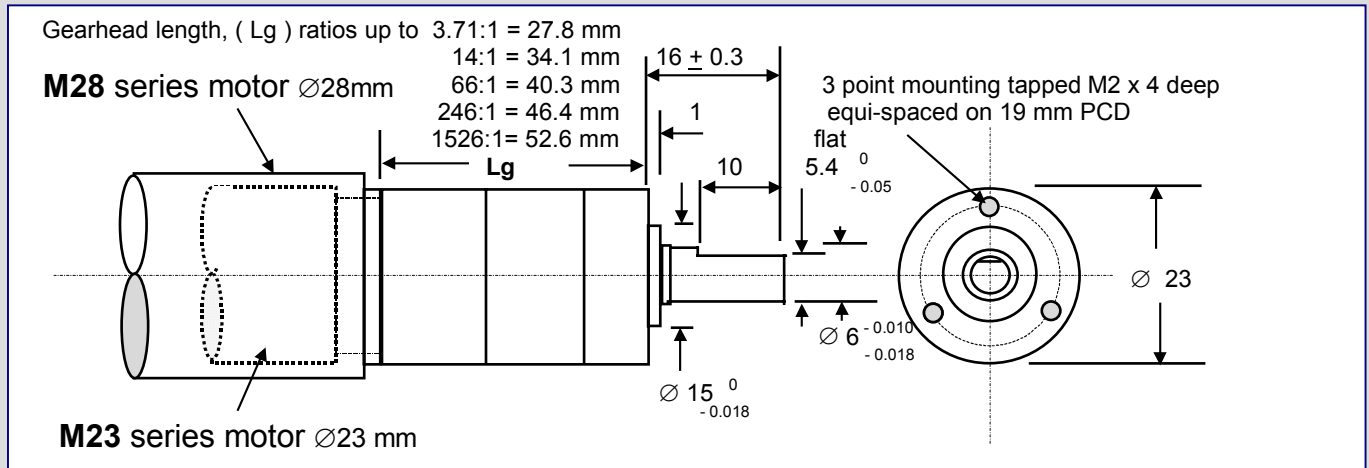


Planetary geared servo motors

P23-1 series

The P23-1 gearhead utilises an all steel planetary construction to provide an outstanding torque transmission capability for a unit of such compact dimensions. Furthermore, the high precision construction with controlled backlash down to less than 1 degree makes P23 series units ideal for high accuracy miniature servo positioning systems. The unit is suitable for use with either M23 or M28 series motors when peak torque ratings up to 1 Nm may be realised.

Dimensions: mm.



Typical Performance:

using M23 series motor

Gear Ratio	Gearbox Efficiency	Geared motor	Rated Speed (rpm)	Rated Torque (Ncm)	Peak Torque (Ncm)
3.71:1	88%		1000	2.2	5
14:1	80%		280	7.8	18
43:1	70%		100	21	48
66:1	70%		60	32	73
134:1	60%	P23-1 / M23	30	56	100 *
159:1	60%		25	66	100 *
246:1	60%		15	70	100 *
415:1	55%		10	70	100 *
592:1	55%		6	70	100 *
989:1	55%		4	70	100 *
1526:1	55%		3	70	100 *

using M28 series motor

Geared motor	Rated Speed (rpm)	Rated Torque (Ncm)	Peak Torque (Ncm)
	800	6.5	16
P23-1 / M28	200	22	50
	60	60	100 *

use P30-1 gearhead

Note* Torque limited by gearbox strength, use appropriate current limit circuit

General gearbox specification

Backlash @ no load	≤ 1 degree
Max Radial load on output shaft	170 N (10 mm from mounting face)
Max axial load	150 N
Operating temperature range	-30°C to + 100°C
Housing Material	metal, nickel plated
Output Bearings	double shielded ball
Assembly Torque Constant	= gear ratio x $\frac{\text{Efficiency}}{100}$ x motor torque constant
Typical Operating current	= motor no-load current + $\frac{\text{Load Torque}}{\text{Assembly torque Constant}}$

Example: Using M23T-12 : No load current	= 0.05 Amps
Torque Constant	= 1.41 Ncm / Amp
Gearhead P23/1 ratio 66:1: Efficiency	= 70%
Geared motor torque constant	= 66 x $\frac{70}{100}$ x 1.41 = 65.14 Nm / Amp
Typical Current @ 32 Ncm Torque	= 0.05 + $\frac{32}{65.14}$ = 0.54 Amps