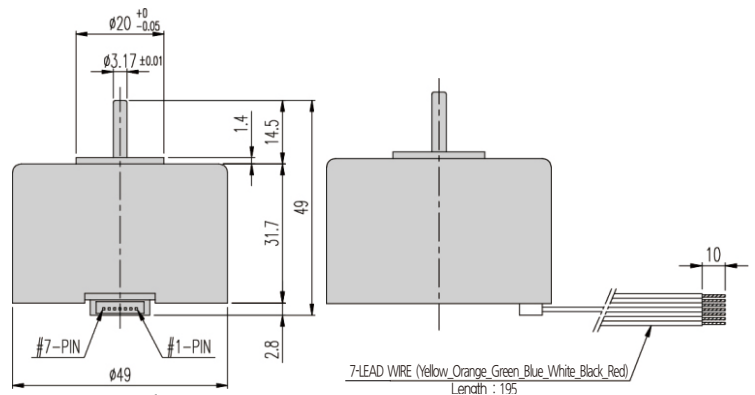
GEAR	MODEL	NB4932S2 DC 24V	
		rpm	kgf-cm
1/004		950	1.4
1/014		271	4.4
1/017		224	5.3
1/024		158	7.5
1/049		78	14
1/061		62	17
1/084		45	24
1/104		37	29
1/144		26	30
1/212		18	30
1/263		14	30
1/294		13	30
1/504		7.5	30
1/624		6.1	30
1/720		5.3	30
1/864		4.4	30
1/1062		3.6	30
1/1470		2.6	30
1/2500		1.52	30
1/3000		1.26	30
1/3600		1.05	30

How to connect when speed control is not needed.

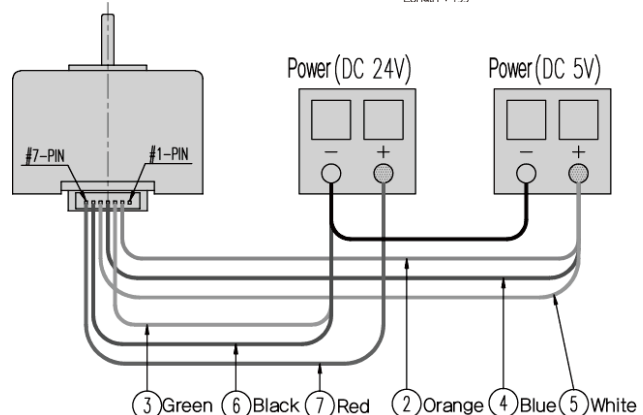
No - Color	Pin - Contents	Connected during operation
1 - Yellow	20FG	No Use
2 - Orange	5V	DC 5V (+)
3 - Green	CW/CCW	5V(+)=CW 5V(-)=CCW
4 - Blue	PWM	DC 5V (+)
5 - White	ST/SP	DC 5V (+)
6 - Black	GND	DC 24V, 5V (-)
7 - Red	24V	DC 24V (+)

- Caution -

1. Use carefully input voltage range of connector each pin.
 2. Two voltage is needed to run motor.
 3. 20FG signal is output signal and no connection is possible but insulation is needed.
 4. Execute function change under motor's no working.
- * Please be cautious that Motor can be damaged when connected to incorrect power (+) (-).



- * Gearbox output shaft rotation direction is same direction with motor.
- * Proceed function change in motor stop type.
- * Controller for speed control is GUN type.

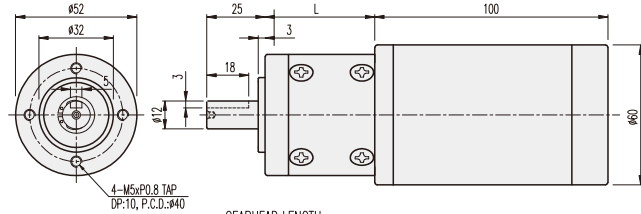


K52-TYPE

Planetary GEARHEAD

DIMENSIONS

K52-K6DS25N SERIES



GEARHEAD LENGTH	
RATIO	L
1/003 ~ 1/004	47
1/012 ~ 1/026	62.5
1/043 ~ 1/126	78
1/150 ~ 1/936	93.5

MOTOR PERFORMANCE DATA

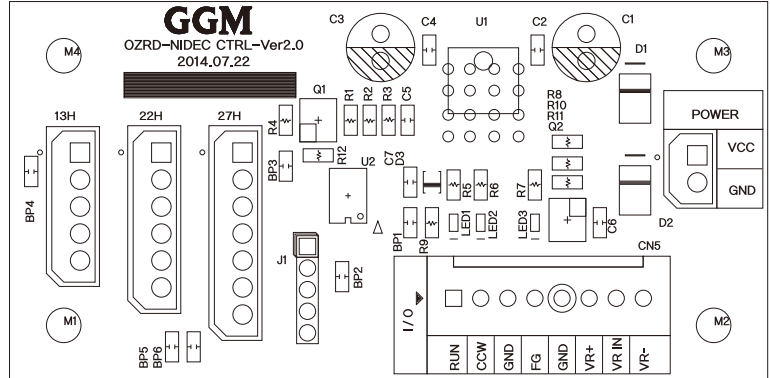
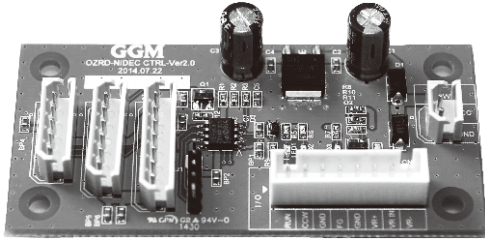
MODEL	ITEM	VOLTAGE (DC)	NO LOAD		AT MAX. EFF.			STALL		WEIGHT (g)
			A	rpm	kgf-cm	A	rpm	A	kgf-cm	
K6DS25N1		12V	1	3450	0.8	3.5	3000	20	5.9	840
K6DS25N2		24V	0.45	3250	0.8	1.5	3000	14.5	9	

AT MAXIMUM EFFICIENCY (K52-□□□-K6DS25N□)

GEAR	MODEL	K6DS25N1		K6DS25N2	
		DC 12V		DC 24V	
		rpm	kgf-cm	rpm	kgf-cm
1/003		1000	1.9	1000	1.9
1/004		750	2.5	750	2.5
1/012		250	6.1	250	6.1
1/015		200	7.7	200	7.7
1/019		158	9.7	158	9.7
1/021		143	10.7	143	10.7
1/026		115	13.3	115	13.3
1/043		70	17.6	70	17.6
1/053		57	21.7	57	21.7
1/066		45	27	45	27
1/081		37	33	37	33
1/100		30	41	30	41
1/113		26.5	46	26.5	46
1/126		23.8	50	23.8	50
1/150		20	50	20	50
1/230		13	75	13	75
1/285		10.5	93	10.5	93
1/353		8.5	100	8.5	100
1/488		6.1	100	6.1	100
1/546		5.5	100	5.5	100
1/676		4.4	100	4.4	100
1/756		4	100	4	100
1/936		3.2	100	3.2	100

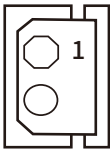
* Gearbox output shaft rotation direction is same direction with motor.

OZRD-NIDEC CTRL-Ver2.0



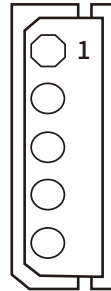
Configuration and Functional Description

POWER



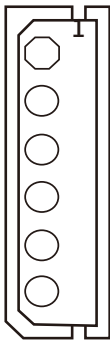
POWER INPUT	
1	VCC (DC12V or 24V)
2	GND

13H



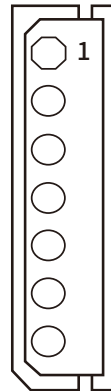
NIDEC 13H	
1	GND BLACK
2	MOTOR VCC RED
3	FG YELLOW
4	FWM WHITE
5	CW/CCW ORANGE

22H



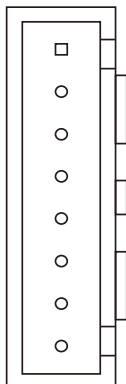
NIDEC 22H	
1	BRAKE WHITE
2	PWM BLUE
3	FG YELLOW
4	CW/CCW ORANGE
5	GND BLACK
6	MOTOR VCC RED

27H



NIDEC 27H	
1	FG YELLOW
2	5V ORANGE
3	CW/CCW GREEN
4	PWM BLUE
5	ST/SP WHITE
6	GND BLACK
7	MOTOR VCC RED

I/O



USER IN/OUT	
1	RUN BLACK
2	CCW WHITE
3	GND ORANGE
4	FG GREEN
5	GND BLUE
6	VR+
7	VR IN
8	VR-

- VR : Volume Resistance to adjust motor speed.
- RUN : Switch for motor running (CW)
(Connecting input 1 and 3)
- CCW : Switch for motor running (CCW)
(Connect input 2 and 3)
LED lamp ON during CCW

* Motor run CCW when connect input 1, 2, 3 simultaneously
 * Counter connector (female) of Power, 13H, 22H, 27H is Molex 5264-XX, terminal 5263PBT.
 * Yeonho Electronics YMH025-XXR available, Counter connector (female) of I/O is Yeonho Electronics SMH 250-08, Terminal YST250.

- ※ The volume resistive capacity is 5KΩ.
- ※ Always connect red (+) black (-) if connected in reverse Motor loss.



MEMO

A series of horizontal dotted lines for writing.



MEMO

Series of horizontal dotted lines for writing notes.