

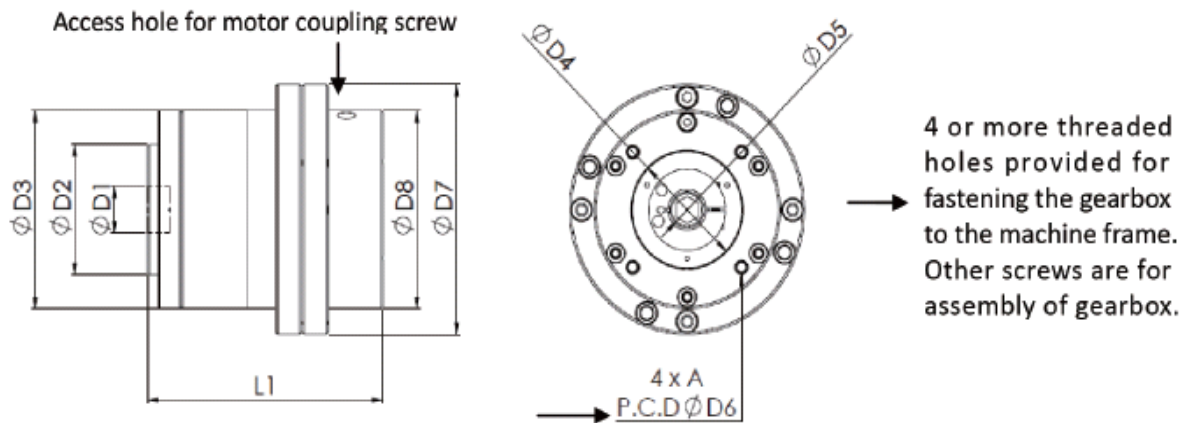
## Type SW1RU- harmonic gearbox

**Technology** – Classified as “strain-wave” gearing and popularly called “harmonic” gearing – Principles of operation can be found on many websites.

**Standard ratios** – 80 to 200/1 in one stage. In planetary, these ratios would require 2 and 3 stages of gearing.

**Features**-- Compared to planetary gearboxes of similar diameter and torque rating, this type of gearing has fewer moving parts, backlash of less than ½ arc-min, quieter, and shorter axial length. Cost can be 30% or more than planetary, depending upon ratio and other construction features.

**Application** --The SW1RU is designed for horizontal or vertical mounting. Standard output is a circular flange, with threaded holes, rotating on a large “crossed axis” roller bearing. A shaft or turntable can be attached to the output flange. Standard input contemplates a servo motor.



Dimension (mm)	SW1RU64	SW1RU76	SW1RU86	SW1RU107	SW1RU138	SW1RU165	SW1RU226
D1- output pilot bore	10	12	16	20	30	32	40
D2 – rotating output flange	24	30	38	56	80	96	135
D3 – output body dia.	50	60	70	85	112	137	186
D4 – motor pilot (typical)	30	30	30	50	70	70	110
D5 – motor input shaft (typ)	8	8	8	14	19	19	22-24
D6 – motor flange mtg holes	46	46	46	70	90	90	145
D7 – dia of housing flange	64	76	86	107	138	165	226
D8 – input hub diameter.	52	60	70	85	112	132	175
L1 - overall length	69	74.5	91.5	107.2	130	160.5	202

Performances		Ratio	SW1RU6 4	SW1RU7 6	SW1RU8 6	SW1RU1 07	SW1RU1 38	SW1RU1 65	SW1RU 226
Nominal Output Torque	Lb-in/ Nm	80	53/6	103/12	222/25	354/40	885/100	1770/200	3186/360
		100	-	133/15	267/30	443/50	1062/120	2124/240	3983/450
		120	-	-	-	443/50	-	-	3983/450
		135	-	-	-	-	1062/120	-	-
		150	-	-	-	443/50	-	-	3983/450
		160	-	-	-	443/50	1062/120	2124/240	3983/450
		200	-	-	-	443/50	1062/120	2124/240	3983/450
Max Acceleration Torque	Lb-in/ Nm	80~200	3 Times Nominal Output Torque						
Emergency Stop Torque	Lb-in/ Nm	80~100	(1) 3.4 times Nominal Output Torque						
Permissible Input Speed	rpm	80~200	3000	3000	3000	3000	3000	3000	3000
Max Backlash	arc-sec	80~200	30	30	30	30	30	30	30
Max Tilting moment-at flange face	Lb-in/ Nm	80~200	44/5	53/6	70/8	88/10	440/50	530/60	619/70
Max. radial force	Lbf/ N	80~200	77 / 343	88 / 392	165 / 735	110 / 490	441/1961	661/2940	765 / 3402
Max. axial force	Lbf/ N	80~200	38 / 171	44 / 196	82 / 367	55 / 245	220/980	330/1470	382 / 1701
Rated life (2)	H	80~200	> 10,000						
Operating Temperature Range	°C	80~200	-10°C to +40°C ambient -- 90°C max operating case temperature						
Sound level (3)	dB(A)	80~200	52	52	52	53	55	62	70
Lubrication		80~200	Lubricated for life (synthetic grease)						
Protection class		80~200	IP54						
Gearhead Inertia	Kg- cm <sup>2</sup>	80~200	0.04	0.14	0.54	1.3	4.2	9.6	22.5
Rigidity	Kgf- m/ arc-min	80~200	0.024	0.060	0.121	0.226	0.538	0.97	1.89
Weight	Kg	80~200	0.7	1.0	1.5	2.7	5.6	12	27.9
No-load running torque	Lb-in/ Nm	80~200	0.6/0.07	0.6/0.07	0.6/0.07	1.2/0.13	2.2/0.25	4.16/0.47	8.4/0.95

- (1) For 1000 times max during life of gearhead
- (2) At permissible input speed and Continuous Output Torque
- (3) At input speed of 1000 rpm
- (4) Efficiency = 85% at permissible input speed and full load

**How to order – State reducer type and size. Provide details of your ratings and dimensions. We offer selection assistance and suggestions.**

**Note: We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. We do not accept any responsibility whatsoever for potential errors or possible lack of information in this document.**

**For critical dimensions, request drawing prior to Purchase Order.**