STÖBER MGS Speed Reducers 2010

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MGS
Speed Reducers

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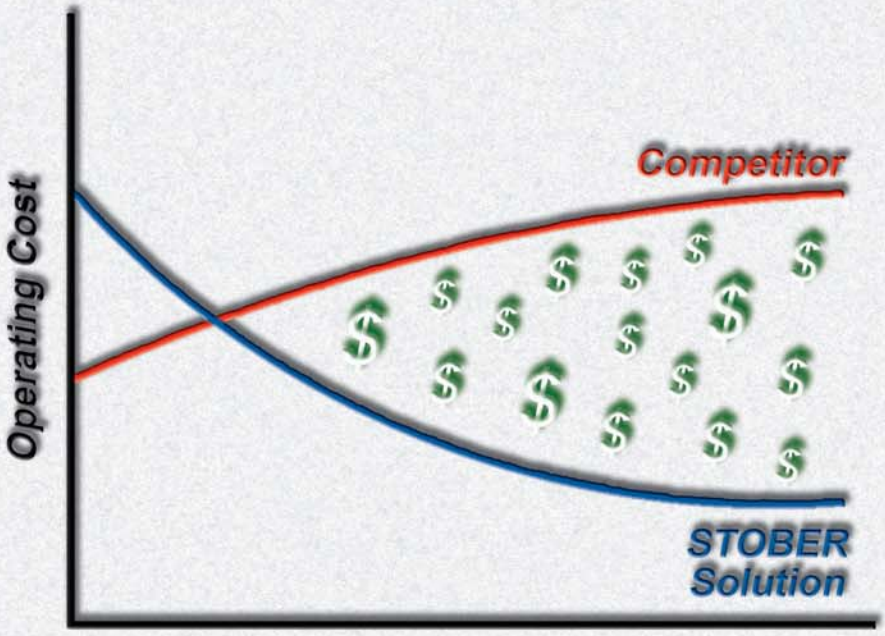

$ Maintenance Cost x $ Engineering Cost x $ Travel Cost x $ Down Time Cost x $ Replacement Cost x $ Energy Cost x $ Inventory Cost = $ Total Cost of Ownership

STÖBER

MGS® Speed Reducers

The Difference

STAINLESS STEEL HELICAL/BEVEL
Stainless steel housing and hardware
Suitable for the most extreme washdown applications
USDA/FDA compliant
Standard delivery — 2 days

FOOD DUTY
Stainless steel hardware
Suitable for the most severe washdown applications
Multilayered 316 stainless steel pigmented coating with anti-microbial clear coat
USDA/FDA compliant
Standard delivery — 4 days
Available as right angle helical/bevel, concentric helical, and offset helical.

BEVERAGE DUTY
Stainless steel hardware
Suitable for moderate washdown applications
316 stainless steel pigmented coating
Standard delivery — 3 days
Available as right angle helical/bevel, concentric helical, and offset helical.

BAKERY WHITE
Plated hardware
Suitable for mild washdown applications
Gloss white epoxy coating
"BISC" compliant
Standard delivery — 3 days
Available as right angle helical/bevel, concentric helical, and offset helical.

STANDARD
Non-plated hardware
Not suitable for washdown applications
Gloss gray coating
Standard delivery — 3 day
Available as concentric helical, offset helical, right angle helical/bevel, and right angle helical/worm.

No expedite charge for next day delivery applys to all.

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PTRA

PTDA Member

EMA

MGS™ Speed Reducers
The STOBER difference = VALUE for you!

Engineered – Structural Rigidity

Engineered – Precision Gearing

Process
- blanked
- turned
- rough milled
- case hardened (61 RC)
- grinding
  - bearing seat
  - pinion outside diameter

3 and 5 YEAR WARRANTY

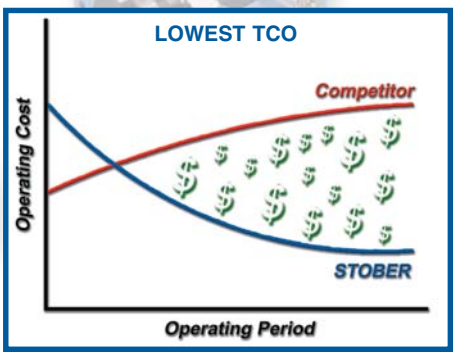
Engineered – High Quality Bearings

Tight Tolerance – Reduced Clearance
Crowned cage for optimal lubricant flow
- improved ball guidance
- fast lubrication film formation
- reduced friction
- lower running noise
- eliminates cage ejections

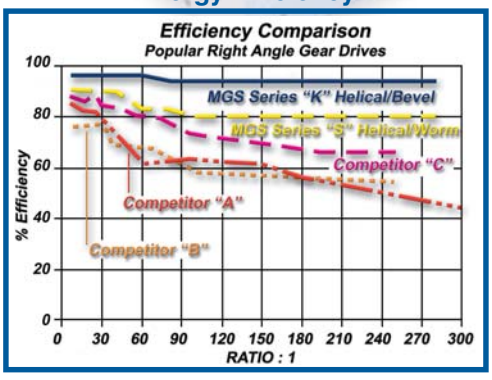
Attention to Detail – Robustness

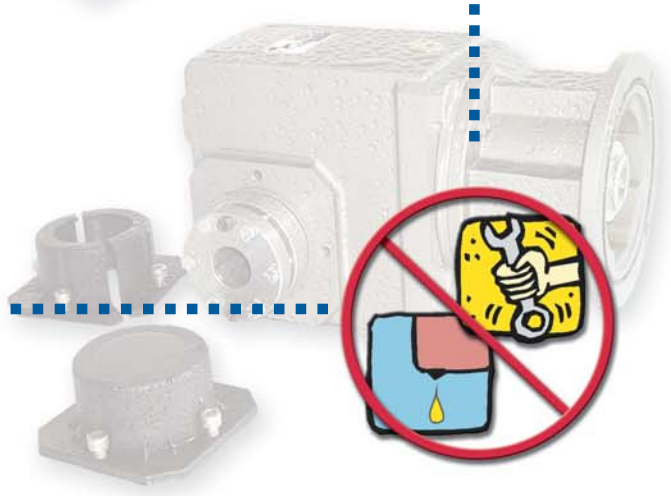
- NEMA C-face adapter with O-ring
- dual output seals
- flexible coupling eliminates misalignment, motor easily removed
- long-life input seals
- stainless steel oil plugs
- magnetic drain plugs
- gears supported with dual bearings in one-piece housing for structural rigidity

MGS™ Speed Reducers
Reliability, Adaptability, Maintainability



Energy Efficiency





MGS™ Speed Reducers
3 Year Warranty – Standard

Standard Warranty Includes:

–Lubricated for Life

–Application Specific Mounting Position - 6 Choices

(Food and Beverage Units are ANY Horizontal Output)

–Choice of 4 Coatings or Stainless Steel (KSS)

– Maintenance Free

MGS™ Speed Reducers
5 Year Warranty – Long Life

Long Life Warranty Includes:

- Improved Input
- Synthetic Oil
- Application Specific Mounting Position - 3 Choices
- Choice of 4 Coatings
- Maintenance Free

MGS™ Speed Reducers
Output Options

Output – Solid Shaft and Hollow Bore Diameter

The output diameters shown **BOLD BLUE** are readily available from inventory. Contact STOBER Drives for delivery on optional output sizes.

Table No. 1

Carbon Steel					Stainless Steel			
Inches		Metric			Inches		Metric	
Shaft	Hollow	Shaft	Hollow	Unit Size	Shaft	Hollow	Shaft	Hollow
.75	—	20	—	**C002**	**.75**	—	—	—
.75, **1.00**	—	25	—	**C102/C103**	**1.00**, 1.25	—	20, 25	—
1.25	—	30	—	**C202/C203**	**1.25**	—	—	—
1.25	—	30	—	**C302/C303**	**1.25**, 1.375	—	25	—
1.625	—	25, 38, 42, 40	—	**C402/C403**	**1.625**	—	—	—
1.625	—	40	—	**C502/C503**	**1.625**	—	—	—
2.125	—	50	—	**C612/C613**	**2.125**	—	—	—
2.375	—	60	—	**C712/C713**	**2.375**	—	—	—
2.875	—	70	—	**C812/C813**	**2.875**	—	—	—
3.625	—	90	—	**C912/C913**	—	—	—	—
1.00	**.75**	25	20	**F102**	—	—	—	—
1.25	**1.00**	30	25	**F202/F203**	—	**1.00**	—	—
1.375	**1.25**	35	30	**F302/F303**	—	**1.25**	—	—
1.625	1.4375, **1.500**	40	40	**F402/F403**	—	—	—	—
2.125	**2.00**	50	50	**F602/F603**	—	—	—	—
1.00	**1.00**	25	25	**K102**	**1.00**	**1.00**	25	25
1.25	**1.1875**, 1.25	30	30	**K202/K203**	**1.25**	1.1875, 1.125, **1.25**	30	30
1.25	**1.375**, 1.4375	30	35	**K302/K303**	**1.25**	**1.25**, **1.375**	40	35
1.375	1.4375, **1.500**	40	40	**K402/K403**	**1.375**	1.500	—	40
1.75	**2.00**	45	50	**K513/K514**	**1.75**	2.00	45	**40**, **50**
1.75	**2.00**	50	50	**K613/K614**	**1.75**	1.4375. 1.9375, 2.00	—	40, 50, 60
2.375	**2.375**	60	60	**K713/K714**	**2.375**	—	—	**60**
2.875	**2.75**	70	70	**K813/K814**	**2.875**	2.1875, 2.375, 2.6875, 2.75	70	60, 70
3.625	**3.25**	90	70, 80, 90	**K913/K914**	—	2.6875, **2.9375**, **3.00**, **3.4375**	90	90
4.375	**4.00**	—	100	**K1013/K1014**	—	—	—	—
1.00	.75, **1.00**	25	20, 25	**S102**	—	—	—	—
1.25	**1.375**	30	35	**S202/S203**	—	—	—	—
1.375	**1.50**	40	40	**S302/S303**	—	—	—	—
1.75	**1.75**	45	50	**S402/S403**	—	—	—	—

Output – Wobble Free Bushing

Table No. 2 **Stainless Steel "WFB" Double Side or "WF" Single Side Bushings – Inches**

	Stock Bores Sizes															
Unit	1	$1^{3}/_{16}$	$1^{1}/_{4}$	$1^{3}/_{8}$	$1^{7}/_{16}$	$1^{1}/_{2}$	$1^{5}/_{8}$	$1^{11}/_{16}$	$1^{3}/_{4}$	$1^{7}/_{8}$	$1^{15}/_{16}$	2	$2^{3}/_{16}$	$2^{3}/_{8}$	$2^{7}/_{16}$	$2^{3}/_{4}$
K1	x	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
K2	x	x	–	–	–	–	–	–	–	–	–	–	–	–	–	–
K3	x	x	x	x	x	x	–	–	–	–	–	–	–	–	–	–
K4	x	x	x	x	x	x	–	–	–	–	–	–	–	–	–	–
K5	–	–	–	–	x	x	x	x	x	x	x	x	–	–	–	–
K6	–	–	–	–	x	x	x	x	x	–	x	x	x	–	–	–
K7	–	–	–	–	–	–	–	–	–	–	x	x	x	x	–	–
K8	–	–	–	–	–	–	–	–	–	–	–	–	x	x	x	x

Table No. 3 **Stainless Steel "WFB" and "WF" Bushings – Metric**

Double Side					Single Side		
25	30	35	40	Unit	25	30	35
x	–	–	–	**K1**	x	–	–
–	x	–	–	**K2**	–	x	–
–	x	x	–	**K3**	–	x	x
–	–	–	x	**K4**	–	–	–
–	–	–	x	**K5**	–	–	–
–	–	–	x	**K6**	–	–	–

Table No. 4 **Carbon Steel "SWFC" Double Side Bushings – Inches**

	Stock Bores Sizes					
Unit	1	$1^{3}/_{16}$	$1^{1}/_{4}$	$1^{3}/_{8}$	$1^{7}/_{16}$	$1^{1}/_{2}$
K3	x	x	x	x	x	x

Food and Beverage Duty Speed Reducers

3 YEAR WARRANTY STANDARD

5 YEAR WARRANTY OPTIONAL

3-DAY DELIVERY

STÖBER

www.stober.com

"KSS" Series – Stainless Steel Right Angle Helical/Bevel MGS Reducer

STOBER Drives Inc. is proud to offer our quality-proven, high-efficiency MGS "K" Series Helical/Bevel speed reducer in a stainless steel housing. The adaptability of the well known double wobble-free bushing, with expanded bore sizes, makes this unit necessary for the toughest washdown applications. The footprint is smaller (30% less) than the standard MGS unit but the "KSS" uses the same high quality helical gearing which is case hardened to 58-62 Rockwell C and precision finished for low noise and long service life. The high efficiency (97%) assures realibility plus cost savings in energy and maintenance.

Performance Specifications:

- Up to 3 HP
- Output Bore Diameters up to 1½ inch
- Ratios up to 70:1
- NEMA C-face for 56C and 143/145TC
- Totally Enclosed — no breather to allow contaminates in or oil out
- Maintenance free — Lubricated for Life — 3 Year Warranty
- Application Specific Mounting Position
- Bushing allows mounting from either side
- Shipped filled with Mobile CIBUS SHC 220-H1 Food Grade Oil
- ALL Stainless Steel Hardware, Laser Etched Nameplate Data

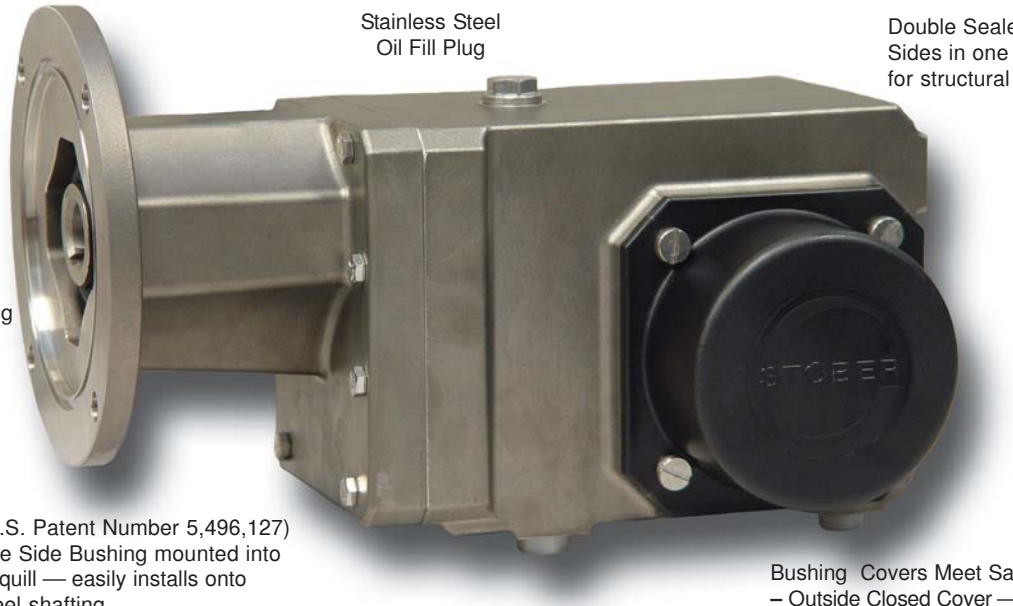
NEMA C-face Input Adapter with O-Ring between the motor and reducer.

High efficiency spiral bevel gearing provides quiet operation and excellent torque carrying capacity

Gears Supported with Dual Bearings in one piece housing for structural rigidity

Stainless Steel Oil Fill Plug

Double Sealed on Both Sides in one piece housing for structural rigidity



Easy Mount, Maintenance Free Flexible Input Coupling

Uses the patented (U.S. Patent Number 5,496,127) Stainless Steel Double Side Bushing mounted into stainless steel output quill — easily installs onto standard stainless steel shafting

Nylon bolts on Side 1 (bottom) and Side 5 for protection during application assembly

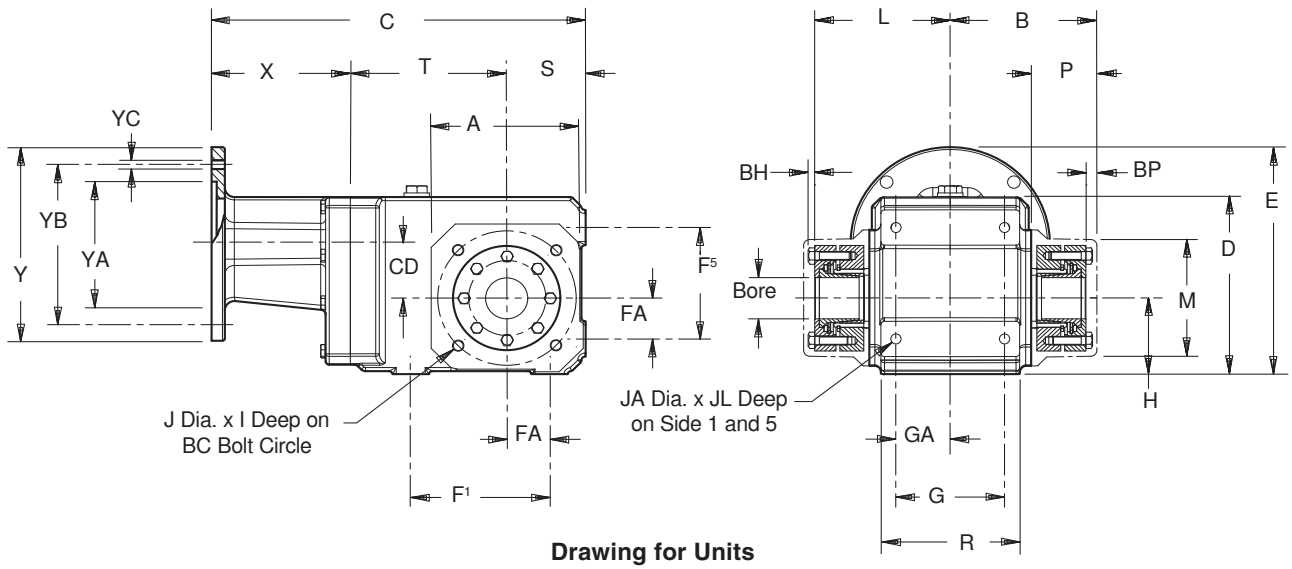
Bushing Covers Meet Safety Standards
- Outside Closed Cover — protects seals from high pressure washing
- Inside Split Cover Cap — enables easy assembly onto the shaft

Part No. Explanation

KSS 2 0 2 W G 0100 MS2R140 E12 WFBSS2 – 108

- **KSS** — "**K**" Series Right Angle Helical/Bevel, **S**tainless **S**teel
- **2** — Unit Size No.
- **0** — Design Generation
- **2** — No. of Stages (**2** = 2 Stage)
- **W** — Output Style — "**W**" Wobble Free Bushing
- **G** — "**G**" — Tapped Holes Housing Style
- **0100** — Nominal Ratio: (**0100** =10:1)
- **MS2R140** — Motor Adapter, Stainless Steel Size 2, Round for NEMA Frame 143/145TD
- **E12** – Mounting Position **Must be Specified**
- **WFBSS2 – 108** — **W**obble **F**ree **B**ushing for **S**tainless **S**teel Unit Size **2**, 1½" Bore (**108** = 1 and 8/16")

"KSS" Series – Stainless Steel MGS Reducer
Tapped Hole – "G" Housing
Double Bushing – Dimensional Data



Drawing for Units
KSS102WG — KSS202WG

Table No. 1 **"KSS" Series – Double Wobble Free Bushing – Dimensions (Inches)**

Unit with Motor Adapter	NEMA C-Face	A	B	C	D	E	F1	F5	G	H	I	J	L	M	P
KSS102WG_MS1R050	56C	4.53	4.06	10.55	4.96	7.00	3.54	2.95	2.76	2.36	.51	M8	3.66	3.06	1.97
KSS202WG_MS2R050	56C	4.96	4.72	12.20	5.94	7.60	4.53	3.74	3.54	2.56	.51	M8	4.30	3.92	2.09
KSS202WG_MS2R140	143/145TC	4.96	4.72	12.20	5.94	7.60	4.53	3.74	3.54	2.56	.51	M8	4.30	3.92	2.09

Table No. 2 **"KSS" Series – Double Wobble Free Bushing – Dimensions (Inches)**

Unit with Motor Adapter	R	S	X	Y	BC	BP	BH	CD	FA	GA	JA	JL	YA	YB	YC	Wt. lbs.
KSS102WG_MS1R050	3.54	2.36	3.81	6.50	3.54	.39	.16	1.42	1.18	1.38	M8	.51	4.500	5.87	.41	29
KSS202WG_MS2R050	4.41	2.56	4.53	6.50	4.53	.42	.16	1.81	1.38	1.77	M8	.63	4.500	5.87	.41	40
KSS202WG_MS2R140	4.41	2.56	4.53	6.50	4.53	.42	.16	1.81	1.38	1.77	M8	.63	4.500	5.87	.41	40

Table No. 3 **"WFBSS" Double Side Bushings – Inches**

	Stock Bores Sizes					
Unit	1	$1^{3}/_{16}$	$1^{1}/_{4}$	$1^{3}/_{8}$	$1^{7}/_{16}$	$1^{1}/_{2}$
KSS1	WFBSS1-100	–	–	–	–	–
KSS2	WFBSS2-100	WFBSS2-103	WFBSS2-104	WFBSS2-106	WFBSS2-107	WFBSS2-108

Table No. 4
"WFBSS" – Double Side Bushings – Metric

	Stock Bores Sizes — mm		
Unit	25	30	35
KSS1	WFBSS1-25	–	–
KSS2	–	WFBSS2-30	WFBSS2-35

Part No. Example

Stainless Steel Unit
143TC Frame Motor Adapter
and $1^{7}/_{16}$ Bushing Bore

KSS202WG0140 MS2R140
WFBSS2-107

All weights are approximate.

"KSS" Series – Stainless Steel MGS Reducer – Selection Data

Selection Procedure:

A. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Part Number.** Check the **Overhung Load**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

1750 RPM Input		PART NUMBER			Exact Ratio	Overhung Load Output Shaft [4]	1450 RPM Input		1160 RPM Input	
Input HP	Output Torque in. lbs.	Base Module	Motor Adapter	NEMA C-Frame		lbs.	Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
430 RPM Output (Approximate)							**360 RPM**		**290 RPM**	
2.64	369	KSS102WG0040	MS1R050	56C	4.000	520	2.19	369	1.71	369
6.84	957	KSS202WG0040	MS2R050	56C	4.000	624	6.04	1,018	5.20	1,097
6.84	957	KSS202WG0040	MS2R140	143/145TC	4.000	624	6.04	1,018	5.20	1,097
400 RPM Output (Approximate)							**330 RPM**		**265 RPM**	
6.46	985	KSS202WG0044	MS2R050	56C	4.364	638	5.70	1,048	4.91	1,129
6.46	985	KSS202WG0044	MS2R140	143/145TC	4.364	638	5.70	1,048	4.91	1,129
335 RPM Output (Approximate)							**280 RPM**		**265 RPM**	
5.76	1,042	KSS202WG0052	MS2R050	56C	5.177	666	5.08	1,110	4.38	1,196
5.76	1,042	KSS202WG0052	MS2R140	143/145TC	5.177	666	5.08	1,110	4.38	1,196
315 RPM Output (Approximate)							**260 RPM**		**215 RPM**	
2.64	514	KSS102WG0056	MS1R050	56C	5.568	565	2.19	514	1.71	514
295 RPM Output (Approximate)							**240 RPM**		**195 RPM**	
2.50	524	KSS102WG0060	MS1R050	56C	6.000	576	2.07	524	1.66	524
5.22	1,095	KSS202WG0060	MS2R050	56C	6.000	691	4.61	1,166	3.97	1,256
5.22	1,095	KSS202WG0060	MS2R140	143/145TC	6.000	691	4.61	1,166	3.97	1,256
260 RPM Output (Approximate)							**215 RPM**		**175 RPM**	
2.46	571	KSS102WG0066	MS1R050	56C	6.644	591	2.04	571	1.63	571
4.86	1,135	KSS202WG0067	MS2R050	56C	6.683	710	4.29	1,208	3.70	1,302
4.86	1,135	KSS202WG0067	MS2R140	143/145TC	6.683	710	4.29	1,208	3.70	1,302
245 RPM Output (Approximate)							**200 RPM**		**160 RPM**	
4.66	1,159	KSS202WG0071	MS2R050	56C	7.118	721	4.11	1,234	3.54	1,329
4.66	1,159	KSS202WG0071	MS2R140	143/145TC	7.118	721	4.11	1,234	3.54	1,329
210 RPM Output (Approximate)							**170 RPM**		**140 RPM**	
2.35	684	KSS102WG0083	MS1R050	56C	8.309	624	1.97	689	1.57	689
4.17	1,225	KSS202WG0084	MS2R050	56C	8.397	751	3.68	1,304	3.17	1,405
4.17	1,225	KSS202WG0084	MS2R140	143/145TC	8.397	751	3.68	1,304	3.17	1,405

Part No. Explanation

KSS 202 W G 0100 MS2R140

- **M**otor Adapter, **S**tainless Size **2**, **R**ound for NEMA Frame 143/145TC (**140**)
- Nominal Ratio: (**0100** =10:1)
- "**G**" — Tapped Hole Housing Style
- Output Style — "**W**" Wobble Free Bushing
- Unit Size No. **2**, Design Generation **0**, No. of Stages (**2** = 2 Stage)
- "**KSS**" Stainless Steel Right Angle Helical/Bevel

NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2

"KSS" Series – Stainless Steel MGS Reducer – Selection Data

NOTE: 1) Complete Base Module Part Number by adding the ratio. Example: KSS202WG**0040**.
2) Select the NEMA C-Face Motor Adapter and add to Part Number. Example **MS2R050** for 56C.
3) Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

1750 RPM Input		PART NUMBER			Exact Ratio	Overhung Load Output Shaft 4)	1450 RPM Input		1160 RPM Input	
Input HP	Output Torque in. lbs.	Base Module	Motor Adapter	NEMA C-Frame		lbs.	Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
190 RPM Output (Approximate)							**155 RPM**		**125 RPM**	
2.19	708	KSS102WG0092	MS1R050	56C	9.249	641	1.93	754	1.63	795
3.93	1,262	KSS202WG0092	MS2R050	56C	9.190	769	3.47	1,344	2.99	1,448
3.93	1,262	KSS202WG0092	MS2R140	143/145TC	9.190	769	3.47	1,344	2.99	1,448
170 RPM Output (Approximate)							**140 RPM**		**115 RPM**	
2.06	730	KSS102WG0100	MS1R050	56C	10.140	656	1.82	778	1.52	814
3.70	1,301	KSS202WG0100	MS2R050	56C	10.073	786	3.26	1,386	2.81	1,493
3.70	1,301	KSS202WG0100	MS2R140	143/145TC	10.073	786	3.26	1,386	2.81	1,493
150 RPM Output (Approximate)							**125 RPM**		**100 RPM**	
1.89	763	KSS102WG0115	MS1R050	56C	11.565	678	1.67	813	1.44	875
3.38	1,362	KSS202WG0115	MS2R050	56C	11.546	814	2.98	14,050	2.57	1,562
3.38	1,362	KSS202WG0115	MS2R140	143/145TC	11.546	814	2.98	14,050	2.57	1,562
140 RPM Output (Approximate)							**115 RPM**		**90 RPM**	
1.78	786	KSS102WG0125	MS1R050	56C	12.618	693	1.57	836	1.35	901
3.17	1,406	KSS202WG0125	MS2R050	56C	12.705	833	2.79	1,497	2.41	1,613
3.17	1,406	KSS202WG0125	MS2R140	143/145TC	12.705	833	2.79	1,497	2.41	1,613
125 RPM Output (Approximate)							**100 RPM**		**85 RPM**	
1.65	816	KSS102WG0140	MS1R050	56C	14.114	713	1.46	868	1.26	935
2.99	1,447	KSS202WG0140	MS2R050	56C	13.851	852	2.64	1,541	2.27	1,660
2.99	1,447	KSS202WG0140	MS2R140	143/145TC	13.851	852	2.64	1,541	2.27	1,660
105 RPM Output (Approximate)							**85 RPM**		**70 RPM**	
1.48	863	KSS102WG0165	MS1R050	56C	16.714	744	1.30	919	1.11	974
2.62	1,545	KSS202WG0170	MS2R050	56C	16.858	894	2.31	1,645	1.99	1,772
2.62	1,545	KSS202WG0170	MS2R140	143/145TC	16.858	894	2.31	1,645	1.99	1,772
100 RPM Output (Approximate)							**80 RPM**		**65 RPM**	
1.43	877	KSS102WG0175	MS1R050	56C	17.563	753	1.26	934	1.09	1,006
2.56	1,564	KSS202WG0175	MS2R050	56C	17.469	902	2.26	1,665	1.92	1,772
2.56	1,564	KSS202WG0175	MS2R140	143/145TC	17.469	902	2.26	1,665	1.92	1,772

Mounting position must be specified when ordering.

"KSS" Series – Stainless Steel MGS Reducer – Selection Data

Selection Procedure:

A. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Part Number.** Check the **Overhung Load**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

1750 RPM Input		PART NUMBER			Exact Ratio	Overhung Load Output Shaft [4]	1450 RPM Input		1160 RPM Input	
Input HP	Output Torque in. lbs.	Base Module	Motor Adapter	NEMA C-Frame		lbs.	Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
90 RPM Output (Approximate)							**70 RPM**		**55 RPM**	
1.30	918	KSS102WG0200	MS1R050	56C	20.150	779	1.15	974	0.92	974
2.32	1,645	KSS202WG0200	MS2R050	56C	20.327	937	2.04	17,051	1.65	1,772
2.32	1,645	KSS202WG0200	MS2R140	143/145TC	20.327	937	2.04	17,051	1.65	1,772
75 RPM Output (Approximate)							**60 RPM**		**50 RPM**	
1.18	963	KSS102WG0230	MS1R050	56C	23.265	808	1.05	1,026	0.87	1,063
2.12	1,718	KSS202WG0230	MS2R050	56C	23.180	969	1.81	1,772	1.45	1,772
2.12	1,718	KSS202WG0230	MS2R140	143/145TC	23.180	969	1.81	1,772	1.45	1,772
70 RPM Output (Approximate)							**55 RPM**		**45 RPM**	
0.97	851	KSS102WG0250	MS1R050	56C	25.220	824	0.80	8,051	0.64	8,051
2.01	1,765	KSS202WG0250	MS2R050	56C	25.130	988	1.67	1,772	1.34	1,772
2.01	1,765	KSS202WG0250	MS2R140	143/145TC	25.130	988	1.67	1,772	1.34	1,772
60 RPM Output (Approximate)							**50 RPM**		**40 RPM**	
1.05	1,025	KSS102WG0280	MS1R050	56C	28.048	846	0.90	1,063	0.72	1,063
1.81	1,772	KSS202WG0280	MS2R050	56C	27.950	1,015	1.05	1,772	1.20	1,772
1.81	1,772	KSS202WG0280	MS2R140	143/145TC	27.950	1,015	1.05	1,772	1.20	1,772
55 RPM Output (Approximate)							**45 RPM**		**35 RPM**	
0.55	647	KSS102WG0340	MS1R050	56C	33.707	886	0.45	647	0.36	647
1.16	1,364	KSS202WG0340	MS2R050	56C	33.618	1,063	0.96	1,364	0.77	1,364
1.16	1,364	KSS202WG0340	MS2R140	143/145TC	33.618	1,063	0.96	1,364	0.77	1,364
50 RPM Output (Approximate)							**40 RPM**		**33 RPM**	
0.87	1,063	KSS102WG0350	MS1R050	56C	35.105	895	0.72	1,063	0.57	1,063
1.47	1,772	KSS202WG0350	MS2R050	56C	34.554	1,070	1.22	1,772	0.97	1,772
1.47	1,772	KSS202WG0350	MS2R140	143/145TC	34.554	1,070	1.22	1,772	0.97	1,772
45 RPM Output (Approximate)							**35 RPM**		**30 RPM**	
0.39	544	KSS102WG0400	MS1R050	56C	40.300	927	0.32	544	0.26	544

Part No. Explanation

KSS **202** **W** **G** **0100** **MS2R140**

- **M**otor Adapter, **S**tainless Size **2**, **R**ound for NEMA Frame 143/145TC (**140**)
- Nominal Ratio: (**0100** =10:1)
- "**G**" — Tapped Hole Housing Style
- Output Style — "**W**" Wobble Free Bushing
- Unit Size No. **2**, Design Generation **0**, No. of Stages (**2** = 2 Stage)
- "**KSS**" Stainless Steel Right Angle Helical/Bevel

NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2

"KSS" Series – Stainless Steel MGS Reducer – Selection Data

NOTE: [1] Complete Base Module Part Number by adding the ratio. Example: KSS202WG**0040**.
[2] Select the NEMA C-Face Motor Adapter and add to Part Number. Example **MS2R050** for 56C.
[3] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

1750 RPM Input		PART NUMBER			Exact Ratio	Overhung Load Output Shaft [4]	1450 RPM Input		1160 RPM Input	
Input HP	Output Torque in. lbs.	Base Module	Motor Adapter	NEMA C-Frame		lbs.	Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
40 RPM Output (Approximate)							**32 RPM**		**25 RPM**	
0.55	900	KSS102WG0470	MS1R050	56C	46.918	963	0.45	900	0.36	900
1.10	1,772	KSS202WG0460	MS2R050	56C	46.225	11,051	0.91	1,772	0.73	1,772
1.10	1,772	KSS202WG0460	MS2R140	143/145TC	46.225	11,051	0.91	1,772	0.73	1,772
35 RPM Output (Approximate)							**30 RPM**		**23 RPM**	
0.25	442	KSS102WG0500	MS1R050	56C	50.310	980	0.21	442	0.17	442
30 RPM Output (Approximate)							**25 RPM**		**20 RPM**	
0.39	758	KSS102WG0560	MS1R050	56C	56.095	1,007	0.32	758	0.26	758
25 RPM Output (Approximate)							**20 RPM**		**18 RPM**	
0.25	616	KSS102WG0700	MS1R050	56C	70.029	1,064	0.21	616	0.17	616

E12 E34 EL5 EL6

Mounting position must be specified when ordering.

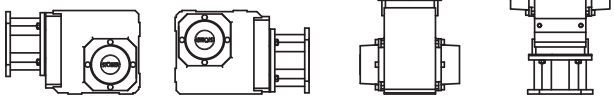
Food and Beverage Duty – MGS Reducers
Mounting Positions and Warranty Options

Mounting Positions – Standard 3 Year Warranty

One Standard Unit for ALL Horizontal Mounting Positions Without Changing the Oil Level. See Page 116 for explanations.

Standard Oil: Mobile 600XP220
Optional Oil: Food Grade Oil (Mobil SHC CIBUS 220)
Synthetic Oil (Mobil SHC 630)

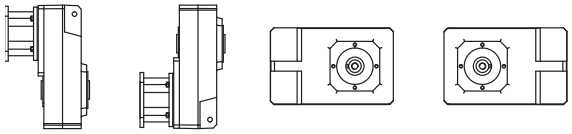
"K" Series Right Angle Helical/Bevel



EL1 EL2 EL5 EL6

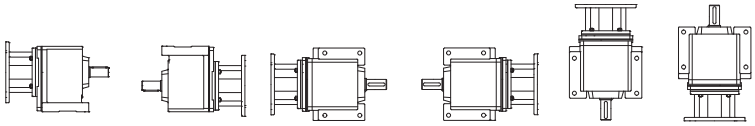
Possible — but not recommended

"F" Series Offset Helical



EL1 EL2 EL5 EL6

"C" Series Concentric Helical



EL1 EL2 EL3 EL4 EL5 EL6

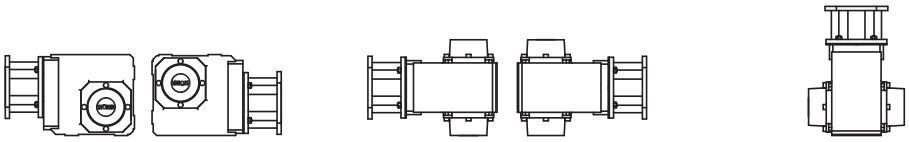
EL5 and EL6 can be supplied on request.
EL6 is possible but not recommended.

Mounting Positions – Long Life 5 Year Warranty

Mounting Position MUST BE SPECIFIED. For Long Life units, E12 is a combination of horizontal output mounting (EL1 and EL2) and E34 is a combination of vertical output mounting (EL3 and EL4) without changing oil levels. See Page 116 for explanations.

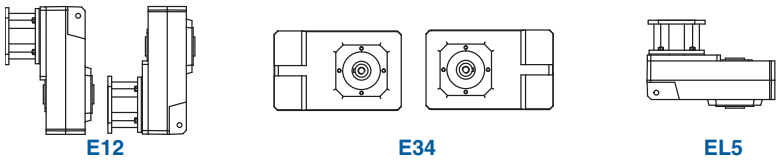
Standard Oil: Synthetic Oil (Mobil SHC630)

"K" Series Right Angle Helical Bevel



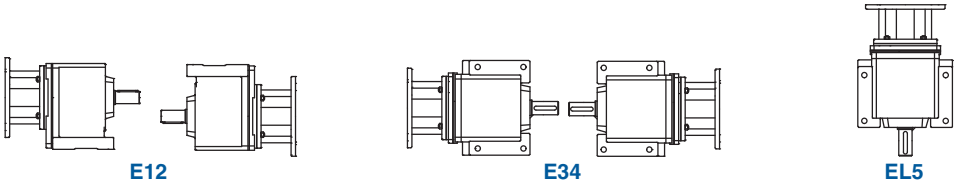
E12 E34 EL5

"F" Series Offset Helical



E12 E34 EL5

"C" Series Concentric Helical



E12 E34 EL5

Other **Housing Styles** are available for each of the above series.
Silver Bullet AM® is a registered trademark of Burke Industrial Coating.

Food and Beverage Duty – MGS Reducers
Features

The standard Food and Beverage Duty unit is supplied with a stainless steel output. This unit has several features that make it virtually MAINTENANCE FREE in a **wet** or **dry** environment.

- Lubricated for Life — with Mobil 600XP220 (3 Year Warranty) or SHC 630 (5 Year Warranty)
- Totally Enclosed — no breather to allow comtaminates in or oil out and double output seals (dual lip outer seal and a single lip inner seal)
- The high quality helical gearing (and spiral bevel gearing in the "K" Series) is case hardened to 58-62 Rockwell C and precision finished for low noise and long service life. With an efficiency of 97%, these reliable drives provide cost savings in energy and maintenance.
- NEMA C-face Input — with an O-ring between the motor and reducer and an easy mount maintenance free coupling
- Mounts in ANY horizontal output position without changing oil levels (other positions are optional or warranty specific)
- ALL stainless steel hardware and stainless steel nameplate
- Standard Coating layers: **FOOD** — 1, Primer; 2, Industrial 316 Stainless Steel Epoxy; 1, Silver Bullet Anti-Microbial® Epoxy
  BEVERAGE — 1, Primer; 2, Industrial 316 Stainless Steel Epoxy
  BAKERY (BISC) — 1, Primer; 1, White Epoxy

SILVER BULLET AM™

STANDARD 3-DAY DELIVERY

"K" and "F" Series Food Duty hollow output units have bore sizes designed specifically for the poultry industry.

Selection Data for "C", "F", and "K" Series begins on Page 25.

Food and Beverage Duty – MGS Reducers
Part Number Explanation

Part No. Explanation with OPTIONS

K 4 0 3 W G 0350 MR160 / 140 B LL E12

- **E12** — Mounting Position (Must be specified on LL.)
- **LL** — Long Life (Option)
- **B** — Beverage Duty Coating, **F** — Food Duty Coating
- 050 (56C), **140** (143/145TC), 180 (182/184TC), 210 (213/215TC), 250 (254/256TC), 280 (284/286TC)
- Motor Adapter Size: MR140, **MR160**, MR200, MR300
- Nominal Ratio: (**0350** = 35:1)
- HOUSING STYLE: "**F**" Housing Style — Flange Mounting — **SPECIFY IN A NOTE**: Flange on Side 3 or Side 4
  "**G**" Housing Style — Tapped Holes
  "**GD**" G Housing with Torque Arm Bracket — **SPECIFY IN A NOTE**: Bracket on Side 1 or Side 5
  "**N**" Housing Style — Foot Mount — **SPECIFY IN A NOTE**: Feet on Side 1 or Side 5
- OUTPUT STYLE: "**A**" Hollow Output — **SPECIFY IN A NOTE**: Shaft Diameter (K302 ONLY)
  "**V**" Single Side Solid Output — **SPECIFY IN A NOTE**: Shaft on Side 3 or Side 4
  "**W**" Wobble Free Bushing
- No. of Stages (**2** = 3 Stage, determined by ratio)
- Design Generation
- Unit Size No.
- Right Angle Helical/Bevel

WFB 4 – 103

- **103** — Output Bore in inches = $1^{3}/_{16}$
- **4** — Base Module Size example: K**4**02/K**4**03)
- **WFB** — **W**obble **F**ree Dou**B**le Side

F 2 0 2 A F 0135 MR200 / 180 F LL E12

- **E12** — Mounting Position (Must be Specified on LL.)
- **LL** – Long Life Option
- **F** — Food Duty Coating, **B** — Beverage Duty Coating
- 050 (56C), 140 (143/145TC), **180** (182/184TC)
- Motor Adapter Size: MR140, MR160, **MR200**
- Nominal Ratio: (**0135** = 13.5:1 approximate — 13.63:1 actual)
- HOUSING STYLE: "**F**" Housing Style — Flange Mounting
  "**G**" Housing Style — Tapped Holes
- OUTPUT STYLE — "**A**" Hollow Output (Poultry industry standard)
- No. of Stages (**02** = 2 Stage, determined by ratio)
- Design Generation
- Unit Size No.
- O**F**fset Helical

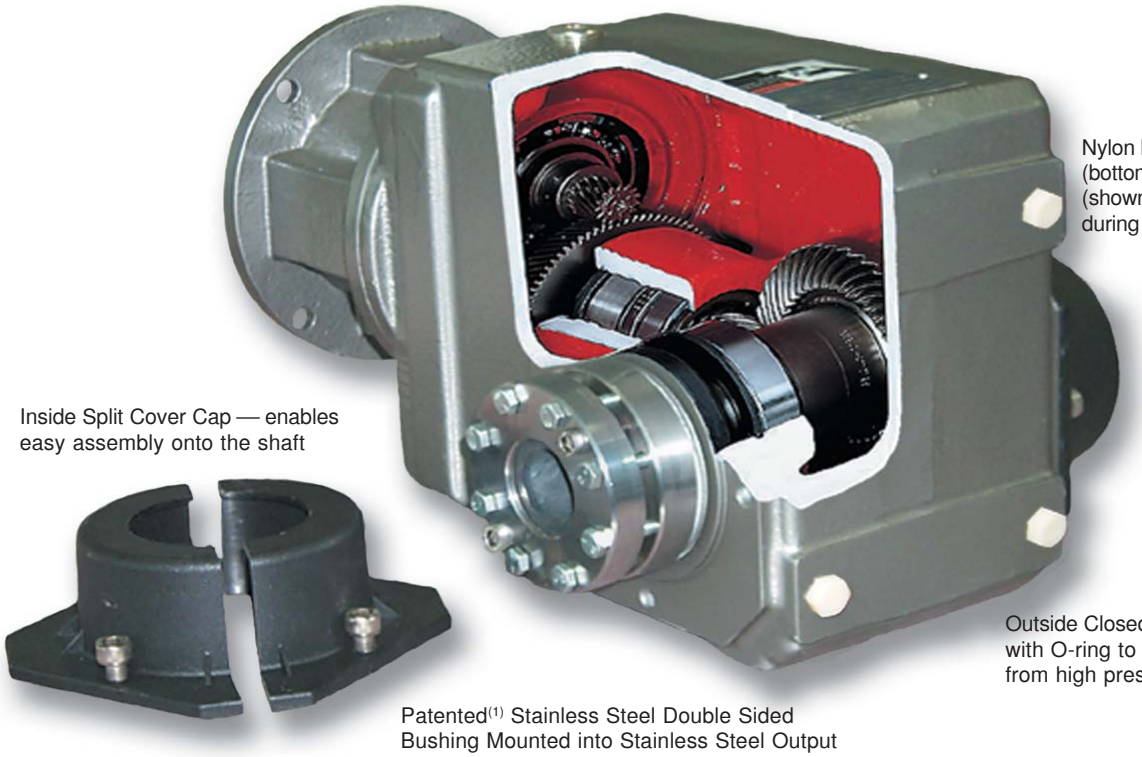
C 4 0 2 N 0135 MR160 / 140 F LL E34

- **E34** — Mounting Position (Must be specified on LL.)
- **LL** — Long Life Option
- **F** — Food Duty Coating, **B** — Beverage Duty Coating
- 050 (56C), **140** (143/145TC), 180 (182/184TC), 210 (213/215TC), 250 (254/256TC), 280 (284/286TC)
- Motor Adapter Size: MR140, **MR160**, MR200, MR250, MR300
- Nominal Ratio: **0135** = 13.5:1
- HOUSING STYLE: "**N**" Housing Style — Foot Mounting
  "**F**" Housing Style — Flange Mounting
  "**G**" Housing Style — Tapped Holes
- No. of Stages (**02** = 2 Stage, determined by ratio)
- Design Generation
- Unit Size No.
- **C**oncentric Helical

Food and Beverage Duty – MGS Reducers Helical/Bevel with Double Bushing

The "K" Series Helical/Bevel MGS Food and Beverage Duty unit is supplied with a patented double sided wobble free bushing system. This unique design allows the unit to be mounted on the shaft from either side of the reducer. Featuring a distinct support side and a clamp side, the dual tapered cones will overcome a wide range of tolerances normally found with standard shaft materials. The clamp side is determined by the customer but is usually the outside bushing.

Each case size can be provided with a variety of bushing bore sizes. The unit is selected based on horsepower or torque rating, output speed or ratio, and the shaft size of the driven equipment. The bushing is not installed into the unit at the factory, but with easy to follow assemble instructions, the unit and bushing can be mounted on the machinery quickly — without any special tools. The bore size in the unit can be changed any time during the life of the unit simply by changing the bushing kit.



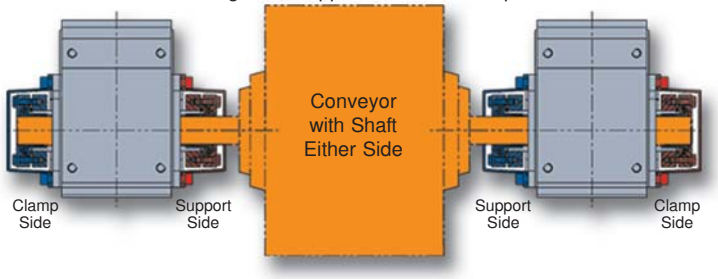
Nylon bolts on Side 1 (bottom) and Side 5 (shown) for protection during assembly

Inside Split Cover Cap — enables easy assembly onto the shaft

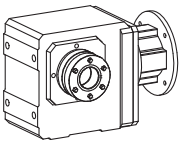
Outside Closed Cover Cap — with O-ring to protect seals from high pressure washing

Patented[1] Stainless Steel Double Sided Bushing Mounted into Stainless Steel Output Quill — easily mounts onto standard cold finished, ground, or stainless shafting.

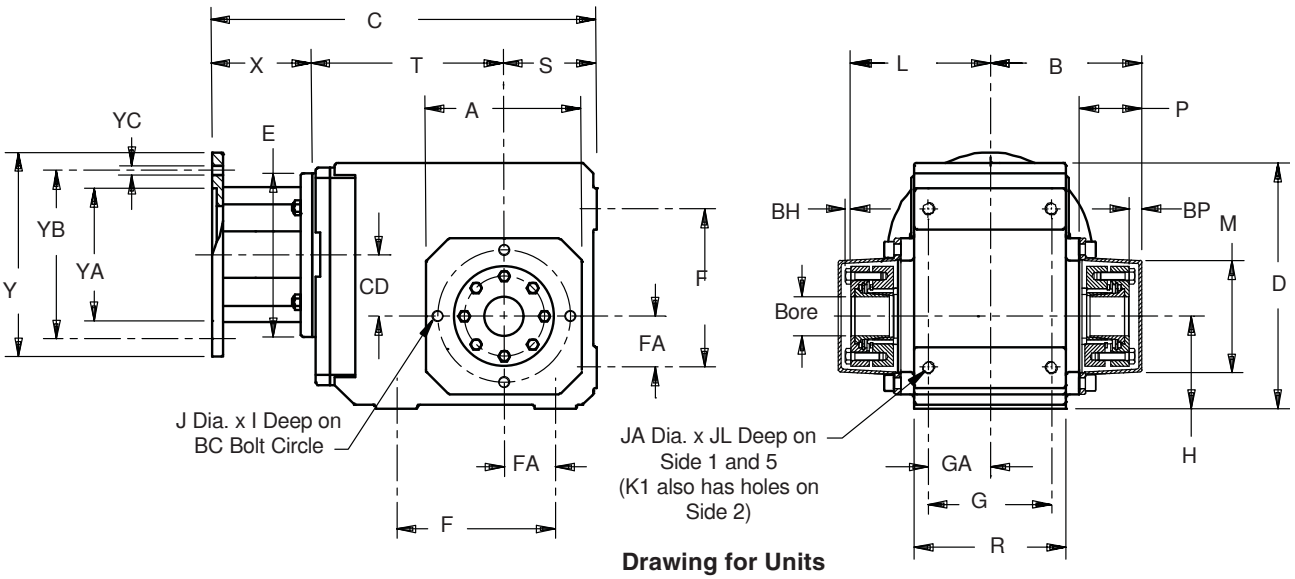
Interchangeable Support Side and Clamp Side



[1] U.S. Patent Number 5,496,127



Food and Beverage Duty
"K" Series – MGS Reducer
Tapped Hole – "G" Housing – Double Bushing



Drawing for Units
K102WG — K403WG

Table No. 1 **"K" Series – Double Wobble Free – Unit Dimensions (Inches)**

Base Module	Max. Bore	A	B	D	F	G	H	I	J	L	M	P	R	S	Z_1	BC	BP	BH	FA	GA	JA	JL
K102	1.000	4.13	3.90	6.30	3.54	2.76	2.36	.51	M8	3.66	3.07	1.97	3.54	2.36	–	3.54	.24	.16	1.18	1.38	M8	.51
K202/203	1.187	4.57	4.68	7.48	4.53	3.54	2.56	.51	M8	4.26	3.46	2.05	4.53	2.56	–	3.94	.39	.16	1.38	1.77	M10	.63
K302/303	1.500	5.20	4.98	8.39	5.12	4.13	2.95	.51	M8	4.54	3.78	2.09	5.12	2.95	–	4.53	.43	.16	1.57	2.07	M10	.63
K402/403	1.500	5.98	5.80	9.45	6.10	4.72	3.54	.63	M10	5.33	4.33	2.40	5.83	3.54	–	5.12	.47	.20	1.97	2.36	M12	.75
K513/514	2.000	5.71	6.05	10.24	5.51	4.92	6.30	.63	M10	5.61	4.54	2.40	6.30	3.94	5.98	5.12	.43	.20	1.57	2.46	M16	1.02
K613/614	2.187	7.09	6.61	12.20	6.30	5.12	7.48	.63	M10	6.10	5.00	2.68	6.61	4.72	6.77	6.50	.51	.24	1.97	2.56	M16	1.02
K713/714	2.375	7.68	7.68	13.46	7.09	5.71	8.35	.75	M12	7.29	5.75	2.91	7.48	4.92	7.52	7.28	.39	.24	2.17	2.85	M20	1.22
K813/814	2.750	8.90	9.34	16.14	9.45	7.28	10.43	.75	M12	8.70	6.95	3.43	9.25	5.71	8.11	8.46	.64	.31	2.95	3.64	M24	1.50

Table No. 2 **Motor Adapter Dimensions (Inches)**

Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR300/180	182/184TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/210	213/215TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/250	254/256TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/280	284/286TC	11.81	6.50	11.13	10.500	9.00	.57	75

Part No. Example

Food Duty Unit
143TC Frame Motor Adapter
and $1^{7}/_{16}$ Bushing Bore
K303WG0650 MR160/140F WFB3-107

Beverage Duty Unit
K303WG0650 MR160/140B WFB3-107

Also available in Housing Styles "N" and "GD".

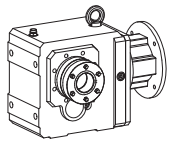
Table No. 3
"WFB" – Double Side Bushings – Metric

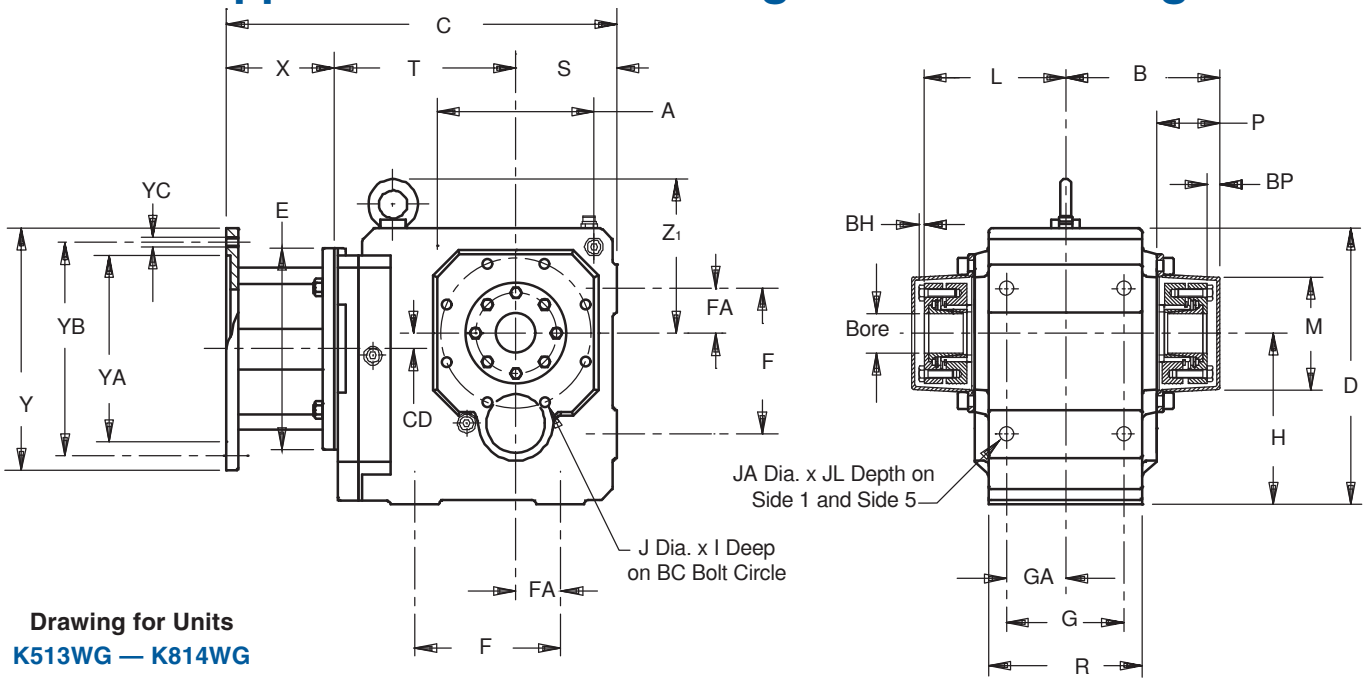
Unit	Stock Bores Sizes — mm			
	25	30	35	40
K1	**WFB1-25**	–	–	–
K2	**WFB2-25**	**WFB2-30**	–	–
K3	–	**WFB3-30**	**WFB3-35**	–
K4	–	–	–	**WFB4-40**
K5	–	–	–	**WFB5-40**
K6	–	–	–	**WFB6-40**

Table No. 4 **"WFB" Double Side Bushings – Inches**

Unit	Stock Bores Sizes					
	1	$1^{3}/_{16}$	$1^{1}/_{4}$	$1^{3}/_{8}$	$1^{7}/_{16}$	$1^{1}/_{2}$
K1	**WFB1-100**	–	–	–	–	–
K2	**WFB2-100**	**WFB2-103**	–	–	–	–
K3	**WFB3-100**	**WFB3-103**	**WFB3-104**	**WFB3-106**	**WFB3-107**	**WFB3-108**
K4	**WFB4-100**	**WFB4-103**	**WFB4-104**	**WFB4-106**	**WFB4-107**	**WFB4-108**

Food and Beverage Duty
"K" Series – MGS Reducer
Tapped Hole – "G" Housing – Double Bushing





Drawing for Units
K513WG — K814WG

Table No. 5 **"K" Series – Double Wobble Free – Unit Dimensions (Inches)**

Base	MR140/050			MR160/140 [1]			MR200/180			MR250/210 [2]			MR300/250 [3]			Wt.
Module	CD	C	T	CD	C	T	CD	C	T	CD	C	T	CD	C	T	lbs.
K102	1.42	10.55	4.88	1.42	11.26	5.04	–	–	–	–	–	–	–	–	–	31
K202	1.81	11.50	5.63	1.81	12.21	5.79	1.81	13.23	5.87	–	–	–	–	–	–	40
K203	1.81	12.96	7.09	–	–	–	–	–	–	–	–	–	–	–	–	53
K302	2.07	12.68	6.42	2.07	13.38	6.57	2.07	14.40	6.65	–	–	–	–	–	–	67
K303	2.07	14.13	7.87	.63	15.08	8.27	–	–	–	–	–	–	–	–	–	73
K402	–	–	–	2.36	14.76	7.36	2.36	15.74	7.44	2.36	16.41	7.56	–	–	–	93
K403	2.36	15.51	8.66	.91	16.46	9.06	–	–	–	–	–	–	–	–	–	100
K513	–	–	–	.59	14.57	6.77	.59	15.59	6.85	.59	16.22	6.97	–	–	–	106
K514	–	–	–	.59	16.26	8.46	–	–	–	–	–	–	–	–	–	109
K613	–	–	–	.71	16.10	7.52	.71	17.12	7.60	.71	17.75	7.72	.71	19.49	8.27	170
K614	–	–	–	.71	17.79	9.21	–	–	–	–	–	–	–	–	–	177
K713	–	–	–	–	–	–	.79	18.42	8.70	.79	19.05	8.82	.79	20.75	9.33	221
K714	–	–	–	.79	19.13	10.35	.79	20.86	11.14	–	–	–	–	–	–	234
K813	–	–	–	–	–	–	.94	20.23	9.72	.94	20.82	9.80	.94	22.52	10.31	309
K814	–	–	–	–	–	–	.94	22.64	12.13	–	–	–	–	–	–	331

[1] Also available as **MR160/050** for a NEMA 56C frame motor.

[2] Also available as **MR250/180** for a NEMA 182/184TC frame motor.

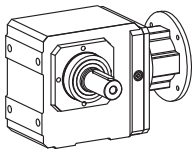
[3] Also available as **MR300/180** for NEMA 182/184TC, **MR300/210** for NEMA 213/215TC, and **MR300/280** for NEMA 284/286TC frame motor.

All weights are approximate.

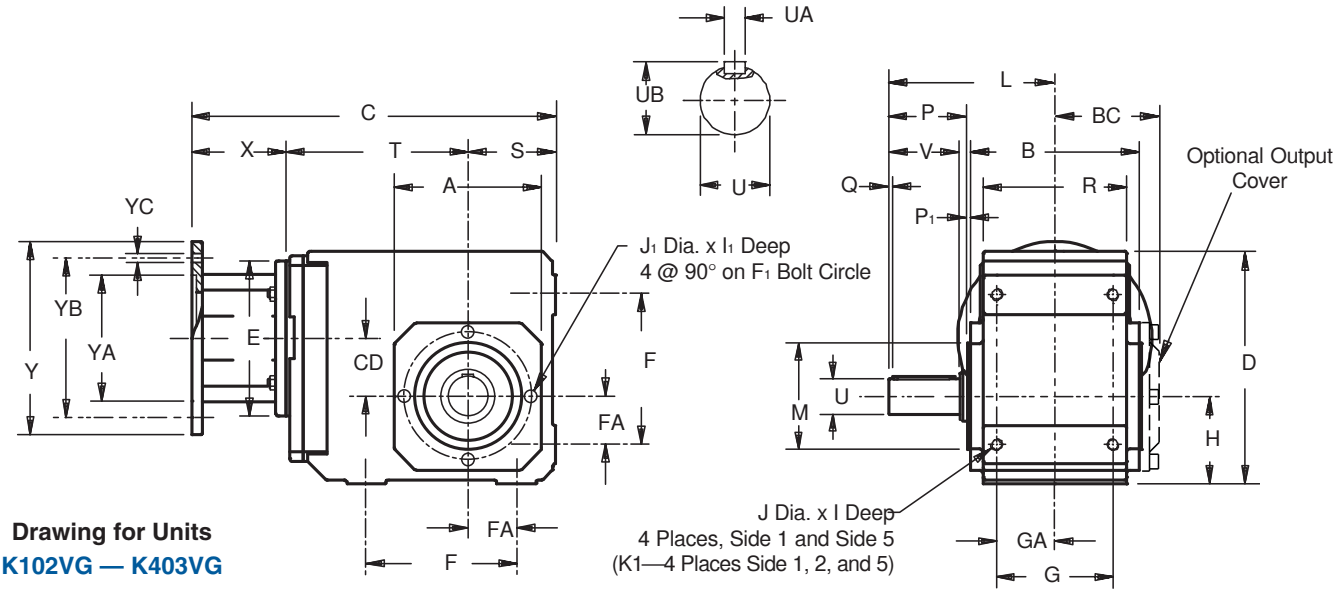
NOTE: A double side bushing kit includes 2 each of a pressure ring and clamp ring, flanged and tapered cone, and all hardware to mount the kit into the reducer. The WFB1 does not use a tapered cone. All double bushing kits include covers. The bushing will accept a shaft with a tolerance of +.000/-.005.

Table No. 6 **"WFB" Double Side Bushings – Inches**

	Stock Bores Sizes — Inches											
Unit	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	2 3/8	2 7/16	2 3/4
K5	WFB5-107	WFB5-108	WFB5-110	WFB5-111	WFB5-112	WFB5-114	WFB5-115	WFB5-200	–	–	–	–
K6	WFB6-107	WFB6-108	WFB6-110	WFB6-111	WFB6-112	–	WFB6-115	WFB6-200	WFB6-203	–	–	–
K7	–	–	–	–	–	–	WFB7-115	WFB7-200	WFB7-203	WFB7-206	–	–
K8	–	–	–	–	–	–	–	–	WFB8-203	WFB8-206	WFB7-207	WFB8-212



Food and Beverage Duty
"K" Series – MGS Reducer
Tapped Holes – "G" Housing – Shaft Output



Drawing for Units
K102VG — K403VG

Table No. 1 **"K" Series – Unit Dimensions (Inches) – "G" Housing Style**

Base Module	A	B	BC	D	F	F_1	FA	G	GA	H	I	I_1	J	J_1	L
K102	4.13	4.17	2.64	6.30	3.54	3.54	1.18	2.76	1.38	2.36	.51	.51	M8	M8	4.53
K202/203	4.57	5.28	3.23	7.48	4.53	3.94	1.38	3.54	1.77	2.56	.63	.51	M10	M8	5.31
K302/303	5.20	5.75	3.46	8.39	5.12	4.53	1.57	4.13	2.07	2.95	.63	.51	M10	M8	5.59
K402/403	5.98	6.81	4.08	9.45	6.10	5.12	1.97	4.72	2.36	3.54	.75	.63	M12	M10	6.93
K513/514	5.71	7.28	4.31	10.24	5.51	5.12	1.57	4.92	2.46	6.30	1.02	.63	M16	M10	8.74
K613/614	7.09	7.87	4.61	12.20	6.30	6.50	1.97	5.12	2.56	7.48	1.02	.63	M16	M10	9.29
K713/714	7.68	8.90	5.08	13.46	7.09	7.28	2.17	5.71	2.85	8.35	1.22	.75	M20	M12	10.91
K813/814	8.90	11.10	6.26	16.14	9.45	8.46	2.95	7.28	3.64	10.43	1.50	.75	M24	M12	12.83

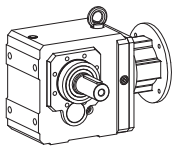
Table No. 2

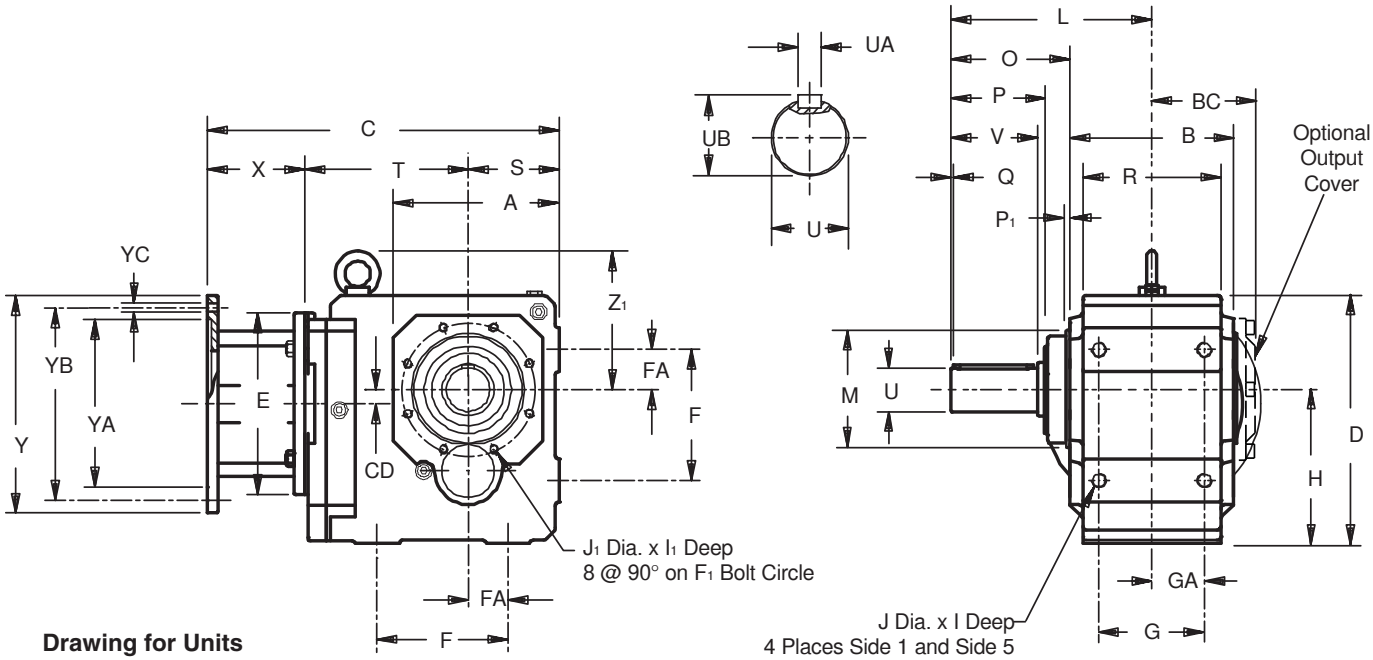
Base Module	M	O	P	P_1	R	Q	S	U	UA—Key	UB	V	Z_1
K102	2.953	–	2.32	.12	3.54	.16	2.36	1.000	$1/4 \times 1/4 \times 1\,9/16$	1.11	1.97	–
K202/203	3.228	–	2.56	.12	4.53	.16	2.56	1.250	$1/4 \times 1/4 \times 1\,15/16$	1.36	2.36	–
K302/303	3.740	–	2.60	.12	5.12	.16	2.95	1.250	$1/4 \times 1/4 \times 1\,15/16$	1.36	2.36	–
K402/403	4.331	–	3.39	.14	5.83	.16	3.54	1.375	$5/16 \times 5/16 \times 2\,5/16$	1.51	2.76	–
K513/514	4.331	5.10	3.90	.14	6.30	.16	3.94	1.750	$3/8 \times 3/8 \times 3\,5/32$	1.92	3.54	5.98
K613/614	5.512	5.35	4.31	.14	6.61	.16	4.72	1.750	$3/8 \times 3/8 \times 3\,5/32$	1.92	3.94	6.77
K713/714	6.102	6.46	5.14	.14	7.48	.16	4.92	2.375	$5/8 \times 5/8 \times 3\,15/16$	2.65	4.72	7.52
K813/814	7.283	7.28	5.94	.16	9.25	.20	5.71	2.875	$3/4 \times 3/4 \times 4\,5/16$	3.21	5.51	8.11

Table No. 3 **Motor Adapter Dimensions (Inches)**

Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR300/180	182/184TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/210	213/215TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/250	254/256TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/280	284/286TC	11.81	6.50	11.13	10.500	9.00	.57	75

Food and Beverage Duty
"K" Series – MGS Reducer
Tapped Holes – "G" Housing – Shaft Output





Drawing for Units
K513VG — K814VG

Table No. 4 **"K" Series – Unit Dimensions (Inches)**

Base	MR140/050			MR160/140 [1]			MR200/180			MR250/210 [2]			MR300/250 [3]			Wt.
Module	CD	C	T	CD	C	T	CD	C	T	CD	C	T	CD	C	T	lbs.
K102	1.42	10.55	4.88	1.42	11.26	5.04	–	–	–	–	–	–	–	–	–	31
K202	1.81	11.50	5.63	1.81	12.21	5.79	1.81	13.23	5.87	–	–	–	–	–	–	40
K203	1.81	12.96	7.09	–	–	–	–	–	–	–	–	–	–	–	–	53
K302	2.07	12.68	6.42	2.07	13.38	6.57	2.07	14.40	6.65	–	–	–	–	–	–	67
K303	2.07	14.13	7.87	.63	15.08	8.27	–	–	–	–	–	–	–	–	–	73
K402	–	–	–	2.36	14.76	7.36	2.36	15.74	7.44	2.36	16.41	7.56	–	–	–	93
K403	2.36	15.51	8.66	.91	16.46	9.06	–	–	–	–	–	–	–	–	–	100
K513	–	–	–	.59	14.57	6.77	.59	15.59	6.85	.59	16.22	6.97	–	–	–	106
K514	–	–	–	.59	16.26	8.46	–	–	–	–	–	–	–	–	–	109
K613	–	–	–	.71	16.10	7.52	.71	17.12	7.60	.71	17.75	7.72	.71	19.49	8.27	170
K614	–	–	–	.71	17.79	9.21	–	–	–	–	–	–	–	–	–	177
K713	–	–	–	–	–	–	.79	18.42	8.70	.79	19.05	8.82	.79	20.75	9.33	221
K714	–	–	–	.79	19.13	10.35	.79	20.86	11.14	–	–	–	–	–	–	234
K813	–	–	–	–	–	–	.94	20.23	9.72	.94	20.82	9.80	.94	22.52	10.31	309
K814	–	–	–	–	–	–	.94	22.64	12.13	–	–	–	–	–	–	331

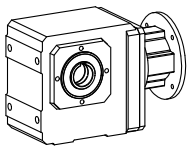
[1] Also available as **MR160/050** for a NEMA 56C frame motor.
[2] Also available as **MR250/180** for a NEMA 182/184TC frame motor.
[3] Also available as **MR300/180** for a NEMA 182/184TC, **MR300/210** for a NEMA 213/215TC, and **MR300/280** for a NEMA 284/286TC frame motor.
All weights are approximate.

Part No. Example

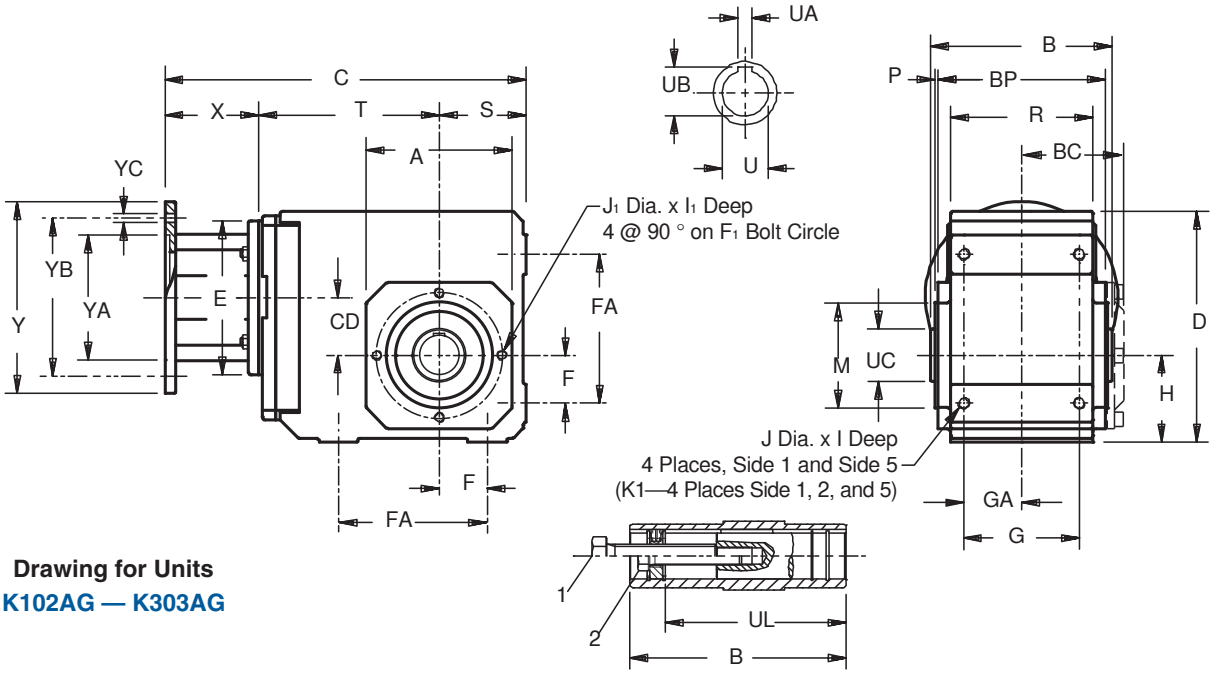
Food Duty Unit
with 143TC Frame Motor Adapter and Output Shaft
K303VG0650 MR160/140F
Specify: Shaft Side

Beverage Duty Unit
K303VG0650 MR160/140B
Specify: Shaft Side

Also available in Housing Styles "N", "F", and "GD".



Food and Beverage Duty
"K" Series – MGS Reducers
Tapped Hole – "G" Housing – Hollow Output



Drawing for Units
K102AG — K303AG

Table No. 1 **"K" Series – Unit Dimensions (Inches) – "G" Housing Style**

Base Module	A	B	D	F	F_1	G	H	I	I_1	J	J_1	M	P	R	S	BC	BP	FA	GA
K102	4.13	4.72	6.30	3.54	3.54	2.76	2.36	.51	.51	M8	M8	2.953	.12	3.54	2.36	2.49	4.17	1.18	1.38
K202/203	4.57	5.83	7.48	4.53	3.94	3.54	2.56	.63	.51	M10	M8	3.228	.12	4.53	2.56	3.25	5.28	1.38	1.77
K302/303	5.20	6.30	8.39	5.12	4.53	4.13	2.95	.63	.51	M10	M8	3.740	.12	5.12	2.95	3.47	5.75	1.57	2.07

Table No. 2 **Standard Bore (Inches)**

Base Module	U	UA	UB	UC	UL	1
K102	1.000	.250	1.12	.1.57	3.86	1/2-13
K202/203	1.250	250	1.37	.1.77	4.78	1/2-13
K302/303	1.250	250	1.37	1.97	4.92	5/8-11
	1.375	.312	1.52	1.97	4.92	5/8-11

1. Removal Bolt – not supplied.
2. Mounting Bolt – must be smaller than removal bolt.

All weights are approximate.

Table No. 3 **Motor Adapter Dimensions (Inches)**

Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23

Table No. 4 **"K" Series – Unit Dimensions (Inches)**

Base	MR140/050			MR160/140 [1]			MR200/180			Wt.
Module	CD	C	T	CD	C	T	CD	C	T	lbs.
K102	1.42	10.55	4.88	1.42	11.26	5.04	–	–	–	31
K202	1.81	11.50	5.63	1.81	12.21	5.79	1.81	13.23	5.87	40
K203	1.81	12.96	7.09	–	–	–	–	–	–	53
K302	2.07	12.68	6.42	2.07	13.38	6.57	2.07	14.40	6.65	67
K303	2.07	14.13	7.87	.63	15.08	8.27	–	–	–	73

[1] Also available as **MR160/050** for a NEMA 56C frame motor.

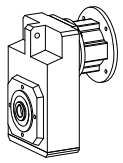
Part No. Example

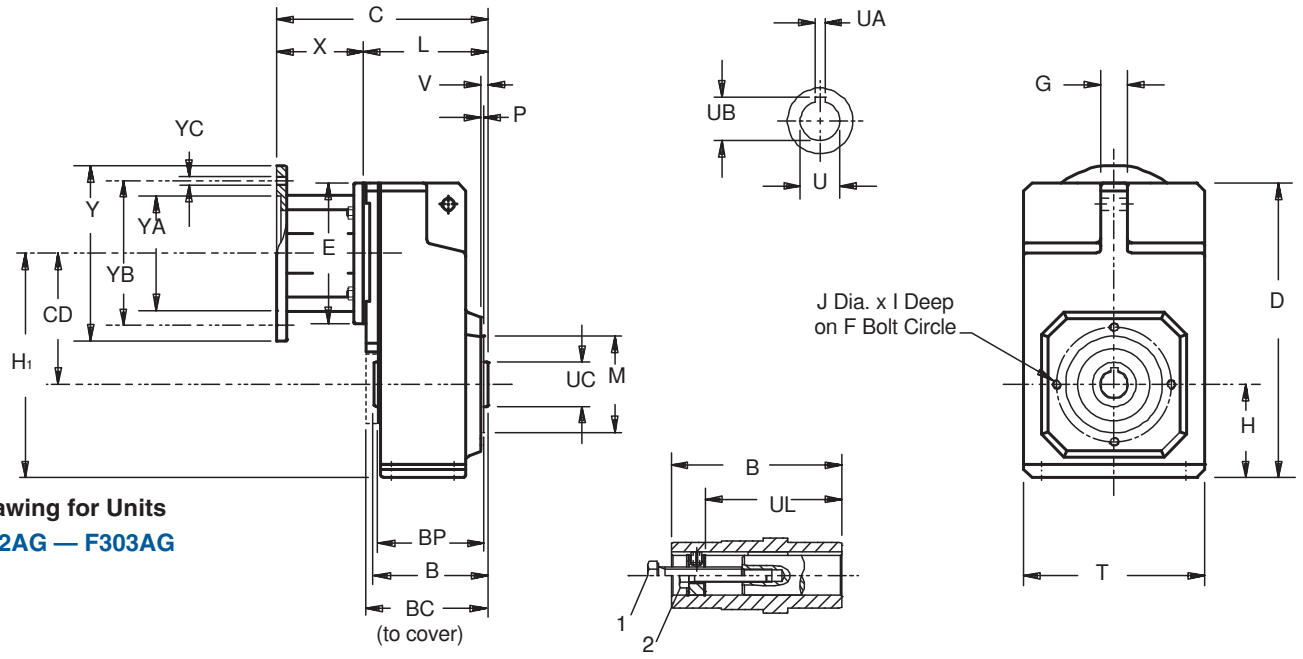
Food Duty
Tapped Holes Housing and Hollow Output
K303AG0650 MR160/140F
Specify Bore Size (K3 ONLY)

Beverage Duty
K303AG0650 MR160/140B
Specify Bore Size (K3 ONLY)

Also available in Housing Styles "N" and "F".

Food and Beverage Duty
"F" Series – MGS Reducer
Tapped Hole – "G" Housing – Hollow Output





Drawing for Units
F202AG — F303AG

Table No. 1 **"F" Series – Unit Dimensions (Inches) – "G" Housing Style**

Base Module	CD	B	D	F	G	H	H_1	I	J	M	P	T	U	V	BC	BP	UA	UB	UC	UL	1
F202/F203	5.16	4.53	11.77	4.53	.87	3.66	8.82	.51	M8	3.740	.12	7.09	1.000	.31	4.76	4.13	.250	1.12	1.77	3.62	1/2-13
F302/F303	5.89	5.12	13.23	5.12	1.18	4.17	10.06	.63	M10	4.331	.14	8.11	1.250	.33	5.45	4.72	.250	1.37	1.97	4.06	1/2-13

Table No. 2
"F" Series — Unit Dimensions (Inches)

Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23

Table No. 3 **"F" Series Unit Dimensions (Inches)**

Base	**MR140/050**		**MR160/140** [1]		**MR200/180**		Approx.
Module	C	L	C	L	C	L	Wt. lbs.
F202	8.15	4.84	8.86	5.00	9.88	5.08	51
F203	9.61	6.30	–	–	–	–	64
F302	8.74	5.43	9.45	5.59	10.47	5.67	67
F303	10.20	6.89	–	–	–	–	73

[1] Also available as **MR160/050** for a NEMA 56C frame motor.

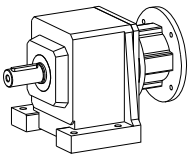
Part No. Example

Food Duty Unit
Tapped Hole Housing with Motor Adapter
F302AG0560 MR160/140F
Beverage Duty Unit
F302AG0560 MR160/140B

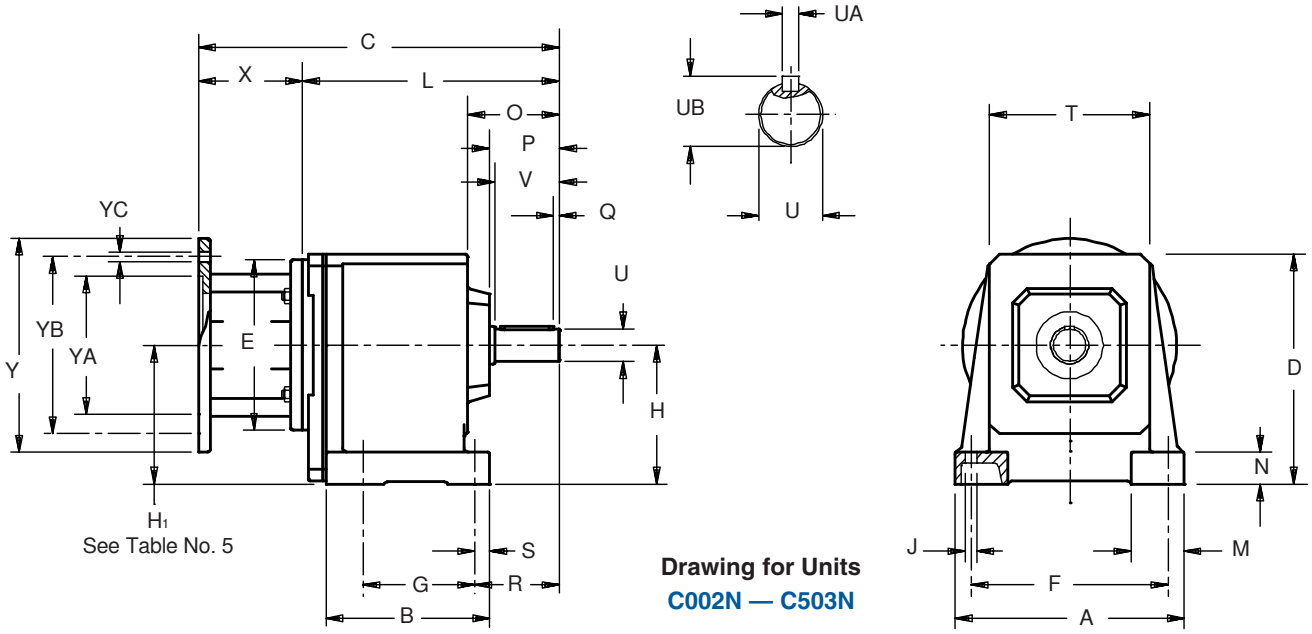
Also available in Housing Styles "N" and "F".

1. Removal Bolt – not supplied.
2. Mounting Bolt – must be smaller than removal bolt.

All weights are approximate.



Food and Beverage Duty
"C" Series – MGS Reducer
Foot Mount – "N" Housing



Drawing for Units
C002N — C503N

Table No. 1 **"C" Series – Foot Mounting Unit Dimensions (Inches) – "N" Housing Style**

Base Module	A	B	D	F	G	H	J	M	N	O	P	Q	R
C002	5.20	3.74	5.67	4.33	2.44	3.23	.28	1.38	.79	2.24	1.73	.16	2.17
C102/C103	6.93	4.65	6.97	5.91	2.76	4.02	.35	1.65	.98	2.72	2.13	.16	2.64
C202/C203	7.87	5.31	7.68	6.69	3.35	4.53	.43	1.97	1.18	3.39	2.56	.16	3.11
C302/C303	8.46	6.06	8.46	7.28	4.13	5.12[1)]	.43	1.97	1.18	3.35	2.56	.16	3.11
C402/C403	10.04	7.09	9.65	8.66	4.33	5.71	.55	2.36	1.38	4.17	3.39	.16	4.13
C502/C503	11.42	7.76	11.42	9.65	5.12	6.69	.71	2.76	1.57	4.21	3.39	.16	4.25
C612/C613	11.81	10.43	12.40	9.65	8.46	7.87[1)]	.71	2.95	1.57	6.02	4.17	.20	5.12

[1)] See Table 5.

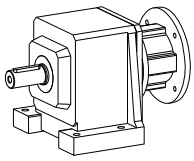
Table No. 2

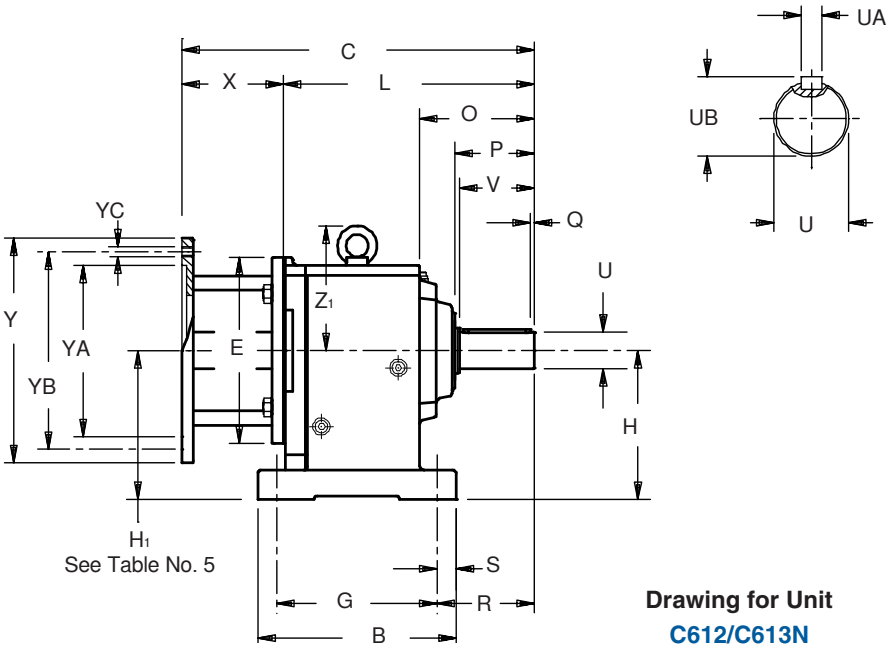
Base Module	S	T	U	V	Z_1	UA—Key	UB
C002	.43	3.62	.7500	1.57	–	$^3/_{16} \times ^3/_{16} \times 1^7/_{32}$	.83
C102/C103	.51	4.88	1.0000	1.97	–	$^1/_4 \times ^1/_4 \times 1^9/_{16}$	1.11
C202/C203	.55	5.43	1.2500	2.36	–	$^1/_4 \times ^1/_4 \times 1^{15}/_{16}$	1.36
C302/C303	.55	5.91	1.2500	2.36	–	$^1/_4 \times ^1/_4 \times 1^{15}/_{16}$	1.36
C402/C403	.75	6.89	1.6250	3.15	–	$^3/_8 \times ^3/_8 \times 2^7/_8$	1.79
C502/C503	.87	7.56	1.6250	3.15	–	$^3/_8 \times ^3/_8 \times 2^7/_8$	1.79
C612/C613	.98	6.97	2.1250	3.94	6.57	$^1/_2 \times ^1/_2 \times 3^5/_{32}$	2.35

Table No. 3
"C" Series – Foot Mounting Unit Dimensions (Inches) – "N" Housing Style

Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR300/180	182/184TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/210	213/215TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/250	254/256TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/280	284/286TC	11.81	6.50	11.13	10.500	9.00	.57	75

Food and Beverage Duty "C" Series – MGS Reducer Foot Mount – "N" Housing





Drawing for Unit
C612/C613N

Table No. 4 "C" Series – Foot Mounting Unit Dimensions (Inches) – "N" Housing Style

Base	MR140/050		MR160/140 [2]		MR200/180		MR250/210 [3]		MR300/250 [4]		Approx.
Module	C	L	C	L	C	L	C	L	C	L	Wt.(lbs.)
C002	9.37	6.06	10.08	6.22	–	–	–	–	–	–	18
C102	10.67	7.36	11.38	7.52	12.40	7.60	–	–	–	–	29
C103	12.13	8.82	–	–	–	–	–	–	–	–	34
C202	11.77	8.46	12.48	8.62	13.50	8.70	–	–	–	–	38
C203	13.23	9.92	14.17	10.31	–	–	–	–	–	–	45
C302	–	–	13.23	9.37	14.25	9.45	14.88	9.57	–	–	49
C303	13.98	10.67	14.92	11.06	–	–	–	–	–	–	56
C402	–	–	15.12	11.26	16.14	11.34	16.77	11.46	–	–	71
C403	–	–	16.81	12.95	–	–	–	–	–	–	78
C502	–	–	15.95	12.09	16.97	12.17	17.59	12.28	19.33	12.83	95
C503	–	–	17.64	13.78	–	–	–	–	–	–	111
C612	–	–	–	–	17.91	13.11	18.54	13.23	20.24	13.74	115
C613	–	–	18.62	14.76	20.35	15.55	–	–	–	–	159

[2] Also available as **MR160/050** for a NEMA 56C frame motor. "H" dimension on the input side of a C303 with an MR160/050 or MR160/140 is 3.66.
[3] Also available as **MR250/180** for a NEMA 182/184TC frame motor.
[4] Also available as **MR300/180** for a NEMA 182/184TC, **MR300/210** for a NEMA 213/215TC , and **MR300/280** for a NEMA 284/286TC frame motor.
All weights are approximate.

Table No. 5 "C" Series – Input Dimension (Inches)

Base	MR160/050 [2]	MR200/180	MR250/210	MR300/250
Module	H_1	H_1	H_1	H_1
C303	3.66	—	—	—
C612	—	7.63	7.63	7.63
C613	—	—	7.63	—

Part No. Example

Food Duty Unit
Foot Mounting with Motor Adapter
C302N0620 MR160/140F

Beverage Duty Unit
C302N0620 MR160/140B

Also available in Housing Styles "G", "F", and "Q".

Notes

“C” Series Concentric Helical Speed Reducers

3 YEAR WARRANTY STANDARD

5 YEAR WARRANTY OPTIONAL

3-DAY DELIVERY

STÖBER

www.stober.com

"C" Series—Concentric Helical MGS Reducers

These versatile gear drives offer you perforamnce, durability, and economy for a wide range of constant speed applications. High efficiency helical gearing keeps motor size to a minimum while conserving energy.

Performance Specifications:

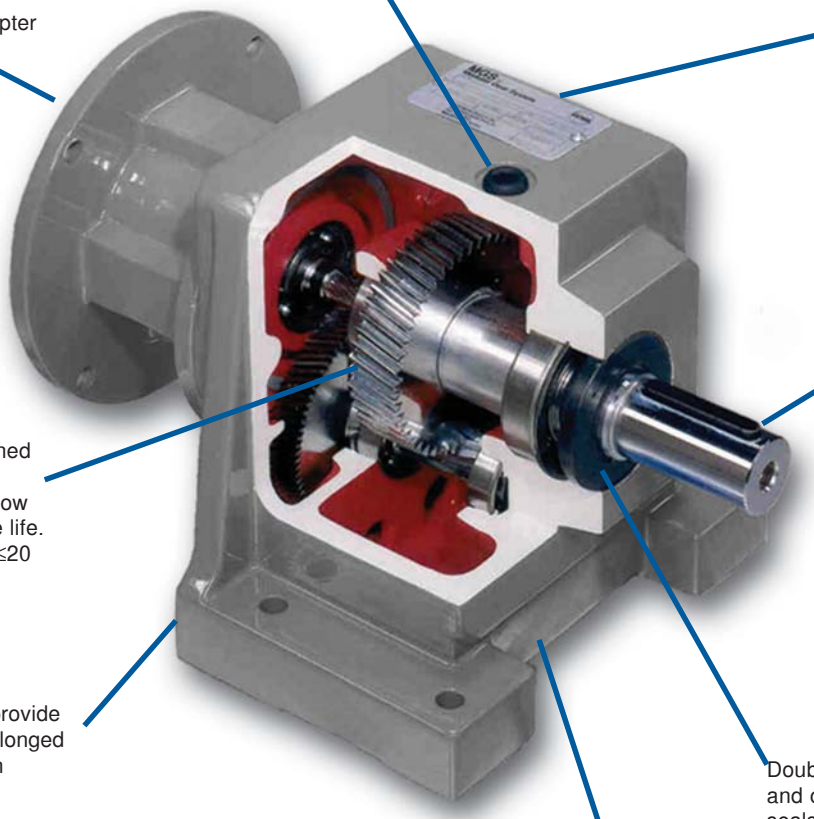
- Horsepower ratings from 1/6 to 165
- Output torques to 62,000 in. lbs.
- Output speeds available from 875 to 6.3 RPM
- Speed reducer ratios from 2.0:1 to 276:1
- 3 year warranty — your assurance of satisfactory product performance

Shipped with the proper amount and type of oil to prevent gear damaging dry start-ups

Strategically located oil fill, drain and breather ports for optimum mounting flexibility. Oil sight glass available.

Input Options:
- Input shaft
- NEMA C-face Adapter (coupling type)

Stainless steel nameplate and hardware



High tensile strength shafts with captured keys

High quality helical gearing is case hardened to 58-62 Rockwell C. Precision finished for low noise and long service life. Standard backlash is ≤20 arc minutes

Cast mounting feet provide rigid support and prolonged alignment with driven equipment

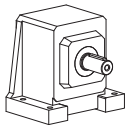
Double lip seals keep oil in and contaminants out. Double seals available for severe duty applications.

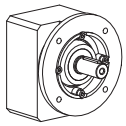
STANDARD 3-DAY DELIVERY

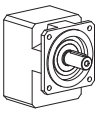
Available with a one-piece cast iron housing. Precision machined bearing supports assure gearset alignment, prolongs bearing life, provides exceptional overhung load capacities to eliminate leakage problems common to drives with bolt-on output covers.

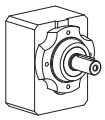
"C" Series—Concentric Helical MGS Speed Reducers Overview

Housing Style + Input Style = Reducer Configurations


Style N
Foot Mount


Style F
Round Flange


Style Q,
Square Flange


Style G
Tapped Holes

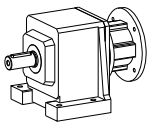
+

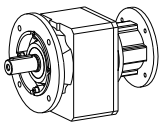

MR
Motor Adapter

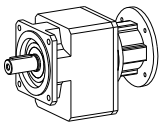

AW
Input Shaft

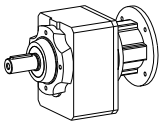
=

Reducer Configurations (See Page 112 for AW Input Shaft.)


Style N, Foot Mount

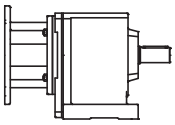

Style F, Round Flange

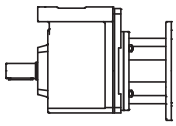

Style Q, Square Flange

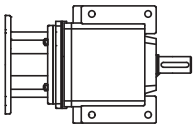

Style G, Tapped Holes

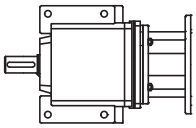
Mounting Positions – Standard 3 Year Warranty

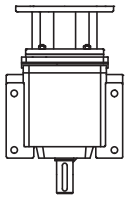
Mounting Positions MUST BE SPECIFIED. (See Page 116 for more details.)
Standard Oil: Mobilegear 600XP220
Optional Oil: Food Grade Oil (Mobil SHC CIBUS 220)
Synthetic Oil (Mobil SHC630)

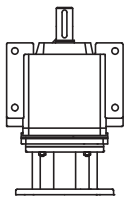

EL1


EL2


EL3

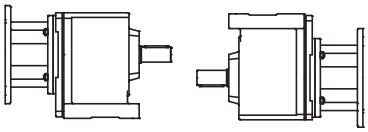

EL4

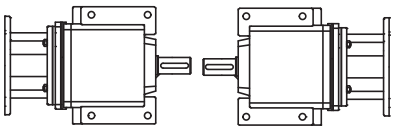

EL5

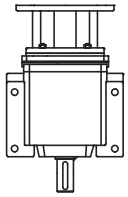

EL6

Mounting Positions – Long Life 5 Year Warranty

Mounting Positions MUST BE SPECIFIED. (See Page 116 for more details.)
Standard Oil: Synthetic Oil (Mobil SHC630)


E12


E34


EL5

Part No. Explanation with OPTIONS

C 4 0 2 N 0135 MR160 / 140 LL E34

- **C** — Concentric Helical
- **4** — Unit Size No.
- **0** — Design Generation
- **2** — No. of Stages (**02** = 2 Stage, determined by ratio)
- **N** — HOUSING STYLE: "**N**" Housing Style — Foot Mounting; "**F**" Housing Style — Flange Mounting; "**G**" Housing Style — Tapped Holes
- **0135** — Nominal Ratio: **0135** = 13.5:1
- **MR160** — Motor Adapter Size: MR140, **MR160**, MR200, MR250, MR300, MR350
- **140** — 050 (56C), **140** (143/145TC), 180 (182/184TC), 210 (213/215TC), 250 (254/256TC), 280 (284/286TC), 320 (324/326TC), 360 (364/365TC)
- **LL** — Long Life Option
- **E34** — Mounting Position (Must be specified.)

THE FOLLOWING INFORMATION IS REQUIRED FOR ANY UNIT:

Mounting Position — EL1 EL2 EL3 EL4 EL5 EL6 E12 E34
Paint — Standard Gray, White, Stainless
Option — Imperial or Metric Shaft (Metric not available in all sizes.)

"C" Series – Concentric Helical MGS Reducer – Selection Data

Selection Procedure:

. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

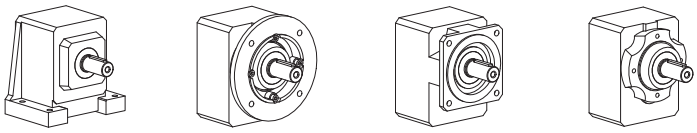
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
875 RPM Output (Approximate)								**725 RPM**		**580 RPM**	
2.64	184	C002_0020	MR140/	050	AW140/010	1.997	166	2.19	184	1.75	184
2.78	196	C102_0020	MR140/	050	AW140/010	2.018	237	2.30	196	1.84	196
4.08	285	C002_0020	MR160/	050, 140	AW160/012	1.997	166	3.60	303	3.10	327
8.11	572	C102_0020	MR160/	050, 140	AW160/012	2.018	237	7.15	609	6.16	655
8.11	572	C102_0020	MR200/	180	AW200/014	2.018	237	7.15	609	6.16	655
9.84	690	C202_0020	MR160/	050, 140	AW160/012	2.009	333	8.15	690	6.52	690
9.84	694	C302_0020	MR160/	050, 140	AW160/012	2.020	496	8.15	694	6.52	694
12.42	872	C202_0020	MR200/	180	AW200/014	2.009	333	10.95	928	9.44	1,000
20.25	1,429	C302_0020	MR200/	180	AW200/014	2.020	496	17.86	1,522	15.39	1,639
20.25	1,429	C302_0020	MR250/	180, 210	AW250/102	2.020	496	17.86	1,522	15.39	1,639
23.36	1,613	C502_0020	MR200/	180	AW200/014	1.976	1,038	19.36	1,613	15.48	1,613
23.36	1,606	C402_0020	MR200/	180	AW200/014	1.968	845	19.36	1,606	15.48	1,606
29.97	2,061	C402_0020	MR250/	180, 210	AW250/102	1.968	845	26.44	2,194	22.78	2,364
36.44	2,516	C502_0020	MR250/	180, 210	AW250/102	1.976	1,038	30.19	2,516	24.15	2,516
46.33	3,199	C502_0020	MR300/	180, 210, 250, 280	AW300/110	1.976	1,038	40.87	3,406	35.22	3,669
795 RPM Output (Approximate)								**660 RPM**		**525 RPM**	
2.78	211	C102_0022	MR140/	050	AW140/010	2.177	241	2.30	211	1.84	211
7.71	586	C102_0022	MR160/	050, 140	AW160/012	2.177	241	6.80	624	5.86	672
7.71	586	C102_0022	MR200/	180	AW200/014	2.177	241	6.80	624	5.86	672
9.84	751	C202_0022	MR160/	050, 140	AW160/012	2.184	340	8.15	751	6.52	751
11.74	896	C202_0022	MR200/	180	AW200/014	2.184	340	10.36	954	8.93	1,028
23.36	1,813	C402_0022	MR200/	180	AW200/014	2.221	871	19.36	1,813	15.48	1,813
23.36	1,834	C502_0022	MR200/	180	AW200/014	2.247	1,072	19.36	1,834	15.48	1,834
27.65	2,146	C402_0022	MR250/	180, 210	AW250/102	2.221	871	24.39	2,285	21.02	2,461
36.44	2,861	C502_0022	MR250/	180, 210	AW250/102	2.247	1,072	30.19	2,861	24.15	2,861
42.53	3,339	C502_0022	MR300/	180, 210, 250, 280	AW300/110	2.247	1,072	37.51	3,555	32.33	3,829
730 RPM Output (Approximate)								**606 RPM**		**485 RPM**	
7.23	605	C102_0024	MR160/	050, 140	AW160/012	2.394	247	6.38	644	5.50	694
7.23	605	C102_0024	MR200/	180	AW200/014	2.394	247	6.38	644	5.50	694
705 RPM Output (Approximate)								**585 RPM**		**470 RPM**	
9.84	863	C302_0025	MR160/	050, 140	AW160/012	2.510	523	8.15	863	6.52	863
9.84	851	C202_0025	MR160/	050, 140	AW160/012	2.475	351	8.15	851	6.52	851
10.80	934	C202_0025	MR200/	180	AW200/014	2.475	351	9.53	995	8.18	1,068
17.52	1,537	C302_0025	MR200/	180	AW200/014	2.510	523	15.46	1,636	13.32	1,762
17.52	1,537	C302_0025	MR250/	180, 210	AW250/102	2.510	523	15.46	1,636	13.32	1,762
23.36	2,005	C402_0025	MR200/	180	AW200/014	2.456	893	19.36	2,005	15.48	2,005
25.86	2,219	C402_0025	MR250/	180, 210	AW250/102	2.456	893	22.81	2,362	19.66	2,545
35.39	3,030	C502_0025	MR250/	180, 210	AW250/102	2.450	1,095	29.32	3,030	23.46	3,030
40.14	3,436	C502_0025	MR300/	180, 210, 250, 280	AW300/110	2.450	1,095	35.41	3,659	30.52	3,941

* For thermal HP capacity, see rating below.

Base Module	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

Housing Styles

N — Foot Mounted **F** — Round Flange **Q** — Square Flange **G** — Tapped Holes



Housing Style Q is available on special order.

NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

"C" Series – Concentric Helical MGS Reducer – Selection Data

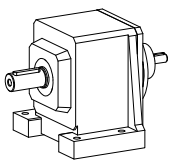
NOTE: [1] Complete Base Module Part Number by adding Housing Style. Example: C302**N**0560.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
680 RPM Output (Approximate)								**544 RPM**		**450 RPM**	
6.88	620	C102_0026	MR160/	050, 140	AW160/012	2.582	252	6.07	661	5.23	712
6.88	620	C102_0026	MR200/	180	AW200/014	2.582	252	6.07	661	5.23	712
650 RPM Output (Approximate)								**537 RPM**		**430 RPM**	
9.84	930	C302_0027	MR160/	050, 140	AW160/012	2.705	533	8.15	930	6.52	930
9.84	925	C202_0027	MR160/	050, 140	AW160/012	2.690	358	8.15	925	6.52	925
10.22	961	C202_0027	MR200/	180	AW200/014	2.690	358	9.02	1,023	7.77	1,102
16.67	1,575	C302_0027	MR200/	180	AW200/014	2.705	533	14.70	1,677	12.67	1,807
16.67	1,575	C302_0027	MR250/	180, 210	AW250/102	2.705	533	14.70	1,677	12.67	1,807
630 RPM Output (Approximate)								**520 RPM**		**418 RPM**	
2.50	242	C002_0028	MR140/	050	AW140/010	2.769	180	2.07	242	1.66	242
3.28	318	C002_0028	MR160/	050, 140	AW160/012	2.769	180	2.90	338	2.50	364
23.36	2,275	C502_0028	MR200/	180	AW200/014	2.787	1,131	19.36	2,275	15.48	2,275
23.36	2,262	C402_0028	MR200/	180	AW200/014	2.771	921	19.36	2,262	15.48	2,262
23.86	2,310	C402_0028	MR250/	180, 210	AW250/102	2.771	921	21.05	2,459	18.14	2,649
35.39	3,447	C502_0028	MR250/	180, 210	AW250/102	2.787	1,131	29.32	3,447	23.46	3,447
36.84	3,587	C502_0028	MR300/	180, 210, 250, 280	AW300/110	2.787	1,131	32.50	3,819	28.00	4,114
565 RPM Output (Approximate)								**470 RPM**		**375 RPM**	
2.46	264	C002_0031	MR140/	050	AW140/010	3.067	185	2.04	264	1.63	264
2.61	282	C102_0031	MR140/	050	AW140/010	3.091	263	2.16	282	1.73	282
3.07	329	C002_0031	MR160/	050, 140	AW160/012	3.067	185	2.70	350	2.33	377
6.10	659	C102_0031	MR160/	050, 140	AW160/012	3.091	263	5.38	701	4.64	756
6.10	659	C102_0031	MR200/	180	AW200/014	3.091	263	5.38	701	4.64	756
9.29	1,007	C202_0031	MR160/	050, 140	AW160/012	3.103	371	8.15	1,066	6.52	1,066
9.29	1,007	C202_0031	MR200/	180	AW200/014	3.103	371	8.20	1,073	7.06	1,155
9.84	1,069	C302_0031	MR160/	050, 140	AW160/012	3.110	552	8.15	1,069	6.52	1,069
15.19	1,650	C302_0031	MR200/	180	AW200/014	3.110	552	13.40	1,757	11.55	1,893
15.19	1,650	C302_0031	MR250/	180, 210	AW250/102	3.110	552	13.40	1,757	11.55	1,893
22.14	2,398	C402_0031	MR200/	180	AW200/014	3.099	947	19.36	2,530	15.48	2,530
22.14	2,398	C402_0031	MR250/	180, 210	AW250/102	3.099	947	19.53	2,553	16.83	2,750
23.36	2,512	C502_0031	MR200/	180	AW200/014	3.077	1,159	19.36	2,512	15.48	2,512
34.24	3,682	C502_0031	MR250/	180, 210	AW250/102	3.077	1,159	28.37	3,682	22.70	3,682
34.24	3,682	C502_0031	MR300/	180, 210, 250, 280	AW300/110	3.077	1,159	28.37	3,682	22.70	3,682
525 RPM Output (Approximate)								**435 RPM**		**350 RPM**	
2.46	285	C002_0033	MR140/	050	AW140/010	3.318	189	2.04	285	1.63	285
2.61	304	C102_0033	MR140/	050	AW140/010	3.334	268	2.16	304	1.73	304
2.91	337	C002_0033	MR160/	050, 140	AW160/012	3.318	189	2.57	359	2.21	387
5.80	676	C102_0033	MR160/	050, 140	AW160/012	3.334	268	5.12	719	4.41	775
5.80	676	C102_0033	MR200/	180	AW200/014	3.334	268	5.12	719	4.41	775

Part No. Explanation

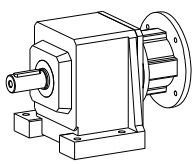
C 3 0 2 N 0620 AW 140 / 012

- C — Concentric Helical
- 3 — Unit No.
- 0 — Generation No.
- 2 — No. of Gear Reductions
- N — Housing Style
- 0620 — Ratio (0620 = 62.0:1)
- AW — Input Shaft
- 140 — Size
- 012 — Shaft Dia. ($^{1}/_{16}$ in.; example—012=$^{12}/_{16}$ or $^{3}/_{4}$)



C 3 0 2 N 0620 MR 160 / 140

- C — Concentric Helical
- 3 — Unit No.
- 0 — Generation No.
- 2 — No. of Reductions
- N — Housing Style
- 0620 — Ratio (0620 = 62.0:1)
- MR — Motor Adapter
- 160 — Size
- 140 — Motor Frame Size (140=143/145TC)



Mounting position must be specified when ordering.

"C" Series – Concentric Helical MGS Reducer – Selection Data

Selection Procedure:

. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
520 RPM Output (Approximate)								**430 RPM**		**345 RPM**	
8.79	1,036	C202_0034	MR160/	050, 140	AW160/012	3.373	379	7.75	1,103	6.52	1,159
8.79	1,036	C202_0034	MR200/	180	AW200/014	3.373	379	7.75	1,103	6.68	1,188
9.84	1,152	C302_0034	MR160/	050, 140	AW160/012	3.352	562	8.15	1,152	6.52	1,152
14.45	1,692	C302_0034	MR200/	180	AW200/014	3.352	562	12.74	1,802	10.98	1,941
14.45	1,692	C302_0034	MR250/	180, 210	AW250/102	3.352	562	12.74	1,802	10.98	1,941
500 RPM Output (Approximate)								**415 RPM**		**330 RPM**	
20.43	2,496	C402_0035	MR200/	180	AW200/014	3.497	976	18.02	2,658	15.48	2,854
20.43	2,496	C402_0035	MR250/	180, 210	AW250/102	3.497	976	18.02	2,658	15.53	2,863
23.36	2,858	C502_0035	MR200/	180	AW200/014	3.501	1,198	19.36	2,858	15.48	2,858
31.64	3,871	C502_0035	MR250/	180, 210	AW250/102	3.501	1,198	27.91	4,121	22.70	4,189
31.64	3,871	C502_0035	MR300/	180, 210, 250, 280	AW300/110	3.501	1,198	27.91	4,121	22.70	4,189
450 RPM Output (Approximate)								**375 RPM**		**300 RPM**	
2.37	318	C002_0038	MR140/	050	AW140/010	3.835	196	1.97	318	1.57	318
2.52	342	C102_0039	MR140/	050	AW140/010	3.883	279	2.09	342	1.67	342
2.64	354	C002_0038	MR160/	050, 140	AW160/012	3.835	196	2.33	377	2.01	406
5.24	711	C102_0039	MR160/	050, 140	AW160/012	3.883	279	4.62	757	3.98	815
5.24	711	C102_0039	MR200/	180	AW200/014	3.883	279	4.62	757	3.98	815
7.99	1,086	C202_0039	MR160/	050, 140	AW160/012	3.888	393	7.05	1,156	6.08	1,246
7.99	1,086	C202_0039	MR200/	180	AW200/014	3.888	393	7.05	1,156	6.08	1,246
9.84	1,338	C402_0039	MR160/	050, 140	AW160/012	3.894	1,002	8.15	1,338	6.52	1,338
9.84	1,333	C302_0039	MR160/	050, 140	AW160/012	3.878	583	8.15	1,333	6.52	1,333
13.11	1,776	C302_0039	MR200/	180	AW200/014	3.878	583	11.56	1,891	9.97	2,037
13.11	1,776	C302_0039	MR250/	180, 210	AW250/102	3.878	583	11.56	1,891	9.97	2,037
19.02	2,587	C402_0039	MR200/	180	AW200/014	3.894	1,002	16.78	2,755	14.46	2,967
19.02	2,587	C402_0039	MR250/	180, 210	AW250/102	3.894	1,002	16.78	2,755	14.46	2,967
23.36	3,156	C502_0039	MR200/	180	AW200/014	3.867	1,228	19.36	3,156	15.48	3,156
29.61	4,001	C502_0039	MR250/	180, 210	AW250/102	3.867	1,228	26.12	4,260	21.90	4,464
29.61	4,001	C502_0039	MR300/	180, 210, 250, 280	AW300/110	3.867	1,228	26.12	4,260	21.90	4,464
420 RPM Output (Approximate) Continued Next Page								**345 RPM**		**275 RPM**	
2.37	344	C002_0041	MR140/	050	AW140/010	4.149	199	1.97	344	1.57	344
2.51	363	C002_0041	MR160/	050, 140	AW160/012	4.149	199	2.21	387	1.91	417
2.52	369	C102_0042	MR140/	050	AW140/010	4.189	284	2.09	369	1.67	369
4.98	729	C102_0042	MR160/	050, 140	AW160/012	4.189	284	4.39	776	3.79	836
4.98	729	C102_0042	MR200/	180	AW200/014	4.189	284	4.39	776	3.79	836
7.56	1,117	C202_0042	MR160/	050, 140	AW160/012	4.226	401	6.67	1,189	5.75	1,281
7.56	1,117	C202_0042	MR200/	180	AW200/014	4.226	401	6.67	1,189	5.75	1,281
9.84	1,436	C302_0042	MR160/	050, 140	AW160/012	4.179	594	8.15	1,436	6.52	1,436
12.47	1,821	C302_0042	MR200/	180	AW200/014	4.179	594	11.00	1,939	9.48	2,089
12.47	1,821	C302_0042	MR250/	180, 210	AW250/102	4.179	594	11.00	1,939	9.48	2,089
23.36	3,415	C612_0042	MR200/	180	AW200/014	4.184	1,683	19.36	3,415	15.48	3,415

* For thermal HP capacity, see rating below.

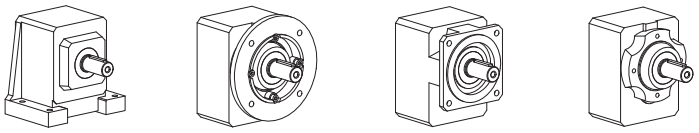
Base Module	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

Housing Styles

N — Foot Mounted **F** — Round Flange **Q** — Square Flange **G** — Tapped Holes



Housing Style Q is available on special order.

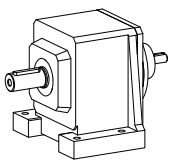
"C" Series – Concentric Helical MGS Reducer – Selection Data

NOTE: [1] Complete Base Module Part Number by adding Housing Style. Example: C302**N**0560.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

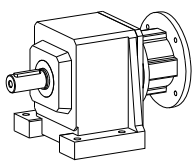
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
420 RPM Output (Approximate) Continued								**345 RPM**		**275 RPM**	
37.73	5,517	C612_0042	MR250/	180, 210	AW250/102	4.184	1,683	31.27	5,517	25.01	5,517
52.15	7,625	C612_0042	MR300/	180, 210, 250, 280	AW300/110	4.184	1,683	46.01	8,118	39.65	8,745
79.57	11,747	C812_0042	MR300/	180, 210, 250, 280	AW300/110	4.225	3,164	65.93	11,747	52.74	11,747
122.95	18,151	C812_0042	MR350/	320, 360	AW350/202	4.225	3,164	101.87	18,151	81.50	18,151
122.95	17,816	C912_0041	MR350/	320, 360	AW350/202	4.147	3,884	101.87	17,816	81.50	17,816
410 RPM Output (Approximate)								**340 RPM**		**270 RPM**	
23.36	3,476	C712_0043	MR200/	180	AW200/014	4.259	2,325	19.36	3,476	15.48	3,476
39.62	5,895	C712_0043	MR250/	180, 210	AW250/102	4.259	2,325	32.82	5,895	26.26	5,895
75.70	11,266	C712_0043	MR300/	180, 210, 250, 280	AW300/110	4.259	2,325	62.72	11,266	50.18	11,266
400 RPM Output (Approximate)								**330 RPM**		**265 RPM**	
9.84	1,510	C402_0044	MR160/	050, 140	AW160/012	4.394	1,033	8.15	1,510	6.52	1,510
17.54	2,694	C402_0044	MR200/	180	AW200/014	4.394	1,033	15.48	2,868	13.34	3,089
17.54	2,694	C402_0044	MR250/	180, 210	AW250/102	4.394	1,033	15.48	2,868	13.34	3,089
23.36	3,591	C502_0044	MR200/	180	AW200/014	4.399	1,268	19.36	3,591	15.48	3,591
27.17	4,177	C502_0044	MR250/	180, 210	AW250/102	4.399	1,268	23.97	4,447	20.66	4,790
27.17	4,177	C502_0044	MR300/	180, 210, 250, 280	AW300/110	4.399	1,268	23.97	4,447	20.66	4,790
375 RPM Output (Approximate)								**310 RPM**		**250 RPM**	
2.30	376	C002_0047	MR140/	050	AW140/010	4.680	206	1.90	376	1.52	376
2.31	378	C002_0047	MR160/	050, 140	AW160/012	4.680	206	2.04	403	1.76	434
2.44	397	C102_0047	MR140/	050	AW140/010	4.658	292	2.02	397	1.62	397
4.64	755	C102_0047	MR160/	050, 140	AW160/012	4.658	292	4.09	804	3.53	866
4.64	755	C102_0047	MR200/	180	AW200/014	4.658	292	4.09	804	3.53	866
7.08	1,154	C202_0047	MR160/	050, 140	AW160/012	4.667	411	6.24	1,229	5.38	1,324
7.08	1,154	C202_0047	MR200/	180	AW200/014	4.667	411	6.24	1,229	5.38	1,324
9.84	1,591	C502_0046	MR160/	050, 140	AW160/012	4.629	1,284	8.15	1,591	6.52	1,591
9.84	1,607	C302_0047	MR160/	050, 140	AW160/012	4.675	611	8.15	1,607	6.52	1,607
9.84	1,609	C402_0047	MR160/	050, 140	AW160/012	4.682	1,050	8.15	1,609	6.52	1,609
11.57	1,891	C302_0047	MR200/	180	AW200/014	4.675	611	10.21	2,013	8.80	2,168
11.57	1,891	C302_0047	MR250/	180, 210	AW250/102	4.675	611	10.21	2,013	8.80	2,168
16.82	2,751	C402_0047	MR200/	180	AW200/014	4.682	1,050	14.84	2,929	12.79	3,155
16.82	2,751	C402_0047	MR250/	180, 210	AW250/102	4.682	1,050	14.84	2,929	12.79	3,155
22.97	3,715	C502_0046	MR200/	180	AW200/014	4.629	1,284	19.36	3,778	15.48	3,778
26.27	4,248	C502_0046	MR250/	180, 210	AW250/102	4.629	1,284	23.17	4,523	19.97	4,872
26.27	4,248	C502_0046	MR300/	180, 210, 250, 280	AW300/110	4.629	1,284	23.17	4,523	19.97	4,872

Part No. Explanation

C 3 0 2 N 0620 AW 140 / 012
- Concentric Helical
- Unit No.
- Generation No.
- No. of Gear Reductions
- Housing Style
- Ratio (0620 = 62.0:1)
- Input Shaft
- Size
- Shaft Dia. ($^{1}/_{16}$ in.; example—012=$^{12}/_{16}$ or $^{3}/_{4}$)



C 3 0 2 N 0620 MR 160 / 140
- Concentric Helical
- Unit No.
- Generation No.
- No. of Reductions
- Housing Style
- Ratio (0620 = 62.0:1)
- Motor Adapter
- Size
- Motor Frame Size (140=143/145TC)



Mounting position must be specified when ordering.

"C" Series – Concentric Helical MGS Reducer – Selection Data

Selection Procedure:

. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

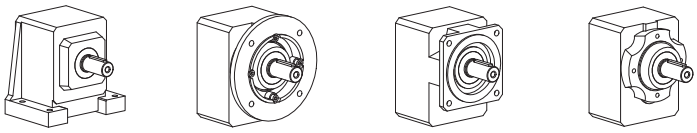
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
345 RPM Output (Approximate)								**285 RPM**		**230 RPM**	
2.19	388	C002_0051	MR140/	050	AW140/010	5.063	210	1.90	406	1.52	406
2.19	388	C002_0051	MR160/	050, 140	AW160/012	5.063	210	1.94	413	1.67	445
2.44	428	C102_0050	MR140/	050	AW140/010	5.025	297	2.02	428	1.62	428
4.41	775	C102_0050	MR160/	050, 140	AW160/012	5.025	297	3.89	825	3.35	888
4.41	775	C102_0050	MR200/	180	AW200/014	5.025	297	3.89	825	3.35	888
6.70	1,187	C202_0051	MR160/	050, 140	AW160/012	5.072	420	5.91	1,264	5.09	1,361
6.70	1,187	C202_0051	MR200/	180	AW200/014	5.072	420	5.91	1,264	5.09	1,361
9.84	1,731	C302_0050	MR160/	050, 140	AW160/012	5.037	623	8.15	1,731	6.52	1,731
11.01	1,938	C302_0050	MR200/	180	AW200/014	5.037	623	9.71	2,064	8.37	2,223
11.01	1,938	C302_0050	MR250/	180, 210	AW250/102	5.037	623	9.71	2,064	8.37	2,223
23.36	4,149	C612_0051	MR200/	180	AW200/014	5.083	1,767	19.36	4,149	15.48	4,149
36.77	6,531	C612_0051	MR250/	180, 210	AW250/102	5.083	1,767	30.47	6,531	24.37	6,531
45.81	8,136	C612_0051	MR300/	180, 210, 250, 280	AW300/110	5.083	1,767	40.41	8,662	34.82	9,331
330 RPM Output (Approximate)								**275 RPM**		**220 RPM**	
9.84	1,810	C502_0053	MR160/	050, 140	AW160/012	5.265	1,326	8.15	1,810	6.52	1,810
9.84	1,816	C402_0053	MR160/	050, 140	AW160/012	5.284	1,082	8.15	1,816	6.52	1,816
15.51	2,865	C402_0053	MR200/	180	AW200/014	5.284	1,082	13.69	3,050	11.79	3,285
15.51	2,865	C402_0053	MR250/	180, 210	AW250/102	5.284	1,082	13.69	3,050	11.79	3,285
22.97	4,226	C502_0053	MR200/	180	AW200/014	5.265	1,326	19.36	4,298	15.48	4,298
23.36	4,335	C712_0053	MR200/	180	AW200/014	5.311	2,457	19.36	4,335	15.48	4,335
24.11	4,435	C502_0053	MR250/	180, 210	AW250/102	5.265	1,326	21.27	4,722	18.33	5,086
24.11	4,435	C502_0053	MR300/	210	AW300/110	5.265	1,326	21.27	4,722	18.33	5,086
38.46	7,137	C712_0053	MR250/	180, 210	AW250/102	5.311	2,457	31.87	7,137	25.49	7,137
73.49	13,638	C712_0053	MR300/	180, 210, 250, 280	AW300/110	5.311	2,457	60.89	13,638	48.71	13,638
325 RPM Output (Approximate)								**270 RPM**		**215 RPM**	
77.01	14,495	C812_0054	MR300/	180, 210, 250, 280	AW300/110	5.387	3,362	63.81	14,495	51.05	14,495
118.49	22,304	C812_0054	MR350/	320, 360	AW350/202	5.387	3,362	101.87	23,143	81.50	23,143
300 RPM Output (Approximate) Continued Next Page								**250 RPM**		**200 RPM**	
2.00	407	C002_0058	MR140/	050	AW140/010	5.824	217	1.76	433	1.46	450
2.00	407	C002_0058	MR160/	050, 140	AW160/012	5.824	217	1.76	433	1.52	467
2.35	482	C102_0059	MR140/	050	AW140/010	5.875	309	1.94	482	1.56	482
2.42	490	C202_0058	MR140/	050	AW140/010	5.791	434	2.01	490	1.61	490
3.98	816	C102_0059	MR160/	050, 140	AW160/012	5.875	309	3.51	869	3.02	936
3.98	816	C102_0059	MR200/	180	AW200/014	5.875	309	3.51	869	3.02	936
6.13	1,240	C202_0058	MR160/	050, 140	AW160/012	5.791	434	5.41	1,321	4.66	1,423
6.13	1,240	C202_0058	MR200/	180	AW200/014	5.791	434	5.41	1,321	4.66	1,423
8.89	1,820	C302_0059	MR160/	050, 140	AW160/012	5.859	647	7.84	1,938	6.52	2,014
9.84	2,011	C502_0059	MR160/	050, 140	AW160/012	5.850	1,361	8.15	2,011	6.52	2,011
9.84	2,025	C402_0059	MR160/	050, 140	AW160/012	5.891	1,112	8.15	2,025	6.52	2,025

* For thermal HP capacity, see rating below.

Base Module	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

Housing Styles

N — Foot Mounted **F** — Round Flange **Q** — Square Flange **G** — Tapped Holes



Housing Style Q is available on special order.

NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

"C" Series – Concentric Helical MGS Reducer – Selection Data

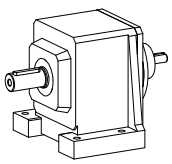
NOTE: [1] Complete Base Module Part Number by adding Housing Style. Example: C302**N**0560.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
300 RPM Output (Approximate) Continued								**250 RPM**		**200 RPM**	
9.96	2,038	C302_0059	MR200/	180	AW200/014	5.859	647	8.78	2,170	7.57	2,338
9.96	2,038	C302_0059	MR250/	180, 210	AW250/102	5.859	647	8.78	2,170	7.57	2,338
14.43	2,970	C402_0059	MR200/	180	AW200/014	5.891	1,112	12.73	3,162	10.97	3,407
14.43	2,970	C402_0059	MR250/	180, 210	AW250/102	5.891	1,112	12.73	3,162	10.97	3,407
19.88	4,064	C502_0059	MR200/	180	AW200/014	5.850	1,361	17.54	4,327	15.12	4,661
22.47	4,593	C502_0059	MR250/	180, 210	AW250/102	5.850	1,361	19.82	4,890	17.08	5,268
22.47	4,593	C502_0059	MR300/	180, 210, 250, 280	AW300/110	5.850	1,361	19.82	4,890	17.08	5,268
275 RPM Output (Approximate)								**230 RPM**		**185 RPM**	
1.90	418	C002_0063	MR140/	050	AW140/010	6.300	221	1.67	445	1.44	479
1.90	418	C002_0063	MR160/	050, 140	AW160/012	6.300	221	1.67	445	1.44	479
2.35	520	C102_0063	MR140/	050	AW140/010	6.338	315	1.94	520	1.56	520
2.42	533	C202_0063	MR140/	050	AW140/010	6.295	443	2.01	533	1.61	533
3.78	837	C102_0063	MR160/	050, 140	AW160/012	6.338	315	3.33	891	2.87	960
3.78	837	C102_0063	MR200/	180	AW200/014	6.338	315	3.33	891	2.87	960
5.80	1,275	C202_0063	MR160/	050, 140	AW160/012	6.295	443	5.12	1,358	4.41	1,463
5.80	1,275	C202_0063	MR200/	180	AW200/014	6.295	443	5.12	1,358	4.41	1,463
8.89	1,962	C302_0063	MR160/	050, 140	AW160/012	6.314	659	7.84	2,089	6.52	2,170
9.47	2,090	C302_0063	MR200/	180	AW200/014	6.314	659	8.36	2,225	7.20	2,397
9.47	2,090	C302_0063	MR250/	180, 210	AW250/102	6.314	659	8.36	2,225	7.20	2,397
265 RPM Output (Approximate)								**220 RPM**		**175 RPM**	
9.84	2,285	C402_0066	MR160/	140	AW160/012	6.648	1,146	8.15	2,285	6.52	2,285
9.84	2,287	C502_0067	MR160/	050, 140	AW160/012	6.655	1,406	8.15	2,287	6.52	2,287
13.31	3,092	C402_0066	MR200/	180	AW200/014	6.648	1,146	11.74	3,292	10.12	3,547
13.31	3,092	C402_0066	MR250/	180, 210	AW250/102	6.648	1,146	11.74	3,292	10.12	3,547
19.88	4,624	C502_0067	MR200/	180	AW200/014	6.655	1,406	17.54	4,923	15.12	5,303
20.62	4,795	C502_0067	MR250/	180, 210	AW250/102	6.655	1,406	18.19	5,105	15.68	5,499
20.62	4,795	C502_0067	MR300/	180, 210, 250, 280	AW300/110	6.655	1,406	18.19	5,105	15.68	5,499
23.36	5,320	C612_0065	MR200/	180	AW200/014	6.518	1,881	19.36	5,320	15.48	5,320
35.40	8,062	C612_0065	MR250/	180, 210	AW250/102	6.518	1,881	29.33	8,062	23.47	8,062
38.81	8,839	C612_0065	MR300/	180, 210, 250, 280	AW300/110	6.518	1,881	34.24	9,411	29.50	10,137
74.64	17,397	C812_0067	MR300/	180, 210, 250, 280	AW300/110	6.670	3,547	61.85	17,397	49.48	17,397
102.76	23,950	C812_0067	MR350/	320, 360	AW350/202	6.670	3,547	90.66	25,500	78.12	27,469
255 RPM Output (Approximate)								**210 RPM**		**170 RPM**	
23.36	5,560	C712_0068	MR200/	180	AW200/014	6.811	2,615	19.36	5,560	15.48	5,560
37.06	8,821	C712_0068	MR250/	180, 210	AW250/102	6.811	2,615	30.71	8,821	24.57	8,821
62.38	14,846	C712_0068	MR300/	180, 210, 250, 280	AW300/110	6.811	2,615	55.03	15,806	46.95	16,855

Part No. Explanation

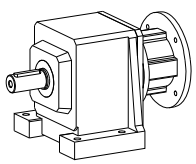
C 3 0 2 N 0620 AW 140 / 012

- C — Concentric Helical
- 3 — Unit No.
- 0 — Generation No.
- 2 — No. of Gear Reductions
- N — Housing Style
- 0620 — Ratio (0620 = 62.0:1)
- AW — Input Shaft
- 140 — Size
- 012 — Shaft Dia. ($^{1}/_{16}$ in.; example—012=$^{12}/_{16}$ or $^{3}/_{4}$)



C 3 0 2 N 0620 MR 160 / 140

- C — Concentric Helical
- 3 — Unit No.
- 0 — Generation No.
- 2 — No. of Reductions
- N — Housing Style
- 0620 — Ratio (0620 = 62.0:1)
- MR — Motor Adapter
- 160 — Size
- 140 — Motor Frame Size (140=143/145TC)



Mounting position must be specified when ordering.

"C" Series – Concentric Helical MGS Reducer – Selection Data

Selection Procedure:

. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

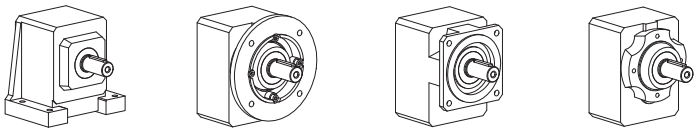
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
245 RPM Output (Approximate)								**200 RPM**		**160 RPM**	
23.36	5,804	C612_0071	MR200/	180	AW200/014	7.111	1,922	19.36	5,804	15.48	5,804
23.36	6,005	C712_0074	MR200/	180	AW200/014	7.357	2,665	19.36	6,005	15.48	6,005
36.62	9,099	C612_0071	MR250/	180, 210	AW250/102	7.111	1,922	30.47	9,136	24.37	9,136
36.62	9,099	C612_0071	MR300/	180, 210, 250, 280	AW300/110	7.111	1,922	32.31	9,688	27.84	10,436
38.46	9,886	C712_0074	MR250/	180, 210	AW250/102	7.357	2,665	31.87	9,886	25.49	9,886
59.25	15,232	C712_0074	MR300/	180, 210, 250, 280	AW300/110	7.357	2,665	52.27	16,218	45.05	17,470
225 RPM Output (Approximate)								**185 RPM**		**150 RPM**	
1.66	447	C002_0077	MR140/	050	AW140/010	7.714	233	1.46	476	1.26	512
1.66	447	C002_0077	MR160/	050, 140	AW160/012	7.714	233	1.46	476	1.26	512
2.23	607	C102_0078	MR140/	050	AW140/010	7.796	332	1.85	607	1.48	607
2.29	625	C202_0078	MR140/	050	AW140/010	7.800	467	1.90	625	1.52	625
3.29	897	C102_0078	MR160/	050, 140	AW160/012	7.796	332	2.90	955	2.50	1,029
3.29	897	C102_0078	MR200/	180	AW200/014	7.796	332	2.90	955	2.50	1,029
5.03	1,370	C202_0078	MR160/	050, 140	AW160/012	7.800	467	4.43	1,458	3.82	1,571
5.03	1,370	C202_0078	MR200/	180	AW200/014	7.800	467	4.43	1,458	3.82	1,571
6.98	1,912	C302_0078	MR160/	050, 140	AW160/012	7.841	696	6.16	2,035	5.30	2,193
8.20	2,246	C302_0078	MR200/	180	AW200/014	7.841	696	7.23	2,392	6.23	2,576
8.20	2,246	C302_0078	MR250/	180, 210	AW250/102	7.841	696	7.23	2,392	6.23	2,576
9.69	2,630	C502_0078	MR160/	050, 140	AW160/012	7.763	1,461	8.15	2,668	6.52	2,668
16.28	4,416	C502_0078	MR200/	180	AW200/014	7.763	1,461	14.36	4,702	12.38	5,065
18.61	5,047	C502_0078	MR250/	180, 210	AW250/102	7.763	1,461	16.42	5,374	14.15	5,789
18.61	5,047	C502_0078	MR300/	180, 210, 250, 280	AW300/110	7.763	1,461	16.42	5,374	14.15	5,789
210 RPM Output (Approximate) Continued Next Page								**175 RPM**		**140 RPM**	
1.85	531	C002_0082	MR140/	050	AW140/010	8.235	237	1.53	531	1.22	531
1.85	531	C002_0082	MR160/	050, 140	AW160/012	8.235	237	1.53	531	1.22	531
2.61	754	C102_0083	MR140/	050	AW140/010	8.263	337	2.16	754	1.73	754
3.68	1,063	C102_0083	MR160/	050, 140	AW160/012	8.263	337	3.05	1,063	2.44	1,063
3.68	1,063	C102_0083	MR200/	180	AW200/014	8.263	337	3.05	1,063	2.44	1,063
6.18	1,770	C202_0082	MR160/	050, 140	AW160/012	8.190	473	5.13	1,772	4.10	1,772
6.18	1,770	C202_0082	MR200/	180	AW200/014	8.190	473	5.13	1,772	4.10	1,772
9.57	2,758	C302_0083	MR160/	050, 140	AW160/012	8.250	704	8.15	2,835	6.52	2,835
9.57	2,758	C302_0083	MR200/	180	AW200/014	8.250	704	8.44	2,936	7.13	3,100
9.57	2,758	C302_0083	MR250/	180, 210	AW250/102	8.250	704	8.44	2,936	7.13	3,100
16.01	4,634	C402_0083	MR200/	180	AW200/014	8.285	1,211	13.94	4,872	11.16	4,872
16.01	4,634	C402_0083	MR250/	180, 210	AW250/102	8.285	1,211	13.94	4,872	11.16	4,872
23.36	6,685	C612_0082	MR200/	180	AW200/014	8.190	1,991	19.36	6,685	15.48	6,685
23.36	6,745	C502_0083	MR200/	180	AW200/014	8.263	1,484	19.36	6,745	15.48	6,745
24.05	6,945	C502_0083	MR250/	180, 210	AW250/102	8.263	1,484	20.34	7,086	16.27	7,086
24.05	6,945	C502_0083	MR300/	180, 210, 250, 280	AW300/110	8.263	1,484	20.34	7,086	16.27	7,086
33.33	9,538	C612_0082	MR250/	180, 210	AW250/102	8.190	1,991	28.34	9,790	22.68	9,790

* For thermal HP capacity, see rating below.

Base Module	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

Housing Styles

N — Foot Mounted **F** — Round Flange **Q** — Square Flange **G** — Tapped Holes



Housing Style Q is available on special order.

NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

"C" Series – Concentric Helical MGS Reducer – Selection Data

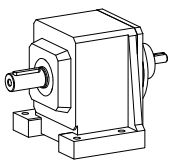
NOTE: [1] Complete Base Module Part Number by adding Housing Style. Example: C302**N**0560.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
210 RPM Output (Approximate) Continued								**175 RPM**		**140 RPM**	
33.33	9,538	C612_0082	MR300/	180, 210, 250, 280	AW300/110	8.190	1,991	29.40	10,155	25.34	10,939
122.95	35,606	C912_0083	MR350/	320, 360	AW350/202	8.288	4,618	101.87	35,606	81.50	35,606
205 RPM Output (Approximate)								**170 RPM**		**135 RPM**	
23.36	6,930	C712_0085	MR200/	180	AW200/014	8.490	2,763	19.36	6,930	15.48	6,930
35.72	10,597	C712_0085	MR250/	180, 210	AW250/102	8.490	2,763	29.60	10,597	23.68	10,597
53.86	15,977	C712_0085	MR300/	180, 210, 250, 280	AW300/110	8.490	2,763	47.51	17,011	40.94	18,325
200 RPM Output (Approximate)								**160 RPM**		**130 RPM**	
74.64	23,586	C812_0090	MR300/	180, 210, 250, 280	AW300/110	9.043	3,827	61.85	23,586	49.48	23,586
83.89	26,508	C812_0090	MR350/	320, 360	AW350/202	9.043	3,827	74.01	28,223	63.78	30,402
190 RPM Output (Approximate)								**155 RPM**		**125 RPM**	
1.65	531	C002_0092	MR140/	050	AW140/010	9.228	244	1.37	531	1.09	531
1.65	531	C002_0092	MR160/	050, 140	AW160/012	9.228	244	1.37	531	1.09	531
2.61	851	C102_0093	MR140/	050	AW140/010	9.326	347	2.16	851	1.73	851
3.26	1,063	C102_0093	MR160/	050, 140	AW160/012	9.326	347	2.70	1,063	2.16	1,063
3.26	1,063	C102_0093	MR200/	180	AW200/014	9.326	347	2.70	1,063	2.16	1,063
5.40	1,772	C202_0094	MR160/	050, 140	AW160/012	9.387	489	4.48	1,772	3.58	1,772
5.40	1,772	C202_0094	MR200/	180	AW200/014	9.387	489	4.48	1,772	3.58	1,772
8.83	2,871	C302_0093	MR160/	050, 140	AW160/012	9.310	726	7.79	3,057	6.32	3,100
8.83	2,871	C302_0093	MR200/	180	AW200/014	9.310	726	7.79	3,057	6.32	3,100
8.83	2,871	C302_0093	MR250/	180	AW250/102	9.310	726	7.79	3,057	6.32	3,100
14.86	4,809	C402_0093	MR200/	180	AW200/014	9.261	1,245	12.47	4,872	9.98	4,872
14.86	4,809	C402_0093	MR250/	180, 210	AW250/102	9.261	1,245	12.47	4,872	9.98	4,872
21.90	7,086	C502_0093	MR200/	180	AW200/014	9.261	1,527	18.14	7,086	14.52	7,086
21.90	7,086	C502_0093	MR250/	180, 210	AW250/102	9.261	1,527	18.14	7,086	14.52	7,086
21.90	7,086	C502_0093	MR300/	180, 210, 250, 280	AW300/110	9.261	1,527	18.14	7,086	14.52	7,086
23.36	7,701	C712_0094	MR200/	180	AW200/014	9.435	2,837	19.36	7,701	15.48	7,701
37.06	12,219	C712_0094	MR250/	180, 210	AW250/102	9.435	2,837	30.71	12,219	24.57	12,219
50.20	16,549	C712_0094	MR300/	180, 210, 250, 280	AW300/110	9.435	2,837	44.28	17,620	35.62	17,716
175 RPM Output (Approximate)								**145 RPM**		**115 RPM**	
23.36	8,253	C612_0100	MR200/	180	AW200/014	10.111	2,099	19.36	8,253	15.48	8,253
23.36	8,091	C712_0099	MR200/	180	AW200/014	9.912	2,872	19.36	8,091	15.48	8,091
28.96	10,232	C612_0100	MR250/	180, 210	AW250/102	10.111	2,099	25.55	10,894	21.87	11,657
28.96	10,232	C612_0100	MR300/	180, 210, 250, 280	AW300/110	10.111	2,099	25.55	10,894	22.02	11,735
34.84	12,068	C712_0099	MR250/	180, 210	AW250/102	9.912	2,872	28.87	12,068	23.10	12,068
48.58	16,824	C712_0099	MR300/	180, 210, 250, 280	AW300/110	9.912	2,872	42.85	17,912	36.93	19,295
69.49	24,648	C812_0100	MR300/	180, 210, 250, 280	AW300/110	10.151	3,939	57.58	24,648	46.06	24,648
77.67	27,549	C812_0100	MR350/	320, 360	AW350/202	10.151	3,939	68.52	29,331	59.05	31,596

Part No. Explanation

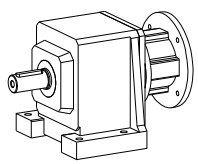
C 3 0 2 N 0620 AW 140 / 012

- C — Concentric Helical
- 3 — Unit No.
- 0 — Generation No.
- 2 — No. of Gear Reductions
- N — Housing Style
- 0620 — Ratio (0620 = 62.0:1)
- AW — Input Shaft
- 140 — Size
- 012 — Shaft Dia. ($^{1}/_{16}$ in.; example—012=$^{12}/_{16}$ or $^{3}/_{4}$)



C 3 0 2 N 0620 MR 160 / 140

- C — Concentric Helical
- 3 — Unit No.
- 0 — Generation No.
- 2 — No. of Reductions
- N — Housing Style
- 0620 — Ratio (0620 = 62.0:1)
- MR — Motor Adapter
- 160 — Size
- 140 — Motor Frame Size (140=143/145TC)



Mounting position must be specified when ordering.

"C" Series – Concentric Helical MGS Reducer – Selection Data

Selection Procedure:

. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

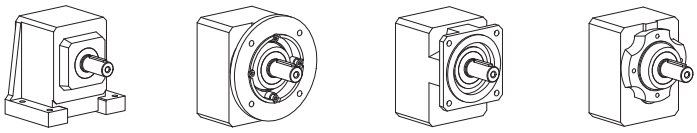
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
170 RPM Output (Approximate)								**140 RPM**		**110 RPM**	
1.48	531	C002_0105	MR140/	050	AW140/010	10.297	250	1.22	531	0.98	531
1.48	531	C002_0105	MR160/	050, 140	AW160/012	10.297	250	1.22	531	0.98	531
2.52	914	C102_0105	MR140/	050	AW140/010	10.383	357	2.09	914	1.67	914
2.93	1,063	C102_0105	MR160/	050, 140	AW160/012	10.383	357	2.43	1,063	1.94	1,063
2.93	1,063	C102_0105	MR200/	180	AW200/014	10.383	357	2.43	1,063	1.94	1,063
4.94	1,772	C202_0105	MR160/	050, 140	AW160/012	10.260	500	4.09	1,772	3.28	1,772
4.94	1,772	C202_0105	MR200/	180	AW200/014	10.260	500	4.09	1,772	3.28	1,772
8.26	2,968	C302_0105	MR160/	050, 140	AW160/012	10.286	744	7.15	3,100	5.72	3,100
8.26	2,968	C302_0105	MR200/	180	AW200/014	10.286	744	7.15	3,100	5.72	3,100
8.26	2,968	C302_0105	MR250/	180, 210	AW250/102	10.286	744	7.15	3,100	5.72	3,100
9.84	3,578	C402_0105	MR160/	050, 140	AW160/012	10.410	1,282	8.15	3,578	6.52	3,578
13.39	4,872	C402_0105	MR200/	180	AW200/014	10.410	1,282	11.10	4,872	8.88	4,872
13.39	4,872	C402_0105	MR250/	180, 210	AW250/102	10.410	1,282	11.10	4,872	8.88	4,872
19.53	7,086	C502_0105	MR200/	180	AW200/014	10.383	1,571	16.18	7,086	12.95	7,086
19.53	7,086	C502_0105	MR250/	180, 210	AW250/102	10.383	1,571	16.18	7,086	12.95	7,086
19.53	7,086	C502_0105	MR300/	180, 210, 250, 280	AW300/110	10.383	1,571	16.18	7,086	12.95	7,086
150 RPM Output (Approximate)								**125 RPM**		**100 RPM**	
1.32	531	C002_0115	MR140/	050	AW140/010	11.540	258	1.09	531	0.87	531
1.32	531	C002_0115	MR160/	050, 140	AW160/012	11.540	258	1.09	531	0.87	531
2.52	1,032	C102_0115	MR140/	050	AW140/010	11.717	367	2.09	1,032	1.67	1,032
2.60	1,063	C102_0115	MR160/	050, 140	AW160/012	11.717	367	2.15	1,063	1.72	1,063
2.60	1,063	C102_0115	MR200/	180	AW200/014	11.717	367	2.15	1,063	1.72	1,063
4.31	1,772	C202_0120	MR160/	050, 140	AW160/012	11.760	518	3.57	1,772	2.86	1,772
4.31	1,772	C202_0120	MR200/	180	AW200/014	11.760	518	3.57	1,772	2.86	1,772
7.62	3,090	C302_0115	MR160/	050, 140	AW160/012	11.607	767	6.33	3,100	5.07	3,100
7.62	3,090	C302_0115	MR200/	180	AW200/014	11.607	767	6.33	3,100	5.07	3,100
7.62	3,090	C302_0115	MR250/	180, 210	AW250/102	11.607	767	6.33	3,100	5.07	3,100
9.84	3,999	C402_0115	MR160/	050, 140	AW160/012	11.636	1,318	8.15	3,999	6.52	3,999
11.98	4,872	C402_0115	MR200/	180	AW200/014	11.636	1,318	9.93	4,872	7.94	4,872
11.98	4,872	C402_0115	MR250/	180, 210	AW250/102	11.636	1,318	9.93	4,872	7.94	4,872
17.43	7,086	C502_0115	MR200/	180	AW200/014	11.636	1,617	14.44	7,086	11.55	7,086
17.43	7,086	C502_0115	MR250/	180, 210	AW250/102	11.636	1,617	14.44	7,086	11.55	7,086
17.43	7,086	C502_0115	MR300/	180, 210, 250, 280	AW300/110	11.636	1,617	14.44	7,086	11.55	7,086
23.36	9,352	C612_0115	MR200/	180	AW200/014	11.457	2,166	19.36	9,352	15.48	9,352
23.36	9,600	C712_0120	MR200/	180	AW200/014	11.761	2,997	19.36	9,600	15.48	9,600
26.65	10,667	C612_0115	MR250/	180, 210	AW250/102	11.457	2,166	23.51	11,357	19.07	11,515
26.65	10,667	C612_0115	MR300/	180, 210, 250, 280	AW300/110	11.457	2,166	23.51	11,357	19.07	11,515
35.72	14,680	C712_0120	MR250/	180, 210	AW250/102	11.761	2,997	29.60	14,680	23.68	14,680
43.11	17,716	C712_0120	MR300/	180, 210, 250, 280	AW300/110	11.761	2,997	35.72	17,716	28.58	17,716
71.52	28,708	C812_0115	MR300/	180, 210, 250, 280	AW300/110	11.487	4,063	59.45	28,798	47.56	28,798
71.52	28,708	C812_0115	MR350/	320, 360	AW350/202	11.487	4,063	63.10	30,565	52.66	31,889
122.95	50,587	C912_0120	MR350/	320, 360	AW350/202	11.775	5,042	101.87	50,587	81.50	50,587

* For thermal HP capacity, see rating below.

Base Module	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

Housing Styles

N — Foot Mounted **F** — Round Flange **Q** — Square Flange **G** — Tapped Holes



Housing Style Q is available on special order.

NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

"C" Series – Concentric Helical MGS Reducer – Selection Data

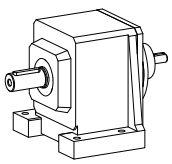
NOTE: [1] Complete Base Module Part Number by adding Housing Style. Example: C302**N**0560.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
140 RPM Output (Approximate)								**115 RPM**		**90 RPM**	
1.21	531	C002_0125	MR140/	050	AW140/010	12.567	263	1.00	531	0.80	531
1.21	531	C002_0125	MR160/	050, 140	AW160/012	12.567	263	1.00	531	0.80	531
2.44	1,062	C102_0125	MR140/	050	AW140/010	12.455	373	2.02	1,062	1.62	1,062
2.44	1,063	C102_0125	MR160/	050, 140	AW160/012	12.455	373	2.02	1,063	1.62	1,063
2.44	1,063	C102_0125	MR200/	180	AW200/014	12.455	373	2.02	1,063	1.62	1,063
4.12	1,772	C202_0125	MR160/	050, 140	AW160/012	12.315	524	3.41	1,772	2.73	1,772
4.12	1,772	C202_0125	MR200/	180	AW200/014	12.315	524	3.41	1,772	2.73	1,772
7.16	3,100	C302_0125	MR160/	050, 140	AW160/012	12.400	780	5.93	3,100	4.74	3,100
7.16	3,100	C302_0125	MR200/	180	AW200/014	12.400	780	5.93	3,100	4.74	3,100
7.16	3,100	C302_0125	MR250/	180, 210	AW250/102	12.400	780	5.93	3,100	4.74	3,100
9.84	4,303	C402_0125	MR160/	050, 140	AW160/012	12.519	1,342	8.15	4,303	6.52	4,303
11.14	4,872	C402_0125	MR200/	180	AW200/014	12.519	1,342	9.23	4,872	7.38	4,872
11.14	4,872	C402_0125	MR250/	180, 210	AW250/102	12.519	1,342	9.23	4,872	7.38	4,872
22.20	9,759	C612_0125	MR200/	180	AW200/014	12.581	2,217	19.36	10,269	15.48	10,269
25.03	11,005	C612_0125	MR250/	180, 210	AW250/102	12.581	2,217	22.08	11,717	19.03	12,622
25.03	11,005	C612_0125	MR300/	180, 210, 250, 280	AW300/110	12.581	2,217	22.08	11,717	19.03	12,622
130 RPM Output (Approximate)								**105 RPM**		**85 RPM**	
23.36	11,207	C712_0135	MR200/	180	AW200/014	13.730	3,115	19.36	11,207	15.48	11,207
34.84	16,716	C712_0135	MR250/	180, 210	AW250/102	13.730	3,115	28.87	16,716	23.10	16,716
36.93	17,716	C712_0135	MR300/	180, 210, 250, 280	AW300/110	13.730	3,115	30.60	17,716	24.48	17,716
40.17	18,501	C712_0130	MR300/	180, 210, 250, 280	AW300/110	13.182	3,084	35.43	19,698	30.54	21,219
125 RPM Output (Approximate) Continued Next Page								**100 RPM**		**80 RPM**	
1.08	531	C002_0140	MR140/	050	AW140/010	14.083	271	0.89	531	0.72	531
1.08	531	C002_0140	MR160/	050, 140	AW160/012	14.083	271	0.89	531	0.72	531
2.16	1,063	C102_0140	MR140/	050	AW140/010	14.056	385	1.79	1,063	1.43	1,063
2.16	1,063	C102_0140	MR160/	050, 140	AW160/012	14.056	385	1.79	1,063	1.43	1,063
2.16	1,063	C102_0140	MR200/	180	AW200/014	14.056	385	1.79	1,063	1.43	1,063
3.59	1,772	C202_0140	MR160/	050, 140	AW160/012	14.115	542	2.98	1,772	2.38	1,772
3.59	1,772	C202_0140	MR200/	180	AW200/014	14.115	542	2.98	1,772	2.38	1,772
6.34	3,100	C302_0140	MR160/	050, 140	AW160/012	13.993	804	5.25	3,100	4.20	3,100
6.34	3,100	C302_0140	MR200/	180	AW200/014	13.993	804	5.25	3,100	4.20	3,100
6.34	3,100	C302_0140	MR250/	180, 210	AW250/102	13.993	804	5.25	3,100	4.20	3,100
9.84	4,787	C502_0140	MR160/	050, 140	AW160/012	13.929	1,691	8.15	4,787	6.52	4,787
9.84	4,809	C402_0140	MR160/	050, 140	AW160/012	13.993	1,380	8.15	4,809	6.52	4,809
9.96	4,872	C402_0140	MR200/	180	AW200/014	13.993	1,380	8.26	4,872	6.60	4,872
9.96	4,872	C402_0140	MR250/	180, 210	AW250/102	13.993	1,380	8.26	4,872	6.60	4,872
14.56	7,086	C502_0140	MR200/	180	AW200/014	13.929	1,691	12.06	7,086	9.65	7,086
14.56	7,086	C502_0140	MR250/	180, 210	AW250/102	13.929	1,691	12.06	7,086	9.65	7,086
14.56	7,086	C502_0140	MR300/	180, 210, 250, 280	AW300/110	13.929	1,691	12.06	7,086	9.65	7,086
23.15	11,444	C612_0140	MR200/	180	AW200/014	14.145	2,283	19.30	11,515	15.44	11,515
23.15	11,444	C612_0140	MR250/	180, 210	AW250/102	14.145	2,283	19.30	11,515	15.44	11,515

Part No. Explanation

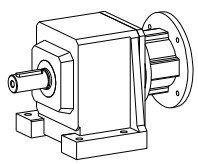
C 3 0 2 N 0620 AW 140 / 012

- C — Concentric Helical
- 3 — Unit No.
- 0 — Generation No.
- 2 — No. of Gear Reductions
- N — Housing Style
- 0620 — Ratio (0620 = 62.0:1)
- AW — Input Shaft
- 140 — Size
- 012 — Shaft Dia. ($^{1}/_{16}$ in.; example—012=$^{12}/_{16}$ or $^{3}/_{4}$)



C 3 0 2 N 0620 MR 160 / 140

- C — Concentric Helical
- 3 — Unit No.
- 0 — Generation No.
- 2 — No. of Reductions
- N — Housing Style
- 0620 — Ratio (0620 = 62.0:1)
- MR — Motor Adapter
- 160 — Size
- 140 — Motor Frame Size (140=143/145TC)



Mounting position must be specified when ordering.

"C" Series – Concentric Helical MGS Reducer – Selection Data

Selection Procedure:

. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
125 RPM Output (Approximate) Continued								**100 RPM**		**80 RPM**	
23.15	11,444	C612_0140	MR300/	180, 210, 250, 280	AW300/110	14.145	2,283	19.30	11,515	15.44	11,515
63.40	30,491	C812_0140	MR300/	180, 210, 250, 280	AW300/110	13.763	4,251	54.94	31,889	43.95	31,889
63.40	30,491	C812_0140	MR350/	320, 360	AW350/202	13.763	4,251	54.94	31,889	43.95	31,889
109.36	53,148	C912_0140	MR350/	320, 360	AW350/202	13.908	5,257	90.62	53,148	72.49	53,148
115 RPM Output (Approximate)								**90 RPM**		**75 RPM**	
0.97	531	C002_0155	MR140/	050	AW140/010	15.637	278	0.81	531	0.64	531
0.97	531	C002_0155	MR160/	050, 140	AW160/012	15.637	278	0.81	531	0.64	531
1.94	1,063	C102_0155	MR140/	050	AW140/010	15.708	395	1.60	1,063	1.28	1,063
1.94	1,063	C102_0155	MR160/	050, 140	AW160/012	15.708	395	1.60	1,063	1.28	1,063
1.94	1,063	C102_0155	MR200/	180	AW200/014	15.708	395	1.60	1,063	1.28	1,063
2.42	1,294	C202_0155	MR140/	050	AW140/010	15.283	553	2.01	1,294	1.61	1,294
3.32	1,772	C202_0155	MR160/	050, 140	AW160/012	15.283	553	2.75	1,772	2.20	1,772
3.32	1,772	C202_0155	MR200/	180	AW200/014	15.283	553	2.75	1,772	2.20	1,772
5.71	3,100	C302_0155	MR160/	050, 140	AW160/012	15.543	825	4.73	3,100	3.78	3,100
5.71	3,100	C302_0155	MR200/	180	AW200/014	15.543	825	4.73	3,100	3.78	3,100
5.71	3,100	C302_0155	MR250/	180, 210	AW250/102	15.543	825	4.73	3,100	3.78	3,100
9.84	5,399	C502_0155	MR160/	050, 140	AW160/012	15.708	1,743	8.15	5,399	6.52	5,399
12.91	7,086	C502_0155	MR200/	180	AW200/014	15.708	1,743	10.70	7,086	8.56	7,086
12.91	7,086	C502_0155	MR250/	180, 210	AW250/102	15.708	1,743	10.70	7,086	8.56	7,086
12.91	7,086	C502_0155	MR300/	180, 210, 250, 280	AW300/110	15.708	1,743	10.70	7,086	8.56	7,086
105 RPM Output (Approximate)								**85 RPM**		**70 RPM**	
8.85	4,872	C402_0160	MR160/	050	AW160/012	15.750	1,422	7.33	4,872	5.87	4,872
8.85	4,872	C402_0160	MR200/	180	AW200/014	15.750	1,422	7.33	4,872	5.87	4,872
8.85	4,872	C402_0160	MR250/	180, 210	AW250/102	15.750	1,422	7.33	4,872	5.87	4,872
18.57	10,514	C612_0160	MR200/	180	AW200/014	16.203	2,362	16.38	11,194	14.12	12,058
21.15	11,974	C612_0160	MR250/	180, 210	AW250/102	16.203	2,362	18.66	12,748	15.04	12,844
21.15	11,974	C612_0160	MR300/	180, 210, 250, 280	AW300/110	16.203	2,362	18.66	12,748	15.04	12,844
22.20	12,980	C712_0165	MR200/	180	AW200/014	16.734	3,273	19.36	13,659	15.48	13,659
31.67	18,517	C712_0165	MR250/	180, 210	AW250/102	16.734	3,273	26.24	18,517	20.99	18,517
32.99	19,716	C812_0170	MR250/	180, 210	AW250/102	17.101	4,488	27.34	19,716	21.87	19,716
34.26	20,033	C712_0165	MR300/	180, 210, 250, 280	AW300/110	16.734	3,273	30.13	21,259	24.10	21,259
54.86	32,780	C812_0170	MR300/	180, 210, 250, 280	AW300/110	17.101	4,488	48.39	34,901	41.27	37,204
54.86	32,780	C812_0170	MR350/	320, 360	AW350/202	17.101	4,488	48.39	34,901	41.27	37,204
66.03	37,985	C912_0165	MR300/	180, 210, 250, 280	AW300/110	16.463	5,483	54.71	37,985	43.77	37,985
107.79	62,006	C912_0165	MR350/	320, 360	AW350/202	16.463	5,483	89.31	62,006	71.45	62,006
100 RPM Output (Approximate) Continued Next Page								**80 RPM**		**65 RPM**	
0.87	531	C002_0175	MR140/	050	AW140/010	17.525	286	0.72	531	0.58	531
0.87	531	C002_0175	MR160/	050, 140	AW160/012	17.525	286	0.72	531	0.58	531
1.72	1,063	C102_0175	MR140/	050	AW140/010	17.727	408	1.42	1,063	1.14	1,063
1.72	1,063	C102_0175	MR160/	050, 140	AW160/012	17.727	408	1.42	1,063	1.14	1,063

* For thermal HP capacity, see rating below.

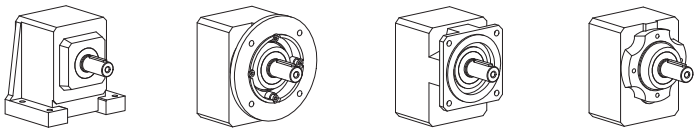
Base Module	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

Housing Styles

N — Foot Mounted **F** — Round Flange **Q** — Square Flange **G** — Tapped Holes



Housing Style Q is available on special order.

"C" Series – Concentric Helical MGS Reducer – Selection Data

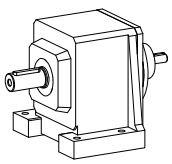
NOTE: [1] Complete Base Module Part Number by adding Housing Style. Example: C302**N**0560.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
100 RPM Output (Approximate) Continued								**80 RPM**		**65 RPM**	
1.72	1,063	C102_0175	MR200/	180	AW200/014	17.727	408	1.42	1,063	1.14	1,063
2.42	1,483	C202_0175	MR140/	050	AW140/010	17.517	572	2.01	1,483	1.61	1,483
2.89	1,772	C202_0175	MR160/	050, 140	AW160/012	17.517	572	2.40	1,772	1.92	1,772
2.89	1,772	C202_0175	MR200/	180	AW200/014	17.517	572	2.40	1,772	1.92	1,772
5.06	3,100	C302_0175	MR160/	050, 140	AW160/012	17.540	851	4.19	3,100	3.35	3,100
5.06	3,100	C302_0175	MR200/	180	AW200/014	17.540	851	4.19	3,100	3.35	3,100
5.06	3,100	C302_0175	MR250/	180, 210	AW250/102	17.540	851	4.19	3,100	3.35	3,100
7.92	4,872	C402_0175	MR160/	050, 140	AW160/012	17.604	1,462	6.56	4,872	5.25	4,872
7.92	4,872	C402_0175	MR200/	180	AW200/014	17.604	1,462	6.56	4,872	5.25	4,872
7.92	4,872	C402_0175	MR250/	180, 210	AW250/102	17.604	1,462	6.56	4,872	5.25	4,872
9.84	6,050	C502_0175	MR160/	050, 140	AW160/012	17.604	1,793	8.15	6,050	6.52	6,050
11.52	7,086	C502_0175	MR200/	180	AW200/014	17.604	1,793	9.55	7,086	7.64	7,086
11.52	7,086	C502_0175	MR250/	180, 210	AW250/102	17.604	1,793	9.55	7,086	7.64	7,086
11.52	7,086	C502_0175	MR300/	180, 210, 250, 280	AW300/110	17.604	1,793	9.55	7,086	7.64	7,086
18.72	11,515	C612_0175	MR200/	180	AW200/014	17.600	2,411	15.51	11,515	12.41	11,515
18.72	11,515	C612_0175	MR250/	180, 210	AW250/102	17.600	2,411	15.51	11,515	12.41	11,515
18.72	11,515	C612_0175	MR300/	180, 210, 250, 280	AW300/110	17.600	2,411	15.51	11,515	12.41	11,515
34.84	21,046	C812_0175	MR250/	180, 210	AW250/102	17.287	4,500	28.87	21,046	23.10	21,046
52.79	31,889	C812_0175	MR300/	180, 210, 250, 280	AW300/110	17.287	4,500	43.74	31,889	34.99	31,889
52.79	31,889	C812_0175	MR350/	320, 360	AW350/202	17.287	4,500	43.74	31,889	34.99	31,889
86.19	53,148	C912_0175	MR350/	320, 360	AW350/202	17.648	5,579	71.41	53,148	57.13	53,148
90 RPM Output (Approximate)								**75 RPM**		**60 RPM**	
15.96	10,934	C612_0195	MR200/	180	AW200/014	19.607	2,477	14.08	11,641	12.13	12,540
18.62	12,759	C612_0195	MR250/	180, 210	AW250/102	19.607	2,477	15.53	12,844	12.43	12,844
18.62	12,759	C612_0195	MR300/	180, 210, 250, 280	AW300/110	19.607	2,477	15.53	12,844	12.43	12,844
23.36	14,906	C712_0185	MR200/	180	AW200/014	18.261	3,346	19.36	14,906	15.48	14,906
27.76	17,716	C712_0185	MR250/	180, 210	AW250/102	18.261	3,346	23.01	17,716	18.40	17,716
27.76	17,716	C712_0185	MR300/	180, 210, 250, 280	AW300/110	18.261	3,346	23.01	17,716	18.40	17,716
31.90	22,576	C812_0200	MR250/	180, 210	AW250/102	20.257	4,682	26.43	22,576	21.14	22,576
49.00	34,684	C812_0200	MR300/	180, 210, 250, 280	AW300/110	20.257	4,682	43.23	36,928	34.84	37,204
49.00	34,684	C812_0200	MR350/	320, 360	AW350/202	20.257	4,682	43.23	36,928	34.84	37,204
85 RPM Output (Approximate) Continued Next Page								**70 RPM**		**55 RPM**	
0.73	531	C002_0210	MR140/	050	AW140/010	20.714	298	0.61	531	0.49	531
0.73	531	C002_0210	MR160/	050, 140	AW160/012	20.714	298	0.61	531	0.49	531
1.46	1,063	C102_0210	MR140/	050	AW140/010	20.844	424	1.21	1,063	0.97	1,063
1.46	1,063	C102_0210	MR160/	050, 140	AW160/012	20.844	424	1.21	1,063	0.97	1,063
1.46	1,063	C102_0210	MR200/	180	AW200/014	20.844	424	1.21	1,063	0.97	1,063
2.29	1,650	C202_0210	MR140/	050	AW140/010	20.583	595	1.90	1,650	1.52	1,650
2.46	1,772	C202_0210	MR160/	050, 140	AW160/012	20.583	595	2.04	1,772	1.63	1,772
2.46	1,772	C202_0210	MR200/	180	AW200/014	20.583	595	2.04	1,772	1.63	1,772
4.27	3,100	C302_0210	MR160/	050, 140	AW160/012	20.800	888	3.53	3,100	2.83	3,100

Part No. Explanation

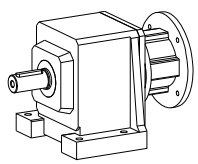
C 3 0 2 N 0620 AW 140 / 012

- C — Concentric Helical
- 3 — Unit No.
- 0 — Generation No.
- 2 — No. of Gear Reductions
- N — Housing Style
- 0620 — Ratio (0620 = 62.0:1)
- AW — Input Shaft
- 140 — Size
- 012 — Shaft Dia. ($^{1}/_{16}$ in.; example—012=$^{12}/_{16}$ or $^{3}/_{4}$)



C 3 0 2 N 0620 MR 160 / 140

- C — Concentric Helical
- 3 — Unit No.
- 0 — Generation No.
- 2 — No. of Reductions
- N — Housing Style
- 0620 — Ratio (0620 = 62.0:1)
- MR — Motor Adapter
- 160 — Size
- 140 — Motor Frame Size (140=143/145TC)



Mounting position must be specified when ordering.

"C" Series – Concentric Helical MGS Reducer – Selection Data

Selection Procedure:

. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

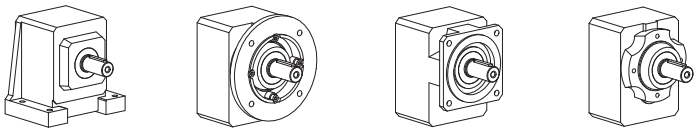
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
85 RPM Output (Approximate) Continued								**70 RPM**		**55 RPM**	
4.27	3,100	C302_0210	MR200/	180	AW200/014	20.800	888	3.53	3,100	2.83	3,100
4.27	3,100	C302_0210	MR250/	180, 210	AW250/102	20.800	888	3.53	3,100	2.83	3,100
6.67	4,872	C402_0210	MR160/	050, 140	AW160/012	20.899	1,526	5.53	4,872	4.42	4,872
6.67	4,872	C402_0210	MR200/	180	AW200/014	20.899	1,526	5.53	4,872	4.42	4,872
6.67	4,872	C402_0210	MR250/	180, 210	AW250/102	20.899	1,526	5.53	4,872	4.42	4,872
9.69	7,061	C502_0210	MR160/	050, 140	AW160/012	20.844	1,871	8.06	7,086	6.45	7,086
9.73	7,086	C502_0210	MR200/	180	AW200/014	20.844	1,871	8.06	7,086	6.45	7,086
9.73	7,086	C502_0210	MR250/	180, 210	AW250/102	20.844	1,871	8.06	7,086	6.45	7,086
9.73	7,086	C502_0210	MR300/	180, 210, 250, 280	AW300/110	20.844	1,871	8.06	7,086	6.45	7,086
18.57	13,413	C712_0210	MR200/	180	AW200/014	20.672	3,451	16.38	14,281	14.12	15,384
29.43	21,259	C712_0210	MR250/	180	AW250/102	20.672	3,451	24.39	21,259	19.51	21,259
29.43	21,259	C712_0210	MR300/	180, 210, 250, 280	AW300/110	20.672	3,451	24.39	21,259	19.51	21,259
75 RPM Output (Approximate)								**60 RPM**		**50 RPM**	
0.66	531	C002_0230	MR140/	050	AW140/010	23.214	307	0.54	531	0.43	531
0.66	531	C002_0230	MR160/	050, 140	AW160/012	23.214	307	0.54	531	0.43	531
1.29	1,063	C102_0240	MR140/	050	AW140/010	23.523	437	1.07	1,063	0.86	1,063
1.29	1,063	C102_0240	MR160/	050, 140	AW160/012	23.523	437	1.07	1,063	0.86	1,063
1.29	1,063	C102_0240	MR200/	180	AW200/014	23.523	437	1.07	1,063	0.86	1,063
2.15	1,772	C202_0240	MR140/	050	AW140/010	23.593	616	1.78	1,772	1.42	1,772
2.15	1,772	C202_0240	MR160/	050, 140	AW160/012	23.593	616	1.78	1,772	1.42	1,772
2.15	1,772	C202_0240	MR200/	180	AW200/014	23.593	616	1.78	1,772	1.42	1,772
3.78	3,100	C302_0230	MR160/	050, 140	AW160/012	23.472	915	3.13	3,100	2.51	3,100
3.78	3,100	C302_0230	MR200/	180	AW200/014	23.472	915	3.13	3,100	2.51	3,100
3.78	3,100	C302_0230	MR250/	180, 210	AW250/102	23.472	915	3.13	3,100	2.51	3,100
5.97	4,872	C402_0230	MR160/	050, 140	AW160/012	23.359	1,569	4.95	4,872	3.96	4,872
5.97	4,872	C402_0230	MR200/	180	AW200/014	23.359	1,569	4.95	4,872	3.96	4,872
5.97	4,872	C402_0230	MR250/	180, 210	AW250/102	23.359	1,569	4.95	4,872	3.96	4,872
8.68	7,086	C502_0230	MR160/	050, 140	AW160/012	23.359	1,925	7.19	7,086	5.76	7,086
8.68	7,086	C502_0230	MR200/	180	AW200/014	23.359	1,925	7.19	7,086	5.76	7,086
8.68	7,086	C502_0230	MR250/	180, 210	AW250/102	23.359	1,925	7.19	7,086	5.76	7,086
8.68	7,086	C502_0230	MR300/	180, 210, 250, 280	AW300/110	23.359	1,925	7.19	7,086	5.76	7,086
14.54	11,515	C612_0230	MR200/	180	AW200/014	22.667	2,568	12.05	11,515	9.64	11,515
14.54	11,515	C612_0230	MR250/	180, 210	AW250/102	22.667	2,568	12.05	11,515	9.64	11,515
14.54	11,515	C612_0230	MR300/	180, 210, 250, 280	AW300/110	22.667	2,568	12.05	11,515	9.64	11,515
21.87	17,716	C712_0230	MR200/	180	AW200/014	23.182	3,551	18.12	17,716	14.50	17,716
21.87	17,716	C712_0230	MR250/	180, 210	AW250/102	23.182	3,551	18.12	17,716	14.50	17,716
21.87	17,716	C712_0230	MR300/	180, 210, 250, 280	AW300/110	23.182	3,551	18.12	17,716	14.50	17,716
32.99	26,733	C812_0230	MR250/	180, 210	AW250/102	23.188	4,843	27.34	26,733	21.87	26,733
39.36	31,889	C812_0230	MR300/	180, 210, 250, 280	AW300/110	23.188	4,843	32.61	31,889	26.09	31,889
39.36	31,889	C812_0230	MR350/	320, 360	AW350/202	23.188	4,843	32.61	31,889	26.09	31,889
65.03	53,148	C912_0230	MR300/	180, 210, 250, 280	AW300/110	23.390	5,986	53.88	53,148	43.11	53,148
65.03	53,148	C912_0230	MR350/	320, 360	AW350/202	23.390	5,986	53.88	53,148	43.11	53,148

* For thermal HP capacity, see rating below.

Base Module	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

Housing Styles

N — Foot Mounted **F** — Round Flange **Q** — Square Flange **G** — Tapped Holes



Housing Style Q is available on special order.

NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

"C" Series – Concentric Helical MGS Reducer – Selection Data

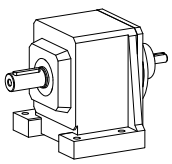
NOTE: 1) Complete Base Module Part Number by adding Housing Style. Example: C302**N**0560.
2) Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
3) Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
4) Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

1750 RPM Input		Base Module 1)	Input Options 2)			Exact Ratio	Overhung Load Output Shaft 4) lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size 3)	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
70 RPM Output (Approximate)								**55 RPM**		**45 RPM**	
0.61	531	C002_0250	MR140/	050	AW140/010	24.972	312	0.50	531	0.40	531
0.61	531	C002_0250	MR160/	050, 140	AW160/012	24.972	312	0.50	531	0.40	531
1.21	1,063	C102_0250	MR140/	050	AW140/010	25.133	445	1.00	1,063	0.80	1,063
1.21	1,063	C102_0250	MR160/	050, 140	AW160/012	25.133	445	1.00	1,063	0.80	1,063
2.06	1,772	C202_0250	MR140/	050	AW140/010	24.641	623	1.70	1,772	1.36	1,772
2.06	1,772	C202_0250	MR160/	050, 140	AW160/012	24.641	623	1.70	1,772	1.36	1,772
2.06	1,772	C202_0250	MR200/	180	AW200/014	24.641	623	1.70	1,772	1.36	1,772
3.58	3,100	C302_0250	MR160/	050, 140	AW160/012	24.800	928	2.96	3,100	2.37	3,100
3.58	3,100	C302_0250	MR200/	180	AW200/014	24.800	928	2.96	3,100	2.37	3,100
3.58	3,100	C302_0250	MR250/	180, 210	AW250/102	24.800	928	2.96	3,100	2.37	3,100
5.59	4,872	C402_0250	MR160/	050, 140	AW160/012	24.923	1,594	4.64	4,872	3.71	4,872
5.59	4,872	C402_0250	MR200/	180	AW200/014	24.923	1,594	4.64	4,872	3.71	4,872
5.59	4,872	C402_0250	MR250/	180, 210	AW250/102	24.923	1,594	4.64	4,872	3.71	4,872
8.09	7,086	C502_0250	MR160/	050, 140	AW160/012	25.073	1,959	6.70	7,086	5.36	7,086
8.09	7,086	C502_0250	MR200/	180	AW200/014	25.073	1,959	6.70	7,086	5.36	7,086
8.09	7,086	C502_0250	MR250/	180, 210	AW250/102	25.073	1,959	6.70	7,086	5.36	7,086
8.09	7,086	C502_0250	MR300/	180, 210, 250, 280	AW300/110	25.073	1,959	6.70	7,086	5.36	7,086
13.15	11,454	C612_0250	MR200/	180	AW200/014	24.928	2,630	11.60	12,195	9.77	12,844
14.75	12,844	C612_0250	MR250/	180, 210	AW250/102	24.928	2,630	12.22	12,844	9.77	12,844
14.75	12,844	C612_0250	MR300/	180, 210, 250, 280	AW300/110	24.928	2,630	12.22	12,844	9.77	12,844
15.96	14,116	C712_0250	MR200/	180	AW200/014	25.313	3,630	14.08	15,029	12.13	16,190
24.04	21,259	C712_0250	MR250/	180, 210	AW250/102	25.313	3,630	19.92	21,259	15.93	21,259
24.04	21,259	C712_0250	MR300/	180, 210, 250, 280	AW300/110	25.313	3,630	19.92	21,259	15.93	21,259
60 RPM Output (Approximate) Continued Next Page								**50 RPM**		**40 RPM**	
0.54	531	C002_0280	MR140/	050	AW140/010	27.986	321	0.45	531	0.36	531
0.54	531	C002_0280	MR160/	050, 140	AW160/012	27.986	321	0.45	531	0.36	531
1.07	1,063	C102_0280	MR140/	050	AW140/010	28.364	458	0.89	1,063	0.71	1,063
1.07	1,063	C102_0280	MR160/	050, 140	AW160/012	28.364	458	0.89	1,063	0.71	1,063
1.80	1,772	C202_0280	MR140/	050	AW140/010	28.243	644	1.49	1,772	1.19	1,772
1.80	1,772	C202_0280	MR160/	050, 140	AW160/012	28.243	644	1.49	1,772	1.19	1,772
1.80	1,772	C202_0280	MR200/	180	AW200/014	28.243	644	1.49	1,772	1.19	1,772
3.17	3,100	C302_0280	MR160/	050, 140	AW160/012	27.986	956	2.63	3,100	2.10	3,100
3.17	3,100	C302_0280	MR200/	180	AW200/014	27.986	956	2.63	3,100	2.10	3,100
3.17	3,100	C302_0280	MR250/	180, 210	AW250/102	27.986	956	2.63	3,100	2.10	3,100
7.22	7,086	C502_0280	MR160/	050, 140	AW160/012	28.099	2,016	5.98	7,086	4.78	7,086
7.22	7,086	C502_0280	MR200/	180	AW200/014	28.099	2,016	5.98	7,086	4.78	7,086
7.22	7,086	C502_0280	MR250/	180, 210	AW250/102	28.099	2,016	5.98	7,086	4.78	7,086
7.22	7,086	C502_0280	MR300/	180, 210, 250, 280	AW300/110	28.099	2,016	5.98	7,086	4.78	7,086
12.01	11,515	C612_0270	MR200/	180	AW200/014	27.429	2,694	9.96	11,515	7.96	11,515
12.01	11,515	C612_0270	MR250/	180, 210	AW250/102	27.429	2,694	9.96	11,515	7.96	11,515
12.01	11,515	C612_0270	MR300/	180, 210, 250, 280	AW300/110	27.429	2,694	9.96	11,515	7.96	11,515
17.71	17,716	C712_0290	MR200/	180	AW200/014	28.636	3,744	14.67	17,716	11.74	17,716
17.71	17,716	C712_0290	MR250/	180, 210	AW250/102	28.636	3,744	14.67	17,716	11.74	17,716

Part No. Explanation

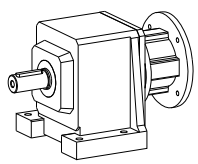
C 3 0 2 N 0620 AW 140 / 012

- C — Concentric Helical
- 3 — Unit No.
- 0 — Generation No.
- 2 — No. of Gear Reductions
- N — Housing Style
- 0620 — Ratio (0620 = 62.0:1)
- AW — Input Shaft
- 140 — Size
- 012 — Shaft Dia. ($^{1}/_{16}$ in.; example—012=$^{12}/_{16}$ or $^{3}/_{4}$)



C 3 0 2 N 0620 MR 160 / 140

- C — Concentric Helical
- 3 — Unit No.
- 0 — Generation No.
- 2 — No. of Reductions
- N — Housing Style
- 0620 — Ratio (0620 = 62.0:1)
- MR — Motor Adapter
- 160 — Size
- 140 — Motor Frame Size (140=143/145TC)



Mounting position must be specified when ordering.

"C" Series – Concentric Helical MGS Reducer – Selection Data

Selection Procedure:

. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
60 RPM	**Output (Approximate)** Continued							**50 RPM**		**40 RPM**	
17.71	17,716	C712_0290	MR300/	180, 210, 250, 280	AW300/110	28.636	3,744	14.67	17,716	11.74	17,716
30.29	27,576	C812_0260	MR250/	180, 210	AW250/102	26.058	4,986	25.09	27,576	20.08	27,576
31.90	30,612	C812_0270	MR250/	180, 210	AW250/102	27.467	5,052	26.43	30,612	21.14	30,612
33.23	31,889	C812_0270	MR300/	180, 210, 250, 280	AW300/110	27.467	5,052	27.53	31,889	22.02	31,889
33.23	31,889	C812_0270	MR350/	320, 360	AW350/202	27.467	5,052	27.53	31,889	22.02	31,889
40.86	37,204	C812_0260	MR300/	180, 210, 250, 280	AW300/110	26.058	4,986	33.86	37,204	27.08	37,204
53.13	53,148	C912_0290	MR300/	180, 210, 250, 280	AW300/110	28.631	6,296	44.02	53,148	35.22	53,148
53.13	53,148	C912_0290	MR350/	320, 360	AW350/202	28.631	6,296	44.02	53,148	35.22	53,148
55 RPM	**Output (Approximate)**							**45 RPM**		**37 RPM**	
0.49	531	C002_0310	MR140/	050	AW140/010	31.256	330	0.40	531	0.32	531
0.49	531	C002_0310	MR160/	050, 140	AW160/012	31.256	330	0.40	531	0.32	531
0.98	1,063	C102_0310	MR140/	050	AW140/010	31.071	469	0.81	1,063	0.65	1,063
0.98	1,063	C102_0310	MR160/	050, 140	AW160/012	31.071	469	0.81	1,063	0.65	1,063
1.65	1,772	C202_0310	MR140/	050	AW140/010	30.692	658	1.37	1,772	1.10	1,772
1.65	1,772	C202_0310	MR160/	050, 140	AW160/012	30.692	658	1.37	1,772	1.10	1,772
2.86	3,100	C302_0310	MR160/	050, 140	AW160/012	31.040	981	2.37	3,100	1.89	3,100
2.86	3,100	C302_0310	MR200/	180	AW200/014	31.040	981	2.37	3,100	1.89	3,100
2.86	3,100	C302_0310	MR250/	180, 210	AW250/102	31.040	981	2.37	3,100	1.89	3,100
4.48	4,872	C402_0310	MR160/	050, 140	AW160/012	31.154	1,686	3.71	4,872	2.97	4,872
4.48	4,872	C402_0310	MR200/	180	AW200/014	31.154	1,686	3.71	4,872	2.97	4,872
4.48	4,872	C402_0310	MR250/	180, 210	AW250/102	31.154	1,686	3.71	4,872	2.97	4,872
6.49	7,086	C502_0310	MR160/	050, 140	AW160/012	31.231	2,070	5.38	7,086	4.30	7,086
6.49	7,086	C502_0310	MR200/	180	AW200/014	31.231	2,070	5.38	7,086	4.30	7,086
6.49	7,086	C502_0310	MR250/	180, 210	AW250/102	31.231	2,070	5.38	7,086	4.30	7,086
10.61	12,011	C612_0320	MR200/	180	AW200/014	32.406	2,808	9.36	12,788	7.52	12,844
11.34	12,844	C612_0320	MR250/	180, 210	AW250/102	32.406	2,808	9.40	12,844	7.52	12,844
11.34	12,844	C612_0320	MR300/	180, 210, 250, 280	AW300/110	32.406	2,808	9.40	12,844	7.52	12,844
54.75	61,477	C912_0320	MR300/	180, 210, 250, 280	AW300/110	32.134	6,481	45.76	62,006	36.61	62,006
55.22	62,006	C912_0320	MR350/	320, 360	AW350/202	32.134	6,481	45.76	62,006	36.61	62,006
50 RPM	**Output (Approximate)** Continued Next Page							**40 RPM**		**33 RPM**	
0.43	531	C002_0350	MR140/	050	AW140/010	35.028	340	0.36	531	0.29	531
0.43	531	C002_0350	MR160/	050, 140	AW160/012	35.028	340	0.36	531	0.29	531
0.87	1,063	C102_0350	MR140/	050	AW140/010	35.065	483	0.72	1,063	0.58	1,063
0.87	1,063	C102_0350	MR160/	050, 140	AW160/012	35.065	483	0.72	1,063	0.58	1,063
1.44	1,772	C202_0350	MR140/	050	AW140/010	35.179	681	1.19	1,772	0.96	1,772
1.44	1,772	C202_0350	MR160/	050, 140	AW160/012	35.179	681	1.19	1,772	0.96	1,772
2.53	3,100	C302_0350	MR160/	050, 140	AW160/012	35.028	1,011	2.10	3,100	1.68	3,100
2.53	3,100	C302_0350	MR200/	180	AW200/014	35.028	1,011	2.10	3,100	1.68	3,100
2.53	3,100	C302_0350	MR250/	180, 210	AW250/102	35.028	1,011	2.10	3,100	1.68	3,100
4.00	4,872	C402_0350	MR160/	050, 140	AW160/012	34.821	1,733	3.32	4,872	2.65	4,872
4.00	4,872	C402_0350	MR200/	180	AW200/014	34.821	1,733	3.32	4,872	2.65	4,872

* For thermal HP capacity, see rating below.

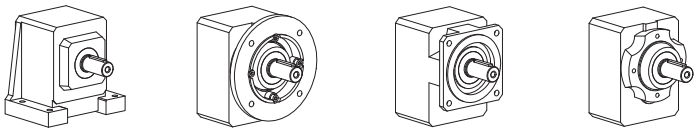
Base Module	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

Housing Styles

N — Foot Mounted **F** — Round Flange **Q** — Square Flange **G** — Tapped Holes



Housing Style Q is available on special order.

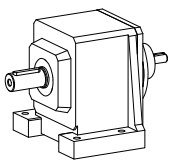
"C" Series – Concentric Helical MGS Reducer – Selection Data

NOTE: [1] Complete Base Module Part Number by adding Housing Style. Example: C302**N**0560.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

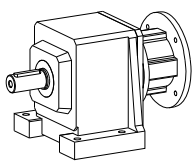
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
50 RPM Output (Approximate) Continued								**40 RPM**		**33 RPM**	
4.00	4,872	C402_0350	MR250/	180, 210	AW250/102	34.821	1,733	3.32	4,872	2.65	4,872
5.79	7,086	C502_0350	MR160/	050, 140	AW160/012	35.000	2,129	4.80	7,086	3.84	7,086
5.79	7,086	C502_0350	MR200/	180	AW200/014	35.000	2,129	4.80	7,086	3.84	7,086
5.79	7,086	C502_0350	MR250/	180, 210	AW250/102	35.000	2,129	4.80	7,086	3.84	7,086
9.45	11,515	C612_0350	MR200/	180	AW200/014	34.872	2,860	7.83	11,515	6.26	11,515
9.45	11,515	C612_0350	MR250/	180, 210	AW250/102	34.872	2,860	7.83	11,515	6.26	11,515
9.45	11,515	C612_0350	MR300/	180, 210, 250, 280	AW300/110	34.872	2,860	7.83	11,515	6.26	11,515
12.55	14,816	C712_0340	MR200/	180	AW200/014	33.797	3,902	11.07	15,775	9.54	16,993
14.46	17,716	C712_0350	MR200/	180	AW200/014	35.065	3,938	11.98	17,716	9.58	17,716
14.46	17,716	C712_0350	MR250/	180, 210	AW250/102	35.065	3,938	11.98	17,716	9.58	17,716
14.46	17,716	C712_0350	MR300/	180, 210, 250, 280	AW300/110	35.065	3,938	11.98	17,716	9.58	17,716
18.00	21,259	C712_0340	MR250/	180, 210	AW250/102	33.797	3,902	14.92	21,259	11.93	21,259
18.00	21,259	C712_0340	MR300/	180, 210, 250, 280	AW300/110	33.797	3,902	14.92	21,259	11.93	21,259
26.75	31,386	C812_0340	MR250/	180, 210	AW250/102	33.585	5,313	23.59	33,417	19.11	33,839
31.70	37,204	C812_0340	MR300/	180, 210, 250, 280	AW300/110	33.585	5,313	26.27	37,204	21.01	37,204
42.24	53,148	C912_0360	MR300/	180, 210, 250, 280	AW300/110	36.005	6,668	35.00	53,148	28.00	53,148
42.24	53,148	C912_0360	MR350/	320, 360	AW350/202	36.005	6,668	35.00	53,148	28.00	53,148
45 RPM Output (Approximate)								**35 RPM**		**30 RPM**	
0.36	531	C002_0420	MR140/	050	AW140/010	41.774	355	0.30	531	0.24	531
0.73	1,063	C102_0420	MR140/	050	AW140/010	41.567	504	0.61	1,063	0.49	1,063
0.73	1,063	C102_0420	MR160/	050, 140	AW160/012	41.567	504	0.61	1,063	0.49	1,063
1.24	1,772	C202_0410	MR140/	050	AW140/010	40.850	707	1.03	1,772	0.82	1,772
1.24	1,772	C202_0410	MR160/	050, 140	AW160/012	40.850	707	1.03	1,772	0.82	1,772
2.15	3,100	C302_0410	MR160/	050, 140	AW160/012	41.354	1,054	1.78	3,100	1.42	3,100
3.34	4,872	C402_0420	MR160/	050, 140	AW160/012	41.751	1,814	2.77	4,872	2.21	4,872
3.34	4,872	C402_0420	MR200/	180	AW200/014	41.751	1,814	2.77	4,872	2.21	4,872
3.34	4,872	C402_0420	MR250/	180, 210	AW250/102	41.751	1,814	2.77	4,872	2.21	4,872
4.86	7,086	C502_0420	MR160/	050, 140	AW160/012	41.688	2,224	4.03	7,086	3.22	7,086
4.86	7,086	C502_0420	MR200/	180	AW200/014	41.688	2,224	4.03	7,086	3.22	7,086
4.86	7,086	C502_0420	MR250/	180, 210	AW250/102	41.688	2,224	4.03	7,086	3.22	7,086
7.85	10,812	C612_0390	MR200/	180	AW200/014	39.396	2,949	6.51	10,812	5.21	10,812
7.85	10,812	C612_0390	MR250/	180, 210	AW250/102	39.396	2,949	6.51	10,812	5.21	10,812
10.61	15,202	C712_0410	MR200/	180	AW200/014	41.016	4,096	9.36	16,186	8.06	17,435
12.95	18,554	C712_0410	MR250/	180, 210	AW250/102	41.016	4,096	10.73	18,554	8.58	18,554
12.95	18,554	C712_0410	MR300/	180, 210, 250, 280	AW300/110	41.016	4,096	10.73	18,554	8.58	18,554
23.05	32,165	C812_0400	MR250/	180, 210	AW250/102	39.938	5,548	19.91	33,527	15.92	33,527
24.02	33,527	C812_0400	MR300/	180, 210, 250, 280	AW300/110	39.938	5,548	19.91	33,527	15.92	33,527
38.77	53,230	C912_0390	MR300/	180, 210, 250, 280	AW300/110	39.298	6,815	32.12	53,230	25.70	53,230
40 RPM Output (Approximate) Continued Next Page								**30 RPM**		**25 RPM**	
0.32	531	C002_0470	MR140/	050	AW140/010	46.815	366	0.27	531	0.22	531
0.65	1,063	C102_0470	MR140/	050	AW140/010	46.909	520	0.54	1,063	0.43	1,063
0.65	1,063	C102_0470	MR160/	050, 140	AW160/012	46.909	520	0.54	1,063	0.43	1,063

Part No. Explanation

C 3 0 2 N 0620 AW 140 / 012
- C — Concentric Helical
- 3 — Unit No.
- 0 — Generation No.
- 2 — No. of Gear Reductions
- N — Housing Style
- 0620 — Ratio (0620 = 62.0:1)
- AW — Input Shaft
- 140 — Size
- 012 — Shaft Dia. ($^{1}/_{16}$ in.; example—012=$^{12}/_{16}$ or $^{3}/_{4}$)



C 3 0 2 N 0620 MR 160 / 140
- C — Concentric Helical
- 3 — Unit No.
- 0 — Generation No.
- 2 — No. of Reductions
- N — Housing Style
- 0620 — Ratio (0620 = 62.0:1)
- MR — Motor Adapter
- 160 — Size
- 140 — Motor Frame Size (140=143/145TC)



Mounting position must be specified when ordering.

"C" Series – Concentric Helical MGS Reducer – Selection Data

Selection Procedure:

. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

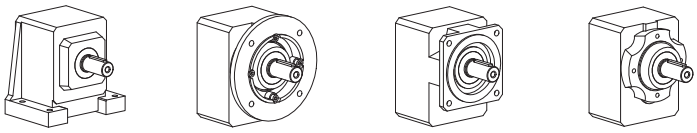
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
40 RPM Output (Approximate) Continued								**30 RPM**		**25 RPM**	
1.08	1,772	C202_0470	MR140/	050	AW140/010	46.822	731	0.90	1,772	0.72	1,772
1.08	1,772	C202_0470	MR160/	050, 140	AW160/012	46.822	731	0.90	1,772	0.72	1,772
1.90	3,100	C302_0470	MR160/	050, 140	AW160/012	46.667	1,086	1.58	3,100	1.26	3,100
2.99	4,872	C402_0470	MR160/	050, 140	AW160/012	46.667	1,865	2.48	4,872	1.98	4,872
2.99	4,872	C402_0470	MR200/	180	AW200/014	46.667	1,865	2.48	4,872	1.98	4,872
2.99	4,872	C402_0470	MR250/	180, 210	AW250/102	46.667	1,865	2.48	4,872	1.98	4,872
4.34	7,086	C502_0470	MR160/	050, 140	AW160/012	46.719	2,289	3.60	7,086	2.88	7,086
4.34	7,086	C502_0470	MR200/	180	AW200/014	46.719	2,289	3.60	7,086	2.88	7,086
4.34	7,086	C502_0470	MR250/	180, 210	AW250/102	46.719	2,289	3.60	7,086	2.88	7,086
7.27	11,515	C612_0450	MR200/	180	AW200/014	45.333	3,054	6.02	11,515	4.82	11,515
7.27	11,515	C612_0450	MR250/	180, 210	AW250/102	45.333	3,054	6.02	11,515	4.82	11,515
7.27	11,515	C612_0450	MR300/	180, 210, 250, 280	AW300/110	45.333	3,054	6.02	11,515	4.82	11,515
10.83	17,716	C712_0470	MR200/	180	AW200/014	46.818	4,234	8.97	17,716	7.18	17,716
10.83	17,716	C712_0470	MR250/	180, 210	AW250/102	46.818	4,234	8.97	17,716	7.18	17,716
10.83	17,716	C712_0470	MR300/	180, 210, 250, 280	AW300/110	46.818	4,234	8.97	17,716	7.18	17,716
20.04	31,889	C812_0460	MR250/	180, 210	AW250/102	45.538	5,733	16.61	31,889	13.28	31,889
20.04	31,889	C812_0460	MR300/	180, 210, 250, 280	AW300/110	45.538	5,733	16.61	31,889	13.28	31,889
33.32	53,148	C912_0460	MR300/	180, 210, 250, 280	AW300/110	45.655	7,075	27.60	53,148	22.08	53,148
33.32	53,148	C912_0460	MR350/	320, 360	AW350/202	45.655	7,075	27.60	53,148	22.08	53,148
35 RPM Output (Approximate)								**29 RPM**		**23 RPM**	
0.30	531	C002_0500	MR140/	050	AW140/010	49.944	372	0.25	531	0.20	531
0.61	1,063	C102_0500	MR140/	050	AW140/010	49.944	528	0.50	1,063	0.40	1,063
1.03	1,772	C202_0490	MR140/	050	AW140/010	49.227	740	0.85	1,772	0.68	1,772
1.03	1,772	C202_0490	MR160/	050, 140	AW160/012	49.227	740	0.85	1,772	0.68	1,772
1.78	3,100	C302_0500	MR160/	050, 140	AW160/012	49.745	1,104	1.48	3,100	1.18	3,100
2.78	4,872	C402_0500	MR160/	050, 140	AW160/012	50.192	1,899	2.30	4,872	1.84	4,872
4.07	7,086	C502_0500	MR160/	050, 140	AW160/012	49.821	2,326	3.37	7,086	2.70	7,086
4.07	7,086	C502_0500	MR200/	180	AW200/014	49.821	2,326	3.37	7,086	2.70	7,086
4.07	7,086	C502_0500	MR250/	180, 210	AW250/102	49.821	2,326	3.37	7,086	2.70	7,086
7.46	12,844	C613_0490	MR200/	180	AW200/014	49.277	3,119	6.18	12,844	4.94	12,844
11.97	21,259	C713_0510	MR250/	180, 210	AW250/102	50.845	4,322	9.91	21,259	7.93	21,259
17.26	29,662	C813_0490	MR250/	180, 210	AW250/102	49.176	5,844	14.30	29,662	11.44	29,662
30 RPM Output (Approximate) Continued Next Page								**26 RPM**		**21 RPM**	
0.27	531	C002_0560	MR140/	050	AW140/010	55.972	382	0.23	531	0.18	531
0.54	1,063	C102_0560	MR140/	050	AW140/010	56.364	544	0.45	1,063	0.36	1,063
0.90	1,772	C202_0560	MR140/	050	AW140/010	56.424	766	0.74	1,772	0.60	1,772
0.90	1,772	C202_0560	MR160/	050, 140	AW160/012	56.424	766	0.74	1,772	0.60	1,772
1.58	3,100	C302_0560	MR160/	050, 140	AW160/012	56.136	1,138	1.31	3,100	1.05	3,100
2.49	4,872	C402_0560	MR160/	050, 140	AW160/012	56.101	1,953	2.06	4,872	1.65	4,872
3.63	7,086	C502_0560	MR160/	050, 140	AW160/012	55.833	2,393	3.01	7,086	2.41	7,086
3.63	7,086	C502_0560	MR200/	180	AW200/014	55.833	2,393	3.01	7,086	2.41	7,086
3.63	7,086	C502_0560	MR250/	180, 210	AW250/102	55.833	2,393	3.01	7,086	2.41	7,086

* For thermal HP capacity, see rating below.

Base Module	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

Housing Styles

N — Foot Mounted **F** — Round Flange **Q** — Square Flange **G** — Tapped Holes



Housing Style Q is available on special order.

NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

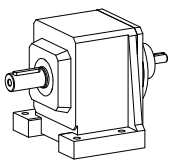
"C" Series – Concentric Helical MGS Reducer – Selection Data

NOTE: [1] Complete Base Module Part Number by adding Housing Style. Example: C302**N**0560.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

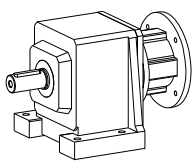
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
30 RPM Output (Approximate) Continued								**26 RPM**		**21 RPM**	
5.98	11,515	C612_0550	MR200/	180	AW200/014	55.111	3,207	4.95	11,515	3.96	11,515
5.98	11,515	C612_0550	MR250/	180, 210	AW250/102	55.111	3,207	4.95	11,515	3.96	11,515
8.92	17,716	C712_0570	MR200/	180	AW200/014	56.818	4,443	7.39	17,716	5.91	17,716
8.92	17,716	C712_0570	MR250/	180, 210	AW250/102	56.818	4,443	7.39	17,716	5.91	17,716
8.92	17,716	C712_0570	MR300/	180, 210, 250, 280	AW300/110	56.818	4,443	7.39	17,716	5.91	17,716
16.85	31,889	C812_0540	MR250/	180, 210	AW250/102	54.154	5,987	13.96	31,889	11.17	31,889
16.85	31,889	C812_0540	MR300/	180, 210, 250, 280	AW300/110	54.154	5,987	13.96	31,889	11.17	31,889
27.24	53,148	C912_0560	MR300/	180, 210, 250, 280	AW300/110	55.833	7,441	22.57	53,148	18.06	53,148
28 RPM Output (Approximate)								**23 RPM**		**18 RPM**	
0.24	531	C002_0620	MR140/	050	AW140/010	62.350	393	0.20	531	0.16	531
0.48	1,054	C102_0620	MR140/	050	AW140/010	62.431	558	0.40	1,054	0.32	1,054
0.77	1,658	C202_0610	MR140/	050	AW140/010	61.354	782	0.64	1,658	0.51	1,658
1.35	2,932	C302_0620	MR160/	050, 140	AW160/012	61.920	1,166	1.12	2,932	0.90	2,932
2.03	4,440	C402_0630	MR160/	050, 140	AW160/012	62.515	2,007	1.68	4,440	1.35	4,440
2.90	6,325	C502_0620	MR160/	050, 140	AW160/012	62.431	2,461	2.40	6,325	1.92	6,325
5.79	12,844	C613_0630	MR200/	180	AW200/014	63.462	3,322	4.80	12,844	3.84	12,844
9.43	21,259	C713_0650	MR250/	180, 210	AW250/102	64.547	4,587	7.81	21,259	6.25	21,259
15.25	35,139	C813_0660	MR250/	180, 210	AW250/102	65.963	6,290	13.37	37,204	10.70	37,204
25 RPM Output (Approximate)								**21 RPM**		**17 RPM**	
0.22	531	C002_0700	MR140/	050	AW140/010	69.875	404	0.18	531	0.14	531
0.43	1,063	C102_0700	MR140/	050	AW140/010	70.455	575	0.36	1,063	0.29	1,063
0.72	1,772	C202_0700	MR140/	050	AW140/010	70.324	810	0.60	1,772	0.48	1,772
1.27	3,100	C302_0700	MR160/	050, 140	AW160/012	69.875	1,202	1.05	3,100	0.84	3,100
2.00	4,872	C402_0700	MR160/	050, 140	AW160/012	69.875	2,063	1.65	4,872	1.32	4,872
2.90	7,086	C502_0700	MR160/	050, 140	AW160/012	69.965	2,532	2.40	7,086	1.92	7,086
4.78	11,515	C612_0690	MR200/	180	AW200/014	68.889	3,391	3.96	11,515	3.17	11,515
4.78	11,515	C612_0690	MR250/	180, 210	AW250/102	68.889	3,391	3.96	11,515	3.17	11,515
7.29	17,716	C712_0700	MR200/	180	AW200/014	69.545	4,674	6.04	17,716	4.83	17,716
7.29	17,716	C712_0700	MR250/	180, 210	AW250/102	69.545	4,674	6.04	17,716	4.83	17,716
13.25	31,889	C812_0690	MR250/	180, 210	AW250/102	68.889	6,358	10.98	31,889	8.78	31,889
13.25	31,889	C812_0690	MR300/	180, 210, 250, 280	AW300/110	68.889	6,358	10.98	31,889	8.78	31,889
21.74	53,148	C912_0700	MR300/	180, 210, 250, 280	AW300/110	69.965	7,872	18.01	53,148	14.41	53,148
22 RPM Output (Approximate) Continued Next Page								**18 RPM**		**15 RPM**	
0.37	1,063	C103_0820	MR140/	050	AW140/010	81.638	597	0.31	1,063	0.25	1,063
0.63	1,772	C203_0810	MR140/	050	AW140/010	80.618	838	0.52	1,772	0.42	1,772
0.64	1,772	C203_0800	MR160/	050, 140	AW160/012	79.589	835	0.53	1,772	0.42	1,772
1.06	3,003	C303_0810	MR140/	050	AW140/010	81.467	1,249	0.87	3,003	0.70	3,003
1.73	4,872	C403_0810	MR160/	050, 140	AW160/012	80.810	2,140	1.43	4,872	1.14	4,872
2.52	7,086	C503_0810	MR160/	050, 140	AW160/012	80.596	2,623	2.08	7,086	1.67	7,086
4.79	12,844	C613_0770	MR200/	180	AW200/014	76.795	3,484	3.97	12,844	3.17	12,844

Part No. Explanation

C 3 0 2 N 0620 AW 140 / 012
- C — Concentric Helical
- 3 — Unit No.
- 0 — Generation No.
- 2 — No. of Gear Reductions
- N — Housing Style
- 0620 — Ratio (0620 = 62.0:1)
- AW — Input Shaft
- 140 — Size
- 012 — Shaft Dia. ($^{1}/_{16}$ in.; example—012=$^{12}/_{16}$ or $^{3}/_{4}$)



C 3 0 2 N 0620 MR 160 / 140
- C — Concentric Helical
- 3 — Unit No.
- 0 — Generation No.
- 2 — No. of Reductions
- N — Housing Style
- 0620 — Ratio (0620 = 62.0:1)
- MR — Motor Adapter
- 160 — Size
- 140 — Motor Frame Size (140=143/145TC)



Mounting position must be specified when ordering.

"C" Series – Concentric Helical MGS Reducer – Selection Data

Selection Procedure:

. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

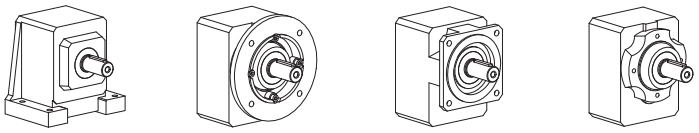
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
22 RPM	**Output (Approximate)** Continued							**18 RPM**		**15 RPM**	
6.72	19,007	C713_0810	MR200/	180	AW200/014	80.965	4,855	5.93	20,237	4.98	21,259
7.63	21,259	C713_0800	MR250/	180, 210	AW250/102	79.734	4,836	6.32	21,259	5.06	21,259
13.50	36,844	C813_0780	MR250/	180, 210	AW250/102	78.133	6,562	11.29	37,204	9.03	37,204
20 RPM	**Output (Approximate)**							**16 RPM**		**13 RPM**	
0.33	1,063	C103_0920	MR140/	050	AW140/010	92.131	608	0.27	1,063	0.22	1,063
0.55	1,772	C203_0920	MR140/	050	AW140/010	92.404	855	0.45	1,772	0.36	1,772
0.56	1,772	C203_0910	MR160/	050, 140	AW160/012	91.225	855	0.46	1,772	0.37	1,772
0.97	3,100	C303_0920	MR140/	050	AW140/010	91.933	1,271	0.80	3,100	0.64	3,100
0.98	3,100	C303_0910	MR160/	050, 140	AW160/012	90.759	1,271	0.81	3,100	0.65	3,100
1.54	4,872	C403_0900	MR160/	050, 140	AW160/012	90.323	2,183	1.28	4,872	1.02	4,872
2.25	7,086	C503_0900	MR160/	050, 140	AW160/012	90.323	2,678	1.86	7,086	1.49	7,086
3.04	9,299	C613_0880	MR160/	050, 140	AW160/012	87.644	3,600	2.52	9,299	2.01	9,299
3.71	11,515	C613_0890	MR200/	180	AW200/014	88.778	3,600	3.08	11,515	2.46	11,515
5.67	17,716	C713_0890	MR250/	180, 210	AW250/102	89.416	4,950	4.70	17,716	3.76	17,716
7.85	24,905	C813_0910	MR200/	180	AW200/014	90.821	6,750	6.50	24,905	5.20	24,905
10.20	31,889	C813_0890	MR250/	180, 210	AW250/102	89.441	6,750	8.45	31,889	6.76	31,889
18 RPM	**Output (Approximate)**							**14 RPM**		**11 RPM**	
3.76	12,844	C613_0980	MR200/	180	AW200/014	97.634	3,600	3.12	12,844	2.50	12,844
5.86	20,308	C713_0990	MR200/	180	AW200/014	99.141	4,950	5.08	21,259	4.07	21,259
6.23	21,259	C713_0980	MR250/	180, 210	AW250/102	97.634	4,950	5.16	21,259	4.13	21,259
10.59	37,204	C813_1010	MR250/	180, 210	AW250/102	100.511	6,750	8.78	37,204	7.02	37,204
16 RPM	**Output (Approximate)**							**13 RPM**		**11 RPM**	
0.27	1,063	C103_1110	MR140/	050	AW140/010	111.091	608	0.23	1,063	0.18	1,063
0.46	1,772	C203_1090	MR160/	050, 140	AW160/012	109.206	855	0.38	1,772	0.31	1,772
0.82	3,100	C303_1080	MR160/	050, 140	AW160/012	108.213	1,271	0.68	3,100	0.54	3,100
1.29	4,872	C403_1080	MR160/	050, 140	AW160/012	107.714	2,183	1.07	4,872	0.86	4,872
1.87	7,086	C503_1090	MR160/	050, 140	AW160/012	108.649	2,678	1.55	7,086	1.24	7,086
2.92	10,835	C613_1060	MR160/	050, 140	AW160/012	106.057	3,600	2.42	10,835	1.94	10,835
3.07	11,515	C613_1070	MR200/	180	AW200/014	107.429	3,600	2.54	11,515	2.03	11,515
4.59	17,716	C713_1100	MR250/	180, 210	AW250/102	110.455	4,950	3.80	17,716	3.04	17,716
7.85	29,498	C813_1080	MR200/	180	AW200/014	107.578	6,750	6.50	29,498	5.20	29,498
13.77	53,148	C913_1100	MR250/	180, 210	AW250/102	110.434	8,325	11.41	53,148	9.13	53,148
13 RPM	**Output (Approximate)** Continued Next Page							**11 RPM**		**9 RPM**	
0.37	1,772	C203_1380	MR140/	050	AW140/010	137.786	855	0.30	1,772	0.24	1,772
0.37	1,772	C203_1360	MR160/	050, 140	AW160/012	136.027	855	0.31	1,772	0.25	1,772
0.65	3,100	C303_1370	MR140/	050	AW140/010	137.192	1,271	0.54	3,100	0.43	3,100
0.66	3,100	C303_1350	MR160/	050, 140	AW160/012	135.441	1,271	0.54	3,100	0.43	3,100
1.04	4,872	C403_1350	MR160/	050, 140	AW160/012	134.643	2,183	0.86	4,872	0.69	4,872
1.50	7,086	C503_1350	MR160/	050, 140	AW160/012	135.333	2,678	1.24	7,086	0.99	7,086
2.44	11,515	C613_1350	MR160/	050, 140	AW160/012	134.838	3,600	2.03	11,515	1.62	11,515

* For thermal HP capacity, see rating below.

Base Module	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

Housing Styles

N — Foot Mounted **F** — Round Flange **Q** — Square Flange **G** — Tapped Holes



Housing Style Q is available on special order.

NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

"C" Series – Concentric Helical MGS Reducer – Selection Data

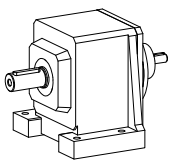
NOTE: [1] Complete Base Module Part Number by adding Housing Style. Example: C302**N**0560.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
13 RPM Output (Approximate) Continued								**11 RPM**		**9 RPM**	
2.90	12,844	C613_1270	MR200/	180	AW200/014	126.924	3,600	2.40	12,844	1.92	12,844
3.69	17,716	C713_1370	MR200/	180	AW200/014	137.338	4,950	3.06	17,716	2.45	17,716
4.67	21,259	C713_1300	MR250/	180, 210	AW250/102	130.359	4,950	3.87	21,259	3.09	21,259
6.59	31,889	C813_1380	MR200/	180	AW200/014	138.389	6,750	5.46	31,889	4.37	31,889
6.70	31,889	C813_1360	MR250/	180, 210	AW250/102	136.286	6,750	5.55	31,889	4.44	31,889
10 RPM Output (Approximate)								**8 RPM**		**7 RPM**	
1.86	11,515	C613_1780	MR200/	180	AW200/014	177.556	3,600	1.54	11,515	1.23	11,515
1.88	11,515	C613_1750	MR160/	050, 140	AW160/012	175.289	3,600	1.56	11,515	1.25	11,515
5.12	31,889	C813_1780	MR200/	180	AW200/014	178.359	6,750	4.24	31,889	3.39	31,889
5.20	31,889	C813_1760	MR250/	180, 210	AW250/102	175.648	6,750	4.30	31,889	3.44	31,889
8.64	53,148	C913_1760	MR250/	180, 210	AW250/102	176.097	8,325	7.16	53,148	5.73	53,148
9.5 RPM Output (Approximate)								**7.5 RPM**		**6 RPM**	
0.17	1,063	C103_1840	MR140/	050	AW140/010	183.727	608	0.14	1,063	0.11	1,063
0.28	1,772	C203_1830	MR140/	050	AW140/010	183.387	855	0.23	1,772	0.18	1,772
0.28	1,772	C203_1810	MR160/	050, 140	AW160/012	181.046	855	0.23	1,772	0.19	1,772
0.49	3,100	C303_1830	MR140/	050	AW140/010	182.778	1,271	0.40	3,100	0.32	3,100
0.49	3,100	C303_1800	MR160/	050, 140	AW160/012	180.444	1,271	0.41	3,100	0.33	3,100
1.12	7,086	C503_1810	MR160/	050, 140	AW160/012	180.646	2,678	0.93	7,086	0.74	7,086
2.76	17,716	C713_1830	MR200/	180	AW200/014	183.371	4,950	2.29	17,716	1.83	17,716
8 RPM Output (Approximate)								**7 RPM**		**5 RPM**	
0.14	1,063	C103_2210	MR140/	050	AW140/010	220.758	608	0.11	1,063	0.09	1,063
0.23	1,772	C203_2210	MR140/	050	AW140/010	220.995	855	0.19	1,772	0.15	1,772
0.40	3,100	C303_2200	MR140/	050	AW140/010	219.867	1,271	0.33	3,100	0.27	3,100
0.41	3,100	C303_2170	MR160/	050, 140	AW160/012	217.061	1,271	0.34	3,100	0.27	3,100
0.64	4,872	C403_2170	MR160/	050, 140	AW160/012	216.925	2,183	0.53	4,872	0.43	4,872
0.94	7,086	C503_2160	MR160/	050, 140	AW160/012	215.889	2,678	0.78	7,086	0.62	7,086
1.55	11,515	C613_2130	MR160/	050, 140	AW160/012	213.096	3,600	1.28	11,515	1.03	11,515
2.28	17,716	C713_2230	MR200/	180	AW200/014	222.538	4,950	1.89	17,716	1.51	17,716
4.37	31,889	C813_2090	MR250/	180, 210	AW250/102	208.879	6,750	3.62	31,889	2.90	31,889
7.06	53,148	C913_2150	MR250/	180, 210	AW250/102	215.357	8,325	5.85	53,148	4.68	53,148
6 RPM Output (Approximate)								**5 RPM**		**4 RPM**	
0.11	1,063	C103_2760	MR140/	050	AW140/010	275.947	608	0.09	1,063	0.07	1,063
0.18	1,772	C203_2750	MR140/	050	AW140/010	275.436	855	0.15	1,772	0.12	1,772
0.32	3,100	C303_2740	MR140/	050	AW140/010	273.677	1,271	0.27	3,100	0.21	3,100
0.52	4,872	C403_2700	MR160/	050, 140	AW160/012	270.183	2,183	0.43	4,872	0.34	4,872
0.75	7,086	C503_2710	MR160/	050, 140	AW160/012	270.532	2,678	0.62	7,086	0.50	7,086
1.24	11,515	C613_2660	MR160/	050, 140	AW160/012	266.370	3,600	1.03	11,515	0.82	11,515
3.38	31,889	C813_2700	MR200/	180	AW200/014	269.815	6,750	2.80	31,889	2.24	31,889

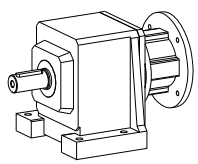
NOTE: For slower speeds than those listed above, units can be combined. Contact STOBER Drives Inc.

Part No. Explanation

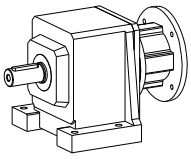
C 3 0 2 N 0620 AW 140 / 012
- C: Concentric Helical
- 3: Unit No.
- 0: Generation No.
- 2: No. of Gear Reductions
- N: Housing Style
- 0620: Ratio (0620 = 62.0:1)
- AW: Input Shaft
- 140: Size
- 012: Shaft Dia. ($^{1}/_{16}$ in.; example—012=$^{12}/_{16}$ or $^{3}/_{4}$)



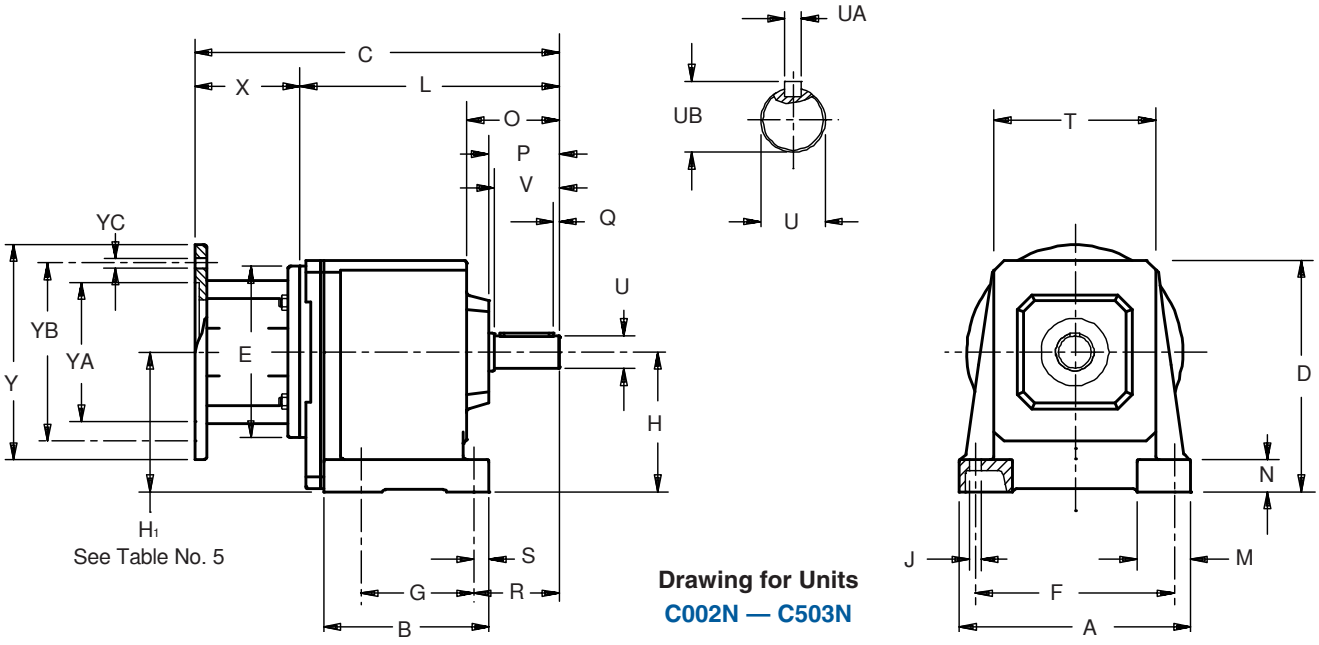
C 3 0 2 N 0620 MR 160 / 140
- C: Concentric Helical
- 3: Unit No.
- 0: Generation No.
- 2: No. of Reductions
- N: Housing Style
- 0620: Ratio (0620 = 62.0:1)
- MR: Motor Adapter
- 160: Size
- 140: Motor Frame Size (140=143/145TC)



Mounting position must be specified when ordering.



"C" Series – MGS Reducer Foot Mount – "N" Housing Dimensional Data



Drawing for Units
C002N — C503N

Table No. 1 **"C" Series – Foot Mounting Unit Dimensions (Inches) – "N" Housing Style**

Base Module	A	B	D	F	G	H	J	M	N	O	P	Q	R	S	T	V	Z_1
C002	5.20	3.74	5.67	4.33	2.44	3.23	.28	1.38	.79	2.24	1.73	.16	2.17	.43	3.62	1.57	–
C102/C103	6.93	4.65	6.97	5.91	2.76	4.02	.35	1.65	.98	2.72	2.13	.16	2.64	.51	4.88	1.97	–
C202/C203	7.87	5.31	7.68	6.69	3.35	4.53	.43	1.97	1.18	3.39	2.56	.16	3.11	.55	5.43	2.36	–
C302/C303	8.46	6.06	8.46	7.28	4.13	5.12 [1]	.43	1.97	1.18	3.35	2.56	.16	3.11	.55	5.91	2.36	–
C402/C403	10.04	7.09	9.65	8.66	4.33	5.71	.55	2.36	1.38	4.17	3.39	.16	4.13	.75	6.89	3.15	–
C502/C503	11.42	7.76	11.42	9.65	5.12	6.69	.71	2.76	1.57	4.21	3.39	.16	4.25	.87	7.56	3.15	–
C612/C613	11.81	10.43	12.40	9.65	8.46	7.87 [1]	.71	2.95	1.57	6.02	4.17	.20	5.12	.98	6.97	3.94	6.57
C712/C713	14.37	11.22	14.76	11.81	9.25	9.25 [1]	.71	3.54	1.97	7.28	5.00	.20	6.42	.98	7.56	4.72	7.91
C812/C813	17.13	14.17	17.72	13.39	11.81	11.42	.87	3.74	2.17	8.58	5.83	.39	7.48	1.14	8.78	5.51	8.70
C912/C913	20.08	16.14	20.87	15.75	13.39	13.39	1.02	4.33	2.36	10.08	7.01	.39	8.74	1.34	10.91	6.69	10.24

[1] See Table No. 5

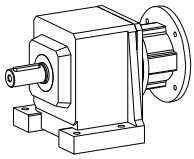
Table No. 2 **Metric output available on request**

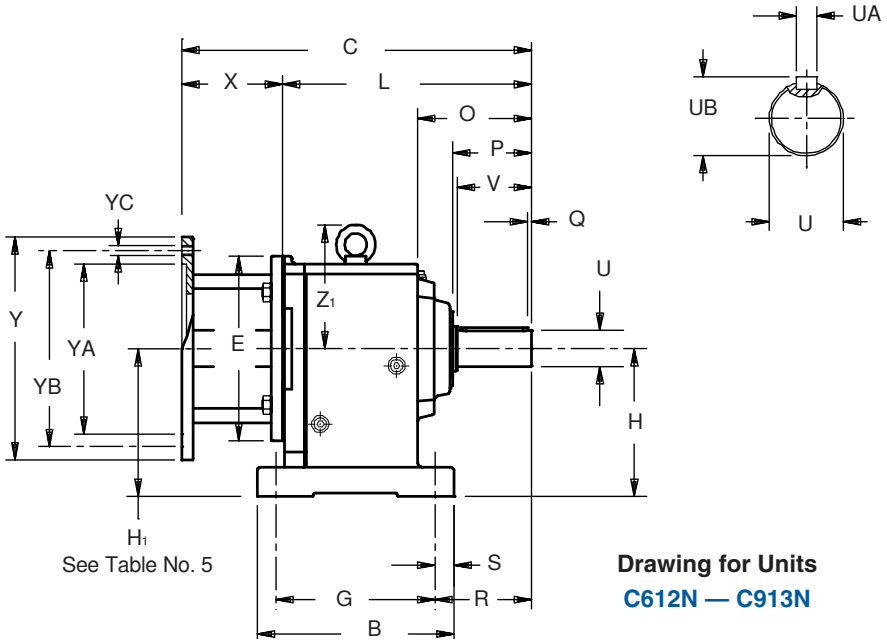
	Standard Shaft - inches			Optional Shaft - mm		
Base Module	U	UA	UB	U	UA	UB
C002	.750	$^3/_{16} \times ^3/_{16} \times 1^7/_{32}$	.83	20_{k6}	A6x6x32	22.5
C102/C103	1.000	$^1/_4 \times ^1/_4 \times 1^9/_{16}$	1.11	25_{k6}	A8x7x40	28
C202/C203	1.250	$^1/_4 \times ^1/_4 \times 1^{15}/_{16}$	1.36	30_{k6}	A8x7X50	33
C302/C303	1.250	$^1/_4 \times ^1/_4 \times 1^{15}/_{16}$	1.36	30_{k6}	A8x7X50	33
C402/C403	1.625	$^3/_8 \times ^3/_8 \times 2^7/_8$	1.79	40_{k6}	A12x8X70	43
C502/C503	1.625	$^3/_8 \times ^3/_8 \times 2^7/_8$	1.79	40_{k6}	A12x8X70	43
C612/C613	2.125	$^1/_2 \times ^1/_2 \times 3^5/_{32}$	2.35	50_{k6}	A14x9x90	53.5
C712/C713	2.375	$^5/_8 \times ^5/_8 \times 3^{15}/_{16}$	2.65	60_{m6}	A18x11x100	64
C812/C813	2.875	$^3/_4 \times ^3/_4 \times 4^5/_{16}$	3.21	70_{m6}	A20x12x125	74.5
C912/C913	3.625	$^7/_8 \times ^7/_8 \times 5^1/_2$	4.01	90_{m6}	A25x14x140	95

Table No. 3 **Motor Adapter Dimensions (Inches)**

Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR300/180	182/184TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/210	213/215TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/250	254/256TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/280	284/286TC	11.81	6.50	11.13	10.500	9.00	.57	75
MR350/320	324/326TC	13.78	7.09	13.37	12.500	11.00	.70	133
MR350/360	364/365TC	13.78	7.09	13.37	12.500	11.00	.70	133

"C" Series – MGS Reducer Foot Mount – "N" Housing Dimensional Data





Drawing for Units
C612N — C913N

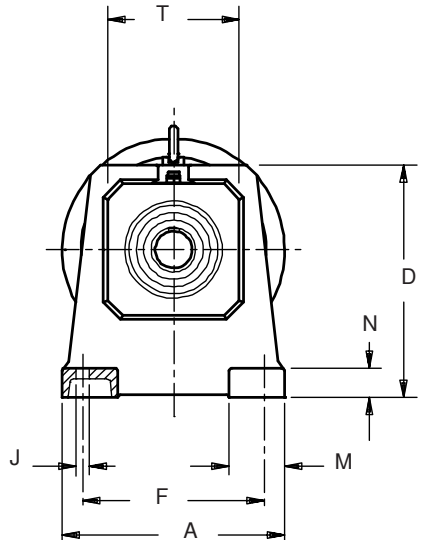


Table No. 4 "C" Series – Foot Mounting Unit Dimensions (Inches) – "N" Housing Style

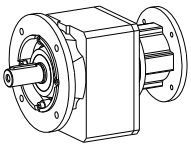
Base	MR140/050		MR160/140 [2]		MR200/180		MR250/210 [3]		MR300/250 [4]		MR350/320 [5]		Approx.
Module	C	L	C	L	C	L	C	L	C	L	C	L	Wt.(lbs.)
C002	9.37	6.06	10.08	6.22	–	–	–	–	–	–	–	–	18
C102	10.67	7.36	11.38	7.52	12.40	7.60	–	–	–	–	–	–	29
C103	12.13	8.82	–	–	–	–	–	–	–	–	–	–	34
C202	11.77	8.46	12.48	8.62	13.50	8.70	–	–	–	–	–	–	38
C203	13.23	9.92	14.17	10.31	–	–	–	–	–	–	–	–	45
C302	–	–	13.23	9.37	14.25	9.45	14.88	9.57	–	–	–	–	49
C303 [1]	13.98	10.67	14.92	11.06	–	–	–	–	–	–	–	–	56
C402	–	–	15.12	11.26	16.14	11.34	16.77	11.46	–	–	–	–	71
C403	–	–	16.81	12.95	–	–	–	–	–	–	–	–	78
C502	–	–	15.95	12.09	16.97	12.17	17.59	12.28	19.33	12.83	–	–	95
C503	–	–	17.64	13.78	–	–	–	–	–	–	–	–	111
C612 [1]	–	–	–	–	17.91	13.11	18.54	13.23	20.24	13.74	–	–	115
C613 [1]	–	–	18.62	14.76	20.35	15.55	–	–	–	–	–	–	159
C712	–	–	–	–	20.00	15.20	20.59	15.28	22.29	15.79	–	–	199
C713 [1]	–	–	–	–	22.40	17.60	23.38	18.07	–	–	–	–	221
C812	–	–	–	–	–	–	23.22	17.91	24.53	18.03	26.42	19.33	322
C813	–	–	–	–	25.04	20.24	26.02	20.71	–	–	–	–	342
C912	–	–	–	–	–	–	–	–	27.56	21.06	29.06	21.97	596
C913	–		–	–	–	–	27.87	22.56	–	–	–	–	678

Table No. 5 "C" Series – Input Dimension (Inches)

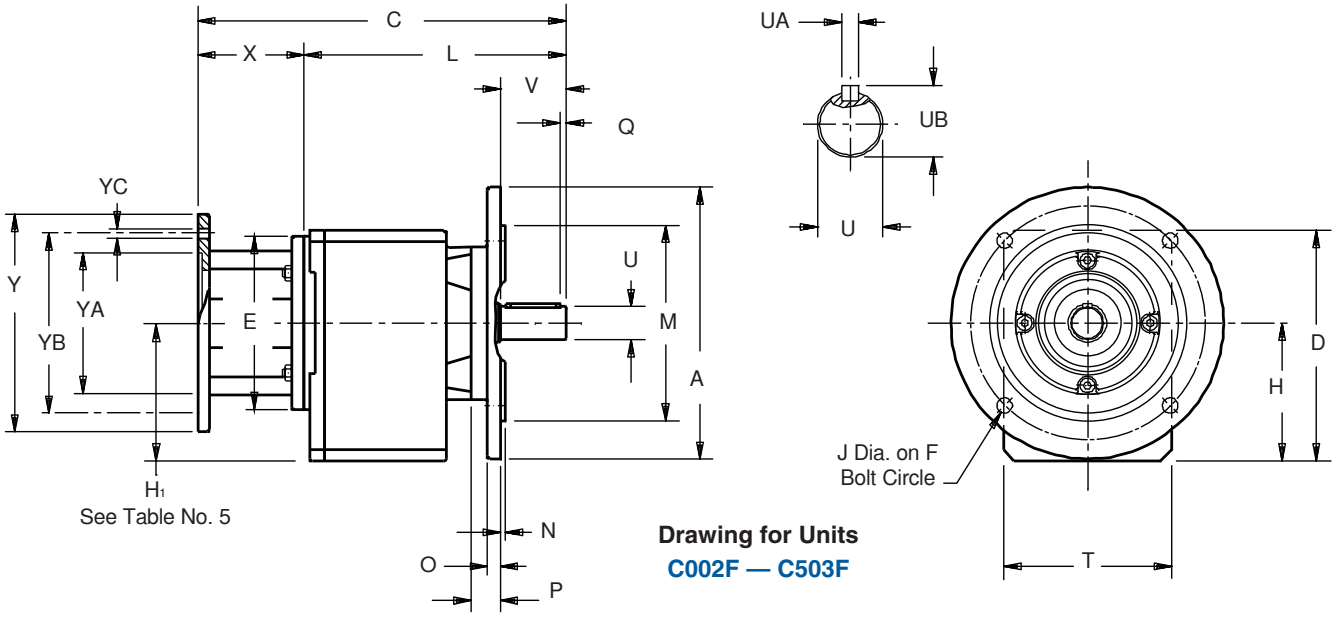
Base	MR160/140[2]	MR200/180	MR250/210	MR300/250
Module	H_1	H_1	H_1	H_1
C303	3.66	—	—	—
C612	—	7.63	7.63	7.63
C613	—	—	7.63	—
C713	—	—	10.00	—

[1] See Table No. 5
[2] Also available as **MR160/050** for a NEMA 56C frame motor.
[3] Also available as **MR250/180** for a NEMA 182/184TC frame motor.
[4] Also available as **MR300/180** for a NEMA 182/184TC, **MR300/210** for a NEMA 213/215TC, and **MR300/280** for a NEMA 284/286TC frame motor.
[5] Also available as **MR350/360** for a NEMA 364/365TC frame motor.
All weights are approximate.

Part No. Example
Foot Mounting with Motor Adapter
C302N0620 MR160/140



"C" Series – MGS Reducer Round Flange – "F" Housing Dimensional Data



Drawing for Units
C002F — C503F

Table No. 1 **"C" Series – Round Flange Unit Dimensions (Inches) – "F" Housing Style**

Base Module	A [1]	D	F	H	J	M	N	O	P	Q	T	V	Z_1
C002	6.30	5.55	5.12	3.11	.35	4.331	.12	.39	.71	.16	3.82	1.57	–
C102/C103	7.87	6.89	6.50	3.94	.43	5.118	.14	.47	.83	.16	5.12	1.97	–
C202/C203	7.87	7.56	6.50	4.41	.43	5.118	.14	.47	1.06	.16	5.59	2.36	–
C302/C303	9.84	8.35	8.46	5.00 [2]	.55	7.087	.16	.47	1.06	.16	6.06	2.36	–
C402/C403	9.84	9.55	8.46	5.61	.55	7.087	.16	.55	1.10	.16	7.01	3.15	–
C502/C503	11.81	11.26	10.43	6.54	.55	9.055	.16	.63	1.14	.16	7.68	3.15	–
C612/C613	11.81	11.97	10.43	7.44 [2]	.55	9.055	.16	.67	1.42	.20	8.86	3.94	6.57
C712/C713	13.78	14.61	11.81	9.09 [2]	.71	9.842	.20	.71	1.73	.20	10.43	4.72	7.91
C812/C813	15.75	17.52	13.78	11.22	.71	11.811	.20	.79	1.77	.39	12.20	5.51	8.70
C912/C913	17.72	20.63	15.75 *	13.15	.71	13.780	.20	.91	1.97	.39	14.37	6.69	10.24

[1] See Page 54 for other available output flanges.
[2] See Table No. 5
* C912 and C913 have 8 mounting holes in the output flange instead of 4 as shown in the drawing.

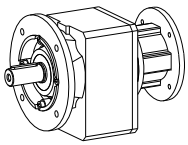
Table No. 2 **Metric output available on request**

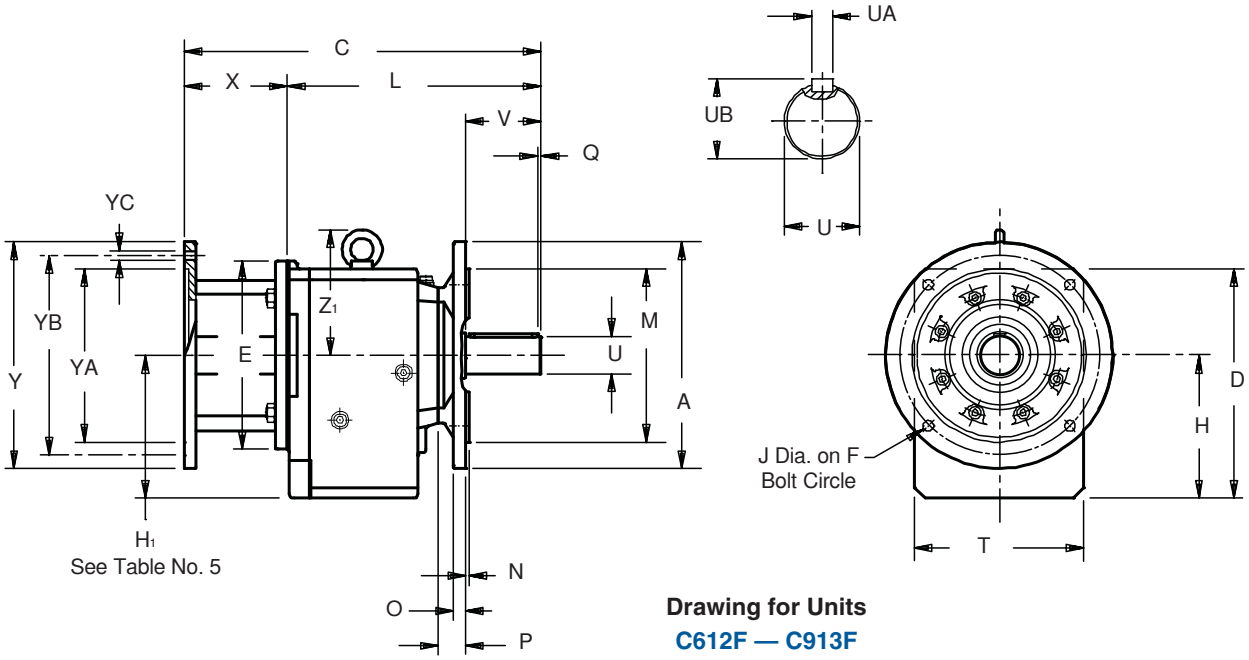
Base Module	Standard Shaft - inches			Optional Shaft - mm		
	U	UA	UB	U	UA	UB
C002	.750	$^3/_{16} \times ^3/_{16} \times 1^7/_{32}$	.83	20_{k6}	A6x6x32	22.5
C102/C103	1.000	$^1/_4 \times ^1/_4 \times 1^9/_{16}$	1.11	25_{k6}	A8x7x40	28
C202/C203	1.250	$^1/_4 \times ^1/_4 \times 1^{15}/_{16}$	1.36	30_{k6}	A8x7X50	33
C302/C303	1.250	$^1/_4 \times ^1/_4 \times 1^{15}/_{16}$	1.36	30_{k6}	A8x7X50	33
C402/C403	1.625	$^3/_8 \times ^3/_8 \times 2^7/_8$	1.79	40_{k6}	A12x8X70	43
C502/C503	1.625	$^3/_8 \times ^3/_8 \times 2^7/_8$	1.79	40_{k6}	A12x8X70	43
C612/C613	2.125	$^1/_2 \times ^1/_2 \times 3^5/_{32}$	2.35	50_{k6}	A14x9x90	53.5
C712/C713	2.375	$^5/_8 \times ^5/_8 \times 3^{15}/_{16}$	2.65	60_{m6}	A18x11x100	64
C812/C813	2.875	$^3/_4 \times ^3/_4 \times 4^5/_{16}$	3.21	70_{m6}	A20x12x125	74.5
C912/C913	3.625	$^7/_8 \times ^7/_8 \times 5^1/_2$	4.01	90_{m6}	A25x14x140	95

Table No. 3 **Motor Adapter Dimensions (Inches)**

Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR300/180	182/184TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/210	213/215TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/250	254/256TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/280	284/286TC	11.81	6.50	11.13	10.500	9.00	.57	75
MR350/320	324/326TC	13.78	7.09	13.37	12.500	11.00	.70	133
MR350/360	364/365TC	13.78	7.09	13.37	12.500	11.00	.70	133

"C" Series – MGS Reducer Round Flange – "F" Housing Dimensional Data





Drawing for Units
C612F — C913F

Table No. 4 "C" Series – Round Flange Unit Dimensions (Inches) – "F" Housing Style

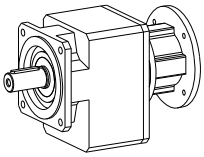
Base	MR140/050		MR160/140 [3]		MR200/180		MR250/210 [4]		MR300/250 [5]		MR350/320 [6]		Approx.
Module	C	L	C	L	C	L	C	L	C	L	C	L	Wt.(lbs.)
C002	9.37	6.06	10.08	6.22	–	–	–	–	–	–	–	–	18
C102	10.67	7.36	11.38	7.52	12.40	7.60	–	–	–	–	–	–	29
C103	12.13	8.82	–	–	–	–	–	–	–	–	–	–	34
C202	11.77	8.46	12.48	8.62	13.50	8.70	–	–	–	–	–	–	38
C203	13.23	9.92	14.17	10.31	–	–	–	–	–	–	–	–	45
C302	–	–	13.23	9.37	14.25	9.45	14.88	9.57	–	–	–	–	49
C303 [2]	13.98	10.67	14.92	11.06	–	–	–	–	–	–	–	–	56
C402	–	–	15.12	11.26	16.14	11.34	16.77	11.46	–	–	–	–	71
C403	–	–	16.81	12.95	–	–	–	–	–	–	–	–	78
C502	–	–	15.95	12.09	16.97	12.17	17.59	12.28	19.33	12.83	–	–	95
C503	–	–	17.64	13.78	–	–	–	–	–	–	–	–	111
C612 [2]	–	–	–	–	17.91	13.11	18.54	13.23	20.24	13.74	–	–	115
C613 [2]	–	–	18.62	14.76	20.35	15.55	–	–	–	–	–	–	159
C712	–	–	–	–	20.00	15.20	20.59	15.28	22.29	15.79	–	–	199
C713 [2]	–	–	–	–	22.40	17.60	23.38	18.07	–	–	–	–	221
C812	–	–	–	–	–	–	23.22	17.91	24.53	18.03	26.42	19.33	322
C813	–	–	–	–	25.04	20.24	26.02	20.71	–	–	–	–	342
C912	–	–	–	–	–	–	–	–	27.56	21.06	29.06	21.97	596
C913	–		–	–	–	–	27.87	22.56	–	–	–	–	678

Table No. 5 "C" Series – Input Dimension (Inches)

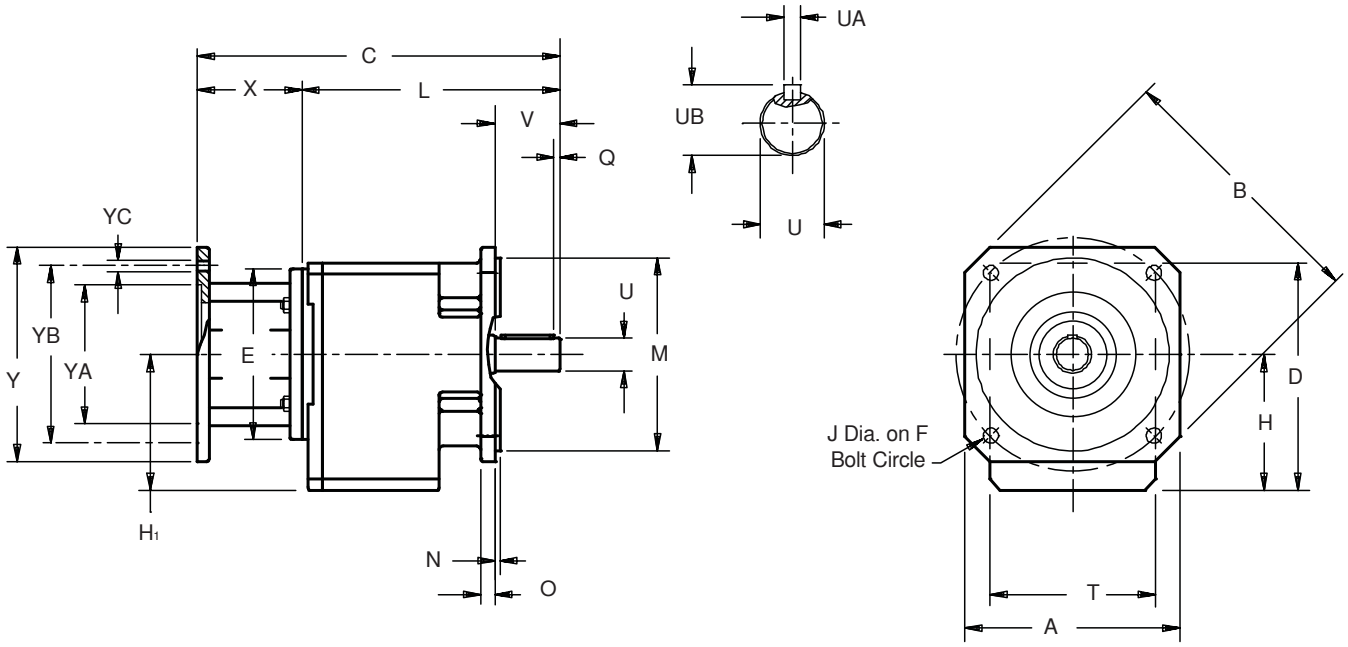
Base	MR160/140[3]	MR200/180	MR250/210	MR300/250
Module	H_1	H_1	H_1	H_1
C303	3.54	—	—	—
C612	—	7.44	7.44	7.44
C613	—	—	7.44	—
C713	—	—	9.84	—

Part No. Example
Round Flange with Motor Adapter
C302F0620 MR160/140

[2] See Table No. 5
[3] Also available as **MR160/050** for a NEMA 56C frame motor.
[4] Also available as **MR250/180** for a NEMA 182/184TC frame motor.
[5] Also available as **MR300/180** for a NEMA 182/184TC, **MR300/210** for a NEMA 213/215TC, and **MR300/280** for a NEMA 284/286TC frame motor.
[6] Also available as **MR350/360** for a NEMA 364/365TC frame motor.
All weights are approximate.



"C" Series – MGS Reducer Square Flange – "Q" Housing Dimensional Data



Drawing for Units
C002Q — C403Q

Table No. 1 **"C" Series – Square Flange Unit Dimensions (Inches) – "Q" Housing Style**

Base Module	A	B	D	F	H	J	M	N	O	Q	T	V
C002	4.88	6.30	5.55	5.12	3.11	.35	4.33	.14	.35	.16	3.82	1.57
C102/C103	5.71	7.56	6.89	6.50	3.94	.43	5.12	.14	.43	.16	5.12	1.97
C202/C203	5.71	7.56	7.56	6.50	4.41	.43	5.12	.14	.43	.16	5.59	2.36
C302/C303	7.87	9.84	8.35	8.46	5.00 [1]	.55	7.09	.16	.55	.16	6.06	2.36
C402/C403	7.87	9.84	9.55	8.46	5.61	.55	7.09	.16	.55	.16	7.01	3.15

[1] H_1 dimension is 3.54 on C303.

Table No. 2 **Metric output available on request**

	Standard Shaft - inches			Optional Shaft - mm		
Base Module	U	UA	UB	U	UA	UB
C002	.750	$^3/_{16} \times ^3/_{16} \times 1^7/_{32}$	.83	20_{k6}	A6x6x32	22.5
C102/C103	1.000	$^1/_4 \times ^1/_4 \times 1^9/_{16}$	1.11	25_{k6}	A8x7x40	28
C202/C203	1.250	$^1/_4 \times ^1/_4 \times 1^{15}/_{16}$	1.36	30_{k6}	A8x7X50	33
C302/C303	1.250	$^1/_4 \times ^1/_4 \times 1^{15}/_{16}$	1.36	30_{k6}	A8x7X50	33
C402/C403	1.625	$^3/_8 \times ^3/_8 \times 2^7/_8$	1.79	40_{k6}	A12x8X70	43

This Housing Style is available on special order.

"C" Series – MGS Reducer Square Flange – "Q" Housing Dimensional Data

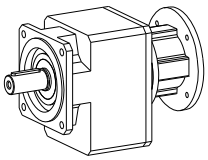


Table No. 3 Motor Adapter Dimensions (Inches)

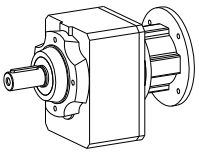
Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36

Table No. 4 "C" Series – Unit Dimensions (Inches) – "Q" Housing Style

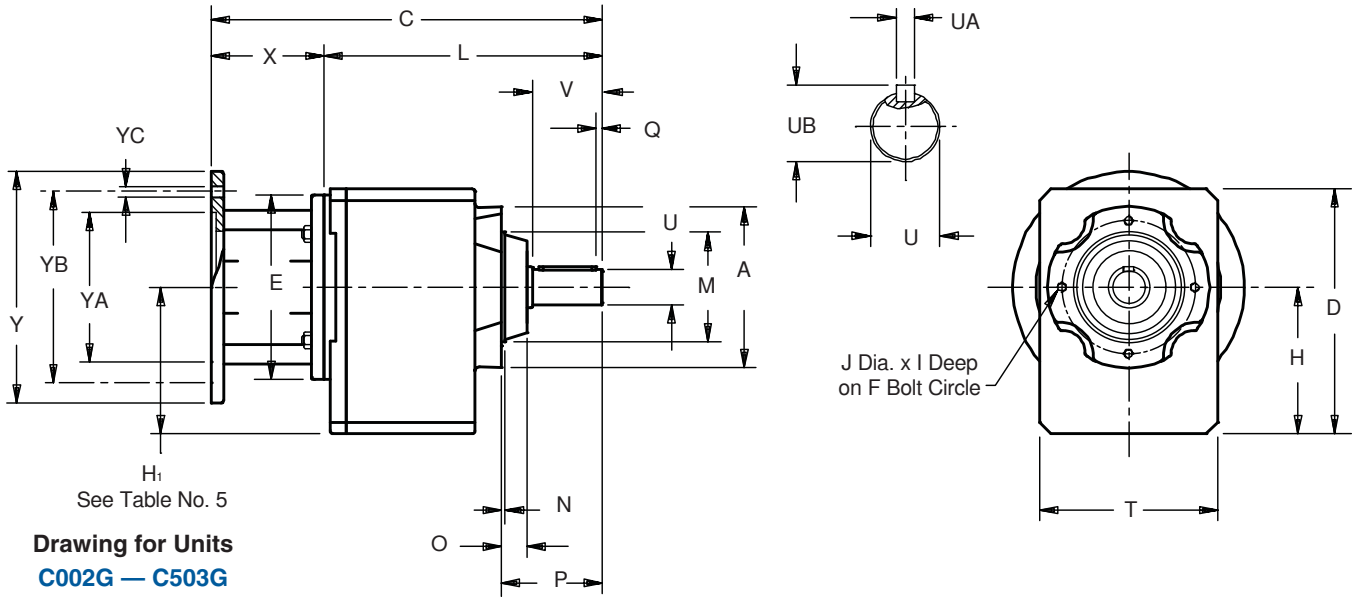
Base	**MR140/050**		**MR160/140** [2]		**MR200/180**		**MR250/210** [3]		Approx.
Module	C	L	C	L	C	L	C	L	Wt.(lbs.)
C002	9.37	6.06	10.08	6.22	–	–	–	–	18
C102	10.67	7.36	11.38	7.52	12.40	7.60	–	–	29
C103	12.13	8.82	–	–	–	–	–	–	34
C202	11.77	8.46	12.48	8.62	13.50	8.70	–	–	38
C203	13.23	9.92	14.17	10.31	–	–	–	–	45
C302	–	–	13.23	9.37	14.25	9.45	14.88	9.57	49
C303 [1]	13.98	10.67	14.92	11.06	–	–	–	–	56
C402	–	–	15.12	11.26	16.14	11.34	16.77	11.46	71
C403	–	–	16.81	12.95	–	–	–	–	78

[2] Also available as **MR160/050** for a NEMA 56C frame motor.
[3] Also available as **MR250/180** for a NEMA 182/184TC frame motor.
All weights are approximate.

Part No. Example
Square Flange with Motor Adapter
C302Q0620 MR160/140



"C" Series – MGS Reducer
Tapped Holes – "G" Housing
Dimensional Data



Drawing for Units
C002G — C503G

Table No. 1 **"C" Series – Tapped Holes Unit Dimensions (Inches) – "G" Housing Style**

Base Module	A	D	F	H	I	J	M	N	O	P	Q	T	V	Z_1
C002	3.43	5.55	2.95	3.11	.39	M6	2.165	.12	.55	2.28	.16	3.82	1.57	–
C102/C103	4.72	6.89	3.94	3.94	.51	M6	3.150	.12	.67	2.80	.16	5.12	1.97	–
C202/C203	5.51	7.56	4.53	4.41	.51	M8	3.740	.12	.87	3.43	.16	5.59	2.36	–
C302/C303	5.51	8.35	4.53	5.00 [1]	.51	M8	3.740	.12	.87	3.43	.16	6.06	2.36	–
C402/C403	6.30	9.55	5.12	5.61	.63	M10	4.331	.14	.87	4.25	.16	7.01	3.15	–
C502/C503	7.56	11.26	6.50 [2]	6.54	.63	M10	5.118	.14	.91	4.29	.16	7.68	3.15	–
C612/C613	7.09	11.97	6.50	7.44 [1]	.63	M10	5.512	.20	1.18	5.35	.20	8.86	3.94	6.57
C712/C713	7.68	14.61	7.28	9.09 [1]	.75	M12	6.102	.31	1.46	6.46	.20	10.43	4.72	7.91
C812/C813	8.90	17.52	8.46	11.22	.75	M12	7.283	.20	1.46	7.28	.39	12.20	5.51	8.70
C912/C913	11.02	20.63	10.43	13.15	1.02	M16	9.055	.20	1.65	8.66	.39	14.37	6.69	10.24

[1] See Table No. 5
[2] C502/C503 has 8 holes instead of 4 as shown in the drawing.

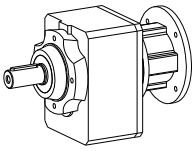
Table No. 2 **Metric output available on request**

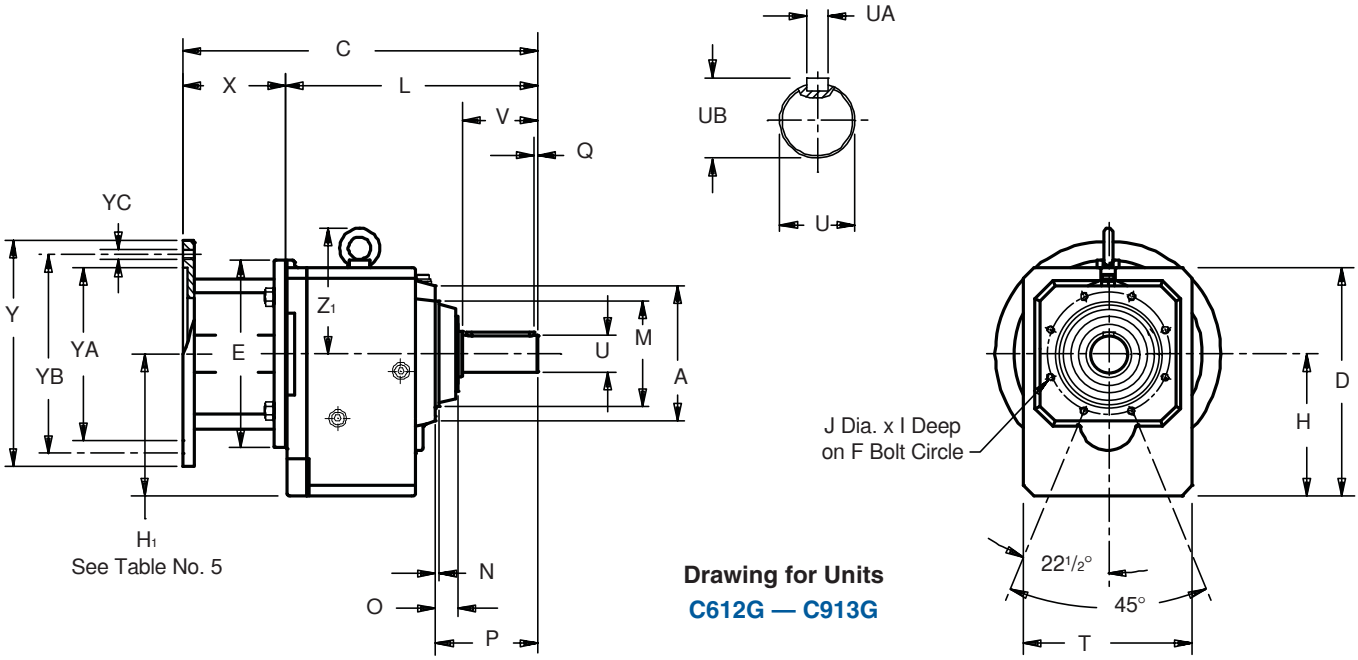
Base Module	Standard Shaft - inches			Optional Shaft - mm		
	U	UA	UB	U	UA	UB
C002	.750	$^3/_{16} \times ^3/_{16} \times 1\,^7/_{32}$	.83	20_{k6}	A6x6x32	22.5
C102/C103	1.000	$^1/_4 \times ^1/_4 \times 1\,^9/_{16}$	1.11	25_{k6}	A8x7x40	28
C202/C203	1.250	$^1/_4 \times ^1/_4 \times 1\,^{15}/_{16}$	1.36	30_{k6}	A8x7X50	33
C302/C303	1.250	$^1/_4 \times ^1/_4 \times 1\,^{15}/_{16}$	1.36	30_{k6}	A8x7X50	33
C402/C403	1.625	$^3/_8 \times ^3/_8 \times 2\,^7/_8$	1.79	40_{k6}	A12x8X70	43
C502/C503	1.625	$^3/_8 \times ^3/_8 \times 2\,^7/_8$	1.79	40_{k6}	A12x8X70	43
C612/C613	2.125	$^1/_2 \times ^1/_2 \times 3\,^5/_{32}$	2.35	50_{k6}	A14x9x90	53.5
C712/C713	2.375	$^5/_8 \times ^5/_8 \times 3\,^{15}/_{16}$	2.65	60_{m6}	A18x11x100	64
C812/C813	2.875	$^3/_4 \times ^3/_4 \times 4\,^5/_{16}$	3.21	70_{m6}	A20x12x125	74.5
C912/C913	3.625	$^7/_8 \times ^7/_8 \times 5\,^1/_2$	4.01	90_{m6}	A25x14x140	95

Table No. 3 **Motor Adapter Dimensions (Inches)**

Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR300/180	182/184TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/210	213/215TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/250	254/256TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/280	284/286TC	11.81	6.50	11.13	10.500	9.00	.57	75
MR350/320	324/326TC	13.78	7.09	13.37	12.500	11.00	.70	133
MR350/360	364/365TC	13.78	7.09	13.37	12.500	11.00	.70	133

"C" Series – MGS Reducer Tapped Holes – "G" Housing Dimensional Data





Drawing for Units
C612G — C913G

Table No. 4 "C" Series – Tapped Holes Unit Dimensions (Inches) – "G" Housing Style

Base	MR140/050		MR160/140 3)		MR200/180		MR250/210 4)		MR300/250 5)		MR350/320 6)		Approx.
Module	C	L	C	L	C	L	C	L	C	L	C	L	Wt.(lbs)
C002	9.37	6.06	10.08	6.22	–	–	–	–	–	–	–	–	18
C102	10.67	7.36	11.38	7.52	12.40	7.60	–	–	–	–	–	–	29
C103	12.13	8.82	–	–	–	–	–	–	–	–	–	–	34
C202	11.77	8.46	12.48	8.62	13.50	8.70	–	–	–	–	–	–	38
C203	13.23	9.92	14.17	10.31	–	–	–	–	–	–	–	–	45
C302	–	–	13.23	9.37	14.25	9.45	14.88	9.57	–	–	–	–	49
C303 1)	13.98	10.67	14.92	11.06	–	–	–	–	–	–	–	–	56
C402	–	–	15.12	11.26	16.14	11.34	16.77	11.46	–	–	–	–	71
C403	–	–	16.81	12.95	–	–	–	–	–	–	–	–	78
C502	–	–	15.95	12.09	16.97	12.17	17.59	12.28	19.33	12.83	–	–	95
C503	–	–	17.64	13.78	–	–	–	–	–	–	–	–	111
C612 1)	–	–	–	–	17.91	13.11	18.54	13.23	20.24	13.74	–	–	115
C613 1)	–	–	18.62	14.76	20.35	15.55	–	–	–	–	–	–	159
C712	–	–	–	–	20.00	15.20	20.59	15.28	22.29	15.79	–	–	199
C713 1)	–	–	–	–	22.40	17.60	23.38	18.07	–	–	–	–	221
C812	–	–	–	–	–	–	23.22	17.91	24.53	18.03	26.42	19.33	322
C813	–	–	–	–	25.04	20.24	26.02	20.71	–	–	–	–	342
C912	–	–	–	–	–	–	–	–	27.56	21.06	29.06	21.97	596
C913	–		–	–	–	–	27.87	22.56	–	–	–	–	678

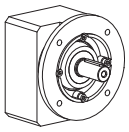
Table No. 5 "C" Series – Input Dimension (Inches)

Base	MR160/140	MR200/180	MR250/210	MR300/250
Module	H_1	H_1	H_1	H_1
C303	3.54	—	—	—
C612	—	7.44	7.44	7.44
C613	—	—	7.44	—
C713	—	—	9.84	—

1) See Table No. 5
3) Also available as **MR160/050** for a NEMA 56C frame motor.
4) Also available as **MR250/180** for a NEMA 182/184TC frame motor.
5) Also available as **MR300/180** for a NEMA 182/184TC, **MR300/210** for a NEMA 213/215TC, and **MR300/280** for a NEMA 284/286TC frame motor.
6) Also available as **MR350/360** for a NEMA 364/365TC frame motor.

All weights are approximate.

Part No. Example
Tapped Holes Housing with Motor Adapter
C302G0620 MR160/140



"C" Series – MGS Reducer
Optional Output Flanges

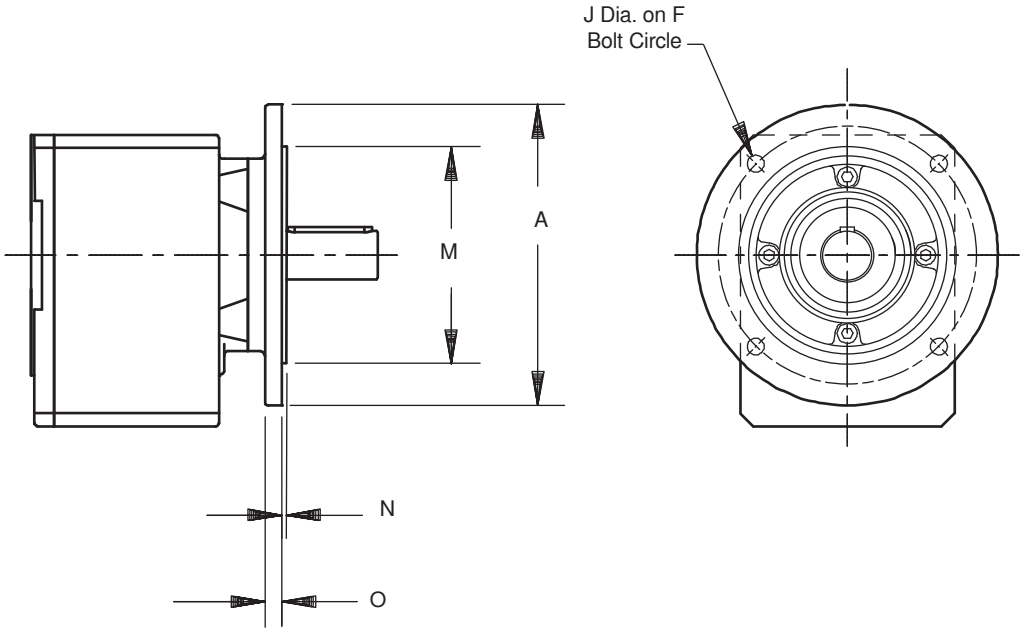


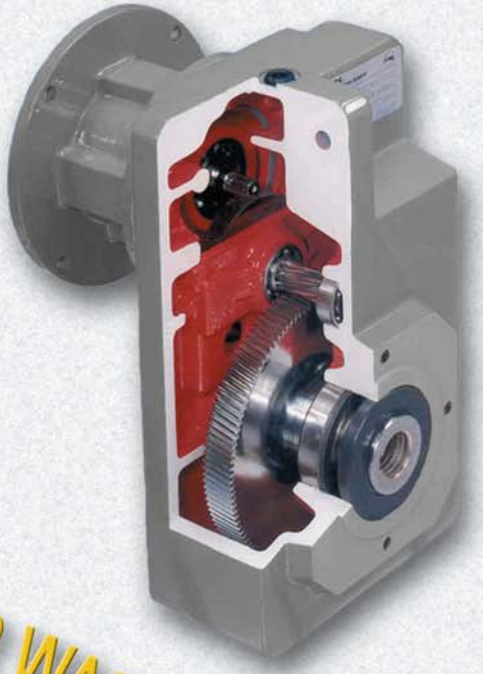
Table No. 1 Flange Dimensions (Inches)

Base Module	Flange Size	A	F	J	M	N	O
C0	120	4.724	3.93	.28	3.150 +.001/-.0004	.12	.39
	140	5.512	4.53	.35	3.740 +.001/-.0004	.12	.39
	160 *	6.300	5.12	.35	4.331 +.001/-.0004	.12	.39
C1	140	5.512	4.53	.35	3.740 +.001/-.0004	.14	.32
	160	6.300	5.12	.35	4.331 +.001/-.0004	.14	.39
	200 *	7.874	6.50	.43	5.118 +.001/-.0004	.14	.47
C2	160	6.300	5.12	.35	4.331 +.001/-.0004	.14	.39
	200 *	7.874	6.50	.43	5.118 +.001/-.0004	.14	.47
	250	9.843	8.46	.55	7.087 +.001/-.0004	.16	.47
C3	160	6.300	5.12	.35	4.331 +.001/-.0004	.14	.39
	200	7.874	6.50	.43	5.118 +.001/-.0004	.14	.47
	250 *	9.843	8.46	.55	7.087 +.001/-.0004	.16	.47
C4	200	7.874	6.50	.43	5.118 +.001/-.0004	.16	.55
	250 *	9.843	8.46	.55	7.087 +.001/-.0004	.16	.55
	300	11.811	10.43	.55	9.055 +.001/-.001	.16	.55
C5	250	9.843	8.46	.55	7.087 +.001/-.0004	.16	.55
	300 *	11.811	10.43	.55	9.055 +.001/-.001	.16	.63
C6	300 *	11.811	10.43	.55	9.055 +.001/-.001	.16	.67
C7	350 *	13.780	11.81	.71	9.842 +.000/-.001	.20	.71
C8	350	13.780	11.81	.71	9.842 +.000/-.001	.20	.71
	400 *	15.748	13.78	.71	11.811 +.000/-.001	.20	.79
	450	17.717	15.75	.71	13.780 +.000/-.001	.20	.79
C9	450 *	17.717	15.75	.71	13.780 +.000/-.001	.20	.91

* This is the standard flange and will be shipped unless otherwise specified.
Optional flanges are not available for all sizes.

“F” Series Offset Helical Speed Reducers

3 YEAR WARRANTY STANDARD



5 YEAR WARRANTY OPTIONAL

3-DAY DELIVERY

STÖBER

www.stober.com

"F" Series – Offset Helical MGS Speed Reducers

Compact size and flexibility make these gear drives a popular choice for applications that require high performance, efficiency, and durability. Series "F" gear drives are available with a wide selection of exact ratios and output speeds to eliminate the need for expensive and maintenance prone external input drives. It's a compact package that reduces product and installlation costs today— and maintenance costs tomorrow.

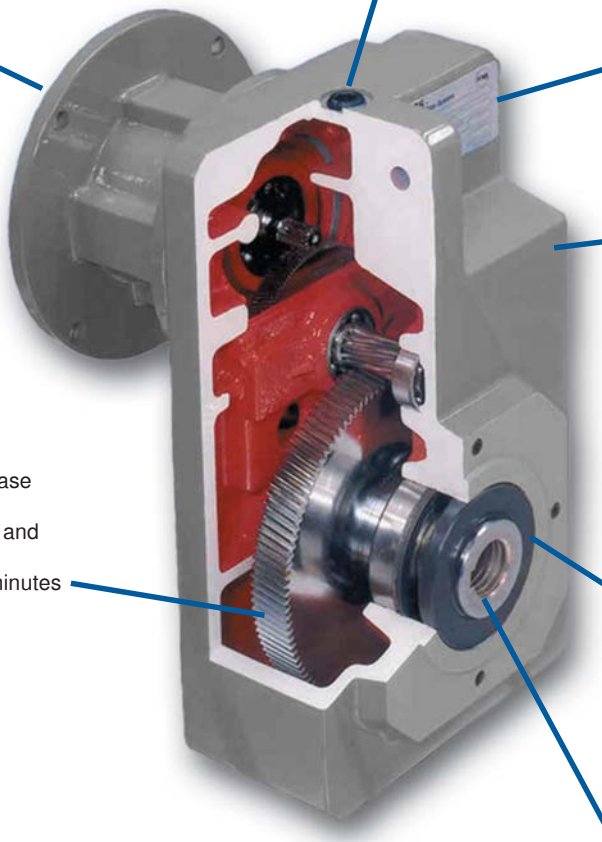
Performance Specifications:

- Horsepower ratings from 1/6 to 33
- Output torques to 9,743 in. lbs.
- Output speeds available from 406 to 3 RPM
- Speed reducer ratios from 4.3:1 to 552:1
- 3 year warranty — your assurance of satisfactory product performance

Strategically located oil fill, drain and breather ports for optimum mounting flexibility. Oil sight glass available.

Input Options:
- Input shaft
- NEMA C-face Adapter (coupling type)

Stainless steel nameplate and hardware



One-piece cast iron housing with precision machined bearing supports assure gearset alignment, prolongs bearing life, provides exceptional overhung load capacities, and eliminates leakage problems common to two-piece housings.

High quality helical gearing is case hardened to 58-62 Rockwell C. Precision finished for low noise and long service life.
Standard backlash is ≤11 arc minutes

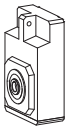
Double lip seals keep oil in and contaminants out. Double seals available for severe duty applications.

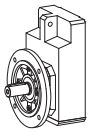
Output Options:
- Solid shaft
- Hollow
- Wobble free bushings

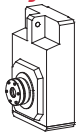
Shipped with the proper amount and type of oil to prevent gear damaging dry start-ups

"F" Series – Offset Helical MGS Speed Reducers Overview

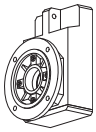
Output Style + Housing Style + Input Style = Reducer Configurations

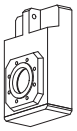

Style A
Hollow Output


Style V
Solid Output


Style W
Bushing Output

+


Style F
Round Flange


Style G
Tapped Holes

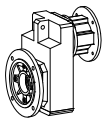
+

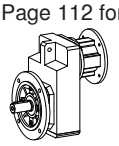

MR
Motor Adapter

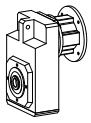

AW
Input Shaft

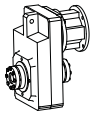
=

Reducer Configurations (See Page 112 for AW Input Shaft.)


Style AF

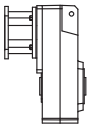

Style VF

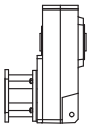

Style AG

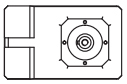

Style WG

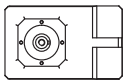
Mounting Positions – Standard 3 Year Warranty

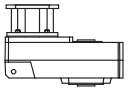
Mounting Positions MUST BE SPECIFIED. (See Page 116 for more details.)
Standard Oil: Mobilgear 600XP220
Optional Oil: Food Grade Oil (Mobil SHC CIBUS 220)
Synthetic Oil (Mobil SHC630)

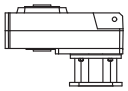

EL1


EL2


EL3

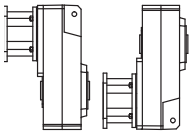

EL4

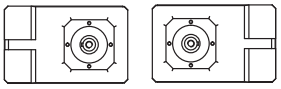

EL5

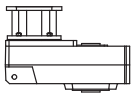

EL6

Mounting Positions – Long Life 5 Year Warranty

Mounting Positions MUST BE SPECIFIED. (See Page 116 for more details.)
Standard Oil: Synthetic Oil (Mobil SHC630)


E12


E34


EL5

Part No. Explanation with OPTIONS

F 4 0 2 V F 0135 MR200/ 180 LL E12

- **E12** — Mounting Position (Must be Specified on LL.)
- **LL** – Long Life Option
- **180** — 050 (56C), 140 (143/145TC), **180** (182/184TC), 210 (213/215TC)
- **MR200/** — Motor Adapter Size: MR140, MR160, **MR200**, MR250
- **0135** — Nominal Ratio: (**0135** = 13.5:1)
- **F** — HOUSING STYLE: "**F**" Housing Style — Flange Mounting; "**G**" Housing Style — Tapped Holes
- **V** — OUTPUT STYLE: "**V**" Solid Output ("F" Housing Style ONLY) — **SPECIFY IN A NOTE**: Imperial or Metric [1]; "**A**" Hollow Output — **SPECIFY IN A NOTE**: Standard or Stainless Steel [1], Imperial or Metric [1]; "**W**" Wobble Free Bushing — **SPECIFY IN A NOTE**: Single or Double Bushing and Bushing Part No. IF Single — Side 5 or Side 6 (Side 6 not possible on F203, F303, F403, F603) (Double Bushing is not possible on F203, F303, F403, F603)
- **2** — No. of Stages (**02** = 2 Stage, determined by ratio)
- **0** — Design Generation
- **4** — Unit Size No.
- **F** — OFfset Helical

THE FOLLOWING INFORMATION IS REQUIRED FOR ANY UNIT:
Mounting Position — EL1 EL2 EL3 EL4 EL5 EL6 E12 E34
Paint — Standard Gray, White, Stainless Steel
[1] — Not available in all sizes.

"F" Series – Offset Helical MGS Reducer – Selection Data

Selection Procedure:

A. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
Input HP	Output Torque in. lbs.		Motor Adapter Size [3]	Motor Adapter NEMA C-Frame	Input Shaft			Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
405 RPM Output (Approximate)								**335 RPM**		**270 RPM**	
2.64	398	F102_0043	MR140/	050	AW140/010	4.308	374	2.19	398	1.75	398
3.75	564	F102_0043	MR160/	050, 140	AW160/012	4.308	374	3.30	600	2.85	647
385 RPM Output (Approximate)								**319 RPM**		**255 RPM**	
23.36	3,711	F602_0045	MR200/	180	AW200/014	4.546	1,129	19.36	3,711	15.48	3,711
33.04	5,249	F602_0045	MR250/	180, 210, 250, 280	AW250/102	4.546	1,129	29.14	5,586	23.31	5,586
375 RPM Output (Approximate)								**310 RPM**		**248 RPM**	
2.78	454	F202_0047	MR140/	050	AW140/010	4.680	491	2.30	454	1.84	454
7.05	1,154	F202_0047	MR160/	050, 140	AW160/012	4.680	491	6.22	1,228	5.36	1,323
7.05	1,154	F202_0047	MR200/	180	AW200/014	4.680	491	6.22	1,228	5.36	1,323
9.84	1,608	F402_0047	MR160/	050, 140	AW160/012	4.678	842	8.15	1,608	6.52	1,608
19.40	3,171	F402_0047	MR200/	180	AW200/014	4.678	842	17.11	3,376	14.75	3,636
19.40	3,171	F402_0047	MR250/	180, 210, 250, 280	AW250/102	4.678	842	17.11	3,376	14.75	3,636
315 RPM Output (Approximate)								**260 RPM**		**210 RPM**	
6.30	1,221	F202_0056	MR160/	050, 140	AW160/012	5.552	513	5.55	1,300	4.79	1,401
6.30	1,221	F202_0056	MR200/	180	AW200/014	5.552	513	5.55	1,300	4.79	1,401
305 RPM Output (Approximate)								**250 RPM**		**200 RPM**	
9.84	1,998	F402_0058	MR160/	050, 140	AW160/012	5.813	889	8.15	1,998	6.52	1,998
9.84	1,966	F302_0057	MR160/	050, 140	AW160/012	5.720	718	8.15	1,966	6.52	1,966
10.27	2,053	F302_0057	MR200/	180	AW200/014	5.720	718	9.06	2,186	7.81	2,354
16.78	3,409	F402_0058	MR200/	180	AW200/014	5.813	889	14.80	3,629	12.76	3,910
16.78	3,409	F402_0058	MR250/	180, 210, 250, 280	AW250/102	5.813	889	14.80	3,629	12.76	3,910
23.36	4,631	F602_0057	MR200/	180	AW200/014	5.673	1,193	19.36	4,631	15.48	4,631
28.51	5,651	F602_0057	MR250/	180, 210, 250, 280	AW250/102	5.673	1,193	25.15	6,016	21.67	6,481
270 RPM Output (Approximate)								**224 RPM**		**180 RPM**	
2.50	564	F102_0065	MR140/	050	AW140/010	6.462	414	2.07	564	1.66	564
2.86	646	F102_0065	MR160/	050, 140	AW160/012	6.462	414	2.52	687	2.17	740
244 RPM Output (Approximate) Continued Next Page								**200 RPM**		**160 RPM**	
2.46	615	F102_0072	MR140/	050	AW140/010	7.156	425	2.04	615	1.63	615
2.61	654	F202_0072	MR140/	050	AW140/010	7.167	547	2.16	654	1.73	654
2.67	668	F102_0072	MR160/	050, 140	AW160/012	7.156	425	2.36	711	2.03	766
5.31	1,330	F202_0072	MR160/	050, 140	AW160/012	7.167	547	4.68	1,416	4.04	1,525
5.31	1,330	F202_0072	MR200/	180	AW200/014	7.167	547	4.68	1,416	4.04	1,525
8.83	2,214	F302_0072	MR160/	050, 140	AW160/012	7.172	759	7.79	2,357	6.52	2,465

* For thermal HP capacity, see rating below.

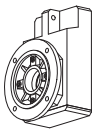
Base Module	F1	F2	F3	F4	F6
Thermal Capacity	2.95	5.36	7.38	12.34	14.75

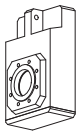
NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30

Housing Styles

F — Round Flange **G** — Tapped Holes





Some Housing Styles are available as Hollow (A) or Solid (V) Output.

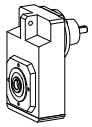
"F" Series – Offset Helical
MGS Reducer – Selection Data

NOTE: [1] Complete Base Module Part Number by adding Output and Housing Style. Example: F302**AG**0560.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

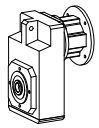
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
Input HP	Output Torque in. lbs.		Motor Adapter		Input Shaft			Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
			Size [3]	NEMA C-Frame							
244 RPM Output (Approximate) Continued								**200 RPM**		**160 RPM**	
8.83	2,214	F302_0072	MR200/	180	AW200/014	7.172	759	7.79	2,357	6.72	2,539
9.84	2,475	F402_0072	MR160/	050, 140	AW160/012	7.202	937	8.15	2,475	6.52	2,475
14.55	3,661	F402_0072	MR200/	180	AW200/014	7.202	937	12.83	3,898	11.06	4,199
14.55	3,661	F402_0072	MR250/	180, 210, 250, 280	AW250/102	7.202	937	12.83	3,898	11.06	4,199
23.36	5,844	F602_0072	MR200/	180	AW200/014	7.159	1,265	19.36	5,844	15.48	5,844
24.41	6,106	F602_0072	MR250/	180, 210, 250, 280	AW250/102	7.159	1,265	21.53	6,501	18.56	7,003
195 RPM Output (Approximate)								**160 RPM**		**130 RPM**	
2.30	720	F102_0089	MR140/	050	AW140/010	8.948	449	1.97	742	1.57	742
2.30	720	F102_0089	MR160/	050, 140	AW160/012	8.948	449	2.03	766	1.75	825
2.52	793	F202_0090	MR140/	050	AW140/010	9.006	579	2.09	793	1.67	793
4.56	1,435	F202_0090	MR160/	050, 140	AW160/012	9.006	579	4.02	1,528	3.47	1,646
4.56	1,435	F202_0090	MR200/	180	AW200/014	9.006	579	4.02	1,528	3.47	1,646
7.60	2,386	F302_0090	MR160/	050, 140	AW160/012	8.986	803	6.70	2,541	5.78	2,737
7.60	2,386	F302_0090	MR200/	180	AW200/014	8.986	803	6.70	2,541	5.78	2,737
9.84	3,091	F602_0090	MR160/	050, 140	AW160/012	8.995	1,339	8.15	3,091	6.52	3,091
9.84	3,086	F402_0090	MR160/	050, 140	AW160/012	8.980	991	8.15	3,086	6.52	3,086
12.56	3,941	F402_0090	MR200/	180	AW200/014	8.980	991	11.08	4,195	9.55	4,519
12.56	3,941	F402_0090	MR250/	180, 210, 250, 280	AW250/102	8.980	991	11.08	4,195	9.55	4,519
20.96	6,589	F602_0090	MR200/	180	AW200/014	8.995	1,339	18.49	7,015	15.48	7,342
20.96	6,589	F602_0090	MR250/	180, 210, 250, 280	AW250/102	8.995	1,339	18.49	7,015	15.94	7,557
160 RPM Output (Approximate)								**130 RPM**		**105 RPM**	
2.02	769	F102_0110	MR140/	050	AW140/010	10.920	472	1.78	819	1.52	876
2.02	769	F102_0110	MR160/	050, 140	AW160/012	10.920	472	1.78	819	1.53	882
2.44	921	F202_0110	MR140/	050	AW140/010	10.803	606	2.02	921	1.62	921
4.04	1,525	F202_0110	MR200/	180	AW200/014	10.803	606	3.56	1,623	3.07	1,749
4.04	1,525	F202_0110	MR160/	050, 140	AW160/012	10.803	606	3.56	1,623	3.07	1,749
6.73	2,536	F302_0110	MR160/	56C	AW160/012	10.785	841	5.94	2,700	5.12	2,909
6.73	2,536	F302_0110	MR200/	180	AW200/014	10.785	841	5.94	2,700	5.12	2,909
9.84	3,718	F602_0110	MR160/	050, 140	AW160/012	10.818	1,402	8.15	3,718	6.52	3,718
9.84	3,720	F402_0110	MR160/	050, 140	AW160/012	10.825	1,038	8.15	3,720	6.52	3,720
11.09	4,194	F402_0110	MR200/	180	AW200/014	10.825	1,038	9.78	4,465	8.43	4,810
11.09	4,194	F402_0110	MR250/	180, 210, 250, 280	AW250/102	10.825	1,038	9.78	4,465	8.43	4,810
18.54	7,007	F602_0110	MR200/	180	AW200/014	10.818	1,402	16.35	7,460	14.09	8,037
18.54	7,007	F602_0110	MR250/	180, 210, 250, 280	AW250/102	10.818	1,402	16.35	7,460	14.09	8,037
130 RPM Output (Approximate) Continued Next Page								**105 RPM**		**85 RPM**	
1.74	827	F102_0135	MR140/	050	AW140/010	13.588	499	1.54	881	1.32	949
1.74	827	F102_0135	MR160/	050, 140	AW160/012	13.588	499	1.54	881	1.32	949

Part No. Explanation

F 6 0 2 A G 0560 AW160 / 012
- Shaft Dia. (1/16 in.; example — 012 = 12/16 or 3/4)
- Size
- Input Shaft
- Ratio (0560 = 56.0:1)
- Housing Style
- Output Style (A-Hollow; V-Solid)
- No. of Gear Reductions
- Generation No.
- Unit No.
- Offset Helical



F 6 0 2 A G 0560 MR 160 /140
- Motor Frame Size (140=143/145TC)
- Size
- Motor Adapter
- Ratio (0560 = 56.0:1)
- Housing Style
- Output Style (A-Hollow; V-Solid)
- No. of Reductions
- Generation No.
- Unit No.
- Offset Helical



Mounting position must be specified when ordering.

"F" Series – Offset Helical
MGS Reducer – Selection Data

Selection Procedure:

A. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
Input HP	Output Torque in. lbs.		Motor Adapter Size [3]	Motor Adapter NEMA C-Frame	Input Shaft			Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
130 RPM Output (Approximate) Continued								**105 RPM**		**85 RPM**	
2.35	1,117	F202_0135	MR140/	050	AW140/010	13.625	642	1.94	1,117	1.56	1,117
2.42	1,133	F302_0135	MR140/	050	AW140/010	13.384	887	2.01	1,133	1.61	1,133
3.46	1,647	F202_0135	MR160/	050, 140	AW160/012	13.625	642	3.05	1,754	2.63	1,889
3.46	1,647	F202_0135	MR200/	180	AW200/014	13.625	642	3.05	1,754	2.63	1,889
5.83	2,725	F302_0135	MR200/	180	AW200/014	13.384	887	5.14	2,902	4.43	3,126
5.83	2,725	F302_0135	MR160/	050, 140	AW160/012	13.384	887	5.14	2,902	4.43	3,126
8.89	4,216	F402_0135	MR160/	050, 140	AW160/012	13.569	1,098	7.84	4,489	6.52	4,664
9.54	4,522	F402_0135	MR200/	180	AW200/014	13.569	1,098	8.41	4,814	7.25	5,186
9.54	4,522	F402_0135	MR250/	180, 210, 250, 280	AW250/102	13.569	1,098	8.41	4,814	7.25	5,186
9.84	4,677	F602_0135	MR160/	050, 140	AW160/012	13.609	1,485	8.15	4,677	6.52	4,677
15.91	7,564	F602_0135	MR250/	180, 210, 250, 280	AW250/102	13.609	1,485	14.03	8,054	12.09	8,676
15.91	7,564	F602_0135	MR200/	180	AW200/014	13.609	1,485	14.03	8,054	12.09	8,676
95 RPM Output (Approximate)								**75 RPM**		**60 RPM**	
1.42	916	F102_0185	MR160/	050, 140	AW160/012	18.457	539	1.25	975	1.08	1,050
1.42	916	F102_0185	MR140/	050	AW140/010	18.457	539	1.25	975	1.08	1,050
2.61	1,702	F202_0185	MR140/	050	AW140/010	18.651	694	2.16	1,702	1.73	1,702
2.81	1,829	F202_0185	MR200/	180	AW200/014	18.651	694	2.48	1,947	2.13	2,098
2.81	1,829	F202_0185	MR160/	050, 140	AW160/012	18.651	694	2.48	1,947	2.13	2,098
4.65	3,051	F302_0190	MR160/	050, 140	AW160/012	18.774	966	4.10	3,248	3.54	3,499
4.65	3,051	F302_0190	MR200/	180	AW200/014	18.774	966	4.10	3,248	3.54	3,499
7.72	5,025	F402_0185	MR160/	050, 140	AW160/012	18.620	1,189	6.81	5,350	5.87	5,763
7.72	5,025	F402_0185	MR200/	180	AW200/014	18.620	1,189	6.81	5,350	5.87	5,763
7.72	5,025	F402_0185	MR250/	180, 210, 250, 280	AW250/102	18.620	1,189	6.81	5,350	5.87	5,763
12.95	8,383	F602_0185	MR200/	180	AW200/014	18.522	1,604	11.43	8,925	9.85	9,614
12.95	8,383	F602_0185	MR250/	180, 210, 250, 280	AW250/102	18.522	1,604	11.43	8,925	9.85	9,614
75 RPM Output (Approximate)								**60 RPM**		**50 RPM**	
1.22	987	F102_0230	MR140/	050	AW140/010	23.080	569	1.08	1,051	0.87	1,063
1.22	987	F102_0230	MR160/	050, 140	AW160/012	23.080	569	1.08	1,051	0.87	1,063
2.41	1,974	F202_0230	MR140/	050	AW140/010	23.434	735	2.09	2,064	1.67	2,064
2.41	1,974	F202_0230	MR160/	050, 140	AW160/012	23.434	735	2.13	2,101	1.72	2,126
2.41	1,974	F202_0230	MR200/	180	AW200/014	23.434	735	2.13	2,101	1.72	2,126
4.00	3,289	F302_0240	MR160/	050, 140	AW160/012	23.520	1,022	3.53	3,501	2.86	3,543
4.00	3,289	F302_0240	MR200/	180	AW200/014	23.520	1,022	3.53	3,501	2.86	3,543
6.67	5,408	F402_0230	MR160/	050, 140	AW160/012	23.214	1,256	5.88	5,758	5.07	6,201
6.67	5,408	F402_0230	MR200/	180	AW200/014	23.214	1,256	5.88	5,758	5.07	6,201
6.67	5,408	F402_0230	MR250/	180, 210, 250, 280	AW250/102	23.214	1,256	5.88	5,758	5.07	6,201
9.84	7,998	F602_0230	MR160/	050, 140	AW160/012	23.272	1,698	8.15	7,998	6.52	7,998
11.12	9,046	F602_0230	MR200/	180	AW200/014	23.272	1,698	9.81	9,631	7.94	9,744
11.12	9,046	F602_0230	MR250/	180, 210, 250, 280	AW250/102	23.272	1,698	9.81	9,631	7.94	9,744

* For thermal HP capacity, see rating below.

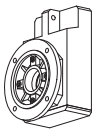
Base Module	F1	F2	F3	F4	F6
Thermal Capacity	2.95	5.36	7.38	12.34	14.75

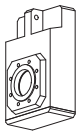
NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30

Housing Styles

F — Round Flange **G** — Tapped Holes





Some Housing Styles are available as Hollow (A) or Solid (V) Output.

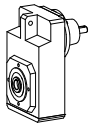
"F" Series – Offset Helical
MGS Reducer – Selection Data

NOTE: [1] Complete Base Module Part Number by adding Output and Housing Style. Example: F302**AG**0560.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

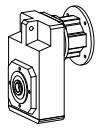
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
60 RPM Output (Approximate)								**50 RPM**		**40 RPM**	
2.13	2,097	F202_0280	MR200/	180	AW200/014	28.112	769	1.79	2,126	1.43	2,126
2.13	2,097	F202_0280	MR140/	050	AW140/010	28.112	769	1.79	2,126	1.43	2,126
2.13	2,097	F202_0280	MR160/	050, 140	AW160/012	28.112	769	1.79	2,126	1.43	2,126
3.54	3,495	F302_0280	MR160/	050, 140	AW160/012	28.230	1,069	2.98	3,543	2.38	3,543
3.54	3,495	F302_0280	MR200/	180	AW200/014	28.230	1,069	2.98	3,543	2.38	3,543
5.89	5,756	F402_0280	MR200/	180	AW200/014	27.986	1,316	5.19	6,128	4.20	6,201
5.89	5,756	F402_0280	MR160/	050, 140	AW160/012	27.986	1,316	5.19	6,128	4.20	6,201
5.89	5,756	F402_0280	MR250/	180, 210, 250, 280	AW250/102	27.986	1,316	5.19	6,128	4.20	6,201
9.84	9,619	F602_0280	MR160/	050, 140	AW160/012	27.986	1,779	8.15	9,619	6.52	9,619
9.84	9,619	F602_0280	MR200/	180	AW200/014	27.986	1,779	8.26	9,744	6.60	9,744
9.84	9,619	F602_0280	MR250/	180, 210, 250, 280	AW250/102	27.986	1,779	8.26	9,744	6.60	9,744
50 RPM Output (Approximate)								**40 RPM**		**30 RPM**	
0.87	1,063	F102_0350	MR140/	050	AW140/010	35.049	632	0.72	1,063	0.58	1,063
0.87	1,063	F102_0350	MR160/	050, 140	AW160/012	35.049	632	0.72	1,063	0.58	1,063
1.72	2,126	F202_0350	MR140/	050	AW140/010	35.455	815	1.42	2,126	1.14	2,126
1.72	2,126	F202_0350	MR160/	050, 140	AW160/012	35.455	815	1.42	2,126	1.14	2,126
1.72	2,126	F202_0350	MR200/	180	AW200/014	35.455	815	1.42	2,126	1.14	2,126
2.42	2,967	F302_0350	MR140/	050	AW140/010	35.034	1,129	2.01	2,967	1.61	2,967
2.89	3,543	F302_0350	MR160/	050, 140	AW160/012	35.034	1,129	2.40	3,543	1.92	3,543
2.89	3,543	F302_0350	MR200/	180	AW200/014	35.034	1,129	2.40	3,543	1.92	3,543
5.06	6,201	F402_0350	MR160/	050, 140	AW160/012	35.079	1,393	4.19	6,201	3.35	6,201
5.06	6,201	F402_0350	MR200/	180	AW200/014	35.079	1,393	4.19	6,201	3.35	6,201
5.06	6,201	F402_0350	MR250/	180, 210, 250, 280	AW250/102	35.079	1,393	4.19	6,201	3.35	6,201
7.92	9,744	F602_0350	MR160/	050, 140	AW160/012	35.208	1,884	6.56	9,744	5.25	9,744
7.92	9,744	F602_0350	MR200/	180	AW200/014	35.208	1,884	6.56	9,744	5.25	9,744
7.92	9,744	F602_0350	MR250/	180, 210, 250, 280	AW250/102	35.208	1,884	6.56	9,744	5.25	9,744
35 RPM Output (Approximate) Continued Next Page								**30 RPM**		**25 RPM**	
0.66	1,063	F102_0460	MR140/	050	AW140/010	46.429	678	0.54	1,063	0.43	1,063
0.66	1,063	F102_0460	MR160/	050, 140	AW160/012	46.429	678	0.54	1,063	0.43	1,063
1.29	2,126	F202_0470	MR140/	050	AW140/010	47.045	875	1.07	2,126	0.86	2,126
1.29	2,126	F202_0470	MR160/	050, 140	AW160/012	47.045	875	1.07	2,126	0.86	2,126
1.29	2,126	F202_0470	MR200/	180	AW200/014	47.045	875	1.07	2,126	0.86	2,126
2.15	3,543	F302_0470	MR140/	050	AW140/010	47.185	1,216	1.78	3,543	1.42	3,543
2.15	3,543	F302_0470	MR160/	050, 140	AW160/012	47.185	1,216	1.78	3,543	1.42	3,543
2.15	3,543	F302_0470	MR200/	180	AW200/014	47.185	1,216	1.78	3,543	1.42	3,543
3.78	6,201	F402_0470	MR160/	050, 140	AW160/012	46.944	1,498	3.13	6,201	2.51	6,201
3.78	6,201	F402_0470	MR200/	180	AW200/014	46.944	1,498	3.13	6,201	2.51	6,201
3.78	6,201	F402_0470	MR250/	180, 210, 250, 280	AW250/102	46.944	1,498	3.13	6,201	2.51	6,201

Part No. Explanation

F 6 0 2 A G 0560 AW160 / 012
- F — Unit No. Offset Helical
- 6 — Generation No.
- 0 — No. of Gear Reductions
- 2 — Output Style (A-Hollow; V-Solid)
- A — Housing Style
- G — Ratio (0560 = 56.0:1)
- 0560 — Input Shaft
- AW160 — Size
- 012 — Shaft Dia. ($^{1}/_{16}$ in.; example — 012 = $^{12}/_{16}$ or $^{3}/_{4}$)



F 6 0 2 A G 0560 MR 160 /140
- F — Unit No. Offset Helical
- 6 — Generation No.
- 0 — No. of Reductions
- 2 — Output Style (A-Hollow; V-Solid)
- A — Housing Style
- G — Ratio (0560 = 56.0:1)
- 0560 — Motor Adapter
- MR 160 — Size
- /140 — Motor Frame Size (140=143/145TC)



Mounting position must be specified when ordering.

"F" Series – Offset Helical
MGS Reducer – Selection Data

Selection Procedure:

A. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
Input HP	Output Torque in. lbs.		Motor Adapter Size [3]	Motor Adapter NEMA C-Frame	Input Shaft			Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
35 RPM Output (Approximate) Continued								**30 RPM**		**25 RPM**	
5.97	9,744	F602_0470	MR160/	050, 140	AW160/012	46.719	2,022	4.95	9,744	3.96	9,744
5.97	9,744	F602_0470	MR200/	180	AW200/014	46.719	2,022	4.95	9,744	3.96	9,744
5.97	9,744	F602_0470	MR250/	180, 210, 250, 280	AW250/102	46.719	2,022	4.95	9,744	3.96	9,744
30 RPM Output (Approximate)								**25 RPM**		**20 RPM**	
1.07	2,126	F202_0570	MR140/	050	AW140/010	56.727	917	0.89	2,126	0.71	2,126
1.07	2,126	F202_0570	MR160/	050, 140	AW160/012	56.727	917	0.89	2,126	0.71	2,126
1.80	3,543	F302_0560	MR140/	050	AW140/010	56.486	1,272	1.49	3,543	1.19	3,543
1.80	3,543	F302_0560	MR160/	050, 140	AW160/012	56.486	1,272	1.49	3,543	1.19	3,543
1.80	3,543	F302_0560	MR200/	180	AW200/014	56.486	1,272	1.49	3,543	1.19	3,543
3.17	6,201	F402_0560	MR160/	050, 140	AW160/012	55.972	1,565	2.63	6,201	2.10	6,201
3.17	6,201	F402_0560	MR200/	180	AW200/014	55.972	1,565	2.63	6,201	2.10	6,201
3.17	6,201	F402_0560	MR250/	180, 210, 250, 280	AW250/102	55.972	1,565	2.63	6,201	2.10	6,201
5.01	9,744	F602_0560	MR160/	050, 140	AW160/012	55.714	2,113	4.15	9,744	3.32	9,744
5.01	9,744	F602_0560	MR200/	180	AW200/014	55.714	2,113	4.15	9,744	3.32	9,744
5.01	9,744	F602_0560	MR250/	180, 210, 250, 280	AW250/102	55.714	2,113	4.15	9,744	3.32	9,744
25 RPM Output (Approximate)								**20 RPM**		**16.5 RPM**	
0.43	1,063	F102_0700	MR140/	050	AW140/010	70.056	752	0.36	1,063	0.29	1,063
0.43	1,063	F102_0700	MR160/	050, 140	AW160/012	70.056	752	0.36	1,063	0.29	1,063
0.87	2,126	F202_0700	MR140/	050	AW140/010	70.130	967	0.72	2,126	0.58	2,126
0.87	2,126	F202_0700	MR160/	050, 140	AW160/012	70.130	967	0.72	2,126	0.58	2,126
1.44	3,543	F302_0700	MR140/	050	AW140/010	70.359	1,344	1.19	3,543	0.96	3,543
1.44	3,543	F302_0700	MR160/	050, 140	AW160/012	70.359	1,344	1.19	3,543	0.96	3,543
2.53	6,201	F402_0700	MR160/	050, 140	AW160/012	70.056	1,655	2.10	6,201	1.68	6,201
2.53	6,201	F402_0700	MR200/	180	AW200/014	70.056	1,655	2.10	6,201	1.68	6,201
2.53	6,201	F402_0700	MR250/	180, 210, 250, 280	AW250/102	70.056	1,655	2.10	6,201	1.68	6,201
4.00	9,744	F602_0700	MR160/	050, 140	AW160/012	69.643	2,234	3.32	9,744	2.65	9,744
4.00	9,744	F602_0700	MR200/	180	AW200/014	69.643	2,234	3.32	9,744	2.65	9,744
4.00	9,744	F602_0700	MR250/	180, 210, 250, 280	AW250/102	69.643	2,234	3.32	9,744	2.65	9,744
19 RPM Output (Approximate)								**16 RPM**		**12 RPM**	
0.32	1,063	F102_0940	MR140/	050	AW140/010	93.631	808	0.27	1,063	0.22	1,063
0.65	2,126	F202_0940	MR140/	050	AW140/010	93.818	1,040	0.54	2,126	0.43	2,126
0.65	2,126	F202_0940	MR160/	050, 140	AW160/012	93.818	1,040	0.54	2,126	0.43	2,126
1.08	3,543	F302_0940	MR140/	050	AW140/010	93.644	1,443	0.90	3,543	0.72	3,543
1.08	3,543	F302_0940	MR160/	050, 140	AW160/012	93.644	1,443	0.90	3,543	0.72	3,543
1.90	6,201	F402_0930	MR160/	050, 140	AW160/012	93.333	1,779	1.58	6,201	1.26	6,201
2.99	9,744	F602_0930	MR160/	050, 140	AW160/012	93.333	2,403	2.48	9,744	1.98	9,744
2.99	9,744	F602_0930	MR200/	180	AW200/014	93.333	2,403	2.48	9,744	1.98	9,744
2.99	9,744	F602_0930	MR250/	180, 210	AW250/102	93.333	2,403	2.48	9,744	1.98	9,744

* For thermal HP capacity, see rating below.

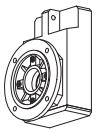
Base Module	F1	F2	F3	F4	F6
Thermal Capacity	2.95	5.36	7.38	12.34	14.75

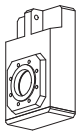
NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30

Housing Styles

F — Round Flange **G** — Tapped Holes





Some Housing Styles are available as Hollow (A) or Solid (V) Output.

"F" Series – Offset Helical
MGS Reducer – Selection Data

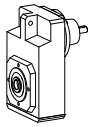
NOTE: [1] Complete Base Module Part Number by adding Output and Housing Style. Example: F302**AG**0560.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
Input HP	Output Torque in. lbs.		Motor Adapter		Input Shaft			Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
			Size [3]	NEMA C-Frame							
15 RPM Output (Approximate)								**12 RPM**		**9 RPM**	
0.27	1,063	F102_1120	MR140/	050	AW140/010	111.944	845	0.23	1,063	0.18	1,063
0.54	2,126	F202_1130	MR140/	050	AW140/010	112.727	1,088	0.45	2,126	0.36	2,126
0.90	3,543	F302_1130	MR140/	050	AW140/010	112.848	1,512	0.74	3,543	0.60	3,543
0.90	3,543	F302_1130	MR160/	050, 140	AW160/012	112.848	1,512	0.74	3,543	0.60	3,543
13 RPM Output (Approximate)								**10 RPM**		**8 RPM**	
0.22	1,063	F102_1400	MR140/	050	AW140/010	139.750	893	0.18	1,063	0.14	1,063
1.27	6,201	F402_1400	MR160/	050, 140	AW160/012	139.750	1,967	1.05	6,201	0.84	6,201
2.00	9,744	F602_1400	MR160/	050, 140	AW160/012	139.750	2,659	1.65	9,744	1.32	9,744
0.43	2,126	F202_1410	MR140/	050	AW140/010	140.909	1,151	0.36	2,126	0.29	2,126
0.72	3,543	F302_1410	MR140/	050	AW140/010	140.648	1,598	0.60	3,543	0.48	3,543
10 RPM Output (Approximate)								**8 RPM**		**6 RPM**	
0.56	3,543	F303_1820	MR160/	050, 140	AW160/012	182.449	1,688	0.47	3,543	0.37	3,543
0.99	6,201	F403_1820	MR160/	050, 140	AW160/012	181.519	2,081	0.82	6,201	0.65	6,201
1.57	9,744	F603_1810	MR160/	050, 140	AW160/012	180.646	2,813	1.30	9,744	1.02	9,744
8 RPM Output (Approximate)								**7 RPM**		**5 RPM**	
0.28	2,126	F203_2220	MR140/	050	AW140/010	222.182	1,215	0.23	2,126	0.18	2,126
1.31	9,744	F603_2150	MR160/	050, 140	AW160/012	215.429	2,813	1.09	9,744	0.86	9,744
6 RPM Output (Approximate)								**5 RPM**		**4 RPM**	
0.22	2,126	F203_2750	MR140/	050	AW140/010	274.675	1,215	0.19	2,126	0.15	2,126
0.67	6,201	F403_2710	MR160/	050, 140	AW160/012	270.881	2,081	0.55	6,201	0.43	6,201
5 RPM Output (Approximate)								**4 RPM**		**3 RPM**	
0.28	3,543	F303_3670	MR140/	050	AW140/010	366.774	1,688	0.23	3,543	0.18	3,543
0.78	9,744	F603_3610	MR160/	050, 140	AW160/012	360.889	2,813	0.65	9,744	0.51	9,744
3 RPM Output (Approximate)								**2.5 RPM**		**2 RPM**	
0.11	2,126	F203_5520	MR140/	050	AW140/010	551.894	1,215	0.09	2,126	0.07	2,126
0.19	3,543	F303_5510	MR140/	050	AW140/010	550.872	1,688	0.15	3,543	0.12	3,543
0.33	6,201	F403_5470	MR140/	050	AW140/010	547.354	2,081	0.27	6,201	0.21	6,201
0.52	9,744	F603_5400	MR160/	050, 140	AW160/012	540.367	2,813	0.43	9,744	0.34	9,744

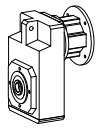
NOTE: For slower speeds than those listed, units can be combined. Contact STOBER Drives Inc.

Part No. Explanation

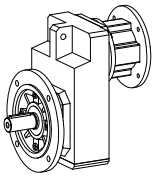
F 6 0 2 A G 0560 AW160 / 012
- Shaft Dia. (1/16 in.; example — 012 = 12/16 or 3/4)
- Size
- Input Shaft
- Ratio (0560 = 56.0:1)
- Housing Style
- Output Style (A-Hollow; V-Solid)
- No. of Gear Reductions
- Generation No.
- Unit No.
- Offset Helical



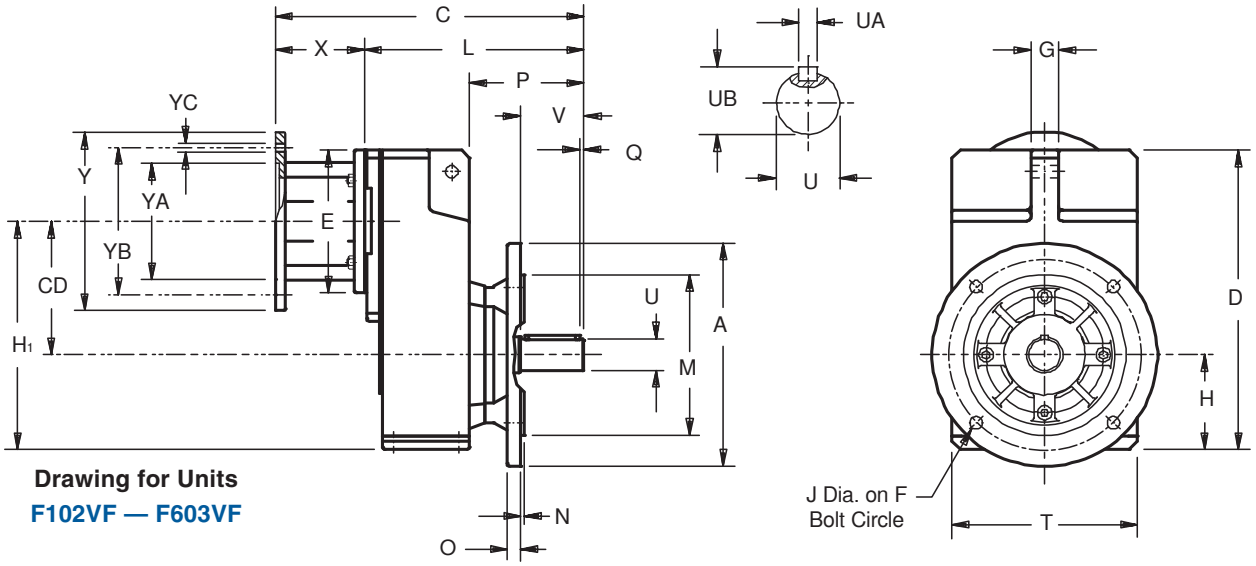
F 6 0 2 A G 0560 MR 160 /140
- Motor Frame Size (140=143/145TC)
- Size
- Motor Adapter
- Ratio (0560 = 56.0:1)
- Housing Style
- Output Style (A-Hollow; V-Solid)
- No. of Reductions
- Generation No.
- Unit No.
- Offset Helical



Mounting position must be specified when ordering.



"F" Series – MGS Reducer
Round Flange – "F" Housing
Shaft Output – Dimensional Data



Drawing for Units
F102VF — F603VF

Table No. 1 "F" Series – Round Flange Dimensions (Inches) – "F" Housing Style

Base Module	CD	A	D	F	G	H	H_1	J	M	N	O	P	Q	T	V
F102	4.02	6.30	9.37	5.12	.79	2.91	6.93	.35	4.331	.14	.39	3.80	.16	5.71	1.97
F202/F203	5.16	7.87	11.77	6.50	.87	3.66	8.82	.43	5.118	.14	.55	4.53	.16	7.09	2.36
F302/F303	5.89	9.84	13.23	8.46	1.18	4.17	10.06	.55	7.087	.16	.59	5.10	.16	8.11	2.76
F402/F403	6.65 [1]	9.84	14.57	8.46	1.18	4.57	11.22	.55	7.087	.16	.59	5.49	.16	9.06	3.15
F602/F603	7.72	11.81	17.64	10.43	1.38	5.39	13.11	.55	9.055	.16	.67	6.44	.20	10.43	3.94

[1] C.D. is 5.19 for F403 with MR160/050 or MR160/140 input.

Table No. 2 "F" Series — "F" Housing Style

Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36

Table No. 3 Metric output available on request

Base Module	Standard Shaft - inches			Optional Shaft - mm		
	U	UA	UB	U	UA	UB
F102	1.000	$^1/_4 \times ^1/_4 \times 1^9/_{16}$	1.11	25k6	A8x7x40	28
F202/F203	1.250	$^1/_4 \times ^1/_4 \times 1^{15}/_{16}$	1.36	30k6	A8x7x50	33
F302/F303	1.375	$^5/_{16} \times ^5/_{16} \times 2^5/_{16}$	1.51	35k6	A10x8X60	38
F402/F403	1.625	$^3/_8 \times ^3/_8 \times 2^7/_8$	1.79	40k6	A12x8X70	43
F602/F603	2.125	$^1/_2 \times ^1/_2 \times 3^5/_{32}$	2.35	50k6	A14x9X90	53.5

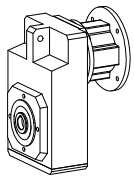
Table No. 4 Motor Adapter Dimensions (Inches)

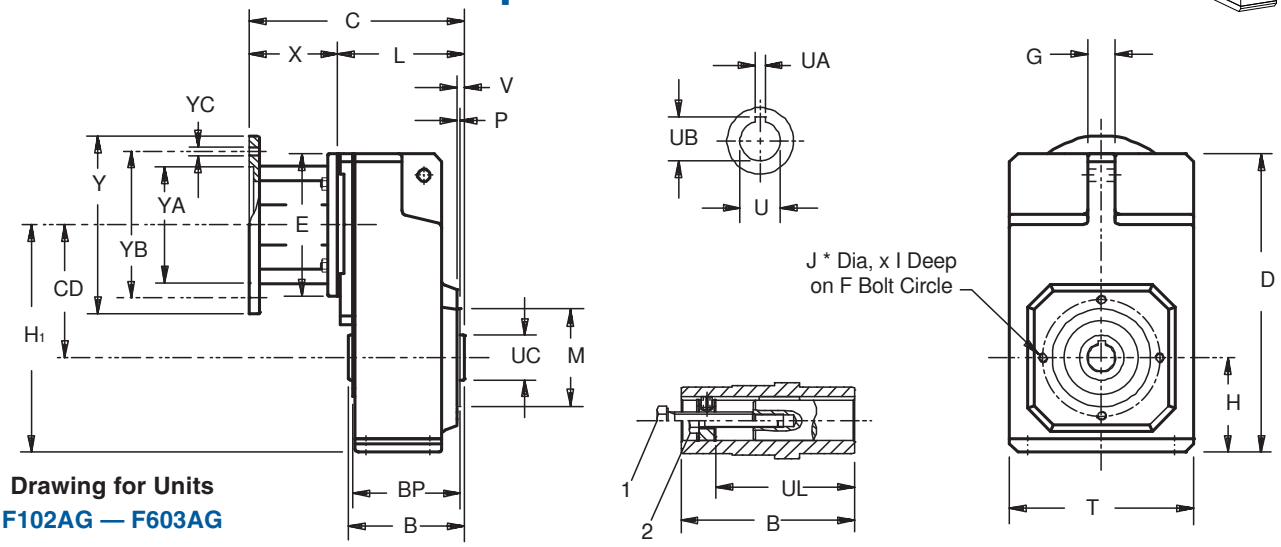
Base	MR140/050		MR160/140[2]		MR200/180		MR250/210[3]		Approx.
Module	C	L	C	L	C	L	C	L	Wt. lbs.
F102	10.40	7.09	11.10	7.24	–	–	–	–	38
F202	11.70	8.39	12.40	8.54	13.42	8.62	–	–	51
F203	13.15	9.84	–	–	–	–	–	–	64
F302	12.76	9.45	13.47	9.61	14.49	9.69	–	–	67
F303	14.22	10.91	15.13	11.28	–	–	–	–	73
F402	–	–	14.45	10.59	15.47	10.67	16.10	10.79	84
F403	15.20	11.89	16.14	12.28	–	–	–	–	91
F602	–	–	16.46	12.60	17.48	12.68	18.11	12.80	165
F603	–	–	18.15	14.29	–	–	–	–	177

[2] Also available as **MR160/050** for a NEMA 56C frame motor.
[3] Also available as **MR250/180** for a NEMA 182/184TC frame motor.
All weights are approximate.

Part No. Example
Round Flange with Motor Adapter
F302VF0620 MR160/140

"F" Series – MGS Reducer
Tapped Holes – "G" Housing
Hollow Output – Dimensional Data





Drawing for Units
F102AG — F603AG

Table No. 1 "F" Series – Tapped Holes Unit Dimensions (Inches) – "G" Housing Style

Base Module	CD	B	C	D	D_1	F	F_1	G	H	H_1	H_2	I	J *	M	L_1	O	P	T	V	BP	RB
F102	4.02	3.74	2.86	9.37	.43	3.35	5.91	.79	2.91	6.93	.55	.51	M8	2.756	.59	1.38	.10	5.71	.26	3.43	1.18
F202/203	5.16	4.53	3.55	11.77	.43	4.53	7.13	.87	3.66	8.82	.98	.51	M8	3.740	.59	1.57	.12	7.09	.31	4.13	1.18
F302/303	5.89	5.12	4.06	13.23	.55	5.12	8.07	1.18	4.17	10.06	.96	.63	M10	4.331	.79	1.77	.14	8.11	.33	4.72	1.57
F402/403	6.65[1)]	5.71	4.53	14.57	.55	5.12	8.98	1.18	4.57	11.22	1.02	.63	M10	4.331	.79	1.77	.14	9.06	.33	5.31	1.57
F602/603	7.72	7.09	5.22	17.64	.57	6.50	10.63	1.38	5.39	13.11	1.02	.63	M10	5.118	1.18	2.77	.14	10.43	.41	6.54	2.36

*F602 and F603 has 8 tapped holes instead of 4 as shown on drawing.
[1)] C.D. is 5.19 for F403 with MR160/050 or MR160/140 input.

1. Removal Bolt – not supplied.
2. Mounting Bolt – must be smaller than removal bolt.

Table No. 2 "F" Series — "G" Housing Style

Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36

Part No. Example
Tapped Holes Housing with Motor Adapter
F302AG0620 MR160/140

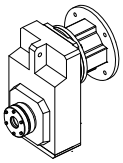
Table No. 3 Metric output available on request

Base Module	Standard Bore - inches			Optional Bore - mm					
	U	UA	UB	U	UA	UB	UC	UL	1
F102	.750	.187	.84	20_{H7}	6_{JS9}	22.8	1.38	2.87	3/8-16
F202/F203	1.000	.250	1.12	25_{H7}	8_{JS9}	28.3	1.77	3.62	1/2-13
F302/F303	1.250	.250	1.37	30_{H7}	8_{JS9}	33.3	1.97	4.06	1/2-13
F402/F403	1.500	.375	1.67	40_{H7}	12_{JS9}	43.3	2.17	4.49	3/4-10
F602/F603	2.000	.500	2.23	50_{H7}	14_{JS9}	53.8	2.76	5.63	3/4-10

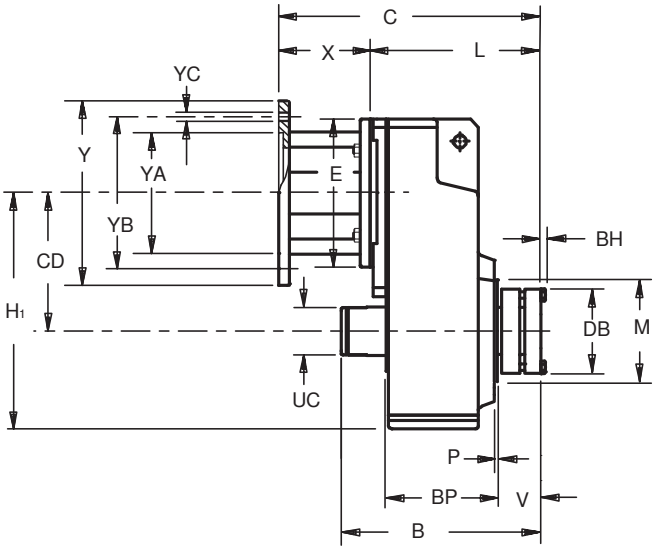
Table No. 4 Motor Adapter Dimensions (Inches)

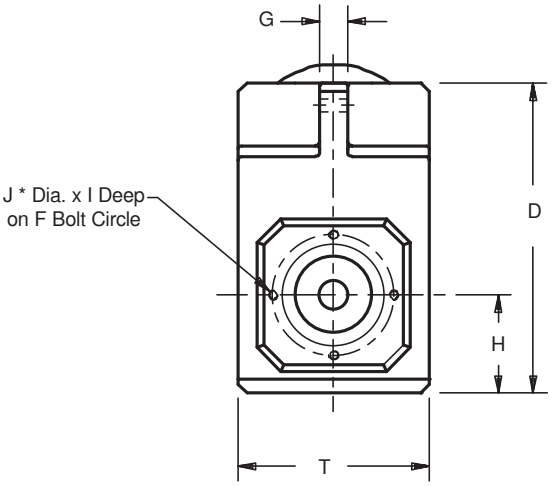
Base Module	MR140/050		MR160/140[2)]		MR200/180		MR250/210[3)]		Approx. Wt. lbs.
	C	L	C	L	C	L	C	L	
F102	7.40	4.09	8.11	4.25	–	–	–	–	38
F202	8.15	4.84	8.86	5.00	9.88	5.08	–	–	51
F203	9.61	6.30	–	–	–	–	–	–	64
F302	8.74	5.43	9.45	5.59	10.47	5.67	–	–	67
F303	10.20	6.89	11.14	7.28	–	–	–	–	73
F402	–	–	10.04	6.18	11.06	6.26	11.68	6.38	84
F403	10.79	7.48	11.73	7.87	–	–	–	–	91
F602	–	–	11.34	7.48	12.36	7.56	12.99	7.68	165
F603	–	–	13.03	9.17	–	–	–	–	177

[2)] Also available as **MR160/050** for a NEMA 56C frame motor.
[3)] Also available as **MR250/180** for a NEMA 182/184TC frame motor.
All weights are approximate.



"F" Series – MGS Reducer
Tapped Holes – "G" Housing
Single Bushing – Dimensional Data





Important: For ease of installation, a 1/32 x 45° chamfer (minimum) is recommended for the output shaft end.

Table No. 1 "F" Series – Single Side Wobble Free Bushing Unit Dimensions (Inches)

Base Module	CD	B	D	F	G	H	H_1	I	J *	M	P	T	V	BH	BP	DB	UC	Bushing Capscrews No.— Size Metric	Tight Torque in.lbs	Tight Torque Nm
F102	4.02	6.40	9.37	3.54	.79	2.91	6.93	.51	M8	2.953	.10	5.71	1.18	.16	3.43	2.68	1.35	6 — M6x25	89	10
F202/F203	5.16	7.26	11.77	4.53	.87	3.66	8.82	.51	M8	3.740	.12	7.09	1.54	.16	4.13	3.07	1.74	8 — M6x30	89	10
F302/F303	5.89	7.95	13.23	5.12	1.18	4.17	10.06	.63	M10	4.331	.14	8.11	1.54	.16	4.72	3.31	1.90	8 — M6x30	89	10
F402/F403	6.65 [1]	8.93	14.57	5.12	1.18	4.57	11.22	.63	M10	4.331	.14	9.06	1.78	.20	5.31	3.82	2.14	8 — M8x30	221	25
F602/F603	7.72	10.24	17.64	6.50	1.38	5.39	13.11	.63	M10	5.118	.14	10.43	1.77	.24	6.54	4.13	2.53	8 — M10x35	434	49

*F602 and F603 has 8 tapped holes instead of 4 as shown on drawing.
[1] C.D. is 5.19 for F403 with MR160/050 or MR160/140 input.

Table No. 2 "F" Series Unit Dimensions (Inches)

Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36

Table No. 3 Motor Adapter Dimensions (Inches)

Base Module	MR140/050 C	MR140/050 L	MR160/140 [2] C	MR160/140 [2] L	MR200/180 C	MR200/180 L	MR250/210 [3] C	MR250/210 [3] L	Wt. lbs.
F102	8.42	5.11	9.13	5.27	—	—	—	—	38
F202	9.50	6.19	10.21	6.35	11.23	6.43	—	—	51
F203	10.96	7.65	—	—	—	—	—	—	64
F302	10.09	6.78	10.80	6.94	11.82	7.02	—	—	67
F303	11.55	8.24	12.49	8.63	—	—	—	—	73
F402	—	—	11.63	7.77	12.65	7.85	13.28	7.97	84
F403	12.38	9.07	13.32	9.46	—	—	—	—	91
F602	—	—	12.84	8.98	13.86	9.06	14.49	9.18	165
F603	—	—	14.53	10.67	—	—	—	—	177

Part No. Example

Unit with Motor Adapter and 1 3/8" Bore Single Bushing

F402WG0560 MR160/140 WF4–106

Table No. 4 "WF" Single Side Bushings

Base Module	Stock Bores Sizes 3/4	1	1 3/16	1 1/4	1 3/8	1 7/16	1 1/2	1 5/8	1 11/16	1 3/4	1 7/8	1 15/16	2
F102	WF1-075	—	—	—	—	—	—	—	—	—	—	—	—
F202/F203	—	WF2-100	WF2-103	—	—	—	—	—	—	—	—	—	—
F302/F303	—	WF3-100	WF3-103	WF3-104	WF3-106	WF3-107	WF3-108	—	—	—	—	—	—
F402/F403	—	WF4-100	WF4-103	WF4-104	WF4-106	WF4-107	WF4-108	—	—	—	—	—	—
F602/F603	—	—	—	—	—	WF5-107	WF5-108	WF5-110	WF5-111	WF5-112	WF5-114	WF5-115	WF5-200

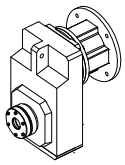
[2] Also available as **MR160/050** for a NEMA 56C frame motor.
[3] Also available as **MR250/180** for a NEMA 182/184TC frame motor.

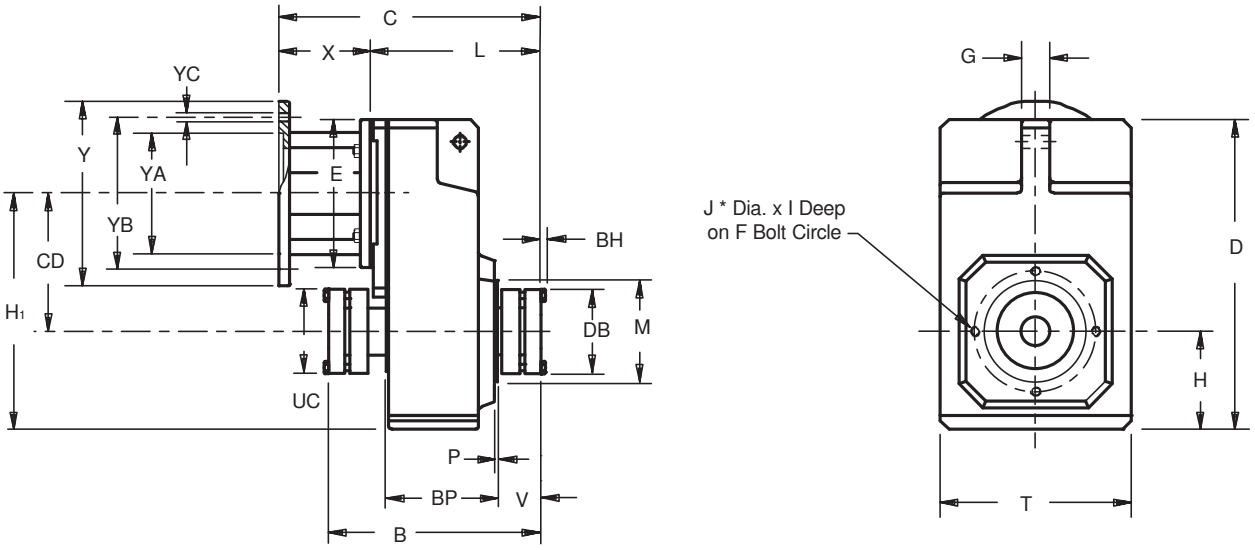
A complete bushing kit includes the locking ring assembly, tapered cone, support ring, and all hardware to mount the kit into the MGS reducer.
The bushing will accept a shaft with a tolerance of +.000/-.005.

NOTE: F6 units use a WF5 Bushing Kit.

All weights are approximate.

"F" Series – MGS Reducer
Tapped Holes – "G" Housing
Double Bushing – Dimensional Data





Important: For ease of installation, a 1/32 x 45° chamfer (minimum) is recommended for the output shaft end.

Table No. 1 "F" Series – Double Side Wobble Free Bushing Unit Dimensions (Inches)

Base Module	CD	B	D	F	G	H	H_1	I	J *	M	P	T	V	BH	BP	DB	Bushing Capscrews No.— Size Metric	Tight Torque in.lbs	Tight Torque Nm
F102	4.02	6.73	9.37	3.54	.79	2.91	6.93	.51	M8	2.953	.10	5.71	1.18	.16	3.43	2.68	6 — M6x25	89	10
F202	5.16	7.77	11.77	4.53	.87	3.66	8.82	.51	M8	3.740	.12	7.09	1.54	.16	4.13	3.07	8 — M6x30	89	10
F302	5.89	8.46	13.23	5.12	1.18	4.17	10.06	.63	M10	4.331	.14	8.11	1.54	.16	4.72	3.31	8 — M6x30	89	10
F402	6.65 [1]	9.57	14.57	5.12	1.18	4.57	11.22	.63	M10	4.331	.14	9.06	1.78	.20	5.31	3.82	8 — M8x30	221	25
F602	7.72	10.84	17.64	6.50	1.38	5.39	13.11	.63	M10	5.118	.14	10.43	1.77	.24	6.54	4.13	8 — M10x35	434	49

*F602 has 8 tapped holes instead of 4 as shown on drawing.

[1] C.D. is 5.19 for F403 with MR160/050 or MR160/140 input.

Table No. 2 "F" Series Unit Dimensions (Inches)

Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36

Table No. 3 Motor Adapter Dimensions (Inches)

Base Module	MR140/050 C	MR140/050 L	MR160/140[2] C	MR160/140[2] L	MR200/180 C	MR200/180 L	MR250/210[3] C	MR250/210[3] L	Wt. lbs.
F102	8.42	5.11	–	–	–	–	–	–	38
F202	9.50	6.19	10.21	6.35	–	–	–	–	51
F302	10.09	6.78	10.80	6.94	11.82	7.02	–	–	67
F402	–	–	11.63	7.77	12.65	7.85	–	–	84
F602	–	–	12.84	8.98	13.86	9.06	14.49	9.18	165

Part No. Example

Unit with Motor Adapter and 1 3/8" Bore Double Bushing

F402WG0560 MR160/140 WFN4–106

(WFN bushings do not have covers.)

Table No. 4 "WFN" Double Side Bushings without Covers

Unit	Stock Bores Sizes 3/4	1	1 3/16	1 1/4	1 3/8	1 7/16	1 1/2	1 5/8	1 11/16	1 3/4	1 7/8	1 15/16	2
F102	**WFN1-075**	–	–	–	–	–	–	–	–	–	–	–	–
F202	–	**WFN2-100**	**WFN2-103**	–	–	–	–	–	–	–	–	–	–
F302	–	**WFN3-100**	**WFN3-103**	**WFN3-104**	**WFN3-106**	**WFN3-107**	**WFN3-108**	–	–	–	–	–	–
F402	–	**WFN4-100**	**WFN4-103**	**WFN4-104**	**WFN4-106**	**WFN4-107**	**WFN4-108**	–	–	–	–	–	–
F602	–	–	–	–	–	**WFN5-107**	**WFN5-108**	**WFN5-110**	**WFN5-111**	**WFN5-112**	**WFN5-114**	**WFN5-115**	**WFN5-200**

[2] Also available as **MR160/050** for a NEMA 56C frame motor.

[3] Also available as **MR250/180** for a NEMA 182/184TC frame motor.

A complete bushing kit includes the locking ring assembly, tapered cone, support ring, and all hardware to mount the kit into the MGS reducer.

The bushing will accept a shaft with a tolerance of +.000/-.005.

NOTE: F6 units use a WFN5 Bushing Kit.

All weights are approximate.

"F" Series – MGS Reducer Tapped Holes – "GN" Housing and Rubber Buffer

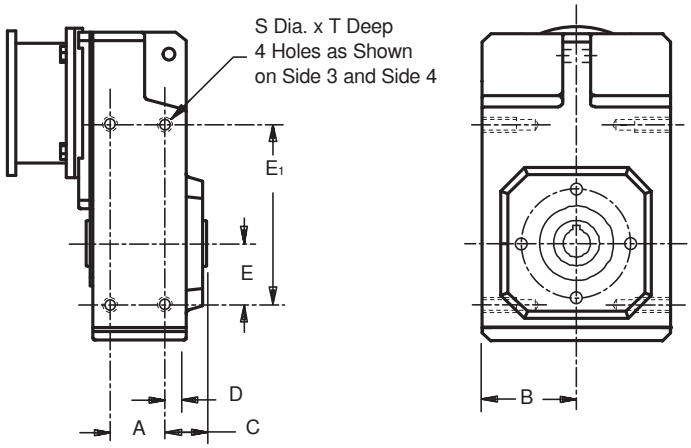


Table No. 1

"F" Series – Foot Mount "GN" Housing Dimensions (Inches)

Base Module	A	B	C	D	E	E1	S	T
F102/F103	1.97	2.79	1.14	.39	1.57	5.51	M6	.43
F202/F203	2.52	3.46	1.32	.41	2.17	6.89	M8	.51
F302/F303	2.83	4.02	1.48	.49	2.36	7.87	M10	.63
F402/F403	3.43	4.49	1.48	49	2.76	8.66	M10	.63
F602/F603	4.25	5.16	1.83	.61	3.35	10.63	M12	.75

Rubber Buffer for Torque Arm Mounting

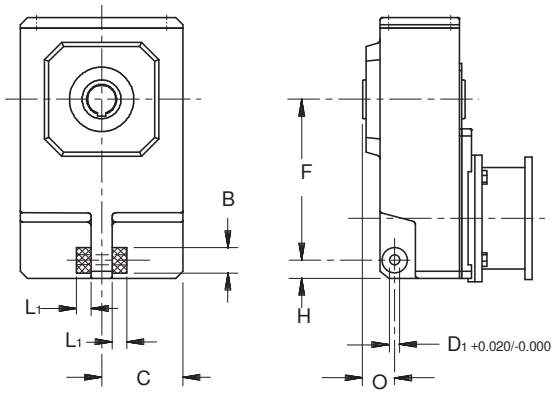


Table No. 2

"F" Series – Rubber Buffer Dimensions (Inches)

Base Module	A	B	C	F	H	D1	L1	O
F102/F103	25192	1.18	2.86	5.91	.55	.43	.59	1.38
F202/F203	25192	1.18	3.55	7.12	.98	.43	.59	1.57
F302/F303	25193	1.57	4.06	8.07	.96	.55	.79	1.77
F402/F403	25193	1.57	4.53	8.98	1.02	.55	.79	1.77
F602/F603	25194	2.36	5.22	10.63	1.02	.57	1.18	2.77

Order two (2) rubber buffers for each unit.
Torque arms are not supplied by STOBER.

“K” Series Right Angle Helical/Bevel Speed Reducers

3 YEAR WARRANTY STANDARD

5 YEAR WARRANTY OPTIONAL

3-DAY DELIVERY

STÖBER

www.stober.com

"K" Series – Right Angle Helical/Bevel MGS Reducers

Right angle helical/bevel gear drives offer higher input-to-output efficiencies than conventional worm gear drives. This added efficiency reduces your costs today through smaller gear drive and motor sizing. Tomorrow, you'll benefit through optimum energy savings.

Performance Specifications:

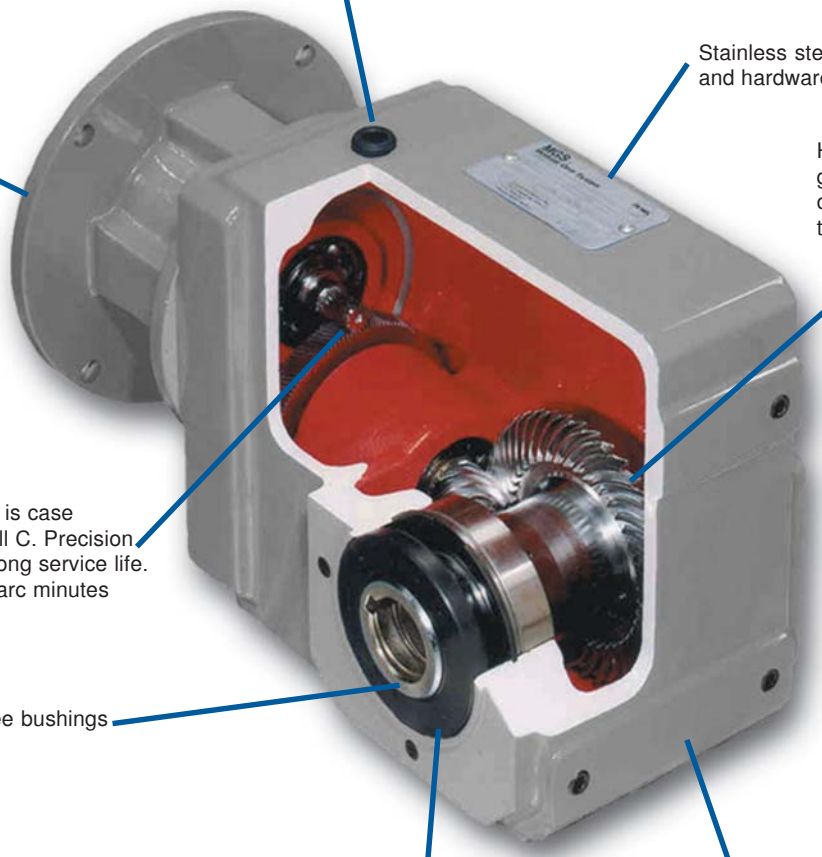
- Horsepower ratings from 1/6 to 165
- Output torques to 106,296 in. lbs.
- Output speeds available from 437 to 4.5 RPM
- Speed reducer ratios from 4:1 to 381:1
- 3 year warranty — your assurance of satisfactory product performance

Strategically located oil fill, drain and breather ports for optimum mounting flexibility. Oil sight glass available.

Input Options:
- Input shaft
- NEMA C-face Adapter (coupling type)

Stainless steel nameplate and hardware

High efficiency spiral bevel gearing provides quiet operation and excellent torque carrying capacity



High quality helical gearing is case hardened to 58-62 Rockwell C. Precision finished for low noise and long service life. Standard backlash is ≤12 arc minutes

Output Options:
- Solid shaft
- Hollow
- Wobble free bushings

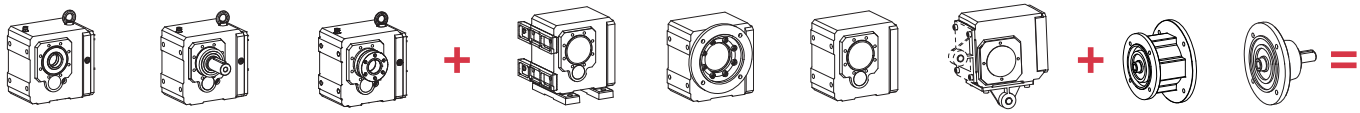
Double lip seals keep oil in and contaminants out. Double seals available for severe duty applications.

One-piece cast iron housing with precision machined bearing supports assure gearset alignment, prolongs bearing life, provides exceptional overhung load capacities, and eliminates leakage problems common to drives with bolt-on output covers.

Shipped with the proper amount and type of oil to prevent gear damaging dry start-ups.

"K" Series – Right Angle Helical/Bevel MGS Speed Reducers Overview

Output Style + Housing Style + Input Style = Reducer Configurations



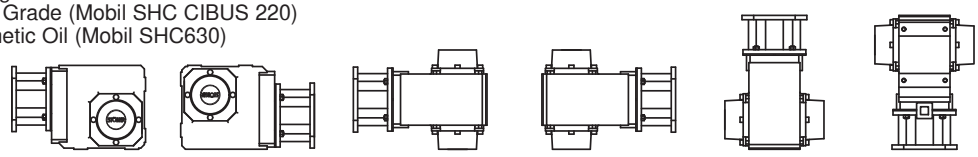
Style A Hollow Output | Style V Solid Output | Style W Bushing Output | + | Style N Foot Mount | Style F Round Flange | Style G Tapped Holes | Style GD Torque Arm Bracket | + | MR Motor Adapter | AW Input Shaft | =

Reducer Configurations (See Page 112 for AW Input Shaft.)

Style AN Hollow Output Foot Mount | Style VN Solid Output Foot Mount | Style AF Hollow Output Flange Mount | Style VF Solid Output Flange Mount | Style AG Hollow Output Tapped Holes | Style VG Solid Output Tapped Holes | Style WG Bushing Tapped Holes

Mounting Positions – Standard 3 Year Warranty

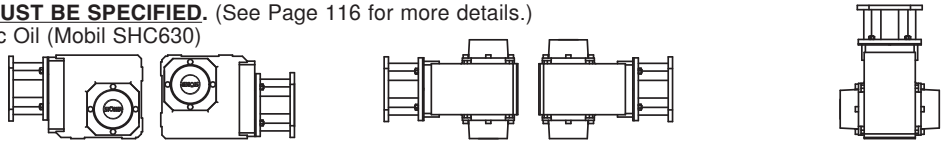
Mounting Position MUST BE SPECIFIED. (See Page 116 for more details.)
Standard Oil: Mobilgear 600XP220
Optional Oil: Food Grade (Mobil SHC CIBUS 220)
Synthetic Oil (Mobil SHC630)



EL1 | EL2 | EL3 | EL4 | EL5 | EL6

Mounting Positions – Long Life 5 Year Warranty

Mounting Position MUST BE SPECIFIED. (See Page 116 for more details.)
Standard Oil: Synthetic Oil (Mobil SHC630)



E12 | E34 | EL5

Part No. Explanation with OPTIONS

K 3 0 2 A GD 0560 MR160 / 140 LL E12

- **Mounting Position (Must be specified on LL.)**
- **Long Life (Option)**
- 050 (56C), **140** (143/145TC), 180 (182/184TC), 210 (213/215TC), 250 (254/256TC), 280 (284/286TC), 320 (324/326TC), 360 (364/365TC)
- Motor Adapter Size: MR140, **MR160**, MR200, MR300, MR350
- Nominal Ratio: (**0560** = 56.705:1)
- HOUSING STYLE: "**F**" Housing Style — Flange Mounting — **SPECIFY IN A NOTE**: Flange on Side 3 or Side 4
  "**G**" Housing Style — Tapped Holes
  "**GD**" G Housing with Torque Arm Bracket — **SPECIFY IN A NOTE**: Bracket on Side 1 or Side 5
  "**N**" Housing Style — Foot Mount — **SPECIFY IN A NOTE**: Feet on Side 1 or Side 5
- OUTPUT STYLE: "**A**" Hollow Output — **SPECIFY IN A NOTE**: Imperial or Metric[1)]
  "**V**" Solid Output — **SPECIFY IN A NOTE**: Imperial or Metric[1)], Double or Single — IF Single: Shaft Side 3 or Side 4
  "**W**" Wobble Free Bushing — **Bushing Part No. Explanation**
- No. of Stages (**2** = 2 Stage, determined by ratio)
- Design Generation
- Unit Size No.
- Right Angle Helical/Bevel

THE FOLLOWING INFORMATION IS REQUIRED:

Mounting Position	—	EL1 EL2 EL3 EL4 EL5 EL6 E12 E34
Paint	—	Standard Gray, White, Stainless
Shaft Side	—	Side 3 or Side 4
Flange Side	—	Side 3 or Side 4
Feet Side	—	Side 1 or Side 5 (Also Side 2 on K1)
Torque Arm Bracket	—	Side 1 or Side 5 (Also Side 2 on K1)

[1)] Metric not available in all sizes.

WFB 3 – 108	**W**obble **F**ree STAINLESS STEEL Dou**B**le Side Bushing for unit size K**3**, 1 1/2" Bore (**108** = 1 and 8/16") (Includes covers.)
SWF 3 C – 108	**S**tandard CARBON STEEL, Double Side **W**obble **F**ree Bushing for unit size K**3**, Includes **C**overs, 1 1/2" Bore (**108** = 1 and 8/16")
WF 3 – 108	**W**obble **F**ree STAINLESS STEEL Single Side Bushing for unit size K**3**, 1 1/2" Bore (**108** = 1 and 8/16")
SWF 3 – 108	**S**tandard CARBON STEEL, Single Side **W**obble **F**ree Bushing for unit size K**3**, 1 1/2" Bore (**108** = 1 and 8/16")

"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

Selection Procedure:

A. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
435 RPM Output (Approximate)								**360 RPM**		**290 RPM**	
2.64	369	K102_0040	MR140/	050	AW140/010	4.000	520	2.19	369	1.71	369
2.81	392	K202_0040	MR140/	050	AW140/010	4.000	624	2.32	392	1.86	392
3.83	536	K102_0040	MR160/	050, 140	AW160/012	4.000	520	3.38	570	2.91	614
6.84	957	K202_0040	MR160/	050, 140	AW160/012	4.000	624	6.04	1,018	5.20	1,097
6.84	957	K202_0040	MR200/	180	AW200/014	4.000	624	6.04	1,018	5.20	1,097
9.84	1,375	K302_0040	MR160/	050, 140	AW160/012	4.000	728	8.15	1,375	6.52	1,375
9.84	1,375	K402_0040	MR160/	050, 140	AW160/012	4.000	1,165	8.15	1,375	6.52	1,375
11.99	1,675	K302_0040	MR200/	180	AW200/014	4.000	728	10.57	1,784	9.11	1,921
17.99	2,514	K402_0040	MR200/	180	AW200/014	4.000	1,165	15.87	2,677	13.67	2,883
17.99	2,514	K402_0040	MR250/	180, 210	AW250/102	4.000	1,165	15.87	2,677	13.67	2,883
400 RPM Output (Approximate)								**330 RPM**		**265 RPM**	
2.78	423	K202_0044	MR140/	050	AW140/010	4.364	638	2.30	423	1.84	423
6.46	985	K202_0044	MR160/	050, 140	AW160/012	4.364	638	5.70	1,048	4.91	1,129
6.46	985	K202_0044	MR200/	180	AW200/014	4.364	638	5.70	1,048	4.91	1,129
9.84	1,500	K302_0044	MR160/	050, 140	AW160/012	4.364	744	8.15	1,500	6.52	1,500
9.84	1,500	K402_0044	MR160/	050, 140	AW160/012	4.364	1,191	8.15	1,500	6.52	1,500
11.31	1,725	K302_0044	MR200/	180	AW200/014	4.364	744	9.98	1,836	8.60	1,978
16.97	2,588	K402_0044	MR200/	180	AW200/014	4.364	1,191	14.97	2,755	12.90	2,968
16.97	2,588	K402_0044	MR250/	180, 210	AW250/102	4.364	1,191	14.97	2,755	12.90	2,968
340 RPM Output (Approximate)								**280 RPM**		**225 RPM**	
5.76	1,042	K202_0052	MR160/	050, 140	AW160/012	5.177	666	5.08	1,110	4.38	1,196
5.76	1,042	K202_0052	MR200/	180	AW200/014	5.177	666	5.08	1,110	4.38	1,196
325 RPM Output (Approximate)								**270 RPM**		**215 RPM**	
9.84	1,847	K302_0054	MR160/	050, 140	AW160/012	5.375	784	8.15	1,847	6.52	1,847
9.84	1,849	K302_0054	MR200/	180	AW200/014	5.375	784	8.68	1,968	7.48	2,120
9.84	1,863	K402_0054	MR160/	050, 140	AW160/012	5.422	1,257	8.15	1,863	6.52	1,863
14.69	2,782	K402_0054	MR200/	180	AW200/014	5.422	1,257	12.95	2,962	11.16	3,191
14.69	2,782	K402_0054	MR250/	180, 210	AW250/102	5.422	1,257	12.95	2,962	11.16	3,191
315 RPM Output (Approximate)								**260 RPM**		**210 RPM**	
2.64	514	K102_0056	MR140/	050	AW140/010	5.568	565	2.19	514	1.71	514
3.07	598	K102_0056	MR160/	050, 140	AW160/012	5.568	565	2.71	637	2.34	686
290 RPM Output (Approximate) Continued Next Page								**240 RPM**		**195 RPM**	
2.50	524	K102_0060	MR140/	050	AW140/010	6.000	576	2.07	524	1.66	524
2.78	582	K202_0060	MR140/	050	AW140/010	6.000	691	2.30	582	1.84	582
2.92	613	K102_0060	MR160/	050, 140	AW160/012	6.000	576	2.58	653	2.22	703
5.22	1,095	K202_0060	MR160/	050, 140	AW160/012	6.000	691	4.61	1,166	3.97	1,256
5.22	1,095	K202_0060	MR200/	180	AW200/014	6.000	691	4.61	1,166	3.97	1,256

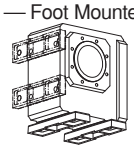
* For thermal HP capacity, see rating below.

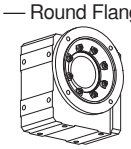
Base Module	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

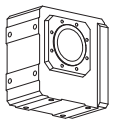
NEMA TEFC 1750 RPM

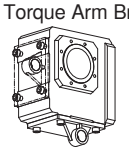
Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

Housing Styles

N — Foot Mounted 

F — Round Flange 

G — Tapped Holes 

GD — Torque Arm Bracket 

These Housing Styles are available as Hollow (A) or Solid (V) Output.

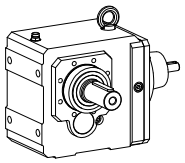
"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

NOTE: [1] Complete Base Module Part Number by adding Housing and Output Style. Example: K402**VG**0690.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

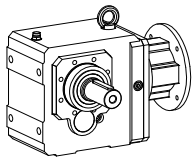
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
290 RPM Output (Approximate) Continued								**240 RPM**		**195 RPM**	
9.15	1,918	K302_0060	MR160/	050, 140	AW160/012	6.000	806	8.07	2,042	6.52	2,062
9.15	1,918	K302_0060	MR200/	180	AW200/014	6.000	806	8.07	2,042	6.95	2,199
9.84	2,062	K402_0060	MR160/	050, 140	AW160/012	6.000	1,290	8.15	2,062	6.52	2,062
13.73	2,878	K402_0060	MR200/	180	AW200/014	6.000	1,290	12.11	3,064	10.44	3,301
13.73	2,878	K402_0060	MR250/	180, 210	AW250/102	6.000	1,290	12.11	3,064	10.44	3,301
260 RPM Output (Approximate)								**215 RPM**		**175 RPM**	
2.46	571	K102_0066	MR140/	050	AW140/010	6.644	591	2.04	571	1.63	571
2.61	610	K202_0067	MR140/	050	AW140/010	6.683	710	2.16	610	1.73	610
2.73	634	K102_0066	MR160/	050, 140	AW160/012	6.644	591	2.41	675	2.08	728
4.86	1,135	K202_0067	MR160/	050, 140	AW160/012	6.683	710	4.29	1,208	3.70	1,302
4.86	1,135	K202_0067	MR200/	180	AW200/014	6.683	710	4.29	1,208	3.70	1,302
8.46	1,994	K302_0067	MR160/	050, 140	AW160/012	6.740	830	7.47	2,123	6.44	2,286
8.46	1,994	K302_0067	MR200/	180	AW200/014	6.740	830	7.47	2,123	6.44	2,286
9.84	2,309	K402_0067	MR160/	050, 140	AW160/012	6.719	1,327	8.15	2,309	6.52	2,309
12.73	2,988	K402_0067	MR200/	180	AW200/014	6.719	1,327	11.23	3,182	9.68	3,427
12.73	2,988	K402_0067	MR250/	180, 210	AW250/102	6.719	1,327	11.23	3,182	9.68	3,427
245 RPM Output (Approximate)								**200 RPM**		**160 RPM**	
4.66	1,159	K202_0071	MR160/	050, 140	AW160/012	7.118	721	4.11	1,234	3.54	1,329
4.66	1,159	K202_0071	MR200/	180	AW200/014	7.118	721	4.11	1,234	3.54	1,329
235 RPM Output (Approximate)								**195 RPM**		**155 RPM**	
7.96	2,056	K302_0074	MR160/	050, 140	AW160/012	7.391	849	7.02	2,189	6.05	2,358
7.96	2,056	K302_0074	MR200/	180	AW200/014	7.391	849	7.02	2,189	6.05	2,358
9.84	2,563	K402_0075	MR160/	050, 140	AW160/012	7.456	1,362	8.15	2,563	6.52	2,563
11.88	3,094	K402_0075	MR200/	180	AW200/014	7.456	1,362	10.48	3,294	9.03	3,548
11.88	3,094	K402_0075	MR250/	180, 210	AW250/102	7.456	1,362	10.48	3,294	9.03	3,548
22.58	5,710	K513_0073	MR200/	180	AW200/014	7.347	1,629	19.37	5,911	15.49	5,911
22.58	5,710	K513_0073	MR250/	180, 210	AW250/102	7.347	1,629	19.92	6,079	17.17	6,548
23.37	5,891	K613_0073	MR200/	180	AW200/014	7.323	1,936	19.37	5,891	15.49	5,891
23.37	5,989	K813_0074	MR200/	180	AW200/014	7.445	3,524	19.37	5,989	15.49	5,989
23.37	6,084	K713_0076	MR200/	180	AW200/014	7.563	2,684	19.37	6,084	15.49	6,084
29.90	7,536	K613_0073	MR250/	180, 210	AW250/102	7.323	1,936	26.38	8,024	22.73	8,644
29.90	7,536	K613_0073	MR300/	180, 210, 250, 280	AW300/110	7.323	1,936	26.38	8,024	22.73	8,644
37.76	9,828	K713_0076	MR250/	180, 210	AW250/102	7.563	2,684	31.28	9,828	25.03	9,828
47.89	12,467	K713_0076	MR300/	180, 210, 250, 280	AW300/110	7.563	2,684	42.25	13,274	36.41	14,299
220 RPM Output (Approximate)								**185 RPM**		**146 RPM**	
79.61	21,741	K913_0079	MR300/	180, 210, 250, 280	AW300/110	7.934	8,025	65.97	21,741	52.77	21,741
123.02	33,594	K913_0079	MR350/	320, 360	AW350/202	7.934	8,025	101.93	33,594	81.55	33,594

Part No. Explanation

K 4 0 2 V G 0690 AW 160 / 012
- Shaft Dia. (1/16 in.; example — 012 = 12/16 or 3/4)
- Size
- Input Shaft
- Ratio (0690 = 69.0:1)
- Housing Style
- Output Style (A-hollow; V-solid)
- No. of Gear Reductions
- Generation No.
- Unit No.
- Right Angle Helical/Bevel



K 4 0 2 V G 0690 MR 160 / 140
- Motor Frame Size (140=143/145TC)
- Size
- Motor Adapter
- Ratio (0690 = 69.0:1)
- Housing Style
- Output Style (A-hollow; V-solid)
- No. of Reductions
- Generation No.
- Unit No.
- Right Angle Helical/Bevel



Mounting position must be specified when ordering.

"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

Selection Procedure:

A. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
Input HP	Output Torque in. lbs.		Motor Adapter		Input Shaft			Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
			Size [3]	NEMA C-Frame							
215 RPM Output (Approximate)								**180 RPM**		**143 RPM**	
21.10	5,907	K513_0081	MR200/	180	AW200/014	8.134	1,671	18.61	6,289	15.49	6,544
21.10	5,907	K513_0081	MR250/	180, 210	AW250/102	8.134	1,671	18.61	6,289	16.04	6,774
23.37	6,522	K613_0081	MR200/	180	AW200/014	8.107	1,986	19.37	6,522	15.49	6,522
27.94	7,796	K613_0081	MR300/	180, 210, 250, 280	AW300/110	8.107	1,986	24.65	8,301	21.24	8,942
27.94	7,796	K613_0081	MR250/	180, 210	AW250/102	8.107	1,986	24.65	8,301	21.24	8,942
210 RPM Output (Approximate)								**170 RPM**		**140 RPM**	
2.35	684	K102_0083	MR140/	050	AW140/010	8.309	624	1.97	689	1.57	689
2.35	684	K102_0083	MR160/	050, 140	AW160/012	8.309	624	2.08	728	1.79	784
2.52	740	K202_0084	MR140/	050	AW140/010	8.397	751	2.09	740	1.67	740
4.17	1,225	K202_0084	MR160/	050, 140	AW160/012	8.397	751	3.68	1,304	3.17	1,405
4.17	1,225	K202_0084	MR200/	180	AW200/014	8.397	751	3.68	1,304	3.17	1,405
7.28	2,149	K302_0084	MR160/	050	AW160/012	8.444	878	6.43	2,288	5.54	2,465
7.28	2,149	K302_0084	MR200/	180	AW200/014	8.444	878	6.43	2,288	5.54	2,465
9.84	2,879	K402_0084	MR160/	050, 140	AW160/012	8.377	1,402	8.15	2,879	6.52	2,879
10.99	3,216	K402_0084	MR200/	180	AW200/014	8.377	1,402	9.69	3,424	8.35	3,689
10.99	3,216	K402_0084	MR250/	180, 210	AW250/102	8.377	1,402	9.69	3,424	8.35	3,689
23.37	6,631	K813_0082	MR200/	180	AW200/014	8.243	3,615	19.37	6,631	15.49	6,631
23.37	6,736	K713_0084	MR200/	180	AW200/014	8.373	2,753	19.37	6,736	15.49	6,736
37.76	10,881	K713_0084	MR250/	180, 210	AW250/102	8.373	2,753	31.28	10,881	25.03	10,881
44.75	12,897	K713_0084	MR300/	180, 210, 250, 280	AW300/110	8.373	2,753	39.48	13,732	34.02	14,792
190 RPM Output (Approximate)								**155 RPM**		**125 RPM**	
2.19	708	K102_0092	MR140/	050	AW140/010	9.249	641	1.93	754	1.63	795
2.19	708	K102_0092	MR160/	050, 140	AW160/012	9.249	641	1.93	754	1.67	812
2.61	839	K202_0092	MR140/	050	AW140/010	9.190	769	2.16	839	1.73	839
3.93	1,262	K202_0092	MR160/	050, 140	AW160/012	9.190	769	3.47	1,344	2.99	1,448
3.93	1,262	K202_0092	MR200/	180	AW200/014	9.190	769	3.47	1,344	2.99	1,448
6.85	2,217	K302_0093	MR160/	050, 140	AW160/012	9.267	898	6.04	2,360	5.20	2,542
6.85	2,217	K302_0093	MR200/	180	AW200/014	9.267	898	6.04	2,360	5.20	2,542
9.84	3,175	K402_0092	MR160/	050, 140	AW160/012	9.238	1,436	8.15	3,175	6.52	3,175
10.29	3,323	K402_0092	MR200/	180	AW200/014	9.238	1,436	9.08	3,538	7.83	3,811
10.29	3,323	K402_0092	MR250/	180, 210	AW250/102	9.238	1,436	9.08	3,538	7.83	3,811
19.48	6,147	K513_0092	MR200/	180	AW200/014	9.168	1,722	17.19	6,545	14.81	7,050
19.48	6,147	K513_0092	MR250/	180, 210	AW250/102	9.168	1,722	17.19	6,545	14.81	7,050
23.37	7,306	K613_0091	MR200/	180	AW200/014	9.081	2,043	19.37	7,306	15.49	7,306
23.37	7,392	K713_0092	MR200/	180	AW200/014	9.188	2,818	19.37	7,392	15.49	7,392
25.91	8,097	K613_0091	MR250/	180, 210	AW250/102	9.081	2,043	22.85	8,621	19.69	9,286
25.91	8,097	K613_0091	MR300/	180, 210, 250, 280	AW300/110	9.081	2,043	22.85	8,621	19.69	9,286
36.79	11,634	K713_0092	MR250/	180, 210	AW250/102	9.188	2,818	30.48	11,634	24.39	11,634
42.07	13,303	K713_0092	MR300/	180, 210, 250, 280	AW300/110	9.188	2,818	37.11	14,163	31.98	15,257

* For thermal HP capacity, see rating below.

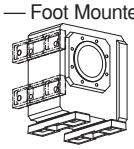
Base Module	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

NEMA TEFC 1750 RPM

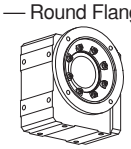
Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

Housing Styles

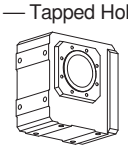
N — Foot Mounted



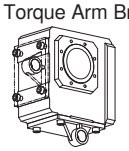
F — Round Flange



G — Tapped Holes



GD — Torque Arm Bracket



These Housing Styles are available as Hollow (A) or Solid (V) Output.

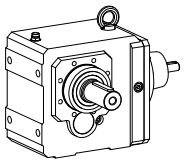
"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

NOTE: [1] Complete Base Module Part Number by adding Housing and Output Style. Example: K402**VG**0690.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

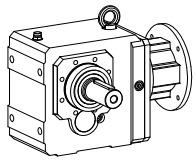
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
Input HP	Output Torque in. lbs.		Motor Adapter Size [3]	Motor Adapter NEMA C-Frame	Input Shaft			Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
170 RPM Output (Approximate)								**140 RPM**		**115 RPM**	
2.06	730	K102_0100	MR140/	050	AW140/010	10.140	656	1.82	778	1.52	814
2.06	730	K102_0100	MR160/	050, 140	AW160/012	10.140	656	1.82	778	1.57	838
2.44	859	K202_0100	MR140/	050	AW140/010	10.073	786	2.02	859	1.62	859
3.70	1,301	K202_0100	MR160/	050, 140	AW160/012	10.073	786	3.26	1,386	2.81	1,493
3.70	1,301	K202_0100	MR200/	180	AW200/014	10.073	786	3.26	1,386	2.81	1,493
6.45	2,284	K302_0100	MR160/	050, 140	AW160/012	10.135	919	5.69	2,432	4.90	2,619
6.45	2,284	K302_0100	MR200/	180	AW200/014	10.135	919	5.69	2,432	4.90	2,619
9.70	3,423	K402_0100	MR160/	050, 140	AW160/012	10.098	1,469	8.15	3,471	6.52	3,471
9.70	3,423	K402_0100	MR200/	180	AW200/014	10.098	1,469	8.56	3,645	7.38	3,926
9.70	3,423	K402_0100	MR250/	180, 210	AW250/102	10.098	1,469	8.56	3,645	7.38	3,926
18.20	6,359	K513_0100	MR200/	180	AW200/014	10.150	1,766	16.06	6,770	13.84	7,293
18.20	6,359	K513_0100	MR250/	180, 210	AW250/102	10.150	1,766	16.06	6,770	13.84	7,293
23.37	8,088	K613_0100	MR200/	180	AW200/014	10.054	2,096	19.37	8,088	15.49	8,088
23.37	8,269	K813_0105	MR200/	180	AW200/014	10.279	3,820	19.37	8,269	15.49	8,269
23.37	8,183	K713_0100	MR200/	180	AW200/014	10.172	2,890	19.37	8,183	15.49	8,183
24.21	8,376	K613_0100	MR250/	180, 210	AW250/102	10.054	2,096	21.35	8,918	18.40	9,607
24.21	8,376	K613_0100	MR300/	180, 210, 250, 280	AW300/110	10.054	2,096	21.35	8,918	18.40	9,607
36.79	12,880	K713_0100	MR250/	180, 210	AW250/102	10.172	2,890	30.48	12,880	24.39	12,880
38.48	13,613	K813_0105	MR250/	180, 210	AW250/102	10.279	3,820	31.88	13,613	25.05	13,613
39.31	13,762	K713_0100	MR300/	180, 210, 250, 280	AW300/110	10.172	2,890	34.68	14,652	29.88	15,783
67.57	23,904	K813_0105	MR300/	180, 210, 250, 280	AW300/110	10.279	3,820	59.61	254,051	48.74	26,014
77.05	26,830	K913_0100	MR300/	180, 210, 250, 280	AW300/110	10.117	8,528	63.84	26,830	51.07	26,830
123.02	42,837	K913_0100	MR350/	320, 360	AW350/202	10.117	8,528	101.93	42,837	81.55	42,837
150 RPM Output (Approximate) Continued Next Page								**125 RPM**		**100 RPM**	
1.89	763	K102_0115	MR140/	050	AW140/010	11.565	678	1.67	813	1.44	875
1.89	763	K102_0115	MR160/	050, 140	AW160/012	11.565	678	1.67	813	1.44	875
2.52	1,017	K202_0115	MR140/	050	AW140/010	11.546	814	2.09	1,017	1.67	1,017
3.38	1,362	K202_0115	MR160/	050, 140	AW160/012	11.546	814	2.98	1,450	2.57	1,562
3.38	1,362	K202_0115	MR200/	180	AW200/014	11.546	814	2.98	1,450	2.57	1,562
5.89	2,390	K302_0115	MR160/	050, 140	AW160/012	11.610	9,051	5.20	2,544	4.48	2,741
5.89	2,390	K302_0115	MR200/	180	AW200/014	11.610	9,051	5.20	2,544	4.48	2,741
8.89	3,577	K402_0115	MR160/	050, 140	AW160/012	11.518	1,518	7.84	3,808	6.52	3,959
8.89	3,577	K402_0115	MR200/	180	AW200/014	11.518	1,518	7.84	3,808	6.76	4,102
8.89	3,577	K402_0115	MR250/	180, 210	AW250/102	11.518	1,518	7.84	3,808	6.76	4,102
16.68	6,643	K513_0115	MR200/	180	AW200/014	11.569	1,825	14.72	7,072	12.68	7,618
16.68	6,643	K513_0115	MR250/	180, 210	AW250/102	11.569	1,825	14.72	7,072	12.68	7,618
22.25	8,736	K613_0115	MR200/	180	AW200/014	11.407	2,163	19.37	9,177	15.49	9,177
22.25	8,736	K613_0115	MR250/	180, 210	AW250/102	11.407	2,163	19.63	9,301	16.92	10,020
22.25	8,736	K613_0115	MR300/	180, 210, 250, 280	AW300/110	11.407	2,163	19.63	9,301	16.92	10,020
23.37	9,478	K713_0120	MR200/	180	AW200/014	11.781	2,998	19.37	9,478	15.49	9,478
23.37	9,578	K813_0120	MR200/	180	AW200/014	11.906	3,963	19.37	9,578	15.49	9,578
35.42	14,362	K713_0120	MR250/	180, 210	AW250/102	11.781	2,998	29.35	14,362	23.48	14,362

Part No. Explanation

K 4 0 2 V G 0690 AW 160 / 012
- Shaft Dia. (1/16 in.; example — 012 = 12/16 or 3/4)
- Size
- Input Shaft
- Ratio (0690 = 69.0:1)
- Housing Style
- Output Style (A-hollow; V-solid)
- No. of Gear Reductions
- Generation No.
- Unit No.
- Right Angle Helical/Bevel



K 4 0 2 V G 0690 MR 160 / 140
- Motor Frame Size (140=143/145TC)
- Size
- Motor Adapter
- Ratio (0690 = 69.0:1)
- Housing Style
- Output Style (A-hollow; V-solid)
- No. of Reductions
- Generation No.
- Unit No.
- Right Angle Helical/Bevel



Mounting position must be specified when ordering.

"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

Selection Procedure:

A. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
150 RPM Output (Approximate) Continued								**125 RPM**		**100 RPM**	
35.64	14,452	K713_0120	MR300/	180, 210, 250, 280	AW300/110	11.781	2,998	31.44	15,387	27.10	16,575
37.08	15,196	K813_0120	MR250/	180, 210	AW250/102	11.906	3,963	30.73	15,196	24.58	15,196
61.26	25,104	K813_0120	MR300/	180, 210, 250, 280	AW300/110	11.906	3,963	54.04	26,728	46.57	28,792
140 RPM Output (Approximate)								**115 RPM**		**90 RPM**	
1.78	786	K102_0125	MR140/	050	AW140/010	12.618	693	1.57	836	1.35	901
1.78	786	K102_0125	MR160/	050, 140	AW160/012	12.618	693	1.57	836	1.35	901
2.35	1,042	K202_0125	MR140/	050	AW140/010	12.705	833	1.94	1,042	1.56	1,042
2.42	1,065	K302_0125	MR140/	050	AW140/010	12.577	970	2.01	1,065	1.61	1,065
3.17	1,406	K202_0125	MR160/	050, 140	AW160/012	12.705	833	2.79	1,497	2.41	1,613
3.17	1,406	K202_0125	MR200/	180	AW200/014	12.705	833	2.79	1,497	2.41	1,613
5.58	2,454	K302_0125	MR160/	050, 140	AW160/012	12.577	970	4.93	2,613	4.25	2,815
5.58	2,454	K302_0125	MR200/	180	AW200/014	12.577	970	4.93	2,613	4.25	2,815
8.34	3,691	K402_0125	MR160/	050, 140	AW160/012	12.658	1,554	7.36	3,930	6.34	4,233
8.34	3,691	K402_0125	MR200/	180	AW200/014	12.658	1,554	7.36	3,930	6.34	4,233
8.34	3,691	K402_0125	MR250/	180, 210	AW250/102	12.658	1,554	7.36	3,930	6.34	4,233
15.59	6,872	K513_0130	MR200/	180	AW200/014	12.808	1,872	13.75	7,316	11.81	7,881
15.59	6,872	K513_0130	MR250/	180, 210	AW250/102	12.808	1,872	13.75	7,316	11.81	7,881
20.79	9,038	K613_0125	MR200/	180	AW200/014	12.629	2,219	18.34	9,622	15.49	10,160
20.79	9,038	K613_0125	MR250/	180, 210	AW250/102	12.629	2,219	18.34	9,622	15.81	10,365
20.79	9,038	K613_0125	MR300/	180, 210, 250, 280	AW300/110	12.629	2,219	18.34	9,622	15.81	10,365
74.69	32,196	K913_0125	MR300/	180, 210, 250, 280	AW300/110	12.525	8,996	61.88	32,196	49.05	32,196
107.05	46,343	K913_0125	MR350/	320, 360	AW350/202	12.525	8,996	94.84	49,341	81.55	53,032
125 RPM Output (Approximate)								**105 RPM**		**85 RPM**	
1.65	816	K102_0140	MR140/	50	AW140/010	14.114	713	1.46	868	1.26	935
1.65	816	K102_0140	MR160/	050, 140	AW160/012	14.114	713	1.46	868	1.26	935
2.44	1,181	K202_0140	MR140/	050	AW140/010	13.851	852	2.02	1,181	1.62	1,181
2.99	1,447	K202_0140	MR160/	050, 140	AW160/012	13.851	852	2.64	1,541	2.27	1,660
2.99	1,447	K202_0140	MR200/	180	AW200/014	13.851	852	2.64	1,541	2.27	1,660
5.22	2,540	K302_0140	MR160/	050, 140	AW160/012	13.935	995	4.60	2,704	3.97	2,913
5.22	2,540	K302_0140	MR200/	180	AW200/014	13.935	995	4.60	2,704	3.97	2,913
7.85	3,806	K402_0140	MR160/	050, 140	AW160/012	13.885	1,590	6.92	4,053	5.96	4,366
7.85	3,806	K402_0140	MR200/	180	AW200/014	13.885	1,590	6.92	4,053	5.96	4,366
7.85	3,806	K402_0140	MR250/	180, 210	AW250/102	13.885	1,590	6.92	4,053	5.96	4,366
120 RPM Output (Approximate) Continued Next Page								**100 RPM**		**80 RPM**	
9.84	4,924	K513_0145	MR160/	050, 140	AW160/012	14.536	1,932	8.15	4,924	6.52	4,924
14.33	7,168	K513_0145	MR200/	180	AW200/014	14.536	1,932	12.64	7,631	10.56	7,972
14.33	7,168	K513_0145	MR250/	180, 210	AW250/102	14.536	1,932	12.64	7,631	10.56	7,972
19.11	9,427	K613_0145	MR200/	180	AW200/014	14.332	2,290	16.86	10,037	14.53	10,812
19.11	9,427	K613_0145	MR250/	180, 210	AW250/102	14.332	2,290	16.86	10,037	14.53	10,812

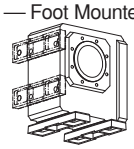
* For thermal HP capacity, see rating below.

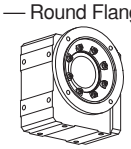
Base Module	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

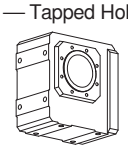
NEMA TEFC 1750 RPM

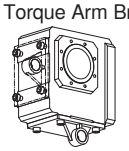
Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

Housing Styles

N — Foot Mounted 

F — Round Flange 

G — Tapped Holes 

GD — Torque Arm Bracket 

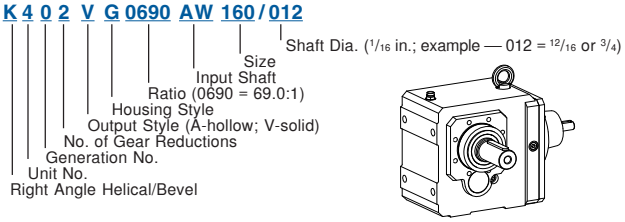
These Housing Styles are available as Hollow (A) or Solid (V) Output.

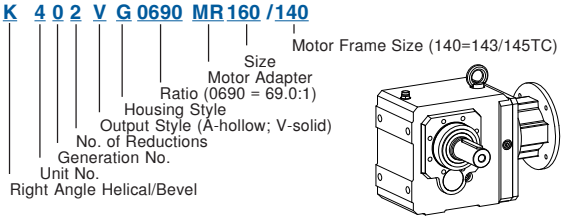
"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

NOTE: [1] Complete Base Module Part Number by adding Housing and Output Style. Example: K402**VG**0690.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
Input HP	Output Torque in. lbs.		Motor Adapter Size [3]	Motor Adapter NEMA C-Frame	Input Shaft			Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
120 RPM Output (Approximate) Continued								**100 RPM**		**80 RPM**	
19.11	9,427	K613_0145	MR300/	180, 210, 250, 280	AW300/110	14.332	2,290	16.86	10,037	14.53	10,812
23.37	11,908	K713_0150	MR200/	180	AW200/014	14.802	3,175	19.37	11,908	15.49	11,908
23.37	11,940	K813_0150	MR200/	180	AW200/014	14.842	4,187	19.37	11,940	15.49	11,940
30.61	15,595	K713_0150	MR250/	180, 210	AW250/102	14.802	3,175	27.00	16,604	22.69	17,438
30.61	15,595	K713_0150	MR300/	180, 210, 250, 280	AW300/110	14.802	3,175	27.00	16,604	23.27	17,886
35.74	18,259	K813_0150	MR250/	180, 210	AW250/102	14.842	4,187	29.62	18,259	23.69	18,259
52.89	27,018	K813_0150	MR300/	180, 210, 250, 280	AW300/110	14.842	4,187	46.66	28,766	40.21	30,987
110 RPM Output (Approximate)								**90 RPM**		**75 RPM**	
9.84	5,451	K513_0160	MR160/	050, 140	AW160/012	16.093	1,982	8.15	5,451	6.52	5,451
13.39	7,415	K513_0160	MR200/	180	AW200/014	16.093	1,982	11.81	7,895	9.54	7,972
13.39	7,415	K513_0160	MR250/	180, 210	AW250/102	16.093	1,982	11.81	7,895	9.54	7,972
17.86	9,752	K613_0160	MR200/	180	AW200/014	15.868	2,349	15.75	10,383	13.58	11,185
17.86	9,752	K613_0160	MR250/	180, 210	AW250/102	15.868	2,349	15.75	10,383	13.58	11,185
17.86	9,752	K613_0160	MR300/	180, 210, 250, 280	AW300/110	15.868	2,349	15.75	10,383	13.58	11,185
71.79	39,311	K913_0160	MR300/	180, 210, 250, 280	AW300/110	15.910	9,550	59.48	39,311	47.59	39,311
91.66	50,190	K913_0160	MR350/	320, 360	AW350/202	15.910	9,550	80.86	53,437	69.68	57,563
105 RPM Output (Approximate)								**85 RPM**		**70 RPM**	
1.48	863	K102_0165	MR140/	050	AW140/010	16.714	744	1.30	919	1.11	974
1.48	863	K102_0165	MR160/	050, 140	AW160/012	16.714	744	1.30	919	1.11	974
2.23	1,313	K202_0170	MR140/	050	AW140/010	16.858	894	1.85	1,313	1.48	1,313
2.29	1,358	K302_0170	MR140/	050	AW140/010	16.939	1,045	1.90	1,358	1.52	1,358
2.62	1,545	K202_0170	MR160/	050, 140	AW160/012	16.858	894	2.31	1,645	1.99	1,772
2.62	1,545	K202_0170	MR200/	180	AW200/014	16.858	894	2.31	1,645	1.99	1,772
4.58	2,710	K302_0170	MR160/	050, 140	AW160/012	16.939	1,045	4.04	2,886	3.47	3,100
4.58	2,710	K302_0170	MR200/	180	AW200/014	16.939	1,045	4.04	2,886	3.47	3,100
6.87	4,067	K402_0170	MR160/	050, 140	AW160/012	16.939	1,672	6.06	4,330	5.22	4,665
6.87	4,067	K402_0170	MR200/	180	AW200/014	16.939	1,672	6.06	4,330	5.22	4,665
6.87	4,067	K402_0170	MR250/	180, 210	AW250/102	16.939	1,672	6.06	4,330	5.22	4,665
9.84	5,811	K613_0170	MR160/	050, 140	AW160/012	17.156	2,396	8.15	5,811	6.52	5,811
16.95	10,009	K613_0170	MR200/	180	AW200/014	17.156	2,396	14.95	10,657	12.89	11,480
16.95	10,009	K613_0170	MR250/	180, 210	AW250/102	17.156	2,396	14.95	10,657	12.89	11,480
16.95	10,009	K613_0170	MR300/	180, 210, 250, 280	AW300/110	17.156	2,396	14.95	10,657	12.89	11,480
23.37	13,184	K713_0165	MR200/	180	AW200/014	16.388	3,256	19.37	13,184	15.49	13,184
23.37	13,219	K813_0165	MR200/	180	AW200/014	16.432	4,295	19.37	13,219	15.49	13,219
28.60	16,133	K713_0165	MR250/	180, 210	AW250/102	16.388	3,256	25.23	17,177	21.74	180,503
28.60	16,133	K713_0165	MR300/	180, 210, 250, 280	AW300/110	16.388	3,256	25.23	17,177	21.74	180,503
35.74	20,215	K813_0165	MR250/	180, 210	AW250/102	16.432	4,295	29.62	20,215	23.69	20,215
49.42	279,051	K813_0165	MR300/	180, 210, 250, 280	AW300/110	16.432	4,295	43.60	29,759	37.57	32,057

Part No. Explanation





Mounting position must be specified when ordering.

"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

Selection Procedure:

A. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
100 RPM Output (Approximate)								**82 RPM**		**65 RPM**	
1.43	877	K102_0175	MR140/	050	AW140/010	17.563	753	1.26	934	1.09	1,006
1.43	877	K102_0175	MR160/	050, 140	AW160/012	17.563	753	1.26	934	1.09	1,006
2.35	1,433	K202_0175	MR140/	050	AW140/010	17.469	902	1.94	1,433	1.56	1,433
2.42	1,464	K302_0175	MR140/	050	AW140/010	17.293	1,050	2.01	1,464	1.61	1,464
2.56	1,564	K202_0175	MR160/	050, 140	AW160/012	17.469	902	2.26	1,665	1.92	1,772
2.56	1,564	K202_0175	MR200/	180	AW200/014	17.469	902	2.26	1,665	1.92	1,772
4.52	2,729	K302_0175	MR160/	050, 140	AW160/012	17.293	1,050	3.98	2,906	3.40	3,100
4.52	2,729	K302_0175	MR200/	180	AW200/014	17.293	1,050	3.98	2,906	3.40	3,100
6.75	4,104	K402_0175	MR160/	050, 140	AW160/012	17.405	1,683	5.95	4,370	5.13	4,707
6.75	4,104	K402_0175	MR200/	180	AW200/014	17.405	1,683	5.95	4,370	5.13	4,707
6.75	4,104	K402_0175	MR250/	180, 210	AW250/102	17.405	1,683	5.95	4,370	5.13	4,707
9.84	5,921	K513_0175	MR160/	050, 140	AW160/012	17.481	2,023	8.15	5,921	6.52	5,921
12.67	7,622	K513_0175	MR200/	180	AW200/014	17.481	2,023	10.98	7,972	8.78	7,972
12.67	7,622	K513_0175	MR250/	180, 210	AW250/102	17.481	2,023	10.98	7,972	8.78	7,972
23.37	13,939	K813_0175	MR200/	180	AW200/014	17.327	4,353	19.37	13,939	15.49	13,939
34.86	20,791	K813_0175	MR250/	180, 210	AW250/102	17.327	4,353	28.89	20,791	23.11	20,791
47.70	28,449	K813_0175	MR300/	180, 210, 250, 280	AW300/110	17.327	4,353	42.08	30,289	36.27	32,628
95 RPM Output (Approximate)								**79 RPM**		**63 RPM**	
23.37	14,702	K713_0185	MR200/	180	AW200/014	18.275	3,346	19.37	14,702	15.49	14,702
26.60	16,730	K713_0185	MR250/	180, 210	AW250/102	18.275	3,346	23.46	17,812	20.22	19,187
26.60	16,730	K713_0185	MR300/	180, 210, 250, 280	AW300/110	18.275	3,346	23.46	17,812	20.22	19,187
90 RPM Output (Approximate)								**75 RPM**		**60 RPM**	
9.84	6,434	K613_0190	MR160/	050, 140	AW160/012	18.994	2,457	8.15	6,434	6.52	6,434
9.84	6,555	K513_0195	MR160/	050, 140	AW160/012	19.353	2,075	8.15	6,555	6.52	6,555
11.84	7,885	K513_0195	MR200/	180	AW200/014	19.353	2,075	9.92	7,972	7.93	7,972
11.84	7,885	K513_0195	MR250/	180, 210	AW250/102	19.353	2,075	9.92	7,972	7.93	7,972
15.84	10,355	K613_0190	MR200/	180	AW200/014	18.994	2,457	13.97	11,025	12.04	11,876
15.84	10,355	K613_0190	MR250/	180, 210	AW250/102	18.994	2,457	13.97	11,025	12.04	11,876
15.84	10,355	K613_0190	MR300/	180, 210, 250, 280	AW300/110	18.994	2,457	13.97	11,025	12.04	11,876
23.37	15,432	K813_0190	MR200/	180	AW200/014	19.183	4,465	19.37	15,432	15.49	15,432
34.86	23,018	K813_0190	MR250/	180, 210	AW250/102	19.183	4,465	28.89	23,018	23.11	23,018
44.58	29,431	K813_0190	MR300/	180, 210, 250, 280	AW300/110	19.183	4,465	39.32	31,335	33.89	33,754
69.53	45,620	K913_0190	MR300/	180, 210, 250, 280	AW300/110	19.063	9,992	57.61	45,620	46.09	45,620
81.25	53,308	K913_0190	MR350/	320, 360	AW350/202	19.063	9,992	71.68	56,756	61.77	61,139
85 RPM Output (Approximate) Continued Next Page								**70 RPM**		**55 RPM**	
1.30	918	K102_0200	MR140/	050	AW140/010	20.150	779	1.15	974	0.92	974
1.30	918	K102_0200	MR160/	050, 140	AW160/012	20.150	779	1.15	974	0.92	974
2.14	1,522	K202_0200	MR140/	050	AW140/010	20.327	937	1.78	1,522	1.42	1,522
2.22	1,570	K302_0200	MR140/	050	AW140/010	20.278	1,093	1.84	1,570	1.47	1,570
2.32	1,645	K202_0200	MR160/	050, 140	AW160/012	20.327	937	2.04	17,051	1.65	1,772

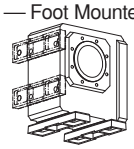
* For thermal HP capacity, see rating below.

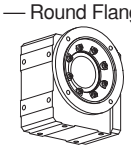
Base Module	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

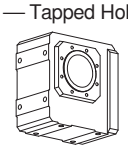
NEMA TEFC 1750 RPM

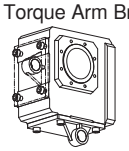
Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

Housing Styles

N — Foot Mounted 

F — Round Flange 

G — Tapped Holes 

GD — Torque Arm Bracket 

These Housing Styles are available as Hollow (A) or Solid (V) Output.

"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

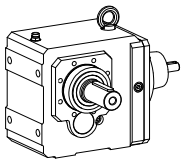
NOTE: [1] Complete Base Module Part Number by adding Housing and Output Style. Example: K402**VG**0690.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
85 RPM Output (Approximate) Continued								**70 RPM**		**55 RPM**	
4.06	2,878	K302_0200	MR160/	050, 140	AW160/012	20.278	1,093	3.58	3,064	2.90	3,100
4.06	2,878	K302_0200	MR200/	180	AW200/014	20.278	1,093	3.58	3,064	2.90	3,100
6.11	4,313	K402_0200	MR160/	050, 140	AW160/012	20.197	1,747	5.39	4,592	4.58	4,872
6.11	4,313	K402_0200	MR200/	180	AW200/014	20.197	1,747	5.39	4,592	4.58	4,872
6.11	4,313	K402_0200	MR250/	180, 210	AW250/102	20.197	1,747	5.39	4,592	4.58	4,872
23.37	16,277	K713_0200	MR200/	180	AW200/014	20.233	3,433	19.37	16,277	15.49	16,277
24.85	17,307	K713_0200	MR250/	180, 210	AW250/102	20.233	3,433	21.92	18,427	18.89	19,850
24.85	17,307	K713_0200	MR300/	180, 210, 250, 280	AW300/110	20.233	3,433	21.92	18,427	18.89	19,850
80 RPM Output (Approximate)								**65 RPM**		**53 RPM**	
9.84	7,449	K513_0220	MR160/	050, 140	AW160/012	21.992	2,143	8.15	7,449	6.52	7,449
9.84	7,345	K613_0220	MR160/	050, 140	AW160/012	21.684	2,540	8.15	7,345	6.52	7,345
10.53	7,972	K513_0220	MR200/	180	AW200/014	21.992	2,143	8.73	7,972	6.98	7,972
10.53	7,972	K513_0220	MR250/	180, 210	AW250/102	21.992	2,143	8.73	7,972	6.98	7,972
14.05	10,822	K613_0220	MR200/	180	AW200/014	21.684	2,540	12.79	11,522	11.02	12,412
14.05	10,822	K613_0220	MR250/	180, 210	AW250/102	21.684	2,540	12.79	11,522	11.02	12,412
14.05	10,822	K613_0220	MR300/	180, 210, 250, 280	AW300/110	21.684	2,540	12.79	11,522	11.02	12,412
75 RPM Output (Approximate)								**60 RPM**		**50 RPM**	
1.18	963	K102_0230	MR140/	050	AW140/010	23.265	808	1.05	1,026	0.87	1,063
1.18	963	K102_0230	MR160/	050, 140	AW160/012	23.265	808	1.05	1,026	0.87	1,063
2.12	1,718	K202_0230	MR140/	050	AW140/010	23.180	969	1.81	1,772	1.45	1,772
2.12	1,718	K202_0230	MR160/	050, 140	AW160/012	23.180	969	1.81	1,772	1.45	1,772
2.12	1,718	K202_0230	MR200/	180	AW200/014	23.180	969	1.81	1,772	1.45	1,772
2.29	1,867	K302_0230	MR140/	050	AW140/010	23.292	1,131	1.90	1,867	1.52	1,867
3.70	3,014	K302_0230	MR160/	050, 140	AW160/012	23.292	1,131	3.16	3,100	2.52	3,100
3.70	3,014	K302_0230	MR200/	180	AW200/014	23.292	1,131	3.16	3,100	2.52	3,100
5.56	4,523	K402_0230	MR160/	050, 140	AW160/012	23.292	1,810	4.90	4,815	3.97	4,872
5.56	4,523	K402_0230	MR200/	180	AW200/014	23.292	1,810	4.90	4,815	3.97	4,872
5.56	4,523	K402_0230	MR250/	180, 210	AW250/102	23.292	1,810	4.90	4,815	3.97	4,872
22.21	17,383	K713_0230	MR200/	180	AW200/014	22.739	3,534	19.37	18,293	15.49	18,293
22.99	17,994	K713_0230	MR250/	180, 210	AW250/102	22.739	3,534	20.28	19,158	17.48	20,637
22.99	17,994	K713_0230	MR300/	180, 210, 250, 280	AW300/110	22.739	3,534	20.28	19,158	17.48	20,637
23.37	18,539	K813_0230	MR200/	180	AW200/014	23.044	4,674	19.37	18,539	15.49	18,539
33.01	26,184	K813_0230	MR250/	180, 210	AW250/102	23.044	4,674	27.35	26,184	21.88	26,184
39.45	31,286	K813_0230	MR300/	180, 210, 250, 280	AW300/110	23.044	4,674	34.80	33,310	29.99	35,882
73 RPM Output (Approximate) Continued Next Page								**57 RPM**		**48 RPM**	
9.51	7,972	K513_0240	MR160/	050, 140	AW160/012	24.348	2,198	7.88	7,972	6.31	7,972
9.51	7,972	K513_0240	MR200/	180	AW200/014	24.348	2,198	7.88	7,972	6.31	7,972
9.51	7,972	K513_0240	MR250/	180, 210	AW250/102	24.348	2,198	7.88	7,972	6.31	7,972
9.84	8,132	K613_0240	MR160/	050, 140	AW160/012	24.007	2,605	8.15	8,132	6.52	8,132
13.55	11,196	K613_0240	MR200/	180	AW200/014	24.007	2,605	11.95	11,920	10.30	12,840

Part No. Explanation

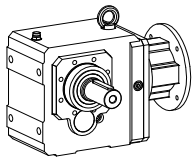
K 4 0 2 V G 0690 AW 160 / 012

- Shaft Dia. (1/16 in.; example — 012 = 12/16 or 3/4)
- Size
- Input Shaft
- Ratio (0690 = 69.0:1)
- Housing Style
- Output Style (A-hollow; V-solid)
- No. of Gear Reductions
- Generation No.
- Unit No.
- Right Angle Helical/Bevel



K 4 0 2 V G 0690 MR 160 / 140

- Motor Frame Size (140=143/145TC)
- Size
- Motor Adapter
- Ratio (0690 = 69.0:1)
- Housing Style
- Output Style (A-hollow; V-solid)
- No. of Reductions
- Generation No.
- Unit No.
- Right Angle Helical/Bevel



Mounting position must be specified when ordering.

"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

Selection Procedure:

A. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
73 RPM Output (Approximate) Continued								**57 RPM**		**48 RPM**	
13.55	11,196	K613_0240	MR250/	180, 210	AW250/102	24.007	2,605	11.95	11,920	10.30	12,840
13.55	11,196	K613_0240	MR300/	180, 210, 250, 280	AW300/110	24.007	2,605	11.95	11,920	10.30	12,840
34.86	28,729	K913_0240	MR250/	180, 210	AW250/102	23.943	10,578	28.89	28,729	23.11	28,729
66.62	54,898	K913_0240	MR300/	180, 210, 250, 280	AW300/110	23.943	10,578	55.20	54,898	44.16	54,898
69.79	57,516	K913_0240	MR350/	320, 360	AW350/202	23.943	10,578	61.57	61,236	49.88	62,006
70 RPM Output (Approximate)								**55 RPM**		**45 RPM**	
0.97	851	K102_0250	MR140/	050	AW140/010	25.220	824	0.80	8,051	0.64	8,051
0.97	851	K102_0250	MR160/	050, 140	AW160/012	25.220	824	0.80	8,051	0.64	8,051
2.01	1,765	K202_0250	MR140/	050	AW140/010	25.130	988	1.67	1,772	1.34	1,772
2.01	1,765	K202_0250	MR160/	050, 140	AW160/012	25.130	988	1.67	1,772	1.34	1,772
2.13	1,877	K302_0250	MR140/	050	AW140/010	25.259	1,154	1.76	1,877	1.41	1,877
3.48	3,070	K302_0250	MR160/	050, 140	AW160/012	25.259	1,154	2.88	3,070	2.31	3,070
5.02	4,434	K402_0250	MR160/	050, 140	AW160/012	25.279	1,848	4.16	4,434	3.33	4,434
5.02	4,434	K402_0250	MR200/	180	AW200/014	25.279	1,848	4.16	4,434	3.33	4,434
5.02	4,434	K402_0250	MR250/	180, 210	AW250/102	25.279	1,848	4.16	4,434	3.33	4,434
21.48	18,615	K713_0250	MR200/	180	AW200/014	25.175	3,625	18.95	19,819	15.49	20,253
21.48	18,615	K713_0250	MR250/	180, 210	AW250/102	25.175	3,625	18.95	19,819	16.26	21,259
21.48	18,615	K713_0250	MR300/	180, 210, 250, 280	AW300/110	25.175	3,625	18.95	19,819	16.26	21,259
23.37	20,525	K813_0260	MR200/	180	AW200/014	25.513	4,795	19.37	20,525	15.49	20,525
33.01	28,989	K813_0260	MR250/	180, 210	AW250/102	25.513	4,795	27.35	28,989	21.88	28,989
36.86	32,365	K813_0260	MR300/	180, 210, 250, 280	AW300/110	25.513	4,795	32.52	34,459	28.02	37,120
60 RPM Output (Approximate) Continued Next Page								**50 RPM**		**40 RPM**	
1.05	1,025	K102_0280	MR140/	050	AW140/010	28.048	846	0.90	1,063	0.72	1,063
1.05	1,025	K102_0280	MR160/	050, 140	AW160/012	28.048	846	0.90	1,063	0.72	1,063
1.81	1,772	K202_0280	MR140/	050	AW140/010	27.950	1,015	1.05	1,772	1.20	1,772
1.81	1,772	K202_0280	MR160/	050, 140	AW160/012	27.950	1,015	1.05	1,772	1.20	1,772
2.22	2,159	K302_0280	MR140/	050	AW140/010	27.883	1,183	1.84	2,159	1.47	2,159
3.18	3,100	K302_0280	MR160/	050, 140	AW160/012	27.883	1,183	2.64	3,100	2.11	3,100
3.18	3,100	K302_0280	MR200/	180	AW200/014	27.883	1,183	2.64	3,100	2.11	3,100
4.94	4,796	K402_0280	MR160/	050, 140	AW160/012	27.771	1,891	4.16	4,872	3.33	4,872
4.94	4,796	K402_0280	MR200/	180	AW200/014	27.771	1,891	4.16	4,872	3.33	4,872
4.94	4,796	K402_0280	MR250/	180, 210	AW250/102	27.771	1,891	4.16	4,872	3.33	4,872
7.94	7,972	K513_0290	MR160/	050, 140	AW160/012	29.181	2,300	6.58	7,972	5.26	7,972
7.94	7,972	K513_0290	MR200/	180	AW200/014	29.181	2,300	6.58	7,972	5.26	7,972
7.94	7,972	K513_0290	MR250/	180, 210	AW250/102	29.181	2,300	6.58	7,972	5.26	7,972
9.70	9,606	K613_0290	MR160/	050, 140	AW160/012	28.772	2,726	8.15	9,746	6.52	9,746
12.01	11,892	K613_0290	MR200/	180	AW200/014	28.772	2,726	10.59	12,661	8.60	12,844
12.01	11,892	K613_0290	MR250/	180, 210	AW250/102	28.772	2,726	10.59	12,661	8.60	12,844
12.01	11,892	K613_0290	MR300/	180, 210, 250, 280	AW300/110	28.772	2,726	10.59	12,661	8.60	12,844
18.58	18,728	K713_0290	MR200/	180	AW200/014	29.285	3,765	16.39	19,939	13.98	21,259
19.42	19,577	K713_0290	MR250/	180, 210	AW250/102	29.285	3,765	17.13	20,844	13.98	21,259

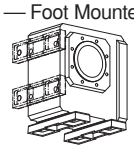
* For thermal HP capacity, see rating below.

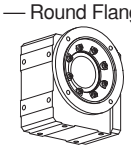
Base Module	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

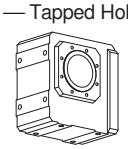
NEMA TEFC 1750 RPM

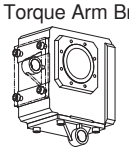
Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

Housing Styles

N — Foot Mounted 

F — Round Flange 

G — Tapped Holes 

GD — Torque Arm Bracket 

These Housing Styles are available as Hollow (A) or Solid (V) Output.

"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

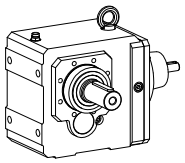
NOTE: [1] Complete Base Module Part Number by adding Housing and Output Style. Example: K402**VG**0690.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
Input HP	Output Torque in. lbs.		Motor Adapter Size [3]	Motor Adapter NEMA C-Frame	Input Shaft			Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
60 RPM Output (Approximate) Continued								**50 RPM**		**40 RPM**	
19.42	19,577	K713_0290	MR300/	180, 210, 250, 280	AW300/110	29.285	3,765	17.13	20,844	13.98	21,259
22.21	22,364	K813_0290	MR200/	180	AW200/014	29.254	4,962	19.37	23,534	15.49	23,534
31.69	31,904	K813_0290	MR250/	180, 210	AW250/102	29.254	4,962	26.25	31,904	21.00	31,904
33.64	33,876	K813_0290	MR300/	180, 210, 250, 280	AW300/110	29.254	4,962	29.68	36,067	24.49	37,204
55 RPM Output (Approximate)								**45 RPM**		**36 RPM**	
2.76	3,100	K303_0330	MR160/	050, 140	AW160/012	32.649	1,231	2.29	3,100	1.83	3,100
3.13	3,489	K403_0320	MR160/	050, 140	AW160/012	32.390	1,966	2.59	3,489	2.07	3,489
7.17	7,972	K513_0320	MR160/	050, 140	AW160/012	32.308	2,359	5.94	7,972	4.75	7,972
7.17	7,972	K513_0320	MR200/	180	AW200/014	32.308	2,359	5.94	7,972	4.75	7,972
7.17	7,972	K513_0320	MR250/	180, 210	AW250/102	32.308	2,359	5.94	7,972	4.75	7,972
9.70	10,635	K613_0320	MR160/	050, 140	AW160/012	31.855	2,796	8.15	10,790	6.52	10,790
11.22	12,302	K613_0320	MR200/	180	AW200/014	31.855	2,796	9.71	12,844	7.77	12,844
11.22	12,302	K613_0320	MR250/	180, 210	AW250/102	31.855	2,796	9.71	12,844	7.77	12,844
11.22	12,302	K613_0320	MR300/	180, 210, 250, 280	AW300/110	31.855	2,796	9.71	12,844	7.77	12,844
18.15	20,253	K713_0320	MR200/	180	AW200/014	32.423	3,862	15.78	21,259	12.63	21,259
18.15	20,253	K713_0320	MR250/	180, 210	AW250/102	32.423	3,862	15.78	21,259	12.63	21,259
18.15	20,253	K713_0320	MR300/	180, 210, 250, 280	AW300/110	32.423	3,862	15.78	21,259	12.63	21,259
22.21	24,760	K813_0320	MR200/	180	AW200/014	32.389	5,090	19.37	26,056	15.49	26,056
31.44	305,045	K813_0320	MR250/	180, 210	AW250/102	32.389	5,090	26.25	35,323	21.00	35,323
31.44	305,045	K813_0320	MR300/	180, 210, 250, 280	AW300/110	32.389	5,090	27.65	37,204	22.12	37,204
33.01	36,492	K913_0320	MR250/	180, 210	AW250/102	32.116	11,383	27.35	36,492	21.88	36,492
56.10	62,006	K913_0320	MR300/	180, 210, 250, 280	AW300/110	32.116	11,383	46.48	62,006	37.18	62,006
56.10	62,006	K913_0320	MR350/	320, 360	AW350/202	32.116	11,383	46.48	62,006	37.18	62,006
52 RPM Output (Approximate)								**43 RPM**		**35 RPM**	
0.55	647	K102_0340	MR140/	050	AW140/010	33.707	886	0.45	647	0.36	647
1.16	1,364	K202_0340	MR140/	050	AW140/010	33.618	1,063	0.96	1,364	0.77	1,364
1.16	1,364	K202_0340	MR160/	050, 140	AW160/012	33.618	1,063	0.96	1,364	0.77	1,364
1.89	2,217	K302_0340	MR140/	050	AW140/010	33.618	1,240	1.56	2,217	1.21	2,217
1.89	2,217	K302_0340	MR160/	050, 140	AW160/012	33.618	1,240	1.56	2,217	1.21	2,217
2.93	3,445	K402_0340	MR160/	050, 140	AW160/012	33.678	1,985	2.43	3,445	1.94	3,445
50 RPM Output (Approximate) Continued Next Page								**40 RPM**		**33 RPM**	
0.87	1,063	K102_0350	MR140/	050	AW140/010	35.105	895	0.72	1,063	0.57	1,063
0.87	1,063	K102_0350	MR160/	050, 140	AW160/012	35.105	895	0.72	1,063	0.57	1,063
1.47	1,772	K202_0350	MR140/	050	AW140/010	34.554	1,070	1.22	1,772	0.97	1,772
1.47	1,772	K202_0350	MR160/	050, 140	AW160/012	34.554	1,070	1.22	1,772	0.97	1,772
2.13	2,581	K302_0350	MR140/	050	AW140/010	34.731	1,250	1.76	2,581	1.41	2,581
2.51	3,100	K303_0360	MR160/	050, 140	AW160/012	35.833	1,260	2.08	3,100	1.67	3,100
2.55	3,100	K302_0350	MR160/	050, 140	AW160/012	34.731	1,250	2.12	3,100	1.69	4,872
3.24	3,985	K403_0360	MR160/	050, 140	AW160/012	35.721	2,014	2.69	3,985	2.15	4,872
4.01	4,872	K402_0350	MR160/	050, 140	AW160/012	34.758	2,001	3.32	4,872	2.66	4,872

Part No. Explanation

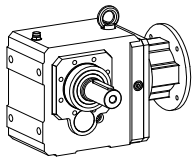
K 4 0 2 V G 0690 AW 160 / 012

- K — Unit No. Right Angle Helical/Bevel
- 4 — Generation No.
- 0 — No. of Gear Reductions
- 2 — Output Style (A-hollow; V-solid)
- V — Housing Style
- G — Ratio (0690 = 69.0:1)
- 0690 — Input Shaft
- AW — Size
- 160 — Shaft Dia. ($^{1}/_{16}$ in.; example — 012 = $^{12}/_{16}$ or $^{3}/_{4}$)
- 012



K 4 0 2 V G 0690 MR 160 / 140

- K — Unit No. Right Angle Helical/Bevel
- 4 — Generation No.
- 0 — No. of Reductions
- 2 — Output Style (A-hollow; V-solid)
- V — Housing Style
- G — Ratio (0690 = 69.0:1)
- 0690 — Size Motor Adapter
- MR — Size
- 160 — Motor Frame Size (140=143/145TC)
- 140



Mounting position must be specified when ordering.

"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

Selection Procedure:

A. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

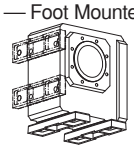
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
50 RPM Output (Approximate) Continued								**40 RPM**		**33 RPM**	
4.01	4,872	K402_0350	MR200/	180	AW200/014	34.758	2,001	3.32	4,872	2.66	7,972
4.01	4,872	K402_0350	MR250/	180, 210	AW250/102	34.758	2,001	3.32	4,872	2.66	7,972
6.66	7,972	K513_0350	MR160/	050, 140	AW160/012	34.800	2,403	5.51	7,972	4.41	7,972
6.66	7,972	K513_0350	MR200/	180	AW200/014	34.800	2,403	5.51	7,972	4.41	11,138
6.66	7,972	K513_0350	MR250/	180, 210	AW250/102	34.800	2,403	5.51	7,972	4.41	12,844
8.15	9,711	K613_0350	MR160/	050, 140	AW160/012	34.610	2,855	7.19	10,339	6.20	12,844
10.62	12,647	K613_0350	MR200/	180	AW200/014	34.610	2,855	8.93	12,844	7.15	12,844
10.62	12,647	K613_0350	MR250/	180, 210	AW250/102	34.610	2,855	8.93	12,844	7.15	21,259
10.62	12,647	K613_0350	MR300/	180, 210, 250, 280	AW300/110	34.610	2,855	8.93	12,844	7.15	21,259
15.97	19,477	K713_0350	MR200/	180	AW200/014	35.438	3,949	14.09	20,737	11.55	21,259
17.10	20,862	K713_0350	MR250/	180, 210	AW250/102	35.438	3,949	14.44	21,259	11.55	3,100
17.10	20,862	K713_0350	MR300/	180, 210, 250, 280	AW300/110	35.438	3,949	14.44	21,259	11.55	3,985
18.58	23,110	K813_0360	MR200/	180	AW200/014	36.138	5,231	16.39	24,605	14.13	260,505
29.22	36,348	K813_0360	MR300/	180, 210, 250, 280	AW300/110	36.138	5,231	24.78	37,204	19.83	37,204
29.22	36,348	K813_0360	MR250/	180, 210	AW250/102	36.138	5,231	24.78	37,204	19.83	37,204
45 RPM Output (Approximate)								**38 RPM**		**30 RPM**	
1.07	1,455	K203_0390	MR140/	050	AW140/010	39.454	1,106	0.89	1,455	0.71	1,455
2.30	3,100	K303_0390	MR160/	050, 140	AW160/012	39.187	1,288	1.90	3,100	1.52	3,100
3.03	4,077	K403_0390	MR160/	050, 140	AW160/012	39.047	2,060	2.51	4,077	2.01	4,077
6.01	7,972	K513_0390	MR160/	050, 140	AW160/012	38.529	2,465	4.98	7,972	3.98	7,972
6.01	7,972	K513_0390	MR200/	180	AW200/014	38.529	2,465	4.98	7,972	3.98	7,972
6.01	7,972	K513_0390	MR250/	180, 210	AW250/102	38.529	2,465	4.98	7,972	3.98	7,972
8.15	10,752	K613_0380	MR160/	050, 140	AW160/012	38.319	2,929	7.19	11,448	6.20	12,331
9.74	12,844	K613_0380	MR200/	180	AW200/014	38.319	2,929	8.07	12,844	6.46	12,844
9.74	12,844	K613_0380	MR250/	180, 210	AW250/102	38.319	2,929	8.07	12,844	6.46	12,844
9.74	12,844	K613_0380	MR300/	180, 210, 250, 280	AW300/110	38.319	2,929	8.07	12,844	6.46	12,844
15.74	21,259	K713_0390	MR200/	180	AW200/014	39.234	40,051	13.04	21,259	10.44	21,259
15.74	21,259	K713_0390	MR250/	180, 210	AW250/102	39.234	40,051	13.04	21,259	10.44	21,259
15.74	21,259	K713_0390	MR300/	180, 210, 250, 280	AW300/110	39.234	40,051	13.04	21,259	10.44	21,259
31.91	41,786	K913_0380	MR250/	180, 210	AW250/102	38.042	11,876	26.44	41,786	21.15	41,786
47.36	62,006	K913_0380	MR300/	180, 210, 250, 280	AW300/110	38.042	11,876	39.24	62,006	31.39	62,006
47.36	62,006	K913_0380	MR350/	320, 360	AW350/202	38.042	11,876	39.24	62,006	31.39	62,006
43 RPM Output (Approximate)								**36 RPM**		**29 RPM**	
0.39	544	K102_0400	MR140/	050	AW140/010	40.300	927	0.32	544	0.26	544
0.72	1,023	K202_0400	MR140/	050	AW140/010	40.394	1,113	0.60	1,023	0.48	1,023
1.20	1,705	K302_0410	MR140/	050	AW140/010	40.512	1,299	1.00	1,705	0.80	1,705
1.20	1,705	K302_0410	MR160/	050, 140	AW160/012	40.512	1,299	1.00	1,705	0.80	1,705
1.93	2,729	K402_0410	MR160/	050, 140	AW160/012	40.512	2,079	1.60	2,729	1.28	2,729
18.58	25,586	K813_0400	MR200/	180	AW200/014	40.009	5,366	16.39	27,241	14.13	29,344
27.02	37,204	K813_0400	MR250/	180, 210	AW250/102	40.009	5,366	22.39	37,204	17.91	37,204
27.02	37,204	K813_0400	MR300/	180, 210, 250, 280	AW300/110	40.009	5,366	22.39	37,204	17.91	37,204

* For thermal HP capacity, see rating below.

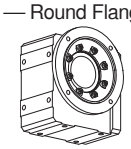
Base Module	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

Housing Styles

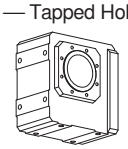
N — Foot Mounted



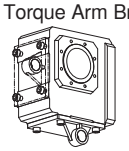
F — Round Flange



G — Tapped Holes



GD — Torque Arm Bracket



These Housing Styles are available as Hollow (A) or Solid (V) Output.

NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

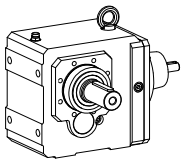
"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

NOTE: [1] Complete Base Module Part Number by adding Housing and Output Style. Example: K402**VG**0690.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

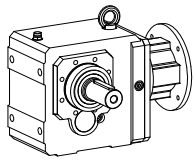
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
40 RPM Output (Approximate)								**32 RPM**		**26 RPM**	
0.55	900	K102_0470	MR140/	050	AW140/010	46.918	963	0.45	900	0.36	900
1.07	1,667	K203_0450	MR140/	050	AW140/010	45.223	1,145	0.89	1,667	0.71	1,667
1.10	1,772	K202_0460	MR140/	050	AW140/010	46.225	11,051	0.91	1,772	0.73	1,772
1.10	1,772	K202_0460	MR160/	050, 140	AW160/012	46.225	11,051	0.91	1,772	0.73	1,772
1.89	3,048	K302_0460	MR140/	050	AW140/010	46.225	1,343	1.56	3,048	1.25	3,048
1.89	3,048	K302_0460	MR160/	050, 140	AW160/012	46.225	1,343	1.56	3,048	1.25	3,048
2.01	3,100	K303_0450	MR160/	050, 140	AW160/012	44.892	1,333	1.66	3,100	1.33	3,100
2.93	4,737	K402_0460	MR160/	050, 140	AW160/012	46.308	2,149	2.43	4,737	1.94	4,737
3.13	4,798	K403_0450	MR160/	050, 140	AW160/012	44.536	2,129	2.59	4,798	2.07	4,798
4.81	7,972	K513_0480	MR160/	050, 140	AW160/012	48.161	2,607	3.98	7,972	3.19	7,972
4.81	7,972	K513_0480	MR200/	180	AW200/014	48.161	2,607	3.98	7,972	3.19	7,972
4.81	7,972	K513_0480	MR250/	180, 210	AW250/102	48.161	2,607	3.98	7,972	3.19	7,972
5.32	7,972	K513_0440	MR160/	050, 140	AW160/012	43.500	2,541	4.41	7,972	3.53	7,972
5.32	7,972	K513_0440	MR200/	180	AW200/014	43.500	2,541	4.41	7,972	3.53	7,972
5.32	7,972	K513_0440	MR250/	180, 210	AW250/102	43.500	2,541	4.41	7,972	3.53	7,972
6.81	10,099	K613_0430	MR160/	050, 140	AW160/012	43.111	3,016	6.00	10,752	5.17	11,582
6.81	11,181	K613_0480	MR160/	050, 140	AW160/012	47.730	3,094	6.00	11,904	5.17	12,823
7.82	12,844	K613_0480	MR200/	180	AW200/014	47.730	3,094	6.48	12,844	5.18	12,844
7.82	12,844	K613_0480	MR250/	180, 210	AW250/102	47.730	3,094	6.48	12,844	5.18	12,844
8.66	12,844	K613_0430	MR200/	180	AW200/014	43.111	3,016	7.17	12,844	5.74	12,844
8.66	12,844	K613_0430	MR250/	180, 210	AW250/102	43.111	3,016	7.17	12,844	5.74	12,844
13.16	20,403	K713_0450	MR200/	180	AW200/014	45.054	4,193	11.36	21,259	9.09	21,259
13.71	21,259	K713_0450	MR250/	180, 210	AW250/102	45.054	4,193	11.36	21,259	9.09	21,259
13.71	21,259	K713_0450	MR300/	180, 210, 250, 280	AW300/110	45.054	4,193	11.36	21,259	9.09	21,259
15.97	24,320	K813_0440	MR200/	180	AW200/014	44.250	50,502	14.09	25,894	12.14	27,893
24.43	37,204	K813_0440	MR250/	180, 210	AW250/102	44.250	50,502	20.24	37,204	16.19	37,204
24.43	37,204	K813_0440	MR300/	180, 210, 250, 280	AW300/110	44.250	50,502	20.24	37,204	16.19	37,204
35 RPM Output (Approximate) Continued Next Page								**28 RPM**		**23 RPM**	
0.25	442	K102_0500	MR140/	050	AW140/010	50.310	980	0.21	442	0.17	442
0.48	853	K202_0500	MR140/	050	AW140/010	50.492	1,177	0.40	853	0.32	853
0.77	1,364	K302_0500	MR140/	050	AW140/010	50.492	1,373	0.64	1,364	0.51	1,364
1.02	1,772	K203_0500	MR140/	050	AW140/010	49.759	1,172	0.84	1,772	0.68	1,772
1.07	1,816	K303_0490	MR140/	050	AW140/010	49.260	1,364	0.89	1,816	0.71	1,816
1.35	2,387	K402_0500	MR160/	050, 140	AW160/012	50.427	2,196	1.12	2,387	0.90	2,387
1.85	3,100	K303_0490	MR160/	050, 140	AW160/012	48.631	1,360	1.53	3,100	1.23	3,100
2.89	4,872	K403_0490	MR160/	050, 140	AW160/012	48.944	2,179	2.40	4,872	1.92	4,872
12.38	21,259	K713_0500	MR200/	180	AW200/014	49.881	4,301	10.26	21,259	8.21	21,259
12.38	21,259	K713_0500	MR250/	180, 210	AW250/102	49.881	4,301	10.26	21,259	8.21	21,259
12.38	21,259	K713_0500	MR300/	180, 210, 250, 280	AW300/110	49.881	4,301	10.26	21,259	8.21	21,259
15.97	26,926	K813_0490	MR200/	180	AW200/014	48.991	5,644	14.09	28,668	12.14	30,882
22.06	37,204	K813_0490	MR250/	180, 210	AW250/102	48.991	5,644	18.28	37,204	14.63	37,204
22.06	37,204	K813_0490	MR300/	180, 210, 250, 280	AW300/110	48.991	5,644	18.28	37,204	14.63	37,204

Part No. Explanation

K 4 0 2 V G 0690 AW 160 / 012
- Shaft Dia. (1/16 in.; example — 012 = 12/16 or 3/4)
- Size
- Input Shaft
- Ratio (0690 = 69.0:1)
- Housing Style
- Output Style (A-hollow; V-solid)
- No. of Gear Reductions
- Generation No.
- Unit No.
- Right Angle Helical/Bevel



K 4 0 2 V G 0690 MR 160 / 140
- Motor Frame Size (140=143/145TC)
- Size
- Motor Adapter
- Ratio (0690 = 69.0:1)
- Housing Style
- Output Style (A-hollow; V-solid)
- No. of Reductions
- Generation No.
- Unit No.
- Right Angle Helical/Bevel



Mounting position must be specified when ordering.

"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

Selection Procedure:

A. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
35 RPM Output (Approximate) Continued								**28 RPM**		**23 RPM**	
30.30	51,041	K913_0490	MR250/	180, 210	AW250/102	48.937	12,647	25.11	51,041	20.09	51,041
36.81	62,006	K913_0490	MR300/	180, 210, 250, 280	AW300/110	48.937	12,647	30.05	62,006	24.40	62,006
60.30	100,751	K1013_0490	MR300/	180, 210, 250, 280	AW300/110	48.543	15,535	49.96	100,751	39.97	100,751
63.62	106,296	K1013_0490	MR350/	320, 360	AW350/202	48.543	15,535	52.71	106,296	42.17	106,296
30 RPM Output (Approximate)								**25 RPM**		**20 RPM**	
0.39	758	K102_0560	MR140/	050	AW140/010	56.095	1,007	0.32	758	0.26	758
0.72	1,407	K202_0560	MR140/	050	AW140/010	55.542	1,205	0.60	1,407	0.48	1,407
0.95	1,772	K203_0540	MR140/	050	AW140/010	54.250	1,198	0.79	1,772	0.63	1,772
1.07	2,012	K303_0550	MR140/	050	AW140/010	54.579	1,400	0.89	2,012	0.71	2,012
1.20	2,345	K302_0560	MR140/	050	AW140/010	55.705	1,407	1.00	2,345	0.80	2,345
1.20	2,345	K302_0560	MR160/	050, 140	AW160/012	55.705	1,407	1.00	2,345	0.80	2,345
1.67	3,100	K303_0540	MR160/	050, 140	AW160/012	53.883	1,395	1.39	3,100	1.11	3,100
1.93	3,752	K402_0560	MR160/	050, 140	AW160/012	55.705	22,051	1.60	3,752	1.28	3,752
2.64	4,872	K403_0540	MR160/	050, 140	AW160/012	53.690	2,230	2.18	4,872	1.75	4,872
3.97	7,972	K513_0580	MR160/	050, 140	AW160/012	58.297	2,734	3.29	7,972	2.63	7,972
3.97	7,972	K513_0580	MR200/	180	AW200/014	58.297	2,734	3.29	7,972	2.63	7,972
3.97	7,972	K513_0580	MR250/	180, 210	AW250/102	58.297	2,734	3.29	7,972	2.63	7,972
5.27	10,436	K613_0580	MR160/	050, 140	AW160/012	57.545	3,242	4.65	11,111	4.01	11,969
6.48	12,844	K613_0580	MR200/	180	AW200/014	57.545	3,242	5.37	12,844	4.30	12,844
6.48	12,844	K613_0580	MR250/	180, 210	AW250/102	57.545	3,242	5.37	12,844	4.30	12,844
10.55	21,259	K713_0590	MR200/	180	AW200/014	58.570	4,477	8.74	21,259	6.99	21,259
10.55	21,259	K713_0590	MR250/	180, 210	AW250/102	58.570	4,477	8.74	21,259	6.99	21,259
10.55	21,259	K713_0590	MR300/	180, 210, 250, 280	AW300/110	58.570	4,477	8.74	21,259	6.99	21,259
12.55	25,527	K813_0590	MR200/	180	AW200/014	59.082	5,915	11.07	27,179	9.54	29,277
18.30	37,204	K813_0590	MR250/	180, 210	AW250/102	59.082	5,915	15.16	37,204	12.13	37,204
18.30	37,204	K813_0590	MR300/	180, 210, 250, 280	AW300/110	59.082	5,915	15.16	37,204	12.13	37,204
27 RPM Output (Approximate) Continued Next Page								**22 RPM**		**18 RPM**	
0.75	1,772	K203_0680	MR140/	050	AW140/010	68.419	1,269	0.62	1,772	0.50	1,772
0.78	1,772	K203_0660	MR140/	050	AW140/010	66.027	1,258	0.65	1,772	0.52	1,772
1.07	2,446	K303_0660	MR140/	050	AW140/010	66.346	1,470	0.89	2,446	0.71	2,446
1.07	2,497	K303_0680	MR140/	050	AW140/010	67.733	1,477	0.89	2,497	0.71	2,497
1.35	3,100	K303_0670	MR160/	050, 140	AW160/012	66.868	1,473	1.12	3,100	0.89	3,100
1.38	3,100	K303_0650	MR160/	050, 140	AW160/012	65.499	1,465	1.14	3,100	0.91	3,100
2.10	4,872	K403_0670	MR160/	050, 140	AW160/012	67.298	2,360	1.74	4,872	1.39	4,872
2.16	4,872	K403_0650	MR160/	050, 140	AW160/012	65.499	2,344	1.79	4,872	1.43	4,872
3.59	7,972	K513_0650	MR160/	050, 140	AW160/012	64.544	2,805	2.97	7,972	2.38	7,972
3.59	7,972	K513_0650	MR200/	180	AW200/014	64.544	2,805	2.97	7,972	2.38	7,972
3.59	7,972	K513_0650	MR250/	180, 210	AW250/102	64.544	2,805	2.97	7,972	2.38	7,972
5.27	11,554	K613_0640	MR160/	050, 140	AW160/012	63.710	3,325	4.65	12,301	3.88	12,844
5.86	12,844	K613_0640	MR200/	180	AW200/014	63.710	3,325	4.85	12,844	3.88	12,844
5.86	12,844	K613_0640	MR250/	180, 210	AW250/102	63.710	3,325	4.85	12,844	3.88	12,844

* For thermal HP capacity, see rating below.

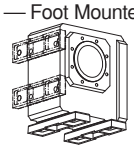
Base Module	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

NEMA TEFC 1750 RPM

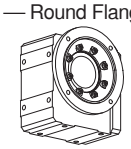
Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

Housing Styles

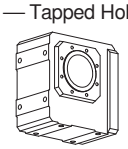
N — Foot Mounted



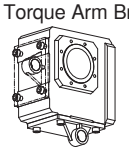
F — Round Flange



G — Tapped Holes



GD — Torque Arm Bracket



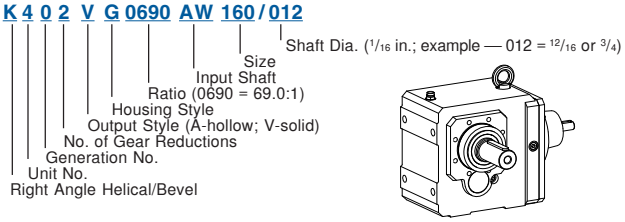
These Housing Styles are available as Hollow (A) or Solid (V) Output.

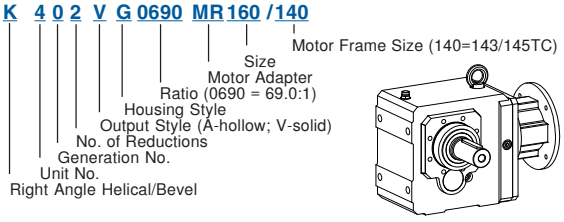
"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

NOTE: [1] Complete Base Module Part Number by adding Housing and Output Style. Example: K402**VG**0690.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
27 RPM Output (Approximate) Continued								**22 RPM**		**18 RPM**	
9.53	21,259	K713_0650	MR200/	180	AW200/014	64.846	4,593	7.89	21,259	6.31	21,259
9.53	21,259	K713_0650	MR250/	180, 210	AW250/102	64.846	4,593	7.89	21,259	6.31	21,259
9.53	21,259	K713_0650	MR300/	180, 210, 250, 280	AW300/110	64.846	4,593	7.89	21,259	6.31	21,259
12.55	28,262	K813_0650	MR200/	180	AW200/014	65.412	6,067	11.07	30,091	9.54	32,414
16.42	37,204	K814_0670	MR250/	180, 210	AW250/102	66.833	6,100	13.61	37,204	10.88	37,204
16.53	37,204	K813_0650	MR250/	180, 210	AW250/102	65.412	6,067	13.69	37,204	10.95	37,204
16.53	37,204	K813_0650	MR300/	180, 210, 250, 280	AW300/110	65.412	6,067	13.69	37,204	10.95	37,204
26.76	58,091	K913_0630	MR250/	180, 210	AW250/102	63.071	13,476	23.61	61,849	18.93	62,006
28.56	62,006	K913_0630	MR300/	180, 210, 250, 280	AW300/110	63.071	13,476	23.67	62,006	18.93	62,006
50.17	106,296	K1013_0620	MR300/	180, 210, 250, 280	AW300/110	61.553	16,485	41.57	106,296	33.26	106,296
50.17	106,296	K1013_0620	MR350/	320, 360	AW350/202	61.553	16,485	41.57	106,296	33.26	106,296
25 RPM Output (Approximate)								**21 RPM**		**17 RPM**	
0.25	616	K102_0700	MR140/	050	AW140/010	70.029	1,064	0.21	616	0.17	616
0.48	1,172	K202_0690	MR140/	050	AW140/010	69.427	1,274	0.40	1,172	0.32	1,172
0.77	1,876	K302_0690	MR140/	050	AW140/010	69.427	1,486	0.64	1,876	0.51	1,876
1.35	3,283	K402_0690	MR160/	050, 140	AW160/012	69.338	2,378	1.12	3,283	0.90	3,283
3.01	7,268	K513_0700	MR160/	050, 140	AW160/012	70.083	2,863	2.50	7,268	2.00	7,268
4.60	10,894	K613_0690	MR160/	050, 140	AW160/012	68.772	3,390	4.06	11,599	3.26	11,639
4.92	11,639	K613_0690	MR200/	180	AW200/014	68.772	3,390	4.07	11,639	3.26	11,639
4.92	11,639	K613_0690	MR250/	180, 210	AW250/102	68.772	3,390	4.07	11,639	3.26	11,639
7.85	19,244	K713_0710	MR200/	180	AW200/014	71.203	4,701	6.05	19,244	5.21	19,244
7.85	19,244	K713_0710	MR250/	180, 210	AW250/102	71.203	4,701	6.05	19,244	5.21	19,244
10.61	26,191	K813_0720	MR200/	180	AW200/014	71.701	6,208	9.36	27,886	8.07	30,039
12.94	31,935	K813_0720	MR250/	180, 210	AW250/102	71.701	6,208	10.72	31,935	8.58	31,935
12.94	31,935	K813_0720	MR300/	180, 210, 250, 280	AW300/110	71.701	6,208	10.72	31,935	8.58	31,935
23 RPM Output (Approximate)								**19 RPM**		**15 RPM**	
4.60	12,061	K613_0760	MR160/	050, 140	AW160/012	76.140	3,477	4.06	12,841	3.25	12,844
4.90	12,844	K613_0760	MR200/	180	AW200/014	76.140	3,477	4.06	12,844	3.25	12,844
4.90	12,844	K613_0760	MR250/	180, 210	AW250/102	76.140	3,477	4.06	12,844	3.25	12,844
23.06	59,535	K913_0750	MR250/	180, 210	AW250/102	75.004	14,072	19.90	62,006	15.92	62,006
24.02	62,006	K913_0750	MR300/	180, 210, 250, 280	AW300/110	75.004	14,072	19.90	62,006	15.92	62,006
38.76	100,417	K1013_0750	MR300/	180, 210, 250, 280	AW300/110	75.276	17,335	32.11	100,417	25.69	100,417
22 RPM Output (Approximate) Continued Next Page								**18 RPM**		**15 RPM**	
0.65	1,772	K203_0800	MR140/	050	AW140/010	79.615	1,318	0.54	1,772	0.43	1,772
1.07	2,916	K403_0790	MR140/	050	AW140/010	79.105	2,457	0.89	2,916	0.71	2,916
1.07	2,928	K303_0790	MR140/	050	AW140/010	79.424	1,537	0.89	2,928	0.71	2,928
1.15	3,100	K303_0780	MR160/	050, 140	AW160/012	78.410	1,532	0.95	3,100	0.76	3,100
1.81	4,872	K403_0780	MR160/	050, 140	AW160/012	78.095	2,449	1.05	4,872	1.20	4,872
2.99	7,972	K513_0780	MR160/	050, 140	AW160/012	77.592	2,937	2.47	7,972	1.98	7,972

Part No. Explanation





Mounting position must be specified when ordering.

"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

Selection Procedure:

A. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

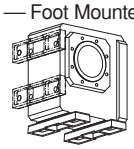
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
22 RPM Output (Approximate) Continued								**18 RPM**		**15 RPM**	
7.84	21,259	K713_0790	MR200/	180	AW200/014	78.832	4,823	6.49	21,259	5.19	21,259
7.84	21,259	K713_0790	MR250/	180, 210	AW250/102	78.832	4,823	6.49	21,259	5.19	21,259
10.61	28,998	K813_0790	MR200/	180	AW200/014	79.384	6,368	9.36	30,874	8.07	33,258
12.94	35,365	K813_0790	MR250/	180, 210	AW250/102	79.384	6,368	10.72	35,365	8.58	35,365
12.94	35,365	K813_0790	MR300/	180, 210, 250, 280	AW300/110	79.384	6,368	10.72	35,365	8.58	35,365
20 RPM Output (Approximate)								**17 RPM**		**13 RPM**	
2.03	6,105	K513_0870	MR160/	050, 140	AW160/012	87.290	3,024	1.68	6,105	1.35	6,105
2.77	7,972	K514_0850	MR160/	050, 140	AW160/012	85.034	3,005	2.29	7,972	1.83	7,972
2.90	8,600	K613_0860	MR160/	050, 140	AW160/012	86.178	3,586	2.40	8,600	1.92	8,600
3.14	8,919	K614_0840	MR160/	050, 140	AW160/012	83.843	3,562	2.60	8,919	2.08	8,919
4.83	14,803	K713_0890	MR200/	180	AW200/014	89.004	4,950	4.00	14,803	3.20	14,803
4.83	14,803	K713_0890	MR250/	180, 210	AW250/102	89.004	4,950	4.00	14,803	3.20	14,803
7.04	21,259	K714_0890	MR200/	180	AW200/014	89.061	4,950	5.83	21,259	4.67	21,259
8.22	24,838	K813_0880	MR200/	180	AW200/014	87.763	6,525	6.81	24,838	5.41	24,838
8.22	24,838	K813_0880	MR250/	180, 210	AW250/102	87.763	6,525	6.81	24,838	5.41	24,838
12.35	37,204	K814_0890	MR250/	180, 210	AW250/102	88.885	6,525	10.23	37,204	8.18	37,204
19 RPM Output (Approximate)								**16 RPM**		**12.5 RPM**	
0.57	1,772	K203_0910	MR140/	050	AW140/010	90.787	1,350	0.47	1,772	0.38	1,772
0.99	3,100	K303_0910	MR140/	050	AW140/010	91.226	1,575	0.82	3,100	0.65	3,100
1.00	3,100	K303_0900	MR160/	050, 140	AW160/012	90.061	1,575	0.83	3,100	0.66	3,100
1.07	3,363	K403_0910	MR140/	050	AW140/010	91.226	2,520	0.89	3,363	0.71	3,363
1.57	4,872	K403_0900	MR160/	050, 140	AW160/012	90.061	2,520	1.30	4,872	1.04	4,872
2.50	7,972	K514_0940	MR160/	050, 140	AW160/012	94.145	3,026	2.07	7,972	1.66	7,972
3.14	9,874	K614_0930	MR160/	050, 140	AW160/012	92.826	3,600	2.60	9,874	2.08	9,874
17.53	54,901	K914_0920	MR250/	180, 210	AW250/102	92.352	14,625	14.53	54,901	11.62	54,901
25.52	82,844	K1013_0940	MR300/	180, 210, 250, 280	AW300/110	94.329	18,000	21.14	82,844	16.91	82,844
18 RPM Output (Approximate)								**15 RPM**		**12 RPM**	
2.03	6,761	K513_0970	MR160/	050, 140	AW160/012	96.642	3,026	1.68	6,761	1.35	6,761
2.90	9,524	K613_0950	MR160/	050, 140	AW160/012	95.412	3,600	2.40	9,524	1.92	9,524
4.83	16,394	K713_0990	MR200/	180	AW200/014	98.540	4,950	4.01	16,394	3.20	16,394
4.83	16,394	K713_0990	MR250/	180, 210	AW250/102	98.540	4,950	4.01	16,394	3.20	16,394
6.36	21,259	K714_0990	MR200/	180	AW200/014	98.604	4,950	5.27	21,259	4.22	21,259
8.22	270,506	K813_0970	MR200/	180	AW200/014	97.166	6,525	6.81	27,506	5.45	27,506
8.22	270,506	K813_0970	MR250/	180, 210	AW250/102	97.166	6,525	6.81	27,506	5.45	27,506
11.15	37,204	K814_0980	MR250/	180, 210	AW250/102	98.408	6,525	9.24	37,204	7.39	37,204
14.05	47,620	K913_0950	MR250/	180, 210	AW250/102	95.412	14,625	12.01	47,620	9.61	47,620
14.05	47,620	K913_0950	MR300/	180, 210, 250, 280	AW300/110	95.412	14,625	12.01	47,620	9.61	47,620

* For thermal HP capacity, see rating below.

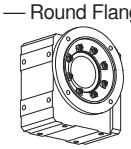
Base Module	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

Housing Styles

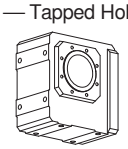
N — Foot Mounted



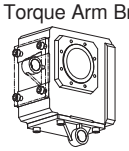
F — Round Flange



G — Tapped Holes



GD — Torque Arm Bracket



These Housing Styles are available as Hollow (A) or Solid (V) Output.

NEMA TEFC 1750 RPM

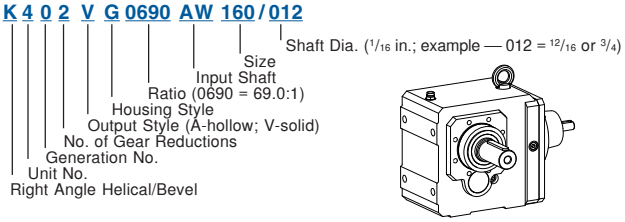
Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

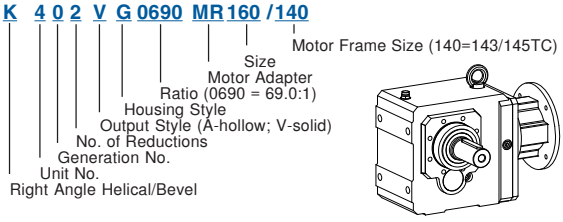
"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

NOTE: [1] Complete Base Module Part Number by adding Housing and Output Style. Example: K402**VG**0690.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
Input HP	Output Torque in. lbs.		Motor Adapter Size [3]	Motor Adapter NEMA C-Frame	Input Shaft			Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
16 RPM Output (Approximate)								**13 RPM**		**10 RPM**	
0.47	1,772	K203_1090	MR140/	050	AW140/010	109.471	1,350	0.39	1,772	0.31	1,772
0.82	3,100	K303_1090	MR140/	050	AW140/010	109.208	1,575	0.68	3,100	0.55	3,100
0.84	3,100	K303_1080	MR160/	050, 140	AW160/012	107.814	1,575	0.69	3,100	0.55	3,100
1.07	4,010	K403_1090	MR140/	050	AW140/010	108.769	2,520	0.89	4,010	0.71	4,010
1.32	4,872	K403_1070	MR160/	050, 140	AW160/012	107.381	2,520	1.09	4,872	0.87	4,872
2.08	7,972	K514_1130	MR160/	050, 140	AW160/012	112.834	3,026	1.73	7,972	1.38	7,972
2.98	11,257	K614_1110	MR160/	050, 140	AW160/012	111.254	3,600	2.47	11,257	1.98	11,257
5.47	21,259	K714_1150	MR200/	180	AW200/014	114.700	4,950	4.53	21,259	3.62	21,259
9.73	37,204	K814_1130	MR250/	180, 210	AW250/102	112.838	6,525	8.06	37,204	6.45	37,204
14 RPM Output (Approximate)								**12 RPM**		**9 RPM**	
1.88	7,972	K514_1250	MR160/	050, 140	AW160/012	124.924	3,026	1.56	7,972	1.25	7,972
2.98	12,464	K614_1230	MR160/	050, 140	AW160/012	123.174	3,600	2.47	12,464	1.98	12,464
3.08	13,110	K714_1250	MR160/	050, 140	AW160/012	125.368	4,950	2.56	13,110	2.04	13,110
4.94	21,259	K714_1270	MR200/	180	AW200/014	126.990	4,950	4.09	21,259	3.27	21,259
8.78	37,204	K814_1250	MR250/	180, 210	AW250/102	124.927	6,525	7.28	37,204	5.82	37,204
14.76	62,006	K914_1240	MR250/	180, 210	AW250/102	123.877	14,625	12.23	62,006	9.79	62,006
13 RPM Output (Approximate)								**11 RPM**		**8.5 RPM**	
0.38	1,772	K203_1350	MR140/	050	AW140/010	135.335	1,350	0.32	1,772	0.25	1,772
0.66	3,100	K303_1360	MR140/	050	AW140/010	136.029	1,575	0.55	3,100	0.44	3,100
0.67	3,100	K303_1340	MR160/	050, 140	AW160/012	134.292	1,575	0.56	3,100	0.44	3,100
1.04	4,872	K403_1360	MR140/	050	AW140/010	136.137	2,520	0.86	4,872	0.69	4,872
1.05	4,872	K403_1340	MR160/	050, 140	AW160/012	134.399	2,520	0.87	4,872	0.70	4,872
1.75	7,972	K514_1350	MR160/	050, 140	AW160/012	134.560	3,026	1.45	7,972	1.16	7,972
2.83	12,844	K614_1340	MR160/	050, 140	AW160/012	133.827	3,600	2.35	12,844	1.88	12,844
2.97	13,797	K714_1370	MR160/	050, 140	AW160/012	137.025	4,950	2.46	13,797	1.97	13,797
4.52	21,259	K714_1390	MR200/	180	AW200/014	138.797	4,950	3.74	21,259	2.99	21,259
7.87	37,204	K814_1390	MR250/	180, 210	AW250/102	139.387	6,525	6.52	37,204	5.22	37,204
12 RPM Output (Approximate)								**10 RPM**		**8 RPM**	
1.58	7,972	K514_1490	MR160/	050, 140	AW160/012	148.977	3,026	1.31	7,972	1.05	7,972
2.56	12,844	K614_1480	MR160/	050, 140	AW160/012	148.165	3,600	2.12	12,844	1.69	12,844
2.97	15,275	K714_1520	MR160/	050, 140	AW160/012	151.706	4,950	2.46	15,275	1.97	15,275
6.82	32,748	K814_1420	MR200/	180	AW200/014	141.539	6,525	6.02	34,866	5.14	37,204
12.47	62,006	K914_1470	MR250/	180, 210	AW250/102	146.732	14,625	10.33	62,006	8.26	62,006
15.61	78,797	K1014_1490	MR250/	180, 210	AW250/102	148.889	18,000	13.77	83,894	11.03	84,001
11 RPM Output (Approximate)								**9 RPM**		**7.5 RPM**	
4.08	21,259	K714_1540	MR200/	180	AW200/014	153.668	4,950	3.38	21,259	2.70	21,259
6.82	36,257	K814_1570	MR200/	180	AW200/014	156.703	6,525	5.80	37,204	4.64	37,204
7.11	37,204	K814_1540	MR250/	180, 210	AW250/102	154.322	6,525	5.89	37,204	4.71	37,204

Part No. Explanation





Mounting position must be specified when ordering.

"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

Selection Procedure:

A. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

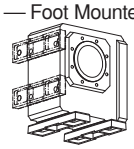
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
10 RPM Output (Approximate)								**8 RPM**		**7 RPM**	
0.28	1,772	K203_1810	MR140/	050	AW140/010	181.048	1,350	0.24	1,772	0.19	1,772
0.49	3,048	K303_1810	MR140/	050	AW140/010	181.048	1,575	0.41	3,048	0.32	3,048
0.50	3,048	K303_1790	MR160/	050, 140	AW160/012	178.737	1,575	0.41	3,048	0.33	3,048
0.76	4,737	K403_1810	MR140/	050	AW140/010	181.372	2,520	0.63	4,737	0.05	4,737
0.77	4,737	K403_1790	MR160/	050, 140	AW160/012	179.056	2,520	0.64	4,737	0.05	4,737
1.40	7,972	K514_1680	MR160/	050, 140	AW160/012	168.200	3,026	1.16	7,972	0.93	7,972
2.27	12,844	K614_1670	MR160/	050, 140	AW160/012	166.694	3,600	1.88	12,844	1.05	12,844
2.84	16,753	K714_1740	MR160/	050, 140	AW160/012	174.209	4,950	2.31	16,753	1.88	16,753
3.55	21,259	K714_1760	MR200/	180	AW200/014	176.462	4,950	2.94	21,259	2.36	21,259
5.95	34,989	K814_1730	MR200/	180	AW200/014	173.313	6,525	5.25	37,204	4.20	37,204
6.43	37,204	K814_1710	MR250/	180, 210	AW250/102	170.679	6,525	5.33	37,204	4.26	37,204
9 RPM Output (Approximate)								**7.5 RPM**		**6 RPM**	
1.26	7,972	K514_1860	MR160/	050, 140	AW160/012	186.221	3,026	1.05	7,972	0.84	7,972
2.05	12,844	K614_1850	MR160/	050, 140	AW160/012	184.554	3,600	1.70	12,844	1.36	12,844
2.84	18,548	K714_1930	MR160/	050, 140	AW160/012	192.874	4,950	2.31	18,548	1.88	18,548
3.21	21,259	K714_1950	MR200/	180	AW200/014	195.368	4,950	2.66	21,259	2.13	21,259
5.72	37,204	K814_1920	MR200/	180	AW200/014	191.882	6,525	4.74	37,204	3.79	37,204
5.81	37,204	K814_1890	MR250/	180, 210	AW250/102	188.966	6,525	4.81	37,204	3.85	37,204
9.69	62,006	K914_1890	MR250/	180, 210	AW250/102	188.757	14,625	8.03	62,006	6.42	62,006
13.17	83,571	K1014_1870	MR250/	180, 210	AW250/102	187.236	18,000	11.61	88,978	10.01	95,848
8 RPM Output (Approximate)								**7 RPM**		**5.5 RPM**	
0.05	3,752	K403_2150	MR160/	050, 140	AW160/012	215.391	2,520	0.42	3,752	0.34	3,752
0.19	1,407	K203_2180	MR140/	050	AW140/010	217.538	1,350	0.16	1,407	0.12	1,407
0.31	2,345	K303_2180	MR140/	050	AW140/010	218.176	1,575	0.26	2,345	0.21	2,345
0.50	3,752	K403_2180	MR140/	050	AW140/010	218.176	2,520	0.41	3,752	0.33	3,752
1.04	7,972	K514_2250	MR160/	050, 140	AW160/012	225.417	3,026	0.86	7,972	0.69	7,972
1.70	12,844	K614_2230	MR160/	050, 140	AW160/012	222.051	3,600	1.41	12,844	1.13	12,844
2.59	19,872	K714_2260	MR160/	050, 140	AW160/012	226.472	4,950	2.22	20,589	1.78	20,589
2.73	21,259	K714_2290	MR200/	180	AW200/014	229.400	4,950	2.26	21,259	1.81	21,259
4.74	37,204	K814_2310	MR200/	180	AW200/014	231.404	6,525	3.93	37,204	3.14	37,204
4.82	37,204	K814_2280	MR250/	180, 210	AW250/102	227.887	6,525	3.99	37,204	3.19	37,204
7 RPM Output (Approximate) Continued Next Page								**6 RPM**		**4.5 RPM**	
0.94	7,972	K514_2500	MR160/	050, 140	AW160/012	249.569	3,026	0.78	7,972	0.62	7,972
1.29	11,639	K614_2660	MR160/	050, 140	AW160/012	265.917	3,600	1.07	11,639	0.86	11,639
1.54	12,844	K614_2460	MR160/	050, 140	AW160/012	246.347	3,600	1.27	12,844	1.02	12,844
2.05	21,259	K714_2510	MR160/	050, 140	AW160/012	205.737	4,950	2.07	21,259	1.66	21,259
2.47	21,259	K714_2540	MR200/	180	AW200/014	253.979	4,950	2.05	21,259	1.64	21,259
4.28	37,204	K814_2560	MR200/	180	AW200/014	256.198	6,525	3.55	37,204	2.84	37,204
4.35	37,204	K814_2520	MR250/	180, 210	AW250/102	252.304	6,525	3.60	37,204	2.88	37,204

* For thermal HP capacity, see rating below.

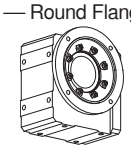
Base Module	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
Thermal Capacity	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.64	67.05

Housing Styles

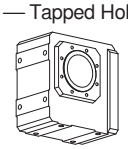
N — Foot Mounted



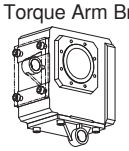
F — Round Flange



G — Tapped Holes



GD — Torque Arm Bracket



These Housing Styles are available as Hollow (A) or Solid (V) Output.

NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10
250	254/256TC	15, 20
280	284/286TC	25, 30
320	324/326TC	40, 50
360	364/365TC	60, 75

"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

NOTE: [1] Complete Base Module Part Number by adding Housing and Output Style. Example: K402**VG**0690.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

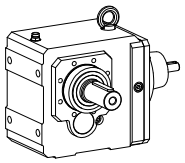
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
7 RPM	**Output (Approximate)** Continued							**6 RPM**		**4.5 RPM**	
5.72	47,896	K914_2470	MR200/	180	AW200/014	247.029	14,625	5.05	50,994	4.35	54,932
7.52	62,006	K914_2430	MR250/	180, 210	AW250/102	243.275	14,625	6.23	62,006	4.98	62,006
6 RPM	**Output (Approximate)**							**5 RPM**		**4 RPM**	
0.13	1,172	K203_2720	MR140/	050	AW140/010	271.923	1,350	0.10	1,172	0.08	1,172
0.20	1,876	K303_2720	MR140/	050	AW140/010	271.923	1,575	0.17	1,876	0.13	1,876
0.35	3,283	K403_2720	MR140/	050	AW140/010	271.572	2,520	0.29	3,283	0.23	3,283
0.78	7,972	K514_3000	MR160/	050, 140	AW160/012	300.023	3,026	0.65	7,972	0.52	7,972
0.79	7,268	K514_2710	MR160/	050, 140	AW160/012	270.989	3,026	0.66	7,268	0.52	7,268
1.29	12,844	K614_2940	MR160/	050, 140	AW160/012	294.408	3,600	1.07	12,844	0.85	12,844
2.06	21,259	K714_3050	MR160/	050, 140	AW160/012	304.817	4,950	1.70	21,259	1.36	21,259
2.06	19,244	K714_2750	MR160/	050, 140	AW160/012	275.319	4,950	1.71	19,244	1.37	19,244
3.35	35,365	K814_3110	MR200/	180	AW200/014	310.919	6,525	2.78	35,365	2.22	35,365
5.00	49,821	K914_2940	MR200/	180	AW200/014	293.764	14,625	4.41	53,044	3.80	57,140
9.53	93,852	K1014_2900	MR250/	180, 210	AW250/102	290.350	18,000	8.41	99,923	6.76	100,417
5 RPM	**Output (Approximate)**							**4.5 RPM**		**3.5 RPM**	
0.53	6,105	K514_3380	MR160/	050, 140	AW160/012	337.521	3,026	0.44	6,105	0.35	6,105
0.53	6,761	K514_3740	MR160/	050, 140	AW160/012	373.684	3,026	0.44	6,761	0.35	6,761
0.76	8,600	K614_3330	MR160/	050, 140	AW160/012	333.223	3,600	0.63	8,600	0.05	8,600
0.76	9,524	K614_3690	MR160/	050, 140	AW160/012	368.926	3,600	0.63	9,524	0.05	9,524
1.27	14,803	K714_3440	MR160/	050, 140	AW160/012	344.148	4,950	1.05	14,803	0.84	14,803
1.27	16,394	K714_3810	MR160/	050, 140	AW160/012	381.021	4,950	1.05	16,394	0.84	16,394
3.76	47,620	K914_3740	MR200/	180	AW200/014	373.696	14,625	3.11	47,620	2.49	47,620

NOTE: For slower speeds than those shown, units can be combined. Contact STOBER Drives Inc.

Part No. Explanation

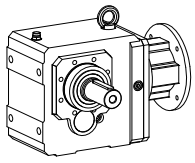
K 4 0 2 V G 0690 AW 160 / 012

- Shaft Dia. (1/16 in.; example — 012 = 12/16 or 3/4)
- Size
- Input Shaft
- Ratio (0690 = 69.0:1)
- Housing Style
- Output Style (A-hollow; V-solid)
- No. of Gear Reductions
- Generation No.
- Unit No.
- Right Angle Helical/Bevel

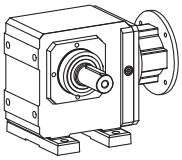


K 4 0 2 V G 0690 MR 160 / 140

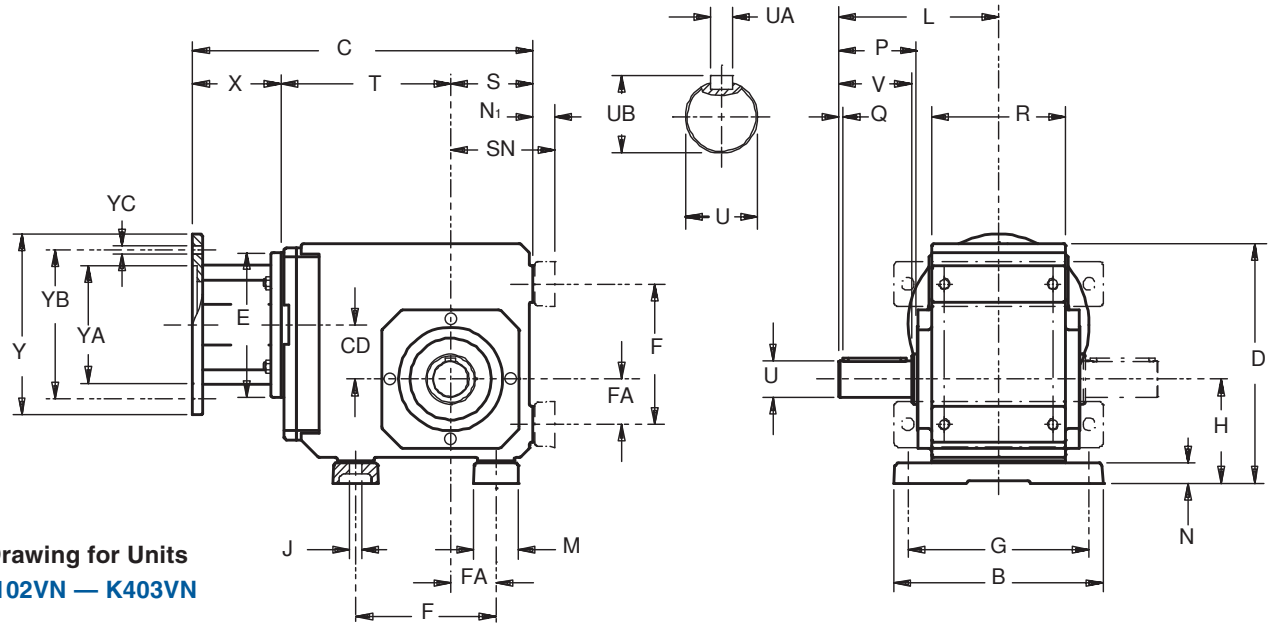
- Motor Frame Size (140=143/145TC)
- Size
- Motor Adapter
- Ratio (0690 = 69.0:1)
- Housing Style
- Output Style (A-hollow; V-solid)
- No. of Reductions
- Generation No.
- Unit No.
- Right Angle Helical/Bevel



Mounting position must be specified when ordering.



"K" Series – MGS Reducer
Foot Mount – "N" Housing
Shaft Output – Dimensional Data



Drawing for Units
K102VN — K403VN

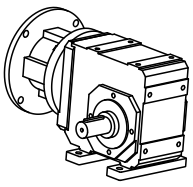
Table No. 1 **"K" Series – Foot Mounting Unit Dimensions (Inches) – "N" Housing Style**

Base Module	B	D	F	G	H	J	L	M	N	O	P	Q	R	S	V	Z_1	BO	FA	N_1	SN
K102	5.51	6.81	3.54*	4.53	2.95	.35	4.53	1.18	.51	–	2.32	.16	3.54	2.36	1.97	–	–	1.18	.59	2.95
K202/203	7.28	8.39	4.53	6.10	3.46	.43	5.31	1.57	.79	–	2.56	.16	4.53	2.56	2.36	–	–	1.38	.91	3.46
K302/303	7.87	9.29	5.12	6.69	3.86	.43	5.59	1.77	.79	–	2.60	.16	5.12	2.95	2.36	–	–	1.57	.91	3.86
K402/403	9.06	10.43	6.10	7.87	4.53	.55	6.93	1.97	.87	–	3.39	.16	5.83	3.54	2.76	–	–	1.97	.98	4.53
K513/514	9.45	11.42	5.51	7.87	7.48	.71	8.74	2.36	1.06	5.10	3.90	.16	6.30	3.94	3.54	5.98	7.28	1.57	1.18	5.12
K613/614	9.84	13.39	6.30	8.27	8.66	.71	9.29	2.56	1.06	5.35	4.31	.16	6.61	4.72	3.94	6.77	7.87	1.97	1.18	5.91
K713/714	11.42	14.96	7.09	9.45	9.84	.87	10.91	2.76	1.38	6.46	5.14	.16	7.48	4.92	4.72	7.52	8.90	2.17	1.50	6.42
K813/814	14.17	17.91	9.45	11.81	12.20	1.02	12.83	3.35	1.61	7.28	5.94	.20	9.25	5.71	5.51	8.11	11.10	2.95	1.77	7.48
K913/914	16.93	21.46	11.02	14.17	14.37	1.30	15.16	3.74	1.81	8.66	7.13	.31	11.22	7.09	6.69	9.84	12.99	3.74	1.97	9.06
K1013/1014	15.75	23.27	13.78	12.99	14.76	1.54	16.46	4.72	1.77	9.45	8.66	.59	15.75	–	8.27	12.01	14.02	4.53	1.77	8.86

* Mounting holes are also located on Side 2 (top) of the K1 unit ONLY.

Table No. 2 **Motor Adapter Dimensions (Inches)**

Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR300/180	182/184TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/210	213/215TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/250	254/256TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/280	284/286TC	11.81	6.50	11.13	10.500	9.00	.57	75
MR350/320	324/326TC	13.78	7.09	13.37	12.500	11.00	.70	133
MR350/360	364/365TC	13.78	7.09	13.37	12.500	11.00	.70	133



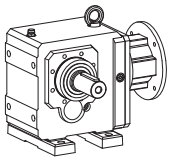
K1 Housing with tapped holes on Side 1, Side 2, and Side 5. Shown with mounting feet on Side 1.

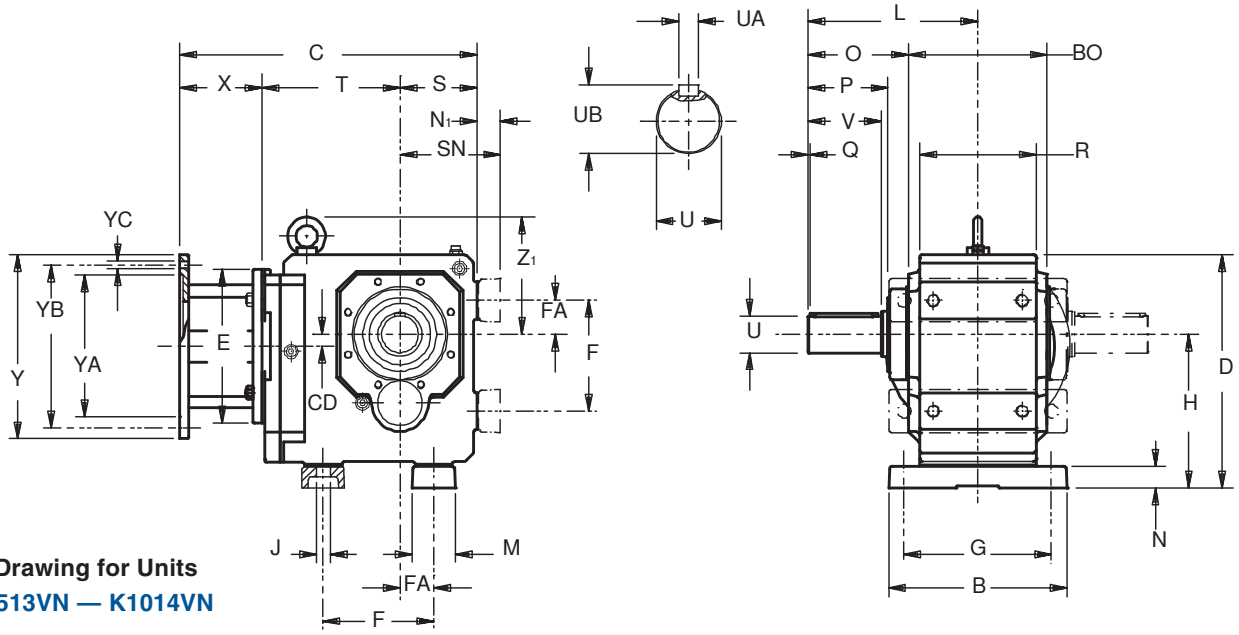
Part No. Example

Foot Mounting with Motor Adapter

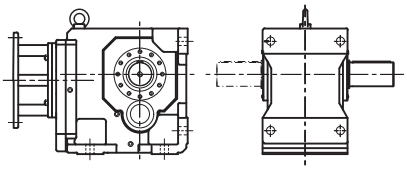
K303VN0650 MR160/140

"K" Series – MGS Reducer
Foot Mount – "N" Housing
Shaft Output – Dimensional Data





Drawing for Units
K513VN — K1014VN



Mounting feet are integral in the K10 housing.

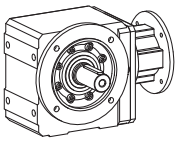
Table No. 3 **Metric output available on request.**

Base Module	Standard Shaft — inches			Optional Shaft — mm		
	U	UA — Key	UB	U	UA — Key	UB
K102	1.000	$^1/_4 \times ^1/_4 \times 1^9/_{16}$	1.11	25_{k6}	M8 ×7×40	28
K202/K203	1.250	$^1/_4 \times ^1/_4 \times 1^{15}/_{16}$	1.36	30_{k6}	M8 ×7×50	33
K302/K303	1.250	$^1/_4 \times ^1/_4 \times 1^{15}/_{16}$	1.36	30_{k6}	M8 ×7×50	33
K402/K403	1.375	$^5/_{16} \times ^5/_{16} \times 2^5/_{16}$	1.51	40_{k6}	M12 ×8×70	43
K513/K514	1.750	$^3/_8 \times ^3/_8 \times 3^5/_{32}$	1.92	45_{k6}	M14 ×9×80	48.5
K613/K614	1.750	$^3/_8 \times ^3/_8 \times 3^5/_{32}$	1.92	50_{k6}	M14 ×9×90	53.5
K713/K714	2.375	$^5/_8 \times ^5/_8 \times 3^{15}/_{16}$	2.65	60_{k6}	M18 ×11×110	64
K813/K814	2.875	$^3/_4 \times ^3/_4 \times 4^5/_{16}$	3.21	70_{m6}	M20 ×12×125	74.5
K913/K914	3.625	$^7/_8 \times ^7/_8 \times 5^1/_2$	4.01	90_{m6}	M25 ×14×140	95
K1013/K1014	4.375	1 × 1 × $7^1/_8$	4.82	110_{m6}	M28 ×16×180	116

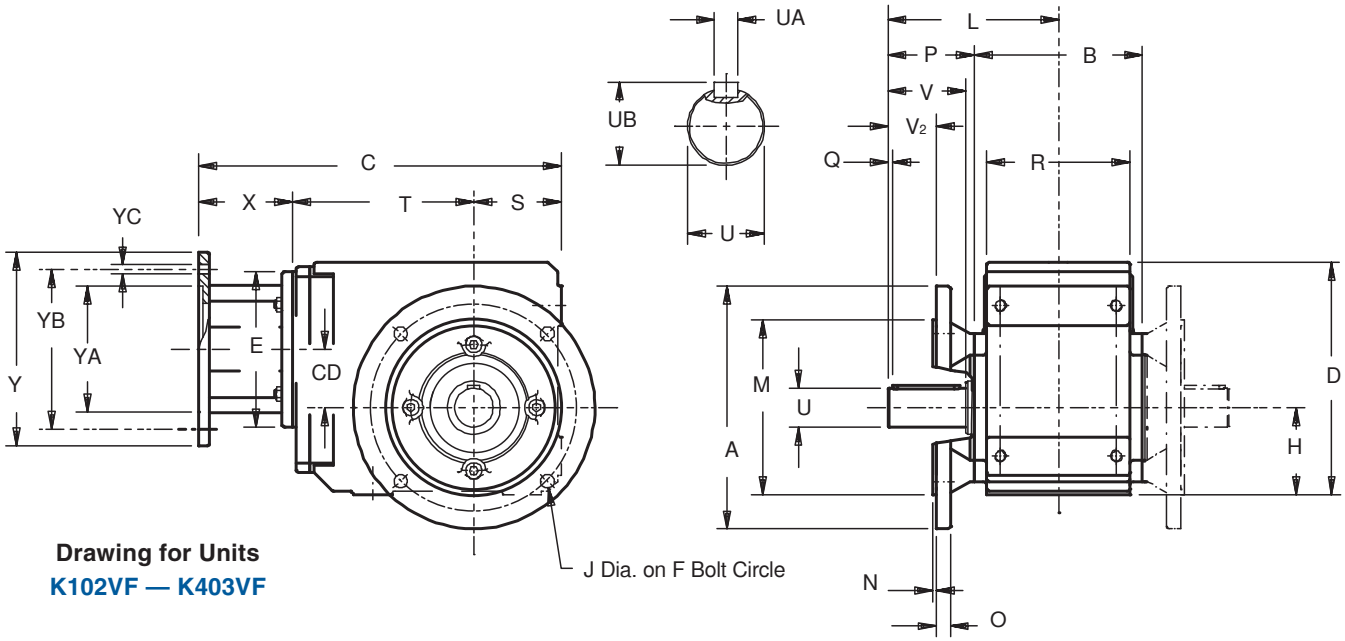
Table No. 4 **"K" Series – Foot Mounting Unit Dimensions (Inches) – "N" Housing Style**

Base	MR140/050			MR160/140 [1]			MR200/180			MR250/210 [2]			MR300/250 [3]			MR350/320 [4]			Wt.
Module	CD	C	T	CD	C	T	CD	C	T	CD	C	T	CD	C	T	CD	C	T	lbs.
K102	1.42	10.55	4.88	1.42	11.26	5.04	–	–	–	–	–	–	–	–	–	–	–	–	31
K202	1.81	11.50	5.63	1.81	12.21	5.79	1.81	13.23	5.87	–	–	–	–	–	–	–	–	–	40
K203	1.81	12.96	7.09	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	53
K302	2.07	12.68	6.42	2.07	13.38	6.57	2.07	14.40	6.65	–	–	–	–	–	–	–	–	–	67
K303	2.07	14.13	7.87	.63	15.08	8.27	–	–	–	–	–	–	–	–	–	–	–	–	73
K402	–	–	–	2.36	14.76	7.36	2.36	15.74	7.44	2.36	16.41	7.56	–	–	–	–	–	–	93
K403	2.36	15.51	8.66	.91	16.46	9.06	–	–	–	–	–	–	–	–	–	–	–	–	100
K513	–	–	–	.59	14.57	6.77	.59	15.59	6.85	.59	16.22	6.97	–	–	–	–	–	–	106
K514	–	–	–	.59	16.26	8.46	–	–	–	–	–	–	–	–	–	–	–	–	109
K613	–	–	–	.71	16.10	7.52	.71	17.12	7.60	.71	17.75	7.72	.71	19.49	8.27	–	–	–	170
K614	–	–	–	.71	17.79	9.21	–	–	–	–	–	–	–	–	–	–	–	–	177
K713	–	–	–	–	–	–	.79	18.42	8.70	.79	19.05	8.82	.79	20.75	9.33	–	–	–	221
K714	–	–	–	.79	19.13	10.35	.79	20.86	11.14	–	–	–	–	–	–	–	–	–	234
K813	–	–	–	–	–	–	.94	20.23	9.72	.94	20.82	9.80	.94	22.52	10.31	–	–	–	309
K814	–	–	–	–	–	–	.94	22.64	12.13	–	–	–	–	–	–	–	–	–	331
K913	–	–	–	–	–	–	–	–	–	.98	23.97	11.57	.98	25.68	12.09	.98	27.17	12.99	508
K914	–	–	–	–	–	–	.98	25.79	13.90	.98	26.77	14.37	–	–	–	–	–	–	530
K1013	–	–	–	–	–	–	–	–	–	–	–	–	1.10	15.43	30.79	1.10	32.29	16.34	913
K1014	–	–	–	–	–	–	–	–	–	1.10	31.89	17.72	–	–	–	–	–	–	993

[1] Also available as **MR160/050** for a NEMA 56C frame motor.
[2] Also available as **MR250/180** for a NEMA 182/184TC frame motor.
[3] Also available as **MR300/180** for a NEMA 182/184TC, **MR300/210** for a NEMA 213/215TC, and **MR300/280** for a NEMA 284/286TC frame motor.
[4] Also available as **MR350/360** for a NEMA 364/365TC frame motor.
All weights are approximate.



"K" Series – MGS Reducer
Flange Mount – "F" Housing
Shaft Output – Dimensional Data



Drawing for Units
K102VF — K403VF

Table No. 1 **"K" Series – Round Flange Unit Dimensions (Inches) – "F" Housing Style**

Base Module	A [1]	B	D	F	H	J	L	M	N	O	P	Q	R	S	V	V_2	Z_1
K102	6.30	4.17	6.30	5.12	2.36	.35	4.53	4.331 +.001/-.0004	.14	.39	2.44	.16	3.54	2.36	1.97	1.18	–
K202/203	7.87	5.28	7.48	6.50	2.56	.43	5.31	5.118 +.001/-.0004	.14	.47	2.68	.16	4.53	2.56	2.36	1.42	–
K302/303	7.87	5.75	8.39	6.50	2.95	.43	5.59	5.118 +.001/-.0004	.14	.55	2.72	.16	5.12	2.95	2.36	1.22	–
K402/403	9.84	6.81	9.45	8.46	3.54	.55	6.93	7.087 +.001/-.0004	.16	.59	3.52	.16	5.83	3.54	2.76	1.95	–
K513/514	9.84	7.28	10.24	8.46	6.30	.55	8.74	7.087 +.001/-.0004	.16	.59	5.10	.16	6.30	3.94	3.54	–	5.98
K613/614	11.81	7.87	12.20	10.43	7.48	.55	9.29	9.055 +.001/-.001	.16	.67	5.35	.16	6.61	4.72	3.94	–	6.77
K713/714	13.78	8.90	13.46	11.81	8.35	.71	10.91	9.842 +.000/-.001	.20	.71	6.46	.16	7.48	4.92	4.72	–	7.52
K813/814	15.75	11.10	16.14	13.78	10.43	.71	12.83	11.811 +.000/-.001	.20	.79	7.28	.20	9.25	5.71	5.51	–	8.11
K913/914	17.72	12.99	19.49	15.75	12.40	.71	15.16	13.780 +.000/-.001	.20	.91	8.66	.31	11.22	7.09	6.69	–	9.84
K1013/1014	21.65	14.02	23.27	19.69	14.76	.71	18.35	17.716 +.000/-.002	.20	.98	11.34	.59	15.75	8.86	8.27	–	12.01

[1] See Page 100 for other flange sizes. Optional flanges are not available for all sizes.

Table No. 2 **Motor Adapter Dimensions (Inches)**

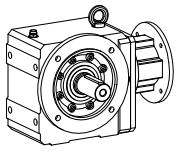
Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR300/180	182/184TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/210	213/215TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/250	254/256TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/280	284/286TC	11.81	6.50	11.13	10.500	9.00	.57	75
MR350/320	324/326TC	13.78	7.09	13.37	12.500	11.00	.70	133
MR350/360	364/365TC	13.78	7.09	13.37	12.500	11.00	.70	133

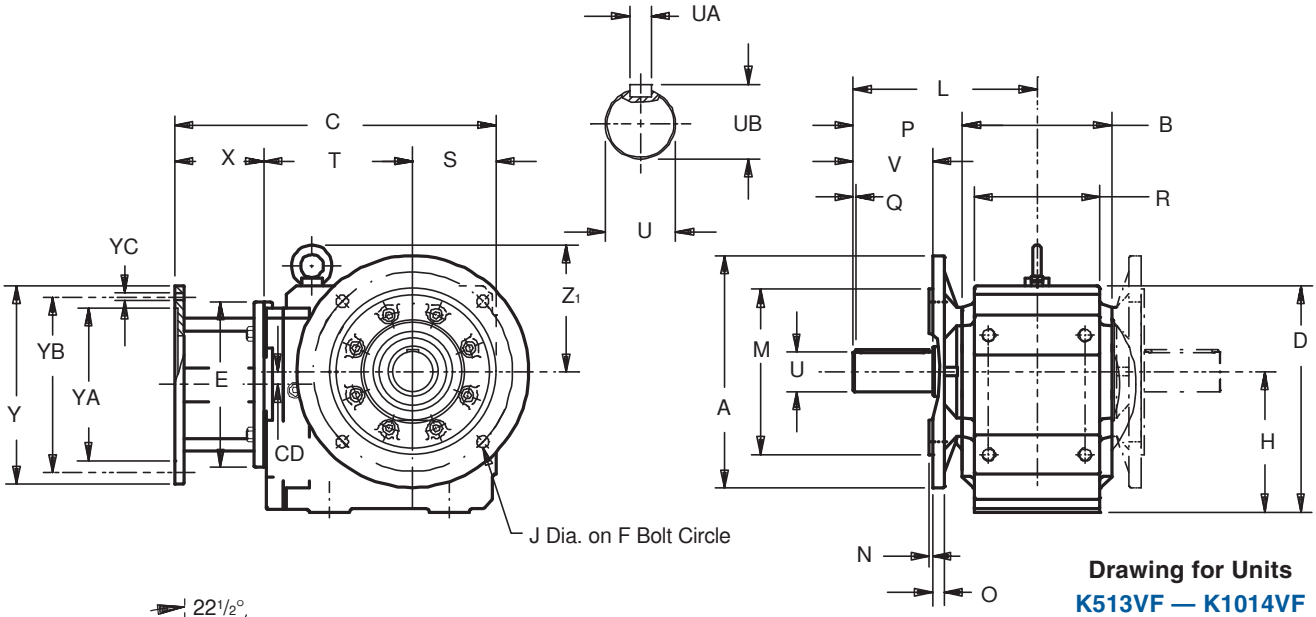
Part No. Example

Round Flange with Motor Adapter

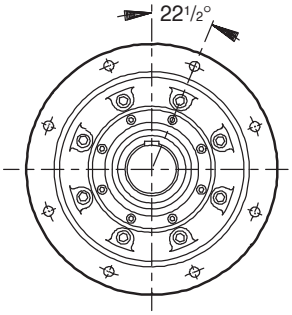
K303VF0650 MR160/140

"K" Series – MGS Reducer
Flange Mount – "F" Housing
Shaft Output – Dimensional Data





Drawing for Units
K513VF — K1014VF



K913 thru K1014 has 8 mounting holes in the output flange located as shown.

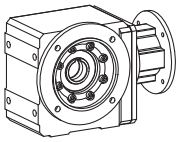
Table No. 4 **Metric output available on request.**

Base Module	Standard Shaft — inches			Optional Shaft — mm		
	U	UA — Key	UB	U	UA — Key	UB
K102	1.000	1/4 × 1/4 × 1 9/16	1.11	25k6	M8 ×7×40	28
K202/203	1.250	1/4 × 1/4 × 1 15/16	1.36	30k6	M8 ×7×50	33
K302/303	1.250	1/4 × 1/4 × 1 15/16	1.36	30k6	M8 ×7×50	33
K402/403	1.375	5/16 × 5/16 × 2 5/16	1.51	40k6	M12 ×8×70	43
K513/514	1.750	3/8 × 3/8 × 3 5/32	1.92	45k6	M14 ×9×80	48.5
K613/614	1.750	3/8 × 3/8 × 3 5/32	1.92	50k6	M14 ×9×90	53.5
K713/714	2.375	5/8 × 5/8 × 3 15/16	2.65	60k6	M18 ×11×110	64
K813/814	2.875	3/4 × 3/4 × 4 5/16	3.21	70m6	M20 ×12×125	74.5
K913/914	3.625	7/8 × 7/8 × 5 1/2	4.01	90m6	M25 ×14×140	95
K1013/1014	4.375	1 × 1 × 7 1/8	4.82	110m6	M28 ×16×180	116

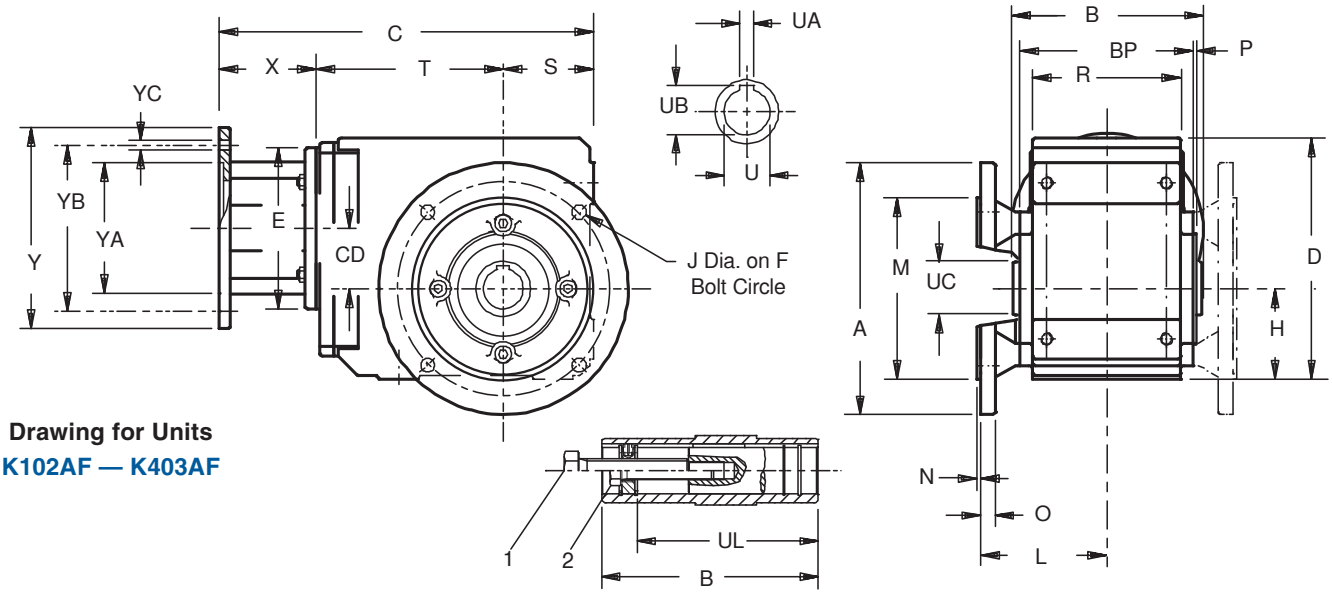
Table No. 5 **"K" Series – Flange Mounting Unit Dimensions (Inches) – "F" Housing Style**

Base	MR140/050			MR160/140 [1]			MR200/180			MR250/210 [2]			MR300/250 [3]			MR350/320 [4]			Wt.
Module	CD	C	T	CD	C	T	CD	C	T	CD	C	T	CD	C	T	CD	C	T	lbs.
K102	1.42	10.55	4.88	1.42	11.26	5.04	–	–	–	–	–	–	–	–	–	–	–	–	31
K202	1.81	11.50	5.63	1.81	12.21	5.79	1.81	13.23	5.87	–	–	–	–	–	–	–	–	–	40
K203	1.81	12.96	7.09	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	53
K302	2.07	12.68	6.42	2.07	13.38	6.57	2.07	14.40	6.65	–	–	–	–	–	–	–	–	–	67
K303	2.07	14.13	7.87	.63	15.08	8.27	–	–	–	–	–	–	–	–	–	–	–	–	73
K402	–	–	–	2.36	14.76	7.36	2.36	15.74	7.44	2.36	16.41	7.56	–	–	–	–	–	–	93
K403	2.36	15.51	8.66	.91	16.46	9.06	–	–	–	–	–	–	–	–	–	–	–	–	100
K513	–	–	–	.59	14.57	6.77	.59	15.59	6.85	.59	16.22	6.97	–	–	–	–	–	–	106
K514	–	–	–	.59	16.26	8.46	–	–	–	–	–	–	–	–	–	–	–	–	109
K613	–	–	–	.71	16.10	7.52	.71	17.12	7.60	.71	17.75	7.72	.71	19.49	8.27	–	–	–	170
K614	–	–	–	.71	17.79	9.21	–	–	–	–	–	–	–	–	–	–	–	–	177
K713	–	–	–	–	–	–	.79	18.42	8.70	.79	19.05	8.82	.79	20.75	9.33	–	–	–	221
K714	–	–	–	.79	19.13	10.35	.79	20.86	11.14	–	–	–	–	–	–	–	–	–	234
K813	–	–	–	–	–	–	.94	20.23	9.72	.94	20.82	9.80	.94	22.52	10.31	–	–	–	309
K814	–	–	–	–	–	–	.94	22.64	12.13	–	–	–	–	–	–	–	–	–	331
K913	–	–	–	–	–	–	–	–	–	.98	23.97	11.57	.98	25.68	12.09	.98	27.17	12.99	508
K914	–	–	–	–	–	–	.98	25.79	13.90	.98	26.77	14.37	–	–	–	–	–	–	530
K1013	–	–	–	–	–	–	–	–	–	–	–	–	1.10	15.43	30.79	1.10	32.29	16.34	913
K1014	–	–	–	–	–	–	–	–	–	1.10	31.89	17.72	–	–	–	–	–	–	993

[1] Also available as **MR160/050** for a NEMA 56C frame motor.
[2] Also available as **MR250/180** for a NEMA 182/184TC frame motor.
[3] Also available as **MR300/180** for a NEMA 182/184TC, **MR300/210** for a NEMA 213/215TC, and **MR300/280** for a NEMA 284/286TC frame motor.
[4] Also available as **MR350/360** for a NEMA 364/365TC frame motor.
All weights are approximate.



"K" Series – MGS Reducer
Flange Mount – "F" Housing
Hollow Output – Dimensional Data



Drawing for Units
K102AF — K403AF

Table No. 1 "K" Series – Hollow Output, Round Flange Unit Dimensions (Inches) – "F" Housing Style

Base Module	A [1]	B	D	F	H	J	L	M	N	O	P	R	S	Z_1	BP	UC	UL	1
K102	6.30	4.72	6.30	5.12	2.36	.35	3.35	4.331 +.001/-.0004	.14	.39	2.44	3.54	2.36	–	4.17	1.57	3.86	1/2-13
K202/203	7.87	5.83	7.48	6.50	2.56	.43	3.90	5.118 +.001/-.0004	.14	.47	2.68	4.53	2.56	–	5.28	1.77	4.78	1/2-13
K302/303	7.87	6.30	8.39	6.50	2.95	.43	4.37	5.118 +.001/-.0004	.14	.55	2.72	5.12	2.95	–	5.75	1.97	4.92	5/8-11
K402/403	9.84	7.40	9.45	8.46	3.54	.55	4.98	7.087 +.001/-.0004	.16	.59	3.52	5.83	3.54	–	6.81	2.17	6.18	3/4-10
K513/514	9.84	7.87	10.24	8.46	6.30	.55	5.20	7.087 +.001/-.0004	.16	.59	5.10	6.30	3.94	5.98	7.28	2.56	6.46	3/4-10
K613/614	11.81	8.46	12.20	10.43	7.48	.55	5.35	9.055 +.001/-.001	.16	.67	5.35	6.61	4.72	6.77	7.87	2.76	7.05	3/4-10
K713/714	13.78	9.53	13.46	11.81	8.35	.71	6.18	9.842 +.000/-.001	.20	.71	6.46	7.48	4.92	7.52	8.90	3.35	8.43	1-8
K813/814	15.75	11.81	16.14	13.78	10.43	.71	7.32	11.811 +.000/-.001	.20	.79	7.28	9.25	5.71	8.11	11.10	3.94	10.35	1-8
K913/914	17.72	13.78	19.49	15.75	12.40	.71	8.46	13.780 +.000/-.001	.20	.91	8.66	11.22	7.09	9.84	12.99	4.33	11.89	1-8
K1013/1014	21.65	16.14	23.27	19.69	14.76	.71	10.08	17.716 +.000/-.002	.20	.98	11.34	15.75	8.86	12.01	15.60	5.12	14.25	1 1/4-7

[1] See Page 100 for other flange sizes. Optional flanges are not available for all sizes.

Table No. 2 Motor Adapter Dimensions (Inches)

Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR300/180	182/184TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/210	213/215TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/250	254/256TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/280	284/286TC	11.81	6.50	11.13	10.500	9.00	.57	75
MR350/320	324/326TC	13.78	7.09	13.37	12.500	11.00	.70	133
MR350/360	364/365TC	13.78	7.09	13.37	12.500	11.00	.70	133

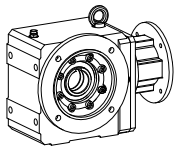
Part No. Example

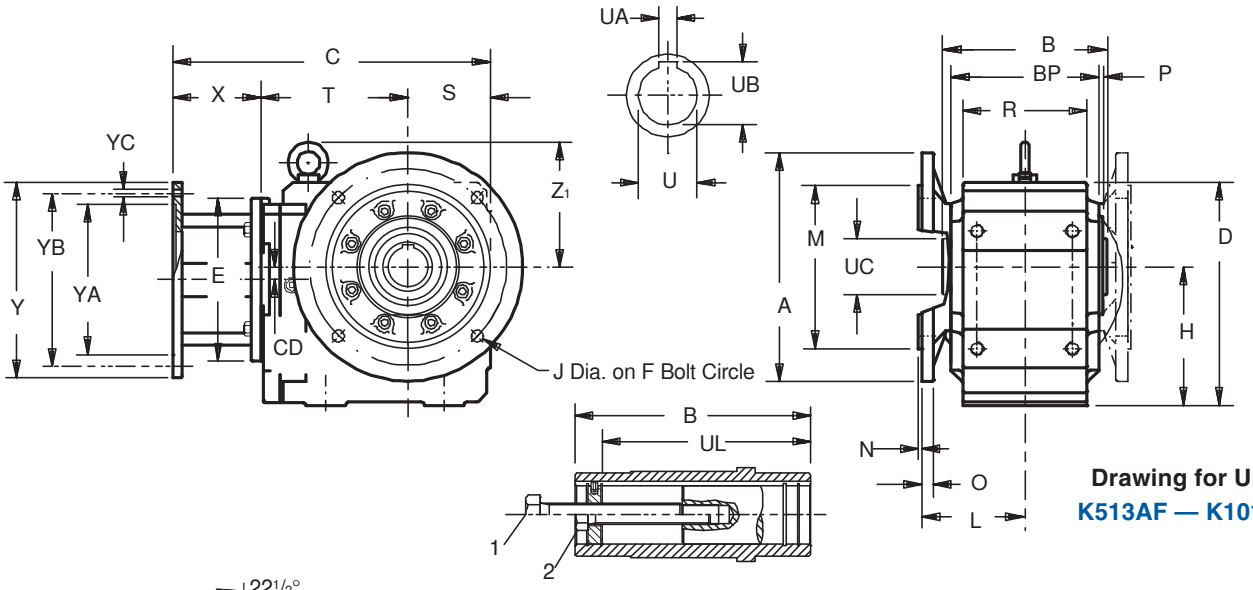
Hollow Output, Flanged Housing with Motor Adapter

K303AF0650 MR160/140

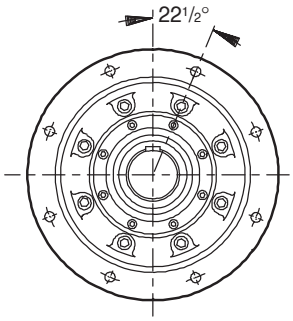
1. Removal Bolt – not supplied.
2. Mounting Bolt – must be smaller than removal bolt.

"K" Series – MGS Reducer
Flange Mount – "F" Housing
Hollow Output – Dimensional Data





Drawing for Units
K513AF — K1014AF



K913 thru K1014 has 8 mounting holes in the output flange located as shown.

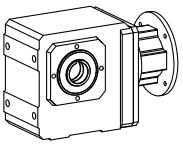
Table No. 4 **Metric output available on request.**

Base Module	Standard Bore - inches			Optional Bore - mm		
	U	UA	UB	U	UA	UB
K102	1.000	.250	1.11	25H7	8JS9	28.3
K202/203	1.1875	.250	1.31	30H7	8JS9	33.3
K302/303	1.375	.312	1.52	35H7	10JS9	38.3
K402/403	1.500	.375	1.67	40H7	12JS9	43.3
K513/514	2.000	.500	2.13	50H7	14JS9	53.8
K613/614	2.000	.500	2.23	50H7	14JS9	53.8
K713/714	2.375	.625	2.66	60H7	18JS9	64.4
K813/814	2.750	.625	3.03	70H7	20JS9	74.9
K913/914	3.250	.750	3.59	90H7	25JS9	95.4
K1013/1014	4.000	1.000	4.31	100H7	28JS9	116

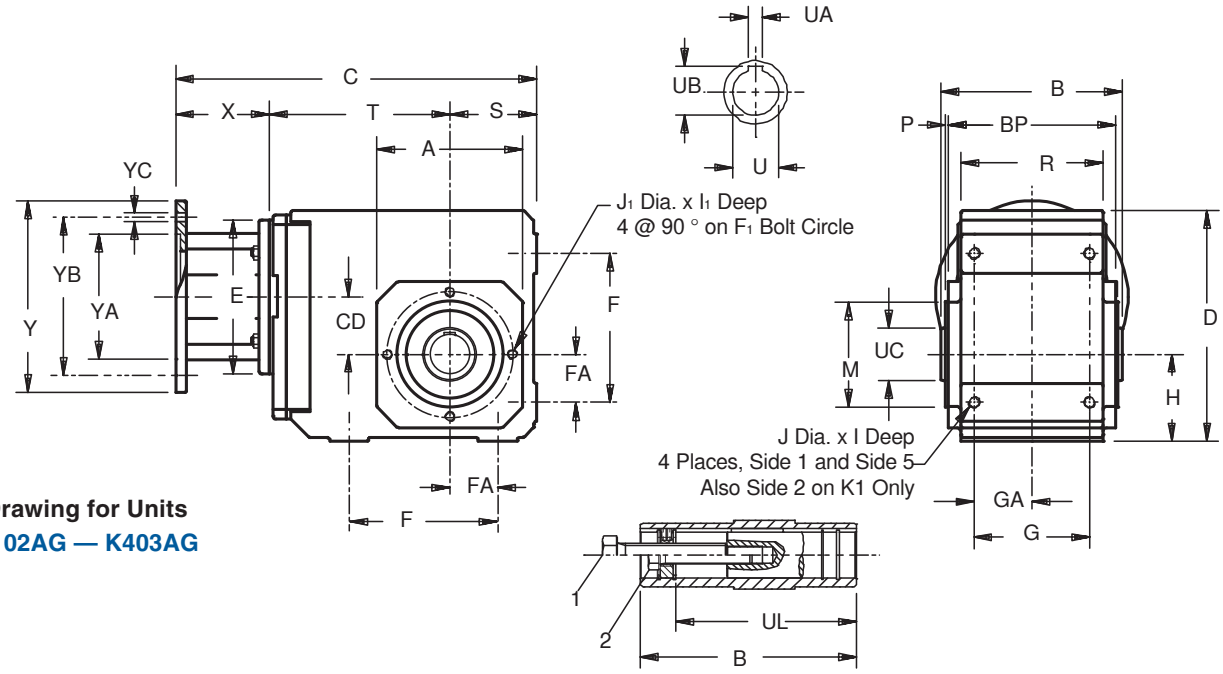
Table No. 5 **"K" Series – Hollow Output, Round Flange Unit Dimensions (Inches) – "F" Housing Style**

Base	MR140/050			MR160/140 [1]			MR200/180			MR250/210 [2]			MR300/250 [3]			MR350/320 [4]			Wt.
Module	CD	C	T	CD	C	T	CD	C	T	CD	C	T	CD	C	T	CD	C	T	lbs.
K102	1.42	10.55	4.88	1.42	11.26	5.04	–	–	–	–	–	–	–	–	–	–	–	–	31
K202	1.81	11.50	5.63	1.81	12.21	5.79	1.81	13.23	5.87	–	–	–	–	–	–	–	–	–	40
K203	1.81	12.96	7.09	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	53
K302	2.07	12.68	6.42	2.07	13.38	6.57	2.07	14.40	6.65	–	–	–	–	–	–	–	–	–	67
K303	2.07	14.13	7.87	.63	15.08	8.27	–	–	–	–	–	–	–	–	–	–	–	–	73
K402	–	–	–	2.36	14.76	7.36	2.36	15.74	7.44	2.36	16.41	7.56	–	–	–	–	–	–	93
K403	2.36	15.51	8.66	.91	16.46	9.06	–	–	–	–	–	–	–	–	–	–	–	–	100
K513	–	–	–	.59	14.57	6.77	.59	15.59	6.85	.59	16.22	6.97	–	–	–	–	–	–	106
K514	–	–	–	.59	16.26	8.46	–	–	–	–	–	–	–	–	–	–	–	–	109
K613	–	–	–	.71	16.10	7.52	.71	17.12	7.60	.71	17.75	7.72	.71	19.49	8.27	–	–	–	170
K614	–	–	–	.71	17.79	9.21	–	–	–	–	–	–	–	–	–	–	–	–	177
K713	–	–	–	–	–	–	.79	18.42	8.70	.79	19.05	8.82	.79	20.75	9.33	–	–	–	221
K714	–	–	–	.79	19.13	10.35	.79	20.86	11.14	–	–	–	–	–	–	–	–	–	234
K813	–	–	–	–	–	–	.94	20.23	9.72	.94	20.82	9.80	.94	22.52	10.31	–	–	–	309
K814	–	–	–	–	–	–	.94	22.64	12.13	–	–	–	–	–	–	–	–	–	331
K913	–	–	–	–	–	–	–	–	–	.98	23.97	11.57	.98	25.68	12.09	.98	27.17	12.99	508
K914	–	–	–	–	–	–	.98	25.79	13.90	.98	26.77	14.37	–	–	–	–	–	–	530
K1013	–	–	–	–	–	–	–	–	–	–	–	–	1.10	15.43	30.79	1.10	32.29	16.34	913
K1014	–	–	–	–	–	–	–	–	–	1.10	31.89	17.72	–	–	–	–	–	–	993

[1] Also available as **MR160/050** for a NEMA 56C frame motor.
[2] Also available as **MR250/180** for a NEMA 182/184TC frame motor.
[3] Also available as **MR300/180** for a NEMA 182/184TC, **MR300/210** for a NEMA 213/215TC, and **MR300/280** for a NEMA 284/286TC frame motor.
[4] Also available as **MR350/360** for a NEMA 364/365TC frame motor.
All weights are approximate.



"K" Series – MGS Reducer
Tapped Holes – "G" Housing
Hollow Output – Dimensional Data



Drawing for Units
K102AG — K403AG

Table No. 1 **"K" Series – Tapped Hole Unit Dimensions (Inches) – "G" Housing Style**

Base Module	A	B	D	F	F_1	G	H	I	I_1	J	J_1	M	P	R	S	Z_1	BP	FA	GA
K102	4.13	4.72	6.30	3.54	3.54	2.76	2.36	.51	.51	M8	M8	2.953 +.001/-.0003	.12	3.54	2.36	–	4.17	1.18	1.38
K202/203	4.57	5.83	7.48	4.53	3.94	3.54	2.56	.63	.51	M10	M8	3.228 +.001/-.0004	.12	4.53	2.56	–	5.28	1.38	1.77
K302/303	5.20	6.30	8.39	5.12	4.53	4.13	2.95	.63	.51	M10	M8	3.740 +.001/-.0004	.12	5.12	2.95	–	5.75	1.57	2.07
K402/403	5.98	7.40	9.45	6.10	5.12	4.72	3.54	.75	.63	M12	M10	4.331 +.001/-.0004	.14	5.83	3.54	–	6.81	1.97	2.36
K513/514	5.71	7.87	10.24	5.51	5.12	4.92	6.30	1.02	.63	M16	M10	4.331 +.001/-.0004	.14	6.30	3.94	5.98	7.28	1.57	2.46
K613/614	7.09	8.46	12.20	6.30	6.50	5.12	7.48	1.02	.63	M16	M10	5.512 +.001/-.0004	.14	6.61	4.72	6.77	7.87	1.97	2.56
K713/714	7.68	9.53	13.46	7.09	7.28	5.71	8.35	1.22	.75	M20	M12	6.102 +.001/-.0004	.14	7.48	4.92	7.52	8.90	2.17	2.85
K813/814	8.90	11.81	16.14	9.45	8.46	7.28	10.43	1.50	.75	M24	M12	7.283 +.001/-.001	.16	9.25	5.71	8.11	11.10	2.95	3.64
K913/914	11.02	13.78	19.49	11.02	10.43	8.86	12.40	1.89	1.02	M30	M16	9.055 +.001/-.001	.20	11.22	7.09	9.84	12.99	3.74	4.43
K1013/1014	13.38	16.14	23.27	11.81	11.81	12.99	14.76	1.77	1.30	1.54	M20	9.843 +.001/-.001	.28	15.59	8.86	12.01	15.60	4.53	6.50

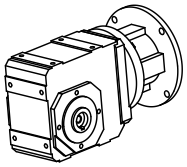
Table No. 2

Base Module	UC	UL	1
K102	1.57	3.86	1/2-13
K202/203	1.77	4.78	1/2-13
K302/303	1.97	4.92	5/8-11
K402/403	2.17	6.18	3/4-10
K513/514	2.56	6.46	3/4-10
K613/614	2.76	7.05	3/4-10
K713/714	3.35	8.43	1-8
K813/814	3.94	10.35	1-8
K913/914	4.33	11.89	1-8
K1013/1014	5.12	14.25	1 1/4-7

1. Removal Bolt – not supplied.
2. Mounting Bolt – must be smaller than removal bolt.

Table No. 3 **Motor Adapter Dimensions (Inches)**

Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR300/180	182/184TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/210	213/215TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/250	254/256TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/280	284/286TC	11.81	6.50	11.13	10.500	9.00	.57	75
MR350/320	324/326TC	13.78	7.09	13.37	12.500	11.00	.70	133
MR350/360	364/365TC	13.78	7.09	13.37	12.500	11.00	.70	133



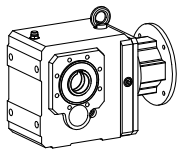
K1 Housing with tapped holes on Side 1, Side 2, and Side 5.

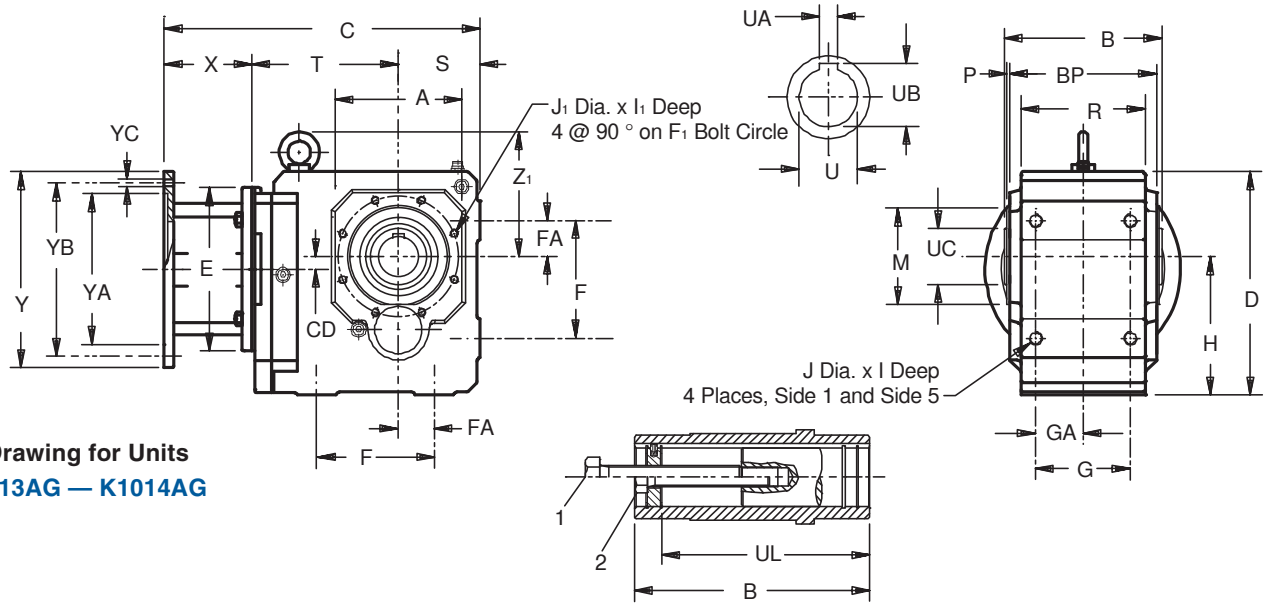
Part No. Example

Tapped Holes Housing with Motor Adapter

K303AG0650 MR160/140

"K" Series – MGS Reducer
Tapped Holes – "G" Housing
Hollow Output – Dimensional Data

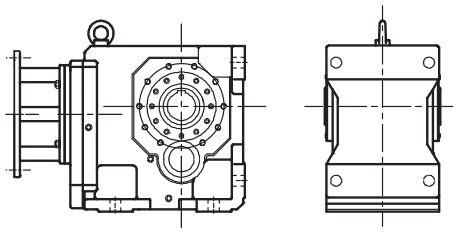




Drawing for Units
K513AG — K1014AG

Table No. 4 **Metric output available on request.**

Base Module	Standard Bore - inches			Optional Bore - mm		
	U	UA	UB	U	UA	UB
K102	1.000	.250	1.11	25_{H7}	8_{JS9}	28.3
K202/203	1.1875	.250	1.31	30_{H7}	8_{JS9}	33.3
K302/303	1.375	.312	1.52	35_{H7}	10_{JS9}	38.3
K402/403	1.500	.375	1.67	40_{H7}	12_{JS9}	43.3
K513/514	2.000	.500	2.13	50_{H7}	14_{JS9}	53.8
K613/614	2.000	.500	2.23	50_{H7}	14_{JS9}	53.8
K713/714	2.375	.625	2.66	60_{H7}	18_{JS9}	64.4
K813/814	2.750	.625	3.03	70_{H7}	20_{JS9}	74.9
K913/914	3.250	.750	3.59	90_{H7}	25_{JS9}	95.4
K1013/1014	4.000	1.000	4.31	100_{H7}	28_{JS9}	116

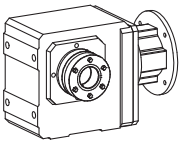


Typical K10 housing.

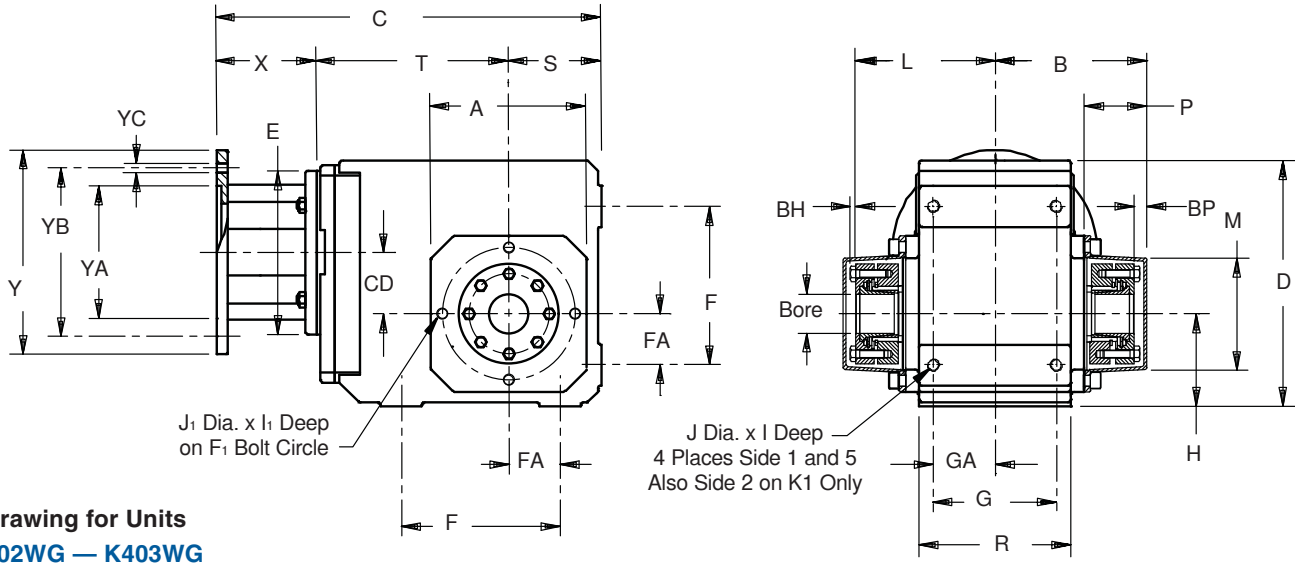
Table No. 5 **"K" Series – Tapped Hole Unit Dimensions (Inches) – "G" Housing Style**

Base	MR140/050			MR160/140 [1]			MR200/180			MR250/210 [2]			MR300/250 [3]			MR350/320 [4]			Wt.
Module	CD	C	T	CD	C	T	CD	C	T	CD	C	T	CD	C	T	CD	C	T	lbs.
K102	1.42	10.55	4.88	1.42	11.26	5.04	–	–	–	–	–	–	–	–	–	–	–	–	31
K202	1.81	11.50	5.63	1.81	12.21	5.79	1.81	13.23	5.87	–	–	–	–	–	–	–	–	–	40
K203	1.81	12.96	7.09	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	53
K302	2.07	12.68	6.42	2.07	13.38	6.57	2.07	14.40	6.65	–	–	–	–	–	–	–	–	–	67
K303	2.07	14.13	7.87	.63	15.08	8.27	–	–	–	–	–	–	–	–	–	–	–	–	73
K402	–	–	–	2.36	14.76	7.36	2.36	15.74	7.44	2.36	16.41	7.56	–	–	–	–	–	–	93
K403	2.36	15.51	8.66	.91	16.46	9.06	–	–	–	–	–	–	–	–	–	–	–	–	100
K513	–	–	–	.59	14.57	6.77	.59	15.59	6.85	.59	16.22	6.97	–	–	–	–	–	–	106
K514	–	–	–	.59	16.26	8.46	–	–	–	–	–	–	–	–	–	–	–	–	109
K613	–	–	–	.71	16.10	7.52	.71	17.12	7.60	.71	17.75	7.72	.71	19.49	8.27	–	–	–	170
K614	–	–	–	.71	17.79	9.21	–	–	–	–	–	–	–	–	–	–	–	–	177
K713	–	–	–	–	–	–	.79	18.42	8.70	.79	19.05	8.82	.79	20.75	9.33	–	–	–	221
K714	–	–	–	.79	19.13	10.35	.79	20.86	11.14	–	–	–	–	–	–	–	–	–	234
K813	–	–	–	–	–	–	.94	20.23	9.72	.94	20.82	9.80	.94	22.52	10.31	–	–	–	309
K814	–	–	–	–	–	–	.94	22.64	12.13	–	–	–	–	–	–	–	–	–	331
K913	–	–	–	–	–	–	–	–	–	.98	23.97	11.57	.98	25.68	12.09	.98	27.17	12.99	508
K914	–	–	–	–	–	–	.98	25.79	13.90	.98	26.77	14.37	–	–	–	–	–	–	530
K1013	–	–	–	–	–	–	–	–	–	–	–	–	1.10	15.43	30.79	1.10	32.29	16.34	913
K1014	–	–	–	–	–	–	–	–	–	1.10	31.89	17.72	–	–	–	–	–	–	993

[1] Also available as **MR160/050** for a NEMA 56C frame motor.
[2] Also available as **MR250/180** for a NEMA 182/184TC frame motor.
[3] Also available as **MR300/180** for a NEMA 182/184TC, **MR300/210** for a NEMA 213/215TC, and **MR300/280** for a NEMA 284/286TC frame motor.
[4] Also available as **MR350/360** for a NEMA 364/365TC frame motor.
All weights are approximate.



"K" Series – MGS Reducer
Tapped Holes – "G" Housing
Double Bushing – Dimensional Data



Drawing for Units
K102WG — K403WG

Table No. 1 **"K" Series – Double Wobble Free – Unit Dimensions (Inches)**

Base Module	Max. Bore	A	B	D	F	F_1	G	H	I	I_1	J	J_1	L	M	P	R	S	Z_1	BP	BH	FA	GA
K102	1.000	4.13	3.90	6.30	3.54	3.54	2.76	2.36	.51	.51	M8	M8	3.66	3.07	1.97	3.54	2.36	–	.24	.16	1.18	1.38
K202/203	1.187	4.57	4.68	7.48	4.53	3.94	3.54	2.56	.63	.51	M10	M8	4.26	3.46	2.05	4.53	2.56	–	.39	.16	1.38	1.77
K302/303	1.500	5.20	4.98	8.39	5.12	4.53	4.13	2.95	.63	.51	M10	M8	4.54	3.78	2.09	5.12	2.95	–	.43	.16	1.57	2.07
K402/403	1.500	5.98	5.80	9.45	6.10	5.12	4.72	3.54	.75	.63	M12	M10	5.33	4.33	2.40	5.83	3.54	–	.47	.20	1.97	2.36
K513/514	2.000	5.71	6.05	10.24	5.51	5.12	4.92	6.30	1.02	.63	M16	M10	5.61	4.54	2.40	6.30	3.94	5.98	.43	.20	1.57	2.46
K613/614	2.187	7.09	6.61	12.20	6.30	6.50	5.12	7.48	1.02	.63	M16	M10	6.10	5.00	2.68	6.61	4.72	6.77	.51	.24	1.97	2.56
K713/714	2.375	7.68	7.68	13.46	7.09	7.28	5.71	8.35	1.22	.75	M20	M12	7.29	5.75	2.91	7.48	4.92	7.52	.39	.24	2.17	2.85
K813/814	2.750	8.90	9.34	16.14	9.45	8.46	7.28	10.43	1.50	.75	M24	M12	8.70	6.95	3.43	9.25	5.71	8.11	.64	.31	2.95	3.64

Table No. 2 **Motor Adapter Dimensions (Inches)**

Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR300/180	182/184TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/210	213/215TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/250	254/256TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/280	284/286TC	11.81	6.50	11.13	10.500	9.00	.57	75

Part No. Example

143TC Frame Motor Adapter
and $1^{7}/_{16}$ Bushing Bore

K303WG0650 MR160/140
WFB3-107

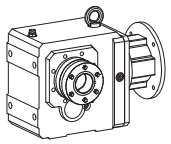
Table No. 3
"WFB" – Double Side Bushings – Metric

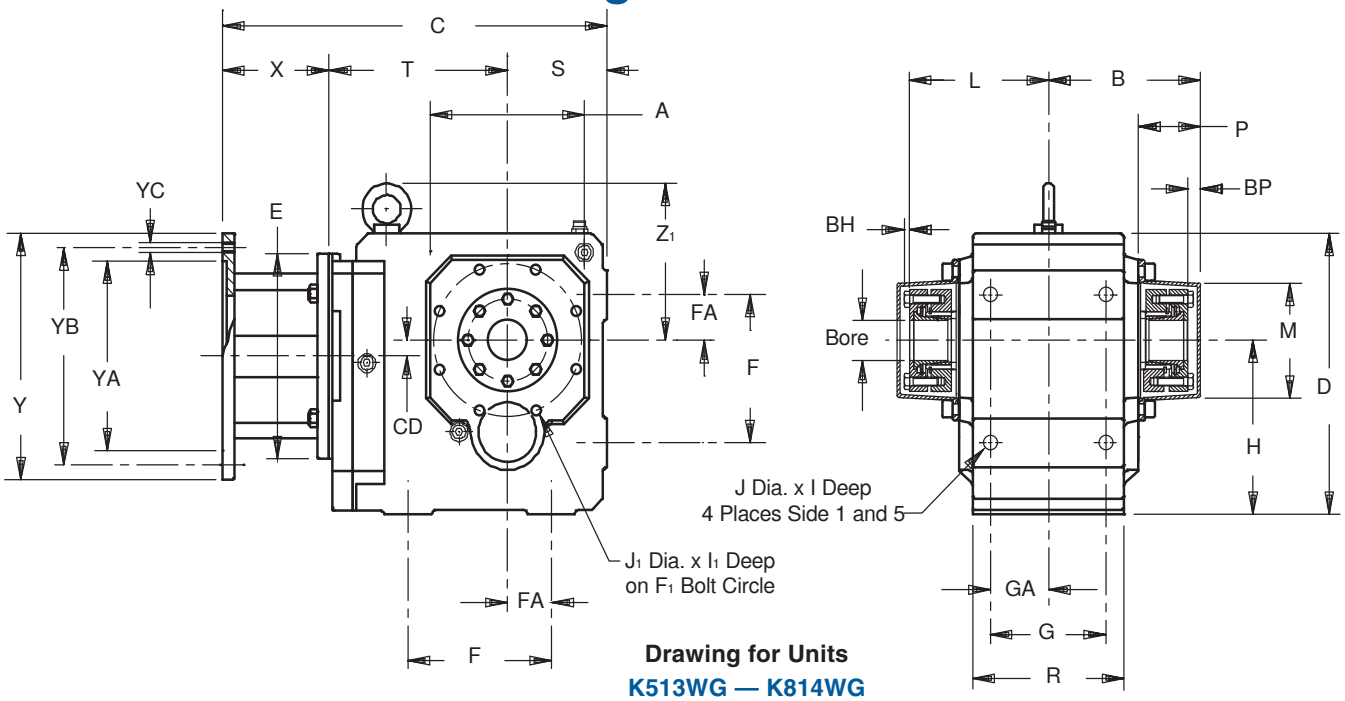
Unit	Stock Bores Sizes — mm			
	25	30	35	40
K1	**WFB1-25**	–	–	–
K2	–	**WFB2-30**	–	–
K3	–	**WFB3-30**	**WFB3-35**	–
K4	–	–	–	**WFB4-40**
K5	–	–	–	**WFB5-40**
K6	–	–	–	**WFB6-40**

Table No. 4 **"WFB" Double Side Bushings – Inches**

Unit	Stock Bores Sizes					
	1	$1^{3}/_{16}$	$1^{1}/_{4}$	$1^{3}/_{8}$	$1^{7}/_{16}$	$1^{1}/_{2}$
K1	**WFB1-100**	–	–	–	–	–
K2	**WFB2-100**	**WFB2-103**	–	–	–	–
K3	**WFB3-100**	**WFB3-103**	**WFB3-104**	**WFB3-106**	**WFB3-107**	**WFB3-108**
K4	**WFB4-100**	**WFB4-103**	**WFB4-104**	**WFB4-106**	**WFB4-107**	**WFB4-108**

"K" Series – MGS Reducer
Tapped Holes – "G" Housing
Double Bushing – Dimensional Data





Drawing for Units
K513WG — K814WG

Table No. 5 **"K" Series – Double Wobble Free – Unit Dimensions (Inches)**

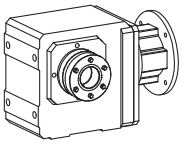
Base	MR140/050			MR160/140 [1]			MR200/180			MR250/210 [2]			MR300/250 [3]			Wt.
Module	CD	C	T	CD	C	T	CD	C	T	CD	C	T	CD	C	T	lbs.
K102	1.42	10.55	4.88	1.42	11.26	5.04	–	–	–	–	–	–	–	–	–	31
K202	1.81	11.50	5.63	1.81	12.21	5.79	1.81	13.23	5.87	–	–	–	–	–	–	40
K203	1.81	12.96	7.09	–	–	–	–	–	–	–	–	–	–	–	–	53
K302	2.07	12.68	6.42	2.07	13.38	6.57	2.07	14.40	6.65	–	–	–	–	–	–	67
K303	2.07	14.13	7.87	.63	15.08	8.27	–	–	–	–	–	–	–	–	–	73
K402	–	–	–	2.36	14.76	7.36	2.36	15.74	7.44	2.36	16.41	7.56	–	–	–	93
K403	2.36	15.51	8.66	.91	16.46	9.06	–	–	–	–	–	–	–	–	–	100
K513	–	–	–	.59	14.57	6.77	.59	15.59	6.85	.59	16.22	6.97	–	–	–	106
K514	–	–	–	.59	16.26	8.46	–	–	–	–	–	–	–	–	–	109
K613	–	–	–	.71	16.10	7.52	.71	17.12	7.60	.71	17.75	7.72	.71	19.49	8.27	170
K614	–	–	–	.71	17.79	9.21	–	–	–	–	–	–	–	–	–	177
K713	–	–	–	–	–	–	.79	18.42	8.70	.79	19.05	8.82	.79	20.75	9.33	221
K714	–	–	–	.79	19.13	10.35	.79	20.86	11.14	–	–	–	–	–	–	234
K813	–	–	–	–	–	–	.94	20.23	9.72	.94	20.82	9.80	.94	22.52	10.31	309
K814	–	–	–	–	–	–	.94	22.64	12.13	–	–	–	–	–	–	331

[1] Also available as **MR160/050** for a NEMA 56C frame motor.
[2] Also available as **MR250/180** for a NEMA 182/184TC frame motor.
[3] Also available as **MR300/180** for a NEMA 182/184TC, **MR300/210** for a NEMA 213/215TC, and **MR300/280** for a NEMA 284/286TC frame motor.
All weights are approximate.

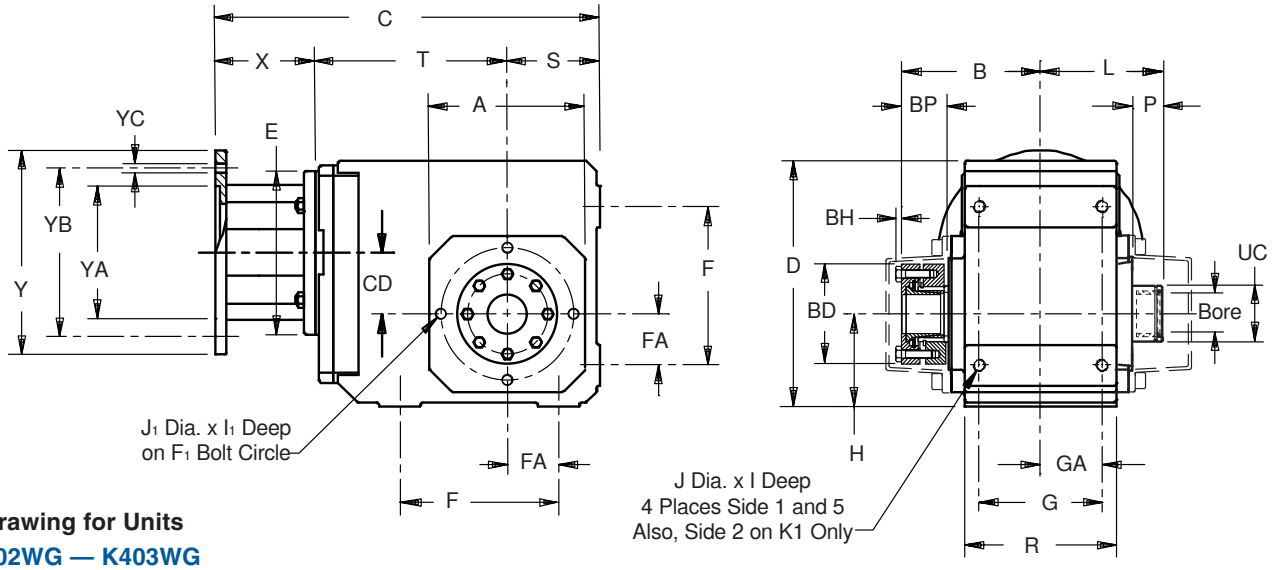
NOTE: A double side bushing kit includes 2 each of a pressure ring and clamp ring, flanged and tapered cone, and all hardware to mount the kit into the reducer. The WFB1 does not use a tapered cone. All double bushing kits include covers.
The bushing will accept a shaft with a tolerance of +.000/-.005.

Table No. 6 **"WFB" Double Side Bushings – Inches**

	Stock Bores Sizes — Inches											
Unit	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	2 3/8	2 7/16	2 3/4
K5	WFB5-107	WFB5-108	WFB5-110	WFB5-111	WFB5-112	WFB5-114	WFB5-115	WFB5-200	–	–	–	–
K6	WFB6-107	WFB6-108	WFB6-110	WFB6-111	WFB6-112	–	WFB6-115	WFB6-200	WFB6-203	–	–	–
K7	–	–	–	–	–	–	WFB7-115	WFB7-200	WFB7-203	WFB7-206	–	–
K8	–	–	–	–	–	–	–	–	WFB8-203	WFB8-206	WFB8-207	WFB8-212



"K" Series – MGS Reducer
Tapped Holes – "G" Housing
Single Bushing – Dimensional Data



Drawing for Units
K102WG — K403WG

Table No. 1 **"K" Series – Single Side Wobble Free Bushing – Unit Dimensions (Inches)**

Base Module	A	B	D	F	F_1	G	H	I	I_1	J	J_1	L	P	R	S	Z_1	BD	BP	BH	FA	GA	UC
K102	4.13	3.66	6.30	3.54	3.54	2.76	2.36	.51	.51	M8	M8	3.15	1.97	3.54	2.36	–	2.76	1.62	.16	1.18	1.38	1.54
K202/203	4.57	4.29	7.48	4.53	3.94	3.54	2.567	.63	.51	M10	M8	3.78	2.05	4.53	2.56	–	3.07	1.54	.16	1.38	1.7	1.73
K302/303	5.20	4.54	8.39	5.12	4.53	4.13	2.95	.63	.51	M10	M8	4.02	2.09	5.12	2.95	–	3.31	1.55	.16	1.57	2.07	1.93
K402/403	5.98	5.33	9.45	6.10	5.12	4.72	3.54	.75	.63	M12	M10	4.69	2.40	5.83	3.54	–	3.82	1.83	.20	1.97	2.36	2.13
K513/514	5.71	5.61	10.24	5.51	5.12	4.92	6.30	1.02	.63	M16	M10	4.96	2.40	6.30	3.94	5.98	4.13	1.87	.20	1.57	2.46	2.56
K613/614	7.09	6.10	12.20	6.30	6.50	5.12	7.48	1.02	.63	M16	M10	5.12	2.68	6.61	4.72	6.77	4.65	2.11	.24	1.97	2.56	2.91
K713/714	7.68	7.29	13.46	7.09	7.28	5.71	8.35	1.22	.75	M20	M12	6.20	2.91	7.48	4.92	7.52	5.43	2.70	.24	2.17	2.85	3.35
K813/814	8.90	8.70	16.14	9.45	8.46	7.28	10.43	1.50	.75	M24	M12	7.58	3.43	9.25	5.71	8.11	6.22	2.99	.31	2.95	3.64	3.94

Table No. 2 **Motor Adapter Dimensions (Inches)**

Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs.
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR300/180	182/184TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/210	213/215TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/250	254/256TC	11.81	6.50	9.00	8.500	7.25	.57	75
MR300/280	284/286TC	11.81	6.50	11.13	10.500	9.00	.57	75

Part No. Example

143TC Frame Motor Adapter
and $1^{7}/_{16}$ Bushing Bore

K303WG0650 MR160/140
WF3-107

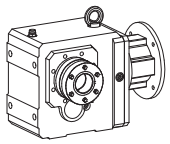
Table No. 3
"WF" Single Side Bushing – Metric

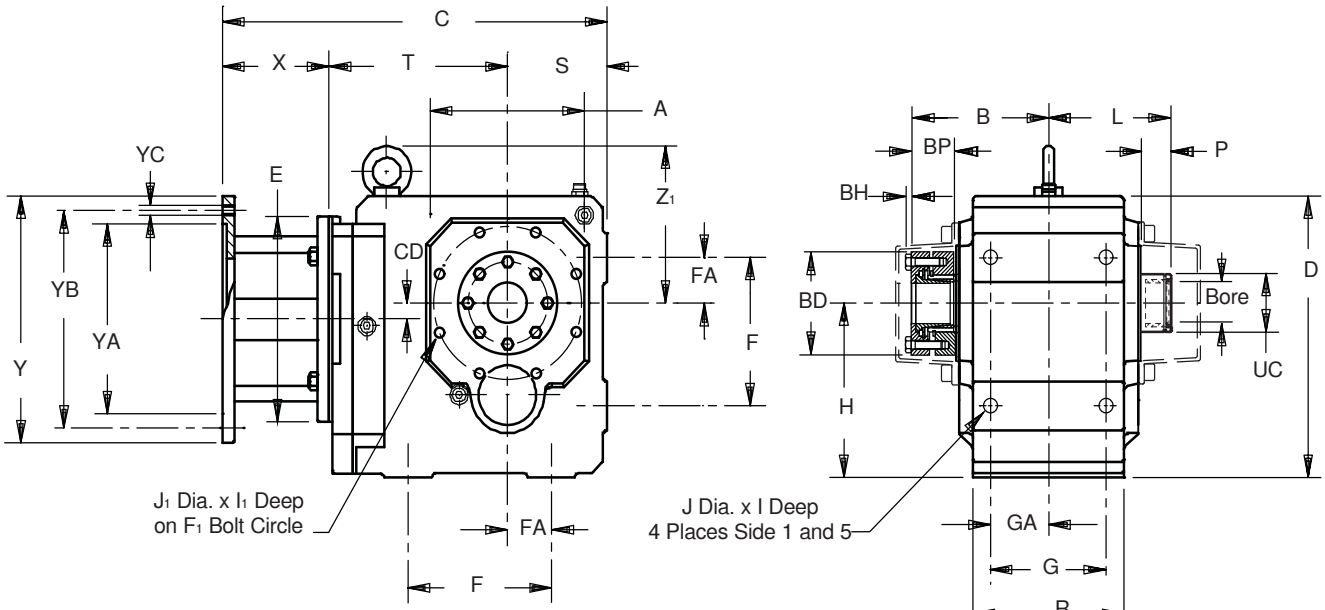
Unit	Stock Bores Sizes — mm		
	25	30	35
K1	**WF1-25**	–	–
K2	–	**WF2-30**	–
K3	–	**WF3-30**	**WF3-35**

Table No. 4 **"WF" Single Side Bushings**

Unit	Stock Bores Sizes					
	1	$1^{3}/_{16}$	$1^{1}/_{4}$	$1^{3}/_{8}$	$1^{7}/_{16}$	$1^{1}/_{2}$
K1	**WF1-100**	–	–	–	–	–
K2	**WF2-100**	**WF2-103**	–	–	–	–
K3	**WF3-100**	**WF3-103**	**WF3-104**	**WF3-106**	**WF3-107**	**WF3-108**
K4	**WF4-100**	**WF4-103**	**WF4-104**	**WF4-106**	**WF4-107**	**WF4-108**

"K" Series – MGS Reducer
Tapped Holes – "G" Housing
Single Bushing – Dimensional Data





Drawing for Units
K513WG — K814WG

Table No. 5 "K" Series – Single Side Wobble Free Bushing – Unit Dimensions (Inches)

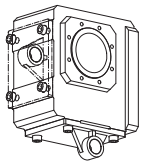
Base	MR140/050			MR160/140 [1]			MR200/180			MR250/210 [2]			MR300/250 [3]			Wt.
Module	CD	C	T	CD	C	T	CD	C	T	CD	C	T	CD	C	T	lbs.
K102	1.42	10.55	4.88	1.42	11.26	5.04	–	–	–	–	–	–	–	–	–	31
K202	1.81	11.50	5.63	1.81	12.21	5.79	1.81	13.23	5.87	–	–	–	–	–	–	40
K203	1.81	12.96	7.09	–	–	–	–	–	–	–	–	–	–	–	–	53
K302	2.07	12.68	6.42	2.07	13.38	6.57	2.07	14.40	6.65	–	–	–	–	–	–	67
K303	2.07	14.13	7.87	.63	15.08	8.27	–	–	–	–	–	–	–	–	–	73
K402	–	–	–	2.36	14.76	7.36	2.36	15.74	7.44	2.36	16.41	7.56	–	–	–	93
K403	2.36	15.51	8.66	.91	16.46	9.06	–	–	–	–	–	–	–	–	–	100
K513	–	–	–	.59	14.57	6.77	.59	15.59	6.85	.59	16.22	6.97	–	–	–	106
K514	–	–	–	.59	16.26	8.46	–	–	–	–	–	–	–	–	–	109
K613	–	–	–	.71	16.10	7.52	.71	17.12	7.60	.71	17.75	7.72	.71	19.49	8.27	170
K614	–	–	–	.71	17.79	9.21	–	–	–	–	–	–	–	–	–	177
K713	–	–	–	–	–	–	.79	18.42	8.70	.79	19.05	8.82	.79	20.75	9.33	221
K714	–	–	–	.79	19.13	10.35	.79	20.86	11.14	–	–	–	–	–	–	234
K813	–	–	–	–	–	–	.94	20.23	9.72	.94	20.82	9.80	.94	22.52	10.31	309
K814	–	–	–	–	–	–	.94	22.64	12.13	–	–	–	–	–	–	331

[1] Also available as **MR160/050** for a NEMA 56C frame motor.
[2] Also available as **MR250/180** for a NEMA 182/184TC frame motor.
[3] Also available as **MR300/180** for a NEMA 182/184TC, **MR300/210** for a NEMA 213/215TC, and **MR300/280** for a NEMA 284/286TC frame motor.
All weights are approximate.

NOTE: Single side bushing kits include 1 each of the pressure and locking ring, tapered cone, support ring, and all hardware to mount the kit into the MGS reducer. The WF1 bushing does not use a tapered cone. Covers are optional.
The bushing will accept a shaft with a tolerance of +.000/-.005.

Table No. 6 "WF" Single Side Bushings

	Stock Bores Sizes											
Unit	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	2 3/8	2 7/16	2 3/4
K5	WF5-107	WF5-108	WF5-110	WF5-111	WF5-112	WF5-114	WF5-115	WF5-200	–	–	–	–
K6	WF6-107	WF6-108	WF6-110	WF6-111	WF6-112	–	WF6-115	WF6-200	WF6-203	–	–	–
K7	–	–	–	–	–	–	WF7-115	WF7-200	WF7-203	WF7-206	–	–
K8	–	–	–	–	–	–	–	–	WF8-203	WF8-206	WF8-207	WF8-212



"K" Series – MGS Reducer Torque Arm Bracket

(torque arm supplied by others)

All brackets can be mounted on all units K102 through K1014 on Side 1 and Side 5.
The bracket can be mounted on the top side (Side 2) of K102 ONLY.

Drawing for Units
K102AGD — K403AGD

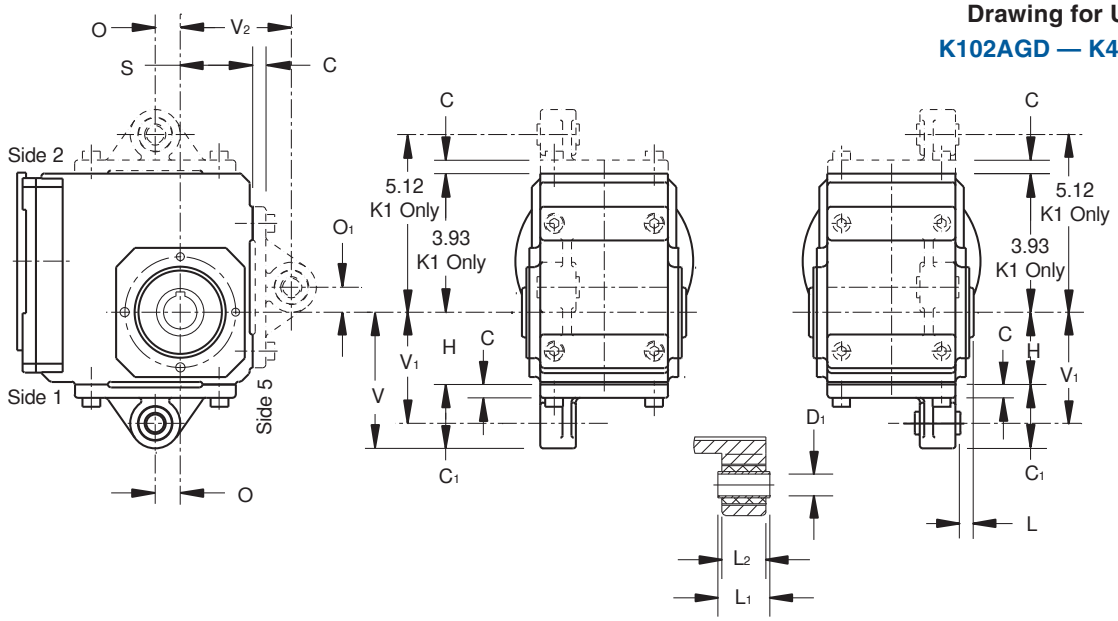
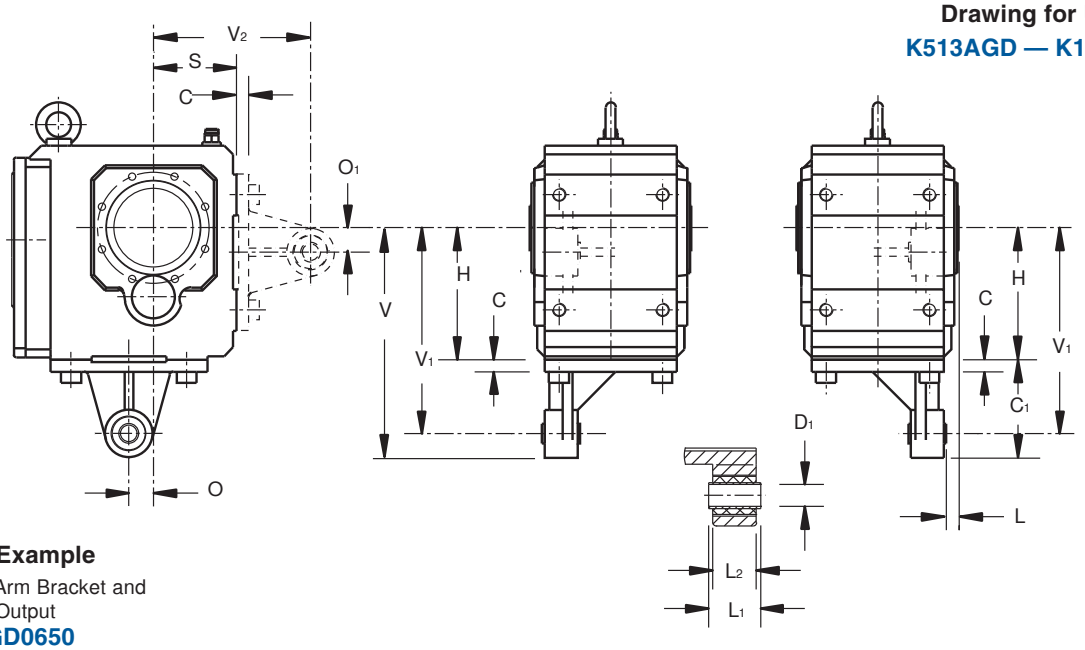


Table No. 1 **"K" Series — Torque Arm Bracket Dimensions (Inches)**

Base Module	C	C_1	D_1 H9		H	L	L_1	L2	O	O_1	S	V	V_1	V_2
K102	.39	2.03	.47	+0.017/-0.000	2.36	.51	1.10	.94	.59	.59	2.36	4.39	3.54	3.54
K202/K203	.47	2.26	.63	+0.017/-0.000	2.56	.53	1.50	1.26	.89	.89	2.56	4.82	3.93	3.93
K302/K303	.47	2.66	.63	+0.017/-0.000	2.95	.47	1.50	1.26	.98	.98	2.95	5.61	4.72	4.72
K402/K403	.55	3.46	.79	+0.020/-0.000	3.54	.67	1.81	1.57	1.08	1.08	3.54	7.00	5.91	5.91
K513/K514	.59	4.68	.79	+0.020/-0.000	6.30	.67	1.81	1.57	1.18	1.18	3.93	10.98	9.84	7.48
K613/K614	.59	3.50	.79	+0.020/-0.000	7.48	.81	1.81	1.57	1.18	1.18	4.72	10.98	9.84	7.09
K713/K714	.67	4.80	.79	+0.020/-0.000	8.35	.91	2.76	2.52	1.38	1.38	4.92	13.15	11.81	8.39
K813/K814	.67	4.77	.94	+0.020/-0.000	10.43	1.02	4.53	4.02	1.77	1.77	5.71	15.20	13.78	9.06
K913/K914	.79	6.80	.94	+0.020/-0.000	12.40	1.02	4.53	4.02	1.77	1.77	7.09	19.20	17.72	12.40
K1013/K1014	1.65	9.25	1.57	+0.024/-0.000	14.76	.24	4.88	4.65	2.36	2.17	8.86	24.01	21.65	15.75

Drawing for Units
K513AGD — K1014AGD

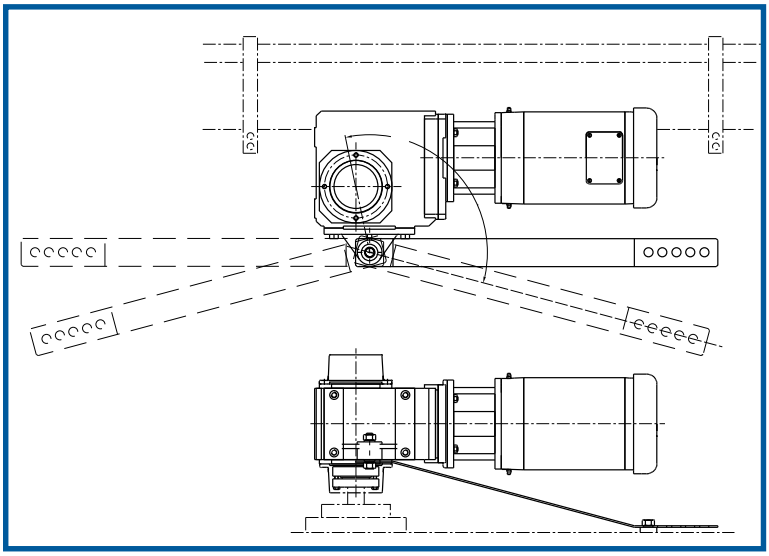


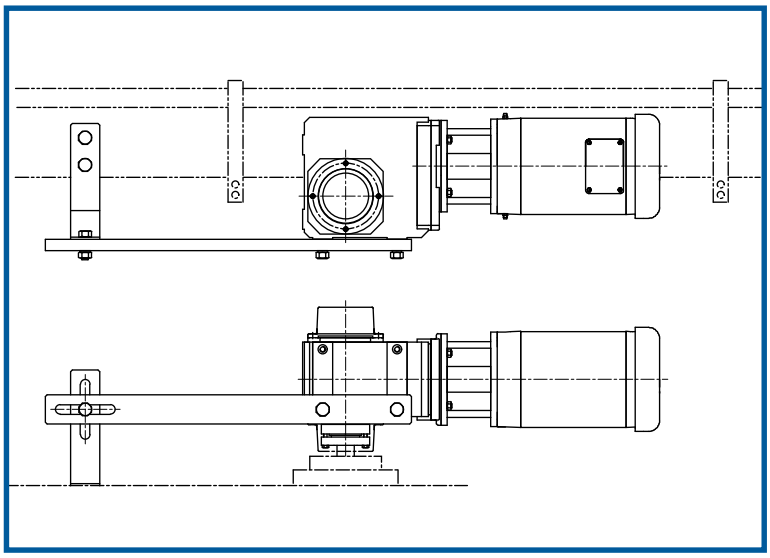
Part No. Example

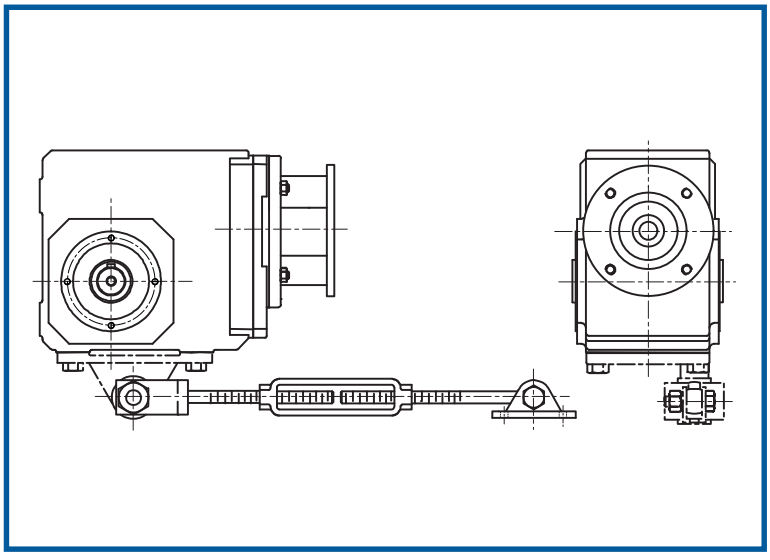
Unit with Torque Arm Bracket and Hollow Output
K513AGD0650

"K" Series – MGS Reducer
Torque Arm Mounting Method

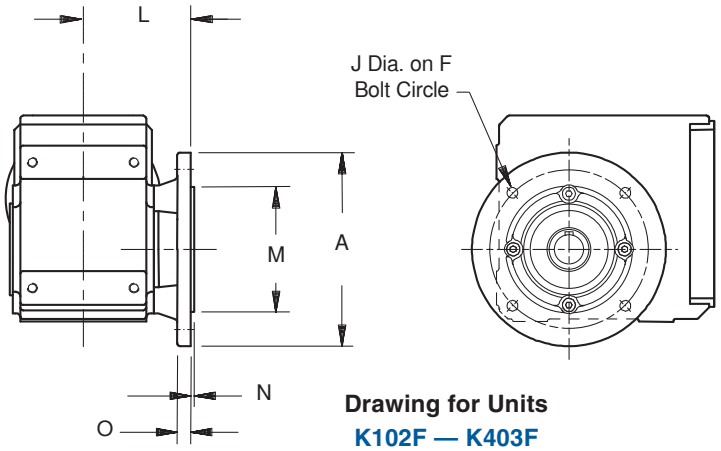
(torque arm supplied by others)



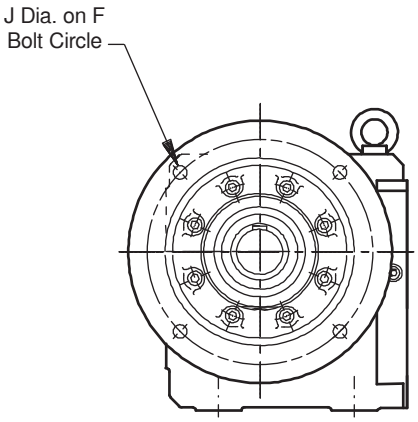




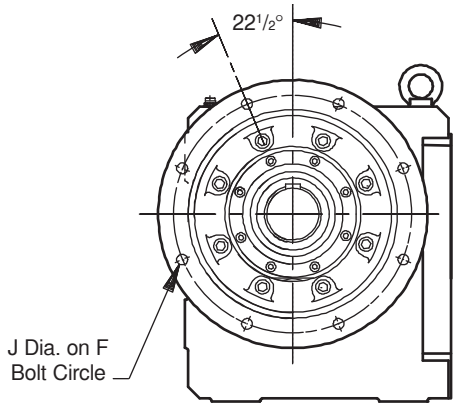
"K" Series – MGS Reducer
Optional Round Flanges



Drawing for Units
K102F — K403F



Drawing for Units
K513F — K814F



Drawing for Units
K913F — K1014F

Table No. 1 Flange Dimensions (Inches) – Standard and Optional

Base Module	Flange Size	A	F	J	L	M	N	O
K102	140	5.512	4.53	.35	3.35	3.740 +.001/-.0004	.12	.39
	160 *	6.300	5.12	.35	4.53	4.331 +.001/-.0004	.14	.39
K202/K203	160	6.300	5.12	.35	3.90	4.331 +.001/-.0004	.14	.47
	200 *	7.874	6.50	.43	5.31	5.118 +.001/-.0004	.14	.47
K302/K303	160	6.300	5.12	.35	4.37	4.331 +.001/-.0004	.14	.55
	200 *	7.874	6.50	.43	5.59	5.118 +.001/-.0004	.14	.55
K402/K403	250 *	9.843	8.46	.55	6.93	7.087 +.001/-.0004	.16	.59
K513/K514	250 *	9.843	8.46	.55	8.74	7.087 +.001/-.0004	.16	.59
K613/K614	300 *	11.811	12.20	.55	9.29	9.055 +.001/-.001	.16	.67
K713/K714	300	11.811	10.43	.55	6.18	9.055 +.001/-.001	.20	.71
	350 *	13.780	11.81	.71	10.91	9.842 +.000/-.001	.20	.71
K813/K814	350	13.780	11.81	.71	7.32	9.842 +.000/-.001	.20	.79
	400 *	15.748	13.78	.71	7.32	11.811 +.000/-.001	.20	.79
	450	17.717	15.75	.71	7.32	13.781 +.000/-.001	.20	.79
K913/K914	450 *	17.717	15.75	.71	8.46	13.780 +.000/-.001	.20	.91
K1013/K1014	550 *	21.654	19.69	.71	10.08	17.717 +.000/-.002	.20	.98

* This is the standard flange and will be shipped unless otherwise specified.
Optional flanges are not available for all sizes.

“S” Series Right Angle Helical/Worm Speed Reducers

3 YEAR WARRANTY

“S” Series

3-DAY DELIVERY

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"S" Series – Right Angle Helical/Worm MGS Speed Reducers

These durable units combine economy and versatility for a wide range of applications. MGS helical-before-worm gearing offers twice the efficiency of two-stage worm drives.

Performance Specifications:

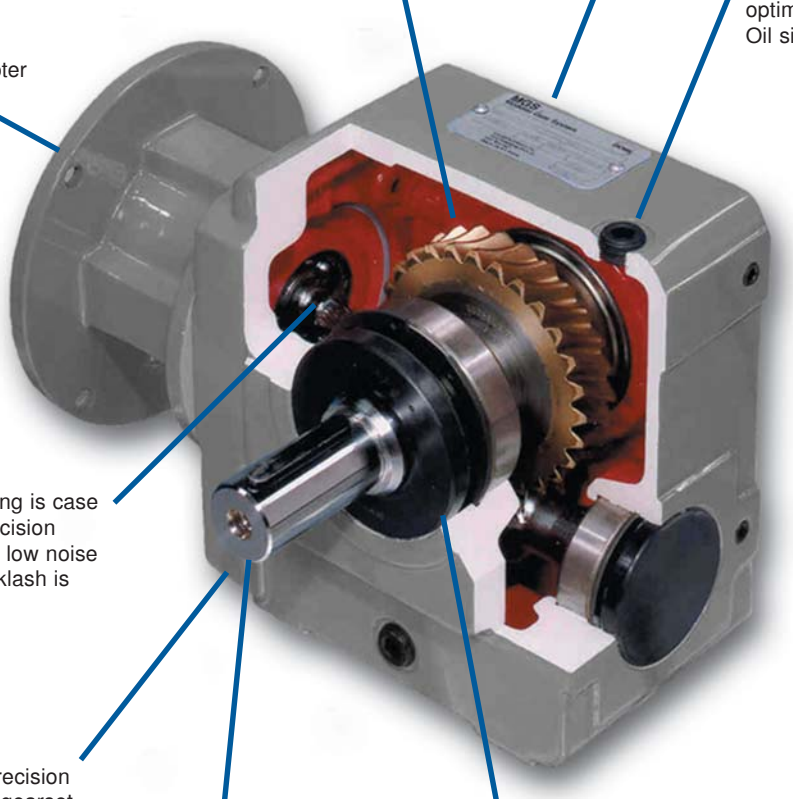
- Horsepower ratings from 1/6 to 8.19
- Output torques to 7,086 in. lbs.
- Output speeds available from 318 to 2.5 RPM
- Speed reducer ratios from 9.2:1 to 683:1
- 3 year warranty—your assurance of satisfactory product performance

Centrifugally cast bronze worm gear and precision worm provide excellent torque carrying capacity and high efficiency

Stainless steel nameplate and hardware

Strategically located oil fill, drain and breather ports for optimum mounting flexibility. Oil sight glass available.

Input Options:
- Input shaft
- NEMA C-face Adapter (coupling type)



High quality first stage helical gearing is case hardened to 58-62 Rockwell C. Precision finished with minimum backlash for low noise and long service life. Standard backlash is ≤20 arc minutes

One-piece cast iron housing with precision machined bearing supports assure gearset alignment, prolongs bearing life, provides exceptional overhung load capacities, and eliminates leakage problems common to drives with bolt-on output covers.

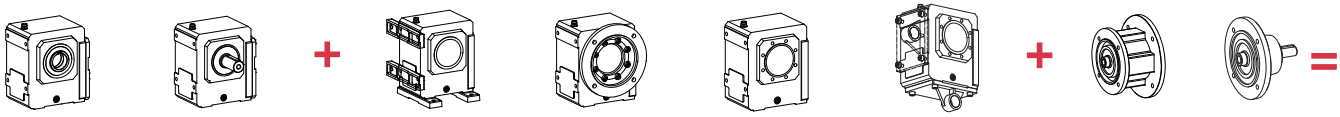
Output Options:
- Solid shaft
- Hollow

Double lip seals keep oil in and contaminants out. Double seals available for severe duty applications

Shipped with the proper amount and type of oil to prevent gear damaging dry start-ups

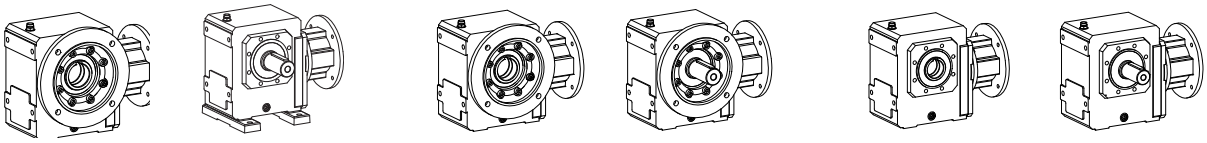
"S" Series – Right Angle Helical/Worm MGS Speed Reducers Overview

Output Style + Housing Style + Input Style = Reducer Configurations



Style A Hollow Output | Style V Solid Output | + | Style N Foot Mount | Style F Round Flange | Style G Tapped Holes | Style GD Torque Arm Bracket | + | MR Motor Adapter | AW Input Shaft | =

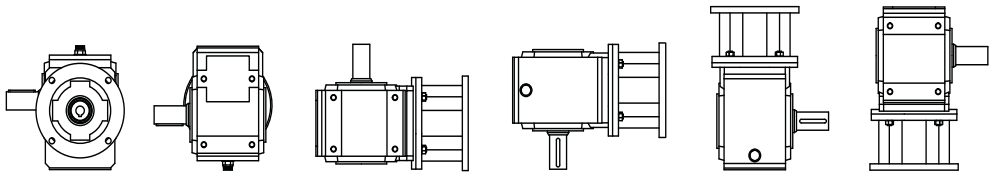
Reducer Configurations (See Page 112 for AW Input Shaft.)



Style AN Hollow Output | Style VN Solid Output | Style AF Hollow Output | Style VF Solid Output | Style AG Hollow Output | Style VG Solid Output

Mounting Positions (Units shown with shaft on Side 4.)

Mounting Position MUST BE SPECIFIED. (See Page 116 for more details.)
Standard Oil: Mobile 600XP220
Optional Oil: Food Grade Oil (Mobil SHC CIBUS 220)
Synthetic Oil (Mobil SHC630)



EL1 | EL2 | EL3 | EL4 | EL5 | EL6

Part No. Explanation with OPTIONS and REQUIRED INFORMATION

S 4 0 2 A N 0280 MR200 / 180

- S — Right Angle Helical/Worm
- 4 — Unit Size No.
- 0 — Design Generation
- 2 — No. of Stages (**2** = 2 Stage, determined by ratio)
- A — OUTPUT STYLE: "**A**" Hollow Output — **SPECIFY IN A NOTE**: Imperial or Metric[1)]
  "**V**" Solid Output — **SPECIFY IN A NOTE**: Imperial or Metric[1)], Single or Double
  IF Single: Shaft on Side 3 or Side 4
- N — HOUSING STYLE: "**F**" Housing Style — Flange Mounting — **SPECIFY IN A NOTE**: Flange on Side 3 or Side 4
  "**G**" Housing Style — Tapped Holes
  "**GD**" Housing Style — Torque Arm Bracket — **SPECIFY IN A NOTE**: Bracket on Side 1 or Side 5
  "**N**" Housing Style — Foot Mount — **SPECIFY IN A NOTE**: Feet on Side 1 or Side 5
- 0280 — Nominal Ratio: (**0280** = 27.9:1)
- MR200 — Motor Adapter Size: MR140, MR160, **MR200**, MR250
- 180 — 050 (56C), 140 (143/145TC), **180** (182/184TC), 210 (213/215TC),

THE FOLLOWING INFORMATION IS REQUIRED FOR ANY UNIT:
Mounting Position — EL1 EL2 EL3 EL4 EL5 EL6
Paint — Standard Gray, White, Stainless

[1)] Not available in all sizes.

"S" Series – Right Angle Helical/Worm MGS Reducer – Selection Data

Selection Procedure:

A. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
Input HP	Output Torque in. lbs.		Motor Adapter Size [3]	Motor Adapter NEMA C-Frame	Input Shaft			Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
190 RPM Output (Approximate)								**155 RPM**		**125 RPM**	
1.78	511	S102_0092	MR140/	050	AW140/010	9.200	593	1.69	589	1.60	684
1.78	511	S102_0092	MR160/	050, 140	AW160/012	9.200	593	1.69	589	1.60	684
3.26	939	S202_0092	MR140/	050	AW140/010	9.232	862	2.67	933	2.16	928
3.47	998	S202_0092	MR160/	050, 140	AW160/012	9.232	862	3.27	1,145	3.08	1,320
3.47	998	S202_0092	MR200/	180	AW200/014	9.232	862	3.27	1,145	3.08	1,320
5.17	1,499	S302_0093	MR160/	050, 140	AW160/012	9.310	1,078	5.20	1,834	4.25	1,836
5.17	1,499	S302_0093	MR200/	180	AW200/014	9.310	1,078	5.20	1,834	5.23	2,261
150 RPM Output (Approximate)								**125 RPM**		**100 RPM**	
1.68	598	S102_0115	MR140/	050	AW140/010	11.500	627	1.59	691	1.43	760
1.68	598	S102_0115	MR160/	050, 140	AW160/012	11.500	627	1.59	691	1.43	760
3.16	1,131	S202_0115	MR140/	050	AW140/010	11.600	912	2.58	1,125	2.10	1,118
3.26	1,165	S202_0115	MR160/	050, 140	AW160/012	11.600	912	3.07	1,337	2.89	1,541
3.26	1,165	S202_0115	MR200/	180	AW200/014	11.600	912	3.07	1,337	2.89	1,541
5.20	1,877	S302_0115	MR160/	050, 140	AW160/012	11.660	1,141	5.23	2,298	4.88	2,625
125 RPM Output (Approximate)								**100 RPM**		**80 RPM**	
1.61	689	S102_0140	MR140/	050	AW140/010	14.040	657	1.45	758	1.27	812
1.61	689	S102_0140	MR160/	050, 140	AW160/012	14.040	657	1.45	758	1.27	812
3.04	1,307	S202_0140	MR140/	050	AW140/010	13.910	956	2.48	1,299	2.01	1,292
3.07	1,319	S202_0140	MR160/	050, 140	AW160/012	13.910	956	2.89	1,513	2.57	1,651
3.07	1,319	S202_0140	MR200/	180	AW200/014	13.910	956	2.89	1,513	2.57	1,651
5.20	2,253	S302_0140	MR160/	050, 140	AW160/012	14.000	1,196	4.86	2,563	3.94	2,549
5.20	2,253	S302_0140	MR200/	180	AW160/012	14.000	1,196	4.93	2,602	4.31	2,790
8.00	3,479	S402_0140	MR160/	050, 140	AW160/012	13.950	1,554	7.77	4,110	6.79	4,407
8.00	3,479	S402_0140	MR200/	180	AW200/014	13.950	1,554	7.77	4,110	6.79	4,407
8.00	3,479	S402_0140	MR250/	180, 210	AW250/102	13.950	1,554	7.77	4,110	6.79	4,407
100 RPM Output (Approximate								**80 RPM**		**65 RPM**	
1.43	762	S102_0175	MR140/	050	AW140/010	17.470	695	1.26	815	1.10	874
1.43	762	S102_0175	MR160/	050, 140	AW160/012	17.470	695	1.26	815	1.10	874
2.89	1,544	S202_0175	MR140/	050	AW140/010	17.550	1,011	2.41	1,567	1.96	1,559
2.89	1,544	S202_0175	MR160/	050, 140	AW160/012	17.550	1,011	2.56	1,664	2.24	1,784
3.02	1,625	S302_0175	MR140/	050	AW140/010	17.370	1,264	2.46	1,617	2.00	1,608
4.85	2,614	S302_0175	MR160/	050, 140	AW160/012	17.370	1,264	4.26	2,796	3.73	2,998
4.85	2,614	S302_0175	MR200/	180	AW200/014	17.370	1,264	4.26	2,796	3.73	2,998
7.67	4,143	S402_0175	MR160/	050, 140	AW160/012	17.490	1,644	6.74	4,432	5.89	4,752
7.67	4,143	S402_0175	MR200/	180	AW200/014	17.490	1,644	6.74	4,432	5.89	4,752
7.67	4,143	S402_0175	MR250/	180, 210	AW250/102	17.490	1,644	6.74	4,432	5.89	4,752
75 RPM Output (Approximate) Continued Next Page								**60 RPM**		**50 RPM**	
1.19	837	S102_0230	MR140/	050	AW140/010	23.140	747	1.04	895	0.91	960
1.19	837	S102_0230	MR160/	050, 140	AW160/012	23.140	747	1.04	895	0.91	960
2.42	1,709	S202_0230	MR140/	050	AW140/010	23.290	1,087	2.12	1,828	1.85	1,954

For thermal HP capacity, see rating below.

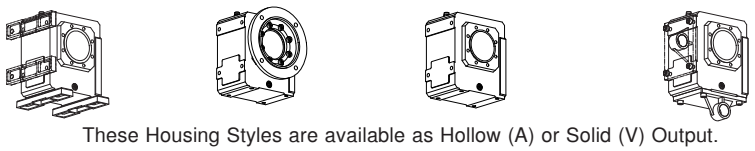
Base Module Thermal Capacity	S1	S2	S3	S4
	2.95	5.36	7.38	12.34

NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10

Housing Styles

N — Foot Mounted **F** — Round Flange **G** — Tapped Holes **GD** — Torque Arm Bracket



These Housing Styles are available as Hollow (A) or Solid (V) Output.

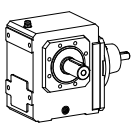
"S" Series – Right Angle Helical/Worm MGS Reducer – Selection Data

NOTE: [1] Complete Base Module Part Number by adding Housing and Output Style. Example: S302**VG**0590.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

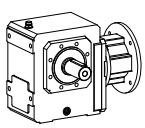
1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
75 RPM Output (Approximate) Continued								**60 RPM**		**50 RPM**	
2.42	1,709	S202_0230	MR160/	050, 140	AW160/012	23.290	1,087	2.12	1,828	1.85	1,960
2.88	2,056	S302_0230	MR140/	050	AW140/010	23.400	1,359	2.36	2,046	1.91	2,037
4.05	2,887	S302_0230	MR160/	050, 140	AW160/012	23.400	1,359	3.55	3,088	3.11	3,311
4.05	2,887	S302_0230	MR200/	180	AW200/014	23.400	1,359	3.55	3,088	3.11	3,311
6.38	4,566	S402_0230	MR160/	050, 140	AW160/012	23.400	1,767	5.61	4,883	4.90	5,236
6.38	4,566	S402_0230	MR200/	180	AW200/014	23.400	1,767	5.61	4,883	4.90	5,236
6.38	4,566	S402_0230	MR250/	180	AW250/102	23.400	1,767	5.61	4,883	4.90	5,236
60 RPM Output (Approximate)								**50 RPM**		**40 RPM**	
1.06	890	S102_0280	MR140/	050	AW140/010	27.900	782	0.93	952	0.81	1,021
1.06	890	S102_0280	MR160/	050, 140	AW160/012	27.900	782	0.93	952	0.81	1,021
2.15	1,819	S202_0280	MR140/	050	AW140/010	28.080	1,138	1.89	1,946	1.65	2,087
2.15	1,819	S202_0280	MR160/	050, 140	AW160/012	28.080	1,138	1.89	1,946	1.65	2,087
2.78	2,369	S302_0280	MR140/	050	AW140/010	28.010	1,422	2.27	2,359	1.84	2,348
3.60	3,065	S302_0280	MR160/	050, 140	AW160/012	28.010	1,422	3.16	3,278	2.76	3,515
3.60	3,065	S302_0280	MR200/	180	AW200/014	28.010	1,422	3.16	3,278	2.76	3,515
5.39	4,610	S402_0280	MR160/	050, 140	AW160/012	27.900	1,849	4.41	4,588	3.57	4,566
5.66	4,841	S402_0280	MR200/	180	AW200/014	27.900	1,849	4.97	5,178	4.35	5,552
50 RPM Output (Approximate)								**40 RPM**		**30 RPM**	
0.92	960	S102_0350	MR140/	050	AW140/010	34.920	826	0.78	992	0.63	988
0.92	960	S102_0350	MR160/	050, 140	AW160/012	34.920	826	0.78	992	0.63	988
1.86	1,953	S202_0350	MR140/	050	AW140/010	34.710	1,202	1.64	2,089	1.39	2,176
1.86	1,953	S202_0350	MR160/	050, 140	AW160/012	34.710	1,202	1.64	2,089	1.39	2,176
2.67	2,820	S302_0350	MR140/	050	AW140/010	34.890	1,503	2.18	2,808	1.77	2,796
3.12	3,298	S302_0350	MR160/	050, 140	AW160/012	34.890	1,503	2.74	3,527	2.27	3,591
4.92	5,217	S402_0350	MR160/	050, 140	AW160/012	34.920	1,954	4.04	5,219	3.28	5,197
4.92	5,217	S402_0350	MR200/	180	AW200/014	34.920	1,954	4.04	5,219	3.28	5,197
40 RPM Output (Approximate)								**30 RPM**		**25 RPM**	
0.82	995	S102_0440	MR140/	050	AW140/010	43.680	874	0.73	1,065	0.65	1,161
0.82	995	S102_0440	MR160/	050, 140	AW160/012	43.680	874	0.73	1,065	0.65	1,161
1.42	1,751	S202_0440	MR140/	050	AW140/010	43.880	1,272	1.25	1,876	1.13	2,075
1.42	1,751	S202_0440	MR160/	050, 140	AW160/012	43.880	1,272	1.25	1,876	1.13	2,075
2.63	3,301	S302_0430	MR160/	050, 140	AW160/012	43.440	1,590	2.33	3,557	2.10	3,910
3.86	4,893	S402_0440	MR160/	050, 140	AW160/012	43.710	2,067	3.43	5,267	3.08	5,799
3.86	4,893	S402_0440	MR200/	180	AW200/014	43.710	2,067	3.43	5,267	3.08	5,799
3.86	4,893	S402_0440	MR250/	180	AW250/102	43.710	2,067	3.43	5,267	3.08	5,799
30 RPM Output (Approximate) Continued Next Page								**25 RPM**		**20 RPM**	
0.69	1,100	S102_0580	MR140/	050	AW140/010	57.860	940	0.61	1,189	0.53	1,261
0.69	1,100	S102_0580	MR160/	050, 140	AW140/010	57.860	940	0.61	1,189	0.53	1,261
1.19	1,945	S202_0580	MR140/	050	AW140/010	58.220	1,367	1.08	2,141	0.95	2,306
1.19	1,945	S202_0580	MR160/	050, 140	AW160/012	58.220	1,367	1.08	2,141	0.95	2,306

Part No. Explanation

S 3 0 2 V G 0590 AW 160 / 012
- Shaft Dia. (1/16 in.; example — 012 = 12/16 or 3/4)
- Size
- Input Shaft
- Ratio (0590 = 59.0:1)
- Housing Style
- Output Style (A-hollow; V-solid)
- No. of Gear Reductions
- Generation No.
- Unit No.
- Right Angle Helical/Worm



S 3 0 2 V G 0590 MR 160 / 140
- Motor Frame Size (140=143/145TC)
- Size
- Motor Adapter
- Ratio (0590 = 59.0:1)
- Housing Style
- Output Style (A-hollow; V-solid)
- No. of Reductions
- Generation No.
- Unit No.
- Right Angle Helical/Worm



Mounting position must be specified when ordering.

"S" Series – Right Angle Helical/Worm MGS Reducer – Selection Data

Selection Procedure:

A. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
Input HP	Output Torque in. lbs.		Motor Adapter Size [3]	Motor Adapter NEMA C-Frame	Input Shaft			Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
30 RPM Output (Approximate) Continued								**25 RPM**		**20 RPM**	
2.25	3,725	S302_0590	MR140/	050	AW140/010	58.500	1,709	2.01	4,040	1.75	4,306
2.25	3,725	S302_0590	MR160/	050, 140	AW160/012	58.500	1,709	2.01	4,040	1.75	4,306
3.29	5,500	S402_0590	MR160/	050, 140	AW160/012	58.500	2,222	2.95	5,984	2.57	6,393
3.29	5,500	S402_0590	MR200/	180	AW200/014	58.500	2,222	2.95	5,984	2.57	6,393
3.29	5,500	S402_0590	MR250/	180	AW250/102	58.500	2,222	2.95	5,984	2.57	6,393
25 RPM Output (Approximate)								**20 RPM**		**15 RPM**	
0.62	1,183	S102_0700	MR140/	050	AW140/010	69.750	983	0.54	1,254	0.46	1,314
0.62	1,183	S102_0700	MR160/	050, 140	AW160/012	69.750	983	0.54	1,254	0.46	1,314
1.09	2,128	S202_0700	MR140/	50	AW140/010	70.200	1,431	0.97	2,290	0.84	2,426
1.09	2,128	S202_0700	MR160/	050, 140	AW160/012	70.200	1,431	0.97	2,290	0.84	2,426
2.03	4,009	S302_0700	MR140/	50	AW140/010	70.030	1,789	1.78	4,272	1.53	4,494
2.03	4,009	S302_0700	MR160/	050, 140	AW160/012	70.030	1,789	1.78	4,272	1.53	4,494
2.97	5,927	S402_0700	MR160/	050, 140	AW160/012	69.750	2,325	2.61	6,333	2.25	6,676
20 RPM Output (Approximate)								**15 RPM**		**13 RPM**	
0.54	1,262	S102_0870	MR140/	050	AW140/010	87.300	1,039	0.46	1,318	0.39	1,366
0.54	1,262	S102_0870	MR160/	050, 140	AW160/012	87.300	1,039	0.46	1,318	0.39	1,366
0.95	2,297	S202_0870	MR140/	050	AW140/010	86.790	1,512	0.83	2,428	0.71	2,538
0.95	2,297	S202_0870	MR160/	050, 140	AW160/012	86.790	1,512	0.83	2,428	0.71	2,538
1.76	4,293	S302_0870	MR140/	050	AW140/010	87.230	1,890	1.52	4,504	1.29	4,682
1.76	4,293	S302_0870	MR160/	050, 140	AW160/012	87.230	1,890	1.52	4,504	1.29	4,682
2.59	6,374	S402_0870	MR160/	050, 140	AW160/012	87.300	2,457	2.23	6,698	1.90	6,972
15 RPM Output (Approximate)								**12 RPM**		**10 RPM**	
0.43	1,340	S102_1170	MR140/	050	AW140/010	116.700	1,117	0.37	1,382	0.31	1,417
0.78	2,478	S202_1160	MR140/	050	AW140/010	116.100	1,625	0.66	2,575	0.56	2,657
0.78	2,478	S202_1160	MR160/	050, 140	AW160/012	116.100	1,625	0.66	2,575	0.56	2,657
1.42	4,580	S302_1160	MR140/	050	AW140/010	116.100	2,031	1.21	4,738	1.01	4,872
1.42	4,580	S302_1160	MR160/	050, 140	AW160/012	116.100	2,031	1.21	4,738	1.01	4,872
2.09	6,817	S402_1160	MR160/	050, 140	AW160/012	116.300	2,640	1.78	7,060	1.46	7,086
12 RPM Output (Approximate)								**10 RPM**		**8 RPM**	
0.38	1,378	S102_1400	MR140/	050	AW140/010	139.500	1,164	0.32	1,407	0.26	1,401
0.68	2,557	S203_1360	MR140/	050	AW140/010	136.300	1,693	0.58	2,640	0.47	2,657
0.69	2,567	S202_1400	MR140/	050	AW140/010	139.500	1,693	0.58	2,649	0.47	2,657
1.21	4,584	S302_1400	MR140/	050	AW140/010	139.900	2,117	0.99	4,562	0.80	4,542
1.21	4,584	S302_1400	MR160/	050, 140	AW160/012	139.900	2,117	0.99	4,562	0.80	4,542
1.83	7,000	S403_1350	MR160/	050, 140	AW160/012	134.900	2,752	1.52	7,086	1.24	7,086
1.84	7,041	S402_1400	MR160/	050, 140	AW160/012	139.900	2,752	1.52	7,086	1.24	7,086

For thermal HP capacity, see rating below.

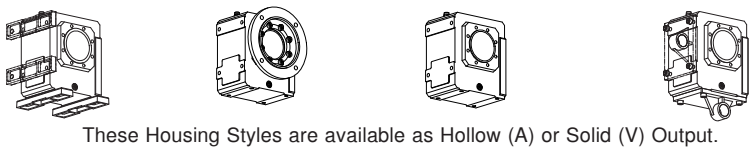
Base Module	S1	S2	S3	S4
Thermal Capacity	2.95	5.36	7.38	12.34

NEMA TEFC 1750 RPM

Frame Size	C-Frame	Motor HP
050	56C	1/3 - 1 1/2
140	143/145TC	1, 1 1/2, 2
180	182/184TC	3, 5
210	213/215TC	7 1/2, 10

Housing Styles

N — Foot Mounted **F** — Round Flange **G** — Tapped Holes **GD** — Torque Arm Bracket



These Housing Styles are available as Hollow (A) or Solid (V) Output.

"S" Series – Right Angle Helical/Worm MGS Reducer – Selection Data

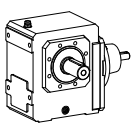
NOTE: [1] Complete Base Module Part Number by adding Housing and Output Style. Example: S302**VG**0590.
[2] Select Input Option (Motor Adapter **or** Input Shaft) and add to Part Number.
[3] Select Motor Adapter Size plus required Motor Frame Size. Example: **MR160/** plus **050** for 56C
[4] Overhung Load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input		1160 RPM Input	
			Motor Adapter		Input Shaft						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame				Input HP	Output Torque in. lbs.	Input HP	Output Torque in. lbs.
10 RPM Output (Approximate)								**8 RPM**		**6 RPM**	
0.25	1,143	S102_1740	MR140/	050	AW140/010	174.100	1,230	0.21	1,138	0.17	1,134
0.57	2,651	S203_1720	MR140/	050	AW140/010	171.800	1,789	0.47	2,657	0.38	2,657
1.03	4,848	S303_1680	MR160/	050, 140	AW160/012	167.900	2,236	0.85	4,872	0.69	4,872
1.03	4,855	S303_1700	MR140/	050	AW140/010	170.100	2,236	0.85	4,872	0.69	4,872
1.49	7,086	S403_1690	MR160/	050, 140	AW160/012	169.000	2,907	1.23	7,086	1.00	7,086
7 RPM Output (Approximate)								**6 RPM**		**5 RPM**	
0.26	1,253	S102_2420	MR140/	050	AW140/010	242.000	1,237	0.22	1,306	0.19	1,350
0.43	2,657	S203_2280	MR140/	050	AW140/010	228.000	1,800	0.35	2,657	0.29	2,657
0.78	4,872	S303_2260	MR160/	050, 140	AW160/012	226.200	2,250	0.64	4,872	0.52	4,872
1.12	7,086	S403_2290	MR140/	050	AW140/010	229.100	2,925	0.92	7,086	0.75	7,085
1.12	7,086	S403_2260	MR160/	050, 140	AW160/012	226.200	2,925	0.92	7,086	0.75	7,086
6 RPM Output (Approximate)								**5 RPM**		**4 RPM**	
0.22	1,300	S102_2890	MR140/	050	AW140/010	289.300	1,237	0.19	1,344	0.16	1,381
0.36	2,657	S203_2750	MR140/	050	AW140/010	275.000	1,800	0.30	2,657	0.24	2,657
0.65	4,872	S303_2740	MR140/	050	AW140/010	274.300	2,250	0.54	4,872	0.44	4,872
0.65	4,872	S303_2710	MR160/	050, 140	AW160/012	270.800	2,250	0.54	4,872	0.44	4,872
0.94	7,086	S403_2730	MR140/	050	AW140/010	273.200	2,925	0.77	7,086	0.63	7,086
5 RPM Output (Approximate)								**4 RPM**		**3 RPM**	
0.19	1,348	S102_3610	MR140/	050	AW140/010	361.200	1,237	0.16	1,383	0.13	1,413
0.29	2,657	S203_3400	MR140/	050	AW140/010	339.900	1,800	0.24	2,657	0.19	2,657
0.53	4,872	S303_3370	MR160/	050, 140	AW160/012	337.300	2,250	0.43	4,872	0.35	4,872
0.53	4,872	S303_3420	MR140/	050	AW140/010	341.700	2,250	0.43	4,872	0.35	4,872
0.76	7,086	S403_3380	MR160/	050, 140	AW160/012	337.600	2,925	0.62	7,086	0.51	7,086
0.76	7,086	S403_3420	MR140/	050	AW140/010	341.900	2,925	0.62	7,086	0.51	7,086
4 RPM Output (Approximate)								**3 RPM**		**2.5 RPM**	
0.22	2,657	S203_4550	MR140/	050	AW140/010	454.700	1,800	0.18	2,657	0.15	2,657
0.40	4,872	S303_4550	MR140/	050	AW140/010	454.700	2,250	0.33	4,872	0.26	4,872
0.40	4,872	S303_4490	MR160/	050, 140	AW160/012	448.900	2,250	0.33	4,872	0.26	4,872
0.57	7,086	S403_4560	MR140/	050	AW140/010	455.500	2,925	0.47	7,086	0.38	7,086
3 RPM Output (Approximate)								**2.5 RPM**		**2 RPM**	
0.18	2,655	S203_5460	MR140/	050	AW140/010	546.400	1,800	0.15	2,650	0.12	2,645
0.30	4,475	S303_5480	MR140/	050	AW140/010	548.000	2,250	0.25	4,465	0.20	4,457
0.48	7,086	S403_5410	MR160/	050, 140	AW160/012	541.000	2,925	0.39	7,086	0.32	7,086
2.5 RPM Output (Approximate)								**2 RPM**		**1.5 RPM**	
0.12	2,208	S203_6830	MR140/	050	AW140/010	683.000	1,800	0.10	2,204	0.08	2,201
0.34	6,303	S403_6820	MR140/	050	AW140/010	682.100	2,925	0.28	6,291	0.23	6,280

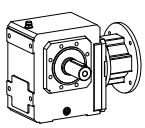
NOTE: For slower speeds than those listed above, units can be combined. Contact STOBER Drives Inc.

Part No. Explanation

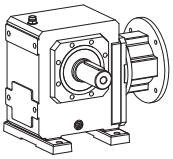
S 3 0 2 V G 0590 AW 160 / 012
- Shaft Dia. ($^{1}/_{16}$ in.; example — 012 = $^{12}/_{16}$ or $^{3}/_{4}$)
- Size
- Input Shaft
- Ratio (0590 = 59.0:1)
- Housing Style
- Output Style (A-hollow; V-solid)
- No. of Gear Reductions
- Generation No.
- Unit No.
- Right Angle Helical/Worm



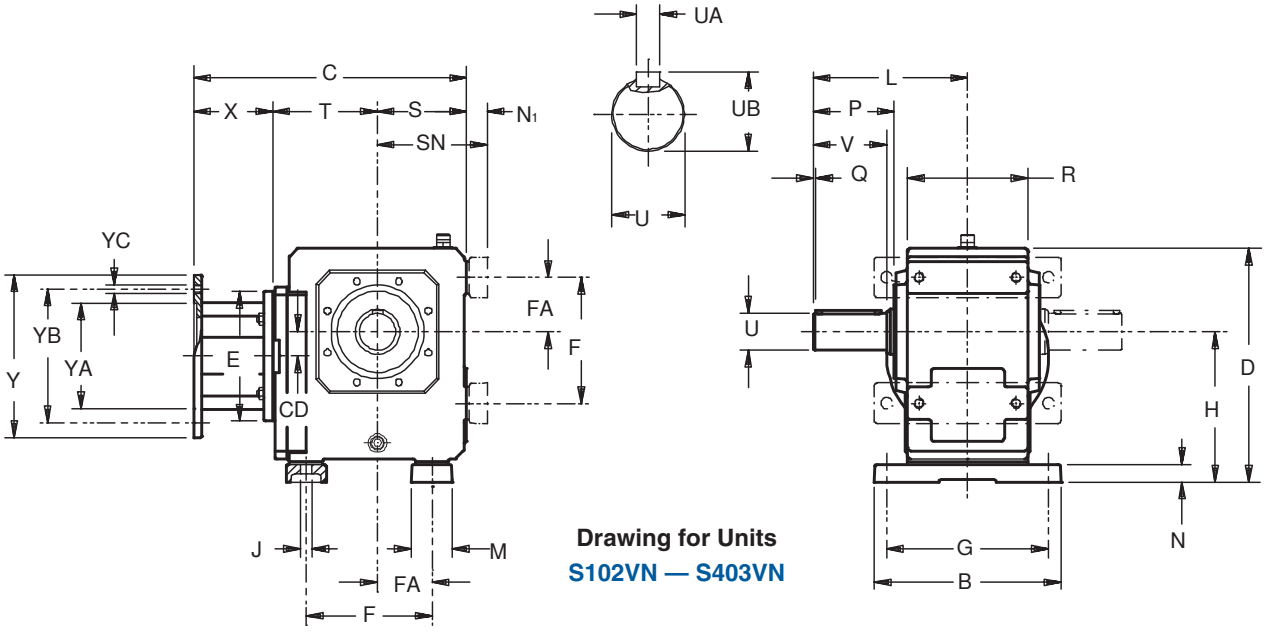
S 3 0 2 V G 0590 MR 160 / 140
- Motor Frame Size (140=143/145TC)
- Size
- Motor Adapter
- Ratio (0590 = 59.0:1)
- Housing Style
- Output Style (A-hollow; V-solid)
- No. of Reductions
- Generation No.
- Unit No.
- Right Angle Helical/Worm



Mounting position must be specified when ordering.



"S" Series – MGS Reducer
Foot Mount – "N" Housing
Shaft Output – Dimensional Data



Drawing for Units
S102VN — S403VN

Table No. 1 **"S" Series – Foot Mounting Unit Dimensions (Inches) – "N" Housing Style**

Base Module	B	D	F	G	H	J	L	M	N	N_1	P	Q	R	S	V	FA	SN
S102	5.51	7.17	3.54	4.53	4.53	.35	4.53	1.18	.51	.59	2.32	.16	3.54	2.76	1.97	1.57	3.35
S202/203	7.28	8.78	4.53	6.10	5.63	.43	5.43	1.57	.79	.91	2.64	.16	4.53	3.35	2.36	2.05	4.25
S302/303	7.87	10.08	5.12	6.69	6.42	.43	6.69	1.77	.79	.91	3.54	.16	5.12	3.94	3.15	2.05	4.84
S402/403	9.06	11.34	6.10	7.87	7.28	.55	7.48	1.97	.87	.98	3.94	.16	5.83	4.33	3.54	2.64	5.31

Table No. 2 **Metric output available on request.**

	Standard Shaft - inches			Optional Shaft - mm		
Base Module	U	UA	UB	U	UA	UB
S102	1.000	$^1/_4 \times ^1/_4 \times 1^1/_2$	1.11	25_{k6}	A8x7x40	28.0
S202/203	1.250	$^1/_4 \times ^1/_4 \times 1^{15}/_{16}$	1.36	30_{k6}	A8x7x50	33.0
S302/303	1.375	$^5/_{16} \times ^5/_{16} \times 2^5/_{16}$	1.51	40_{k6}	A12x8X70	43.0
S402/403	1.750	$^3/_8 \times ^3/_8 \times 3^5/_{32}$	1.92	45_{k6}	A14x9x80	48.5

Part No. Example
Foot Mounting with Motor Adapter
S302VN0620 MR160/140

Table No. 3
"S" Series – Foot Mounting Dimensions (Inches) – "N" Housing Style

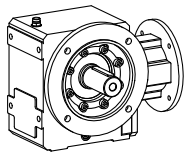
Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36

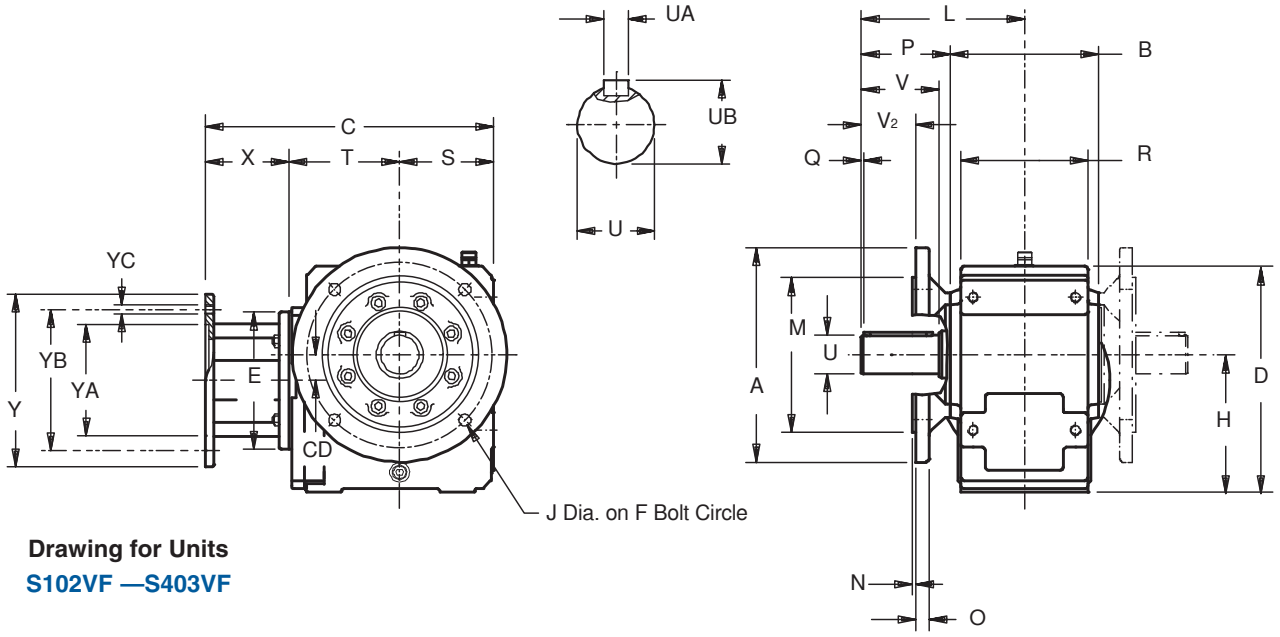
Table No. 4 **"S" Series – Foot Mounting Dimensions (Inches) – "N" Housing Style**

Base	MR140/050			MR160/140 [1]			MR200/180			MR250/210 [2]			Approx.
Module	CD	C	T	CD	C	T	CD	C	T	CD	C	T	Wt. lbs.
S102	.55	9.34	3.27	.55	10.05	3.43	–	–	–	–	–	–	31
S202	.67	10.52	3.86	.67	11.23	4.02	.67	12.24	4.09	–	–	–	49
S203	.67	11.97	5.31	–	–	–	–	–	–	–	–	–	53
S302	1.00	11.70	4.45	1.00	12.41	4.61	1.00	13.43	4.69	–	–	–	60
S303	1.00	13.16	5.91	2.44	14.10	6.30	–	–	–	–	–	–	67
S402	–	–	–	1.18	13.27	5.08	1.18	14.29	5.16	1.18	14.88	5.24	80
S403	1.18	14.02	6.38	2.64	14.96	6.77	–	–	–	–	–	–	95

[1] Also available as **MR160/050** for a NEMA 56C frame motor.
[2] Also available as **MR250/180** for a NEMA 182/184TC frame motor.
All weights are approximate.

"S" Series – MGS Reducer
Flange Mount – "F" Housing
Shaft Output – Dimensional Data





Drawing for Units
S102VF —S403VF

Table No. 1 **"S" Series – Round Flange Unit Dimensions (Inches) – "F" Housing Style**

Base Module	A [1]	B	D	F	H	J	L	M	N	O	P	Q	R	S	V	V_2
S102	6.30	4.17	6.57	5.12	3.94	.35	4.53	4.331	.14	.39	2.44	.16	3.54	2.76	1.97	1.18
S202/203	7.87	5.28	7.87	6.50	4.72	.43	5.43	5.118	.14	.55	2.80	.16	4.53	3.35	2.36	1.30
S302/303	9.84	6.02	9.17	8.46	5.51	.55	6.69	7.087	.16	.59	3.68	.16	5.12	3.94	3.15	2.11
S402/403	9.84	6.81	10.35	8.46	6.30	.55	7.48	7.087	.16	.59	4.07	.16	5.83	4.33	3.54	2.52

[1] See Page 109 for other flange sizes. Optional flanges are not available for all sizes.

Table No. 2 **Metric output available on request.**

	Standard Shaft - inches			Optional Shaft - mm		
Base Module	U	UA	UB	U	UA	UB
S102	1.000	$^1/_4 \times ^1/_4 \times 1^1/_2$	1.11	25_{k6}	A8x7x40	28.0
S202/203	1.250	$^1/_4 \times ^1/_4 \times 1^{15}/_{16}$	1.36	30_{k6}	A8x7x50	33.0
S302/303	1.375	$^5/_{16} \times ^5/_{16} \times 2^5/_{16}$	1.51	40_{k6}	A12x8X70	43.0
S402/403	1.750	$^3/_8 \times ^3/_8 \times 3^5/_{32}$	1.92	45_{k6}	A14x9x80	48.5

Table No. 3
"S" Series – Round Flange Unit Dimensions (Inches) – "F" Housing Style

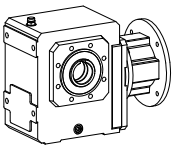
Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36

Table No. 4 "S" Series– Round Flange Unit Dimensions (Inches) –"F" Housing Style

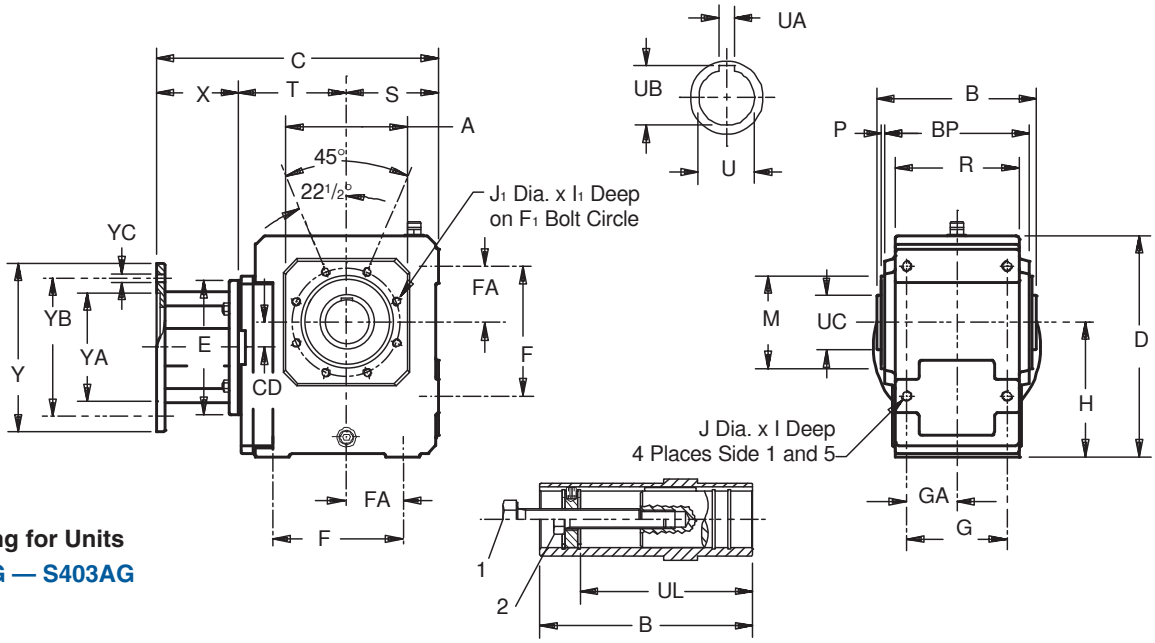
Base	MR140/050			MR160/140 [1]			MR200/180			MR250/210 [2]			Approx
Module	CD	C	T	CD	C	T	CD	C	T	CD	C	T	Wt. lbs.
S102	.55	9.34	3.27	.55	10.05	3.43	–	–	–	–	–	–	31
S202	.67	10.52	3.86	.67	11.23	4.02	.67	12.24	4.09	–	–	–	49
S203	.67	11.97	5.31	–	–	–	–	–	–	–	–	–	53
S302	1.00	11.70	4.45	1.00	12.41	4.61	1.00	13.43	4.69	–	–	–	60
S303	1.00	13.16	5.91	2.44	14.10	6.30	–	–	–	–	–	–	67
S402	–	–	–	1.18	13.27	5.08	1.18	14.29	5.16	1.18	14.88	5.24	80
S403	1.18	14.02	6.38	2.64	14.96	6.77	–	–	–	–	–	–	95

[1] Also available as **MR160/050** for a NEMA 56C frame motor.
[2] Also available as **MR250/180** for a NEMA 182/184TC frame motor.
All weights are approximate.

Part No. Example
Round Flange with Motor Adapter
S302VF0620 MR160/140



"S" Series – MGS Reducer
Tapped Holes – "G" Housing
Hollow Output – Dimensional Data



Drawing for Units
S102AG — S403AG

Table No. 1 **"S" Series – Tapped Holes Unit Dimensions (Inches) – "G" Housing Style**

Base Module	A	B	D	F	F_1	G	H	I	I_1	J	J_1 [1]	M	P	R	S	BP	FA	GA
S102	4.13	4.72	6.57	3.54	3.54	2.76	3.94	.51	.51	M8	M8	2.953	.12	3.54	2.76	4.17	1.57	1.38
S202/203	5.20	5.91	7.87	4.53	4.53	3.54	4.72	.63	.51	M10	M8	3.740	.16	4.53	3.35	5.28	2.05	1.77
S302/303	5.98	6.61	9.17	5.12	5.12	4.13	5.51	.63	.63	M10	M10	4.331	.14	5.12	3.94	6.02	2.05	2.05
S402/403	5.71	7.48	10.35	6.10	5.12	4.72	6.30	.75	.63	M12	M10	4.331	.14	5.83	4.33	6.81	2.64	2.36

[1] S102 through S303 has 4 tapped holes instead of 8 as shown on drawing.

Table No. 2 **Metric output available on request.**

	Standard Bore - inches			Optional Bore - mm					
Base Module	U	UA	UB	U	UA	UB	UC	UL	1
S102	1.000	.250	1.11	25_{H7}	8_{JS9}	28.3	1.57	3.86	½-13
S202/203	1.375	.312	1.52	35_{H7}	10_{JS9}	38.3	1.97	4.69	⅝-11
S302/303	1.500	.375	1.67	40_{H7}	12_{JS9}	43.3	2.17	5.39	¾-10
S402/403	1.750	.375	1.92	50_{H7}	14_{JS9}	53.8	2.56	6.24	¾-10

1. Removal Bolt – not supplied.
2. Mounting Bolt – must be smaller than removal bolt.

Part No. Example

Tapped Holes Housing with Motor Adapter

S302AG0620 MR160/140

Table No. 3

"S" Series – Tapped Holes Unit Dimensions (Inches) – "G" Housing Style

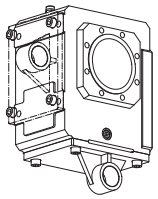
Motor Adapter	NEMA C-Flange	E	X	Y	YA	YB	YC	Wt. lbs
MR140/050	56C	5.51	3.31	6.50	4.500	5.87	.41	9
MR160/050	56C	6.30	3.86	6.50	4.500	5.87	.41	16
MR160/140	143/145TC	6.30	3.86	6.50	4.500	5.87	.41	16
MR200/180	182/184TC	7.87	4.80	9.00	8.500	7.25	.55	23
MR250/180	182/184TC	9.84	5.31	9.00	8.500	7.25	.55	36
MR250/210	213/215TC	9.84	5.31	9.00	8.500	7.25	.55	36

Table No. 4 "S" Series –Tapped Holes Unit Dimensions (Inches) –"G" Housing Style

Base	**MR140/050**			**MR160/140** [2]			**MR200/180**			**MR250/210** [3]			Approx.
Module	CD	C	T	CD	C	T	CD	C	T	CD	C	T	Wt. lbs.
S102	.55	9.34	3.27	.55	10.05	3.43	–	–	–	–	–	–	31
S202	.67	10.52	3.86	.67	11.23	4.02	.67	12.24	4.09	–	–	–	49
S203	.67	11.97	5.31	–	–	–	–	–	–	–	–	–	53
S302	1.00	11.70	4.45	1.00	12.41	4.61	1.00	13.43	4.69	–	–	–	60
S303	1.00	13.16	5.91	2.44	14.10	6.30	–	–	–	–	–	–	67
S402	–	–	–	1.18	13.27	5.08	1.18	14.29	5.16	1.18	14.88	5.24	80
S403	1.18	14.02	6.38	2.64	14.96	6.77	–	–	–	–	–	–	95

[2] Also available as **MR160/050** for a NEMA 56C frame motor.
[3] Also available as **MR250/180** for a NEMA 182/184TC frame motor.
All weights are approximate.

"S" Series – MGS Reducer
Torque Arm Bracket – "GD" Housing
(torque arm supplied by others)



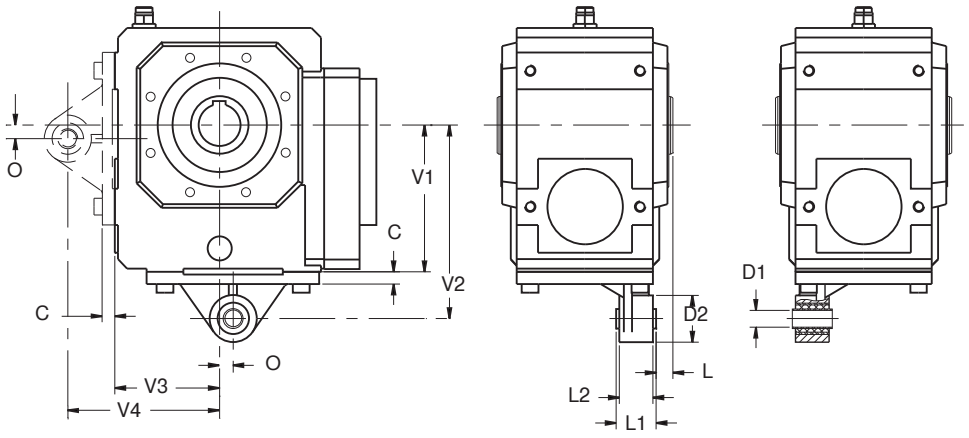


Table No. 1 "S" Series – Torque Arm Bracket Dimensions (Inches)

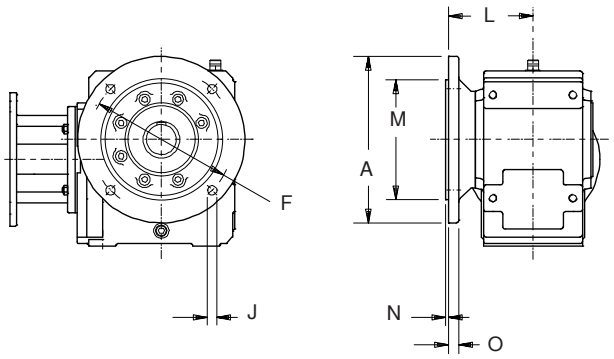
Base Module	C	D1 H9	D2	L	L1	L2	O	V1	V2	V3	V4
S102	.39	.47 +0.017/-.000	1.69	.51	1.10	.94	.20	3.93	5.12	2.76	3.93
S202/S203	.47	.63 +0.017/-.000	1.77	.57	1.50	1.26	.22	4.72	6.10	3.35	4.72
S302/S303	.47	.63 +0.017/-.000	1.77	.63	1.50	1.26	.51	5.51	7.28	3.93	5.71
S402/S403	.55	.79 +0.020/-.000	2.17	.71	1.81	1.57	.41	6.30	8.66	4.33	6.69

Part No. Example

Unit with Torque Arm Bracket
Hollow Output

S302AGD0620

"S" Series – MGS Reducer
Optional Output Flange



Drawing for Units
S102F — S403F

Table No. 2 Flange Dimensions (Inches) – Standard and Optional

Base Module	Flange Size	A	F	J	L	M	N	O
S1	140	5.512	4.53	.35	3.35	3.740 +.001/-.0004	.12	.39
	160 *	6.300	5.12	.35	4.53	4.331 +.001/-.0004	.14	.39
S2	160	6.300	5.12	.35	4.13	4.331 +.001/-.0004	.14	.55
	200 *	7.874	6.50	.43	4.13	5.118 +.001/-.0004	.14	.55
S3	**250***	9.843	8.46	.55	4.58	7.087 +.001/-.0004	.16	.59
S4	**250 ***	9.843	8.46	.55	4.96	7.087 +.001/-.0004	.16	.59

* This is the standard flange and will be shipped unless otherwise specified.
Optional flanges are not available for all sizes.

Notes

Miscellaneous

Other Products Available

STOBER has a wide variely of gearheads in many configurations and styles to fit your servo applications. Contact Technical Support.

STÖBER

www.stober.com

ComTrac® Adjustable Speed Drives
Washdown/Outdoor Service/ Severe Duty

Advantages:

STÖBER has developed a severe duty protection package for ComTrac drives which significantly improves the drives' ability to withstand the effects of outdoor use, exposure to excessively humid or acidic environments, or spray washed with water or caustic fluids.

The ComTrac severe duty package includes corrosion protection for all functional components and housings including:

- Drive cone
- Motor clamping ring
- Motor slide and rack
- Bearing housing
- Main housing cover

To prevent corrosion, these components are protected by a special heat treatment process similar to chrome plating.

Features:

Drive cone — Corrosion protected drive cone extends cone and ring life.

Speed adjustment — The protected motor slide, stainless steel control shaft with pinion, and greased rack and slideway assure the proper speed adjustment.

NEMA C-face input — ComTrac's patented corrosion resistent collet clamp ring assures ease of motor replacement.

External surface — All external surfaces are protected with a special acid-resistant epoxy paint to prevent corrosion and lubricant contamination.

Internal surface — All internal surfaces and bearing housing are protected with a special anticorrosion paint.

Double seals — Double output seals can be provided for maximum protection in very harsh environments.

Mounting position — ComTrac drives in a vertical mounting position (output shaft down) must be adapted to allow water to drain.

Stainless steel nameplate — Other features of the severe duty unit are: stainless steel nameplate, rivets, and chrome plated bolts.

Two year warranty — Like the standard drive, this ComTrac unit is also backed by a two-year warranty.

Delivery — ComTrac units are shipped in 3 days or less.

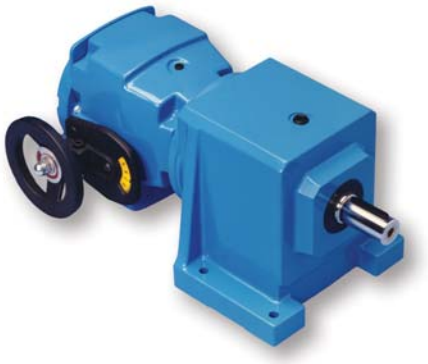
Miscellaneous

MGS® Adjustable Speed Drives

STOBER can offer a wider variety of sizes, ratios, and mounting positions than ever before by utilizing MGS Reducers and ComTrac Adjustable Speed Drives. These versatile gear drives offer you performance, durability, and economy for a wide range of variable speed applications. High efficiency helical gearing keeps motor size to a minimum while conserving energy.

"C" Series – Performance Specifications:

- Horsepower ratings — from 1/2 to 10
- Output speeds — available from 1,139 to 1.2 RPM
- Speed range — 5:1 to 7:1
- Output torques — up to 59,782 in.lbs.
- NEMA frames — from 56C to 215TC



STOBER's versatility continues with MGS Reducers and ComTrac Adjustable Speed Drives when using the Offset Helical Series. Compact size and flexibility make these gear drives a popular choice for applications that require high performance, efficiency, and durability.

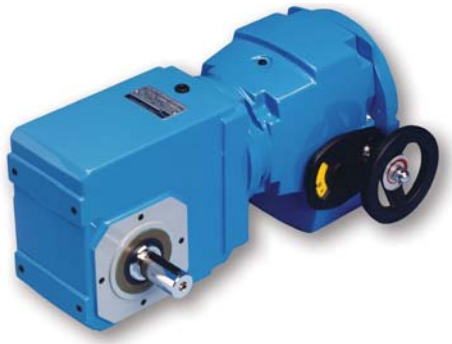
"F" Series – Performance Specifications:

- Horsepower ratings — from 1/2 to 7 1/2
- Output speeds — available from 528 to .6 RPM
- Speed range — 5:1 to 7:1
- Output torques — up to 9,744 in.lbs.
- NEMA frames — from 56C to 215TC

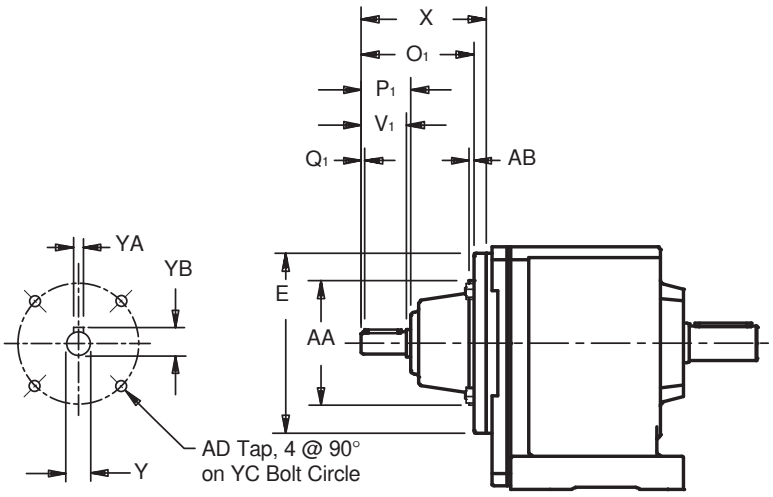
With the many mounting options available, ComTrac Adjustable Speed Drives and MGS Helical/Bevel Speed Reducers offer consistent, higher input-to-output efficiencies and a configurations for almost any application situation. This added efficiency reduces your costs today through smaller gear drive and motor sizing. Tomorrow, you'll benefit through optimum energy savings.

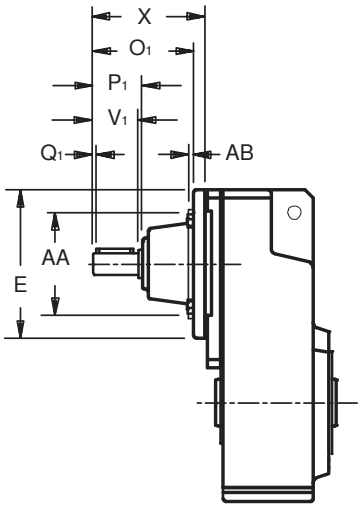
"K" Series – Performance Specifications:

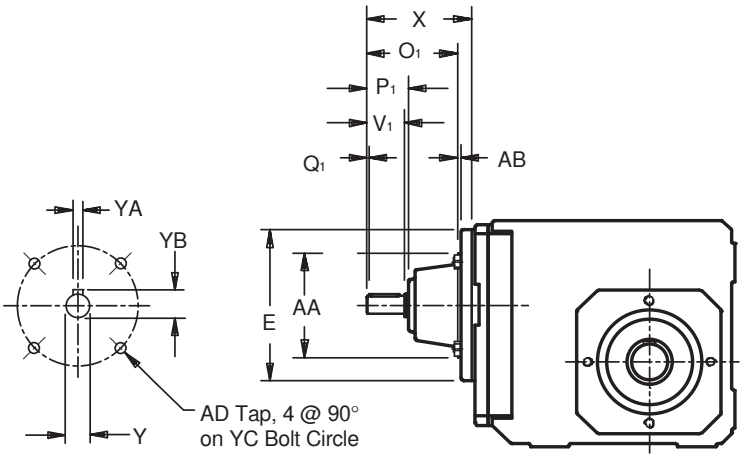
- Horsepower ratings — from 1/2 to 10
- Output speeds — available from 569 to .9 RPM
- Speed range — 5:1 to 7:1
- Output torques — up to 99,227 in.lbs.
- NEMA frames — from 56C to 215TC

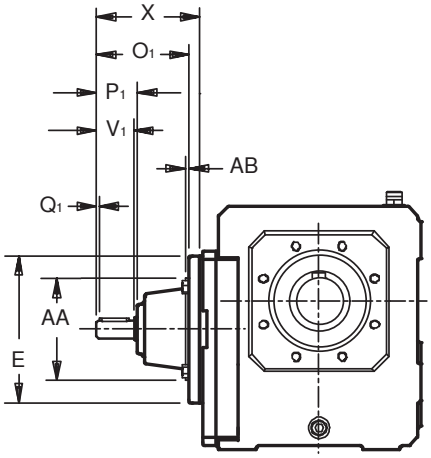


MGS Reducer
AW Input Shaft
Dimensional Data









Part No. Explanation for Input Shaft

AW160 / **012**

010 ($^{10}/_{16}$ = $^{5}/_{8}$), **012** ($^{12}/_{16}$ = $^{3}/_{4}$),
014 ($^{14}/_{16}$=$^{7}/_{8}$), 102 ($1^{2}/_{16}$=$1^{1}/_{8}$),
110 ($1^{10}/_{16}$=$1^{5}/_{8}$), 202 ($2^{2}/_{16}$=$2^{1}/_{8}$)

Input Size: AW140, **AW160**, AW200, AW250, AW300, AW350

Part No. Example

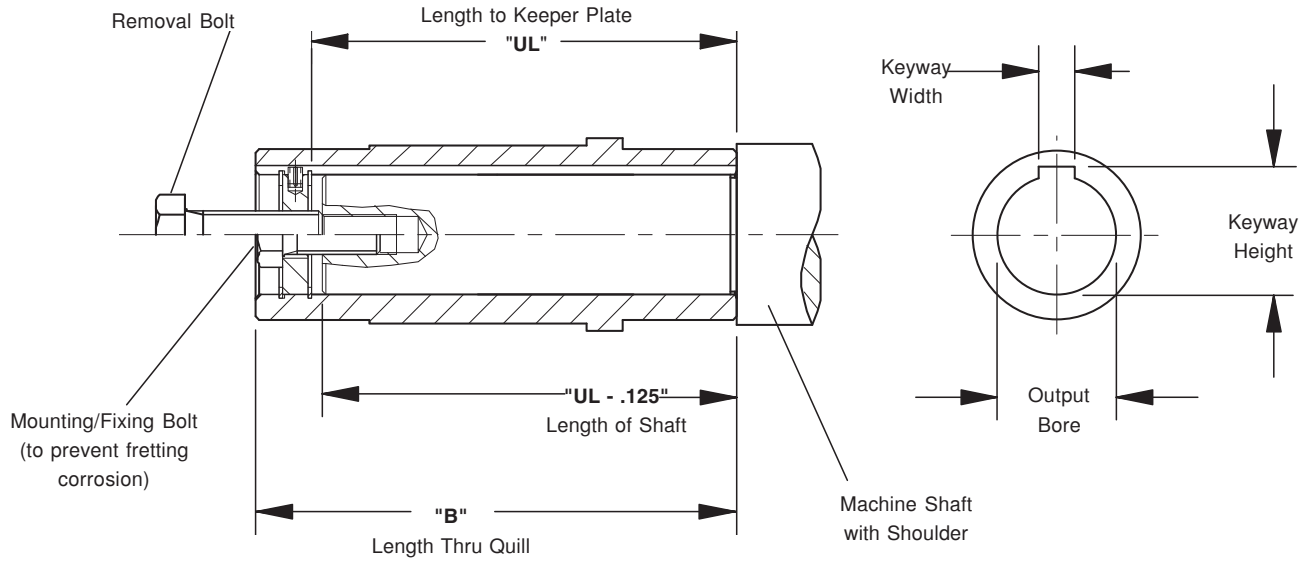
Round Flange with Input Shaft

S302VF0620 AW160/012

Table No. 1 **"AW" Input (Inches)**

Part No. Input Shaft	E	O_1	P_1	Q_1	V_1	X	Y	AA	AB	AD	YA—Key	YB	YC	Wt. lbs.	Overhung Load lbs.
AW140/010	5.51	3.58	1.38	.12	1.25	4.02	.6250	3.740	.16	M8	$^{3}/_{16} \times {}^{3}/_{16} \times {}^{31}/_{32}$	.71	4.53	8	98
AW160/012	6.30	4.21	1.69	.12	1.50	4.69	.7500	4.331	.18	M8	$^{3}/_{16} \times {}^{3}/_{16} \times 1^{7}/_{32}$	.83	5.12	12	196
AW200/014	7.87	5.00	1.97	.16	1.75	5.51	.8750	5.118	.16	M10	$^{3}/_{16} \times {}^{3}/_{16} \times 1^{7}/_{16}$	.96	6.50	18	333
AW250/102	9.84	7.20	2.48	.20	2.25	7.80	1.1250	7.087	.16	M12	$^{1}/_{4} \times {}^{1}/_{4} \times 1^{15}/_{16}$	1.24	8.46	31	680
AW300/110	11.81	8.39	3.54	.24	3.25	9.02	1.6250	9.055	.20	M12	$^{3}/_{8} \times {}^{3}/_{8} \times 2^{7}/_{8}$	1.79	10.43	51	1,072
AW350/202	13.78	10.83	4.88	.28	4.50	11.61	2.1250	9.842	.24	M16	$^{1}/_{2} \times {}^{1}/_{2} \times 3^{15}/_{16}$	2.35	11.81	100	1,569

MGS Reducer Installation
Any Unit with Hollow Output



Mounting Hollow Output Reducers

A STOBER hollow output reducer can be mounted from either side. The tolerance for the hollow bore is shown in the table below and the shaft should be toleranced to fit this bore accordingly.

A keeper plate inside the quill is provided with each unit to prevent axial movement. This keeper plate is held in place with snap rings and can be easily removed for location on either end. A spring pin in the keeper plate mounts into the keyway of the quill and prevents rotation. The keeper plate center hole is tapped to fit the removal bolt.

Before installation, brush the inside of the quill with rust inhibiting grease. When mounting the unit onto the shaft, avoid hammering as this may damage the bearings. Do not mount the reducer dry as removal may be impossible.

The drawing above shows a mounting or fixing bolt and a removal bolt. The mounting/fixing bolt should be smaller in size than the removal bolt. See Table No. 1.

To use the keeper plate with a mounting/fixing bolt, drill and tap the end of the shaft that will be mounted into the reducer. Insert the mounting/fixing bolt through the keeper plate and thread into the shaft end. The machine shaft length should not be longer than the “UL” dimension. A shaft length of "UL minus .125" will allow the shaft shoulder to pull against the face of the quill of the reducer.

Removal of Hollow Output Reducers

To dismantle the unit from the shaft, remove the mounting bolt. Thread the removal bolt into the keeper plate to press against the shaft and loosen the shaft from the unit. Removal of the reducer will be easier if the quill is greased before installation.

Table No. 1 "UL" Dimension and Removal Bolt Size

Unit	Bore	UL	Bolt	Unit	Bore	UL	Bolt	Unit	Bore	UL	Bolt
F1	.750	2.67	3/8-16 NC	K1	1.000	3.86	1/2-13 NC	S1	1.000	3.86	1/2-13 NC
F2	1.000	3.62	1/2-13 NC	K2	1.187	4.78	1/2-13 NC	S2	1.375	4.69	5/8-11 NC
F3	1.250	4.06	1/2-13 NC	K3	1.375	4.92	5/8-11 NC	S3	1.500	5.39	3/4-10 NC
F4	1.500	4.49	3/4-10 NC	K4	1.500	6.18	3/4-10 NC	S4	1.750	6.24	3/4-10 NC
F6	2.000	5.63	3/4-10 NC	K5	2.000	6.46	3/4-10 NC				
				K6	2.000	7.05	3/4-10 NC				
				K7	2.375	8.43	1-8 NC				
				K8	2.750	10.35	1-8 NC				
				K9	3.250	11.89	1-8 NC				
				K10	4.000	14.25	1 1/4-7 NC				

Table No. 2 Hollow Shaft — "U" Dimension

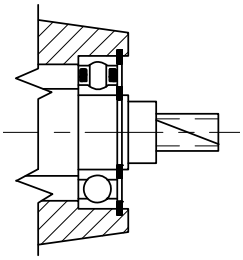
Bore Range	Tolerance	Bore Range	Tolerance
.39 — .71	+.0007 / -.0000	1.97 — 3.15	+.0012 / -.0000
.71 — 1.18	+.0008 / -.0000	3.15 Up	+.0014 / -.0000
1.18 — 1.97	+.0010 / -.0000		

MGS Reducers
Any Unit Style with Backstops

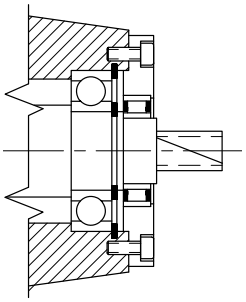
DO NOT USE BACKSTOPS ON MAN LIFTS!

The direction of rotation of the OUTPUT *must* be specified when ordering a unit with a backstop.

See the illustration of standard direction of rotation. (Examples shown are EL1 mounting.)
If the backstop is assembled for the standard rotation, but rotates in the opposite direction at startup, DAMAGE TO THE BACKSTOP IS CERTAIN.



Backstop for AWB200/ 014 through AWB350/202 and MRB200/050 through MRB350/360.



Backstop for all units using: AWB140/010, AWB160/012, MRB140/050, MRB160/050 and MRB160/140.

These backstops cannot be assembled in: C613, C713, C813, C913, K714, K814, K914, and K1014

Table No. 1 AW with Backstop

Input Part No.	Shaft Size	Max. HP * @ 1750 RPM
AWB140/010	.625	2.1
AWB160/012	.750	10.4
AWB200/014	.875	18.2
AWB250/102	1.125	29.1
AWB300/110	1.625	40.5
AWB350/202	2.125	54.0

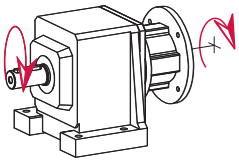
Table No. 2 MR with Backstop

Adapter Part No.	NEMA Frame	Max. HP * @ 1750 RPM
MRB140/050	56C	2.1
MRB160/050	56C	10.4
MRB160/140	143/145TC	10.4
MRB200/050	56C	18.2
MRB200/140	143/145TC	18.2
MRB200/180	182/184TC	18.2
MRB250/180	182/184TC	29.1
MRB250/210	213/215TC	29.1
MRB300/180	182/184TC	40.5
MRB300/210	213/215TC	40.5
MRB300/250	254/256TC	40.5
MRB300/280	284/286TC	40.5
MRB350/320	324/326TC	54.0
MRB350/360	364/365TC	54.0

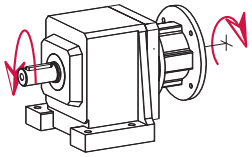
* HP ratings shown are based on 2.0 Service Factor. Maximum HP must not be exceeded.

MGS Reducers
Standard Direction of Rotation

"C" Series – Concentric Helical

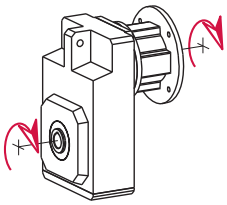


C002 – C912
Input and Output Rotate the Same Direction

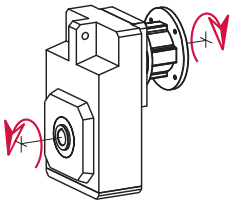


C103 – C913
Input and Output Rotate Opposite Direction

"F" Series – Offset Helical

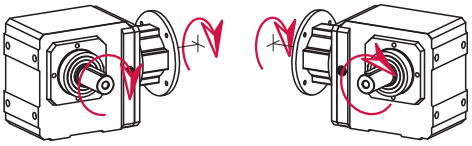


F102 – F602
Input and Output Rotate the Same Direction



F203 – F603
Input and Output Rotate Opposite Direction

"K" Series – Right Angle Helical/Bevel

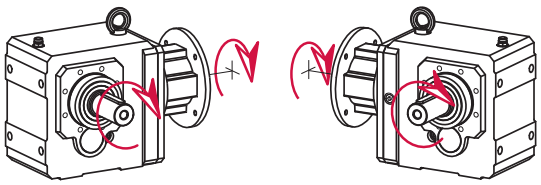


Shaft Side 4 Shaft Side 3

K102 – K402
CCW Input and CW Single Output

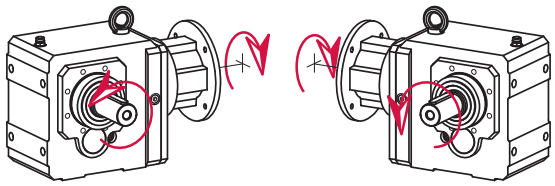
Shaft Side 4 Shaft Side 3

K203 – K403
CCW Input and CCW Single Output



Shaft Side 4 Shaft Side 3

K513 – K1013
CCW Input and CW Single Output



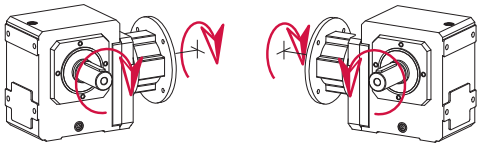
Shaft Side 4 Shaft Side 3

K514 – K1014
CCW Input and CCW Single Output

"S" Series – Right Angle Helical/Worm

Shaft Side 4 — CCW Shaft Side 3 — CW

S102 – S402
CCW Input and Single Output Rotation



Shaft Side 4 —CW Shaft Side 3 — CCW

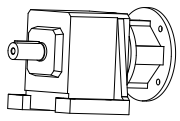
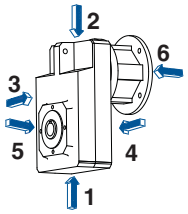
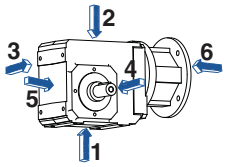
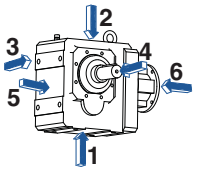
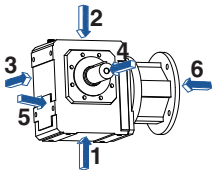
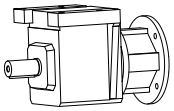
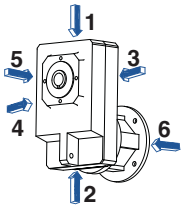
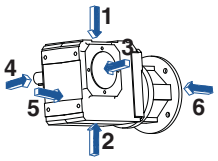
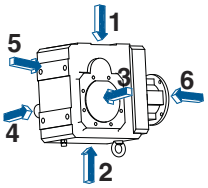
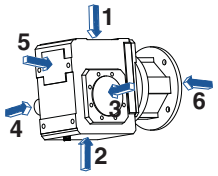
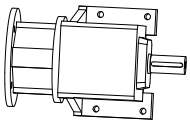
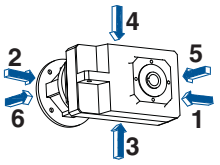
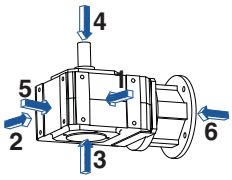
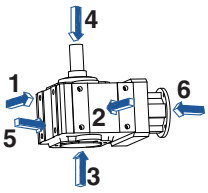
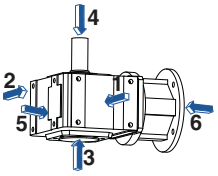
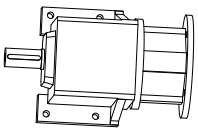
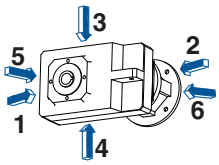
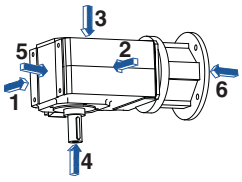
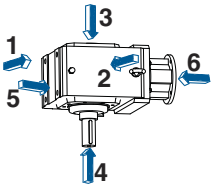
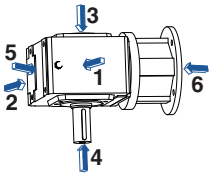
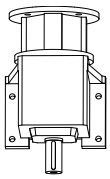
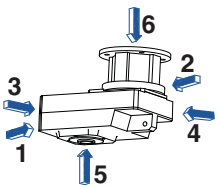
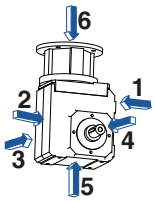
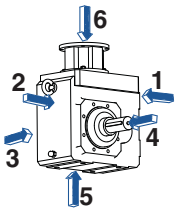
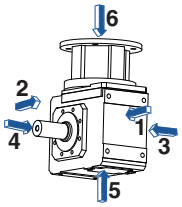
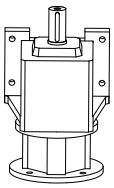
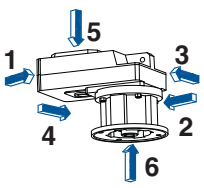
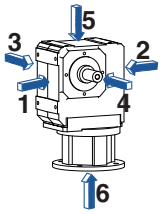
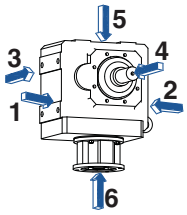
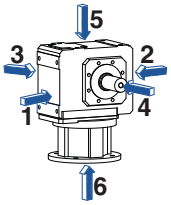
S203 – S403
CCW Input and Single Output

REMINDER:
With a "K" or "S" unit with a double output, the shaft rotation when viewed from Side 3 (CW) will rotate in the opposite direction (CCW) when viewed from Side 4.

MGS Speed Reducer
Lubrication and Mounting Data

Lubrication and Mounting Position

All STOBER units are filled with the correct amount of lubrication before shipping. In order to provide the proper lubrication quantity **the mounting position must be specified at the time the unit is ordered**.

Mounting Position	"C" Series	"F" Series	"K" Series K1-K4	"K" Series K5-K10	"S" Series
EL1 Side 1 is the bottom side when the unit is set in a normal position. Side 1 is the down side for EL1.					
EL2 Side 2 is the top of the unit. Side 2 is the down side for EL2 . (The unit is up-side-down.)					
EL3 Side 3 is the right side when facing the input with the unit in a normal position (EL1). Side 3 is the down side for EL3. Right angle units have the output on Side 3 or 4.					
EL4 Side 4 is the left side when facing the input with the unit in a normal position (EL1). Side 4 is the down side for EL4. Right angle units have the output on Side 3 or 4.					
EL5 Side 5 is the side opposite the motor. Side 5 is the down side for EL5.					
EL6 Side 6 is always the input or motor side. Side 6 is the down side for EL6.					

MGS Speed Reducer Maintenance and Tolerance Data

The lubricant quantity for the mounting position ordered is stamped on the nameplate of each unit.

Maintenance

With STOBER reducers very little maintenance is required under normal operating conditions.

Units supplied without breathers are lubricated for life, maintenance free.

Breathers are provided on these standard units: C612 through C913; K513 through K1014; and S102 through S403

STOBER recommends that the lubrication be changed in units supplied with breathers according to the following schedule:

Normal Operating Conditions — after 5000 Hours
Wet Operating Conditions — after 2000 Hours.

If food grade or synthetic oil is requested, it will be Mobil SHC CIBUS 220 food grade or Mobil SHC630 synthetic.

Characterestics of STOBER Standard Lubricants

	Mobilgear 600XP220	Mobil SHC CIBUS 220 Food Grade	Mobil SHC 630
Anti-Foaming Additives	✓	✓	Excellent
Corrosion Protection	✓	Optimum	Optimum
Friction and Wear Reducing Characterestics	✓	Excellent	Superior
Oxidation Protection	✓	Enhanced	Enhanced
Wide Temperature Range		✓	✓

FORMULAS

1 HP = 54 in.lbs @ 1160 RPM
1 HP = 36 in.lbs @ 1750 RPM

$$HP = \frac{\text{Force} \times \text{FPM}}{33{,}000}$$

$$HP = \frac{\text{T in.lbs.} \times \text{RPM}}{63{,}025}$$

$$HP = \frac{\text{T ft.lbs.} \times \text{RPM}}{5{,}252}$$

$$FPM = .2618 \times \text{Dia.} \times \text{RPM}$$

$$RPM = \frac{FPM}{2618 \times \text{Dia.}}$$

$$RPM = \frac{63{,}025 \times HP}{\text{Torque}}$$

$$\text{T in.lbs.} = \frac{63{,}025 \times HP}{RPM}$$

$$\text{T ft.lbs.} = \frac{5{,}252 \times HP}{RPM}$$

$$T = \text{Force} \times \text{Lever Arm}$$

$$F = \frac{\text{Torque}}{\text{Radius}}$$

All Series Reducers

Table No. 1 Solid Shaft — "U" Dimension

Bore Range	Tolerance	Bore Range	Tolerance
.39 — .71	+.0000 / -.0005	1.97 — 3.15	+.0000 / -.0008
.71 — 1.18	+.0000 / -.0006	3.15 Up	+.0000 / -.0009
1.18 — 1.97	+.0000 / -.0007		

"F", "K", and "S" Series Reducers

Table No. 2 Hollow Shaft — "U" Dimension

Bore Range	Tolerance	Bore Range	Tolerance
.39 — .71	+.0007 / -.0000	1.97 — 3.15	+.0012 / -.0000
.71 — 1.18	+.0008 / -.0000	3.15 Up	+.0014 / -.0000
1.18 — 1.97	+.0010 / -.0000		

All Series Reducers with Input Shaft

Table No. 3 Pilot Diameter — "AA" Dimension

Dia. Range	Tolerance	Dia. Range	Tolerance
3.15 — 4.72	+.0007 / -.0005	9.06 — 12.40	+.0012 / -.0008
4.72 — 7.09	+.0008 / -.0006	12.40 Up	+.0014 / -.0009
7.09 — 9.06	+.0010 / -.0007		

All Series Flange Mounting Reducers

Table No. 4 Pilot Diameter — "M" Dimension

Dia. Range	Tolerance	Dia. Range	Tolerance
3.15 — 4.72	+.0007 / -.0005	9.06 — 12.40	+.0012 / -.0008
4.72 — 7.09	+.0008 / -.0006	12.40 Up	+.0014 / -.0009
7.09 — 9.06	+.0010 / -.0007		

All Series Reducers with Motor Adapter

Table No. 5 Pilot Bore Diameter — "YA" Dimension

Bore Range	Tolerance	Bore Range	Tolerance
1.97 — 3.15	+.0007 / -.0005	7.09 — 9.84	+.0012 / -.0008
3.15 — 4.72	+.0008 / -.0006	9.84 — 12.40	+.0014 / -.0009
4.72 — 7.09	+.0010 / -.0007		

All Series Reducers

Table No. 6 Keyway Width — "UA" Dimension

Bore Range	Tolerance
All Sizes	+.0019 / -.0000

Table No. 7 Thermal Ratings

HP	kW	Base Modules			
2.95	2.2	C0	F1	K1	S1
5.36	4.0	C1	F2	K2	S2
7.38	5.5	C2	F3	K3	S3
12.34	9.2	C3	F4	K4	S4
14.75	11.0	C4	F6	K5	—
20.12	15.0	C5	—	K6	—
29.50	22.0	C6	—	K7	—
40.23	30.0	C7	—	K8	—
53.64	40.0	C8	—	K9	—
67.05	50.0	C9	—	K10	—

Table No. 8 Backlash

Series	Measured in arc minutes*
C	≤ 20
F	≤ 11
K	≤ 12
S	≤ 20

* These measurements were taken from actual test of each series.

MGS Speed Reducer
Service Factor and Selection Procedure

Selection Requirements

To select an MGS speed reducer for any application the following must be known:

Input Speed — Revolutions per Minute (RPM)
Output Speed — Revolutions per Minute (RPM)
Input Horsepower (HP) or Output Torque (in. lbs.)
Application Information to determine the Service Factor

If you have any questions regarding speed reducer selection, contact your STOBER representative or the STOBER Technical Support for assistance.

Horsepower or Torque

MGS speed reducers can be selected by either HP or Output Torque. The following formulas can be used to convert horsepower to torque or torque to horsepower.

$$HP = \frac{\text{Torque (in./lbs.)} \times \text{Output Speed (RPM)}}{63{,}025}$$

$$\text{Torque (in./lbs.)} = \frac{HP \times 63{,}025}{\text{Output Speed (RPM)}}$$

Overhung Loads

Pulling forces or overhung load of pulleys, sheaves, sprockets, etc. on the reducer input and output shaft must not exceed the allowable limits shown in the MGS Selection Data tables. The overhung load shown in the selection tables is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If a overhung load rating is required, use 50% of the published overhung load from the Selection Data. Contact STOBER Technical Support, if assistance is needed.

The following formula can be used to determine actual overhung load for a given drive.

$$OHL = \frac{126{,}000 \times HP \times K}{D \times RPM}$$

where

OHL = Overhung Load (lbs.)
HP = Horsepower
D = Pitch Dia. of Sprocket, Gear, Sheave, Pulley, etc.
RPM = Maximum Speed
K = 1.00 Chain Drives
1.25 Gear Drives
1.25 Gearbelt Drives
1.50 V-Belt Drives
2.50 Flat Belt Drives

No overhung load is encountered when an MGS reducer is flange mounted and/or coupling connected to another unit. However, the shafts of all components must be accurately aligned and secured to prevent pre-loading of the bearings and premature bearing failure.

Service Factor

Service Factor should be determined for conditions such as non-uniform load, hours of service, and elevated ambient temperature. (For applications powered by an AC motor, a Service Factor of 2.0 is normally sufficient.)

To establish a Service Factor (SF), use the information in Tables 1 to 4.

$$SF = f_B \times f_L \times f_T \times f_V$$

Choose an MGS reducer that will meet or exceed,

HP x SF or Torque (in./lbs.) x SF.

Table No. 1 Load Factor (f_B)

Uniform Load	1.0
Non-uniform Load	1.25
Medium Shock	1.4
Severe Shock	1.6

Contact STOBER Technical Support for selection assistance on applications requiring frequent starts and stops.

Table No. 2 Hours of Service Factor (f_L)

Hours	2	4	6	8	12	16	24
f_L	.75	.85	.95	1.0	1.10	1.15	1.20

Table No. 3 Ambient Temperature Factor (f_T)

Temperature (°F)	32	50	70	85	100	120
f_T	1.15	1.15	1.0	1.0	1.15	1.3

For temperatures less than 32° or greater than 120°, contact STOBER Technical Support.

Table No. 4 Torque Characteristic Factor (f_V)
Use for Frequency Convertor Only

Constant Torque over the Entire Speed Variation	1.0
Increasing Output Torque from 87 — 50 Hz	1.7

NOTE: DO NOT SERVICE FACTOR THE MOTOR.

Speed Reducer Selection

A. Under the Input RPM heading, find **Nominal Output RPM** nearest the requirement.

B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.)

C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and **Overhung Loads**.

1. Complete Base Module Number by adding Housing and Output Style. See overview pages for housing and output options available.
2. Select Input Option (Motor Adapter or Input Shaft) and add to completed Part Number.

D. Check **Overhung Load**.

E. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

The following additional information should be known when selecting and must be known when ordering an MGS Reducer:

1. Mounting position.
2. Shaft side extension on right angle units.
3. Bushing side when a single side bushing kit is needed.

Selection Example:

A foot mounted right angle reducer is needed for a non-uniformly loaded belt conveyor. It will be driven by a 3 HP, 1750 RPM, 182/184TC NEMA frame motor mounted to the reducer. The output shaft size is undetermined but the output speed required is 205 RPM. The drive will operate 12 hours per day, 5 days per week.

Determine the Service Factor (SF).

Non-uniform load belt conveyor — Load Factor = **1.25** (f_B)
12 hours per day service — Hours of Service = **1.10** (f_L)
1.25 (f_B) x 1.10 (f_L) = **1.375** SF.

The required HP rating for the reducer is:
3 HP Motor x 1.375 SF = **4.125** HP

MGS Speed Reducer Selection Procedures

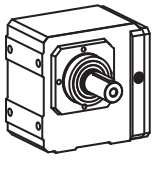
A. From the Selection Data pages for "K" Series reducers, under the 1750 Input RPM heading, find **210 RPM Output (Approximate)** which is the closest to 205.

B. In the **Input HP** column, locate the rating that is equal to or greater than 4.125 HP. The first unit available is rated at **4.17 HP.**

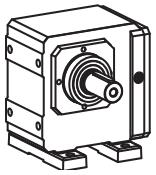
C. Read across the row to select the **Base Module** and **Motor Adapter** to fit a 182/184TC frame.

1. The Base Module is **K202_0084**.
   The Motor Adapter is **MR200/**.
   Add **180** for a 182/184TC frame.

2. Complete the Base Module Part Number by adding **Output Style** and **Housing Style**.
   Example: K202**VN**0084



Output Style "V"
(Solid Shaft)



Housing Style "N"
(Foot Mounting)

D. Check **Overhung Load**.

751 lbs. — with the load at the center of the output shaft

E. If the exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

$$\frac{1750 \text{ Input RPM}}{8.397 \text{ Exact Ratio}} = 208.4 \text{ Output RPM}$$

Since the solid shaft Output Style "V" is available as a single or double output, the shaft side must be designated. In this example, we will specify the shaft on the left, with the mounting feet on the bottom, and the mounting position as standard horizontal.

The complete part number description for ordering must include the **mounting position**, **shaft side**, and **feet side** designations.

For more information on mounting position, see page 116.

"K" Series – Right Angle Helical/Bevel MGS Reducer – Selection Data

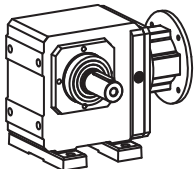
Selection Procedure:

A. Under the Input RPM heading, find **Approximate Output RPM** nearest the requirement.
B. In the **Input HP** column locate the rating that is greater than or equal to the required HP.
(If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than req
C. When HP or Torque rating is located, read across that row to select the **Base Module**, **Input Option** and
D. If exact **Output RPM** is required, divide the **Input RPM** by the **Exact Ratio**.

1750 RPM Input		Base Module [1]	Input Options [2]			Exact Ratio	Overhung Load Output Shaft [4] lbs.	1450 RPM Input	
			Motor Adapter						
Input HP	Output Torque in. lbs.		Size [3]	NEMA C-Frame	Input Shaft			Input HP	Output Torque in. lbs.
215 RPM Output (Approximate)								**180 RPM**	
21.10	5,907	K513_0081	MR200/	180	AW200/014	8.134	1,671	18.61	6,289
21.10	5,907	K513_0081	MR250/	180, 210	AW250/102	8.134	1,671	18.61	6,289
23.37	6,522	K613_0081	MR200/	180	AW200/014	8.107	1,986	19.37	6,522
27.94	7,796	K613_0081	MR300/	180, 210, 250, 280	AW300/110	8.107	1,986	24.65	8,301
27.94	7,796	K613_0081	MR250/	180, 210	AW250/102	8.107	1,986	24.65	8,301
210 RPM Output (Approximate)								**170 RPM**	
2.35	684	K102_0083	MR140/	050	AW140/010	8.309	624	1.97	689
2.35	684	K102_0083	MR160/	050, 140	AW160/012	8.309	624	2.08	728

27.94	7,796	K613_0081	MR250/	180, 210	AW250/102	8.107	1,986	24.65	8,301
210 RPM Output (Approximate)								**170 RPM**	
2.35	684	K102_0083	MR140/	050	AW140/010	8.309	624	1.97	689
2.35	684	K102_0083	MR160/	050, 140	AW160/012	8.309	624	2.08	728
2.52	740	K202_0084	MR140/	050	AW140/010	8.397	751	2.09	740
4.17	1,225	K202_0084	MR160/	050, 140	AW160/012	8.397	751	3.68	1,304
4.17	1,225	K202_0084	MR200/	180	AW200/014	8.397	751	3.68	1,304
7.28	2,149	K302_0084	MR160/	050	AW160/012	8.444	878	6.43	2,288

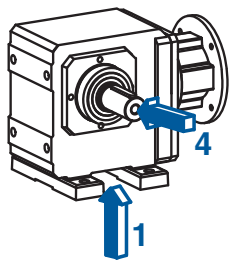
27.94	7,796	K613_0081	MR250/	180, 210	AW250/102	8.107	1,986	24.65	8,301
210 RPM Output (Approximate)								**170 RPM**	
2.35	684	K102_0083	MR140/	050	AW140/010	8.309	624	1.97	689
2.35	684	K102_0083	MR160/	050, 140	AW160/012	8.309	624	2.08	728
2.52	740	K202_0084	MR140/	050	AW140/010	8.397	751	2.09	740
4.17	1,225	K202_0084	MR160/	050, 140	AW160/012	8.397	751	3.68	1,304
4.17	1,225	K202_0084	MR200/	180	AW200/014	8.397	751	3.68	1,304
7.28	2,149	K302_0084	MR160/	050	AW160/012	8.444	878	6.43	2,288



The Part Number is **K202VN0084 MR200/180**.

27.94	7,796	K613_0081	MR250/	180, 210	AW250/102	8.107	1,986	24.65	8,301
210 RPM Output (Approximate)								**170 RPM**	
2.35	684	K102_0083	MR140/	050	AW140/010	8.309	624	1.97	689
2.35	684	K102_0083	MR160/	050, 140	AW160/012	8.309	624	2.08	728
2.52	740	K202_0084	MR140/	050	AW140/010	8.397	751	2.09	740
4.17	1,225	K202_0084	MR200/	180	AW200/014	8.397	751	3.68	1,304
7.28	2,149	K302_0084	MR160/	050	AW160/012	8.444	878	6.43	2,288

K202VN0084 MR200/180
EL1
Shaft Side 4
Feet Side 1



Terms and Conditions of Sale

1. **GENERAL.** All orders for products supplied by STOBER DRIVES INC. ("STOBER") shall be subject to these terms and conditions of sales. All transactions shall be governed by the laws of the Commonwealth of Kentucky. No modifications hereto will be binding unless agreed to in writing by STOBER.

2. **CUSTOMER.** The term "Customer," as used herein, means the distributor, resale dealer, original equipment manufacturer or first end-user customer that purchases the STOBER products.

3. **WARRANTY.** STOBER products shall be free from defects in material and workmanship for a maximum of 5-years (single shift operation or 30 months multiple shift operation) for ServoFit products (ServoFit Modular System, ServoFit Precision Planetary Gearheads, and ServoFit Geared Motors) and MGS Long Life products; 3-years (single shift operation or 18 months multiple shift operation) for other MGS products; 2-years (single shift operation or 12 months multiple shift operation) for ComTrac products, from the date of shipment to the Customer. For ServoFit products, the motor on ServoFit Geared Motors, as well as all normal wear items, including oil seals and bearings, shall be covered for a period of 2-years (single shift operation or 12 months multiple shift operation). In the event that a product proves to be defective, STOBER's sole obligation shall be, at its option, to repair or replace the product. The repaired or replacement product will be shipped F.O.B. STOBER's facilities, freight prepaid by STOBER.

No employee, agent or representative of STOBER has the authority to waive, alter, vary or add to the terms hereof without the prior written approval of an officer of STOBER. It is expressly agreed that (a) this section constitutes the final expression of the parties' understanding with respect to the warranty and (b) this section is a complete and exclusive statement of the terms of the warranty.

STOBER shall have no obligation under the warranty set forth above in the event that:

(a) The Customer fails, within the warranty period to notify STOBER in writing and provide STOBER with evidence satisfactory to STOBER of the alleged defect within five (5) days after it becomes known to the customer;

(b) After inspection of a product, STOBER determines, in its sole discretion, that it is not defective in material or workmanship;

(c) Repair or replacement of a product is required through normal wear and tear;

(d) Any part in a product or any ingredient contained in a product requires replacement or repair through routine usage or normal wear and tear;

(e) A product is not maintained or used in accordance with STOBER's applicable operating and/or maintenance manuals, whether by the Customer or any third party;

(f) A product has been subject to misuse, misapplication, negligence, neglect (including, but not limited to, improper maintenance or storage), accident, catastrophe, improper installation, modification, adjustment, repair or lubrication, whether by the Customer or any third party, without the prior written consent of STOBER. Misuse shall include, but not be limited to, deterioration in a product due to chemical action and wear caused by the presence of abrasive materials;

(g) The system of connected rotating parts into which the product becomes incorporated is not compatible with the product, or it is not free from critical speed or torsional or other type of vibration within the specified operating range, no matter how induced; or

(h) The transmitted load and imposed torsional thrust and overhung loads are not within the published capacity limits for the unit sold.

Items manufactured by other parties but installed in or affixed to STOBER's products are not warranted by STOBER and bear only those warranties, express or implied, which are given by the manufacturer of such items, if any.

THE WARRANTY SET FORTH ABOVE IS INTENDED SOLELY FOR THE BENEFIT OF THE Customer AND DOES NOT APPLY TO ANY THIRD PARTY. ALL CLAIMS MUST BE MADE BY THE Customer AND MAY NOT BE MADE BY ANY THIRD PARTY. THIS WARRANTY MAY NOT BE TRANSFERRED OR ASSIGNED, IN WHOLE OR IN PART, BY THE Customer FOR ANY REASON WHATSOEVER. ANY SUCH ATTEMPTED TRANSFER OR ASSIGNMENT SHALL BE NULL AND VOID.

THIS WARRANTY TAKES THE PLACE OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHICH ARE HEREBY DISCLAIMED AND EXCLUDED BY STOBER, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF USE AND ALL OBLIGATIONS OR LIABILITIES ON THE PART OF STOBER FOR DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE USE, REPAIR OR PERFORMANCE OF THE PRODUCTS.

4. **MODIFICATIONS.** STOBER reserves the right, without notice to the Customer, to (a) change the specifications of any product, (b) improve a product in any manner that STOBER deems necessary or appropriate and (c) discontinue the manufacture of any product.

5. **PURCHASE ORDERS.** The Customer will submit purchase orders for the products to STOBER in writing, whether by mail or telefax, which shall set forth, at a minimum: (a) an identification of the products ordered, (b) prices for such products, (c) quantities, (d) requested delivery dates and (e) shipping instructions and shipping addresses.

6. **ACCEPTANCE OF ORDERS.** All purchase orders received from the Customer are subject to acceptance by STOBER in writing.

7. **MODIFICATION OF ORDERS.** No accepted purchase order shall be modified or canceled except upon the written agreement of STOBER and the Customer. Mutually agreed cancellations shall be subject to reasonable charges based upon expenses already incurred by STOBER and commitments made by STOBER. Mutually agreed change orders shall be subject to all provisions of these Terms and Conditions of Sale.

8. **PRICE INCREASES.** STOBER may increase its prices for the products by providing the original purchaser of the products with at least thirty (30) days' prior written notice. Increased prices for products shall not apply to purchase orders accepted prior to the effective date of the price increase unless such orders provide for delivery more than thirty (30) days after the date of acceptance of the order.

9. **PRICING AND DELIVERY TERMS.** In accordance with KRS 355.2-319(1)(b), all products are delivered F.O.B. STOBER's warehouse facility in Maysville, Kentucky, or such other facility as STOBER may designate. Orders are then shipped per Customer's shipping instructions as set forth in Customer's purchase order. **CATALOG PRICING DOES NOT INCLUDE SHIPPING, HANDLING AND TAXES.** Once delivered to a common carrier of the Customer's choosing [or of STOBER's choosing if Customer has failed to specify a common carrier on or before five (5) days prior to the requested delivery date] STOBER shall have no further responsibility for the products and all risk of damage, loss or delay shall pass to the Customer. A handling fee is added to freight costs by STOBER to cover the cost of having to pay the carrier within seven (7) days when the terms with the Customer are net 30. The Customer has the option of shipping collect with our carrier or the carrier of choice.

10. **PAYMENT TERMS.** Net 30 days. All orders will be shipped either prepaid by the Customer or C.O.D., at STOBER's option, unless the Customer has established a previously approved credit line. If STOBER approves a credit line for the Customer, all payments shall be due within thirty (30) days of the date of the invoice. If any invoice is not paid in full within such thirty (30) day period, then finance charges shall be assessed at the rate of one and one-half percent (1½%) per month (eighteen percent (18%) per year). If such rate is deemed to be usurious at any time, it shall be reduced to the maximum rate permitted by applicable law. STOBER may stop or withhold shipment of products if the Customer does not fulfill its payment obligations. If STOBER is insecure about payment for any reason, STOBER may require full or partial payment in advance and as a condition to the continuation of its delivery of products.

11. **SECURITY INTEREST.** Unless and until the products are paid for in full, STOBER reserves a security interest in them to secure the unpaid balance of the purchase price. The Customer hereby grants to STOBER a power of attorney, coupled with an interest, to execute and file on behalf of the Customer all necessary financing statements and other documents required or appropriate to protect the security interest granted herein.

12. **ACCEPTANCE OF PRODUCTS.** The Customer will conduct any incoming inspection tests as soon as possible upon arrival of the products, but in no event later than ten (10) days after the date of receipt. Any products not rejected by written notice to STOBER within such period shall be deemed accepted by the Customer. STOBER shall not be liable for any additional costs, expenses or damages incurred by the Customer, directly or indirectly, as a result of any shortage, damage or discrepancy in a shipment.

13. **LIMITATION OF REMEDIES.**

(a) STOBER SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE CAUSED BY DELAY IN FURNISHING THE CUSTOMER WITH PRODUCTS.

(b) IN NO EVENT SHALL STOBER'S LIABILITY INCLUDE ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL LOSSES OR DAMAGES, EVEN IF STOBER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH POTENTIAL LOSS OR DAMAGE.

14. **MADE-TO-ORDER PRODUCTS.** STOBER reserves the right to revoke and amend any price quotations offered to the Customer for made-to-order products, provided that such price quotations have not been accepted by the Customer prior to the date of revocation or amendment.

15. **DIES, TOOLS AND EQUIPMENT.** Charges incurred by the Customer for dies, tools and other equipment shall not confer ownership or the right to possession therein by the Customer. All such dies, tools and equipment shall remain the property of STOBER, and STOBER shall have the exclusive right to possession thereof. STOBER shall maintain such tools and equipment in good working order.

16. **REGULATORY LAWS AND STANDARDS.** STOBER makes no representation that its products conform to state or local laws, ordinances, regulations, codes or standards except as may be otherwise agreed to in writing by STOBER.

17. **SIZES AND WEIGHTS.** STOBER's products are made only in the sizes and to the specifications set forth in its catalogs and other literature. If any alteration is requested, such altered product will be treated as a made-to-order item. STOBER assumes no responsibility for typographical errors which may appear in its catalogs or literature, and cannot accept alteration charges caused by such errors. Since weights shown in STOBER's catalogs are approximate, they cannot be used in determining freight allowances set forth in its catalogs and other literature. Freight allowances will be determined at the time of shipment and shall be based on actual shipping weight.

18. **SYSTEM DESIGN.** Responsibility for system design to ensure proper use and application of STOBER's products within their published specifications and ratings rests solely with the Customer. This includes, but is not limited to, an analysis of loads created by torsional vibrations within the entire system, regardless of how induced.

STOBER DRIVES INC.
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www.stober.com • E-mail: sales@stober.com

24 Hour Service Hotline

No matter what happens....

whenever,

wherever,

..we're here!

365 days, 24 hours a day

Customer Service

Technical Support

1 Hour Quote

No Expedite Fee

Emergency: 606 563-6035

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STOBER MGS Speed Reducers 2010

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