

Maximum Rating Tables

Size 813 • GR, NH, EL Series



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Style B

Style H



Size 813

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb in)	Left Hand Catalog No	Right Hand Catalog No	Double Extension Catalog No	Hollow Output Catalog No
5	2500	500	1 528	1 429	180	8130001	8130013	8130025	8130501.10
	1750	350	1 248	1 158	209				
	1170	234	0 952	0 872	235				
	100	20	0 140	0 095	298				
7.5	2500	333	1 281	1 178	223	8130002	8130014	8130026	8130502.10
	1750	233	1 025	0 933	252				
	1170	156	0 770	0 689	278				
	100	13	0 118	0 072	339				
10	2500	250	1 016	0 912	230	8130003	8130015	8130027	8130503.10
	1750	175	0 823	0 729	263				
	1170	117	0 626	0 543	293				
	100	10	0 103	0 058	363				
15	2500	166	0 790	0 678	257	8130004	8130016	8130028	8130504.10
	1750	116	0 642	0 541	292				
	1170	78	0 491	0 402	325				
	100	6.7	0 090	0 042	401				
20	2500	125	0 681	0 562	283	8130005	8130017	8130029	8130505.10
	1750	87	0 551	0 445	320				
	1170	58	0 422	0 328	354				
	100	5.0	0 084	0 034	431				
25	2500	100	0 544	0 431	272	8130006	8130018	8130030	8130506.10
	1750	70	0 445	0 344	309				
	1170	46	0 344	0 255	344				
	100	4.0	0 074	0 027	423				
30	2500	83	0 481	0 364	276	8130007	8130019	8130031	8130507.10
	1750	58	0 395	0 290	314				
	1170	39	0 308	0 215	348				
	100	3.3	0 071	0 023	429				
40	2500	62	0 400	0 283	285	8130008	8130020	8130032	8130508.10
	1750	43	0 329	0 223	322				
	1170	29	0 258	0 165	355				
	100	2.5	0 066	0 017	432				
50	2500	50	0 346	0 232	292	8130009	8130021	8130033	8130509.10
	1750	35	0 285	0 182	327				
	1170	23	0 224	0 133	359				
	100	2.0	0 061	0 014	431				
60	2500	41	0 297	0 184	279	8130010	8130022	8130034	8130510.10
	1750	29	0 246	0 145	313				
	1170	19	0 195	0 107	345				
	100	1.7	0 058	0 011	415				
80	2500	31	0 144	0 081	163	8130011	8130023	8130035	8130511.10
	1750	21	0 121	0 064	183				
	1170	14	0 096	0 047	201				
	100	1.3	0 014	0 005	237				
100	2500	25	0 100	0 051	128	8130012	8130024	8130036	8130512.10
	1750	17	0 084	0 040	143				
	1170	11	0 067	0 029	156				
	100	1.0	0 010	0 003	184				

How To Build a Part Number For Size GR813, NH813, EL813

1. Select partial catalog number from the selection table
2. Replace leading “_” with series code (GR, NH, EL)

Example:

Grove Gear IRONMAN, style B, 5:1 ratio, left hand output
GR-B813-5-L
GR8130001

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NEMA C Input Flange ▲	Style BM			Style HM	Style BMQ			Style HMQ	Ratio
	Left Hand Catalog No	Right Hand Catalog No	Double Extension Catalog No	Hollow Output Catalog No	Left Hand Catalog No	Right Hand Catalog No	Double Extension Catalog No	Hollow Output Catalog No	
48CZ 56C	8130109 8130037	8130121 8130049	8130133 8130061	8130537.10 8130513.10	8130181 8130073	8130193 8130085	8130205 8130097	8130561.10 8130525.10	5
48CZ 56C	8130110 8130038	8130122 8130050	8130134 8130062	8130538.10 8130514.10	8130182 8130074	8130194 8130086	8130206 8130098	8130562.10 8130526.10	7.5
48CZ 56C	8130111 8130039	8130123 8130051	8130135 8130063	8130539.10 8130515.10	8130183 8130075	8130195 8130087	8130207 8130099	8130563.10 8130527.10	10
48CZ 56C	8130112 8130040	8130124 8130052	8130136 8130064	8130540.10 8130516.10	8130184 8130076	8130196 8130088	8130208 8130100	8130564.10 8130528.10	15
48CZ 56C	8130113 8130041	8130125 8130053	8130137 8130065	8130541.10 8130517.10	8130185 8130077	8130197 8130089	8130209 8130101	8130565.10 8130529.10	20
48CZ 56C	8130114 8130042	8130126 8130054	8130138 8130066	8130542.10 8130518.10	8130186 8130078	8130198 8130090	8130210 8130102	8130566.10 8130530.10	25
48CZ 56C	8130115 8130043	8130127 8130055	8130139 8130067	8130543.10 8130519.10	8130187 8130079	8130199 8130091	8130211 8130103	8130567.10 8130531.10	30
48CZ 56C	8130116 8130044	8130128 8130056	8130140 8130068	8130544.10 8130520.10	8130188 8130080	8130200 8130092	8130212 8130104	8130568.10 8130532.10	40
48CZ 56C	8130117 8130045	8130129 8130057	8130141 8130069	8130545.10 8130521.10	8130189 8130081	8130201 8130093	8130213 8130105	8130569.10 8130533.10	50
48CZ 56C	8130118 8130046	8130130 8130058	8130142 8130070	8130546.10 8130522.10	8130190 8130082	8130202 8130094	8130214 8130106	8130570.10 8130534.10	60
48CZ 56C	8130119 8130047	8130131 8130059	8130143 8130071	8130547.10 8130523.10	8130191 8130083	8130203 8130095	8130215 8130107	8130571.10 8130535.10	80
48CZ 56C	8130120 8130048	8130132 8130060	8130144 8130072	8130548.10 8130524.10	8130192 8130084	8130204 8130096	8130216 8130108	8130572.10 8130536.10	100

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Consult Factory for other motor flanges available.

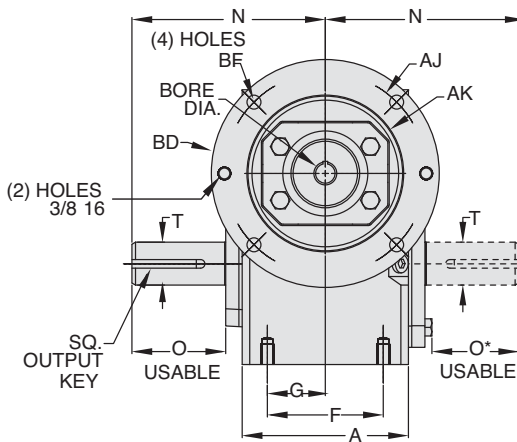
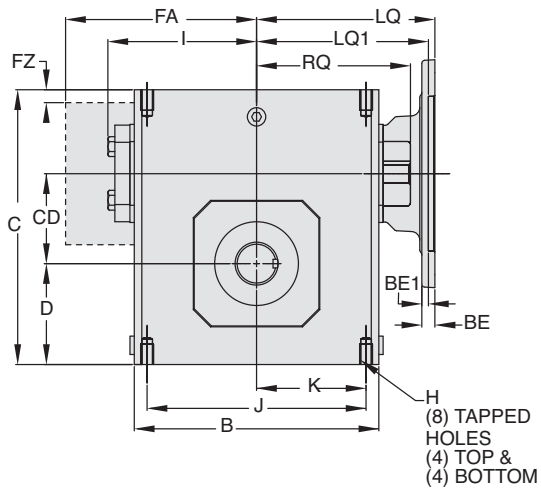


GR Series Dimensions

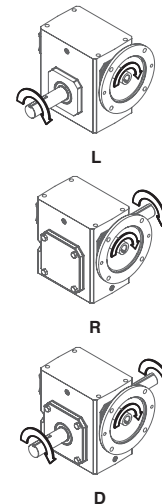
Styles: BMQ, BM, B

**CAST IRON
GR SERIES**

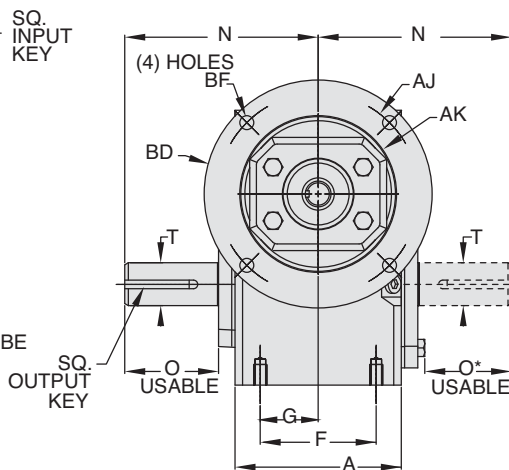
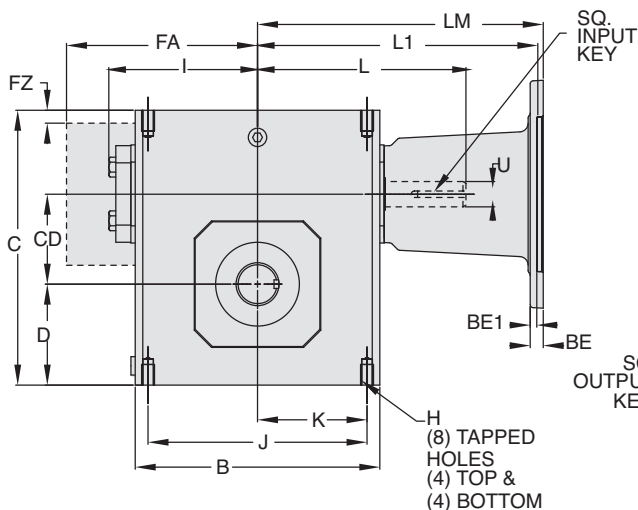
Style BMQ



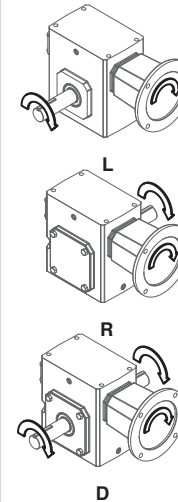
ASSEMBLIES



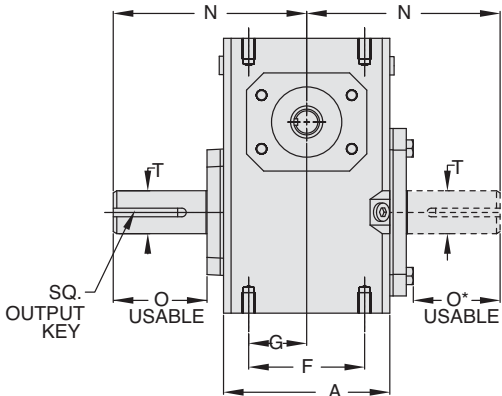
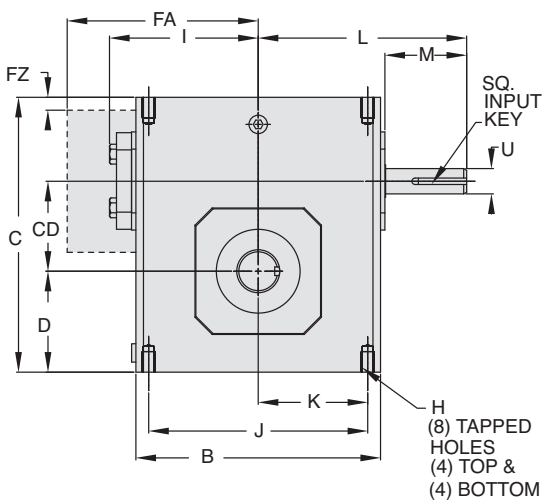
Style BM



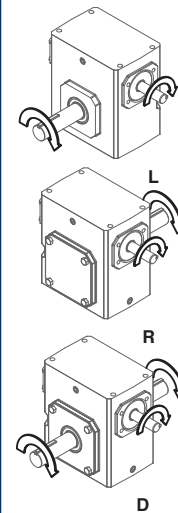
ASSEMBLIES



Style B



ASSEMBLIES



REVERSE ALL ARROWS
FOR OPPOSITE INPUT SHAFT
ROTATION. CONTACT FACTORY
FOR OTHER MOUNTINGS OR
ASSEMBLY POSITIONS.

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STYLE BMQ, BM, B DIMENSIONS (Inches)

Size	A	B	C	D	CD	F	FA ▼	FZ ▼	G	H		I	J	K	L	M	N	O	O*	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*	Output Key
										Tap Size	Depth												
GR813	2.82	3.80	4.66	1.72	1.33	2.00	N/A	N/A	1.00	5/16-18 UNC	.50	2.61	3.25	1.63	3.82	1.76	4.00	2.16	1.94	.625	.500	1/8 X 1.00	3/16 X 1.50
GR815	3.44	4.88	5.38	1.91	1.54	2.75	N/A	N/A	1.38	5/16-18 UNC	.63	3.14	4.19	2.09	4.35	1.76	4.31	2.11	1.90	.750	.625	3/16 X 1.38	3/16 X 1.50
GR818	3.56	5.06	5.75	2.06	1.75	2.75	N/A	N/A	1.38	5/16-18 UNC	.63	3.24	4.19	2.09	4.45	1.76	4.31	2.05	1.84	.875	.625	3/16 X 1.38	3/16 X 1.38
GR821	3.81	5.80	6.38	2.28	2.06	▲	N/A	N/A	1.44	5/16-18 UNC	.63	3.61	▲	2.50	4.82	1.76	4.68	2.29	2.08	1.000	.625	3/16 X 1.38	1/4 X 1.44
GR824	4.06	6.12	6.94	2.50	2.38	2.88	N/A	N/A	1.44	3/8-16 UNC	.69	3.77	5.00	2.50	5.51	2.38	5.14	2.66	2.44	1.125	.750	3/16 X 1.63	1/4 X 1.75
GR826	4.84	7.12	8.00	2.94	2.63	3.38	N/A	N/A	1.69	3/8-16 UNC	.69	4.34	6.38	3.19	6.07	2.38	5.63	2.73	2.52	▲	.750	3/16 X 1.63	1/4 X 1.75
GR830	5.25	8.12	8.88	3.25	3.00	4.00	N/A	N/A	2.00	7/16-14 UNC	.88	4.84	7.00	3.50	6.57	2.38	6.75	3.60	3.36	1.250	.875	3/16 X 1.63	1/4 X 1.75
GR832	5.75	8.50	9.38	3.50	3.25	4.00	N/A	N/A	2.00	7/16-14 UNC	.88	5.02	7.50	3.75	6.76	2.38	7.06	3.66	3.42	▲	.875	3/16 X 1.63	▲
GR842	6.13	10.25	11.38	4.44	4.25	5.00	N/A	N/A	2.50	5/8-11 UNC	1.00	6.10	8.50	4.25	9.57	3.47	8.12	4.50	4.21	1.875	1.250	1/4 X 2.50	1/2 X 3.06
GR852	7.19	13.00	14.00	5.12	5.25	5.81	N/A	N/A	2.91	5/8-11 UNC	1.25	7.50	11.00	5.50	10.88	3.38	9.06	4.78	4.53	2.000	1.250	1/4 X 3.00	1/2 X 3.50
GR860	8.13	14.25	16.50	6.50	6.00	6.38	11.13	0.33	3.19	5/8-11 UNC	1.00	N/A	12.75	6.38	11.78	3.41	10.00	4.65	4.65	2.500	1.500	3/8 X 3.00	5/8 X 4.00
GR870	7.63	14.88	18.91	7.59	7.00	5.50	11.37	0.35	2.75	1-8 UNC	1.56	N/A	12.50	6.25	11.50	2.97	11.76	5.65	5.65	2.750	1.625	3/8 x 2.87**	5/8 x 4.00**
GR880	8.63	17.00	20.96	8.86	8.00	6.50	12.52	0.57	3.25	1-8 UNC	1.66	N/A	14.25	7.13	12.50	2.84	12.25	5.98	5.98	3.000	1.875	1/2 x 2.81**	3/4 x 4.50**
GR8100	9.53	20.88	25.47	10.36	10.00	6.88	14.69	0.51	3.44	1-1/4 -7 UNC	2.04	N/A	17.75	8.88	15.50	3.76	14.75	6.76	6.76	3.750	2.250	1/2 x 3.69**	7/8 x 5.00**

▲ See feature comparison chart.

FEATURE COMPARISON (821, 826, 832)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	(F)3.00" x (J)4.75"	Identical	Identical	✓	✓	GRG
		(F)2.88" x (J)5.00"					GRL
826	1.250"	Identical	Identical	Identical	✓	✓	GRG
	1.125"						GRL
832	1.500"	Identical	3/8 x 2.63	Identical	✓	✓	GRG
	1.375"		5/16 x 2.63				GRL

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		180TC/210TC	L1	250TC	LQ		180TC	LQ1	210TC	250TC	RQ			
	48CZ	56C/140TC				48CZ/56C/140TC	56C/140TC					48CZ/56C/140TC	180TC	210TC	250TC
GR813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A	N/A	N/A	N/A
GR815	6.16	6.60	N/A	N/A	3.99	N/A	N/A	N/A	3.62	N/A	N/A	N/A	N/A	N/A	N/A
GR818	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A	N/A	N/A	N/A
GR821*	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A	N/A	N/A	N/A	N/A	N/A
GR824	N/A	7.76	8.76	N/A	4.63	5.06	N/A	N/A	4.09	4.56	N/A	N/A	N/A	N/A	N/A
GR826*	N/A	8.32	9.32	N/A	5.19	5.62	N/A	N/A	4.82	5.13	N/A	N/A	N/A	N/A	N/A
GR830	N/A	8.82	9.82	N/A	5.95	6.15	6.56	N/A	5.32	5.63	6.06	N/A	N/A	N/A	N/A
GR832*	N/A	9.01	10.01	N/A	6.14	6.34	6.75	N/A	5.51	5.81	6.25	N/A	N/A	N/A	N/A
GR842	N/A	11.81	12.90	13.46	6.45	7.21	7.21	7.77	6.04	6.68	6.68	7.24	N/A	N/A	N/A
GR852	N/A	13.21	14.30	14.86	7.85	8.61	8.61	9.17	7.35	7.98	7.98	8.54	N/A	N/A	N/A
GR860	N/A	N/A	15.88	16.50	10.45	9.33	9.33	9.94	10.01	8.69	8.69	8.69	N/A	N/A	N/A
GR870	N/A	N/A	15.50	15.50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GR880	N/A	N/A	16.58	16.58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NEMA DIMENSIONS (Inches)

Frame	Ajb	AK	BD	BE	BE1	Bore Dia.	Keyway	BFB
48CZ	3.75	3.00	4.36	0.38	N/A	.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)*

Size	LQ1					RQ						
	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D
GR813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR815	3.15	3.18	3.42	N/A	N/A	N/A	2.98	3.00	3.24	N/A	N/A	N/A
GR818	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR821*	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
GR824	N/A	3.72	4.34	N/A	N/A	N/A	3.46	3.71	N/A	N/A	N/A	N/A
GR826*	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	5.07	N/A
GR830	N/A	4.78	5.41	5.41	5.88	N/A	N/A	4.59	5.22	5.22	5.57	N/A
GR832*	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR842	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
GR852	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

* Applies to double output shaft

** Key not provided with gear reducer. Keyway dimension shown.

◆ Keyway width by depth

⊙ Mounting holes rotated 45 degrees from positions shown on Size GR860, Style BM with frame sizes 180TC-250TC.

■ 48CZ not available

● 180TC not available

⊕ Metric IEC B5 input flange options are available only on quill input styles.

* Dimensions same for GRG and GRL Series

⊙ Style B and BM only.

▼ Sizes 860-8100 are supplied with a fan. Dimensions refer to fan guard location.

WARNING

For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

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