

Maximum Rating Tables

GR, NH & EL Series • All Stock Styles



Sizes 813, 815 and 818 • 1.0 S.F.

Nominal Ratio	Input RPM	Nominal Output RPM	Size 813				Size 815**				Size 818			
			Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*	Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*	Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*
10	1750	175.0	0.767	0.679	252	10.00	1.265	1.123	416	10.00	1.702	1.524	564	10.00
15	1750	116.7	0.616	0.530	294	15.00	0.993	0.849	472	15.00	1.196	1.041	578	15.00
20	1750	87.5	0.505	0.420	311	20.00	0.838	0.691	511	20.00	1.000	0.853	632	20.00
25	1750	70.0	0.370	0.306	282	25.00	0.629	0.528	486	25.00	0.844	0.718	662	25.00
30	1750	58.3	0.399	0.311	345	30.00	0.665	0.510	566	30.00	0.770	0.623	692	30.00
40	1750	43.8	0.302	0.235	338	40.00	0.516	0.401	576	40.00	0.595	0.479	690	40.00
45	1750	40.1	0.306	0.229	363	43.69	0.519	0.385	609	43.69	0.590	0.463	732	43.69
50	1750	35.0	0.251	0.187	345	50.00	0.429	0.322	593	50.00	0.492	0.382	705	50.00
60	1750	29.2	0.244	0.174	375	60.00	0.418	0.295	638	60.00	0.469	0.352	760	60.00
75	1750	23.3	0.205	0.138	382	75.00	0.352	0.237	656	75.00	0.392	0.281	777	75.00
80	1750	21.9	0.215	0.140	404	80.00	0.392	0.254	731	80.00	0.402	0.282	812	80.00
100	1750	17.5	0.179	0.110	395	100.00	0.327	0.196	704	100.00	0.345	0.227	818	100.00
125	1750	14.0	0.153	0.087	403	125.00	0.280	0.157	723	125.00	0.292	0.181	833	125.00
150	1750	11.7	0.142	0.074	408	150.00	0.246	0.127	701	150.00	0.261	0.150	831	150.00
200	1750	8.8	0.124	0.056	413	200.00	0.228	0.102	753	200.00	0.221	0.113	831	200.00
250	1750	7.0	0.111	0.045	413	250.00	0.196	0.077	709	250.00	0.194	0.089	817	250.00
300	1750	6.1	0.102	0.039	421	287.28	0.188	0.072	777	287.28	0.179	0.079	849	287.288
400	1750	4.4	0.040	0.015	228	400.00	0.086	0.027	392	400.00	0.068	0.031	451	400.00
500	1750	3.5	0.030	0.010	180	500.00	0.063	0.017	308	500.00	0.046	0.019	348	500.00
600	1750	3.0	0.029	0.011	232	574.56	0.065	0.019	403	574.56	0.049	0.021	459	574.56

* Actual ratio combinations supplied by Factory may vary from above depending on application and manufacturing requirements.

Refer to page 201 for exact ratio of helical primary stage and worm gear secondary stage.

** Size 815 is not available in EL Series.

At speeds above 1750 input RPM, gear reducers may become thermally limited. For continuous operation, limit input HP to 1750 RPM input ratings shown. Contact Factory with application requirements if higher speeds are required.

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

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

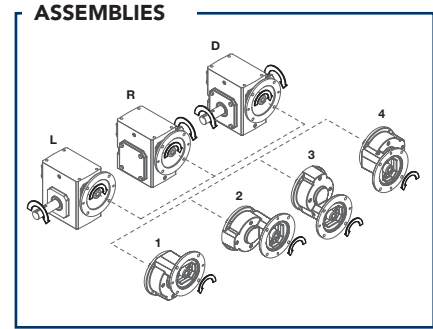
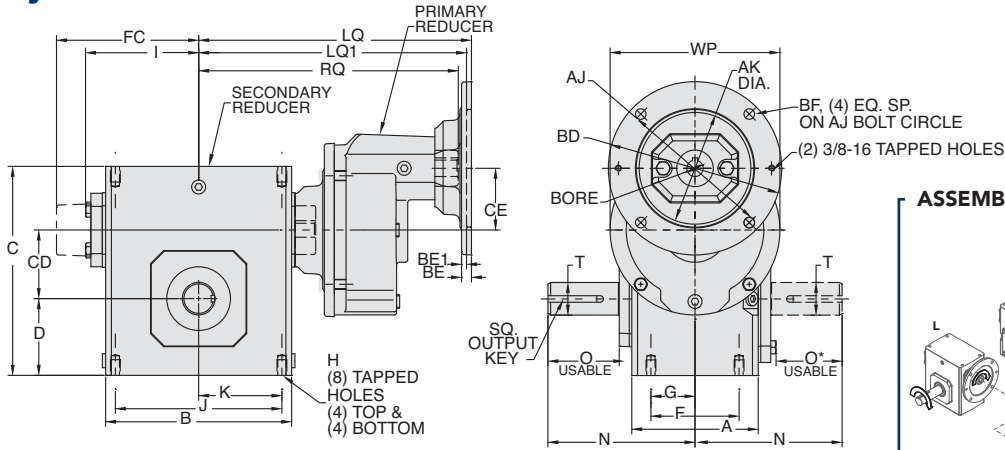


GR Series Dimensions

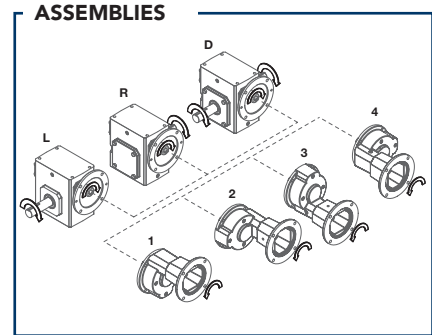
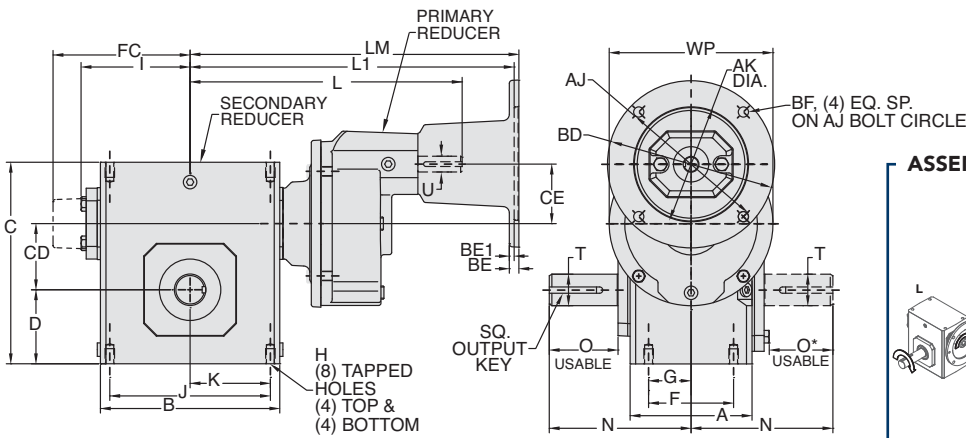
Styles: DXMQ, DXM, DX

CAST IRON
GR SERIES

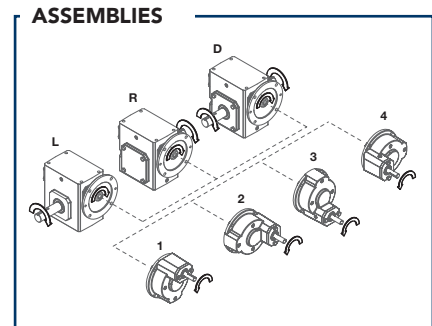
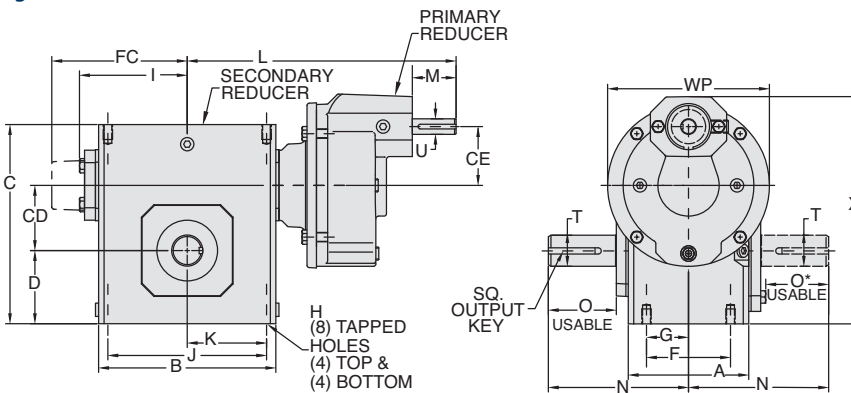
Style DXMQ



Style DXM



Style DX



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

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STYLE DXMQ, DXM, DX DIMENSIONS (Inches)

Size	A	B	C	CD	CE	D	F	FC▼	G	H		I	J	K	L	M	N	O	O*	WP	X	T	U	Input Key**	Output Key
										Tap Size	Depth											+0.000 -0.0015	+0.000 -0.0015		
GR813	2.82	3.80	4.66	1.33	1.91	1.72	2.00	N/A	1.00	5/16-18 UNC	0.50	2.61	3.25	1.63	7.75	1.76	4.00	2.16	1.94	6.50	6.16	0.625	0.625	3/16 x 3/32	3/16 x 1.50
GR815	3.44	4.88	5.38	1.54	1.91	1.91	2.75	N/A	1.38	5/16-18 UNC	0.63	3.14	4.19	2.09	8.28	1.76	4.31	2.11	1.90	6.50	6.56	0.750	0.625	3/16 x 3/32	3/16 x 1.50
GR818	3.56	5.06	5.75	1.75	1.91	2.06	2.75	N/A	1.38	5/16-18 UNC	0.63	3.24	4.19	2.09	8.38	1.76	4.31	2.05	1.84	6.50	6.92	0.875	0.625	3/16 x 3/32	3/16 x 1.38
GR821	3.81	5.80	6.38	2.06	1.91	2.28	▲	N/A	1.44	3/8-16 UNC	0.63	3.61	▲	2.50	8.75	1.76	4.68	2.29	2.08	6.50	7.45	1.000	0.625	3/16 x 3/32	1/4 x 1.44
GR824	4.06	6.12	6.94	2.38	2.36	2.50	2.88	N/A	1.44	3/8-16 UNC	0.69	3.77	5.00	2.50	8.92	1.76	5.14	2.66	2.44	6.50	8.45	1.125	0.625	3/16 x 3/32	1/4 x 1.75
GR826	4.84	7.12	8.00	2.63	2.36	2.94	3.38	N/A	1.69	3/8-16 UNC	0.69	4.34	6.38	3.19	9.48	1.76	5.63	2.73	2.52	6.50	9.13	▲	0.625	3/16 x 1.38	1/4 x 1.75
GR830	5.25	8.12	8.88	3.00	2.36	3.25	4.00	N/A	2.00	7/16-14 UNC	0.88	4.84	7.00	3.50	10.24	1.76	6.75	3.60	3.36	6.50	9.82	1.250	0.625	3/16 x 1.38	1/4 x 1.75
GR832	5.75	8.50	9.38	3.25	2.36	3.50	4.00	N/A	2.00	7/16-14 UNC	0.88	5.02	7.50	3.75	10.43	1.76	7.06	3.66	3.42	6.50	10.32	▲	0.625	3/16 x 1.38	3/8 x 2.25
GR842	6.13	10.25	11.38	4.25	2.87	4.44	5.00	N/A	2.50	5/8-11 UNC	1.00	6.10	8.50	4.25	17.48	3.61	8.12	4.50	4.21	8.50	13.31	1.875	1.250	1/4 x 2.00	1/2 x 3.06
GR852	7.19	13.00	14.00	5.25	2.87	5.12	5.81	N/A	2.91	5/8-11 UNC	1.25	7.50	11.00	5.50	18.88	3.61	9.06	4.78	4.53	8.50	14.99	2.000	1.250	1/4 x 2.00	1/2 x 3.50
GR860	8.13	14.25	16.50	6.00	2.87	6.50	6.38	10.24	3.19	5/8-11 UNC	1.00	N/A	12.75	6.38	19.60	3.61	10.00	4.65	4.65	8.50	17.12	2.500	1.250	1/4 x 2.00	5/8 x 4.00
GR870	7.63	14.88	18.91	7.00	3.49	7.59	5.50	10.63	2.75	1-8 UNC	1.56	N/A	12.50	6.25	19.68	2.50	11.76	5.65	6.50	21.84	2.750	1.250	1.375	1/4 x 2.25**	5/8 x 4.00**
GR880	8.63	17.00	20.96	8.00	4.07	8.86	6.50	11.93	3.25	1-8 UNC	1.66	N/A	14.25	7.13	21.30	3.00	12.25	5.98	5.98	11.64	25.93	3.000	1.375	5/16 x 2.75**	3/4 x 4.50**
GR8100	9.53	20.88	25.47	10.00	4.90	10.36	6.88	14.34	3.44	1-1/4 -7 UNC	2.04	N/A	17.75	8.88	25.78	3.50	14.75	6.76	6.76	13.85	31.35	3.750	1.500	3/8 x 3.25**	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	L1	LQ	180TC	LQ1	250TC	48CZ/	180TC	RQ	250TC
	56C/140TC	210TC	250TC	48CZ/56TC/140TC		210TC	250TC	56C/140TC		210TC	250TC
GR813	10.0	N/A	N/A	8.52	N/A	N/A	N/A	8.13■	N/A	N/A	N/A
GR815	10.53	N/A	N/A	9.05	N/A	N/A	N/A	8.66■	N/A	N/A	N/A
GR818	10.63	N/A	N/A	9.15	N/A	N/A	N/A	8.76■	N/A	N/A	N/A
GR821*	11.00	N/A	N/A	9.52	N/A	N/A	N/A	9.13■	N/A	N/A	N/A
GR824	11.17	N/A	N/A	9.69■	N/A	N/A	N/A	9.30■	N/A	N/A	N/A
GR826*	11.73	N/A	N/A	10.25■	N/A	N/A	N/A	9.86■	N/A	N/A	N/A
GR830	12.49	N/A	N/A	11.01■	N/A	N/A	N/A	10.62■	N/A	N/A	N/A
GR832*	12.68	N/A	N/A	11.20■	N/A	N/A	N/A	10.81■	N/A	N/A	N/A
GR842	N/A	20.66	20.66	N/A	14.97	14.97	15.53	N/A	14.46	14.46	14.86
GR852	N/A	22.06	22.06	N/A	16.37	16.37	16.93	N/A	15.86	15.86	16.26
GR860	N/A	22.78	22.78	N/A	17.09	17.09	17.65	N/A	16.58	16.58	16.98

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	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
- 48CZ not available
- ※ Style DX and DXM only
- ★ Sizes 870-8100 have an input shaft which is not aligned with centerline of primary stage reducer.

- ◆ Metric IEC B5 input flange options are available only on quill input styles
- ✳ Dimensions same for GRG and GRL Series
- ▼ Sizes 860-8100 have extended cap on input cover. Dimension FC is to back face of the cap.

⚠ 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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