



Ratio	****	5.75	16.2	19.4	27.6	33.1	65.5	93.2	111	132	159	190	376	641	1090
1 Number of gear stages		1	2	2	2	2	3	3	3	3	3	3	4	4	4
2 Direction of rotation		=	=	=	=	=	=	=	=	=	=	=	=	=	=
3 Efficiency		0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5
4 L1 (mm)		25	32.5	32.5	32.5	32.5	40	40	40	40	40	40	40	40	40
5 Weight g (oz)		20 (0.705)	25 (0.881)	25 (0.881)	25 (0.881)	25 (0.881)	30 (1.058)	30 (1.058)	30 (1.058)	30 (1.058)	30 (1.058)	30 (1.058)	33 (1.164)	33 (1.164)	33 (1.164)
6 Available with Motor - L2 = Length with motor (mm)															
22S78.....1		51	58.5	58.5	58.5	58.5	66	66	66	66	66	66	66	66	66
22N28.....286		57	64.5	64.5	64.5	64.5	72	72	72	72	72	72	72	72	72
22N48.....308		58.9	66.4	66.4	66.4	66.4	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9
22V28.....202		59.4	66.9	66.9	66.9	66.9	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4
22V48.225		61.2	68.7	68.7	68.7	68.7	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2
23GST82.....2		60.1	67.6	67.6	67.6	67.6	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1
23V58.....4		73.8	81.3	81.3	81.3	81.3	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8
23V48.....11		72.6	80.1	80.1	80.1	80.1	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6
26N48.....5		68.3	75.8	75.8	75.8	75.8	83.3	83.3	83.3	83.3	83.3	83.3	83.3	83.3	83.3
26N48.....9		67.1	74.6	74.6	74.6	74.6	82.1	82.1	82.1	82.1	82.1	82.1	82.1	82.1	82.1
28L28.....164		68.5	76	76	76	76	83.5	83.5	83.5	83.5	83.5	83.5	83.5	83.5	83.5
28L18.....317		68.5	76	76	76	76	83.5	83.5	83.5	83.5	83.5	83.5	83.5	83.5	83.5
28LT12.....164		66.2	73.7	73.7	73.7	73.7	81.2	81.2	81.2	81.2	81.2	81.2	81.2	81.2	81.2
P310.....9		42.4	49.9	49.9	49.9	49.9	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4

Characteristics		R22 • 0 • ....	R22 2R • 0 • ....
7 Shaft Bearings		Sleeve	Ball Bearing
8 Maximum Static Torque	Nm (oz-in)	2 (283)	2 (283)
9 Maximum Radial Force			
@ 8mm from mounting face	N (lb)	10 (2.2)	15 (3.3)
10 Maximum Axial force	N (lb)	10 (2.2)	10 (2.2)
11 Maximum press fit force	N (lb)	300 (67.4)	300 (67.4)
12 Average Backlash @ no-load		1.5°	1.5°
13 Average Backlash @ 3 Nm		3°	3°
Shaft play:			
14 -radial	µm	≤ 25	≤ 10
15 -axial	µm	50-150	50-150
16 Maximum Recommended Input speed	rpm	5000	5,000
17 Operating Temperature Range:	°C (°F)	-30 to +65 (-22 to +150)	

