

Type SBDE Ball Reducer gearbox

Technology – No gears. Speed reduction is due to non-slip, input torque induced, rolling of ball bearings in smooth accurate epicyclic tracks. Principles of operation can be viewed on several websites.

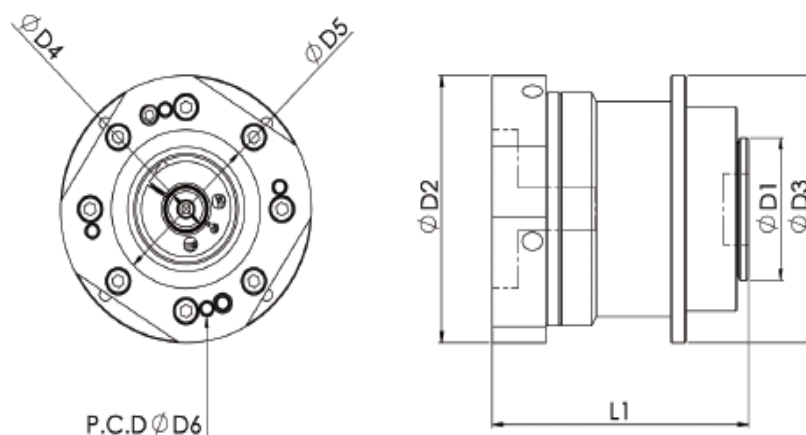
Standard ratios – 10 to 50/1 in one stage. In planetary, ratios greater than 10 would require 2 stages of gearing. Contact us for non-listed ratios.

Features-- This is our smallest diameter rotating flange style gearhead.

Compared to planetary gear reducers of similar diameter and torque rating, this ball reducer features inherent low backlash of less than ½ arc-min. and relative quietness. The standard rotating flange style output is popular for turntable or (disk shaped) loads.

This ball reducer can be **“backlash” (tightness) adjusted** with recommended tools and suggested procedures. Upon request, we will provide information for gearbox owners to adjust backlash or tightness at their own risk.

Application –The output flange rotates on deep groove ball bearings. Standard input contemplates your servo motor. Clamp style input coupling. For higher torque and axial load capability, see our SBRU ball reducer series.



Selected dimensions (mm)	SBDE50	SBDE70	SBDE90
D1 - rotating output flange	28	40	63
D2 – body diameter	47	70	118
D3 – mounting flange dia.	72	86	118
D4 - motor shaft input dia. (max)	8	14	19
D5 –motor pilot	30	50	70
D6 - motor attachment holes	46	70	90
L1 – overall length	79	98.8	120.1

※Please contact us to verify dimension to fit your motor

Performances		Ratio	SBDE50	SBDE70	SBDE90
Nominal Output Torque	Lb-in/Nm	10	124 / 14.01	279.24 / 31.55	346.94 / 39.2
		15	-	183.03 / 20.68	241.09 / 27.24
		20	-	136.21 / 15.39	340.84 / 38.51
		30	100.63 / 11.37	189.93 / 21.46	156.12 / 17.64
		40	-	142.23 / 16.07	249.76 / 28.22
		50	-	-	300.92 / 34
Max Acceleration Torque	Lb-in/Nm	10~50	3 Times of Nominal Output Torque		
Emergency Stop Torque (1)	Lb-in/Nm	10~50	3.4 times of Nominal Output Torque		
Permissible Input Speed	rpm	10~50	3000	3000	3000
Standard Backlash	Arc-sec	10~50	30	30	30
Max. radial force	Lbf/ N	10~50	55 / 245	88 / 392	238 / 1058
Max. axial force	Lbf/ N	10~50	27 / 122	44 / 196	119 / 529
Input Shaft Diameter	mm	10~50	8	14	14~19
Rated life (2)	H	10~50	> 10,000		
Operating Temperature Range	°C	10~50	-10°C to +40°C ambient -- 90°C max operating case temperature		
Sound level	dB (A)	10~50	59	61	63
Lubrication		10~50	Lubricated for life		
Protection class		10~50	IP54		
Gearhead Inertia	kg-cm ²	10~50	0.06	0.14	0.92
Weight	Kg	10~50	0.46	3.4	4.3
Min no-load torque to rotate	Lbf-in/ Nm	10~50	0.9 / 0.1	2.2 / 0.25	4.7 / 0.53

- (1) For 1000 times max during life of gearhead
- (2) At permissible input speed and Nominal Output Torque
- (3) Nominal efficiency is 85% at full rated load
- (4) All position mounting

How to Order – state SBDE size and ratio. Provide torque, speed, and dimensions of your motor.
We provide selection assistance and suggestions upon request.