

Al-Nu the new Aluminum Alloy Housing Worm Gear Reducers from PBEGL

The Worm gear reducers with cast iron housing were in existence for almost half a century. The recent trend is to use aluminum alloy housing in small worm gear reducers.

PBEGL aluminum housings are aesthetically very attractive and the housing construction is such that it gets rigidity and strength, whereby they have an edge over the cast iron housing.

The gearbox is supplied with factory – filled synthetic Lubricant which avoids frequent oil change. In addition, the housing has a heat sink design which is said to provide greater surface area for higher thermal capacity.

The worm gear reducers come in sizes as 63s, 80s and 100s centre distance (mm). Ratios from 5:1 to 70:1 are available.

Features:

- No vent plugs or breathers are required (Makes the gear reducer maintenance-free and prevents risk of oil oxidation and contamination).
- Compression chambers or bladders are not needed (Prevents leaks, contributes to flexibility in mounting and prevents risk of oil oxidation and contamination).
- Both input and output shafts are hollow reducing need of couplings and making drive compact.
- B.S Standards are used as applicable. The gear totally confirms to B.S. 721/1963 for worm gearing.

Advantages:

Lightweight

Rigidity

No Oil Leakage

No Shims.

Ease to assembly/disassembly

Hollow input shaft with motor flange and hollow output shaft as standard

General:

“PBEGL Al-Nu” single reduction worm gear units are manufactured in different sizes is ratios in adaptable type to meet the requirement of almost every industry. Due to robust construction, increased efficiency, flexibility, inter-changeability, compactness, dependability and reliability. These units are suitable for severe operating conditions by means of right selections.

Selection:

Please refer Kilowatt Rating Table and determine the size of the particular unit either by way of input kilowatt or output torque. The ratings are based on unity factor of 12 Hours continuous running under uniform load subject to recommended lubrication and temperature limitation of 90 deg. C.

Specifications:

Gear Housing:

Gear housing is made of close grain structure with top quality Aluminum Alloy liberally designed to store adequate quantity of synthetic lubricant so as achieve higher thermal ratings and ensures gear unit long time lubrication. It is provide with large cooling fins on both sides with maximum surface area exposes to atmosphere for improved efficiency. Bearing housings are perfectly bored to ensure perfect alignment. The housing is totally dust proof and oil tight.

Worm Shaft:

Worm shaft is of single piece accurately made out of case carburized alloy steel, flanks are ground to ensure a positive oil film.

Worm Wheel:

The Worm Wheel is made of cast phosphorous Bronze (confirms to PN-2 as per Bs 1400) Teeth are accurately hobbled to facilitate inter-changeability, Each Worm Wheel is inspected to match the masterpiece.

Bearings:

The worm and worm wheel shafts are supported on ball/taper roller antifriction bearing of ample capacity to permit overhung and shock loads.

Oil Seals:

Superior quality oil seals are used to ensure complete oil tight.

Lubrication:

Gears and bearings are automatically and positively lubricated by means of specially selected synthetic lubricant at all speeds by splash of the lubricant from the sump. Thus, no special attention is necessary for longtime of the gear box lubrication.

Cooling:

Heat dissipation is effectively controlled by adequate lubricant and a large surface area of gear case exposed to air.

Caution:

Synthetic Lubricants must not be mixed with any other of Oil/Grease.

Design Features:

- The main design features of the AI-Nu series are:
- Superior efficiency and low noise assured by precise machining.
- Worm shaft form case carburized steel and ground for excellent surface finishing.
- Centrifugally casted worm wheels from high strength phosphorous bronze.
- Die-casted aluminum gear case.
- Hollow input and output shaft as PBEG standard.

RATINGS AT INPUT SPEED 1400 RPM

GEAR RATION	OUTPUT SPEED RPM	CAPACITY	SIZE OF GEAR UNIT		
			63S	80S	100S
5	280	P1	5.21	9.13	16.72
		T2	154.24	273.20	500.32
7.5	186.68	P1	3.89	6.65	12.81
		T2	170.88	292.13	540.88
10	140	P1	2.78	5.15	9.29
		T2	159.29	298.37	538.23
15	93.33	P1	2.00	3.52	6.26
		T2	166.17	289.09	520.11
20	70	P1	1.87	3.61	4.69
		T2	192.87	376.93	513.59
25	56	P1	1.50	2.94	5.04
		T2	188.61	383.72	657.80
30	46.67	P1	1.26	2.29	4.18
		T2	185.31	345.54	646.69
40	35	P1	0.91	1.70	2.94
		T2	169.18	329.03	576.51
50	28	P1	0.74	1.30	2.26
		T2	167.25	293.82	532.38
60	23.33	P1	0.52	1.09	-
		T2	131.10	291.46	-
70	20	P1	0.52	0.96	-
		T2	150.63	287.98	-

P1=Input Power KW

T2=Output Torque Nm

* The ratings are based on service factor 1, continuous operation of 12 hours/day.

* Refer Page No 5 for Available Frame sizes for all models.

* In accordance with our established policy to constantly improve our products, the specifications contained herein are subject to change without notice.

* Gear ratio other than indicated in above table, if required, please e-mail information with approximate quantity to plant@pbegl.elecon.com

We can accept these ratios against specific orders only as we need sufficient order time to import these units.

RATINGS AT INPUT SPEED 900 RPM

GEAR RATION	OUTPUT SPEED RPM	CAPACITY	SIZE OF GEAR UNIT		
			63S	80S	100S
5	280	P1	4.15	7.26	7.26
		T2	182.31	322.40	322.40
7.5	186.68	P1	3.08	5.26	5.26
		T2	198.55	342.85	342.85
10	140	P1	2.20	4.07	4.07
		T2	184.89	349.93	349.93
15	93.33	P1	1.57	2.78	2.78
		T2	188.94	334.55	334.55
20	70	P1	1.50	2.86	2.86
		T2	220.61	437.00	437.00
25	56	P1	1.20	2.34	2.34
		T2	214.88	435.77	435.77
30	46.67	P1	1.01	1.84	1.84
		T2	211.26	395.41	395.41
40	35	P1	0.71	1.36	1.36
		T2	192.41	374.05	374.05
50	28	P1	0.58	1.06	1.06
		T2	188.33	334.06	334.06
60	23.33	P1	0.41	0.88	-
		T2	140.07	332.93	-
70	20	P1	0.37	0.74	-
		T2	153.31	311.56	-

P1=Input Power KW

T2=Output Torque Nm

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Available Service Factor with Motor Frame

INPUT SPEED 1400 RPM

Size	Motor Frame	Ratio										
		5	7.5	10	15	20	25	30	40	50	60	70
63S	80 B5	6.95	5.19	3.71	2.67	2.49	2.00	1.68	1.21	0.99	-	-
	71 B5	14.08	10.51	7.51	5.41	5.05	4.05	3.41	2.46	2.00	1.41	1.41
80S	90 B5	6.09	4.43	3.43	2.35	2.41	1.96	1.53	1.13	-	-	-
	80 B5	12.17	8.87	6.87	4.69	4.81	3.92	3.05	2.27	1.73	1.45	1.28
100S	132 B5	3.04	2.21	1.69	1.14	-	-	-	-	-	-	-
	112 B5	4.52	3.29	2.51	1.69	1.27	1.36	1.13	-	-	-	-
	100 B5	7.60	5.54	4.22	2.85	2.13	2.29	1.90	1.34	1.03	-	-

INPUT SPEED 900 RPM

Size	Motor Frame	Ratio										
		5	7.5	10	15	20	25	30	40	50	60	70
63S	80 B5	7.55	5.60	4.00	2.85	2.73	2.18	1.84	1.33	1.05	-	-
	71 B5	16.60	12.32	8.80	6.28	6.00	4.80	4.04	2.92	2.32	1.64	1.48
80S	90 B5	6.60	4.78	3.70	2.53	2.60	2.13	1.67	1.24	-	-	-
	80 B5	13.20	9.56	7.40	5.05	5.20	4.25	3.35	2.47	1.93	1.60	1.35
100S	132 B5	3.60	2.59	1.98	1.33	0.99	1.34	-	-	-	-	-
	112 B5	6.05	4.36	3.32	2.23	1.67	2.25	1.50	1.06	-	-	-
	100 B5	8.87	6.40	4.87	3.27	2.45	3.31	2.19	1.56	1.20	-	-

P1=Input Power KW T2=Output Torque Nm

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