

GROVE GEAR

IronMan \mathcal{E} Series

High Efficiency Gear Reducers



Patent Pending

A Regal Brand

REGAL

The Grove Gear IronMan E Series is a high efficiency, right angle gear reducer designed for increased torque density, reduced inventory and improved efficiency. By utilizing modified helical-bevel technology, the E Series is able to operate at 90% efficiency and can provide up to 60% higher torque than a typical worm gear reducer. Through various accessories and modular components, the E Series recreates the critical dimensions of a standard worm gearbox and provides the opportunity to reduce inventory.

More Power

60% more torque than a typical worm gear reducer
Opportunity to downsize motor and gear reducer

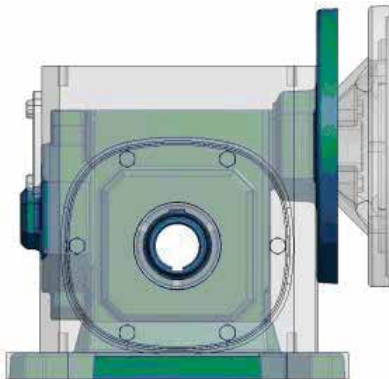
Less Inventory

Four models replace 10 typical worm gear reducer center distances
Plug-in shafts and mounting accessories create hundreds of style combinations

Higher Efficiency

90% operating efficiency
Rapid payback through energy cost savings





More Power

The Grove Gear IronMan E Series offers more torque density than a typical worm reducer in the same mounting footprint. It allows for motor and gear reducer downsizing opportunities.



Less Inventory

With this modular design, 10 typical worm gear center distances can be replaced with just four E Series units. Plug-in shafts and mounting accessories create hundreds of style combinations. By utilizing these modular features, the E Series can be used as a drop in replacement to worm gear reducers.



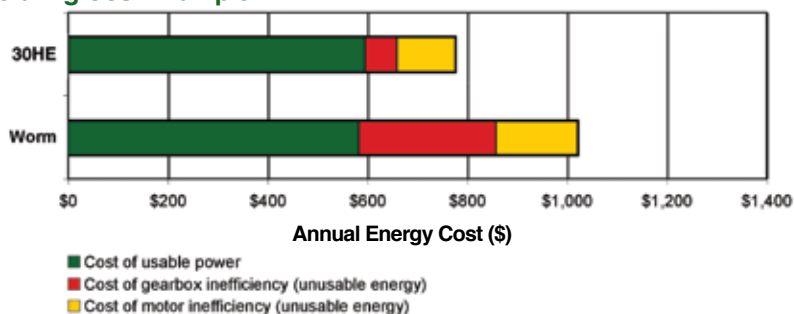
Higher Efficiency

The Grove Gear IronMan E Series Gear Reducer yields 90% operating efficiency and meets the increasing demand for high efficiency products in industrial applications. This revolutionary product utilizes modified helical-bevel technology to provide superior efficiency with the same dimensional footprint as worm gear reducers. The compact design is an ideal alternative to traditional high efficiency units. Placing greater attention on the efficiency of the entire power transmission system can reduce energy costs while boosting productivity, reliability and profitability.

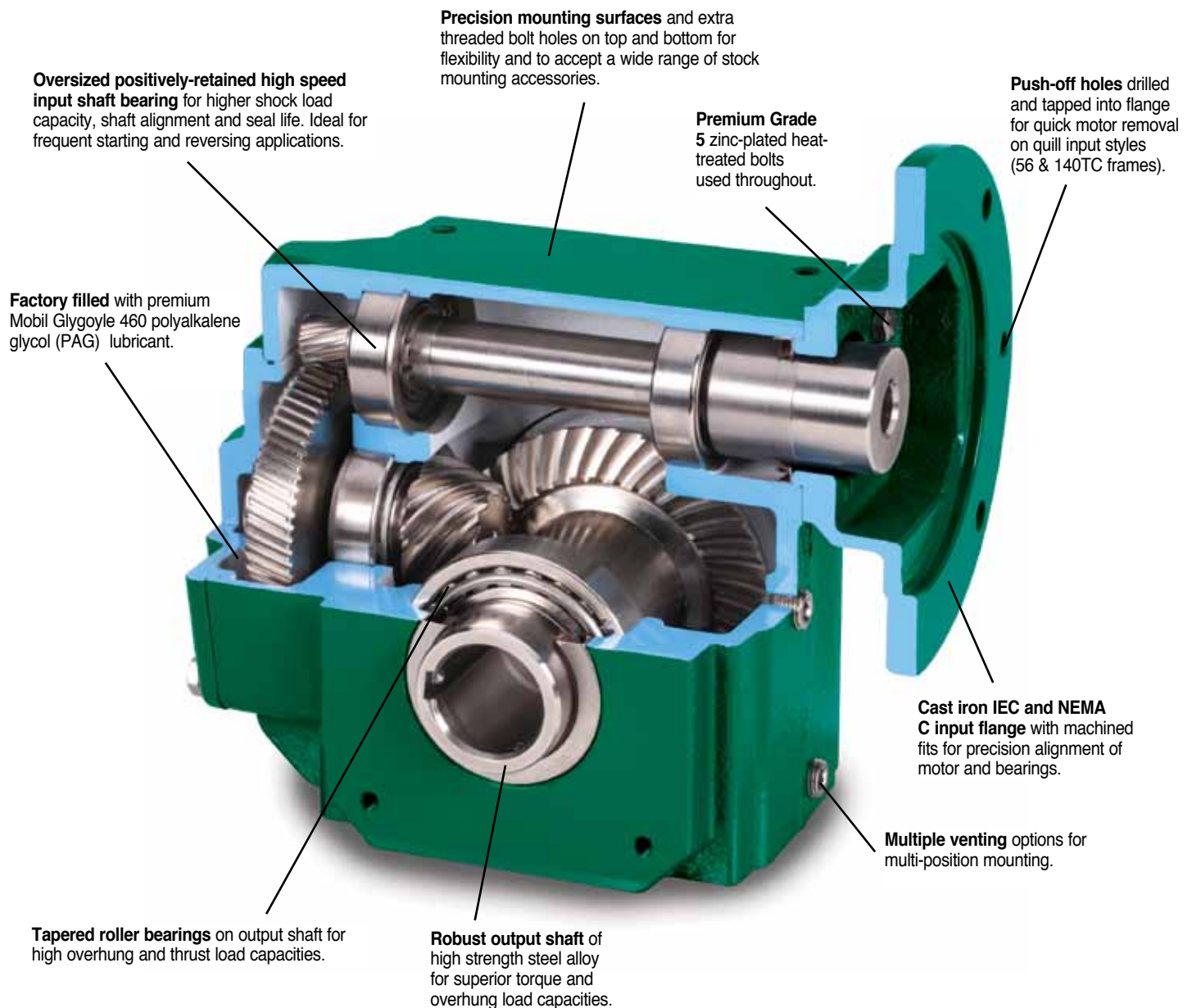
	Worm Drive	£ Series
Gearbox Description	3" worm	30HE
Input Speed (rpm)	1750	
Gearbox Ratio (Input RPM / Output RPM)	60	59.79
Desired Output Torque (in-lbs)	1950	
Gearbox Operating Efficiency (%)	68.0%	90.0%
Select Motor	Standard 3-ph	LEESON WATTSAYER®
Motor HP	1.50	1.00
Motor Efficiency	83.0%	85.0%
Duty Cycle (hrs/day)	24	
Duty Cycle (days/week)	7	
Energy Cost (\$/kW-hr)	\$0.10	
Cost of usable power	\$588	\$590
Cost of gearbox inefficiency (unusable energy)	\$277	\$66
Cost of motor inefficiency (unusable energy)	\$177	\$116
Annual Energy Cost Savings (\$)	\$270	
Annual Energy Savings (kW-hrs)	2,704	

Typical operating example, actual savings will vary.

Operating Cost Example



Premium Features



Quick Selection

Based on required output RPM and input motor horsepower, read across chart to see where an E Series reducer would be appropriate. As a rule of thumb, use 1.00 service factor chart for applications having uniform loads with up to 10 hours service duration per day. This chart is to be considered as a guide only. Contact Factory with specific application information.

Nom. Ratio	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10	15	20
7/1						18HE	24HE	24HE	33HE		
10/1						18HE	24HE	24HE	33HE	43HE	43HE
15/1						18HE	24HE	24HE	33HE	43HE	43HE
20/1					18HE	24HE	24HE	33HE	43HE	43HE	
30/1				18HE	24HE	24HE	33HE	43HE	43HE		
40/1			18HE	24HE	24HE	24HE	33HE	43HE			
50/1	18HE	24HE	24HE	24HE	33HE	43HE					
60/1	18HE	24HE	24HE	33HE	33HE	43HE					

Sample Model Numbers

Solid Output Shaft - E Series

BMQ	24HE	- 11.36	- L	- 56
Style	Size	Ratio	Shaft Orientation	Input Type

Hollow Output Shaft - E Series

HMQ	26HE	- 11.36	- H	- 56	- 23
Style	Size	Ratio	Shaft Orientation	Input Type	Bore Code

Rating Tables

1 Select Reducer

Style HMQ Style HM



Maximum Ratings - 18HE

Ratio	Input RPM	Output RPM	Input HP	Output TQ (lb-in)	NEMA Input Frame	Quill Input / Hollow Output Catalog No. ▼	Coupling Input / Hollow Output Catalog No. ▼
8.02	1750	218.20	4.23	1100	56C 143-5TC	E180508.XX E180516.XX	E180524.XX E180532.XX
	1150	143.39	2.78				
	850	105.99	2.06				
	100	12.47	0.24				
11.42	1750	153.24	2.97	1100	56C 143-5TC	E180509.XX E180517.XX	E180525.XX E180533.XX
	1150	101.70	1.95				
	850	74.43	1.44				
	100	8.76	0.17				
15.60	1750	112.18	2.18	1100	56C 143-5TC	E180510.XX E180518.XX	E180526.XX E180534.XX
	1150	73.72	1.43				
	850	54.49	1.06				
	100	6.41	0.12				
19.93	1750	87.81	1.70	1100	56C 143-5TC	E180511.XX E180519.XX	E180527.XX E180535.XX
	1150	57.70	1.12				
	850	42.65	0.83				
	100	5.02	0.10				
29.10	1750	60.14	1.17	1100	56C 143-5TC	E180512.XX E180520.XX	E180528.XX E180536.XX
	1150	39.52	0.77				
	850	29.21	0.57				
	100	3.44	0.07				
43.53	1750	40.20	0.78	1100	56C 143-5TC	E180513.XX E180521.XX	E180529.XX E180537.XX
	1150	26.42	0.51				
	850	19.53	0.38				
	100	2.30	0.04				
52.50	1750	33.33	0.65	1100	56C 143-5TC	E180514.XX E180522.XX	E180530.XX E180538.XX
	1150	21.90	0.42				
	850	16.19	0.31				
	100	1.90	0.04				
58.33	1750	30.00	0.58	1100	56C 143-5TC	E180515.XX E180523.XX	E180531.XX E180539.XX
	1150	19.72	0.38				
	850	14.57	0.28				
	100	1.71	0.03				

▼ Catalog numbers are for hollow output shaft reducers.
When ordering, substitute the XX suffix with the required output bore code.

Available bore codes 18HE

Fraction Size	3/4"	7/8"	1"	1-1/8"	1-3/16"	1-1/4"	1-7/16"
Decimal Size	0.750	0.875	1.000	1.125	1.188	1.250	1.438
Output Bore Code	12	14	16	18	19	20	23

If a solid output shaft is required for size 18HE, replace "XX" with "23" output bore code on basic reducer.

Style HMQ Style HM



Maximum Ratings - 24HE

Ratio	Input RPM	Output RPM	Input HP	Output TQ (lb-in)	NEMA Input Frame	Quill Input / Hollow Output Catalog No. ▼	Coupling Input / Hollow Output Catalog No. ▼
7.80	1750	224.4	8.50	2149	56C 143-5TC 182-4TC	E240511.XX E240521.XX E240531.XX	E240541.XX E240551.XX E240561.XX
	1150	147.4	6.76				
	850	109.0	5.00				
	100	12.8	0.59				
11.36	1750	154.0	7.06	2600	56C 143-5TC 182-4TC	E240513.XX E240523.XX E240533.XX	E240543.XX E240553.XX E240563.XX
	1150	101.2	4.64				
	850	74.8	3.43				
	100	8.80	0.40				
15.60	1750	112.2	5.14	2600	56C 143-5TC 182-4TC	E240514.XX E240524.XX E240534.XX	E240544.XX E240554.XX E240564.XX
	1150	73.7	3.38				
	850	54.5	2.50				
	100	6.40	0.29				
19.50	1750	89.7	4.11	2600	56C 143-5TC 182-4TC	E240515.XX E240525.XX E240535.XX	E240545.XX E240555.XX E240565.XX
	1150	59.0	2.70				
	850	43.6	2.00				
	100	5.1	0.24				
28.01	1750	62.5	2.86	2600	56C 143-5TC 182-4TC	E240516.XX E240526.XX E240536.XX	E240546.XX E240556.XX E240566.XX
	1150	41.1	1.88				
	850	30.3	1.39				
	100	3.60	0.16				
39.98	1750	43.8	2.01	2600	56C 143-5TC 182-4TC	E240518.XX E240528.XX E240538.XX	E240548.XX E240558.XX E240568.XX
	1150	28.8	1.32				
	850	21.3	0.97				
	100	2.50	0.11				
52.50	1750	33.3	1.53	2600	56C 143-5TC 182-4TC	E240519.XX E240529.XX E240539.XX	E240549.XX E240559.XX E240569.XX
	1150	21.9	1.00				
	850	16.2	0.74				
	100	1.90	0.09				
59.79	1750	29.3	1.34	2600	56C 143-5TC 182-4TC	E240520.XX E240530.XX E240540.XX	E240550.XX E240560.XX E240570.XX
	1150	19.2	0.88				
	850	14.2	0.65				
	100	1.70	0.08				

▼ Catalog numbers are for hollow output shaft reducers.
When ordering, substitute the XX suffix with the required output bore code.

Available bore codes 24HE

Fraction Size	1"	1-1/8"	1-3/16"	1-1/4"	1-7/16"	1-1/2"
Decimal Size	1.000	1.125	1.188	1.250	1.438	1.500
Output Bore Code	16	18	19	20	23	24

If a solid output shaft is required for size 24HE, replace "XX" with "23" output bore code on basic reducer.

1 Select Reducer (cont.)

Style HMQ Style HM



Maximum Ratings - 33HE

Ratio	Input RPM	Output RPM	Input HP	Output TQ (lb-in)	NEMA Input Frame	Quill Input / Hollow Output Catalog No. ▼	Coupling Input / Hollow Output Catalog No. ▼
7.94	1750	220.4	13.00	3346	56C	E330508.XX	E330548.XX
	1150	144.8	11.49		143-5TC	E330516.XX	E330556.XX
	850	107.1	8.49		182-4TC	E330524.XX	E330564.XX
	100	12.59	1.00		213-5TC	E330532.XX	E330572.XX
10.77	1750	162.5	12.89	4500	56C	E330509.XX	E330549.XX
	1150	106.8	8.47		143-5TC	E330517.XX	E330557.XX
	850	78.9	6.26		182-4TC	E330525.XX	E330565.XX
	100	9.29	0.74		213-5TC	E330533.XX	E330573.XX
15.05	1750	116.3	9.22	4500	56C	E330510.XX	E330550.XX
	1150	76.4	6.06		143-5TC	E330518.XX	E330558.XX
	850	56.5	4.48		182-4TC	E330526.XX	E330566.XX
	100	6.64	0.53		213-5TC	E330534.XX	E330574.XX
21.15	1750	82.7	6.56	4500	56C	E330511.XX	E330551.XX
	1150	54.4	4.31		143-5TC	E330519.XX	E330559.XX
	850	40.2	3.19		182-4TC	E330527.XX	E330567.XX
	100	4.73	0.38		213-5TC	E330535.XX	E330575.XX
30.14	1750	58.1	4.61	4500	56C	E330512.XX	E330552.XX
	1150	38.2	3.03		143-5TC	E330520.XX	E330560.XX
	850	28.2	2.24		182-4TC	E330528.XX	E330568.XX
	100	3.32	0.26		213-5TC	E330536.XX	E330576.XX
43.97	1750	39.8	3.16	4500	56C	E330513.XX	E330553.XX
	1150	26.2	2.07		143-5TC	E330521.XX	E330561.XX
	850	19.3	1.53		182-4TC	E330529.XX	E330569.XX
	100	2.27	0.18		213-5TC	E330537.XX	E330577.XX
53.03	1750	33.0	2.62	4500	56C	E330514.XX	E330554.XX
	1150	21.7	1.72		143-5TC	E330522.XX	E330562.XX
	850	16.0	1.27		182-4TC	E330530.XX	E330570.XX
	100	1.89	0.15		213-5TC	E330538.XX	E330578.XX
58.92	1750	29.7	2.36	4500	56C	E330515.XX	E330555.XX
	1150	19.5	1.55		143-5TC	E330523.XX	E330563.XX
	850	14.4	1.14		182-4TC	E330531.XX	E330571.XX
	100	1.70	0.13		213-5TC	E330539.XX	E330579.XX

▼ Catalog numbers are for hollow output shaft reducers.
When ordering, substitute the XX suffix with the required output bore code.

Available bore codes 33HE

Fraction Size	1-3/16"	1-1/4"	1-7/16"	1-1/2"	1-5/8"	1-11/16"	1-3/4"	1-7/8"	1-15/16"	2"	2-3/16"
Decimal Size	1.188	1.250	1.438	1.500	1.625	1.688	1.750	1.875	1.938	2.000	2.188
Output Bore Code	19	20	23	24	26	27	28	30	31	32	35

If a solid output shaft is required for size 33HE, replace "XX" with "31" output bore code on basic reducer.

Style HMQ Style HM



Maximum Ratings - 43HE

Ratio	Input RPM	Output RPM	Input HP	Output TQ (lb-in)	NEMA Input Frame	Quill Input / Hollow Output Catalog No. ▼	Coupling Input / Hollow Output Catalog No. ▼
9.58	1750	182.67	27.37	8500	56C	E430507.XX	E430542.XX
	1150	120.04	17.99		143-5TC	E430514.XX	E430549.XX
	850	88.73	13.30		182-4TC	E430521.XX	E430556.XX
	100	10.44	1.56		213-5TC	E430528.XX	E430563.XX
15.05	1750	116.28	17.42	8500	56C	E430508.XX	E430543.XX
	1150	76.41	11.45		143-5TC	E430515.XX	E430550.XX
	850	56.48	8.46		182-4TC	E430522.XX	E430557.XX
	100	6.64	1.00		213-5TC	E430529.XX	E430564.XX
21.15	1750	82.74	12.40	8500	56C	E430509.XX	E430544.XX
	1150	54.37	8.15		143-5TC	E430516.XX	E430551.XX
	850	40.19	6.02		182-4TC	E430523.XX	E430558.XX
	100	4.73	0.71		213-5TC	E430530.XX	E430565.XX
30.14	1750	58.06	8.70	8500	56C	E430510.XX	E430545.XX
	1150	38.16	5.72		143-5TC	E430517.XX	E430552.XX
	850	28.20	4.23		182-4TC	E430524.XX	E430559.XX
	100	3.32	0.50		213-5TC	E430531.XX	E430566.XX
37.33	1750	46.88	7.02	8500	56C	E430511.XX	E430546.XX
	1150	30.81	4.62		143-5TC	E430518.XX	E430553.XX
	850	22.77	3.41		182-4TC	E430525.XX	E430560.XX
	100	2.68	0.40		213-5TC	E430532.XX	E430567.XX
53.03	1750	33.00	4.95	8500	56C	E430512.XX	E430547.XX
	1150	21.69	3.25		143-5TC	E430519.XX	E430554.XX
	850	16.03	2.40		182-4TC	E430526.XX	E430561.XX
	100	1.89	0.28		213-5TC	E430533.XX	E430568.XX
58.92	1750	29.70	4.45	8500	56C	E430513.XX	E430548.XX
	1150	19.52	2.92		143-5TC	E430520.XX	E430555.XX
	850	14.43	2.16		182-4TC	E430527.XX	E430562.XX
	100	1.70	0.25		213-5TC	E430534.XX	E430569.XX

▼ Catalog numbers are for hollow output shaft reducers.
When ordering, substitute the XX suffix with the required output bore code.

Available bore codes 43HE

Fraction Size	1-7/16"	1-1/2"	1-15/16"	2"	2-3/16"	2-7/16"	3"	3-7/16"
Decimal Size	1.438	1.500	1.938	2.000	2.188	2.438	3.000	3.438
Output Bore Code	23	24	31	35	35	39	48	55

If a solid output shaft is required for size 43HE, replace "XX" with "39" output bore code on basic reducer.

2

Add "B" Interchange Base (if replacing larger worm reducer)

Base P/N	Interchange to Traditional Worm Center Distance
CB21HE	2.06"
CB23HE	2.38"
CB26HE	2.62"
CB30HE	3.00"
CB32HE	3.25"
CB38HE	3.75"
CB42HE	4.25"
CB52HE	5.25"
CB60HE	6.00"

"B" Base mounts to basic reducer and allows simple interchange to larger center distance worm reducers.
 "B" Bases will be assembled to a reducer at no charge upon request. Contact Factory for details.

3

Add Output Shaft (if solid output shaft is needed)





Single Output P/N	Double Output P/N	Shaft Length (in)	Shaft Dia. (in)	Interchange to Traditional Worm Center Distance
S185040	S185043	4.31	0.875	1.75"
S185041	S185044	4.69	1.000	2.06"
S185042	S185045	5.14	1.125	2.38"
S185000	S185004	5.14	1.125	2.38"
S185001	S185005	5.63	1.125	2.62"
S185002	S185006	6.75	1.250	3.00"
S185003	S185007	7.06	1.375	3.25"
S185020	S185023	7.06	1.375	3.25"
S185021	S185024	7.75	1.625	3.75"
S185022	S185025	8.12	1.875	4.25"
S185030	S185033	8.12	1.875	4.25"
S185031	S185034	9.06	2.000	5.25"
S185032	S185035	10.00	2.250	6.00"

If solid shaft is required, substitute the XX suffix in the catalog number with the appropriate bore code.

Shaft kits will be assembled into a reducer at no charge upon request. Contact Factory for details

4

Add Accessory Kit (if replacing worm reducer)

		Converts Basic Reducer + "B" Base Kit to Worm Reducers Below:			
	Worm Reducer Size	Horizontal Base (T-Mount)	Vertical Output (VL/VH Mount) ■	Output Flange (F Mount)	Torque Arm Kit
					
18HE	1.75" CD	E185005.00	E185717.00	E185132.00	E185753.00
	2.06" CD*	E185010.00	--	E185133.00	
	2.38" CD*	E185015.00	--	E185734.00	
24HE	2.38" CD	E185015.00	E185017.00	E185134.00	E185454.00
	2.62" CD*	E185020.00	--	E185135.00	
	3.00" CD*	E185121.00	--	E185136.00	
	3.25" CD*	E185025.00	--	--	
33HE	3.25" CD	E185025.00	E185027.00	E185137.00	E185152.00
	3.75" CD*	E185026.00	--	--	
	4.25" CD*	E185030.00	--	E185138.00	
43HE	4.25" CD	E185030.00	E185032.00	E185738.00	E185754.00
	5.25" CD*	E185035.00	--	E185139.00	
	6.00" CD*	E185040.00	--	E185140.00	

* A "B" Base is required to mount accessories to base units for retrofit to larger center distance worm reducers.

■ VL & VH bases must be installed at Factory.

Accessory kits will be assembled to a reducer at no charge upon request. Contact Factory for details.

Cross Reference

Grove Gear Ironman High Efficiency E Series gear reducers are designed to be dimensional and functional replacements of most worm reducer brands. This chart is meant to be a quick reference guide only. For specific dimensions and ratings of brands listed below, consult manufacturer's catalog information.

**Grove Gear
Style B**



**Grove Gear
Style BM**



**Grove Gear
Style BMQ**



**Grove Gear
Style H**



**Grove Gear
Style HM**



**Grove Gear
Style HMQ**



Grove Gear		Baldor	Boston	Morse (Browning) Raider	Dodge Tigear-2	Falk Omnibox
18HE	B18HE	S918	718	175U	17S	1175WB
	B21HE	S921	721	206U	20S	1206WB
	B23HE	S924	724	237U	23S	1238WB
24HE	B24HE	S924	724	237U	23S	1238WB
	B26HE	S926	726	262U	26S	1262WB
	B30HE	S930	730	300U	30S	1300WB
33HE	B32HE	S932	732	325U	--	1325WB
	B33HE	S932	732	325U	--	1325WB
	B38HE	S938	738	375U	35S	--
43HE	B42HE	--	--	--	40S	1425WB
	B43HE	--	--	--	40S	1425WB
	B52HE	S952	752	516U	47S	1525WB
	B60HE	S960	760	600U	--	1600WB
18HE	BM18HE	LF918	RF718	175C	17A	1175WBF
	BM21HE	LF912	RF721	206C	20A	1206WBF
	BM23HE	LF924	RF724	237C	23A	1238WBF
24HE	BM24HE	LF924	RF724	237C	23A	1238WBF
	BM26HE	LF926	RF726	262C	26A	1262WBF
	BM30HE	LF930	RF730	300C	30A	1230WBF
33HE	BM32HE	LF932	RF732	325C	--	1325WBF
	BM33HE	LF932	RF732	325C	--	1325WBF
	BM38HE	FL938	RF738	375C	35A	--
43HE	BM42HE	--	--	--	40A	1425WBF
	BM43HE	--	--	--	40A	1425WBF
	BM52HE	--	RF752	516C	47A	1525WBF
	BM60HE	--	RF760	600C	--	1600WBF
18HE	BMQ18HE	F918	F718	175Q	17Q	1175WBM
	BMQ21HE	F921	F721	206Q	20Q	1206WBM
	BMQ23HE	F924	F724	237Q	23Q	1238WBM
24HE	BMQ24HE	F924	F724	237Q	23Q	1238WBM
	BMQ26HE	F926	F726	262Q	26Q	1262WBM
	BMQ30HE	F930	F730	300Q	30Q	1300WBM
33HE	BMQ32HE	F932	F732	325Q	--	1325WBM
	BMQ33HE	F932	F732	325Q	--	1325WBM
	BMQ38HE	F928	F738	375Q	35Q	--
43HE	BMQ42HE	--	--	--	40Q	1425WBM
	BMQ43HE	--	--	--	40Q	1425WBM
	BMQ52HE	--	F752	516Q	47Q	1525WBM
	BMQ60HE	--	F760	600Q	--	1600WBM
18HE	H18HE	HS918	H718	175UH	17SH	1175WBQ
	H21HE	HS912	H721	206UH	20SH	1206WBQ
	H23HE	HS924	H724	237UH	23SH	1238WBQ
24HE	H24HE	HS924	H724	237UH	23SH	1238WBQ
	H26HE	HS926	H726	262UH	26SH	1262WBQ
	H30HE	HS930	H730	300UH	30SH	1300WBQ
33HE	H32HE	HS932	H732	325UH	--	1325WBQ
	H33HE	HS932	H732	325UH	--	1325WBQ
	H38HE	HS938	H738	375UH	35SH	--
43HE	H42HE	--	--	--	40SH	1425WBQ
	H43HE	--	--	--	40SH	1425WBQ
	H52HE	--	--	516UH	47SH	1525WBQ
	H60HE	--	--	600UH	--	1600WBQ
18HE	HM18HE	HLF918	HRF718	175CH	17AH	1175WBQF
	HM21HE	HLF921	HRF721	206CH	20AH	1206WBQF
	HM23HE	HLF924	HRF724	237CH	23AH	1238WBQF
24HE	HM24HE	HLF924	HRF724	237CH	23AH	1238WBQF
	HM26HE	HLF926	HRF726	262CH	26AH	1262WBQF
	HM30HE	HLF930	HRF730	300CH	30AH	1300WBQF
33HE	HM32HE	HLF932	HRF732	325CH	--	1325WBQF
	HM33HE	HLF932	HRF732	325CH	--	1325WBQF
	HM38HE	HLF938	HRF738	375CH	35AH	--
43HE	HM42HE	--	--	--	40AH	1425WBQF
	HM43HE	--	--	--	40AH	1425WBQF
	HM52HE	--	--	516CH	47AH	1525WBQF
	HM60HE	--	--	600CH	--	1600WBQF
18HE	HMQ18HE	HF918	HF718	175QH	17QH	1175WBQM
	HMQ21HE	HF921	HF721	206QH	20QH	1206WBQM
	HMQ23HE	HF924	HF724	237QH	23QH	1238WBQM
24HE	HMQ24HE	HF924	HF724	237QH	23QH	1238WBQM
	HMQ26HE	HF926	HF726	262QH	26QH	1262WBQM
	HMQ30HE	HF930	HF730	300QH	30QH	1300WBQM
33HE	HMQ32HE	HF932	HF732	325QH	--	1325WBQM
	HMQ33HE	HF932	HF732	325QH	--	1325WBQM
	HMQ38HE	HF938	HF738	375QH	35QH	--
43HE	HMQ42HE	--	--	--	40QH	1425WBQM
	HMQ43HE	--	--	--	40QH	1425WBQM
	HMQ52HE	--	--	516QH	47QH	1525WBQM
	HMQ60HE	--	--	600QH	--	1600WBQM

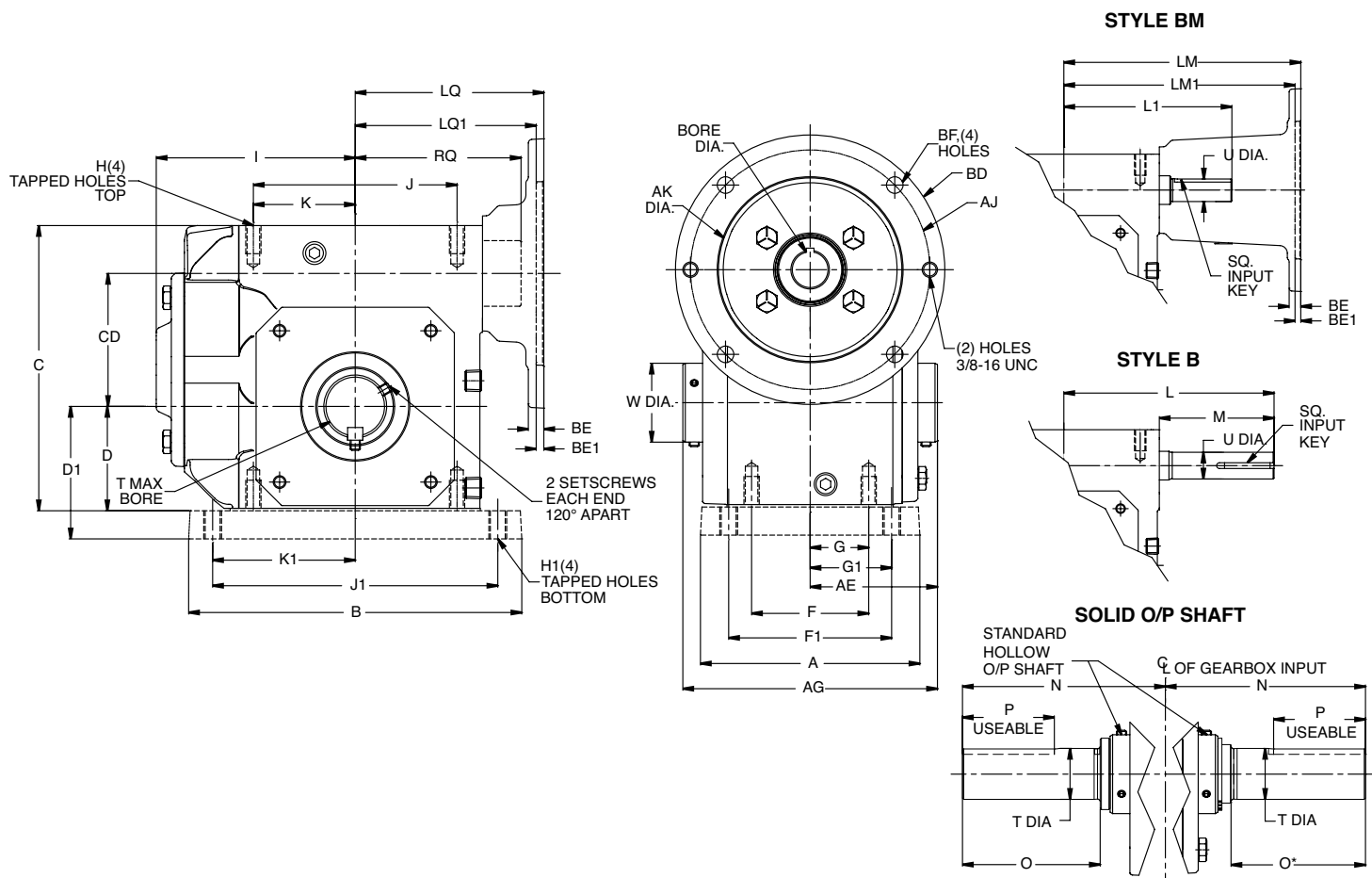
For overlapping units, determine torque and dimensional requirements.

Dimensions

Style HMQ, HM, H • Hollow Output Shaft (Inches)

Reducer Size	A	AE	AG	B	C	CD	D	D1▼	F	F1▼	G	G1▼	H	H1▼	I	J	J1▼	K	K1▼	L	M	T MAX BORE -0.0000 +0.0015
18HE	18HE	N/A		N/A				N/A		N/A		N/A		N/A			N/A		N/A	4.88	1.44	
	21HE	3.85	2.75	5.50	5.75	2.51	2.06	2.28	2.75	2.88	1.38	1.44	5/16-18	3/8-16	4.25	4.190	5.00	2.09	2.50	5.13	2.13	1.438
	23HE	3.87						2.50		2.88		1.44		3/8-16			5.00		2.50	5.31	2.75	
24HE	24HE	4.06						N/A		N/A		N/A		N/A			N/A		N/A	5.50	2.00	
	26HE	4.43	3.13	6.25	6.94	3.26	2.50	2.94	2.88	3.38	1.44	1.69	3/8-16	3/8-16	4.88	5.00	6.38	2.50	3.19	6.31	2.81	1.500
	30HE	5.24						3.25		4.00		2.00	7/16-14	7/16-14			7.00		3.50	6.88	3.44	
	32HE	5.74						3.50		4.00		2.00	7/16-14	7/16-14			7.50		3.75	7.44	4.00	
33HE	33HE	N/A		N/A				N/A		N/A		N/A		N/A			N/A		N/A	6.75	2.07	
	38HE	6.00	3.75	7.50	9.38	3.68	3.50	3.88	4.00	4.75	2.00	2.38	7/16-14	1/2-13	6.15	7.50	8.50	3.75	4.25	8.38	3.70	2.188
	42HE	6.12						4.44		5.00		2.50		5/8-11			8.50		4.25	9.56	4.88	
43HE	43HE	N/A		N/A				N/A		N/A		N/A		N/A			N/A		N/A	7.63	2.07	
	52HE	7.20	4.75	9.50	11.38	5.96	4.44	5.31	5.00	5.81	2.50	2.91	5/8-11	5/8-11	8.36	8.50	11.00	5.00	5.50	9.56	4.00	3.438
	60HE	8.14						6.50		6.38		3.19		5/8-11			12.75		6.38	10.69	5.00	

▼ Dimensions refer to "B Base" mounted to Size 18HE, 24HE, 33HE & 43HE reducer.



Style BMQ, BM, B • Solid Output Shaft Model (Inches)

Reducer Size	U -0.0000 +0.0015	W	I/P key Style (B,BM)	O/P key Style (B,BM,BMQ)
18HE	18HE	1.94	3/16 sq X 1-1/4	3/16 sq X 1-1/8
	21HE			1/4 sq X 1-1/2
	23HE			1/4 sq X 1-3/4
24HE	24HE	1.94	3/16 sq. X 1-1/2	1/4 sq X 1-1/2
	26HE			1/4 sq X 1-3/4
	30HE			1/4 sq X 2-1/4
	32HE			5/16 sq X 2-3/8
33HE	33HE	2.62	1/4 sq. X 2-1/4	3/8 sq X 2-1/2
	38HE			1/2 sq X 3-1/4
	42HE			
43HE	43HE	4.25	3/16 sq X 1-1/2	1/2 sq X 2-1/2
	52HE		1/4 sq X 2-1/4	
	60HE		1/4 sq X 3	1/2 sq X 3-1/2

Reducer Size	N	O	O*	P	T +0.0000 -0.0015
18HE	18HE	4.31	1.38	1.34	1.13
	21HE	4.69	1.76	1.72	1.50
	23HE	5.14	2.21	2.17	1.75
24HE	24HE	5.14	1.77	1.69	1.50
	26HE	5.63	2.25	2.18	2.00
	30HE	6.75	3.38	3.30	2.25
	32HE	7.06	3.69	3.64	2.50
33HE	33HE	7.06	3.06	3.00	2.50
	38HE	7.75	3.75	3.69	2.81
	42HE	8.12	4.12	4.03	3.31
43HE	43HE	8.12	3.06	3.00	2.56
	52HE	9.06	4.00	3.94	3.56
	60HE	10.00	4.94	4.88	3.56

Motor Mounting Dimensions

NEMA Dimensions (Inches)

Reducer Size	L1 All	LM 56/140TC	LM1 180TC/ 210TC	LQ 56/140TC	LQ1 180TC/210TC/ 250TC	RQ 56/140	RQ 180/210/ 250
18HE	18HE	5.32	7.57	N/A	4.44	N/A	3.88
	21HE						
	23HE						
24HE	24HE	5.51	7.76	8.76	4.63	5.06	4.07
	26HE						
	30HE						
	32HE						
33HE	33HE	6.75	9.00	10.00	5.57	6.33	5.01
	38HE						
	42HE						
43HE	43HE	7.63	9.88	10.88	6.45	7.21	5.89
	52HE						
	60HE						

NEMA Dimensions (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
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

♦ Keyway width by depth

GROVE GEAR

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