Aluminum Worm Gearboxes

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IronHorse® Aluminum Worm Gearboxes

Gearbox Selection Factors

Service Factors and K Factors

Service Factors for Selecting Gearboxes (when used with electric motors)				
Service Continuity (per day)	**Load Characteristics**			
	Uniform	**Moderate Shock***	**Heavy Shock***	**Extreme Shock***
Occasional 1/2 hour	1.00	1.00	1.00	1.25
Less than 3 hours	1.00	1.00	1.25	1.50
3-10 hours	1.00	1.25	1.50	1.75
More than 10 hours	1.25	1.50	1.75	2.00
** Shock results from sudden increases in the torque demand of the load, such as: sudden stopping, restarting, and/or reversing; significantly heavy loads dropped onto a moving conveyor; impact loads such as punch press operations.*				
Depending upon the load characteristics, divide the gearbox HP, Overhung Load, and Maximum Mechanical Capacity ratings by the applicable service factor.				

Overhung Load K Factors for Various Drive Types	
Chain & Sprocket	1.00
Gear	1.25
V-belt	1.50
Flat Belt	2.50
Variable Pitch Belt	3.50
Divide gearbox OHL ratings by the applicable OHL K factors.	

IronHorse® Aluminum Worm Gearbox Specifications

Frame Sizes 30, 40, 50 mm Specifications

IronHorse Aluminum Worm Gearbox Specifications – Frame Sizes 30, 40, 50 mm															
											Maximum Ratings @ 1750 rpm Input				
											Mechanical [5]				
Part Number	Nominal / Actual Ratio	Output RPM @ 1750 rpm Input	Nominal Motor HP [1] @ 1800 rpm	NEMA Motor Frame	Output Type [2]	Center Distance [3] (mm)	Overhung Load [4] (lb)	Output Shaft Thrust Load (lb)	Efficiency (%)	Approx Weight (lb)	Input Power (hp)	Output Power (hp)	Output Torque (lb-in)	Maximum Input Speed (rpm)	Maximum Backlash (arc-minute)
WGA-30M-010-H1	10:1	175	0.5	56C	H	30	142	31	80	3	0.54	0.43	150	2,000	28.8
WGA-30M-020-H1	20:1	88	0.25				179	40	72		0.30	0.22	150		28.2
WGA-30M-030-H1	30:1	58	0.25				205	45	62		0.25	0.16	177		28.8
WGA-30M-040-H1	40:1	44	0.2				225	50	55		0.19	0.10	150		28.2
WGA-30M-060-H1	60:1	29	0.12				259	54	46		0.12	0.06	142		25.8
WGA-40M-010-H1	10:1	175	1			40	279	60	83	5	1.15	0.95	354		24.0
WGA-40M-020-H1	20:1	88	0.5				350	76	78		0.61	0.48	345		
WGA-40M-030-H1	30:1	58	0.5				403	87	68		0.53	0.36	389		
WGA-40M-040-H1	40:1	44	0.33				441	96	65		0.39	0.25	363		
WGA-40M-060-H1	60:1	29	0.25				507	110	56		0.25	0.14	319		21.6
WGA-40M-080-H1	80:1	22	0.12				556	121	50		0.19	0.10	283		
WGA-40M-100-H1	100:1	17.5	0.12				595	130	47		0.15	0.07	257		
WGA-50M-010-H1	10:1	175	2			50	406	83	84	8	2.06	1.73	628		19.2
WGA-50M-020-H1	20:1	88	1				510	104	78		1.13	0.88	646		17.4
WGA-50M-030-H1	30:1	58	0.75				586	120	70		0.95	0.67	734		19.2
WGA-50M-040-H1	40:1	44	0.75				643	132	65		0.70	0.46	664		17.4
WGA-50M-060-H1	60:1	29	0.33				739	151	57		0.46	0.26	602		16.2
WGA-50M-080-H1	80:1	22	0.33				810	166	50		0.38	0.19	566		
WGA-50M-100-H1	100:1	17.5	0.25				866	179	46		0.28	0.13	487		

1) Nominal Motor HP is the highest HP 1800 rpm motor to be used with the gearbox under conditions of 1.0 service factor. Gearbox input power capacity decreases as motor speed decreases and as service factor increases.

2) Output Type: H = Hollow Bore.

3) The Center Distance is the distance between the centerlines of the input and output shafts/bores; serves as the gearbox frame size.

4) Overhung Load ratings are for forces perpendicular to the output shaft and located at the shaft midpoint, such as from a gear, pulley, or sprocket with a belt or chain. Divide OHL ratings by the applicable OHL K factors shown separately in the Selection Factors tables. OHL ratings should also be divided by applicable service factors.

5) Maximum Mechanical Ratings are limits based on strength and durability of gearbox components; applicable when operating time is short and stopped time is greater than or equal to operating time. These ratings are applicable for 1.0 service factor loads, and may require modification depending upon characteristics of the applicable driven loads. Refer to the "Service Factors" table for more information.

IronHorse® Aluminum Worm Gearbox Specifications (continued)

Frame Sizes 63, 75 mm Specifications

IronHorse Aluminum Worm Gearbox Specifications – Frame Sizes 63, 75 mm															
Part Number	Nominal / Actual Ratio	Output RPM @ 1750 rpm Input	Nominal Motor HP [1] @ 1800 rpm	NEMA Motor Frame	Output Type [2]	Center Distance [3] (mm)	Overhung Load [4] (lb)	Output Shaft Thrust Load (lb)	Efficiency (%)	Approx Weight (lb)	Maximum Ratings @ 1750 rpm Input Mechanical [5]			Maximum Input Speed (rpm)	Maximum Backlash (arc-minute)
											Input Power (hp)	Output Power (hp)	Output Torque (lb-in)		
WGA-63M-010-H1	10:1	175	3	56C	H	63	510	108	86	13	3.67	3.16	1141	2,000	17.4
WGA-63M-010-H2	10:1	175	3	145TC			510	108	86		3.67	3.16	1141		
WGA-63M-020-H1	20:1	88	2	56C			641	137	80		2.04	1.63	1186		16.2
WGA-63M-020-H2	20:1	88	2	145TC			641	137	80		2.04	1.63	1186		
WGA-63M-030-H1	30:1	58	1.5	56C			736	156	73		1.76	1.28	1416		17.4
WGA-63M-040-H1	40:1	44	1	56C			807	172	70		1.26	0.88	1274		16.2
WGA-63M-060-H1	60:1	29	0.75	56C			928	197	59		0.86	0.51	1141		13.8
WGA-63M-080-H1	80:1	22	0.5	56C			1017	217	53		0.67	0.36	1071		
WGA-63M-100-H1	100:1	18	0.5	56C			1088	234	48		0.57	0.27	1035		
WGA-75M-010-H1	10:1	175	5	56C		75	604	128	86	19	5.44	4.68	1717		16.2
WGA-75M-010-H2	10:1	175	5	145TC			604	128	86		5.44	4.68	1717		
WGA-75M-010-H3	10:1	175	5	182/4TC			604	128	86		5.44	4.68	1717		
WGA-75M-020-H1	20:1	88	3	56C			759	161	79		3.14	2.48	1849		14.4
WGA-75M-020-H2	20:1	88	3	145TC			759	161	79		3.14	2.48	1849		
WGA-75M-030-H1	30:1	58	2	56C			873	185	72		2.48	1.79	2026		16.2
WGA-75M-040-H1	40:1	44	1.5	56C			957	203	68		1.88	1.28	1947		14.4
WGA-75M-060-H1	60:1	29	1	56C			1099	232	62		1.26	0.78	1770		12.6
WGA-75M-080-H1	80:1	22	0.75	56C			1205	256	58		0.97	0.56	1672		
WGA-75M-100-H1	100:1	18	0.75	56C			1289	276	52		0.80	0.42	1593		

1) Nominal Motor HP is the highest HP 1800 rpm motor to be used with the gearbox under conditions of 1.0 service factor. Gearbox input power capacity decreases as motor speed decreases and as service factor increases.

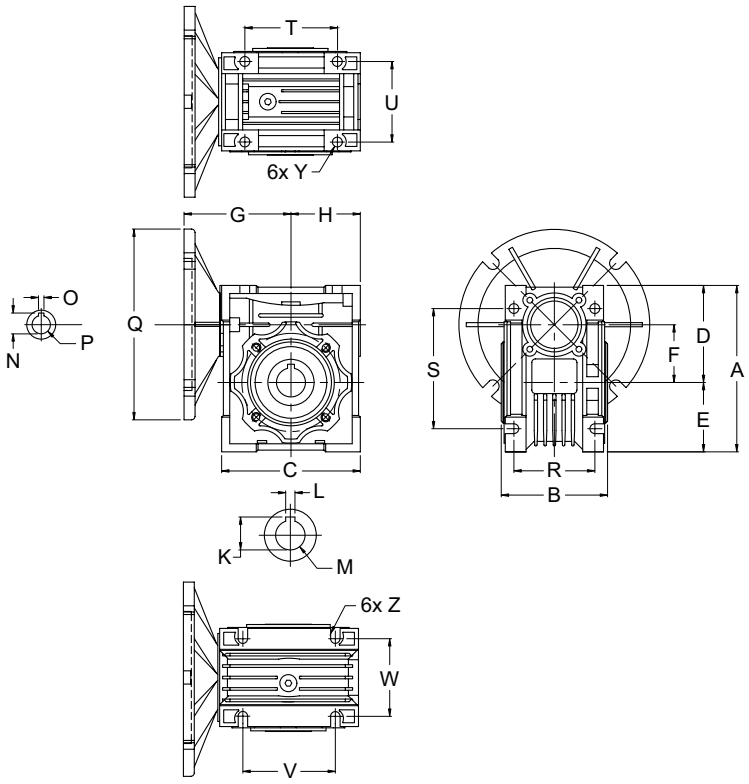
2) Output Type: H = Hollow Bore.

3) The Center Distance is the distance between the centerlines of the input and output shafts/bores; serves as the gearbox frame size.

4) Overhung Load ratings are for forces perpendicular to the output shaft and located at the shaft midpoint, such as from a gear, pulley, or sprocket with a belt or chain. Divide OHL ratings by the applicable OHL K factors shown separately in the Selection Factors tables. OHL ratings should also be divided by applicable service factors.

5) Maximum Mechanical Ratings are limits based on strength and durability of gearbox components; applicable when operating time is short and stopped time is greater than or equal to operating time. These ratings are applicable for 1.0 service factor loads, and may require modification depending upon characteristics of the applicable driven loads. Refer to the "Service Factors" table for more information.

IronHorse® Aluminum Worm Gearbox Dimensions



Dimensions (inches) – IronHorse Aluminum Worm Gearboxes																
Part Number	***NEMA Motor Face***	***A***	***B***	***C***	***D***	***E***	***F***	***G***	***H***	***Output Bore***			***Input Shaft***			***ØQ***
										K	***L***	***ØM***	***N***	***O***	***ØP***	
WGA-30M-xxx-H1	56C	3.82	2.48	3.15	2.24	1.57	1.18	3.19	1.57	0.720	0.20	0.625	0.73	0.19	0.625	6.50
WGA-40M-xxx-H1		4.78	3.07	3.94	2.81	1.97	1.57	3.18	1.97	0.840	0.20	0.750	0.71	0.19	0.625	6.50
WGA-50M-xxx-H1		5.67	3.62	4.72	3.31	2.36	1.97	3.58	2.36	1.110	0.24	1.000	0.71	0.19	0.625	6.50
WGA-63M-xxx-H1		6.87	4.42	5.69	4.00	2.87	2.48	4.06	2.84	1.250	0.31	1.125	0.71	0.19	0.625	6.50
WGA-63M-xxx-H2	145TC	6.87	4.42	5.69	4.00	2.87	2.48	4.06	2.84	1.250	0.31	1.125	0.97	0.19	0.875	6.50
WGA-75M-xxx-H1	56C	8.07	4.72	6.77	4.69	3.39	2.95	4.68	3.39	1.375	0.31	1.250	0.71	0.19	0.625	6.50
WGA-75M-xxx-H2	145TC	8.07	4.72	6.77	4.69	3.39	2.95	4.68	3.39	1.375	0.31	1.250	1.24	0.25	1.125	6.50
WGA-75M-xxx-H3	182/4TC	8.07	4.72	6.77	4.69	3.39	2.95	4.68	3.39	1.375	0.31	1.250	1.24	0.25	1.125	8.97

Part Number	***NEMA Motor Face***	***R***	***S***	***T***	***U***	***V***	***W***	***Y***	***Z***
WGA-30M-xxx-H1	56C	1.73	2.80	2.13	1.73	2.13	1.73	0.26 x 0.33	0.26 x 0.33
WGA-40M-xxx-H1		2.36	3.57	2.76	2.37	2.76	2.37	0.26	0.24 x 0.33
WGA-50M-xxx-H1		2.76	4.09	3.16	2.74	3.15	2.65	0.33	0.33 x 0.48
WGA-63M-xxx-Hx	56C, 145TC	3.35	5.12	3.94	3.35	3.94	3.35	0.33	0.33
WGA-75M-xxx-Hx	56C, 145TC, 182/4TC	3.54	6.02	4.72	3.54	4.72	3.54	0.43	0.43

See our website: www.AutomationDirect.com for complete Engineering drawings.

IronHorse® Aluminum Worm Gearbox Accessories

IronHorse Aluminum Worm Gearbox Accessories		
Part Number	***Description***	***Typical Photo***
WGA-30M-ACC1	Output flange, for aluminum WGA-30M series gearboxes. Includes (4) mounting screws.	
WGA-40M-ACC1	Output flange, for aluminum WGA-40M series gearboxes. Includes (4) mounting screws.	
WGA-50M-ACC1	Output flange, for aluminum WGA-50M series gearboxes. Includes (4) mounting screws.	
WGA-63M-ACC1	Output flange, for aluminum WGA-63M series gearboxes. Includes (8) mounting screws.	
WGA-75M-ACC1	Output flange, for aluminum WGA-75M series gearboxes. Includes (8) mounting screws.	
WGA-30M-ACC2	Torque arm, for aluminum WGA-30M series gearboxes. Includes (4) mounting screws.	
WGA-40M-ACC2	Torque arm, for aluminum WGA-40M series gearboxes. Includes (4) mounting screws.	
WGA-50M-ACC2	Torque arm, for aluminum WGA-50M series gearboxes. Includes (4) mounting screws.	
WGA-63M-ACC2	Torque arm, for aluminum WGA-63M series gearboxes. Includes (8) mounting screws.	
WGA-75M-ACC2	Torque arm, for aluminum WGA-75M series gearboxes. Includes (8) mounting screws.	
WGA-30M-ACC3	Single output shaft, Ø0.625 in, for aluminum WGA-30M series gearboxes. Includes (3) keys, (1) spacer, and (1) retaining ring.	
WGA-40M-ACC3	Single output shaft, Ø0.75 in, for aluminum WGA-40M series gearboxes. Includes (3) keys, (1) spacer, and (1) retaining ring.	
WGA-50M-ACC3	Single output shaft, Ø1.0 in, for aluminum WGA-50M series gearboxes. Includes (3) keys, (1) spacer, and (1) retaining ring.	
WGA-63M-ACC3	Single output shaft, Ø1.125 in, for aluminum WGA-63M series gearboxes. Includes (3) keys, (1) spacer, and (1) retaining ring.	
WGA-75M-ACC3	Single output shaft, Ø1.25 in, for aluminum WGA-75M series gearboxes. Includes (3) keys, (1) spacer, and (1) retaining ring.	
WGA-30M-ACC4	Double output shaft, Ø0.625 in, for aluminum WGA-30M series gearboxes. Includes (4) keys, (2) spacers, and (2) retaining rings.	
WGA-40M-ACC4	Double output shaft, Ø0.75 in, for aluminum WGA-40M series gearboxes. Includes (4) keys, (2) spacers, and (2) retaining rings.	
WGA-50M-ACC4	Double output shaft, Ø1.0 in, for aluminum WGA-50M series gearboxes. Includes (4) keys, (2) spacers, and (2) retaining rings.	
WGA-63M-ACC4	Double output shaft, Ø1.125 in, for aluminum WGA-63M series gearboxes. Includes (4) keys, (2) spacers, and (2) retaining rings.	
WGA-75M-ACC4	Double output shaft, Ø1.25 in, for aluminum WGA-75M series gearboxes. Includes (4) keys, (2) spacers, and (2) retaining rings.	
WGA-30M-ACC5	Output cover, for aluminum WGA-30M series gearboxes. Includes (4) mounting screws.	
WGA-40M-ACC5	Output cover, for aluminum WGA-40M series gearboxes. Includes (4) mounting screws.	
WGA-50M-ACC5	Output cover, for aluminum WGA-50M series gearboxes. Includes (4) mounting screws.	
WGA-63M-ACC5	Output cover, for aluminum WGA-63M series gearboxes. Includes (4) mounting screws.	
WGA-75M-ACC5	Output cover, for aluminum WGA-75M series gearboxes. Includes (4) mounting screws.	