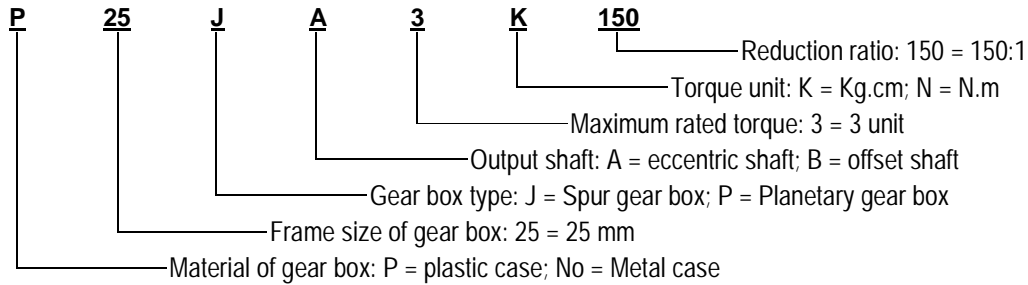


**SECTION 5: GEAR HEADS WITH PM DC MOTORS**

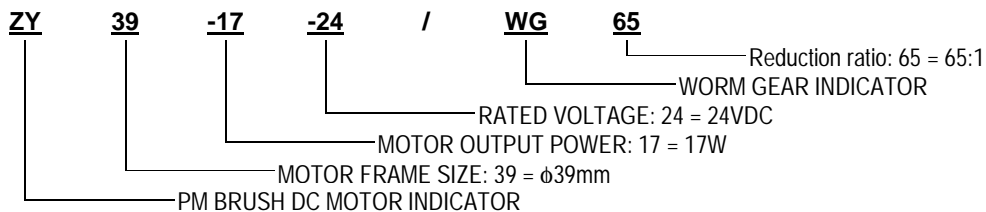
• **PRODUCT NUMBER CODE FOR GEAR HEAD**



• **SELECTION GUIDE**

ITEM #	Frame Size	Type	Max. Load		Ratio	Page
			Kg.cm	N.m		
22PA10K-XXX	φ22 / 24	Planetary	10	1.0	3.7 ~ 720	5-1
25JA3K-XXX	φ25	Spur	3	0.3	10 ~ 700	5-3
28PA10K-XXX	φ28 / 30 / 32 / 36	Planetary	30	3.1	3.7 ~ 720	5-5
33JB6K-XXX	φ33	Spur	6	0.6	8 ~ 781	5-7
37JB6K-XXX	φ37	Spur	6	0.6	6 ~ 3000	5-9
50JB40K-XXX	φ50	Spur	40	4.1	5.9 ~ 426	5-11
56PA200K-XXX	φ56	Planetary	200	20	3.6 ~ 326	5-12
60JB3N-XXX	60X60	Spur	29	3	3 ~ 180	5-13
66JB7.5N-XXX	66X66	Spur	74	7.5	10 ~ 180	5-14
70JB5N-XXX	70X70	Spur	49	5	3 ~ 180	5-15
78JB15N-XXX	78X78	Spur	147	15	3 ~ 136	5-16
80JB8N-XXX	80X80	Spur	78	8	3 ~ 180	5-17
88JB19N-XXX	88X88	Spur	186	19	10 ~ 150	5-18
90JB15N-XXX	90X90	Spur	147	15	3 ~ 180	5-19
99JB72N-XXX	99X99	Spur	706	72	3 ~ 120	5-20
104JB44N-XXX	104X104	Spur	431	44	3 ~ 180	5-21
112JB60N-XXX	112X112	Spur	588	60	10 ~ 80	5-22
7064JA50K-XXX	70X64	Spur	50	5.1	25 ~ 95	5-23
7670JA50K-XXX	76x70	Spur	50	5.1	1000 ~ 3000	5-24
7670JB50K-XXX	76x70	Spur	50	5.1	1000 ~ 3000	5-25
P7660JA10K-XXX	76X60	Spur	10	1.0	125	5-26
P8864JA20K-XXX	88X64	Spur	20	2.0	420	5-27

• **PRODUCT NUMBER CODE FOR CAR WINDOW WARM GEAR HEAD**



• **CAR WINDOW WORM GEAR MOTORS SELECTION GUIDE**

ITEM #	Frame Size	Type	Max. Load		Ratio	Page
			Kg.cm	N.m		
ZY39-XX-XX-WG65	φ39	WORM	10	1.0	65:1	5-28
ZY52-XX-XX-WG62	φ52	WORM	3	0.3	62:1	5-29

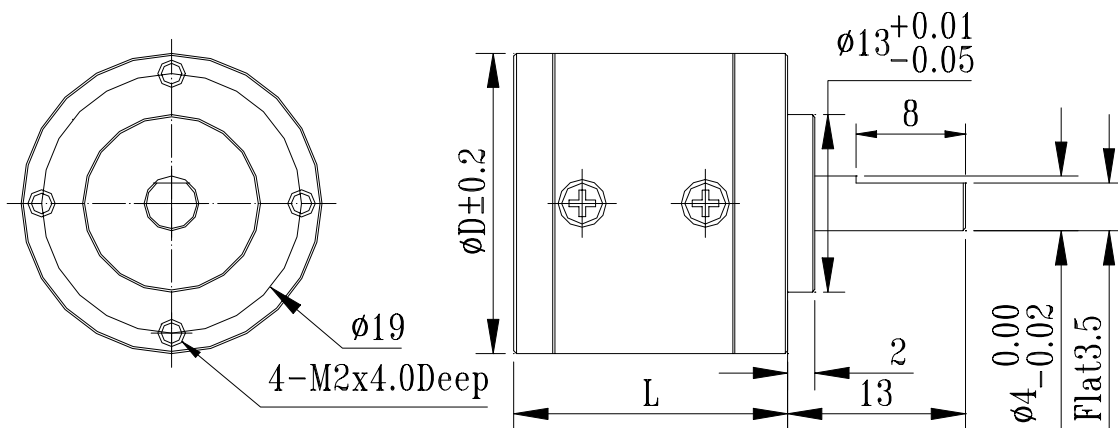
## 22/24PA10K-PLANETARY GEAR HEAD

### • GEAR HEAD SPECIFICATIONS

Number of gear trains	1	2	3	4
Reduction ratio	3.7 5.2	13.8 19.2 26.8	51 71 99.5 139	189 265 369 516 720
Rated load (kg.cm)	2	5	10	10
Maximum load ( kg.cm)	6	15	30	30
Body Length L (mm)	20	25	30	35
Efficiency (%)	80	75	65	55

### • DIMENSIONS

D = 22, 24



130, 180, 300, 310, 370 series DC motors are suitable for 22/24PA10K gear boxes. A few samples are listed in the below tables:

Motor Model Number	Rated	No-load		At Maximum Efficiency				Stall	Motor	
	Voltage VDC	Current mA	Speed r/min	Speed r/min	Torque g.cm	Power W	Current mA	Torque g.cm	Dia. mm	Length mm
130SH-11340	6.0	30	4800	3800	8.5	0.33	120	44	20.4	25.1
180SH-14210	4.5	25	3700	3200	7.0	0.23	100	63	20.4	32.1
280SA-20120	3.0	70	5000	4100	13	0.55	330	75	24.2	30.5
300CA-14270	1.9	32	3500	2700	3.8	0.11	120	18	24.4	12.5
310TA-12025	12	15	4700	2500	15	0.39	60	30	24.4	20
370CH-13350	9	25	4200	3600	15	0.55	110	112	24.2	30.8
370CA-15370	12	18	5600	4800	24	1.18	160	186	24.2	30.8

## SPECIFICATIONS FOR 22/24PA10K SERIES DC GEAR MOTORS

### • 22PA10K-XXX / 130SH-11340

Gear Ratio	3.7	5.2	13.8	19	26.8	51	71	99.5	139	189	265	369	516	720
Efficiency %	80	80	75	75	75	65	65	65	65	55	55	55	55	55
No-load speed (RPM)	1297	923	348	250	179	94	68	48	35	25	18	13	9	7
Rated speed (RPM)	1027	731	275	198	142	75	54	38	27	20	14	10	7	5
Rated load (Kg.cm)	0.03	0.04	0.09	0.12	0.17	0.28	0.39	0.55	0.77	0.88	1.24	1.73	2.41	3.37
Max. Load (Kg.cm)	0.13	0.18	0.46	0.63	0.88	1.46	2.03	2.85	3.98	4.57	6.41	8.93	12.49	17.42

• **22PA10K-XXX / 180SH-14210**

Gear Ratio	3.7	5.2	13.8	19	26.8	51	71	99.5	139	189	265	369	516	720
Efficiency %	80	80	75	75	75	65	65	65	65	55	55	55	55	55
No-load speed (RPM)	1000	712	268	193	138	73	52	37	27	20	14	10	7	5
Rated speed (RPM)	865	615	232	167	119	63	45	32	23	17	12	9	6	4
Rated load (Kg.cm)	0.02	0.03	0.07	0.10	0.14	0.23	0.32	0.45	0.63	0.73	1.02	1.42	1.99	2.77
Max. Load (Kg.cm)	0.19	0.26	0.65	0.91	1.27	2.09	2.91	4.07	5.69	6.55	9.18	12.79	17.88	24.95

• **24PA10K-XXX / 280SA-20120**

Gear Ratio	3.7	5.2	13.8	19	26.8	51	71	99.5	139	189	265	369	516	720
Efficiency %	80	80	75	75	75	65	65	65	65	55	55	55	55	55
No-load speed (RPM)	1351	962	362	260	187	98	70	50	36	26	19	14	10	7
Rated speed (RPM)	1108	788	297	214	153	80	58	41	29	22	15	11	8	6
Rated load (Kg.cm)	0.04	0.05	0.13	0.19	0.26	0.43	0.60	0.84	1.17	1.35	1.89	2.64	3.69	5.15
Max. Load (Kg.cm)	0.22	0.31	0.78	1.08	1.51	2.49	3.46	4.85	6.78	7.80	10.93	15.22	21.29	29.70

• **24PA10K-XXX / 300CA-14270**

Gear Ratio	3.7	5.2	13.8	19	26.8	51	71	99.5	139	189	265	369	516	720
Efficiency %	80	80	75	75	75	65	65	65	65	55	55	55	55	55
No-load speed (RPM)	946	673	254	182	131	69	49	35	25	19	13	9	7	5
Rated speed (RPM)	730	519	196	141	101	53	38	27	19	14	10	7	5	4
Rated load (Kg.cm)	0.01	0.02	0.04	0.05	0.08	0.13	0.18	0.25	0.34	0.40	0.55	0.77	1.08	1.50
Max. Load (Kg.cm)	0.05	0.07	0.19	0.26	0.36	0.60	0.83	1.16	1.63	1.87	2.62	3.65	5.11	7.13

• **24PA10K-XXX / 310TA-12025**

Gear Ratio	3.7	5.2	13.8	19	26.8	51	71	99.5	139	189	265	369	516	720
Efficiency %	80	80	75	75	75	65	65	65	65	55	55	55	55	55
No-load speed (RPM)	1270	904	341	245	175	92	66	47	34	25	18	13	9	7
Rated speed (RPM)	676	481	181	130	93	49	35	25	18	13	9	7	5	3
Rated load (Kg.cm)	0.04	0.06	0.16	0.22	0.30	0.50	0.69	0.97	1.36	1.56	2.19	3.04	4.26	5.94
Max. Load (Kg.cm)	0.09	0.12	0.31	0.43	0.60	0.99	1.38	1.94	2.71	3.12	4.37	6.09	8.51	11.88

• **24PA10K-XXX / 370CA-13350**

Gear Ratio	3.7	5.2	13.8	19	26.8	51	71	99.5	139	189	265	369	516	720
Efficiency %	80	80	75	75	75	65	65	65	65	55	55	55	55	55
No-load speed (RPM)	1135	808	304	219	157	82	59	42	30	22	16	11	8	6
Rated speed (RPM)	973	692	261	188	134	71	51	36	26	19	14	10	7	5
Rated load (Kg.cm)	0.04	0.06	0.16	0.22	0.30	0.50	0.69	0.97	1.36	1.56	2.19	3.04	4.26	5.94
Max. Load (Kg.cm)	0.33	0.47	1.16	1.61	2.25	3.71	5.17	7.24	10.12	11.64	16.32	22.73	30.00	30.00

• **24PA10K-XXX / 370CH-15370**

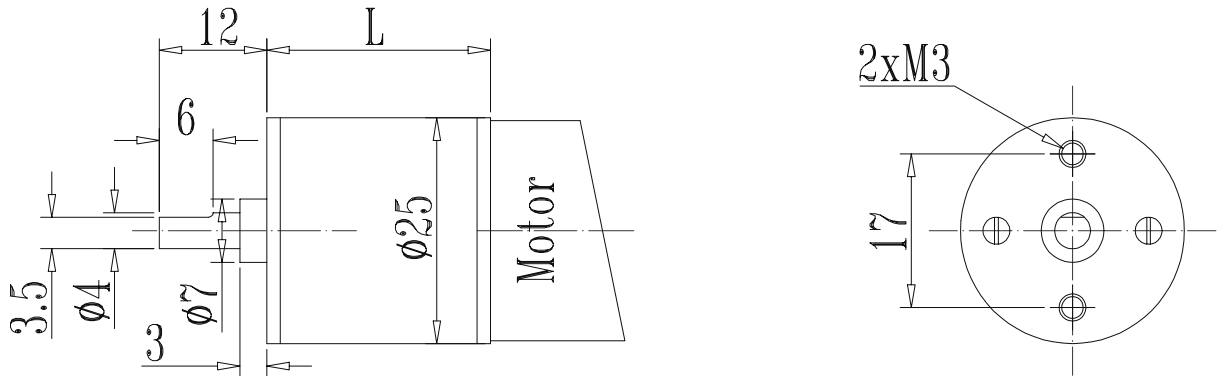
Gear Ratio	3.7	5.2	13.8	19	26.8	51	71	99.5	139	189	265	369	516	720
Efficiency %	80	80	75	75	75	65	65	65	65	55	55	55	55	55
No-load speed (RPM)	1514	1077	406	292	209	110	79	56	40	30	21	15	11	8
Rated speed (RPM)	1297	923	348	250	179	94	68	48	35	25	18	13	9	7
Rated load (Kg.cm)	0.07	0.10	0.25	0.35	0.48	0.80	1.11	1.55	2.17	2.49	3.50	4.87	6.81	9.50
Max. Load (Kg.cm)	0.55	0.77	1.93	2.68	3.74	6.17	8.58	12.03	16.81	19.33	27.11	30.00	30.00	30.00

25JA3K-GEAR HEAD

• GEAR HEAD SPECIFICATIONS

Number of gear trains	3	4	5	6	7
Reduction ratio	10	20 30	50 75 90	100 150 200	250 300 360 400 450 600 700
Rated load (kg.cm)	0.5	1	2	3	3
Maximum load ( kg.cm)	2	3	6	9	9
Body Length (mm)	21	21	23	25	27
Efficiency (%)	78	71	66	60	56
Shaft radial play (mm)	≤0.1				
Shaft axial play (mm)	≤0.35				

• DIMENSIONS



300, 310, 370 series DC motors are suitable for 25JA3K gear boxes. A few samples are listed in the below tables:

Motor Model Number	Rated	No-load		At Maximum Efficiency				Stall	Motor	
	Voltage VDC	Current mA	Speed r/min	Speed r/min	Torque g.cm	Power W	Current mA	Torque g.cm	Dia. mm	Length mm
300CA-14270	1.9	32	3500	2700	3.8	0.11	120	18	24.4	12.5
310TA-11400	5	30	5300	4800	5.0	0.20	85	32	24.4	20
310TA-12025	12	15	4700	2500	15	0.39	60	30	24.4	20
370CA-22170	6	60	6060	5370	24	1.32	310	210	24.2	30.8
370CH-13350	9	25	4200	3600	15	0.55	110	112	24.2	30.8
370CA-15370	12	18	5600	4800	24	1.18	160	186	24.2	30.8
370CA-12400	8	30	2700	2340	19	0.44	70	140	24.2	30.8

SPECIFICATIONS FOR 25JA3K SERIES DC GEAR MOTORS

• 25JA3K-XXX / 300CA-14270

Gear Ratio	10	20	30	50	75	90	100	150	200	250	300	360	400	450	600	700
Efficiency %	78	71	71	66	66	66	60	60	60	56	56	56	56	56	56	56
No-load speed (RPM)	350	175	117	70	47	39	35	23	18	14	12	10	9	8	6	5
Rated speed (RPM)	270	135	90	54	36	30	27	18	14	11	9	8	7	6	5	4
Rated load (Kg.cm)	0.03	0.05	0.08	0.13	0.19	0.23	0.23	0.34	0.46	0.53	0.64	0.77	0.85	0.96	1.28	1.49
Max. Load (Kg.cm)	0.14	0.26	0.38	0.59	0.89	1.1	1.1	1.6	2.2	2.5	3.0	3.6	4.0	4.5	6.0	7

• **25JA3K-XXX / 310TA-11400**

Gear Ratio	10	20	30	50	75	90	100	150	200	250	300	360	400	450	600	700
Efficiency %	78	71	71	66	66	66	60	60	60	56	56	56	56	56	56	56
No-load speed (RPM)	530	265	177	106	71	59	53	35	27	21	18	15	13	12	9	8
Rated speed (RPM)	480	240	160	96	64	53	48	32	24	19	16	13	12	11	8	7
Rated load (Kg.cm)	0.04	0.07	0.11	0.17	0.25	0.30	0.30	0.45	0.60	0.70	0.84	1.01	1.12	1.26	1.68	1.96
Max. Load (Kg.cm)	0.25	0.45	0.68	1.06	1.58	1.90	1.92	2.88	3.84	4.48	5.38	6.45	7.17	8.06	9.00	9.00

• **25JA3K-XXX / 310TA-12025**

Gear Ratio	10	20	30	50	75	90	100	150	200	250	300	360	400	450	600	700
Efficiency %	78	71	71	66	66	66	60	60	60	56	56	56	56	56	56	56
No-load speed (RPM)	470	235	157	94	63	52	47	31	24	19	16	13	12	10	8	7
Rated speed (RPM)	250	125	83	50	33	28	25	17	13	10	8	7	6	6	4	4
Rated load (Kg.cm)	0.12	0.21	0.32	0.50	0.74	0.89	0.90	1.35	1.80	2.10	2.52	3.00	3.00	3.00	3.00	3.00
Max. Load (Kg.cm)	0.23	0.43	0.64	0.99	1.49	1.78	1.80	2.70	3.60	4.20	5.04	6.05	6.72	7.56	9.00	9.00

• **25JA3K-XXX / 370CA-22170**

Gear Ratio	10	20	30	50	75	90	100	150	200	250	300	360	400	450	600	700
Efficiency %	78	71	71	66	66	66	60	60	60	56	56	56	56	56	56	56
No-load speed (RPM)	606	303	202	121	81	67	61	40	30	24	20	17	15	13	10	9
Rated speed (RPM)	537	269	179	107	72	60	54	36	27	21	18	15	13	12	9	8
Rated load (Kg.cm)	0.19	0.34	0.51	0.79	1.19	1.43	1.44	2.16	2.88	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Max. Load (Kg.cm)	1.64	2.98	3.00	6.00	6.00	6.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00

• **25JA3K-XXX / 370CH-13350**

Gear Ratio	10	20	30	50	75	90	100	150	200	250	300	360	400	450	600	700
Efficiency %	78	71	71	66	66	66	60	60	60	56	56	56	56	56	56	56
No-load speed (RPM)	420	210	140	84	56	47	42	28	21	17	14	12	11	9	7	6
Rated speed (RPM)	360	180	120	72	48	40	36	24	18	14	12	10	9	8	6	5
Rated load (Kg.cm)	0.12	0.21	0.32	0.50	0.74	0.89	0.90	1.35	1.80	2.10	2.52	3.00	3.00	3.00	3.00	3.00
Max. Load (Kg.cm)	0.87	1.59	2.39	3.70	5.54	6.00	6.72	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00

• **25JA3K-XXX / 370CA-15370**

Gear Ratio	10	20	30	50	75	90	100	150	200	250	300	360	400	450	600	700
Efficiency %	78	71	71	66	66	66	60	60	60	56	56	56	56	56	56	56
No-load speed (RPM)	560	280	187	112	75	62	56	37	28	22	19	16	14	12	9	8
Rated speed (RPM)	480	240	160	96	64	53	48	32	24	19	16	13	12	11	8	7
Rated load (Kg.cm)	0.19	0.34	0.51	0.79	1.19	1.43	1.44	2.16	2.88	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Max. Load (Kg.cm)	1.45	2.64	3.00	6.00	6.00	6.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00

• **25JA3K-XXX / 370CA-12400**

Gear Ratio	10	20	30	50	75	90	100	150	200	250	300	360	400	450	600	700
Efficiency %	78	71	71	66	66	66	60	60	60	56	56	56	56	56	56	56
No-load speed (RPM)	270	135	90	54	36	30	27	18	14	11	9	8	7	6	5	4
Rated speed (RPM)	234	117	78	47	31	26	23	16	12	9	8	7	6	5	4	3
Rated load (Kg.cm)	0.15	0.27	0.40	0.63	0.94	1.13	1.14	1.71	2.28	2.66	3.00	3.00	3.00	3.00	3.00	3.00
Max. Load (Kg.cm)	1.09	1.99	2.98	4.62	6.00	6.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00

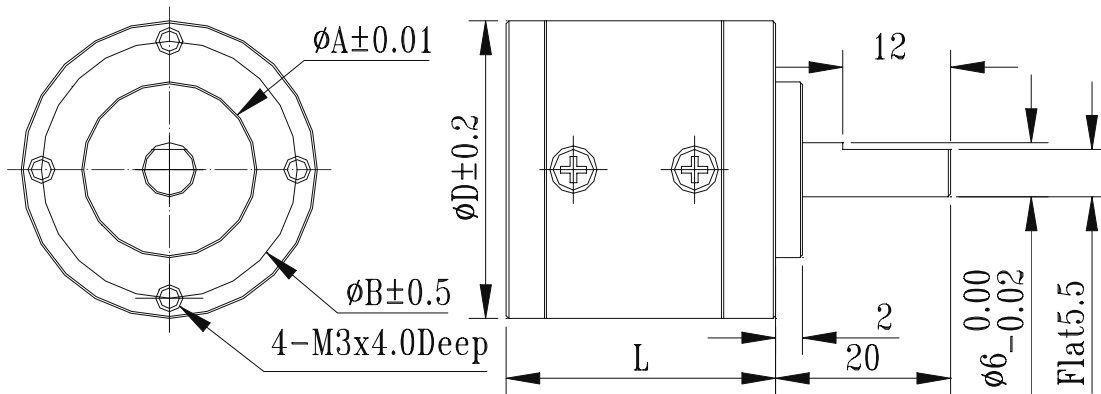
28/30/32/36PA30K-PLANETARY GEAR HEAD

• GEAR HEAD SPECIFICATIONS

Number of gear trains	1	2	3	4
Reduction ratio	3.7 5.2	13.8 19.2 26.8	51 71 99.5 139	189 265 369 516 720
Rated load (kg.cm)	5	10	20	30
Maximum load (kg.cm)	15	30	60	90
Body Length L (mm)	27	33	40	46
Efficiency (%)	80	75	65	55

• DIMENSIONS

D	28	30	32	36
A	17	17	19	19
B	22	22	26	28



365, 375, 380, 385, 395, 500, 545, 555 series DC motors are suitable for 28/30/32/36PA30K gear boxes. A few samples are listed in the below tables:

Motor Model Number	Rated	No-load		At Maximum Efficiency				Stall	Motor	
	Voltage	Current	Speed	Speed	Torque	Power	Current	Torque	Dia.	Length
	VDC	mA	r/min	r/min	g.cm	W	mA	g.cm	mm	mm
365S-12180	12	90	5800	4340	32.7	1.5	240	130	27.7	32.6
380S-10500	24	40	5000	4030	47.8	1.97	150	246	27.7	37.8
385S-10250	24	50	5460	4280	46.9	2.1	160	217	27.7	37.8
500TB-12560	9	23	4000	3300	12	0.41	100	91	32.0	19.5
540S-25150	12	220	5530	4650	140	6.68	960	880	35.8	50
545S-22100	12	160	4200	3500	100	3.6	550	620	35.8	50
555S-18160	24	90	4300	3590	200	7.36	460	1200	35.8	57

SPECIFICATIONS FOR 28/30/32/36PA30K SERIES DC GEAR MOTORS

• 28PA30K-XXX / 365S-12180

Gear Ratio	3.7	5.2	13.8	19	26.8	51	71	99.5	139	189	265	369	516	720
Efficiency %	80	80	75	75	75	65	65	65	65	55	55	55	55	55
No-load speed (RPM)	1568	1115	420	302	216	114	82	58	42	31	22	16	11	8
Rated speed (RPM)	1173	835	314	226	162	85	61	44	31	23	16	12	8	6
Rated load (Kg.cm)	0.10	0.14	0.34	0.47	0.66	1.08	1.51	2.11	2.95	3.40	4.77	6.64	9.28	12.95
Max. Load (Kg.cm)	0.38	0.54	1.35	1.87	2.61	4.31	6.00	8.41	11.75	13.51	18.95	26.38	36.89	51.48

• **28PA30K-XXX / 380S-10500**

Gear Ratio	3.7	5.2	13.8	19	26.8	51	71	99.5	139	189	265	369	516	720
Efficiency %	80	80	75	75	75	65	65	65	65	55	55	55	55	55
No-load speed (RPM)	1351	962	362	260	187	98	70	50	36	26	19	14	10	7
Rated speed (RPM)	1089	775	292	210	150	79	57	41	29	21	15	11	8	6
Rated load (Kg.cm)	0.14	0.20	0.49	0.69	0.96	1.58	2.21	3.09	4.32	4.97	6.97	9.70	13.57	18.93
Max. Load (Kg.cm)	0.73	1.02	2.55	3.54	4.94	8.15	11.35	15.91	22.23	25.57	35.85	49.93	69.81	90.00

• **28PA30K-XXX / 385S-10250**

Gear Ratio	3.7	5.2	13.8	19	26.8	51	71	99.5	139	189	265	369	516	720
Efficiency %	80	80	75	75	75	65	65	65	65	55	55	55	55	55
No-load speed (RPM)	1476	1050	396	284	204	107	77	55	39	29	21	15	11	8
Rated speed (RPM)	1157	823	310	223	160	84	60	43	31	23	16	12	8	6
Rated load (Kg.cm)	0.14	0.20	0.49	0.68	0.94	1.55	2.16	3.03	4.24	4.88	6.84	9.52	13.31	18.57
Max. Load (Kg.cm)	0.64	0.90	2.25	3.12	4.36	7.19	10.01	14.03	19.61	22.56	31.63	44.04	61.58	85.93

• **32PA30K-XXX / 500TB-12560**

Gear Ratio	3.7	5.2	13.8	19	26.8	51	71	99.5	139	189	265	369	516	720
Efficiency %	80	80	75	75	75	65	65	65	65	55	55	55	55	55
No-load speed (RPM)	1081	769	290	208	149	78	56	40	29	21	15	11	8	6
Rated speed (RPM)	892	635	239	172	123	65	46	33	24	17	12	9	6	5
Rated load (Kg.cm)	0.04	0.05	0.12	0.17	0.24	0.40	0.55	0.78	1.08	1.25	1.75	2.44	3.41	4.75
Max. Load (Kg.cm)	0.27	0.38	0.94	1.31	1.83	3.02	4.20	5.89	8.22	9.46	13.26	18.47	25.83	36.04

• **36PA30K-XXX / 540S-25150**

Gear Ratio	3.7	5.2	13.8	19	26.8	51	71	99.5	139	189	265	369	516	720
Efficiency %	80	80	75	75	75	65	65	65	65	55	55	55	55	55
No-load speed (RPM)	1495	1063	401	288	206	108	78	56	40	29	21	15	11	8
Rated speed (RPM)	1257	894	337	242	174	91	65	47	33	25	18	13	9	6
Rated load (Kg.cm)	0.41	0.58	1.45	2.02	2.81	4.64	6.46	9.05	12.6	14.6	20.4	28.4	30.0	30.0
Max. Load (Kg.cm)	2.60	3.66	9.11	12.7	17.7	29.2	40.6	56.9	60.0	90.0	90.0	90.0	90.0	90.0

• **36PA30K-XXX / 545S-22100**

Gear Ratio	3.7	5.2	13.8	19	26.8	51	71	99.5	139	189	265	369	516	720
Efficiency %	80	80	75	75	75	65	65	65	65	55	55	55	55	55
No-load speed (RPM)	1135	808	304	219	157	82	59	42	30	22	16	11	8	6
Rated speed (RPM)	946	673	254	182	131	69	49	35	25	19	13	9	7	5
Rated load (Kg.cm)	0.30	0.42	1.04	1.44	2.01	3.32	4.62	6.47	9.04	10.40	14.58	20.30	28.38	30.00
Max. Load (Kg.cm)	1.84	2.58	6.42	8.93	12.46	20.55	28.61	40.10	56.02	64.45	90.00	90.00	90.00	90.00

• **36PA30K-XXX / 555S-18160**

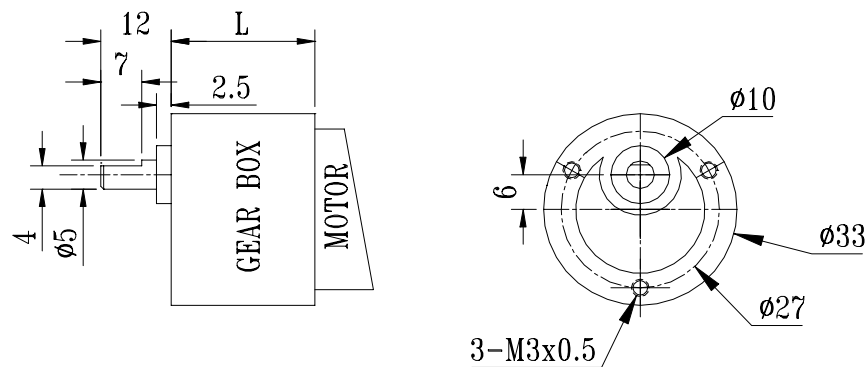
Gear Ratio	3.7	5.2	13.8	19	26.8	51	71	99.5	139	189	265	369	516	720
Efficiency %	80	80	75	75	75	65	65	65	65	55	55	55	55	55
No-load speed (RPM)	1165	829	312	224	161	85	61	43	31	23	16	12	8	6
Rated speed (RPM)	970	690	260	187	134	70	51	36	26	19	14	10	7	5
Rated load (Kg.cm)	0.59	0.83	2.07	2.88	4.02	6.63	9.23	12.94	18.1	20.8	29.2	30.0	30.0	30.0
Max. Load (Kg.cm)	3.55	4.99	12.42	17.28	24.12	39.78	55.38	60.00	60	90	90	90	90	90

### 33JB6K GEAR HEAD

• GEAR HEAD SPECIFICATIONS

Number of gear trains	2	3	4	5
Reduction ratio	8	20 50	125 312	781
Rated load (kg.cm)	1	2	4	6
Maximum load ( kg.cm)	3	6	12	18
Body Length (mm)	20	20	24.5	29
Efficiency (%)	81	72	66	59
Shaft radial play (mm)	≤0.1			
Shaft axial play (mm)	≤0.5			

• DIMENSIONS



360, 365, 375, 380, 385, 390, 395, 500, 520 series DC motors are suitable for 33JA6K gear boxes. A few samples are listed in the below tables:

Motor Model Number	Rated	No-load		At Maximum Efficiency				Stall	Motor	
	Voltage	Current	Speed	Speed	Torque	Power	Current	Torque	Dia.	Length
	VDC	mA	r/min	r/min	g.cm	W	mA	g.cm	mm	mm
500TB-14415	6	28	3700	3000	14	0.43	130	84	32.5	20
500TB-12560	9	23	4000	3300	12	0.41	100	91	32.5	20
520-17415	12	30	5500	4800	30	1.48	145	210	32.5	22.5
520-10900	24	8	3100	2800	5	0.14	13	125	32.5	22.5
360S-10500	24	60	6800	5360	44.5	2.45	200	210	27.7	32.6
365S-12180	12	80	5800	4340	32.7	1.50	240	130	27.7	32.6
380S-10500	24	40	5000	4030	47.8	1.97	150	246	27.7	37.8

### SPECIFICATIONS FOR 33JA6K SERIES DC GEAR MOTORS

• 33JB6K-XXX / 500TB-14415

Gear Ratio	8	20	50	125	312	781
Efficiency %	81	72	72	66	66	59
No-load speed (RPM)	463	185	74	30	12	5
Rated speed (RPM)	375	150	60	24	10	4
Rated load (Kg.cm)	0.09	0.20	0.50	1.16	2.88	6.00
Max. Load (Kg.cm)	0.54	1.21	3.02	6.93	12.00	18.00

• **33JB6K-XXX / 500TB-12560**

Gear Ratio	8	20	50	125	312	781
Efficiency %	81	72	72	66	66	59
No-load speed (RPM)	50	20	8	3	1	1
Rated speed (RPM)	413	165	66	26	11	4
Rated load (Kg.cm)	0.08	0.17	0.43	0.99	2.47	5.53
Max. Load (Kg.cm)	0.59	1.31	3.28	7.51	12.00	18.00

• **33JB6K-XXX / 520-17415**

Gear Ratio	8	20	50	125	312	781
Efficiency %	81	72	72	66	66	59
No-load speed (RPM)	688	275	110	44	18	7
Rated speed (RPM)	600	240	96	38	15	6
Rated load (Kg.cm)	0.19	0.43	1.08	2.48	4.00	6.00
Max. Load (Kg.cm)	1.36	3.02	6.00	12.00	12.00	18.00

• **33JB6K-XXX / 520-10900**

Gear Ratio	8	20	50	125	312	781
Efficiency %	81	72	72	66	66	59
No-load speed (RPM)	388	155	62	25	10	4
Rated speed (RPM)	350	140	56	22	9	4
Rated load (Kg.cm)	0.03	0.07	0.18	0.41	1.03	2.30
Max. Load (Kg.cm)	0.81	1.80	4.50	10.31	18.00	18.00

• **33JB6K-XXX / 360S-10500**

Gear Ratio	8	20	50	125	312	781
Efficiency %	81	72	72	66	66	59
No-load speed (RPM)	850	340	136	54	22	9
Rated speed (RPM)	670	268	107	43	17	7
Rated load (Kg.cm)	0.29	0.64	1.60	3.67	4.00	6.00
Max. Load (Kg.cm)	1.36	3.02	6.00	12.00	12.00	18.00

• **33JB6K-XXX / 365S-12180**

Gear Ratio	8	20	50	125	312	781
Efficiency %	81	72	72	66	66	59
No-load speed (RPM)	725	290	116	46	19	7
Rated speed (RPM)	543	217	87	35	14	6
Rated load (Kg.cm)	0.21	0.47	1.18	2.70	4.00	6.00
Max. Load (Kg.cm)	0.84	1.87	4.68	10.73	12.00	18.00

• **33JB6K-XXX / 380S-10500**

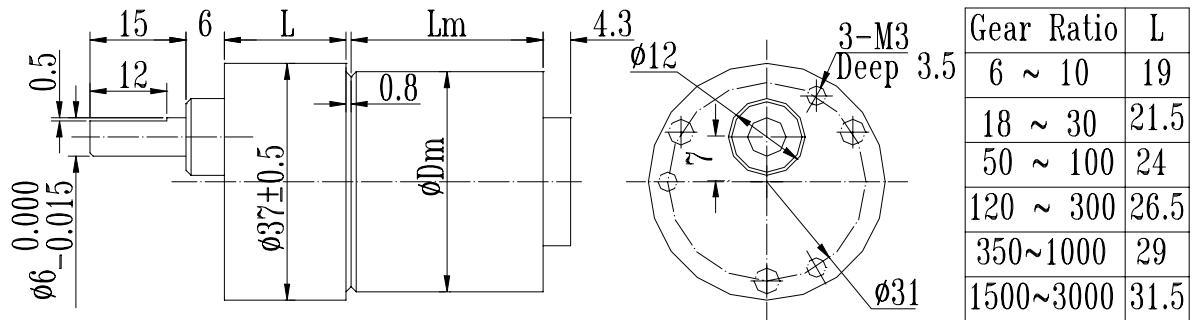
Gear Ratio	8	20	50	125	312	781
Efficiency %	81	72	72	66	66	59
No-load speed (RPM)	625	250	100	40	16	6
Rated speed (RPM)	504	202	81	32	13	5
Rated load (Kg.cm)	0.31	0.69	1.72	3.94	4.00	6.00
Max. Load (Kg.cm)	1.59	3.54	6.00	12.00	12.00	18.00

### 37JB6K GEAR HEAD

• GEAR HEAD SPECIFICATIONS

Number of gear trains	2	3	4	5	6	7
Reduction ratio	6 10	18 30	50 75 100	150 200 250 300	400 500 750 1000	1500 3000
Rated load (kg.cm)	1	2	4	6	6	6
Maximum load (kg.cm)	3	6	12	18	18	18
Body Length (mm)	19	21.5	24	26.5	29	31.5
Efficiency (%)	81	72	66	59	48	43
Shaft radial play (mm)	≤0.1					
Shaft axial play (mm)	≤0.5					

• DIMENSIONS



310, 370, 365, 380, 540, 550 series DC motors are suitable for 37JB6K Gear Heads.

A few motor samples are listed in the below table:

Motor Model Number	Rated	No-load		At Maximum Efficiency				Stall	Motor	
	Voltage VDC	Current mA	Speed r/min	Speed r/min	Torque g.cm	Power W	Current mA	Torque g.cm	Dia. mm	Length mm
310TA-12025	12	15	4700	2500	15	0.39	60	30	24.4	20
370CA-15370	12	18	5600	4800	24	1.18	160	186	24.2	30.8
365S-12180	12	80	5800	4340	32.7	1.5	240	130	27.7	32.6
380S-10500	24	40	5000	4030	47.8	1.97	150	246	27.7	37.8
540S-25150	12	220	5530	4650	140	6.68	960	880	35.8	50
545S-18150	24	120	5600	4500	160	9.2	530	900	35.8	50
555S-2677	12	140	4460	3780	150	5.95	780	990	35.8	57

• 37JB6K-XXX / 310TA-12025

Gear Ratio	6	10	18	30	50	75	100	150	200	250	300	400	500	750	1000	1500	3000
Efficiency %	81	72	72	72	66	66	66	59	59	59	59	48	48	48	48	43	43
No-load speed (RPM)	783	470	261	157	94	63	47	31	24	19	16	12	9	6	5	3	2
Rated speed (RPM)	417	250	139	83	50	33	25	17	13	10	8	6	5	3	3	2	1
Rated load (Kg.cm)	0.07	0.11	0.19	0.32	0.50	0.74	0.99	1.33	1.77	2.21	2.66	2.88	3.60	5.40	6.00	6.00	6.00
Max. Load (Kg.cm)	0.15	0.22	0.39	0.65	0.99	1.49	2.0	2.7	3.5	4.4	5.3	5.8	7.2	10.8	14.4	18.0	18.0

• **37JB6K-XXX / 370CA-15370**

Gear Ratio	6	10	18	30	50	75	100	150	200	250	300	400	500	750	1000	1500	3000
Efficiency %	81	72	72	72	66	66	66	59	59	59	59	48	48	48	48	43	43
No-load speed (RPM)	933	560	311	187	112	75	56	37	28	22	19	14	11	7	6	4	2
Rated speed (RPM)	800	480	267	160	96	64	48	32	24	19	16	12	10	6	5	3	2
Rated load (Kg.cm)	0.12	0.17	0.31	0.52	0.79	1.19	1.58	2.12	2.83	3.54	4.25	4.61	5.76	6.00	6.00	6.00	6.00
Max. Load (Kg.cm)	0.90	1.34	2.41	4.02	6.14	9.21	12.0	16.5	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0

• **37JB6K-XXX / 365S-12180**

Gear Ratio	6	10	18	30	50	75	100	150	200	250	300	400	500	750	1000	1500	3000
Efficiency %	81	72	72	72	66	66	66	59	59	59	59	48	48	48	48	43	43
No-load speed (RPM)	967	580	322	193	116	77	58	39	29	23	19	15	12	8	6	4	2
Rated speed (RPM)	800	480	267	160	96	64	48	32	24	19	16	12	10	6	5	3	2
Rated load (Kg.cm)	0.16	0.24	0.42	0.71	1.08	1.62	2.16	2.89	3.86	4.82	5.79	6.00	6.00	6.00	6.00	6.00	6.00
Max. Load (Kg.cm)	0.63	0.94	1.68	2.81	4.29	6.44	8.6	11.5	15.3	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0

• **37JB6K-XXX / 380S-10500**

Gear Ratio	6	10	18	30	50	75	100	150	200	250	300	400	500	750	1000	1500	3000
Efficiency %	81	72	72	72	66	66	66	59	59	59	59	48	48	48	48	43	43
No-load speed (RPM)	833	500	278	167	100	67	50	33	25	20	17	13	10	7	5	3	2
Rated speed (RPM)	672	403	224	134	81	54	40	27	20	16	13	10	8	5	4	3	1
Rated load (Kg.cm)	0.23	0.34	0.62	1.03	1.58	2.37	3.15	4.23	5.64	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Max. Load (Kg.cm)	1.20	1.77	3.19	5.31	8.12	12.00	12.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0

• **37JB6K-XXX / 540S-25150**

Gear Ratio	6	10	18	30	50	75	100	150	200	250	300	400	500	750	1000	1500	3000
Efficiency %	81	72	72	72	66	66	66	59	59	59	59	48	48	48	48	43	43
No-load speed (RPM)	922	553	307	184	111	74	55	37	28	22	18	14	11	7	6	4	2
Rated speed (RPM)	775	465	258	155	93	62	47	31	23	19	16	12	9	6	5	3	2
Rated load (Kg.cm)	0.68	1.01	1.81	2.00	4.00	4.00	4.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Max. Load (Kg.cm)	3.00	6.00	6.00	6.00	12.00	12.00	12.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0

• **37JB6K-XXX / 545S-18150**

Gear Ratio	6	10	18	30	50	75	100	150	200	250	300	400	500	750	1000	1500	3000
Efficiency %	81	72	72	72	66	66	66	59	59	59	59	48	48	48	48	43	43
No-load speed (RPM)	933	560	311	187	112	75	56	37	28	22	19	14	11	7	6	4	2
Rated speed (RPM)	750	450	250	150	90	60	45	30	23	18	15	11	9	6	5	3	2
Rated load (Kg.cm)	0.78	1.15	2.00	2.00	4.00	4.00	4.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Max. Load (Kg.cm)	3.00	6.00	6.00	6.00	12.00	12.00	12.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0

• **37JB6K-XXX / 555S-2677**

Gear Ratio	6	10	18	30	50	75	100	150	200	250	300	400	500	750	1000	1500	3000
Efficiency %	81	72	72	72	66	66	66	59	59	59	59	48	48	48	48	43	43
No-load speed (RPM)	743	446	248	149	89	59	45	30	22	18	15	11	9	6	4	3	1
Rated speed (RPM)	630	378	210	126	76	50	38	25	19	15	13	9	8	5	4	3	1
Rated load (Kg.cm)	0.73	1	1.94	2.00	4.00	4.00	4.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Max. Load (Kg.cm)	3.00	6	6.00	6.00	12.00	12.00	12.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0

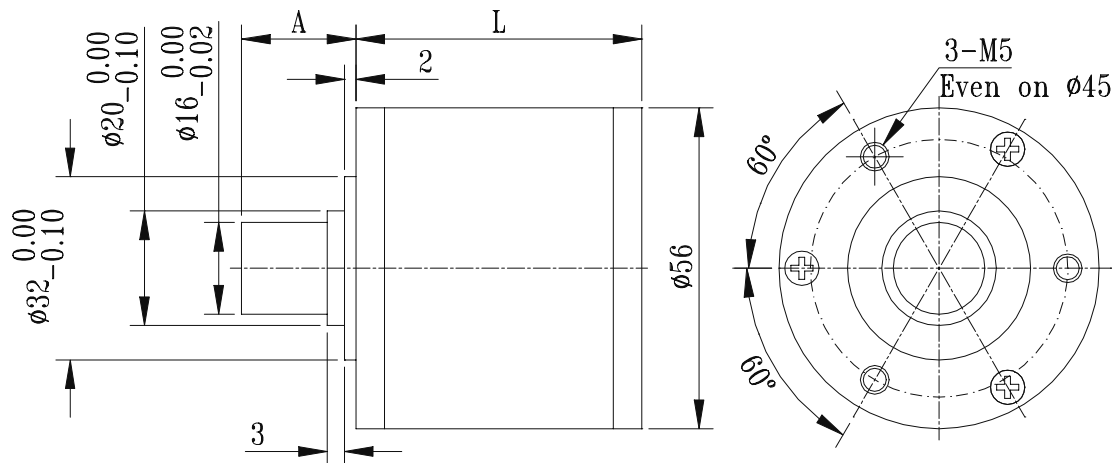


## 56PA200K-PLANETARY GEAR HEAD

### • GEAR HEAD SPECIFICATIONS

Number of gear trains	1	2	3	4
Reduction ratio	3.6 4.25	13 15.3 18	47 55 65 77	168 198 234 276 326
Rated load (kg.cm)	10	33	100	200
Maximum load ( kg.cm)	30	100	300	600
Body Length L (mm)	46	58	70	80
Efficiency (%)	80	75	65	55

### • DIMENSIONS



### Suitable DC Motors for 56PA200K gear heads

Motor Model Number	Rated	No-load		At Maximum Efficiency				Stall	Motor	
	Voltage	Current	Speed	Speed	Torque	Power	Current	Torque	Dia.	Length
	VDC	Amp	r/min	r/min	g.cm	W	Amp	g.cm	mm	mm
ZY54-24-24	24	0.30	3000	2400	1000	24	1.8	5000	54	110
Zy54-35-24	24	0.36	3600	2700	1280	35	2.0	5100	54	110

## SPECIFICATIONS FOR 56PA200K SERIES DC GEAR MOTORS

### • 56PA200K-XXX / ZY54-24-24

Gear Ratio	3.6	4.25	13	15	18	47	55	65	77	168	198	234	276	326
Efficiency %	80	80	75	75	75	65	65	65	65	55	55	55	55	55
No-load speed (RPM)	833	706	231	196	167	64	55	46	39	18	15	13	11	9
Rated speed (RPM)	667	565	185	157	133	51	44	37	31	14	12	10	9	7
Rated load (Kg.cm)	3	3	10	11	14	31	36	42	50	92	109	129	152	179
Max. Load (Kg.cm)	14	17	49	57	68	153	179	211	250	462	545	600	600	600

### • 56PA200K-XXX / ZY54-35-24

Gear Ratio	3.6	4.25	13	15	18	47	55	65	77	168	198	234	276	326
Efficiency %	80	80	75	75	75	65	65	65	65	55	55	55	55	55
No-load speed (RPM)	1000	847	277	235	200	77	65	55	47	21	18	15	13	11
Rated speed (RPM)	750	635	208	176	150	57	49	42	35	16	14	12	10	8
Rated load (Kg.cm)	4	4	12	15	17	39	46	54	64	118	139	165	194	200
Max. Load (Kg.cm)	15	17	50	59	69	156	182	215	255	471	555	600	600	600