

# Maximum Rating Tables

Size 818 • 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 818

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	3.095	2.900	366	_8180001	_8180013	_8180025	_8180501.XX
	1750	350	2.600	2.422	436				
	1170	234	2.066	1.906	513				
7.5	100	20	0.312	0.228	717	_8180002	_8180014	_8180026	_8180502.XX
	2500	333	2.307	2.127	402				
	1750	233	1.909	1.745	471				
10	1170	156	1.473	1.328	537	_8180003	_8180015	_8180027	_8180503.XX
	100	13	0.227	0.147	697				
	2500	250	1.996	1.820	459				
15	1750	175	1.625	1.466	528	_8180004	_8180016	_8180028	_8180504.XX
	1170	117	1.239	1.099	592				
	100	10	0.196	0.118	744				
20	2500	166	1.485	1.301	492	_8180005	_8180017	_8180029	_8180505.XX
	1750	116	1.224	1.058	571				
	1170	78	0.945	0.799	645				
25	100	6.7	0.165	0.087	823	_8180006	_8180018	_8180030	_8180506.XX
	2500	125	1.283	1.093	551				
	1750	87	1.046	0.875	630				
30	1170	58	0.803	0.652	702	_8180007	_8180019	_8180031	_8180507.XX
	100	5.0	0.150	0.069	872				
	2500	100	1.088	0.900	567				
40	1750	70	0.884	0.715	644	_8180008	_8180020	_8180032	_8180508.XX
	1170	46	0.678	0.530	713				
	100	4.0	0.135	0.055	874				
50	2500	83	0.892	0.702	531	_8180009	_8180021	_8180033	_8180509.XX
	1750	58	0.741	0.569	614				
	1170	39	0.580	0.428	692				
60	100	3.3	0.126	0.047	880	_8180010	_8180022	_8180034	_8180510.XX
	2500	62	0.739	0.551	556				
	1750	43	0.609	0.440	634				
80	1170	29	0.476	0.328	706	_8180011	_8180023	_8180035	_8180511.XX
	100	2.5	0.113	0.035	874				
	2500	50	0.625	0.444	559				
100	1750	35	0.515	0.352	634	_8180012	_8180024	_8180036	_8180512.XX
	1170	23	0.404	0.260	701				
	100	2.0	0.103	0.027	857				
100	2500	41	0.542	0.363	550	_8180011	_8180023	_8180035	_8180511.XX
	1750	29	0.449	0.288	623				
	1170	19	0.354	0.213	689				
100	100	1.7	0.097	0.022	842	_8180011	_8180023	_8180035	_8180511.XX
	2500	31	0.247	0.156	314				
	1750	21	0.208	0.124	356				
100	1170	14	0.164	0.091	392	_8180012	_8180024	_8180036	_8180512.XX
	100	1.3	0.023	0.009	470				
	2500	25	0.167	0.097	245				
100	1750	17	0.141	0.077	277	_8180012	_8180024	_8180036	_8180512.XX
	1170	11	0.111	0.057	304				
	100	1.0	0.016	0.006	362				

### How To Build a Part Number For Size GR818, NH818 & EL818

1. Select partial catalog number from the selection table
2. Replace leading “\_” with series code (GR, NH, EL)
3. For hollow output, replace “XX” suffix with bore code (see next page for codes)

#### Example:

Grove Gear IRONMAN, style B, 5:1 ratio, left hand output  
GR-B818-5-L  
GR8180001



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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.*	
56C 143-5TC	8180037 8180073	8180049 8180085	8180061 8180097	8180513.XX 8180525.XX	8180109 8180145	8180121 8180157	8180133 8180169	8180537.XX 8180549.XX	5
56C 143-5TC	8180038 8180074	8180050 8180086	8180062 8180098	8180514.XX 8180526.XX	8180110 8180146	8180122 8180158	8180134 8180170	8180538.XX 8180550.XX	7.5
56C 143-5TC	8180039 8180075	8180051 8180087	8180063 8180099	8180515.XX 8180527.XX	8180111 8180147	8180123 8180159	8180135 8180171	8180539.XX 8180551.XX	10
56C 143-5TC	8180040 8180076	8180052 8180088	8180064 8180100	8180516.XX 8180528.XX	8180112 8180148	8180124 8180160	8180136 8180172	8180540.XX 8180552.XX	15
56C 143-5TC	8180041 8180077	8180053 8180089	8180065 8180101	8180517.XX 8180529.XX	8180113 8180149	8180125 8180161	8180137 8180173	8180541.XX 8180553.XX	20
56C 143-5TC	8180042 8180078	8180054 8180090	8180066 8180102	8180518.XX 8180530.XX	8180114 8180150	8180126 8180162	8180138 8180174	8180542.XX 8180554.XX	25
56C 143-5TC	8180043 8180079	8180055 8180091	8180067 8180103	8180519.XX 8180531.XX	8180115 8180151	8180127 8180163	8180139 8180175	8180543.XX 8180555.XX	30
48CZ 56C 143-5TC	8180188 8180044 8180080	8180200 8180056 8180092	8180212 8180068 8180104	8180568.XX 8180520.XX 8180532.XX	8180224 8180116 8180152	8180236 8180128 8180164	8180248 8180140 8180176	8180580.XX 8180544.XX 8180556.XX	40
48CZ 56C 143-5TC	8180189 8180045 8180081	8180201 8180057 8180093	8180213 8180069 8180105	8180569.XX 8180521.XX 8180533.XX	8180225 8180117 8180153	8180237 8180129 8180165	8180249 8180141 8180177	8180581.XX 8180545.XX 8180557.XX	50
48CZ 56C 143-5TC	8180190 8180046 8180082	8180202 8180058 8180094	8180214 8180070 8180106	8180570.XX 8180522.XX 8180534.XX	8180226 8180118 8180154	8180238 8180130 8180166	8180250 8180142 8180178	8180582.XX 8180546.XX 8180558.XX	60
48CZ 56C	8180191 8180047	8180203 8180059	8180215 8180071	8180571.XX 8180523.XX	8180227 8180119	8180239 8180131	8180251 8180143	8180583.XX 8180547.XX	80
48CZ 56C	8180192 8180048	8180204 8180060	8180216 8180072	8180572.XX 8180524.XX	8180228 8180120	8180240 8180132	8180252 8180144	8180584.XX 8180548.XX	100

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

▲ Consult Factory for other motor flanges available.

\* Catalog numbers are for hollow output shaft reducers.

When ordering, substitute the XX suffix with the required output bore code.

### Available bore codes

Fraction Size	5/8"	11/16"	3/4"	7/8"	1"
Decimal Size	0.625	0.688	0.750	0.875	1.000
Output Bore Code	10	11	12	14	16



# GR Series Dimensions

Styles: UMQ, UM, U

**CAST IRON**  
**GR SERIES**

Single Reduction  
Worm Gear Reducers

Double Reduction  
Worm - Worm Gear Reducers

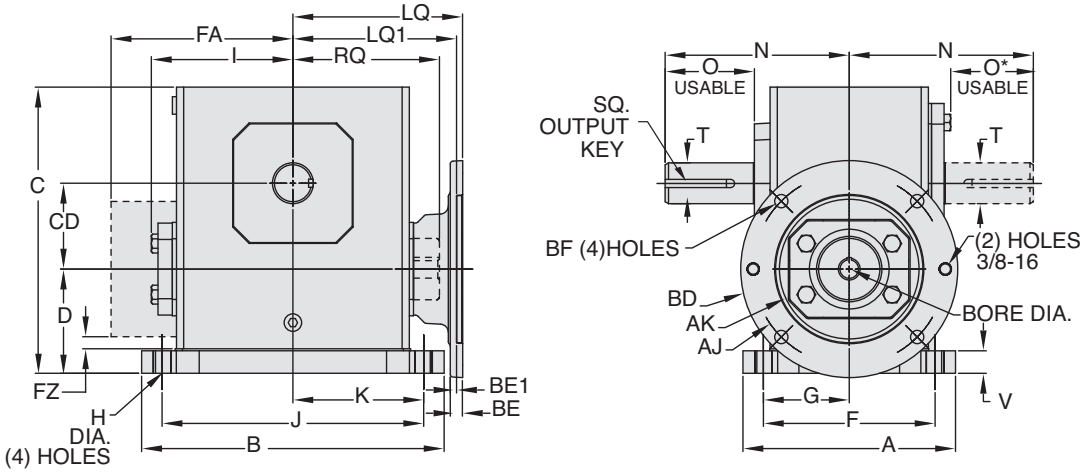
Double Reduction  
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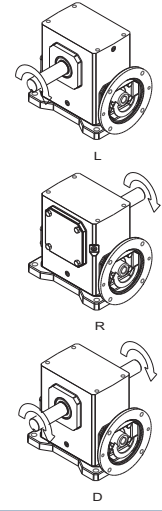
Ratio Multipliers

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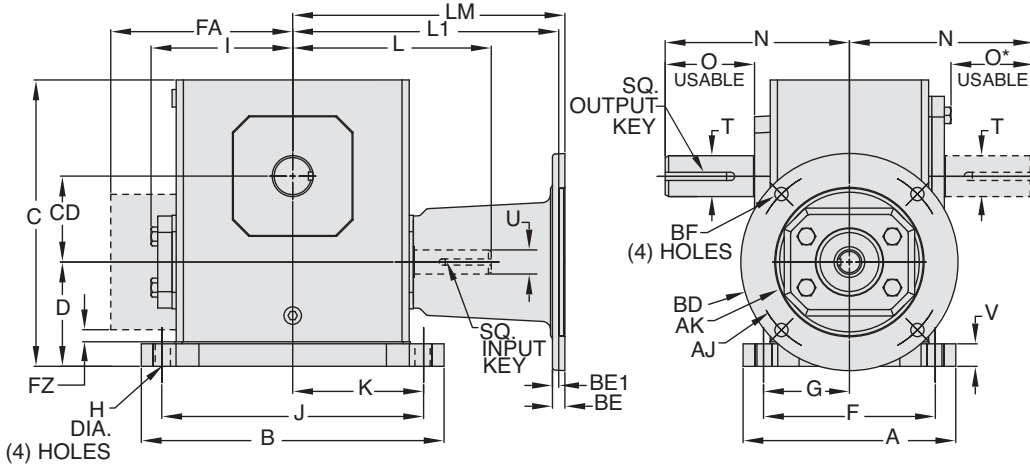
## Style UMQ



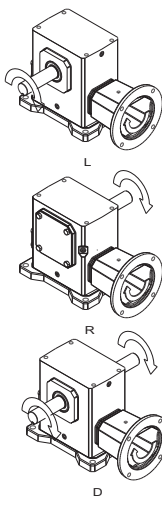
### ASSEMBLIES



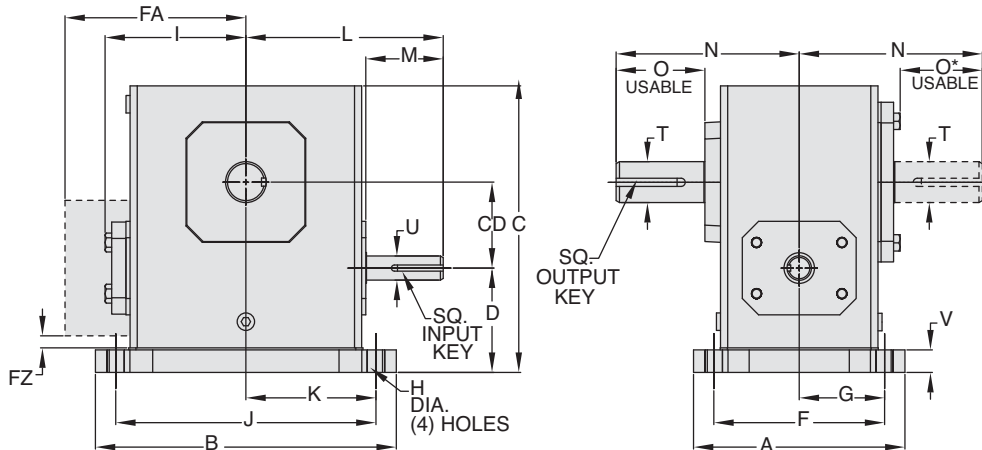
## Style UM



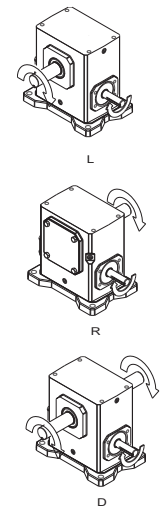
### ASSEMBLIES



## Style U



### ASSEMBLIES



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

**STYLE UMQ, UM, U DIMENSIONS (Inches)**

Size	A	B	C	D	CD	F	FA ▼	FZ ▼	G	H	I	J	K	L	M	N	O	O*	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key#*	Output Key
GR813	4.24	5.37	5.19	2.14	1.33	3.31	N/A	N/A	1.66	.34	2.61	4.37	2.19	3.82	1.76	4.00	2.16	1.94	0.53	.625	.500	1/8 X 1.00	3/16 X 1.50
GR815	5.56	6.50	5.97	2.52	1.54	4.31	N/A	N/A	2.16	.41	3.14	5.25	2.63	4.35	1.76	4.31	2.11	1.90	0.59	.750	.625	3/16 X 1.38	3/16 X 1.50
GR818	5.75	6.99	6.44	2.63	1.75	4.50	N/A	N/A	2.25	.41	3.24	5.75	2.88	4.45	1.76	4.31	2.05	1.84	0.69	.875	.625	3/16 X 1.38	3/16 X 1.38
GR821	6.00	7.69	7.09	2.75	2.06	4.69	N/A	N/A	2.34	.47	3.61	6.38	3.19	4.82	1.76	4.68	2.29	2.08	0.72	1.000	.625	3/16 X 1.38	1/4 X 1.44
GR824	6.19	8.37	7.69	2.81	2.38	4.88	N/A	N/A	2.44	.49	3.77	7.06	3.53	5.51	2.38	5.14	2.66	2.44	0.75	1.125	.750	3/16 X 1.63	1/4 X 1.75
GR826	6.50	9.25	8.75	3.19	2.63	5.25	N/A	N/A	2.63	.53	4.34	8.00	4.00	6.07	2.38	5.63	2.73	2.52	0.75	▲	.750	3/16 X 1.63	1/4 X 1.75
GR830	7.50	10.00	9.63	3.38	3.00	5.88	N/A	N/A	2.94	.53	4.84	8.44	4.22	6.57	2.38	6.75	3.60	3.36	0.75	1.250	.875	3/16 X 1.63	1/4 X 1.75
GR832	7.75	11.12	10.25	3.50	3.25	6.13	N/A	N/A	3.06	.53	5.02	9.50	4.75	6.76	2.38	7.06	3.66	3.42	0.81	▲	.875	3/16 X 1.63	3/8 X 2.25
GR842	9.75	13.24	12.38	3.69	4.25	7.63	N/A	N/A	3.81	.66	6.10	11.12	5.56	9.57	3.47	8.12	4.50	4.21	1.00	1.875	1.250	1/4 X 2.50	1/2 X 3.06
GR852	10.50	16.24	15.13	4.76	5.25	8.38	N/A	N/A	4.19	.78	7.50	14.12	7.06	10.88	3.38	9.06	4.78	4.53	1.13	2.000	1.250	1/4 X 3.00	1/2 X 3.50
GR860	12.00	18.99	17.75	5.25	6.00	9.50	11.13	0.33	4.75	.91	N/A	16.49	8.25	11.78	3.41	10.00	4.65	4.65	1.25	2.500	1.500	3/8 X 3.00	5/8 X 4.00
GR870	13.38	15.38	20.33	5.74	7.00	11.25	11.37	0.35	5.63	1.13	N/A	13.00	6.50	11.50	2.97	11.76	5.65	5.65	1.42	2.750	1.625	3/8 x 2.87**	5/8 x 4.00**
GR880	13.50	17.37	22.61	5.75	8.00	11.50	12.52	0.57	5.75	1.13	N/A	14.75	7.38	12.50	2.84	12.25	5.98	5.98	1.65	3.000	1.875	1/2 x 2.81**	3/4 x 4.50**
GR8100	16.88	21.14	27.12	6.76	10.00	14.00	14.69	0.51	7.00	1.44	N/A	17.00	8.50	15.50	3.76	14.75	6.76	6.76	1.65	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	Identical	Identical	Identical	✓	✓	GRG
							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

◇ If Accessory kit is removed, dimensions will vary. NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 52-53 (B, BM, BMQ).

**Motor Mounting Dimensions**

**NEMA DIMENSIONS (Inches)**

Size	LM 48CZ	56C/ 140TC	180TC/ 210TC	L1 250TC	LQ 48CZ/ 56C/140TC	180TC	LQ1 210TC	250TC	48CZ/ 56C/140TC	RQ 180TC	250TC
GR813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	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
GR818	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	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
GR824	N/A	7.76	8.76	N/A	4.63■	5.06	N/A	N/A	4.09■	4.56	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
GR830	N/A	8.82	9.82	N/A	5.95■	6.15	6.56	N/A	5.32■	5.63	N/A
GR832*	N/A	9.01	10.01	N/A	6.14■	6.34	6.75	N/A	5.51■	5.81	N/A
GR842	N/A	11.81	12.90	13.46	6.45■	7.21	7.21	7.77	6.04■	6.68	7.24
GR852	N/A	13.21	14.30	14.86	7.85■	8.61	8.61	9.17	7.35■	7.98	8.54
GR860	N/A	N/A	15.88	16.50	10.45■	9.33	9.33	9.94	10.01■	8.69	8.69
GR870	N/A	N/A	15.50	15.50	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

**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

- \* 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 UM 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 U and UM only.
- ▼ Sizes 860-8100 are supplied with a fan. Dimensions refer to fan guard location.

Note: Styles UMQ, UM and U are worm under mounting assemblies and not recommended due to increase potential for high speed shaft seal leakage and potential mounting interference. Motor flange may extend below base. Riser blocks are available upon request (see page 274). Contact Factory for selection assistance.

**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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