

MGS® V.24

MGS®

Speed Reducers



Geared to a higher standard™



STÖBER

MGS® Precision Speed Reducers



Welcome to STOBER!

Thank you for your interest in the power transmission reducers offered by STOBER Drives, Inc.!

In 1934, the Stöber brothers founded a small shop in Pforzheim, Germany that made machines and repaired engines. Today, STOBER is an international organization with offices in eleven countries.

This 80 year heritage has given us expertise in gearing that makes STOBER the “gold standard.” STOBER products are of the highest quality and use only the best components.

This catalog covers our comprehensive line of MGS® Speed Reducers for AC induction motors. STOBER is recognized across the United States for its solution design, product durability, and service support. We look forward to the opportunity to work with you, and to help with your speed reducer needs.

Peter Feil, General Manager, STOBER Drives, Inc.

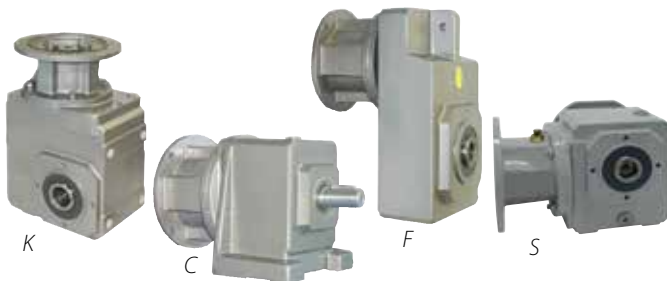


STOBER Drives Inc. was founded in 1991. Our Maysville, Kentucky campus includes 85,000 square feet of sales and service offices, assembly, manufacturing, and warehousing space for German-engineered STOBER products for 1 day shipment nationwide.



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All manufactured components are inspected before being released to assembly. Our quality inspection team ensures every part meets tolerances and is in spec.

STOBBER products are designed and built to perform for the toughest applications. Reliability, adaptability and maintainability are our focus, and durability is truly our trademark.



Unsurpassed:

Solution Designs that build quality around every requirement.

Product Durability that enhances the reliability and life of every application.

Service Support that is empowered to meet and exceed client expectations.

STOBBER Serviced Industries:

Food & Beverage
Meat processing and packing
Poultry
Dairy
Baking
Shingles
Tires
Material Handling and Conveyors
Building Materials
and many others...



MGS® Precision Speed Reducers

The Best you Can Buy...

At STOBBER, offering the best is not a buzz word — it is our passion and way of life. We offer the best product, provided by the best people and processes, and backed by the best service.

Why is STOBBER considered the industry Gold Standard? Our products are backed with superior service, outstanding quality, and the STOBBER guarantee.

The STOBBER Gold Standard: “Total Cost of Ownership” Savings

- STOBBER speed reducers survive in the toughest environments, providing long life under extreme conditions. Their high reliability and durability saves downtime and cost.
- Our product reliability is backed by one of the best warranties in the industry.
- We build and ship in 1 day saving you inventory hassle and cost.
- Our gearboxes adapt to standard NEMA C-face motors size 56C to 356TC.

The MGS® Difference

STOBBER MGS® Speed Reducers are the most efficient units on the market (97% efficiency). This saves money on energy costs and helps optimize and maintain your total operational performance with highly effective equipment:

- Smoother running, better efficiency
- Leakage free, maintenance free
- Runs cool – a difference you can feel
- Runs measurably quieter
- Lower backlash
- Long, maintenance-free life design advantages:
 - Magnetic drain plugs to capture internal particles
 - Flexible coupling eliminates misalignment
 - Gears supported with dual bearings in one piece housing for structural rigidity
 - High quality gears and housings
 - Superior parts including SKF bearings, Simrit seals, Mobil food grade oil



Striving Harder to Deliver the Best Gear Solutions

STOBBER Drives has been assembling products at our Maysville, Kentucky facility for over twenty years. Our expertise in the production and assembly of low-backlash gear units produces products that comply with the highest quality standards.

But, we don't remain satisfied with the status quo. We are continuously enhancing our modern machining production center including numerous recent acquisitions to improve our manufacture time and to ensure maximum quality levels.



Vision:

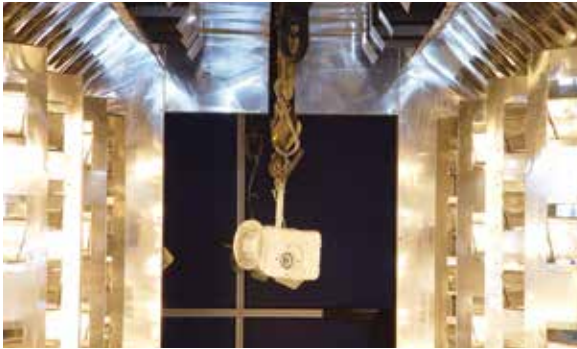
To be recognized as the gold standard

Mission:

To provide the most reliable drive solutions for demanding applications in the shortest lead-time

Values:

Seeking the best
Operating with Integrity
Serving others



A stainless steel epoxy coat Food Duty "K" Series unit en route through the paint and curing oven — our process provides higher paint and coating durability, and enables one day assembly, inspection and shipment.



Service Support for a Lifetime

We stand behind every drive we sell, which is why our service support is also the gold standard in the industry:

STOBER takes pride in offering knowledgeable, factory-trained USA-based service support for our customers. When you call, you won't get a call center on the other side of the globe. Your call is answered in 3 rings or less, letting you know you've found a support system that values your time.

Our easy order method insures you maintain a single contact throughout the process. And, your service representatives are directly responsible for your account. After the sale, our products are easy to install, but if you do have a question or a problem, we provide application and installation support anywhere in the US. With over 80 years gearing & 30 years motor and electronics experience, we have the expertise to solve your most difficult problems.

Application Support Programs

- For support during normal business hours: call 800-711-3588 or email sales@stober.com
- 24/7 emergency customer service hotline: 606.563.6035
- Consultative product support team available via phone, email and chat. Email product support at tecsupport@stober.com
- Application Sizing Software
- Online web tools: CAD and configurator software
- On-site training available
- Emergency shipments available 24/7



Key STOBER Numbers

- 1** day shipping
- 1** hour quoting
- 3** rings or less when you call in — we answer the phone, not an automated switchboard!
- 100%** inspection and testing prior assembly and post assembly (pressure test seals, noise, vibration, ratio verification)
- 5** year warranty
- 24/7** customer service



*Facing page (far left): Brian Sharp, Product Support Team Leader, 2003; Rachael Jones, Customer Service Representative, 2012; (top) Earl Bennington, Warehouse Team Leader, 1992, and Anita Truesdell, Picker, 2007
Above (from top clockwise): Stephanie Berry, Sales Engineer Associate, 2006; Brian Moran, Assembler, 2007; Rick McCall, Machinist, 2007; Lee Thomas, Plant Manager, 2007; Timmy Saunders, Assembly Team Leader, 1995.*

The MGS® Speed Reducer Difference



The KSS Series (inset box below) features an IP69K certified 304 stainless steel housing ideal for frequent pressure cleaning operations typical in the food industry and elsewhere. The PSS Series also features a standard stainless steel housing that is IP69K compliant.

K, KL, C and F Series are optionally available with 316 stainless steel epoxy coating for IP69K certified protection (K, F and C Series shown left to right).



Coatings

K KL C F

These speed reducers are available with 1 day turnaround on a choice of application-specific coatings:

Food Duty

- Primer
- Industrial 316 Stainless Steel Epoxy
- Silver Bullet Anti-Microbial® Epoxy (Silver Bullet AM® is a registered trademark of Burke Industrial Coating)

Beverage Duty

- Primer
- Industrial 316 Stainless Steel Epoxy

Bakery Duty (BISC)

- Primer
- White Epoxy

Food and Beverage Duty

KSS PSS K KL C F

These units have several features and options for maintenance free operation in wet or dry environments.

- Maintenance free design: lifetime lubrication and double output seals (where possible)
- Stainless output bushing, shaft, or bore
- 3 year standard warranty; contact STOBBER for extended 5 year long life warranty
- Multilayer Industrial 316 stainless steel epoxy coating (also available with white epoxy (BISC approved))

- Finish is USDA accepted for food processing and handling; heat cured; IP69K sprayed at 1,450 PSI (100 bar)
- Lubricated for life with Mobil SHC CIBUS 220 for food duty, or Mobil 600XP220 for beverage duty or standard duty applications
- Totally enclosed – no breather to allow contaminants 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



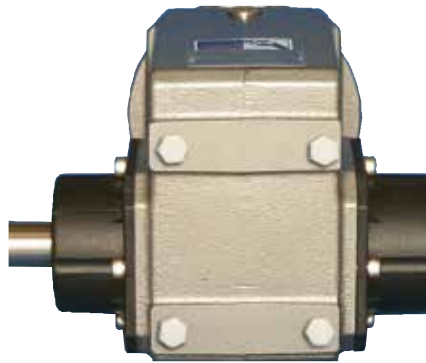
- IP69K certified for extreme high pressure food wash down (sprayed at close distance at 1,450 PSI (100 bar))
- Certified against dust and water ingress
- 304 stainless steel cast housing

Wobble Free Bushing Design

KSS F K KL

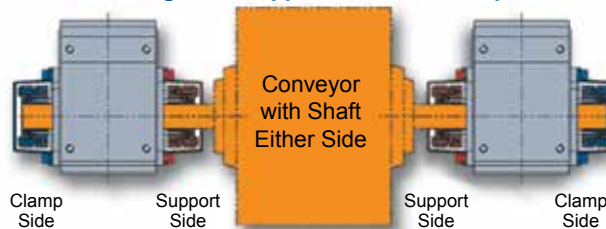
The STOBER "Wobble Free" bushing is a patented double side wobble free bushing system that mounts easily onto standard cold finished, ground, or stainless shafting. This unique design allows the unit to be mounted on the shaft from either side of the reducer by reversing the clamp side and support side bushings. The clamp side is usually the easily accessible outside bushing.

The double sided bushing is not installed into the unit at assembly, but with quick, easy-to-follow instructions when the unit and bushing are mounted on the machine installation.



- Can be supplied with output covers on one or both sides which protect the seals and also cover the rotating bushing
- A variety of bushing bore sizes are provided for each reducer size. The reducer output bore can be changed any time by changing the bushing kit
- The quill, all bushing parts, and hardware can be supplied stainless steel to provide corrosion resistance for wash down applications

Interchangeable Support Side and Clamp Side



The distinct support side and a clamp side are interchangeable. The dual tapered cones are designed to overcome a wide range of tolerances normally found with standard shaft materials. No shaft key necessary.

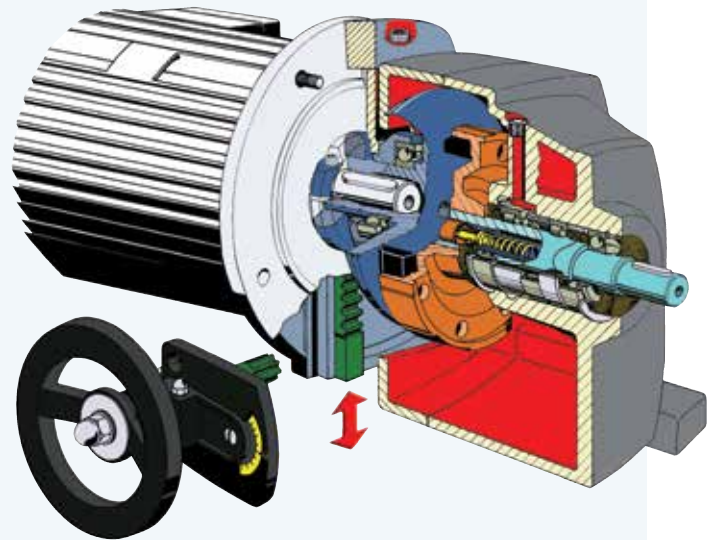
MGS Speed Reducers Outfitted with ComTrac® Adjustable Speed Drives

The ComTrac is an adjustable speed traction drive that transfers power between a motor mounted drive cone and a traction ring.

At rest, a spring loaded torque compensating assembly produces minimal contact pressure between the drive cone and traction ring. As the drive is started, the load compensating cams move against each other to increase pressure between the drive cone and traction ring.

During operation, the load compensating cams maintain the proper amount of pressure between the drive cone and traction ring in proportion to the output load torque required.

Speed changes are made with a hand wheel controlled rack and pinion that changes the relative running diameters of the drive cone and traction ring: the faster running outer diameter of the drive cone increases speed; the slower running center of the drive cone decreases output speed.



ComTrac is available with a severe duty protection package to withstand the effects of outdoor use, exposure to excessively humid or acidic environments, or spray wash downs with water or caustic fluids.



MGS® Speed Reducers At-a-Glance

Versatility

STOBER MGS® speed reducers offer the diversity and range to meet virtually any performance and environmental challenge

If you don't see exactly what you need, call your STOBER representative or STOBER customer service for assistance.

Stainless Steel



Configurations and Options

		KSS	PSS
		page 12	page 30
General	input-Output Orientation	Right-Angle	Inline
	Gearing	Helical/Bevel	Planetary Helical
	Housing	Cast 304 SS	Machined 16-2 SS
	Configurations	3 sizes; 1, 2 or 3 stages	1 size; 1 or 2 stages
	Envelope Size (Min/Max L" x W" x H")	6.7 x 4.2 x 5.0 8.9 x 5.8 x 6.7	7.6 x 6.1 x 6.1 14.4 x 6.1 x 6.1
Performance	Input HP (Max)	1/8 to 10	3/4 to 19
	Output Torque – in-lbs (Max)	616 to 3100	2,655 to 3,894
	Output Speed RPM	10 to 435	18 to 438
NEMA C-Face Motor Compatibility (1750 RPM)	56C	•	•
	143/145TC	•	•
	182/184TC	•	•
	213/215TC		
	254/256TC		
	284/286TC		
	324/326TC		
Output	364/365TC		
	Solid Shaft	•	•
	Hollow Bore	•	
	Wobble Free Bushing	•	
Housing/ Mounting	Round Flange	•	
	Torque Arm	•	
	Foot Mount	•	•
	Tapped Holes	•	•
Protection	USDA Accepted Equipment	•	•
	IP69K Certified	•	
	IP69 Compliant		•
	Housing	Totally enclosed – no breather	Totally Enclosed – no breather
Hardware	Standard 3 year warranty	•	•
	Non-Plated		
	Plated		
	Stainless Steel	•	•
Paint/Coatings	Standard Gloss Gray		
	316SS Epoxy		
	Anti-Microbial Clear Coat		
	BISC White Epoxy		



KL	K	C	F	S
page 34	page 40	page 86	page 128	page 150
Right-Angle	Right-Angle	Inline	Inline (Offset)	Right-Angle
Helical/Bevel	Helical/Bevel	Concentric Helical	Offset Helical	Helical/Worm
Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron
1 size, 2 stages	10 sizes; 2, 3 or 4 stages	10 sizes; 2 or 3 stages	5 sizes; 2 or 3 stages	4 sizes; 2 or 3 stages
5.6 x 4.2 x 4.3	7.4 x 4.2 x 6.3 26.6 x 15.6 x 23.3	6.2 x 5.2 x 5.7 22.6 x 20.1 x 20.9	4.3 x 5.7 x 9.4 9.2 x 10.4 x 17.6	6.2 x 4.2 x 6.6 11.1 x 6.8 x 10.4
1/2 to 2	1/8 to 100	1/8 to 8	1/8 to 33	1/8 to 8
291 to 443	364 to 92,250	182 to 53,148	392 to 9,744	511 to 7,086
55 to 435	5* to 437	2.5* to 190	3* to 406	2.5* to 190
•	•	•	•	•
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Opt	Opt	Opt	Opt	
**	**	**	**	**
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Opt	Opt	Opt	Opt	Opt
Opt	Opt	Opt	Opt	Opt
•	•	•	•	•
Opt	Opt	Opt	Opt	Opt
Opt	Opt	Opt	Opt	Opt
Opt	Opt	Opt	Opt	Opt

*If a slower speed is needed, units can be combined to match application requirements. Contact STOBBER Drives Inc.

** Totally enclosed - no breather housing is optionally available on popular sizes.

MGS® Speed Reducers Sizing/Selection

Speed Reducer Sizing/Selection Requirements

To size an MGS speed reducer for any application, the following information is required:

1. Motor speed (all MGS selection data charts assume a 1750 rpm motor)
2. Desired output speed of the reducer (rpm) to meet the application requirement (refer to selection data charts within each product section, see the following example)
3. Input HP or output torque (in.lbs.) rating requirement of the application (use calculation below)
4. Overhung load limitations of application (use calculation at right)
5. Application Service Factor requirement (use tables on the facing page)

If you have any questions or need assistance selecting the best speed reducer for your application, please contact your STOBBER representative or STOBBER Technical Support.

Once the appropriate MGS speed reducer has been determined use the selection data tables (see sample below), to make the appropriate model selection for the application:

- ① Use RPM Output (Approximate) nearest the application requirement.
- ②A Determine Input HP rating that is greater than or equal to the application required HP, or;
- ②B If selection is based on Torque instead of HP, find an Output Torque that is equal to or greater than required.
- ③ Confirm acceptable overhung load
- ④ Select Base Module and Motor Adapter part number

Complete the part number by selecting the appropriate options from the table located at the beginning of each product section.

Selection Data

Selection Data						
1750 RPM Input		Nominal Ratio	③ Overhung Load Output Shaft ¹⁾ (lbs.)	④ Part Number Codes		Compatible NEMA C-Frame ² with Designated Motor Adapter
②A Input HP	②B Output Torque (in.lbs.)			Base Module	Motor Adapter Adder	
① 435 RPM Output (Approximate)						
2.61	364	4.000	402	KSS102_0040	MS1R050	56C
7.00*	979	4.000	483	KSS202_0040	MS2R050	56C
					MS2R140	143/145TC
9.22*	1,289	4.000	563	KSS302_0040	MS3R050	56C
					MS3R140	143/145TC
					MS3R180	182/184TC

Calculating Overhung Load

Pulling forces or overhung load of pulleys, sheaves, sprockets, etc. on the reducer input and output shaft must not exceed the allowable overhung load limits shown in the Selection Data tables within each product section.

The overhung load is measured at the center of the shaft extension. Hollow output units are not intended to support overhung loads. If an overhung load rating is required, use 50% of the published overhung load from the Selection Data. Contact STOBBER 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
	1.00 Chain Drives
	1.25 Gear Drives
K	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.

Calculating Input HP or Output 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.

$$HP = \frac{\text{Torque (in/lbs)} \times \text{Output Speed (RPM)}}{63,025}$$

$$\text{Torque (in/lbs)} = \frac{HP \times 63,025}{\text{Output Speed (RPM)}}$$

Speed Reducer Sizing to your Specific Application Requirements

Determining Service Factor

Use one of the following two methods to determine the service factor of the speed reducer application.

Note: 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.)

Table 1. Service Class I, II, III

Operating Conditions – not all inclusive. Each application should be checked to determine if any unusual conditions are present. See also Tables 3-5.

Service Class	Service Factor
I	1.25
Moderate Shock – not more than 15 minutes in 2 hours Uniform Load – not more than 10 hours per day.	
II	1.40
Moderate Shock – not more than 10 hours per day. Uniform Load – more than 10 hours per day.	
III	1.50
Heavy Shock – not more than 15 minutes in 2 hours. Moderate Shock – more than 10 hours per day.	
III	1.75
	2.00
Heavy Shock – more than 10 hours per day.	

Type of Equipment	Hrs/Day 3-10 >10
Agitators	
Pure Liquids	I II
Semi-Liquids, variable density	II II
Solids	III III
Brewing and Distilling	
Bottling Machinery	I II
Brew Kettles (continuous duty)	II
Cookers (continuous duty)	II
Mash Tubs (continuous duty)	II
Scale Hopper (frequent starts)	II II
Can Filling Machines	I II
Car Dumpers	III III
Clarifiers	I II
Classifiers	II II
Conveyors (uniform load and fed)	
Apron	II II
Assembly Belt (bucket or pan)	II II
Chain - Flight	II II
Oven - Live Roll - Screw	I II
Conveyors (non-uniform load and fed)	
Apron	II III
Assembly Belt (bucket or pan)	II II
Chain - Flight	II II
Live Roll	* *
Oven - Screw	II II
Reciprocating - Shaker	III III

* Contact STOBBER Drives

Method 1.

Establish a Service Factor (SF) when the driven equipment and service class are known, use Table 1.

Method 2.

Establish a Service Factor (SF) when conditions are known, but the service class is NOT Known, use the information in Tables 2 – 6 below applied to the following equation:

$$SF = f_B \times f_T \times f_L \times f_V$$

Once the service factor has been determined, be sure to choose an MGS speed reducer that will meet or exceed:

$$HP \times SF \text{ or } \text{Torque (in/lbs)} \times SF$$

NOTE: Do not Service Factor the motor.

Table 2. Load Factor (f_B)

Uniform Load.....	1.0	Medium Shock....	1.4
Non-uniform Load	1.25	Severe Shock	1.6

Contact STOBBER Technical Support for selection assistance on applications requiring frequent starts and stops.

Table 3. Ambient Temperature Factor (f_T)

Ambient 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 STOBBER Technical Support.

Table 4. Hours of Service Factor (f_L)

Hours of Service							
	2	4	6	8	12	16	24
f _L	0.75	0.85	0.95	1.0	1.10	1.15	1.20

Table 5. Torque Characteristics (f_V)

Use for Frequency Converter Only

	f _V
Constant torque over entire speed variation	1.0
Increasing output torque from 87 – 50 Hz	1.7

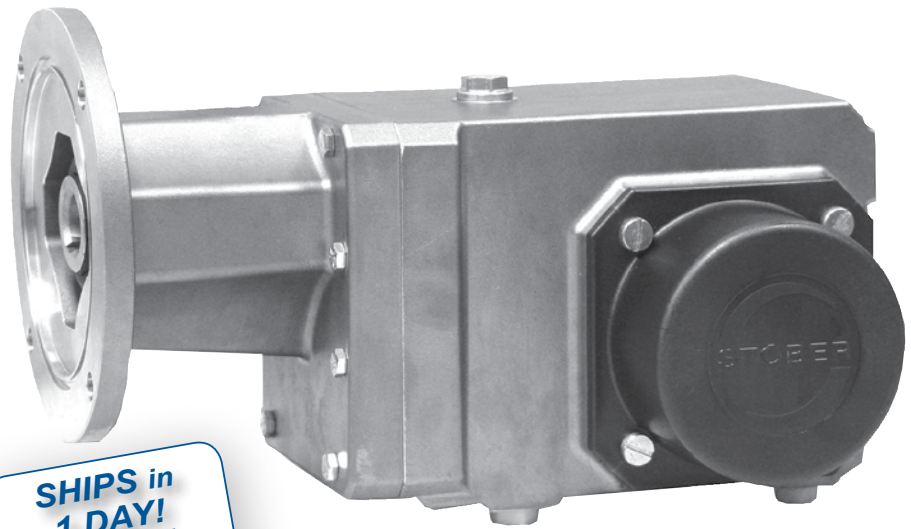
Type of Equipment	Hrs/Day 3-10 >10
Elevators	
Bucket (uniform load)	I II
Bucket (nonuniform load - heavy duty)	II III
Centrifugal Discharge	I II
Freight	II II
Gravity Discharge	I II
Food Industry	
Slicer	II III
Bottling, Can Filling Machines	I II
Cereal Cooker	I II
Mixer, Grinder	III III
Line Shafts	
Uniform load	I II
Nonuniform, Heavy Duty	II III
Machine Tools	
Auxiliary Drive	I II
Main Drive - uniform load	II II
Main Drive - nonuniform Load	III III
Table Conveyors (non reversing)	
Group Drives	II III
Individual Drives	III III
Wire Drawing, Flattening, Winding	II III
Mixers	
Concrete - Continuous	II III
Concrete - Intermittent	III III
Constant Density	II III
Semi-Liquid	III III
Sewage Disposal Equipment	
Bar Screens	I II
Chemical Feeders	I II
Collectors	I II
Dewatering Screws	II II
Scum Breakers	II III
Slow or Rapid Mixers	III III
Thickeners	II II
Vacuum Filters	II II
Screens	
Air Washing	I II
Rotary - Stone or Gravel	II II
Traveling Water Intake	I II
Skip Hoists	II III
Slab Pushers	II III
Stokers	II II
Textile Industry	
Batchers or Calenders	II II
Cards	I II
Card Machines	III III
Dry Cans and Dryers	II II
Dyeing Machines	* III
Looms	* *
Mangles, Nappers and Pads	II II
Soapers, Tenner Frames	II II
Sinners, Washers, Winders	II II
Tumbling Barrels	III III
Windlass	II III

KSS Series: RIGHT ANGLE Solid Shaft / Hollow Output

The KSS Series utilizes our quality-proven, high-efficiency K Series helical/bevel speed reducer mechanics. Enclosed within a sealed, stainless steel housing, the KSS provides superior performance for food duty and severe wash down applications.

The adaptability of our patented double wobble-free bushing, and expanded bore sizes, also makes the KSS ideal for wide ranging installations with motors up to 5 HP and frame sizes from 56C to 182/184TC.

The KSS offers a 30% smaller footprint than the standard MGS unit, even though it uses the same high quality helical gearing (case hardened to 58-62 Rockwell C and precision finished for low noise and long service life). The 97% efficiency of the KSS also assures reliability plus cost savings in energy and maintenance.



**SHIPS in
1 DAY!**
NO EXPEDITE FEE FOR
24 HOUR SERVICE

KSS speed reducers use the patented stainless steel double side bushing (U.S. Patent Number 5,496,127), mounted into stainless steel output quill – easily installs onto standard stainless steel shafting

KSS Series Design Advantages

- 3 year standard warranty
- Up to 5 HP
- Output bore diameters up to 1-1/2"
- Ratios up to 272:1
- ≤12 arcmins backlash
- NEMA C-face for 56C, 143/145TC, and 182/184TC (with O-ring)
- Assembled in the U.S.A.
- Maintenance free – lubricated for life
- Shipped filled with Mobil SHC CIBUS 220 food grade oil
- Totally enclosed – no breather to allow contaminants in or oil out
- Bushing allows mounting from either side
- All stainless steel hardware
- Laser etched nameplate data

The Optimum Food & Beverage Solution!

KSS Speed Reducers are

Ideal for Food & Beverage Industry Applications

- Cast stainless steel housing outside; all stainless steel hardware inside
 - Mobil SHC CIBUS 220 food grade oil
 - Suitable for the most extreme wash down applications
- USDA Accepted Equipment • FDA compliant • IP69K certification



Overview

IP69K
STAINLESS STEEL



KSS Series RIGHT ANGLE Solid Shaft / Hollow Output

KSS Ordering Options At-a-Glance

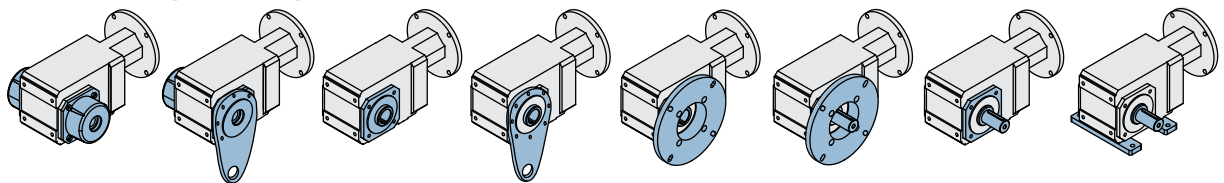
KSS Series are available in a wide range of user-selected design options that tailor the speed reducer to your motor and exact application requirements. Use the appropriate order codes below to build a part number for the complete assembly.

Part Number Example: ① **KSS** ② **1** ③ **0** ④ **2** ⑤ **W** ⑥ **G** ⑦ **0040** ⑧ **MS1R** ⑨ **050** ⑩* **E1256**

Design Option	Part Number Code	Description
① Series	KSS	Stainless steel housing; right angle helical/bevel
② Size	1 2 3	3 sizes of speed reducers
③ Generation	0	Version of speed reducers
④ # of Stages	2 3	Two stage or three stage
⑤ Output	A	Hollow bore output
	V	Solid shaft output (specify side 3, 4 or double sided)
	W	Double wobble-free bushing
⑥ Housing	F	Round output flange (specify side 3 or 4)
	G	Tapped holes around output
	GD	Torque arm
	NG	Foot mounting (specify side 1 or 5)
⑦ Ratio	0040	Ratios range from 4:1 to 279:1 (refer to Selection Data tables)
⑧ Motor Adapter	MS1R	For KSS1
	MS2R	For KSS2
	MS3R	For KSS3
⑨ NEMA Frame Size	050	56C
	140	143/145TC
	180	182/184TC
⑩ Mounting Position*	EL1256 E34	Mounting positions for 3 year warranty

*Note: Mounting position is added to "notes" section of order.

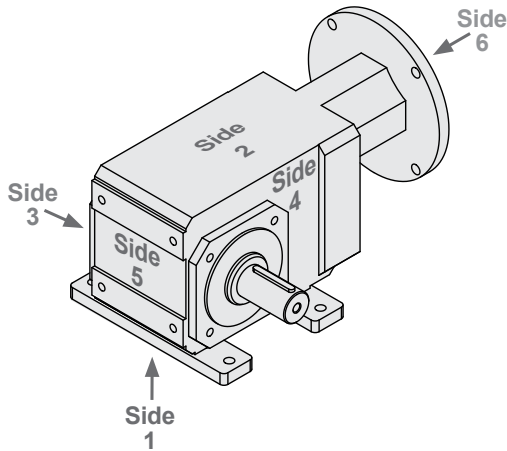
Output and Housing Configurations



See Page	22	23	24	25	26	27	28	29
Output	W Double Bushing	W Double Bushing	A Hollow Bore	A Hollow Bore	A Hollow Bore	V Solid Shaft	V Solid Shaft	V Solid Shaft
Housing	G Tapped Holes	GD Torque Arm	G Tapped Holes	GD Torque Arm	F Round Flange	F Round Flange	G Tapped Holes	NG Foot Mount

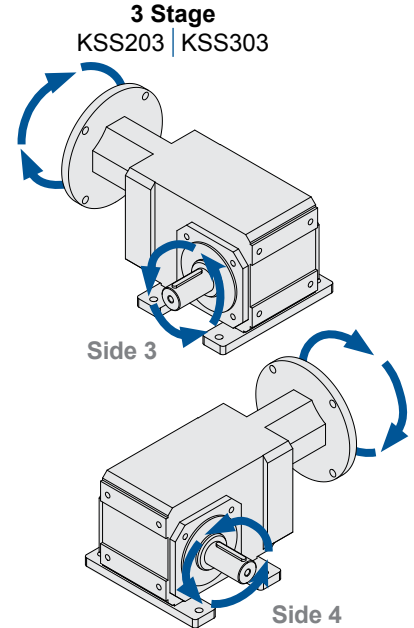
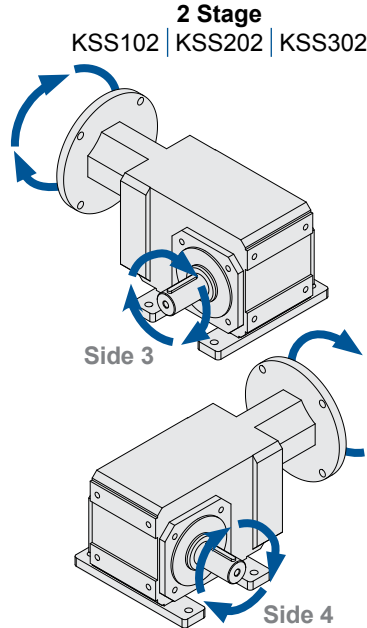
KSS Series: RIGHT ANGLE Solid Shaft / Hollow Output

KSS Series Orientation



KSS Series Direction of Rotation

Output available on side 3, 4 or both. Note: With a double output, the shaft rotation of Side 3 will be the OPPOSITE direction of Side 4 when viewed from Side 5.



KSS Series Output Options

BLUE: standard output diameters in stock
BLACK: optional diameters in stock

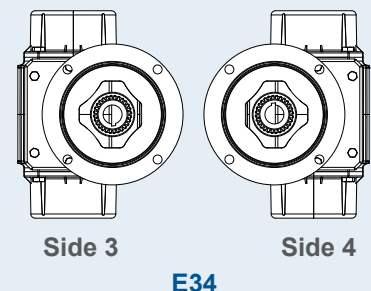
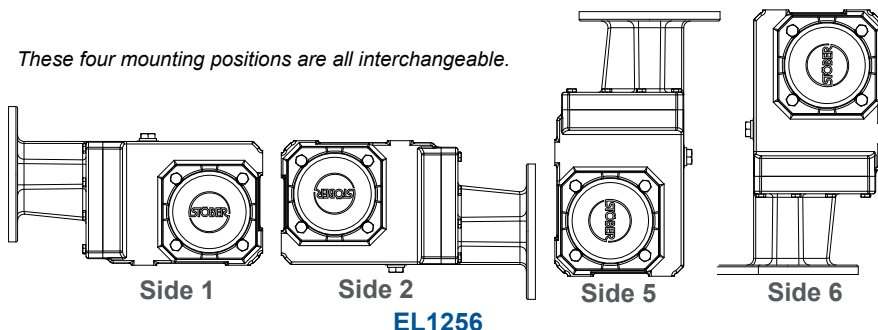
All Outputs Stainless Steel (Inches)		KSS1	KSS2	KSS3
"V" Solid Shaft	Inches	1	1-1/4	1-1/4
"A" Hollow Bore	Inches	1	1-1/4 1-3/8	1 1-1/4 1-3/8 1-7/16
"W" Wobble Free Bushing	Inches	1	1 1-3/16 1-1/4 1-3/8 1-7/16 1-1/2	1 1-3/16 1-1/4 1-3/8 1-7/16 1-1/2
	Metric	25	30 35	30 35

KSS Mounting Position Options

When ordering any KSS unit, the mounting position must be specified. Use one of the mounting position order codes illustrated below that corresponds to the intended application.

Note that KSS units are equipped with specialized seals, higher oil level, and additional features that enables all horizontal output positions to be used interchangeably.

These four mounting positions are all interchangeable.



Selection Data

IP69K
STAINLESS STEEL



KSS

RIGHT ANGLE Solid Shaft / Hollow Output

KSS Sizing/Selection:

1. Find the **RPM Output (Approximate)** nearest the application requirement. (If the exact Output RPM is required, divide the Input RPM [1750] by the value listed in the Nominal Ratio column.)
- 2a. In the **Input HP** column, locate the rating that is greater than or equal to the required HP, or;
- 2b. If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.
3. Confirm that the **Overhung Load** is acceptable for the application.
4. Choose the appropriate **Base Module** and **Motor Adapter** part number code (see page 13 for complete ordering information).

Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes		Compatible NEMA C-Frame ²⁾ with Designated Motor Adapter
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	
435 RPM Output (Approximate)						
2.61	364	4.000	402	KSS102_0040	MS1R050	56C
7.00*	979	4.000	483	KSS202_0040	MS2R050	56C
					MS2R140	143/145TC
9.22*	1,289	4.000	563	KSS302_0040	MS3R050	56C
					MS3R140	143/145TC
					MS3R180	182/184TC
400 RPM Output (Approximate)						
6.60*	1,008	4.364	497	KSS202_0044	MS2R050	56C
					MS2R140	143/145TC
9.22*	1,406	4.364	580	KSS302_0044	MS3R050	56C
					MS3R140	143/145TC
11.57*	1,765	4.364	580	KSS302_0044	MS3R180	182/184TC
340 RPM Output (Approximate)						
5.89*	1,067	5.177	526	KSS202_0052	MS2R050	56C
					MS2R140	143/145TC
325 RPM Output (Approximate)						
8.73*	1,640	5.375	621	KSS302_0054	MS3R050	56C
					MS3R140	143/145TC
10.07*	1,892	5.375	621	KSS302_0054	MS3R180	182/184TC
315 RPM Output (Approximate)						
2.61	507	5.568	449	KSS102_0056	MS1R050	56C

1) 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.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

C-Frame	56C	143/145TC	182/184
HP	1/3 to 1-1/2	1 to 2	3 to 5

* Thermal HP Limit

Base Module Size	KSS102	KSS202	KSS302
HP Limit	2.95	5.36	7.38

KSS Series: RIGHT ANGLE Solid Shaft / Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes		Compatible NEMA C-Frame ²⁾ with Designated Motor Adapter
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	
290 RPM Output (Approximate)						
2.61	546	6.000	460	KSS102_0060	MS1R050	56C
5.34	1,120	6.000	553	KSS202_0060	MS2R050	56C
					MS2R140	143/145TC
9.22*	1,933	6.000	645	KSS302_0060	MS3R050	56C
					MS3R140	143/145TC
9.36*	1,962	6.000	645	KSS302_0060	MS3R180	182/184TC
260 RPM Output (Approximate)						
2.61	605	6.644	476	KSS102_0066	MS1R050	56C
4.97	1,161	6.683	573	KSS202_0067	MS2R050	56C
					MS2R140	143/145TC
7.92*	1,865	6.740	670	KSS302_0067	MS3R050	56C
					MS3R140	143/145TC
8.66*	2,040	6.740	670	KSS302_0067	MS3R180	182/184TC
245 RPM Output (Approximate)						
4.77	1,186	7.118	585	KSS202_0071	MS2R050	56C
					MS2R140	143/145TC
235 RPM Output (Approximate)						
8.14*	2,104	7.391	691	KSS302_0074	MS3R050	56C
					MS3R140	143/145TC
					MS3R180	182/184TC
210 RPM Output (Approximate)						
2.41	699	8.309	513	KSS102_0083	MS1R050	56C
4.27	1,253	8.397	618	KSS202_0084	MS2R050	56C
					MS2R140	143/145TC
6.87	2,029	8.444	722	KSS302_0084	MS3R050	56C
					MS3R140	143/145TC
7.45	2,199	8.444	722	KSS302_0084	MS3R180	182/184TC
190 RPM Output (Approximate)						
2.24	725	9.249	532	KSS102_0092	MS1R050	56C
4.02	1,292	9.190	637	KSS202_0092	MS2R050	56C
					MS2R140	143/145TC
7.00	2,268	9.267	745	KSS302_0093	MS3R050	56C
					MS3R140	143/145TC
					MS3R180	182/184TC

1) 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.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

C-Frame	56C	143/145TC	182/184
HP	1/3 to 1-1/2	1 to 2	3 to 5

* Thermal HP Limit

Base Module Size	KSS102	KSS202	KSS302
HP Limit	2.95	5.36	7.38

Selection Data

IP69K
STAINLESS STEEL



KSS

RIGHT ANGLE Solid Shaft / Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes		Compatible NEMA C-Frame ²⁾ with Designated Motor Adapter
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	

170 RPM Output (Approximate)

2.11	747	10.140	548	KSS102_0100	MS1R050	56C
3.78	1,332	10.073	657	KSS202_0100	MS2R050	56C
					MS2R140	143/145TC
5.98	2,117	10.135	768	KSS302_0100	MS3R050	56C
					MS3R140	143/145TC
6.60	2,337	10.135	768	KSS302_0100	MS3R180	182/184TC

150 RPM Output (Approximate)

1.93	781	11.565	573	KSS102_0115	MS1R050	56C
3.45	1,394	11.546	687	KSS202_0115	MS2R050	56C
					MS2R140	143/145TC
6.02	2,445	11.610	803	KSS302_0115	MS3R050	56C
					MS3R140	143/145TC
					MS3R180	182/184TC

140 RPM Output (Approximate)

1.82	804	12.618	590	KSS102_0125	MS1R050	56C
3.24	1,439	12.705	710	KSS202_0125	MS2R050	56C
					MS2R140	143/145TC
5.12	2,251	12.577	825	KSS302_0125	MS3R050	56C
					MS3R140	143/145TC
5.71	2,511	12.577	825	KSS302_0125	MS3R180	182/184TC

125 RPM Output (Approximate)

1.69	835	14.114	612	KSS102_0140	MS1R050	56C
3.06	1,481	13.851	730	KSS202_0140	MS2R050	56C
					MS2R140	143/145TC
5.33	2,599	13.935	854	KSS302_0140	MS3R050	56C
					MS3R140	143/145TC
					MS3R180	182/184TC

105 RPM Output (Approximate)

1.51	883	16.714	648	KSS102_0165	MS1R050	56C
2.68	1,581	16.858	780	KSS202_0170	MS2R050	56C
					MS2R140	143/145TC
4.03	2,389	16.939	911	KSS302_0170	MS3R050	56C
					MS3R140	143/145TC
4.68	2,774	16.939	911	KSS302_0170	MS3R180	182/184TC

1) 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.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

C-Frame	56C	143/145TC	182/184
HP	1/3 to 1-1/2	1 to 2	3 to 5

KSS Series: RIGHT ANGLE Solid Shaft / Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes		Compatible NEMA C-Frame ²⁾ with Designated Motor Adapter
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	
100 RPM Output (Approximate)						
1.46	898	17.563	659	KSS102_0175	MS1R050	56C
2.62	1,600	17.469	789	KSS202_0175	MS2R050	56C
					MS2R140	143/145TC
4.62	2,793	17.293	917	KSS302_0175	MS3R050	56C
					MS3R140	143/145TC
					MS3R180	182/184TC
85 RPM Output (Approximate)						
1.33	940	20.150	690	KSS102_0200	MS1R050	56C
2.37	1,683	20.327	830	KSS202_0200	MS2R050	56C
					MS2R140	143/145TC
3.56	2,526	20.278	967	KSS302_0200	MS3R050	56C
					MS3R140	143/145TC
4.15	2,945	20.278	967	KSS302_0200	MS3R180	182/184TC
75 RPM Output (Approximate)						
1.21	986	23.265	723	KSS102_0230	MS1R050	56C
2.17	1,758	23.180	867	KSS202_0230	MS2R050	56C
					MS2R140	143/145TC
3.79	3,084	23.292	1,013	KSS302_0230	MS3R050	56C
					MS3R140	143/145TC
					MS3R180	182/184TC
70 RPM Output (Approximate)						
0.96	851	25.220	743	KSS102_0250	MS1R050	56C
2.02	1,772	25.130	891	KSS202_0250	MS2R050	56C
					MS2R140	143/145TC
2.91	2,566	25.259	1,041	KSS302_0250	MS3R050	56C
					MS3R140	143/145TC
3.48	3,070	25.259	1,041	KSS302_0250	MS3R180	182/184TC
60 RPM Output (Approximate)						
1.07	1,049	28.048	770	KSS102_0280	MS1R050	56C
1.81	1,772	27.950	923	KSS202_0280	MS2R050	56C
					MS2R140	143/145TC
3.18	3,100	27.883	1,076	KSS302_0280	MS3R050	56C
					MS3R140	143/145TC
					MS3R180	182/184TC

1) 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.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

C-Frame	56C	143/145TC	182/184
HP	1/3 to 1-1/2	1 to 2	3 to 5

Selection Data

IP69K
STAINLESS STEEL



KSS

RIGHT ANGLE Solid Shaft / Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes		Compatible NEMA C-Frame ²⁾ with Designated Motor Adapter
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	
55 RPM Output (Approximate)						
2.76	3,100	32.649	1,134	KSS303_0330	MS3R050	56C
					MS3R140	143/145TC
52 RPM Output (Approximate)						
0.55	647	33.707	886	KSS102_0340	MS1R050	56C
1.16	1,364	33.618	1,063	KSS202_0340	MS2R050	56C
					MS2R140	143/145TC
1.89	2,217	33.618	1,240	KSS302_0340	MS3R050	56C
					MS3R140	143/145TC
50 RPM Output (Approximate)						
0.87	1,063	35.105	895	KSS102_0350	MS1R050	56C
1.47	1,772	34.554	1,070	KSS202_0350	MS2R050	56C
					MS2R140	143/145TC
2.51	3,100	35.833	1,260	KSS303_0360	MS3R050	56C
					MS3R140	143/145TC
2.55	3,100	34.731	1,250	KSS302_0350	MS3R050	56C
					MS3R140	143/145TC
45 RPM Output (Approximate)						
1.30	1,772	39.454	1,035	KSS203_0390	MS2R050	56C
2.30	3,100	39.187	1,288	KSS303_0390	MS3R050	56C
					MS3R140	143/145TC
43 RPM Output (Approximate)						
0.39	544	40.300	927	KSS102_0400	MS1R050	56C
1.20	1,705	40.512	1,299	KSS302_0410	MS3R050	56C
					MS3R140	143/145TC
40 RPM Output (Approximate)						
1.10	1,772	46.225	1,151	KSS202_0460	MS2R050	56C
					MS2R140	143/145TC
1.14	1,772	45.223	1,083	KSS203_0450	MS2R050	56C
1.89	3,048	46.225	1,343	KSS302_0460	MS3R050	56C
					MS3R140	143/145TC
2.01	3,100	44.892	1,333	KSS303_0450	MS3R050	56C
					MS3R140	143/145TC

1) 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.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

C-Frame	56C	143/145TC	182/184
HP	1/3 to 1-1/2	1 to 2	3 to 5

KSS Series: RIGHT ANGLE Solid Shaft / Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes		Compatible NEMA C-Frame ²⁾ with Designated Motor Adapter
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	
35 RPM Output (Approximate)						
0.25	442	50.310	980	KSS102_0500	MS1R050	56C
0.55	900	46.918	963	KSS102_0470	MS1R050	56C
1.03	1,772	49.759	1,118	KSS203_0500	MS2R050	56C
1.85	3,100	48.631	1,360	KSS303_0490	MS3R050	56C
					MS3R140	143/145TC
30 RPM Output (Approximate)						
0.95	1,772	54.25	1,151	KSS203_0540	MS2R050	56C
0.38	753	56.095	970	KSS102_0560	MS1R050	56C
1.20	2,345	55.705	1,407	KSS302_0560	MS3R050	56C
					MS3R140	143/145TC
1.67	3,100	53.883	1,395	KSS303_0540	MS3R050	56C
					MS3R140	143/145TC
27 RPM Output (Approximate)						
0.78	1,772	66.027	1,229	KSS203_0660	MS2R050	56C
1.38	3,100	65.499	1,465	KSS303_0650	MS3R050	56C
					MS3R140	143/145TC
25 RPM Output (Approximate)						
0.25	616	70.029	1,064	KSS102_0700	MS1R050	56C
0.75	1,772	68.419	1,244	KSS203_0680	MS2R050	56C
1.35	3,100	66.868	1,473	KSS303_0670	MS3R050	56C
					MS3R140	143/145TC

1) 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.

2) **Motor HP for TEFC NEMA C-Frame @ 1750 RPM**

C-Frame	56C	143/145TC	182/184
HP	1/3 to 1-1/2	1 to 2	3 to 5

Selection Data

IP69K
STAINLESS STEEL



KSS

RIGHT ANGLE Solid Shaft / Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes		Compatible NEMA C-Frame ²⁾ with Designated Motor Adapter
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	
22 RPM Output (Approximate)						
0.65	1,772	79.615	1,308	KSS203_0800	MS2R050	56C
1.15	3,100	78.410	1,532	KSS303_0780	MS3R050	56C
					MS3R140	143/145TC
19 RPM Output (Approximate)						
0.57	1,772	90.787	1,350	KSS203_0910	MS2R050	56C
1.00	3,100	90.061	1,575	KSS303_0900	MS3R050	56C
					MS3R140	143/145TC
16 RPM Output (Approximate)						
0.47	1,772	109.471	1,350	KSS203_1090	MS2R050	56C
0.84	3,100	107.814	1,575	KSS303_1080	MS3R050	56C
					MS3R140	143/145TC
13 RPM Output (Approximate)						
0.38	1,772	135.335	1,350	KSS203_1350	MS2R050	56C
0.67	3,100	134.292	1,575	KSS303_1340	MS3R050	56C
					MS3R140	143/145TC
10 RPM Output (Approximate)						
0.50	3,048	178.737	1,575	KSS303_1790	MS3R050	56C
					MS3R140	143/145TC
0.28	1,772	181.048	1,350	KSS203_1810	MS2R050	56C
0.19	1,407	217.538	1,350	KSS203_2180	MS2R050	56C
0.13	1,172	271.923	1,350	KSS203_2720	MS2R050	56C

1) 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.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

C-Frame	56C	143/145TC	182/184
HP	1/3 to 1-1/2	1 to 2	3 to 5

KSS Series: RIGHT ANGLE Solid Shaft / Hollow Output

“W” Double Bushing Output with “G” Tapped Holes around Output Housing

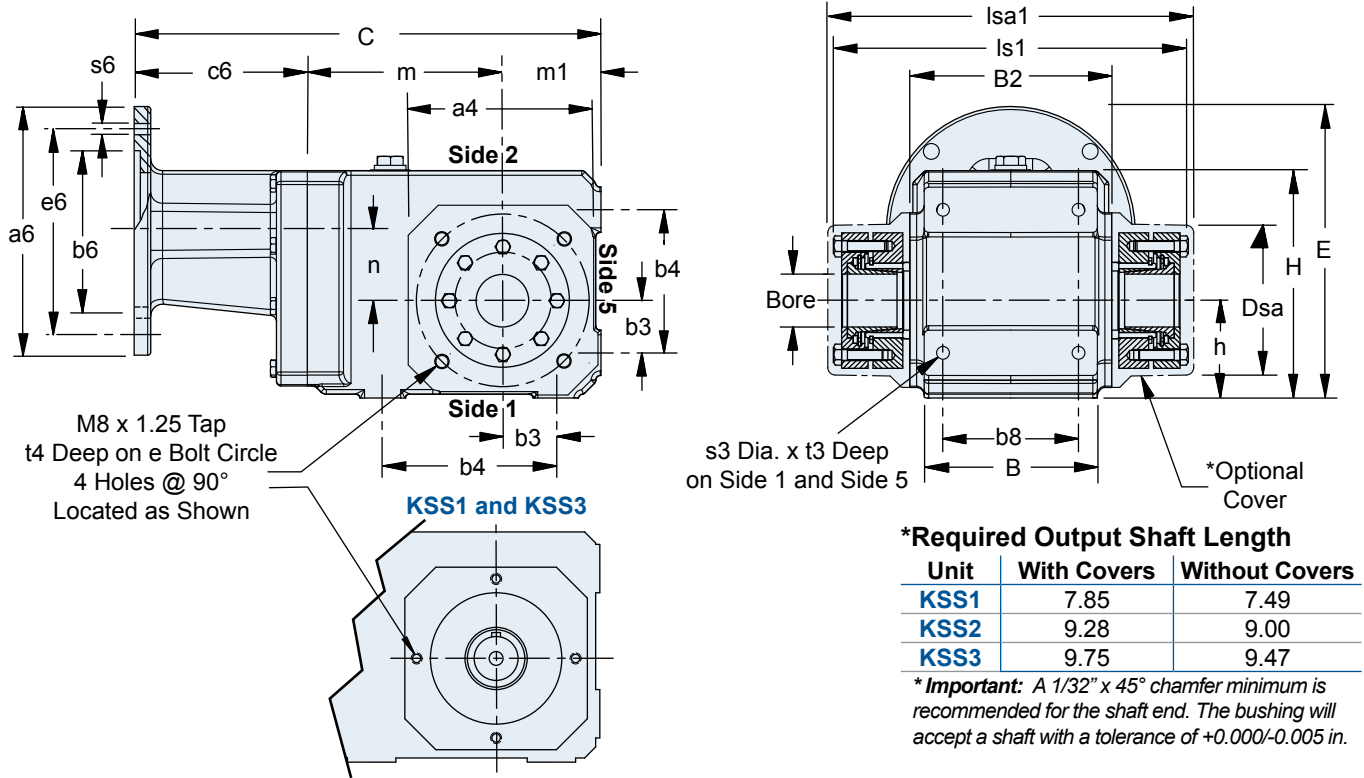


Table 1 KSS Series – “W” Double Wobble-Free Bushing Output with “G” Tapped Holes Housing – Dimensions (in)

Base Module	B2	b3	b4	b8	Dsa	e	H	h	Is1	Isa1	m1	s3	t3	t4
KSS1	4.17	1.18	3.54	2.76	3.07	3.54	4.96	2.36	7.64	7.80	2.36	M8x1.25	0.51	0.51
KSS2	5.28	1.38	4.53	3.54	3.92	4.53	5.94	2.56	8.90	9.36	2.56	M10x1.50	0.63	0.51
KSS3	5.75	1.38	5.12	4.13	3.78	4.53	6.56	2.95	9.41	9.95	2.95	M10x1.50	0.63	0.55

Table 2 KSS Series – “WG” Style Motor Adapter Dimensions (in)

Base Module	NEMA C-Face	a4	a6	B	b6	C	c6	E	e6	m	n	s6	Wt. lbs.
KSS102WG_MS1R050	56C	4.53	6.50	3.54	4.500	10.55	3.81	7.00	5.87	4.37	1.42	0.41	29
KSS202WG_MS2R050	56C	4.96	6.50	4.41	4.500	12.20	4.53	7.60	5.87	5.12	1.81	0.41	40
KSS202WG_MS2R140	143/145TC												
KSS203WG_MS2R050	56C	4.57	6.50	4.53	4.500	13.07	3.31	6.64	5.87	7.20	0.83	0.41	53
KSS302WG_MS3R050	56C		6.50		4.500	13.23	4.37		5.87	5.91	2.09	0.41	55
KSS302WG_MS3R140	143/145TC	5.20	6.50	5.51	4.500	13.23	4.37	8.27	5.87	5.91	2.09	0.41	55
KSS302WG_MS3R180	182/184TC		9.00		8.500	14.57	6.59		7.25	5.02	2.07	0.55	67
KSS303WG_MS3R050	56C	5.20	6.50	5.51	4.500	15.22	4.00	6.83	5.87	8.27	0.63	0.41	55
KSS303WG_MS3R140	143/145TC												

Table 3 “WFBSS” Double Side Bushings Stock Bore Sizes

Base Module	Inches						Metric – mm		
	1	1-3/16	1-1/4	1-3/8	1-7/16	1-1/2	25	30	35
KSS1	WFBSS1-100	—	—	—	—	—	WFBSS1-25	—	—
KSS2	WFBSS2-100	WFBSS2-103	WFBSS2-104	WFBSS2-106	WFBSS2-107	WFBSS2-108	—	WFBSS2-30	WFBSS2-35
KSS3	WFBSS3-100	WFBSS3-103	WFBSS3-104	WFBSS3-106	WFBSS3-107	WFBSS3-108	—	WFBSS3-30	WFBSS3-35



“W” Double Bushing Output with “GD” Torque Arm

Refer to page 22 for all other dimensions

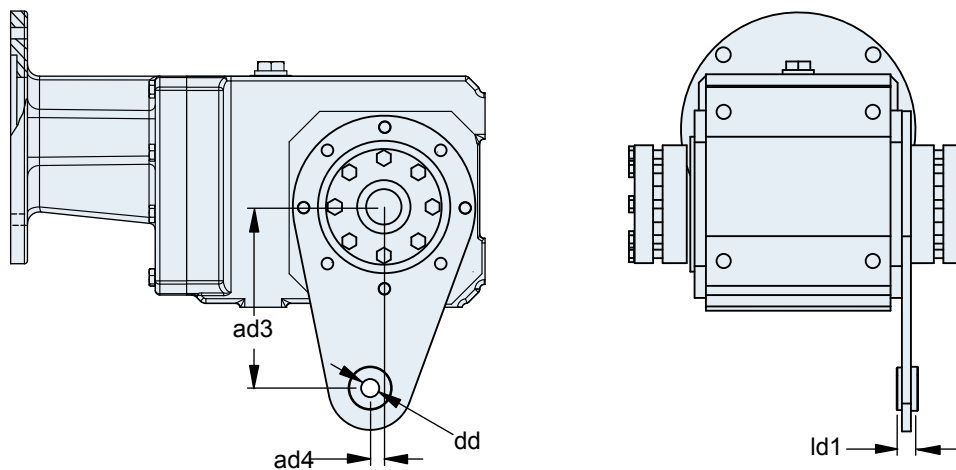


Table 4 “GD” Torque Arm

Base Module	Part Number	mm			
		ad3	ad4	dd	ld1
KSS1	213130	130	10	13	15
KSS2	213131	130	10	13	15
KSS3	213131	130	10	13	15

Note: a bushing output plastic cover cannot be used on the Torque Arm side of speed reducer.
A plastic cover can only be used on the side opposite the torque arm.

KSS Series: RIGHT ANGLE Solid Shaft / Hollow Output

“A” Hollow Bore Output with “G” Tapped Holes around Output Housing

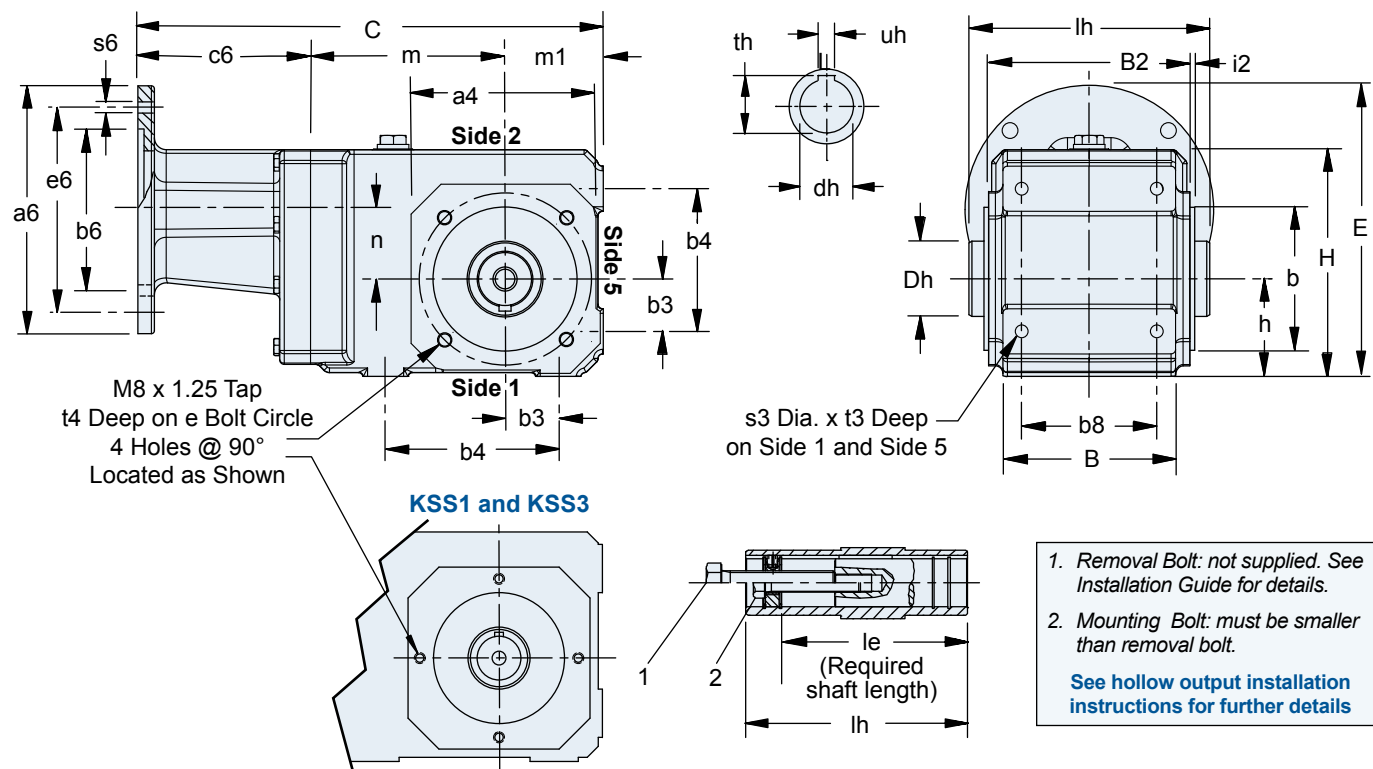


Table 1 KSS Series – “A” Hollow Output with “G” Tapped Holes Housing – Dimensions (in)

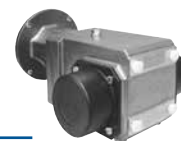
Base Module	b	B2	b4	b8	e	H	h	i2	lh	m1	s3	t3	t4
KSS1	2.95	4.17	3.54	2.76	3.54	4.96	2.36	0.12	4.72	2.36	M8x1.25	0.51	0.51
KSS2	3.74	5.28	4.53	3.54	4.53	5.94	2.56	0.12	5.83	2.56	M10x1.50	0.63	0.51
KSS3	3.74	5.75	5.12	4.13	4.53	6.56	2.95	0.12	6.30	2.95	M10x1.50	0.63	0.55

Table 2 KSS Series – “AG” Style Motor Adapter Dimensions (in)

Base Module	NEMA C-Face	a4	a6	B	b3	b6	C	c6	E	e6	m	n	s6	Wt. lbs.
KSS102AG_MS1R050	56C	4.53	6.50	3.54	1.18	4.500	10.55	3.81	7.00	5.87	4.37	1.42	0.41	29
KSS202AG_MS2R050	56C	4.96	6.50	4.41	1.38	4.500	12.20	4.53	7.60	5.87	5.12	1.81	0.41	40
KSS202AG_MS2R140	143/145TC													
KSS203AG_MS2R050	56C	4.57	6.50	4.53	1.54	4.500	13.07	3.31	6.64	5.87	7.20	0.83	0.41	53
KSS302AG_MS3R050	56C		6.50			4.500	13.23	4.37		5.87	5.91	2.09	0.41	55
KSS302AG_MS3R140	143/145TC	5.20	6.50	5.51	1.38	4.500	13.23	4.37	8.27	5.87	5.91	2.09	0.41	55
KSS302AG_MS3R180	182/184TC		9.00			8.500	14.57	6.59		7.25	5.02	2.07	0.55	67
KSS303AG_MS3R050	56C	5.20	6.50	5.51	1.38	4.500	15.22	4.00	6.83	5.87	8.27	0.63	0.41	55
KSS303AG_MS3R140	143/145TC													

Table 3 “A” Hollow Bore Output — Standard Sizes (see page 14 for other available output options)

Base Module	Inches					Removal Bolt 1
	Dh	dh	le	th	uh	
KSS1	1.57	1	3.86	1.11	1/4	1/2 – 13
KSS2	1.97	1-1/4	4.78	1.37	1/4	1/2 – 13
KSS3	1.97	1-3/8	4.92	1.52	5/16	5/8 – 11



“A” Hollow Bore Output with “GD” Torque Arm

Refer to page 24 for all other dimensions

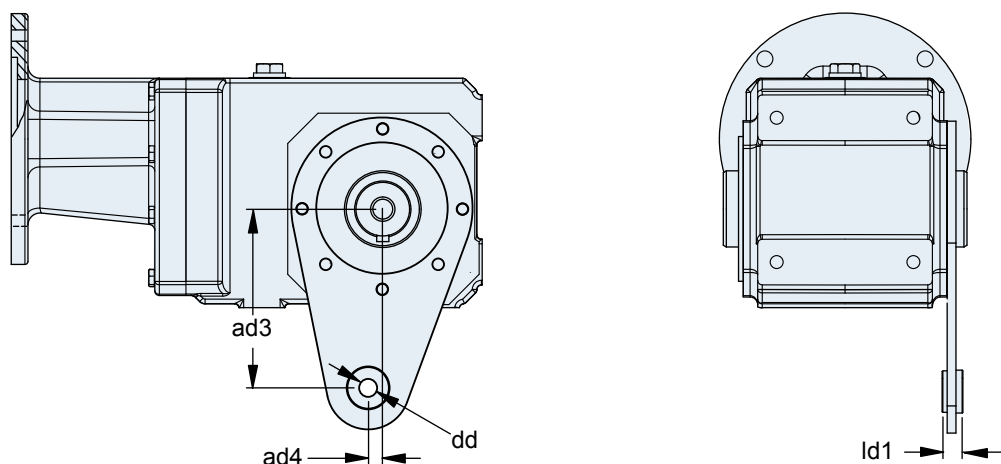


Table 4 “GD” Torque Arm

Base Module	Part Number	mm			
		ad3	ad4	dd	ld1
KSS1	213130	130	10	13	15
KSS2	213131	130	10	13	15
KSS3	213131	130	10	13	15

KSS Series: RIGHT ANGLE Solid Shaft / Hollow Output

“A” Hollow Bore Output with “F” Round Flange Housing

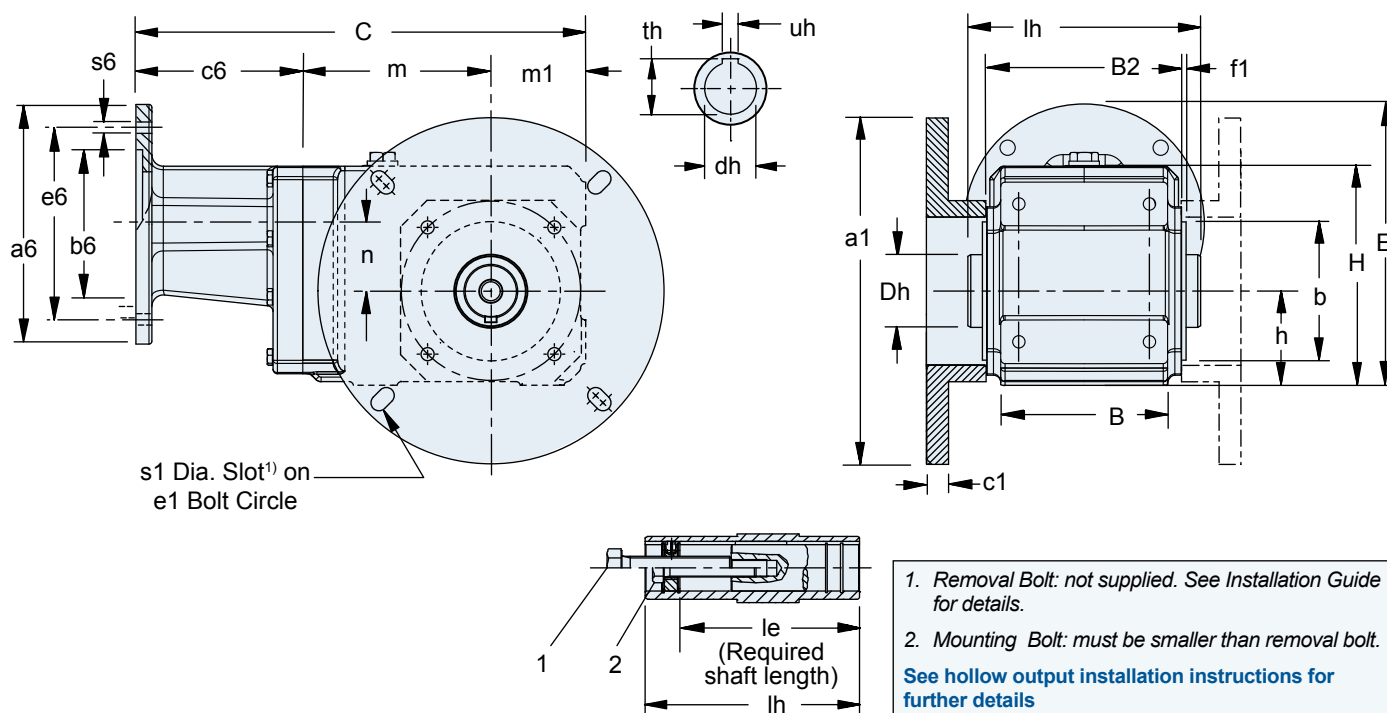


Table 1 KSS Series – “A” Hollow Output with “F” Round Flange Housing – Dimensions (in)

Base Module	a1	b	B2	c1	e1		f1	H	h	lh	m1	s1 ¹⁾
					Min.	Max. ¹⁾						
KSS1	6.75	2.95	4.17	0.55	5.87	—	0.12	4.96	2.36	4.72	2.36	0.33
KSS2	8.74	3.74	5.28	0.55	7.48	8.00	0.12	5.94	2.56	5.28	2.56	0.41
KSS3	8.74	3.74	5.75	0.55	7.48	8.00	0.12	6.56	2.95	6.30	2.95	0.41

1) KSS1 mounting bolt hole is not a slot.

Table 2 KSS Series –“AF” Style Motor Adapter Dimensions (in)

Base Module	NEMA C-Face	a6	B	b6	C	c6	E	e6	m	n	s6	Wt. lbs.
KSS102AF_MS1R050	56C	6.50	3.54	4.500	10.09	3.81	7.03	5.87	4.37	1.42	0.41	29
KSS202AF_MS2R050	56C	6.50	4.41	4.500	12.20	4.53	7.62	5.87	5.12	1.81	0.41	40
KSS202AF_MS2R140	143/145TC	6.50	4.41	4.500	12.20	4.53	7.62	5.87	5.12	1.81	0.41	40
KSS203AF_MS2R050	56C	6.50	4.53	4.500	13.07	3.31	6.64	5.87	7.20	1.81	0.41	53
KSS302AF_MS3R050	56C	6.50		4.500	13.23	4.37		5.87	5.91	2.09	0.41	55
KSS302AF_MS3R140	143/145TC	6.50	5.51	4.500	13.23	4.37	8.29	5.87	5.91	2.09	0.41	55
KSS302AF_MS3R180	182/184TC	9.00		8.500	14.57	6.59		7.25	5.02	2.07	0.55	67
KSS303AF_MS3R050	56C	6.50	5.51	4.500	15.22	4.00	6.83	5.87	8.27	0.63	0.41	55
KSS303AF_MS3R140	143/145TC	6.50	5.51	4.500	15.22	4.00	6.83	5.87	8.27	0.63	0.41	55

Table 3 “A” Hollow Bore Output — Standard Sizes (see page 14 for other available output options)

Base Module	Inches						Removal Bolt 1
	Dh	dh	le	th	uh		
KSS1	1.57	1	3.86	1.11	1/4		1/2 – 13
KSS2	1.97	1-1/4	4.78	1.37	1/4		1/2 – 13
KSS3	1.97	1-3/8	4.92	1.52	5/16		5/8 – 11

Dimensional Data

IP69K
STAINLESS STEEL



“V” Solid Shaft Output with “F” Round Flange Housing

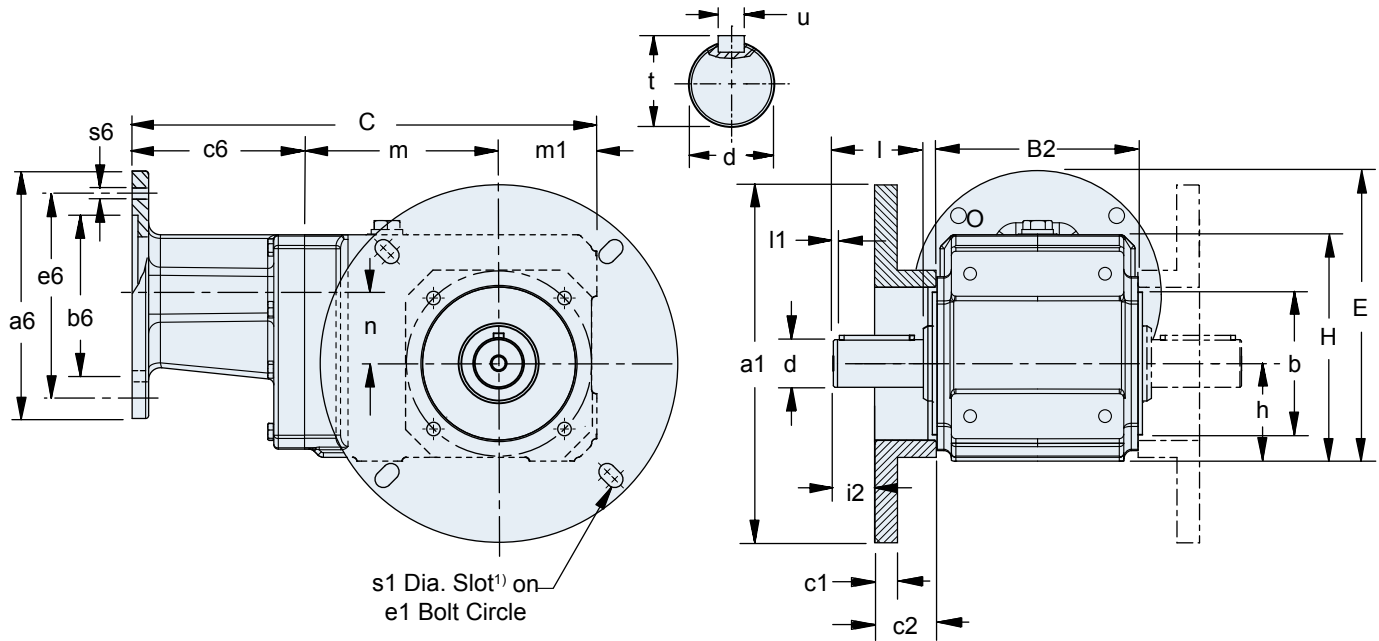


Table 1 KSS Series – “V” Solid Shaft Output with “F” Round Flange Housing Dimensions (in)

Base Module	a1	b	B2	c1	e1		H	h	i2	l	l1	m1	s1 ¹)
					Min.	Max.¹)							
KSS1	6.75	2.95	4.17	0.55	5.87	—	4.96	2.36	0.81	1.97	0.16	2.36	0.33
KSS2	8.74	3.74	5.28	0.55	7.48	8.00	5.94	2.56	1.10	2.36	0.16	2.56	0.41
KSS3	8.74	3.74	5.75	0.55	7.48	8.00	6.56	2.95	1.10	2.36	0.16	2.95	0.41

1) KSS1 mounting bolt hole is not a slot.

Table 2 KSS Series – “VF” Style Motor Adapter Dimensions (in)

Base Module	NEMA C-Face	a6	b6	C	c2	c6	E	e6	m	n	s6	Wt. lbs.
KSS102VF_MS1R050	56C	6.50	4.500	10.55	1.26	3.81	7.03	5.87	4.37	1.42	0.41	29
KSS202VF_MS2R050	56C	6.50	4.500	12.20	1.26	4.53	7.62	5.87	5.12	1.81	0.41	40
KSS202VF_MS2R140	143/145TC	6.50	4.500	12.20	1.26	4.53	7.62	5.87	5.12	1.81	0.41	40
KSS203VF_MS2R050	56C	6.50	4.500	13.07	1.26	3.31	6.64	5.87	7.20	0.83	0.41	53
KSS302VF_MS3R050	56C	6.50	4.500	13.23		4.37		5.87	5.91	2.09	0.41	55
KSS302VF_MS3R140	143/145TC	6.50	4.500	13.23	1.50	4.37	8.29	5.87	5.91	2.09	0.41	55
KSS302VF_MS3R180	182/184TC	9.00	8.500	14.57		6.59		7.25	5.02	2.07	0.55	67
KSS303VF_MS3R050	56C	6.50	4.500	15.22	1.50	4.00	6.83	5.87	8.27	0.63	0.41	55
KSS303VF_MS3R140	143/145TC	6.50	4.500	15.22	1.50	4.00	6.83	5.87	8.27	0.63	0.41	55

Table 3 “V” Solid Shaft Output — Standard Sizes

Base Module	Inches		
	d	t	u— Key
KSS1	1	1.11	1/4 x 1/4 x 1-9/16
KSS2	1-1/4	1.36	1/4 x 1/4 x 1-15/16
KSS3	1-1/4	1.36	1/4 x 1/4 x 1-15/16

KSS Series: RIGHT ANGLE Solid Shaft / Hollow Output

“V” Solid Shaft Output with “G” Tapped Holes around Output Housing

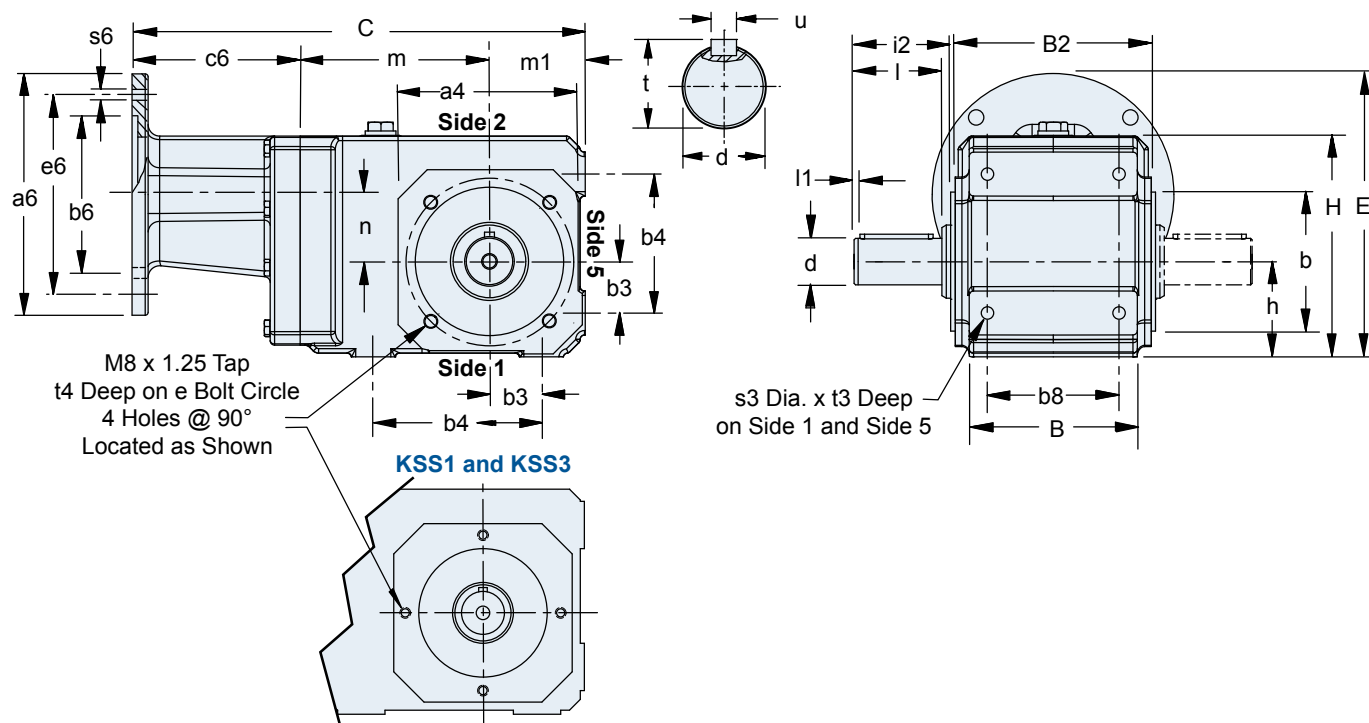


Table 1 KSS Series – “V” Solid Shaft Output with “G” Tapped Holes Housing – Dimensions (in)

Base Module	b	B2	b3	b4	b8	e	H	h	i2	l	l1	m1	s3	t3	t4
KSS1	2.95	4.17	1.18	3.54	2.76	3.54	4.96	2.36	2.32	1.97	0.16	2.36	M8x1.25	0.51	0.51
KSS2	3.74	5.28	1.38	4.53	3.54	4.53	5.94	2.56	2.60	2.36	0.16	2.56	M10x1.50	0.63	0.51
KSS3	3.74	5.75	1.38	5.12	4.13	4.53	6.56	2.95	2.60	2.36	0.16	2.95	M10x1.50	0.63	0.55

Table 2 KSS Series – “VG” Style Motor Adapter Dimensions (in)

Base Module	NEMA C-Face	a4	a6	B	b6	C	c6	E	e6	m	n	s6	Wt. lbs.
KSS102VG_MS1R050	56C	4.53	6.50	3.54	4.500	10.55	3.81	7.03	5.87	4.37	1.42	0.41	29
KSS202VG_MS2R050	56C	4.96	6.50	4.41	4.500	12.20	4.53	7.62	5.87	5.12	1.81	0.41	40
KSS202VG_MS2R140	143/145TC												
KSS203VG_MS2R050	56C	4.57	6.50	4.53	4.500	13.07	3.31	6.64	5.87	7.20	0.83	0.41	53
KSS302VG_MS3R050	56C		6.50		4.500	13.23	4.37		5.87	5.91	2.09	0.41	55
KSS302VG_MS3R140	143/145TC	5.20	6.50	5.51	4.500	13.23	4.37	8.29	5.87	5.91	2.09	0.41	55
KSS302VG_MS3R180	182/184TC		9.00		8.500	14.57	6.59		7.25	5.02	2.07	0.55	67
KSS303VG_MS3R050	56C	5.20	6.50	5.51	4.500	15.22	4.00	6.83	5.87	8.27	0.63	0.41	55
KSS303VG_MS3R140	143/145TC												

Table 3 “V” Solid Shaft Output — Standard Sizes

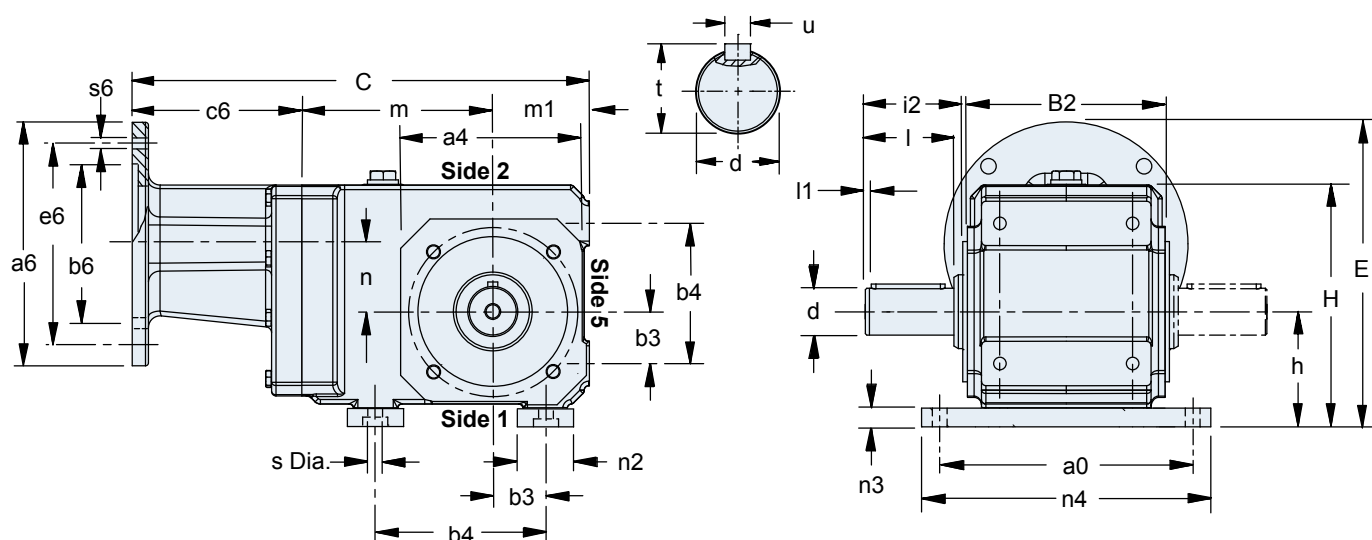
Base Module	Inches		
	d	t	u– Key
KSS1	1	1.11	1/4 x 1/4 x 1-9/16
KSS2	1-1/4	1.36	1/4 x 1/4 x 1-15/16
KSS3	1-1/4	1.36	1/4 x 1/4 x 1-15/16

Dimensional Data

IP69K
STAINLESS STEEL



“V” Solid Shaft Output with “NG” Foot Mount Housing



KSS

RIGHT ANGLE Solid Shaft / Hollow Output

Table 1 KSS Series – “V” Solid Shaft Output with “NG” Foot Mount – Dimensions (in)

Base Module	a0	B2	b3	b4	E	h	i2	l	l1	m1	n2	n3	n4	s
KSS1	4.53	4.17	1.18	3.54	7.03	2.36	2.32	1.97	0.16	2.36	1.50	0.50	5.51	0.33
KSS2	6.73	5.28	1.38	4.53	8.10	3.07	2.60	2.36	0.16	2.56	1.50	0.50	7.72	0.39
KSS3	6.73	5.75	1.38	5.12	7.33	3.44	2.60	2.36	0.16	2.95	1.50	0.50	7.72	0.39

Table 2 KSS Series – “VNG” Style Motor Adapter Dimensions (in)

Base Module	NEMA C-Face	a4	a6	b6	C	c6	e6	H	m	n	s6	Wt. lbs.
KSS102VNG_MS1R050	56C	4.53	6.50	4.500	10.55	3.81	5.87	4.96	4.37	1.42	0.41	29
KSS202VNG_MS2R050	56C	4.96	6.50	4.500	12.20	4.53	5.87	6.46	5.12	1.81	0.41	40
KSS202VNG_MS2R140	143/145TC											
KSS203VNG_MS2R050	56C	4.57	6.50	4.500	13.07	3.31	5.87	5.94	7.20	0.83	0.41	53
KSS302VNG_MS3R050	56C		6.50	4.500	13.23	4.37	5.87		5.91	2.09	0.41	55
KSS302VNG_MS3R140	143/145TC	5.20	6.50	4.500	13.23	4.37	5.87	7.07	5.91	2.09	0.41	55
KSS302VNG_MS3R180	182/184TC		9.00	8.500	14.57	6.59	7.25		5.02	2.07	0.55	67
KSS303VNG_MS3R050	56C	5.20	6.50	4.500	15.22	4.00	5.87	7.07	8.27	0.63	0.41	55
KSS303VNG_MS3R140	143/145TC											

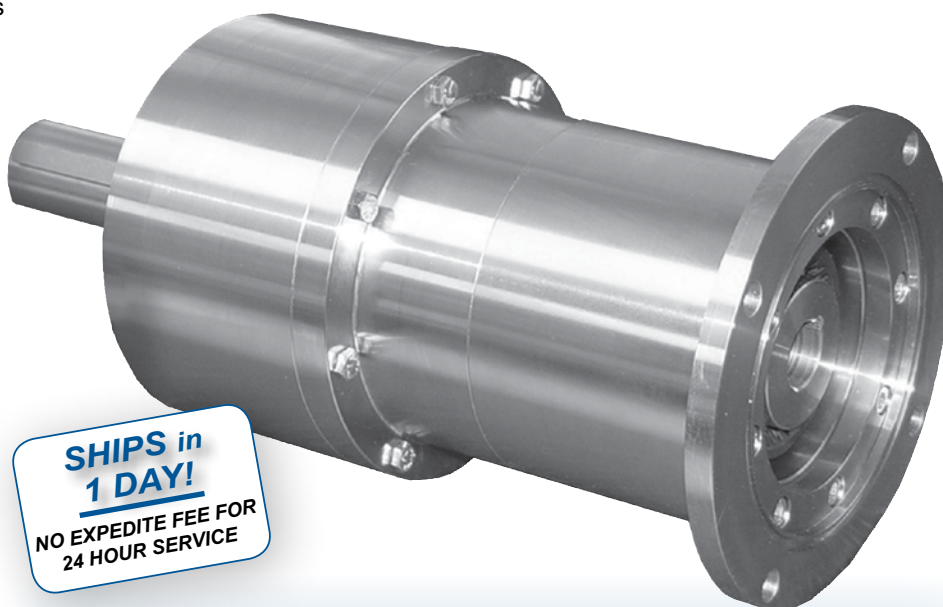
Table 3 “V” Solid Shaft Output — Standard Sizes

Base Module	Inches		
	d	t	u— Key
KSS1	1	1.11	1/4 x 1/4 x 1-9/16
KSS2	1-1/4	1.36	1/4 x 1/4 x 1-15/16
KSS3	1-1/4	1.36	1/4 x 1/4 x 1-15/16

The IP69K compliant machined stainless steel PSS planetary units can withstand the toughest washdown applications.

PSS Series Design Advantages

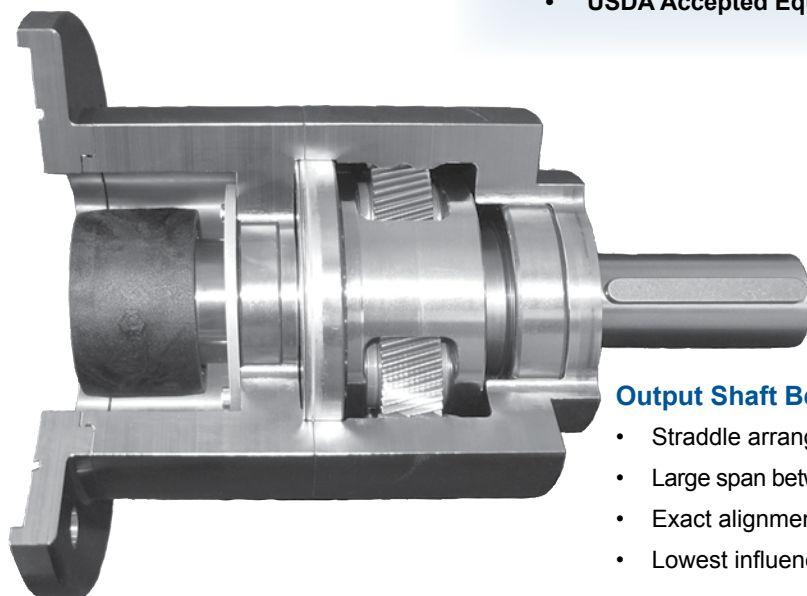
- 3 year standard warranty
- Up to 19 HP
- 1-1/2" output shaft diameter
- Ratios up to 100:1
- ≤4 arcmins backlash
- Bowex coupling input for easy assembly
- NEMA C-face for 56C, 143/145TC, and 182/184TC (with O-ring)
- Assembled in the U.S.A.
- Maintenance free – lubricated for life
- Shipped filled with Mobil SHC CIBUS 220 food grade oil
- Totally enclosed – no breather to allow contaminants in or oil out
- Unrestricted mounting position
- All stainless steel hardware
- Laser etched nameplate data



An Ideal Solution Food & Beverage Applications

**PSS Speed Reducers are
Ideal for Food & Beverage Industry Applications**

- Machined stainless steel housing outside;
all stainless steel hardware inside
 - Mobil SHC CIBUS 220 food grade oil
- Suitable for the most extreme wash down applications
- USDA Accepted Equipment • FDA compliant • IP69K compliant

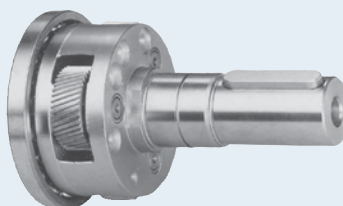


Output Shaft Bearings:

- Straddle arrangement — gears are mounted between two bearings
- Large span between shaft bearings provides high tilting rigidity and long life
- Exact alignment and minimal wear
- Lowest influences on gear teeth

Planet Carrier:

- Completely ground with one machine clamp
- Lowest influences on gear teeth



Overview



PSS Ordering Options At-a-Glance

PSS Series are available in a wide range of user-selected design options that tailor the speed reducer to your motor and exact application requirements. Use the appropriate order codes below to build a part number for the complete gearhead assembly.

Part Number Example: PSS 7 0 1 S P D 0040 MS5R 050

Design Option	Part Number Code	Description
① Series	PSS	Inline planetary helical, stainless steel housing
② Size	5 7	2 sizes of speed reducers
③ Generation	0	Version of speed reducers
④ # of Stages	1 2	One stage or two stage
⑤ Housing	S N	Standard Optional foot mount (PSS7 only)
⑥ Output	P	Output shaft with key
⑦ Bearing	D R	Axial bearing (PSS7) Normal bearing (PSS5)
⑧ Ratio	0040	Ratios range from 4:1 to 100:1 (refer to Selection Data tables)
⑨ Motor Adapter	MS4R MS5R MS7R	Fits 56C NEMA and 143/145TC NEMA motor (PSS502) Fits 56C NEMA and 143/145TC NEMA motor (PSS501, PSS702) Fits 182/184TC NEMA motor (PSS701)
⑩ NEMA Frame Size	050 140 180	56C 143/145TC 182/184TC
Mounting Position	—	Mounting position is unrestricted

PSS Series Output Options

BLUE: standard output diameters in stock

All Outputs Stainless Steel (Inches)		PSS5	PSS7
"P" Solid Shaft	Inches	1-1/4	1-1/2

PSS Sizing/Selection:

- Find the **RPM Output (Approximate)** nearest the application requirement. (If the exact Output RPM is required, divide the Input RPM [1750] by the value listed in the Nominal Ratio column.)
- In the **Input HP** column, locate the rating that is greater than or equal to the required HP, or;
 - If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.
- Confirm that the **Overhung Load** is acceptable for the application.
- Choose the appropriate **Base Module** and **Motor Adapter** part number code (see page 31 for complete ordering information).

Selection Data

RPM Output (Approximate)	1750 RPM Input		Exact Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes		Compatible NEMA C-Frame ²⁾ with Designated Motor Adapter
	Input HP	Output Torque (in.lbs.)			Base Module	Motor Adapter	
438	11.40	1,593	4	825	PSS501_0040	MS5R050	56C
	18.98	2,655	4	643	PSS701_0040	MS5R140	143/145TC
350	18.98	3,319	5	693	PSS701_0050	MS7R180	182/184TC
	10.14	1,947	5.5	918	PSS501_0055	MS5R050	56C
250	15.91	3,894	7	775	PSS701_0070	MS5R140	143/145TC
	4.56	1,593	10	1,120	PSS501_0100	MS7R180	182/184TC
175	7.59	2,655	10	873	PSS701_0100	MS5R050	56C
	2.91	1,593	16	1,311	PSS502_0160	MS5R140	143/145TC
109	7.10	3,894	16	1,021	PSS702_0160	MS5R180	182/184TC
	5.68	3,894	20	1,100	PSS702_0200	MS4R050	56C
88	2.58	1,947	22	1,350	PSS502_0220	MS4R140	143/145TC
	4.54	3,894	25	1,185	PSS702_0250	MS5R050	56C
70	2.07	1,947	27.5	1,350	PSS502_0275	MS5R140	143/145TC
	4.05	3,894	28	1,231	PSS702_0280	MS5R180	182/184TC
65	3.24	3,894	35	1,326	PSS702_0350	MS5R050	56C
	1.48	1,947	38.5	1,350	PSS502_0385	MS4R050	56C
45	2.84	3,894	40	1,386	PSS702_0400	MS4R140	143/145TC
	2.27	3,894	50	1,493	PSS702_0500	MS5R050	56C
31	1.03	1,947	55	1,350	PSS502_0550	MS5R140	143/145TC
	1.62	3,894	70	1,670	PSS702_0700	MS5R180	182/184TC
25	0.77	2,655	100	1,800	PSS702_1000	MS5R050	56C
						MS5R140	143/145TC
						MS5R180	182/184TC

1) 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.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

C-Frame	56C	143/145TC	182/184
HP	1/3 to 1-1/2 HP	1 to 2	3 to 5

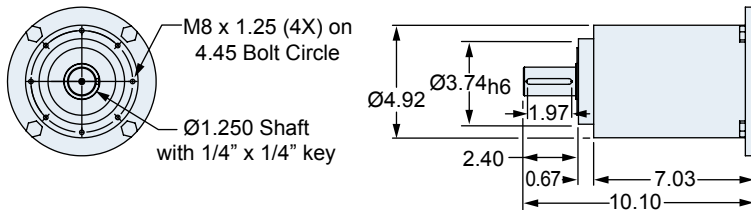
Dimensions (in)

IP69K
STAINLESS STEEL

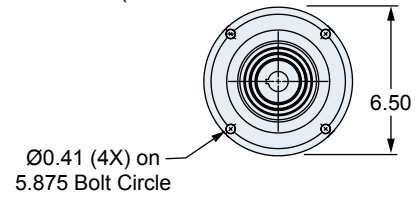


PSS
INLINE Shaft Output

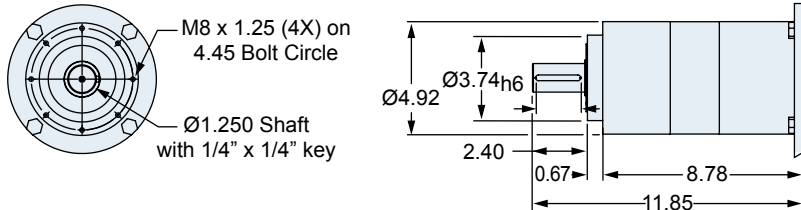
PSS501



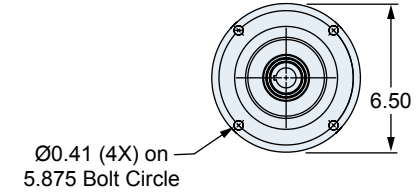
MS5R050 & MS5R140
(for NEMA 56C or 143/145TC motor)



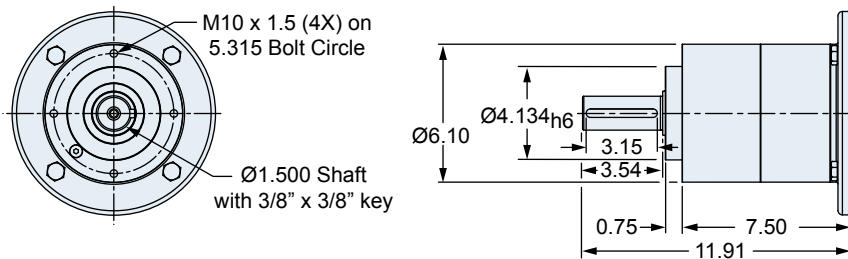
PSS502



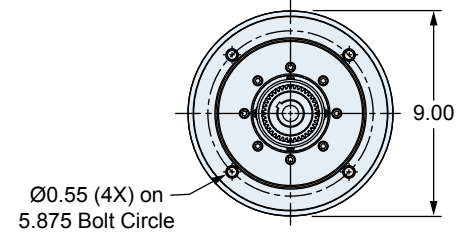
MS4R050 & MS4R140
(for NEMA 56C or 143/145TC motor)



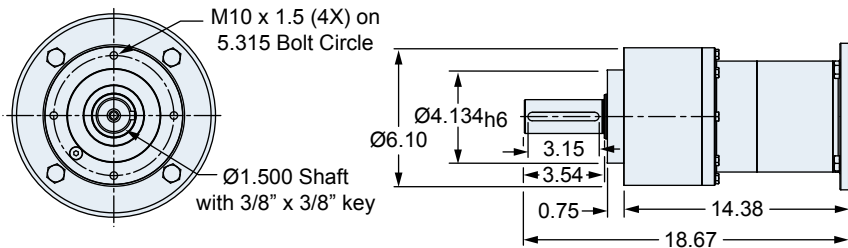
PSS701



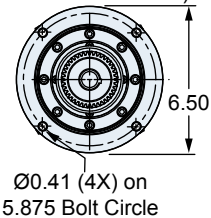
MS7R180
(for NEMA 182/184TC motor)



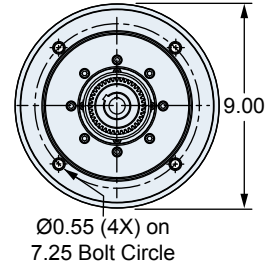
PSS702



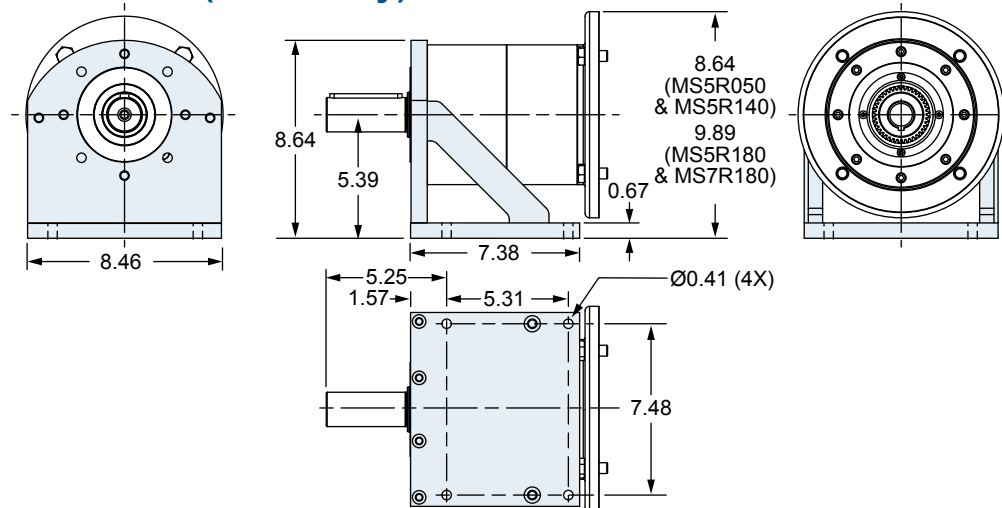
MS5R050 & MS5R140
(for NEMA 56C or 143/145TC motor)



MS5R180
(for NEMA 182/184TC motor)



Optional Foot Mount (PSS7 only)



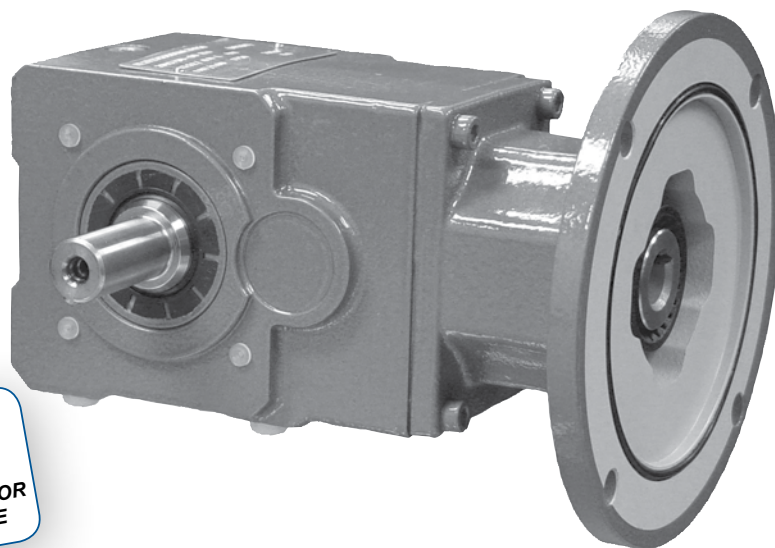
KL Series: RIGHT ANGLE – Solid Shaft/Hollow Output

The KL is compact and symmetrical. Its 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.

KL Series Design Advantages

- 3 year standard warranty with option for 5 years
- Up to 2 HP
- Ratios of 4:1 to 32:1
- ≤20 arcmins backlash
- NEMA C-face for 56C
- Assembled in the U.S.A.
- Maintenance free – lubricated for life
- Shipped filled with Mobilgear 600XP220 (standard) or Mobil SHC CIBUS 220 food grade oil (optional)
- Laser etched nameplate data

**SHIPS in
1 DAY!**
NO EXPEDITE FEE FOR
24 HOUR SERVICE



KL Options for Food & Beverage

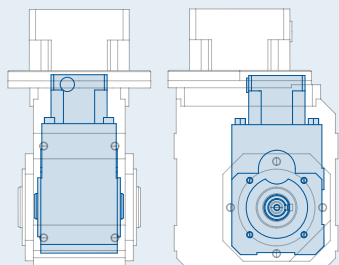
KL units can be ordered with these special features for suitability in food and beverage duty applications

- Mobil SHC CIBUS 220 food grade oil
 - Anti-microbial clear coat
 - 316 stainless steel epoxy coating
 - Suitable for wash down applications
- USDA Accepted Equipment • FDA compliant

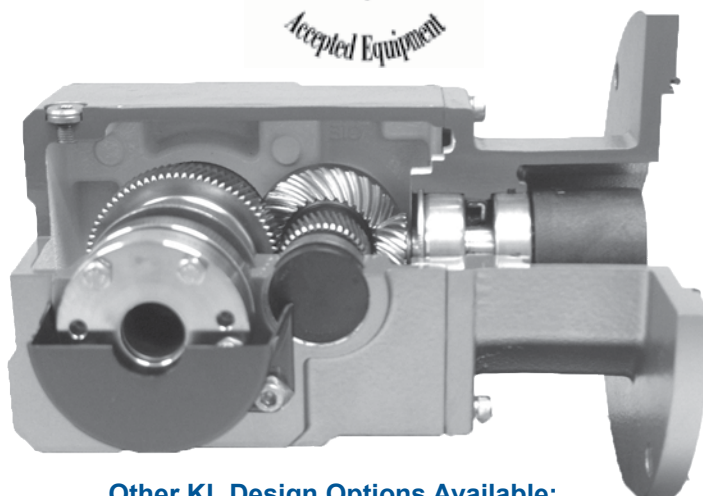
KL Size Advantage

The STOBER KL Series is a much more compact version of the K Series. Available in 4:1 to 32:1 ratios, the KL Series offers an alternative right angle helical/bevel gearhead for smaller gearhead size applications. Like the K Series, the KL is available in hollow, solid shaft, and wobble free bushing output options.

All units are lubricated for life with synthetic oil. Food grade oil available.



Size comparison of KL102 with K102



Other KL Design Options Available:

- BISC white epoxy coating
- Plated or stainless steel hardware
 - IP69K certified



Overview

KL Ordering Options At-a-Glance

KL Series are available in a wide range of user-selected design options that tailor the speed reducer to your motor and exact application requirements. Use the appropriate order codes below to build a part number for the complete assembly.

Part Number Example:

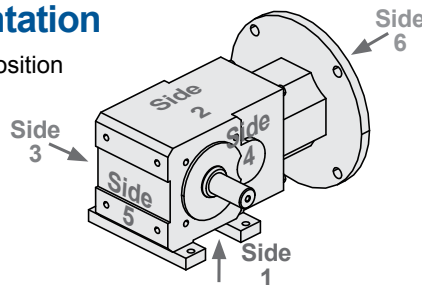
	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
Standard duty	KL	2	0	2	A	F	0040	ML2R/	050	
Food duty	KL	2	0	2	A	F	0040	ML2R/	050	F

Design Option	Part Number Code	Description
① Series	KL	Right angle helical/bevel
② Size	2	Size of speed reducer
③ Generation	0	Version of speed reducers
④ # of Stages	2	Two stage
⑤ Output*	A	Hollow bore output (Ø0.75")
	P	Solid shaft output (Ø0.75") with key (specify side 3, 4 or double sided)
	W	Double wobble-free bushing (Ø0.75")
⑥ Housing	F	Output flange mount (specify side 3 or 4)
	G	Tapped holes around output
	NG	Foot mounting (specify side 1 or 5)
⑦ Ratio	0040	Ratios range from 4:1 to 32:1 (refer to Selection Data tables)
⑧ Motor Adapter	ML2R	Round motor adapter
⑨ NEMA Frame Size	050	56C
⑩ Food & Beverage Option	F	Food duty service
	B	Beverage duty service
Mounting Position	—	Mounting position is unrestricted

* Standard Hollow Bore and Solid Shaft options are carbon steel; contact factory for stainless steel option. 20 mm solid shaft also available.

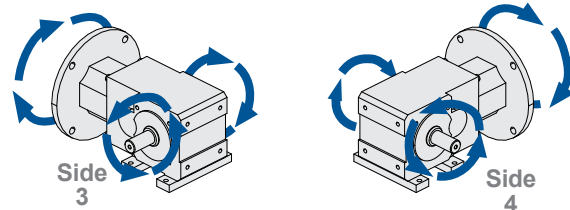
KL Series Orientation

Unrestricted mounting position

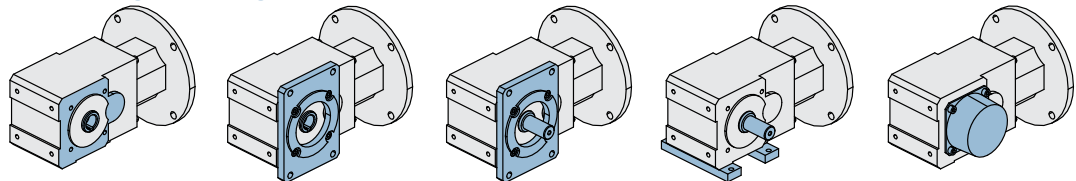


KL Series Direction of Rotation

Output available on side 3, 4 or both. Note: With a double output, the shaft rotation of Side 3 will be the OPPOSITE direction of Side 4 when viewed from Side 5.



KL Output and Housing Configurations



See Page	37	37	38	38	39
Output	A Hollow Bore	A Hollow Bore	P Solid Shaft	P Solid Shaft	W Double Bushing
Housing	G Tapped Holes	F Flange Mount	F Flange Mount	NG Foot Mount	G Tapped Holes

KL Sizing/Selection:

1. Find the **RPM Output (Approximate)** nearest the application requirement. (If the exact Output RPM is required, divide the Input RPM [1750] by the value listed in the Exact Ratio column.)
- 2a. In the **Input HP** column, locate the rating that is greater than or equal to the required HP, or;
- 2b. If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.
3. Confirm that the **Overhung Load** is acceptable for the application.
4. Choose the appropriate **Base Module** and **Motor Adapter** part number code (see page 35 for complete ordering information).

Selection Data

1750 RPM Input		Exact Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes		Compatible NEMA C-Frame ²⁾ with Designated Motor Adapter
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	
435 RPM Output (Approximate)						
2.08	291	4.000	225	KL202_0040	ML2R050	56C
220 RPM Output (Approximate)						
1.47	411	8.000	284	KL202_0080	ML2R050	56C
110 RPM Output (Approximate)						
0.79	443	16.000	358	KL202_0160	ML2R050	56C
55 RPM Output (Approximate)						
0.40	443	32.000	450	KL202_0320	ML2R050	56C

1) 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.

2) **Motor HP for TEFC NEMA C-Frame @ 1750 RPM**

Order Code	050
C-Frame	56C
HP	1/3 to 1-1/2

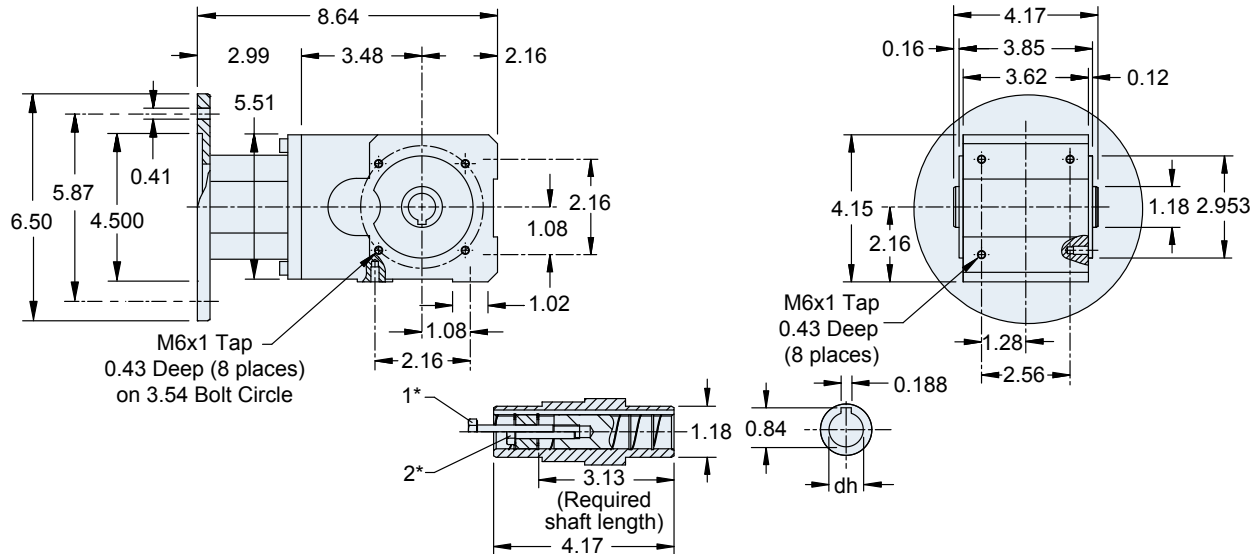
See Installation and Troubleshooting Guide for further details



Dimensions (in)

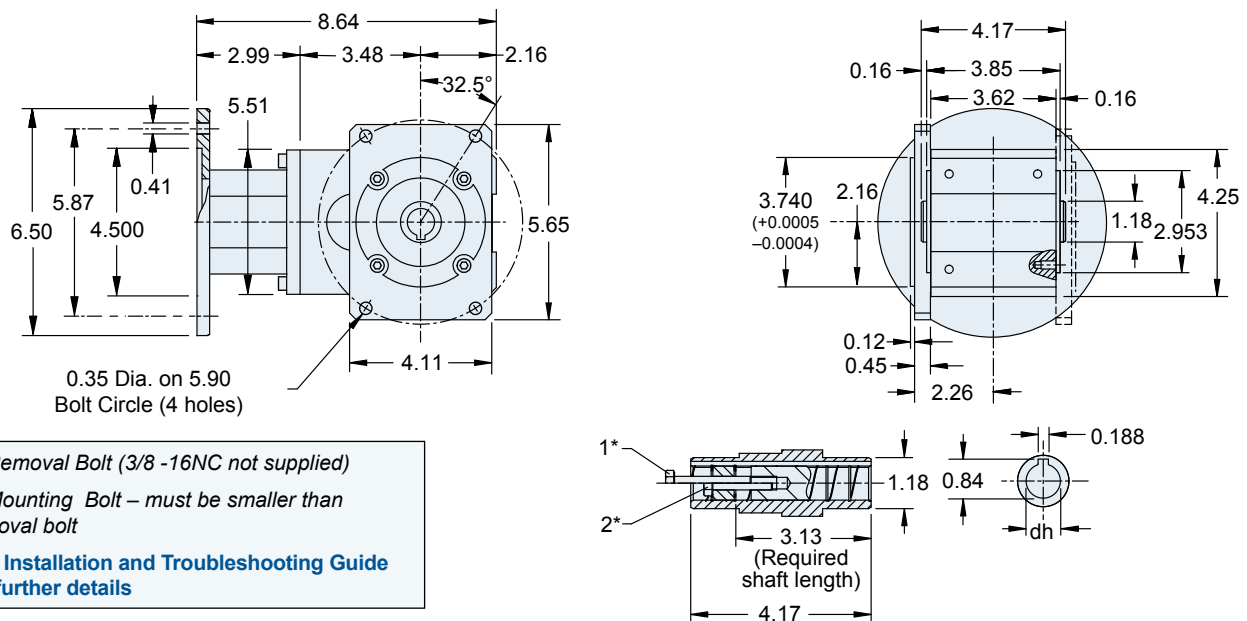
KL Series with “A” Hollow Output Option

“G” Tapped Holes Housing Option



KL Series with “A” Hollow Output Option

“F” Output Flange Housing Option



- * 1. Removal Bolt (3/8 -16NC not supplied)
- 2. Mounting Bolt – must be smaller than removal bolt

See Installation and Troubleshooting Guide for further details

“A” Solid Hollow Bore Output Options

BLUE designates standard hollow output diameters. Black designates optional diameters readily available from inventory.

	Carbon Steel		Stainless Steel*	
	Inches	Metric	Inches	Metric
Dimension “dh”	3/4	20	3/4	—

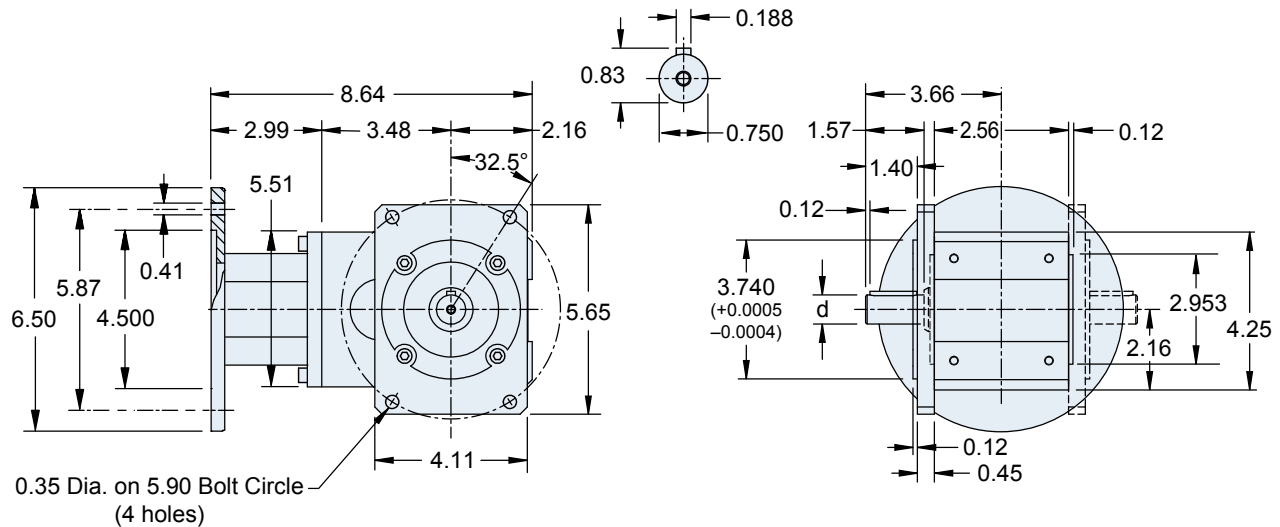
* Stainless steel is ideal for food and beverage or harsh washdown environments.

KL
RIGHT ANGLE – Solid Shaft/Hollow Output

KL Series: RIGHT ANGLE – Solid Shaft/Hollow Output

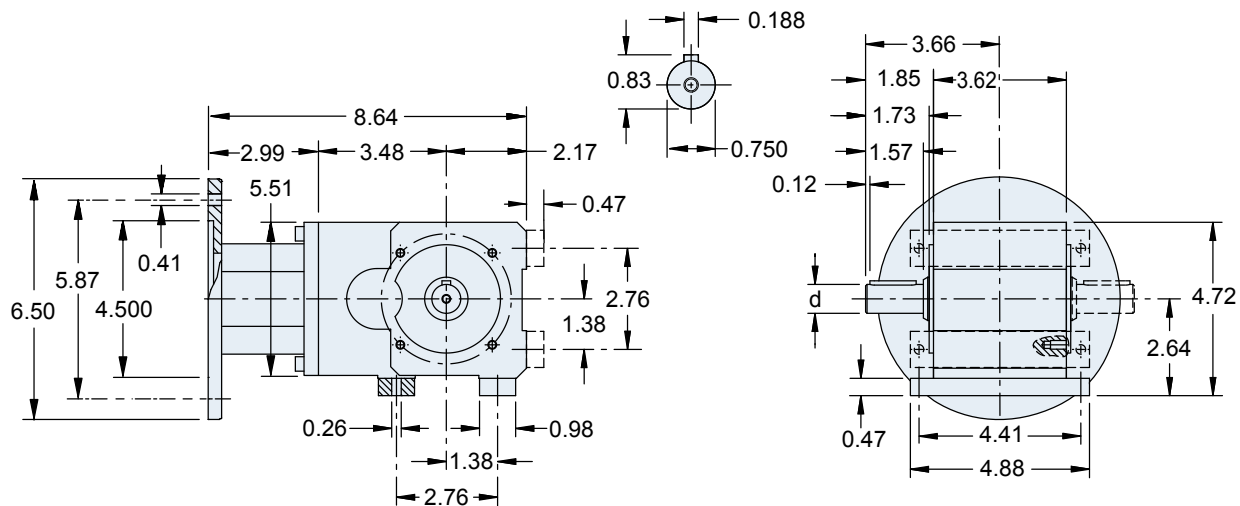
KL Series with “P” Solid Shaft Output Option

“F” Output Flange Housing Option



KL Series with “P” Solid Shaft Output Option

“NG” Foot Mounting Housing Option



“P” Solid Shaft Output Options

BLUE designates standard shaft diameters. Black designates optional diameters readily available from inventory.

	Carbon Steel		Stainless Steel*	
	Inches	Metric	Inches	Metric
Dimension “d”	3/4	20	3/4	20

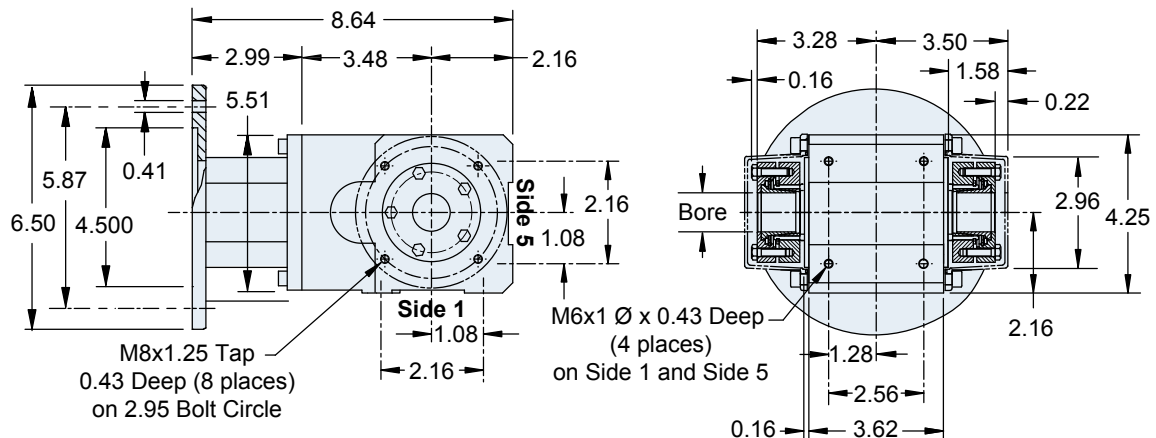
* Stainless steel is ideal for food and beverage or harsh washdown environments.



Dimensions (in)

KL Series (KL202 only) with “W” Wobble Free Bushing Output Option

“G” Tapped Holes Housing Option



Important: A 1/32" x 45° chamfer minimum is recommended for the shaft end.
The bushing will accept a shaft with a tolerance of +0.000/-0.005 inches.

“WFB” Wobble Free Double Bushing Output

BLUE designates standard bore diameter.

	Carbon Steel		Stainless Steel*	
	Inches	Metric	Inches	Metric
Bore	—	—	3/4	—
Part Number	—	—	WFBKL2-012	—

* Stainless steel is ideal for food and beverage or harsh washdown environments.

KL

RIGHT ANGLE – Solid Shaft/Hollow Output

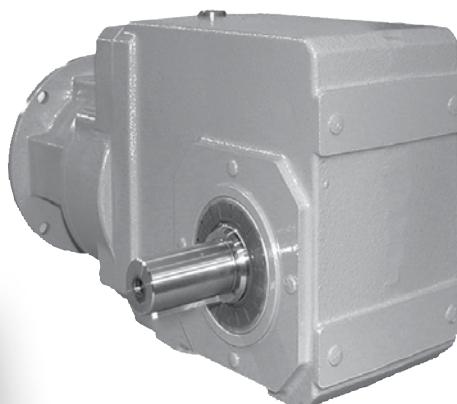
K Series: RIGHT ANGLE – Solid Shaft/Hollow Output

K Series 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.

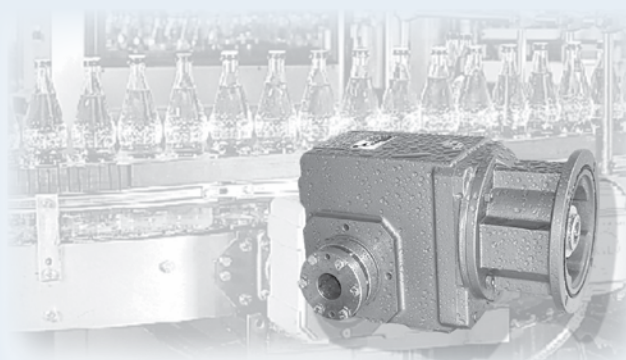
K Series Design Advantages

- 3 year standard warranty
- Up to 105 HP
- Standard output speeds available from 435 to 5 RPM; units can be combined to achieve slower speeds to meet your application needs
- Output torques to 92,250 in. lbs.
- Ratios of 4:1 to 373.7:1
- ≤12 arcmins backlash
- NEMA C-face for 56C thru 364/365TC
- Assembled in the U.S.A.
- One-piece precision machined housing
- High quality helical gearing is case hardened to 58-62 Rockwell C. Precision finished for low noise and long service life. When the backlash is set by our manufacturing and assemble methods it remains consistent throughout the life of the reducer without further need for adjustment
- 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
- Double lip seals keep oil in and contaminants out. Double seals available for severe duty applications
- Strategically located oil fill, drain and breather ports for optimum mounting flexibility
- Magnetic drain plugs to help remove particles from oil
- Shipped filled with Mobilgear 600XP220 (standard) or Mobil SHC CIBUS 220 food grade oil (optional)
- Laser etched nameplate data

**SHIPS in
1 DAY!**
NO EXPEDITE FEE FOR
24 HOUR SERVICE



K Options for Food & Beverage



“F” Option for Food Duty Applications

- Totally enclosed unit — no breathers, maintenance free, lubricated for life
- Mobil SHC CIBUS 220 food grade oil
- Anti-microbial clear coat
- 316 stainless steel epoxy coating
- Stainless steel shaft, hollow bore or double bushing output
- USDA Accepted Equipment



“B” Option for Beverage Duty Applications

- Totally enclosed unit — no breathers, maintenance free, lubricated for life
- Mobil 600XP220 mineral oil
- 316 stainless steel epoxy coating
- Stainless steel shaft, hollow bore or double bushing output

Other K Series Design Options Available:

- BISC white epoxy coating
- Plated or stainless steel hardware
 - IP69K certified

Overview



K Ordering Options At-a-Glance

K Series are available in a wide range of user-selected design options that tailor the speed reducer to your motor and exact application requirements. Use the appropriate order codes below to build a part number for the complete gearhead assembly.

Part Number Examples:

	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪*
Standard duty	K	2	0	2	A	F	0040	MR140/	050		EL1
Food duty	K	2	0	2	A	F	0040	MR140/	050	F	EL1

Design Option	Part Number Code	Description
① Series	K	Right angle helical/bevel
② Size	2	10 sizes of speed reducers (1 thru 10)
③ Generation	0 1	0 for sizes K1 thru K4; 1 for sizes K5 thru K10
④ # of Stages	2	Two, three or four stage (determined by ratio)
⑤ Output	A	Hollow bore output (inch, metric, stainless steel)
	V	Solid shaft output with key (specify side 3, 4, or double sided)
	W	Single or double wobble-free bushing (specify side 3 or 4 for single bushing)
⑥ Housing	F	Output flange mount (specify side 3 or 4)
	G	Tapped holes around output
	GD	Torque arm bracket mounting (specify side 1 or 5; also side 2 on K1 only)
	NG	Foot mounting (specify side 1 or 5; or side 2 on K1 only)
⑦ Ratio	0040	Ratios range from 4:1 to 373.7:1 (refer to Selection Data tables) Note: if a slower speed is required, units can be combined to achieve the necessary ratio for low speed applications. Contact STOBBER Drives Inc.
⑧ Motor Adapter	MR140 thru MR350	Round motor adapter sizes (refer to Selection Data tables); optional solid shaft inputs and backstop bearings also available**
⑨ NEMA Frame Size (refer to Selection Data tables)	050	56C
	140	143/145TC
	180	182/184TC
	210	213/215TC
	250	254/256TC
	280	284/286TC
	320	324/326TC
	360	364/365TC
⑩ Food & Beverage Option	F	Food duty service
	B	Beverage duty service
⑪ Mounting Position* Refer to page 44 illustrations	EL1 EL2 EL3 EL4 EL5 EL6 EL1256	Mounting positions for 3 year warranty

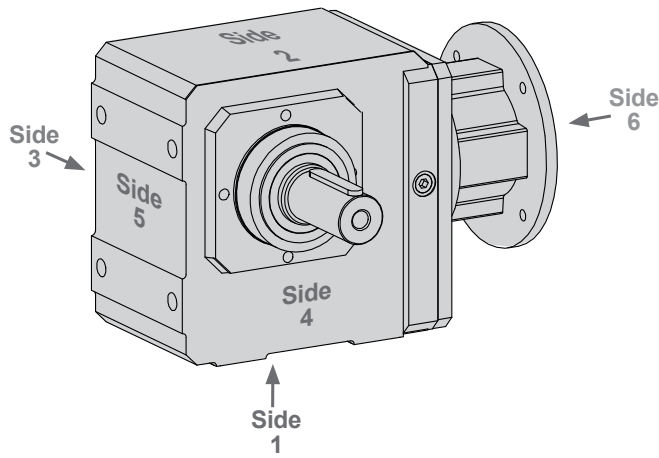
* Mounting position is added to "notes" section of order.

** Optional solid shaft inputs are available in place of motor adapters for all sizes. See page 45 for details.

Optional backstop bearings are available on select sizes of motor adapters and solid shaft inputs to prevent inclined or vertical applications from backdriving in a power off situation (excluding manlifts). See page 45 for details.

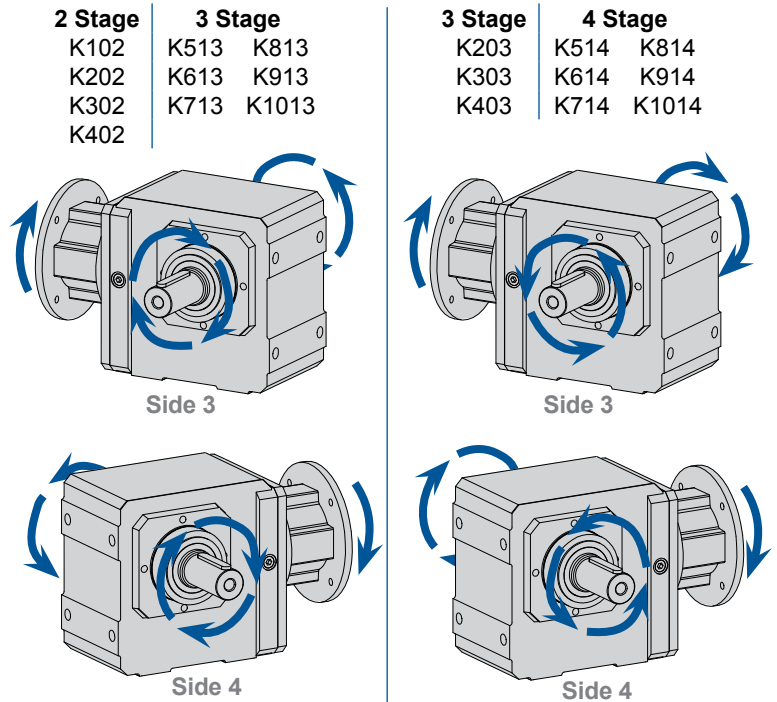
K Series: RIGHT ANGLE – Solid Shaft/Hollow Output

K Series Orientation

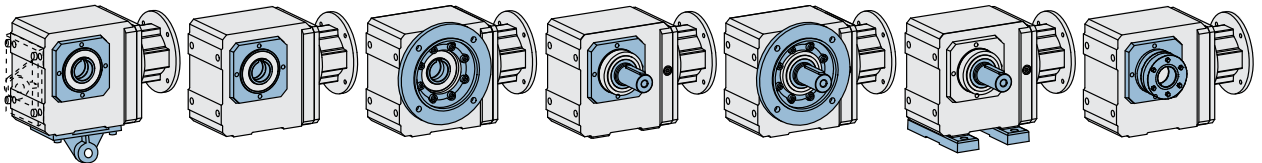


K Series Direction of Rotation

Output available on side 3, 4 or both. Note: With a double output, the shaft rotation of Side 3 will be the OPPOSITE direction of Side 4 when viewed from Side 5.



K Output and Housing Configurations



See Page	68	70	72	74	76	78	80 & 82
Output	A Hollow Bore	A Hollow Bore	A Hollow Bore	V Solid Shaft	V Solid Shaft	V Solid Shaft	W Wobble Free Bushing Single or Double
Housing	GD Torque Arm	G Tapped Holes	F Flange Mount	G Tapped Holes	F Flange Mount	NG Foot Mount	G Tapped Holes

Availability*

Standard Duty	K1-K10	K1-K10	K1-K10	K1-K10	K1-K10	K1-K10	K1-K8
Food & Beverage Duty	K1-K9	K1-K9	K1-K9	K1-K9	K1-K9	K1-K9	K1-K8

* See Output Options Chart page 43 for standard and optional solid shaft, hollow bore and wobble free bushing options.



Overview

K Series Output Options

BLUE: standard output diameters in stock

BLACK: optional diameters in stock

Other options are available upon request. Please contact STOBBER to learn about other options and their deliveries.

			K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
“V” Solid Shaft	Carbon Steel	Inches	1	1-1/4	1-1/4	1-3/8	1-3/4	1-3/4	2-3/8	2-7/8	3-5/8	4-3/8
		Metric	25	30	30	40	45	50	60	70	90	110
	Stainless Steel	Inches	1	1-1/4	1-1/4	1-3/8	1-3/4	1-3/4	2-3/8	2-7/8	3-5/8	—
		Metric	25	30	—	—	45	—	—	—	—	—

“A” Hollow Bore	Carbon Steel	Inches	1	1-3/16 1-1/4	1-3/8 1-7/16	1-7/16 1-1/2	2	2	2-3/8	2-3/4	3-1/4	4
		Metric	25	30	30 35	40	40 50	50	60	70	70	—
	Stainless Steel	Inches	1	1-1/8 1-1/4	1 1-1/4 1-3/8 1-7/16	1-1/2	1-1/2 2	2	—	—	2-15/16 3 3-7/16	—
		Metric	25	30	35	40	40 50	—	60	70	75	—

“W” Wobble Free Bushing (Stainless Steel except where noted)	Inches	Single & Double	1	1 1-3/16	1*	1	1-7/16	1-7/16	1-15/16 2 2-3/16	2-3/16 2-3/8 2-7/16 2-3/4	—	—
					1-3/16*	1-3/16	1-1/2	1-1/2				
					1-1/4*	1-1/4	1-5/8	1-5/8				
					1-3/8*	1-3/8	1-11/16	1-11/16				
					1-7/16*	1-7/16	1-3/4	1-3/4				
					1-1/2*	1-1/2	1-7/8	1-15/16				
	Metric	Single Double	25	30	30 35	—	—	—	—	—	—	—
			25	25 30	30 35	40	40	40	—	—	—	—

*Also available in carbon steel

K

RIGHT ANGLE – Solid Shaft/Hollow Output

K Mounting Position Options

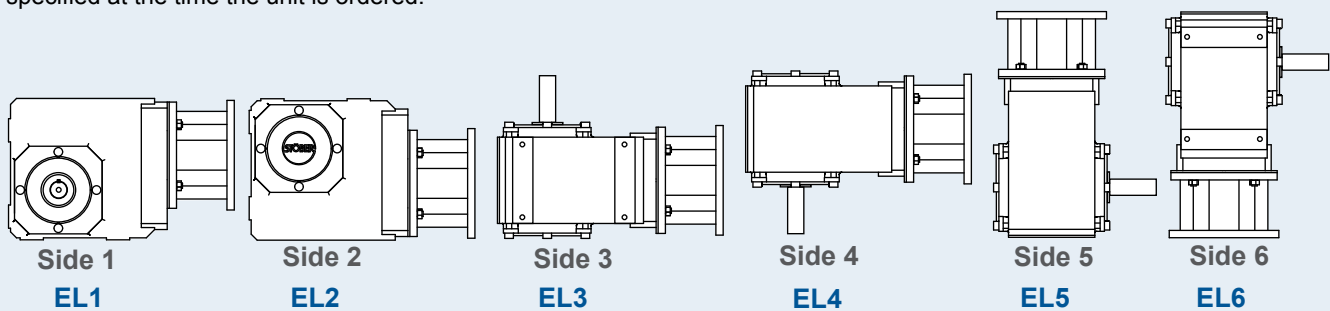
When ordering any K unit, the mounting position must be specified. Use one of the mounting position order codes illustrated below that corresponds to the intended application.

Note: All illustrations below are shown with a solid shaft output on side 4. K units can have a solid shaft, hollow or single bushing output on either Side 3 or Side 4. **The desired output side must be specified when ordering.**

Standard Duty

All STOBER standard duty 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.

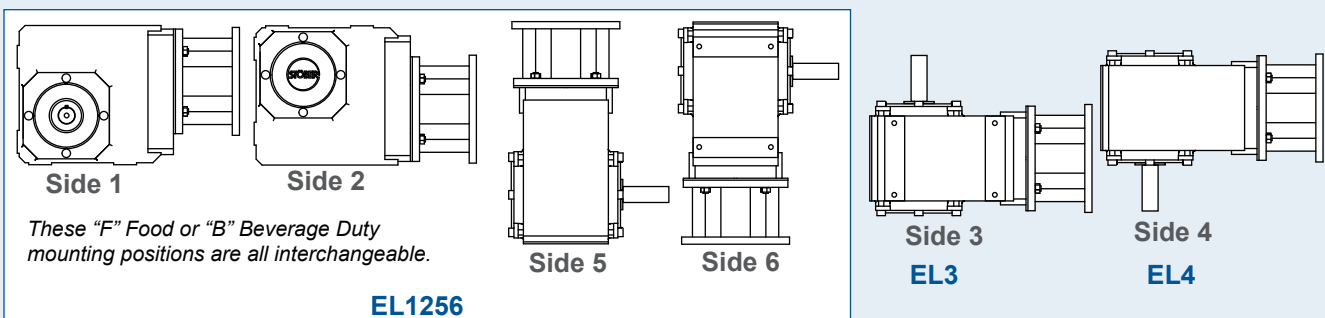
DO NOT mount standard duty reducers in a position other than the mounting position specified on the order!



Food & Beverage Duty

Food and Beverage duty units are equipped with specialized seals, higher oil level, and additional features compared to standard units. These added features enable all horizontal output positions (EL1, 2, 5 and 6) to be used interchangeably.

DO NOT mount horizontal Food and Beverage duty reducers in a vertical position, or mount vertical position reducers other than specified on the order!





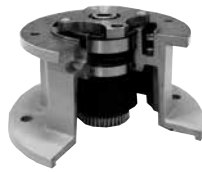
Overview

K Series Optional Backstops

Select sizes motor adapter and solid input shaft

The backstop option is a bearing that is added to the motor adapter or input shaft housing that prevents the gearbox from backdriving during a power off situation. Backstops are used primarily for inclined conveyor installations. (Not for use on man lifts!)

NOTE: To include a backstop, a "B" is added to the part number code. Gearbox output direction of rotation must be specified with order. Maximum HP limitation must not be exceeded. If the backstop is assembled for the standard rotation but rotates in the opposite direction at startup, damage to the backstop is certain.



Contact STOBBER Drives for additional information.

Motor Adapter Sizes Available with Backstop

Adapter Part Number	NEMA Frame	Max HP* @1750 PRM
MRB160/050	56C	10.4
MRB160/140	143/145TC	
MRB200/050	56C	18.2
MRB200/140	143/145TC	
MRB200/180	182/184TC	

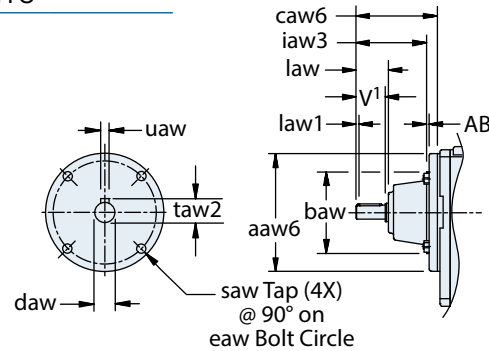
Input Shafts Sizes Available with Backstop

Adapter Part Number	Shaft Size (in)	Max HP* @1750 PRM
AWB160/012	3/4	10.4
AWB200/014	7/8	18.2

*Maximum HP must not be exceeded. Ratings are based on 2.0 service factor.

K Series Optional Input Shafts

All K Series gearboxes are available with an optional input shaft in place of the motor adapter. See Selection Data tables for specific sizes available for each size configuration.



"AW" Optional Input Shaft Dimensions (Inches)

Part No.	aaw6	AB	baw	caw6	daw	eaw	iaw3	law	law1	saw	taw2	uaw (Key)	V ¹	Wt. (lbs)	Overhung Load (lbs)
AW140/010	5.51	0.16	3.740	4.02	0.6250	4.53	3.58	1.38	0.12	M8x1.25	0.71	3/16x3/16x31/32	1.25	8	98
AW160/012	6.30	0.18	4.331	4.69	0.7500	5.12	4.21	1.69	0.12	M8x1.25	0.83	3/16x3/16x1-7/32	1.50	12	196
AW200/014	7.87	0.16	5.118	5.51	0.8750	6.50	5.00	1.97	0.16	M10x1.5	0.96	3/16x3/16x1-7/16	1.75	18	333
AW250/102	9.84	0.16	7.087	7.80	1.1250	8.46	7.20	2.48	0.20	M12x1.75	1.24	1/4x4x1-15/16	2.25	31	680
AW300/110	11.81	0.20	9.055	9.02	1.6250	10.43	8.39	3.54	0.24	M12x1.75	1.79	3/8x3/8x2-7/8	3.25	51	1,072
AW350/202	13.78	0.24	9.842	11.61	2.1250	11.81	10.83	4.88	0.28	M16x2	2.35	1/2x1/2x3-15/16	4.50	100	1,569

K Series Lubrication Maintenance

K102 thru K403 are supplied without breathers and are lubricated for life and maintenance free.

Breathers are provided on K513 thru K1014, located as shown*. STOBBER recommends changing the lubrication in

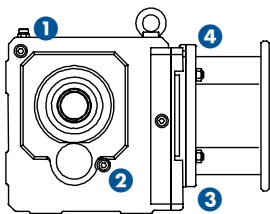
breather supplied units after 10,000 hours for normal operating conditions or every 5,000 hours for wet operating conditions.

*K513 and larger units with the Food & Beverage option exclude a breather. Contact STOBBER for details.

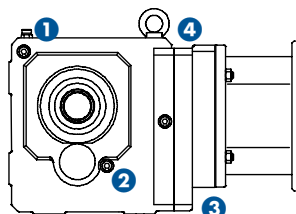
Drain Plug and Vent Location

Mounting Position	1	2 *	2a *	3	4
EL1	Vent			Drain	
EL2	Drain			Vent	
EL3		Vent	Drain		
EL4		Drain	Vent		
EL5	K513-K1013	Drain		Vent	
	K514-K1014	Drain			Vent
EL6	K513-K1013	Vent		Drain	
	K514-K1014	Vent			Drain

* Position 2a is on the opposite side of 2.



3 Stage Units
(K513 thru K1013)



4 Stage Units
(K514 thru K1014)

K
RIGHT ANGLE – Solid Shaft/Hollow Output

K Sizing/Selection:

1. Find the **RPM Output (Approximate)** nearest the application requirement. (If the exact Output RPM is required, divide the Input RPM [1750] by the value listed in the Nominal Ratio column.)
- 2a. In the **Input HP** column, locate the rating that is greater than or equal to the required HP, or;
- 2b. If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.
3. Confirm that the **Overhung Load** is acceptable for the application.
4. Choose the appropriate **Base Module**, **Motor Adapter** and **NEMA C-Frame** part number order codes (see page 41 for complete ordering information). An optional input shaft, in place of the NEMA C-face motor adapter, is also available.

Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

435 RPM Output (Approximate)

2.61	364	4.000	402	K102_0040	MR140/	050	AW140/010
2.61	364	4.000	483	K202_0040	MR140/	050	AW140/010
3.92*	548	4.000	402	K102_0040	MR160/	050 140	AW160/012
7.00*	979	4.000	483	K202_0040	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
9.22*	1,289	4.000	563	K302_0040	MR160/	050 140	AW160/012
9.22	1,289	4.000	901	K402_0040	MR160/	050 140	AW160/012
12.26*	1,714	4.000	563	K302_0040	MR200/	180	AW200/014
18.39*	2,572	4.000	901	K402_0040	MR200/	180	AW200/014
					MR250/	180 210	AW250/102

400 RPM Output (Approximate)

2.61	397	4.364	497	K202_0044	MR140/	050	AW140/010
6.60*	1,008	4.364	497	K202_0044	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
9.22*	1,406	4.364	580	K302_0044	MR160/	050 140	AW160/012
9.22	1,406	4.364	928	K402_0044	MR160/	050 140	AW160/012
11.57*	1,765	4.364	580	K302_0044	MR200/	180	AW200/014
17.36*	2,648	4.364	928	K402_0044	MR200/	180	AW200/014
					MR250/	180 210	AW250/102

1) 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.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾
340 RPM Output (Approximate)							
5.89*	1,067	5.177	526	K202_0052	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
325 RPM Output (Approximate)							
8.73*	1,640	5.375	621	K302_0054	MR160/	050 140	AW160/012
9.22	1,747	5.422	997	K402_0054	MR160/	050 140	AW160/012
10.07*	1,892	5.375	621	K302_0054	MR200/	180	AW200/014
15.02*	2,847	5.422	997	K402_0054	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
315 RPM Output (Approximate)							
2.61	507	5.568	449	K102_0056	MR140/	050	AW140/010
3.14*	612	5.568	449	K102_0056	MR160/	050 140	AW160/012
290 RPM Output (Approximate)							
2.61	546	6.000	460	K102_0060	MR140/	050	AW140/010
2.61	546	6.000	553	K202_0060	MR140/	050	AW140/010
2.99*	627	6.000	460	K102_0060	MR160/	050 140	AW160/012
5.34	1,120	6.000	553	K202_0060	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
9.22*	1,933	6.000	645	K302_0060	MR160/	050 140	AW160/012
9.22	1,933	6.000	1,031	K402_0060	MR160/	050 140	AW160/012
9.36*	1,962	6.000	645	K302_0060	MR200/	180	AW200/014
14.04*	2,945	6.000	1,031	K402_0060	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
260 RPM Output (Approximate)							
2.61	605	6.644	476	K102_0066	MR140/	050	AW140/010
2.61	609	6.683	573	K202_0067	MR140/	050	AW140/010
2.80	649	6.644	476	K102_0066	MR160/	050 140	AW160/012
4.97	1,161	6.683	573	K202_0067	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
7.92*	1,865	6.740	670	K302_0067	MR160/	050 140	AW160/012
8.66*	2,040	6.740	670	K302_0067	MR200/	180	AW200/014
8.73	2,050	6.719	1,071	K402_0067	MR160/	050 140	AW160/012
13.02*	3,058	6.719	1,071	K402_0067	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
245 RPM Output (Approximate)							
4.77	1,186	7.118	585	K202_0071	MR160/	050 140	AW160/012
					MR200/	180	AW200/014

* Thermal HP Limit

Base Module Size	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
HP Limit	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.63	67.05

K

RIGHT ANGLE – Solid Shaft/Hollow Output

K Series: RIGHT ANGLE – Solid Shaft/Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

235 RPM Output (Approximate)

8.14*	2,104	7.391	691	K302_0074	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
9.22	2,402	7.456	1,109	K402_0075	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
12.14	3,166	7.456	1,109	K402_0075	MR250/	180 210	AW250/102
21.97*	5,562	7.347	1,325	K513_0073	MR200/	180	AW200/014
23.08*	5,842	7.347	1,325	K513_0073	MR250/	180 210	AW250/102
24.58*	6,201	7.323	1,575	K613_0073	MR200/	180	AW200/014
24.58	6,305	7.445	2,870	K813_0074	MR200/	180	AW200/014
24.58	6,405	7.563	2,189	K713_0076	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
30.56*	7,712	7.323	1,575	K613_0073	MR300/	180 210 250 280	AW300/110
39.32	10,087	7.445	2,870	K813_0074	MR250/	180 210	AW250/102
39.32*	10,247	7.563	2,189	K713_0076	MR250/	180 210	AW250/102
48.95*	12,757	7.563	2,189	K713_0076	MR300/	180 210 250 280	AW300/110
73.72*	18,914	7.445	2,870	K813_0074	MR300/	180 210 250 280	AW300/110

220 RPM Output (Approximate)

73.72*	20,156	7.934	6,570	K913_0079	MR300/	180 210 250 280	AW300/110
105.20*	28,763	7.934	6,570	K913_0079	MR350/	320 360	AW350/202
105.20*	28,795	7.943	8,090	K1013_0079	MR350/	320 360	AW350/202

215 RPM Output (Approximate)

21.56*	6,044	8.134	1,371	K513_0081	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
24.58*	6,865	8.107	1,629	K613_0081	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
28.56*	7,978	8.107	1,629	K613_0081	MR300/	180 210 250 280	AW300/110

1) 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.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes

Selection Data



1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

210 RPM Output (Approximate)

2.41	699	8.309	513	K102_0083	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.61	765	8.397	618	K202_0084	MR140/	050	AW140/010
4.27	1,253	8.397	618	K202_0084	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
6.87	2,029	8.444	722	K302_0084	MR160/	050 140	AW160/012
7.45*	2,199	8.444	722	K302_0084	MR200/	180	AW200/014
7.70	2,256	8.377	1,153	K402_0084	MR160/	050 140	AW160/012
11.24	3,291	8.377	1,153	K402_0084	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
24.58	6,980	8.243	2,969	K813_0082	MR200/	180	AW200/014
39.32	11,169	8.243	2,969	K813_0082	MR250/	180 210	AW250/102
39.32*	11,345	8.373	2,264	K713_0084	MR250/	180 210	AW250/102
45.74*	13,197	8.373	2,264	K713_0084	MR300/	180 210 250 280	AW300/110
73.72*	20,941	8.243	2,969	K813_0082	MR300/	180 210 250 280	AW300/110

190 RPM Output (Approximate)

2.24	725	9.249	532	K102_0092	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.61	837	9.190	637	K202_0092	MR140/	050	AW140/010
4.02	1,292	9.190	637	K202_0092	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
7.00	2,268	9.267	745	K302_0093	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
8.73	2,819	9.238	1,191	K402_0092	MR160/	050 140	AW160/012
10.53	3,400	9.238	1,191	K402_0092	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
19.60*	6,190	9.168	1,427	K513_0092	MR200/	180	AW200/014
19.91*	6,290	9.168	1,427	K513_0092	MR250/	180 210	AW250/102
22.41*	7,013	9.081	1,692	K613_0091	MR200/	180	AW200/014
24.58	7,781	9.188	2,335	K713_0092	MR200/	180	AW200/014
24.58	7,862	9.284	3,089	K813_0093	MR200/	180	AW200/014
26.48*	8,285	9.081	1,692	K613_0091	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
39.32*	12,449	9.188	2,335	K713_0092	MR250/	180 210	AW250/102
39.32	12,579	9.284	3,089	K813_0093	MR250/	180 210	AW250/102
42.99*	13,612	9.188	2,335	K713_0092	MR300/	180 210 250 280	AW300/110
73.72*	23,586	9.284	3,089	K813_0093	MR300/	180 210 250 280	AW300/110

* Thermal HP Limit

Base Module Size	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
HP Limit	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.63	67.05

K Series: RIGHT ANGLE – Solid Shaft/Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

170 RPM Output (Approximate)

2.11	747	10.140	548	K102_0100	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.61	917	10.073	657	K202_0100	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
3.78	1,332	10.073	657	K202_0100	MR200/	180	AW200/014
5.98	2,117	10.135	768	K302_0100	MR160/	050 140	AW160/012
6.60	2,337	10.135	768	K302_0100	MR200/	180	AW200/014
6.66	2,351	10.098	1,227	K402_0100	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
9.92	3,503	10.098	1,227	K402_0100	MR250/	180 210	AW250/102
					MR200/	180	AW200/014
18.60*	6,507	10.150	1,476	K513_0100	MR250/	180 210	AW250/102
22.41*	7,764	10.054	1,750	K613_0100	MR200/	180	AW200/014
24.58	8,614	10.172	2,416	K713_0100	MR200/	180	AW200/014
24.58	8,705	10.279	3,196	K813_0105	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
24.74*	8,571	10.054	1,750	K613_0100	MR300/	180 210 250 280	AW300/110
39.32*	13,782	10.172	2,416	K713_0100	MR250/	180 210	AW250/102
39.32	13,927	10.279	3,196	K813_0105	MR250/	180 210	AW250/102
40.17*	14,082	10.172	2,416	K713_0100	MR300/	180 210 250 280	AW300/110
69.06*	24,461	10.279	3,196	K813_0105	MR300/	180 210 250 280	AW300/110
73.72*	25,702	10.117	7,125	K913_0100	MR300/	180 210 250 280	AW300/110
105.20*	36,202	9.986	8,731	K1013_0100	MR350/	320 360	AW350/202
105.20*	36,677	10.117	7,125	K913_0100	MR350/	320 360	AW350/202

1) 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.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes

Selection Data



1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

150 RPM Output (Approximate)

1.93	781	11.565	573	K102_0115	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.61	1,052	11.546	687	K202_0115	MR140/	050	AW140/010
3.45	1,394	11.546	687	K202_0115	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
6.02	2,445	11.610	803	K302_0115	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
7.70	3,102	11.518	1,282	K402_0115	MR160/	050 140	AW160/012
9.09	3,660	11.518	1,282	K402_0115	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
17.04*	6,791	11.569	1,542	K513_0115	MR200/	180	AW200/014
17.05*	6,797	11.569	1,542	K513_0115	MR250/	180 210	AW250/102
19.60	7,702	11.407	1,825	K613_0115	MR200/	180	AW200/014
21.48	8,721	11.781	2,537	K713_0120	MR200/	180	AW200/014
22.74*	8,939	11.407	1,825	K613_0115	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
24.58	10,082	11.906	3,356	K813_0120	MR200/	180	AW200/014
36.43*	14,788	11.781	2,537	K713_0120	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
39.32	16,132	11.906	3,356	K813_0120	MR250/	180 210	AW250/102
62.61*	25,688	11.906	3,356	K813_0120	MR300/	180 210 250 280	AW300/110

140 RPM Output (Approximate)

1.82	804	12.618	590	K102_0125	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.61	1,145	12.577	825	K302_0125	MR140/	050	AW140/010
2.61	1,157	12.705	710	K202_0125	MR140/	050	AW140/010
3.24	1,439	12.705	710	K202_0125	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.12	2,251	12.577	825	K302_0125	MR160/	050 140	AW160/012
5.71	2,511	12.577	825	K302_0125	MR200/	180	AW200/014
5.86	2,594	12.658	1,323	K402_0125	MR160/	050 140	AW160/012
8.53	3,777	12.658	1,323	K402_0125	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
15.93*	7,032	12.808	1,595	K513_0130	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
19.60	8,527	12.629	1,888	K613_0125	MR200/	180	AW200/014
21.25*	9,248	12.629	1,888	K613_0125	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
73.72*	31,819	12.525	7,650	K913_0125	MR300/	180 210 250 280	AW300/110
105.20*	45,247	12.481	9,405	K1013_0125	MR350/	320 360	AW350/202
105.20*	45,406	12.525	7,650	K913_0125	MR350/	320 360	AW350/202

* Thermal HP Limit

Base Module Size	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
HP Limit	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.63	67.05

K Series: RIGHT ANGLE – Solid Shaft/Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

125 RPM Output (Approximate)

1.69	835	14.114	612	K102_0140	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.61	1,262	13.851	730	K202_0140	MR140/	050	AW140/010
3.06	1,481	13.851	730	K202_0140	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.33	2,599	13.935	854	K302_0140	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
6.66	3,232	13.885	1,364	K402_0140	MR160/	050 140	AW160/012
8.02	3,895	13.885	1,364	K402_0140	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
21.48	9,655	13.043	2,625	K713_0130	MR200/	180	AW200/014
24.58	11,163	13.182	3,472	K813_0130	MR200/	180	AW200/014
34.04*	15,299	13.043	2,625	K713_0130	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
39.32	17,861	13.182	3,472	K813_0130	MR250/	180 210	AW250/102
58.50*	26,575	13.182	3,472	K813_0130	MR300/	180 210 250 280	AW300/110

120 RPM Output (Approximate)

8.46	4,235	14.536	1,664	K513_0145	MR160/	050 140	AW160/012
14.64	7,335	14.536	1,664	K513_0145	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
17.24	8,512	14.332	1,970	K613_0145	MR200/	180	AW200/014
18.92	9,650	14.802	2,738	K713_0150	MR200/	180	AW200/014
19.53	9,646	14.332	1,970	K613_0145	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
22.11	11,309	14.842	3,612	K813_0150	MR200/	180	AW200/014
31.29*	15,957	14.802	2,738	K713_0150	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
39.12	20,007	14.842	3,612	K813_0150	MR250/	180 210	AW250/102
54.06*	27,647	14.842	3,612	K813_0150	MR300/	180 210 250 280	AW300/110

110 RPM Output (Approximate)

8.46	4,689	16.093	1,721	K513_0160	MR160/	050 140	AW160/012
13.68	7,588	16.093	1,721	K513_0160	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
17.24	9,425	15.868	2,038	K613_0160	MR200/	180	AW200/014
18.25	9,979	15.868	2,038	K613_0160	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
73.72*	40,419	15.910	8,285	K913_0160	MR300/	180 210 250 280	AW300/110
93.68*	51,358	15.910	8,285	K913_0160	MR350/	320 360	AW350/202
105.20*	57,555	15.876	10,190	K1013_0160	MR350/	320 360	AW350/202

1) 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.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

105 RPM Output (Approximate)

1.51	883	16.714	648	K102_0165	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.44	1,439	16.858	780	K202_0170	MR140/	050	AW140/010
2.61	1,543	16.939	911	K302_0170	MR140/	050	AW140/010
2.68	1,581	16.858	780	K202_0170	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
4.03	2,389	16.939	911	K302_0170	MR160/	050 140	AW160/012
4.65	2,753	16.939	1,458	K402_0170	MR160/	050 140	AW160/012
4.68	2,774	16.939	911	K302_0170	MR200/	180	AW200/014
7.03	4,162	16.939	1,458	K402_0170	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
8.68	5,129	17.156	2,091	K613_0170	MR160/	050 140	AW160/012
15.25	9,014	17.156	2,091	K613_0170	MR200/	180	AW200/014
17.32	10,242	17.156	2,091	K613_0170	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
18.92	10,684	16.388	2,832	K713_0165	MR200/	180	AW200/014
22.11	12,521	16.432	3,737	K813_0165	MR200/	180	AW200/014
29.23	16,508	16.388	2,832	K713_0165	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
39.12	22,151	16.432	3,737	K813_0165	MR250/	180 210	AW250/102
50.51*	28,601	16.432	3,737	K813_0165	MR300/	180 210 250 280	AW300/110

100 RPM Output (Approximate)

1.46	898	17.563	659	K102_0175	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.61	1,575	17.293	917	K302_0175	MR140/	050	AW140/010
2.61	1,591	17.469	789	K202_0175	MR140/	050	AW140/010
2.62	1,600	17.469	789	K202_0175	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
4.62	2,793	17.293	917	K302_0175	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.86	3,567	17.405	1,471	K402_0175	MR160/	050 140	AW160/012
6.90	4,200	17.405	1,471	K402_0175	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
7.57	4,556	17.481	1,769	K513_0175	MR160/	050 140	AW160/012
12.95	7,800	17.481	1,769	K513_0175	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
19.85	11,851	17.327	3,803	K813_0175	MR200/	180	AW200/014
35.15	20,990	17.327	3,803	K813_0175	MR250/	180 210	AW250/102
48.76*	29,111	17.327	3,803	K813_0175	MR300/	180 210 250 280	AW300/110

* Thermal HP Limit

Base Module Size	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
HP Limit	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.63	67.05

K
RIGHT ANGLE – Solid Shaft/Hollow Output

K Series: RIGHT ANGLE – Solid Shaft/Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

95 RPM Output (Approximate)

15.67	9,865	18.275	2,937	K713_0185	MR200/	180	AW200/014
27.18	17,119	18.275	2,937	K713_0185	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110

90 RPM Output (Approximate)

7.57	5,044	19.353	1,830	K513_0195	MR160/	050 140	AW160/012
8.68	5,679	18.994	2,164	K613_0190	MR160/	050 140	AW160/012
11.95	7,972	19.353	1,830	K513_0195	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
15.25	9,980	18.994	2,164	K613_0190	MR200/	180	AW200/014
16.19	10,596	18.994	2,164	K613_0190	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
19.85	13,121	19.183	3,934	K813_0190	MR200/	180	AW200/014
35.15	23,238	19.183	3,934	K813_0190	MR250/	180 210	AW250/102
45.56*	30,115	19.183	3,934	K813_0190	MR300/	180 210 250 280	AW300/110
73.72*	48,429	19.063	8,800	K913_0190	MR300/	180 210 250 280	AW300/110
83.04*	54,548	19.063	8,800	K913_0190	MR350/	320 360	AW350/202
105.20*	67,977	18.751	10,772	K1013_0190	MR350/	320 360	AW350/202

85 RPM Output (Approximate)

1.33	940	20.150	690	K102_0200	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.07	1,471	20.327	830	K202_0200	MR140/	050	AW140/010
2.32	1,643	20.278	967	K302_0200	MR140/	050	AW140/010
2.37	1,683	20.327	830	K202_0200	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
3.56	2,526	20.278	967	K302_0200	MR160/	050 140	AW160/012
4.03	2,849	20.197	1,546	K402_0200	MR160/	050 140	AW160/012
4.15	2,945	20.278	967	K302_0200	MR200/	180	AW200/014
					MR200/	180	AW200/014
6.25	4,413	20.197	1,546	K402_0200	MR250/	180 210	AW250/102
15.67	10,922	20.233	3,038	K713_0200	MR200/	180	AW200/014
25.40	17,710	20.233	3,038	K713_0200	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110

1) 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.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes

Selection Data



1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

80 RPM Output (Approximate)

6.36	4,817	21.992	1,910	K513_0220	MR160/	050 140	AW160/012
7.39	5,518	21.684	2,261	K613_0220	MR160/	050 140	AW160/012
10.52	7,972	21.992	1,910	K513_0220	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
12.98	9,702	21.684	2,261	K613_0220	MR200/	180	AW200/014
14.82	11,074	21.684	2,261	K613_0220	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110

75 RPM Output (Approximate)

1.21	986	23.265	723	K102_0230	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.17	1,758	23.180	867	K202_0230	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.61	2,121	23.292	1,013	K302_0230	MR140/	050	AW140/010
3.79	3,084	23.292	1,013	K302_0230	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
4.65	3,786	23.292	1,621	K402_0230	MR160/	050 140	AW160/012
5.68	4,628	23.292	1,621	K402_0230	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
13.54	10,610	22.739	3,159	K713_0230	MR200/	180	AW200/014
15.67	12,440	23.044	4,182	K813_0230	MR200/	180	AW200/014
23.50	18,413	22.739	3,159	K713_0230	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
27.75	22,036	23.044	4,182	K813_0230	MR250/	180 210	AW250/102
40.32*	32,014	23.044	4,182	K813_0230	MR300/	180 210 250 280	AW300/110

73 RPM Output (Approximate)

6.36	5,334	24.348	1,976	K513_0240	MR160/	050 140	AW160/012
7.39	6,109	24.007	2,339	K613_0240	MR160/	050 140	AW160/012
9.50	7,972	24.348	1,976	K513_0240	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
12.98	10,741	24.007	2,339	K613_0240	MR200/	180	AW200/014
13.85	11,456	24.007	2,339	K613_0240	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
35.15	29,004	23.943	9,495	K913_0240	MR250/	180 210	AW250/102
62.77*	51,785	23.943	9,495	K913_0240	MR300/	180 210 250 280	AW300/110
71.33*	58,854	23.943	9,495	K913_0240	MR350/	320 360	AW350/202
97.49*	79,931	23.793	11,661	K1013_0240	MR350/	320 360	AW350/202

* Thermal HP Limit

Base Module Size	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
HP Limit	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.63	67.05

K Series: RIGHT ANGLE – Solid Shaft/Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

70 RPM Output (Approximate)

0.96	851	25.220	743	K102_0250	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.73	1,515	25.130	891	K202_0250	MR140/	050	AW140/010
1.89	1,670	25.259	1,041	K302_0250	MR140/	050	AW140/010
2.02	1,772	25.130	891	K202_0250	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.91	2,566	25.259	1,041	K302_0250	MR160/	050 140	AW160/012
3.34	2,956	25.279	1,666	K402_0250	MR160/	050 140	AW160/012
3.48	3,070	25.259	1,041	K302_0250	MR200/	180	–
5.02	4,434	25.279	1,666	K402_0250	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
13.54	11,746	25.175	3,268	K713_0250	MR200/	180	AW200/014
15.67	13,773	25.513	4,327	K813_0260	MR200/	180	AW200/014
21.96	19,048	25.175	3,268	K713_0250	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
27.75	24,397	25.513	4,327	K813_0260	MR250/	180 210	AW250/102
37.67	33,118	25.513	4,327	K813_0260	MR300/	180 210 250 280	AW300/110

60 RPM Output (Approximate)

1.07	1,049	28.048	770	K102_0280	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.81	1,772	27.950	923	K202_0280	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.32	2,260	27.883	1,076	K302_0280	MR140/	050	AW140/010
3.18	3,100	27.883	1,076	K302_0280	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
4.03	3,917	27.771	1,719	K402_0280	MR160/	050 140	AW160/012
5.02	4,872	27.771	1,719	K402_0280	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
5.11	5,136	29.181	2,099	K513_0290	MR160/	050 140	AW160/012
5.97	5,923	28.772	2,485	K613_0290	MR160/	050 140	AW160/012
7.93	7,972	29.181	2,099	K513_0290	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
10.48	10,395	28.772	2,485	K613_0290	MR200/	180	AW200/014
11.33	11,434	29.285	3,437	K713_0290	MR200/	180	AW200/014
12.27	12,169	28.772	2,485	K613_0290	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
13.54	13,649	29.254	4,529	K813_0290	MR200/	180	AW200/014
19.85	20,033	29.285	3,437	K713_0290	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
23.91	24,103	29.254	4,529	K813_0290	MR250/	180 210	AW250/102
34.39	34,664	29.254	4,529	K813_0290	MR300/	180 210 250 280	AW300/110

1) 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.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

55 RPM Output (Approximate)

2.76	3,100	32.649	1,134	K303_0330	MR160/	050 140	AW160/012
3.34	3,733	32.390	1,809	K403_0320	MR160/	050 140	AW160/012
5.11	5,687	32.308	2,171	K513_0320	MR160/	050 140	AW160/012
5.97	6,557	31.855	2,571	K613_0320	MR160/	050 140	AW160/012
7.16	7,972	32.308	2,171	K513_0320	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
10.48	11,508	31.855	2,571	K613_0320	MR200/	180	AW200/014
11.33	12,659	32.423	3,555	K713_0320	MR200/	180	AW200/014
11.47	12,589	31.855	2,571	K613_0320	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
13.54	15,112	32.389	4,685	K813_0320	MR200/	180	AW200/014
18.55	20,724	32.423	3,555	K713_0320	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
23.91	26,686	32.389	4,685	K813_0320	MR250/	180 210	AW250/102
27.75	30,711	32.116	10,471	K913_0320	MR250/	180 210	AW250/102
32.13	35,860	32.389	4,685	K813_0320	MR300/	180 210 250 280	AW300/110
49.56	54,851	32.116	10,471	K913_0320	MR300/	180 210 250 280	AW300/110
56.03*	62,006	32.116	10,471	K913_0320	MR350/	320 360	AW350/202
58.79	63,887	31.535	12,810	K1013_0320	MR300/	180 210 250 280	AW300/110
78.29*	85,073	31.535	12,810	K1013_0320	MR350/	320 360	AW350/202

52 RPM Output (Approximate)

0.55	647	33.707	819	K102_0340	MR140/	050	AW140/010
1.16	1,364	33.618	981	K202_0340	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.48	1,734	33.618	1,145	K302_0340	MR140/	050	AW140/010
1.89	2,217	33.618	1,145	K302_0340	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.62	3,084	33.678	1,833	K402_0340	MR160/	050 140	AW160/012
2.93	3,445	33.678	1,833	K402_0340	MR200/	180	AW200/014

K

RIGHT ANGLE – Solid Shaft/Hollow Output

* Thermal HP Limit

Base Module Size	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
HP Limit	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.63	67.05

K Series: RIGHT ANGLE – Solid Shaft/Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

50 RPM Output (Approximate)

0.87	1,063	35.105	830	K102_0350	MR140/ MR160/	050 050 140	AW140/010 AW160/012
1.47	1,772	34.554	990	K202_0350	MR140/ MR160/ MR200/	050 050 140 180	AW140/010 AW160/012 AW200/014
1.89	2,297	34.731	1,157	K302_0350	MR140/	050	AW140/010
2.51	3,100	35.833	1,170	K303_0360	MR160/	050 140	AW160/012
2.55	3,100	34.731	1,157	K302_0350	MR160/ MR200/	050 140 180	AW160/012 AW200/014
3.34	4,065	34.758	1,852	K402_0350	MR160/	050 140	AW160/012
3.34	4,117	35.721	1,869	K403_0360	MR160/	050 140	AW160/012
4.01	4,872	34.758	1,852	K402_0350	MR200/ MR250/	180 180 210	AW200/014 AW250/102
4.50	5,402	34.800	2,226	K513_0350	MR160/	050 140	AW160/012
5.11	6,092	34.610	2,643	K613_0350	MR160/	050 140	AW160/012
6.65	7,972	34.800	2,226	K513_0350	MR200/ MR250/	180 180 210	AW200/014 AW250/102
8.95	10,673	34.610	2,643	K613_0350	MR200/	180	AW200/014
9.98	12,191	35.438	3,662	K713_0350	MR200/	180	AW200/014
10.77	12,844	34.610	2,643	K613_0350	MR250/ MR300/	180 210 180 210 250 280	AW250/102 AW300/110
11.33	14,109	36.138	4,859	K813_0360	MR200/	180	AW200/014
17.41	21,259	35.438	3,662	K713_0350	MR250/ MR300/	180 210 180 210 250 280	AW250/102 AW300/110
19.95	24,839	36.138	4,859	K813_0360	MR250/	180 210	AW250/102
29.87	37,194	36.138	4,859	K813_0360	MR300/	180 210 250 280	AW300/110

45 RPM Output (Approximate)

1.30	1,772	39.454	1,035	K203_0390	MR140/	050	AW140/010
2.30	3,100	39.187	1,205	K303_0390	MR160/	050 140	AW160/012
3.34	4,500	39.047	1,926	K403_0390	MR160/	050 140	AW160/012
4.50	5,981	38.529	2,302	K513_0390	MR160/	050 140	AW160/012
5.11	6,745	38.319	2,734	K613_0380	MR160/	050 140	AW160/012
6.01	7,972	38.529	2,302	K513_0390	MR200/ MR250/	180 180 210	AW200/014 AW250/102
8.95	11,817	38.319	2,734	K613_0380	MR200/	180	AW200/014
9.73	12,844	38.319	2,734	K613_0380	MR250/ MR300/	180 210 180 210 250 280	AW250/102 AW300/110
9.98	13,497	39.234	3,789	K713_0390	MR200/	180	AW200/014
15.73	21,259	39.234	3,789	K713_0390	MR250/ MR300/	180 210 180 210 250 280	AW250/102 AW300/110
24.72	32,411	38.042	11,079	K913_0380	MR250/	180 210	AW250/102
43.99	57,666	38.042	11,079	K913_0380	MR300/	180 210 250 280	AW300/110
47.30	62,006	38.042	11,079	K913_0380	MR350/	320 360	AW350/202
50.44	67,096	38.601	13,703	K1013_0390	MR300/	180 210 250 280	AW300/110
67.07*	89,219	38.601	13,703	K1013_0390	MR350/	320 360	AW350/202

1) 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.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

43 RPM Output (Approximate)

0.38	541	40.300	869	K102_0400	MR140/	050	AW140/010
0.72	1,023	40.394	1,043	K202_0400	MR140/	050	AW140/010
1.20	1,705	40.512	1,218	K302_0410	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.93	2,729	40.512	1,950	K402_0410	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
11.33	15,621	40.009	5,027	K813_0400	MR200/	180	AW200/014
19.95	27,499	40.009	5,027	K813_0400	MR250/	180 210	AW250/102
26.99	37,204	40.009	5,027	K813_0400	MR300/	180 210 250 280	AW300/110

40 RPM Output (Approximate)

0.55	900	46.918	914	K102_0470	MR140/	050	AW140/010
1.10	1,772	46.225	1,091	K202_0460	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.14	1,772	45.223	1,083	K203_0450	MR140/	050	AW140/010
1.48	2,384	46.225	1,273	K302_0460	MR140/	050	AW140/010
1.89	3,048	46.225	1,273	K302_0460	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.01	3,100	44.892	1,261	K303_0450	MR160/	050 140	AW160/012
2.62	4,240	46.308	2,038	K402_0460	MR160/	050 140	AW160/012
2.93	4,737	46.308	2,038	K402_0460	MR200/	180	AW200/014
3.17	4,872	44.536	2,012	K403_0450	MR160/	050 140	AW160/012
3.74	5,603	43.500	2,397	K513_0440	MR160/	050 140	AW160/012
4.22	6,261	43.111	2,843	K613_0430	MR160/	050 140	AW160/012
5.32	7,972	43.500	2,397	K513_0440	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
7.38	10,965	43.111	2,843	K613_0430	MR200/	180	AW200/014
8.00	12,417	45.054	3,967	K713_0450	MR200/	180	AW200/014
8.65	12,844	43.111	2,843	K613_0430	MR250/	180 210	AW250/102
9.98	15,222	44.250	5,199	K813_0440	MR200/	180	AW200/014
13.69	21,259	45.054	3,967	K713_0450	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
17.49	26,663	44.250	5,199	K813_0440	MR250/	180 210	AW250/102
24.40	37,204	44.250	5,199	K813_0440	MR300/	180 210 250 280	AW300/110

K

RIGHT ANGLE – Solid Shaft/Hollow Output

* Thermal HP Limit

Base Module Size	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
HP Limit	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.63	67.05

K Series: RIGHT ANGLE – Solid Shaft/Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾
35 RPM Output (Approximate)							
0.25	442	50.310	935	K102_0500	MR140/	050	AW140/010
0.48	853	50.492	1,124	K202_0500	MR140/	050	AW140/010
0.77	1,364	50.492	1,311	K302_0500	MR140/	050	AW140/010
1.03	1,772	49.759	1,118	K203_0500	MR140/	050	AW140/010
1.07	1,815	49.260	1,300	K303_0490	MR140/	050	AW140/010
1.35	2,387	50.427	2,097	K402_0500	MR160/	050 140	AW160/012
1.85	3,100	48.631	1,295	K303_0491	MR160/	050 140	AW160/012
2.89	4,872	48.944	2,076	K403_0490	MR160/	050 140	AW160/012
3.74	6,203	48.161	2,480	K513_0480	MR160/	050 140	AW160/012
4.22	6,932	47.730	2,941	K613_0480	MR160/	050 140	AW160/012
4.80	7,972	48.161	2,480	K513_0480	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
7.38	12,140	47.730	2,941	K613_0480	MR200/	180	AW200/014
7.81	12,844	47.730	2,941	K613_0480	MR250/	180 210	AW250/102
8.00	13,747	49.881	4,104	K713_0500	MR200/	180	AW200/014
9.98	16,853	48.991	5,378	K813_0490	MR200/	180	AW200/014
12.37	21,259	49.881	4,104	K713_0500	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
17.49	29,520	48.991	5,378	K813_0490	MR250/	180 210	AW250/102
19.95	33,636	48.937	12,050	K913_0490	MR250/	180 210	AW250/102
22.04	37,204	48.991	5,378	K813_0490	MR300/	180 210 250 280	AW300/110
35.44	59,756	48.937	12,050	K913_0490	MR300/	180 210 250 280	AW300/110
41.49	69,403	48.543	14,790	K1013_0490	MR300/	180 210 250 280	AW300/110
55.15	92,250	48.543	14,790	K1013_0490	MR350/	320 360	AW350/202

1) 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.

2) **Motor HP for TEFC NEMA C-Frame @ 1750 RPM**

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

3) **Optional Input Shaft**

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes

Selection Data



1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

30 RPM Output (Approximate)

0.38	753	56.095	970	K102_0560	MR140/	050	AW140/010
0.72	1,407	55.542	1,160	K202_0560	MR140/	050	AW140/010
0.95	1,772	54.250	1,151	K203_0540	MR140/	050	AW140/010
1.20	2,345	55.705	1,355	K302_0560	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.32	2,481	54.579	1,346	K303_0550	MR140/	050	AW140/010
1.67	3,100	53.883	1,340	K303_0540	MR160/	050 140	AW160/012
1.93	3,752	55.705	2,168	K402_0560	MR160/	050 140	AW160/012
2.63	4,872	53.690	2,141	K403_0540	MR160/	050 140	AW160/012
2.84	5,699	58.297	2,643	K513_0580	MR160/	050 140	AW160/012
3.36	6,658	57.545	3,131	K613_0580	MR160/	050 140	AW160/012
3.97	7,972	58.297	2,643	K513_0580	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
5.87	11,633	57.545	3,131	K613_0580	MR200/	180	AW200/014
6.42	12,949	58.570	4,330	K713_0590	MR200/	180	AW200/014
6.48	12,844	57.545	3,131	K613_0580	MR250/	180 210	AW250/102
7.37	15,014	59.082	5,724	K813_0590	MR200/	180	AW200/014
10.53	21,259	58.570	4,330	K713_0590	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
13.00	26,457	59.082	5,724	K813_0590	MR250/	180 210	AW250/102
18.27	37,204	59.082	5,724	K813_0590	MR300/	180 210 250 280	AW300/110

K

RIGHT ANGLE – Solid Shaft/Hollow Output

K Series: RIGHT ANGLE – Solid Shaft/Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

27 RPM Output (Approximate)

0.75	1,772	68.419	1,244	K203_0680	MR140/	050	AW140/010
0.78	1,772	66.027	1,229	K203_0660	MR140/	050	AW140/010
1.25	2,848	66.346	1,436	K303_0660	MR140/	050	AW140/010
1.32	3,016	66.346	2,298	K403_0660	MR140/	050	AW140/010
1.32	3,079	67.733	1,446	K303_0680	MR140/	050	AW140/010
1.32	3,099	68.169	2,319	K403_0680	MR140/	050	AW140/010
1.35	3,100	66.868	1,440	K303_0670	MR160/	050 140	AW160/012
1.37	3,100	65.499	1,430	K303_0650	MR160/	050 140	AW160/012
2.10	4,872	67.298	2,309	K403_0670	MR160/	050 140	AW160/012
2.16	4,872	65.499	2,288	K403_0650	MR160/	050 140	AW160/012
2.84	6,310	64.544	2,734	K513_0650	MR160/	050 140	AW160/012
3.36	7,371	63.710	3,239	K613_0640	MR160/	050 140	AW160/012
3.58	7,972	64.544	2,734	K513_0650	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
5.85	12,844	63.710	3,239	K613_0640	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
6.42	14,337	64.846	4,480	K713_0650	MR200/	180	AW200/014
7.37	16,622	65.412	5,922	K813_0650	MR200/	180	AW200/014
9.51	21,259	64.846	4,480	K713_0650	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
13.00	29,292	65.412	5,922	K813_0650	MR250/	180 210	AW250/102
15.22	34,499	66.833	5,965	K814_0670	MR250/	180 210	AW250/102
15.85	34,454	63.071	13,113	K913_0630	MR250/	180 210	AW250/102
16.51	37,204	65.412	5,922	K813_0650	MR300/	180 210 250 280	AW300/110
28.20	61,289	63.071	13,113	K913_0630	MR300/	180 210 250 280	AW300/110
34.03	72,176	61.553	16,009	K1013_0620	MR300/	180 210 250 280	AW300/110

25 RPM Output (Approximate)

0.25	616	70.029	1,045	K102_0700	MR140/	050	AW140/010
0.48	1,172	69.427	1,250	K202_0690	MR140/	050	AW140/010
0.77	1,876	69.427	1,458	K302_0690	MR140/	050	AW140/010
1.35	3,283	69.338	2,332	K402_0690	MR160/	050 140	AW160/012
2.43	5,877	70.083	2,810	K513_0700	MR160/	050 140	AW160/012
2.84	6,723	68.772	3,322	K613_0690	MR160/	050 140	AW160/012
3.01	7,268	70.083	2,810	K513_0700	MR200/	180	AW200/014
4.91	11,639	68.772	3,322	K613_0690	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
5.47	13,414	71.203	4,621	K713_0710	MR200/	180	AW200/014
6.42	15,852	71.701	6,106	K813_0720	MR200/	180	AW200/014
7.84	19,244	71.203	4,621	K713_0710	MR250/	180 210	AW250/102
11.26	27,814	71.701	6,106	K813_0720	MR250/	180 210	AW250/102
12.93	31,935	71.701	6,106	K813_0720	MR300/	180 210 250 280	AW300/110

1) 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.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes

Selection Data



1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

23 RPM Output (Approximate)

2.84	7,443	76.140	3,437	K613_0760	MR160/	050 140	AW160/012
4.90	12,844	76.140	3,437	K613_0760	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
14.04	36,283	75.004	13,893	K913_0750	MR250/	180 210	AW250/102
14.82	37,204	73.993	6,170	K814_0740	MR250/	180 210	AW250/102
23.56	60,903	75.004	13,893	K913_0750	MR300/	180 210 250 280	AW300/110
28.20	73,149	75.276	17,119	K1013_0750	MR300/	180 210 250 280	AW300/110

22 RPM Output (Approximate)

0.65	1,772	79.615	1,308	K203_0800	MR140/	050	AW140/010
1.11	3,030	79.424	1,525	K303_0790	MR140/	050	AW140/010
1.15	3,100	78.410	1,518	K303_0780	MR160/	050 140	AW160/012
1.25	3,396	79.105	2,437	K403_0790	MR140/	050	AW140/010
1.81	4,872	78.095	2,426	K403_0780	MR160/	050 140	AW160/012
2.43	6,506	77.592	2,907	K513_0780	MR160/	050 140	AW160/012
2.98	7,972	77.592	2,907	K513_0780	MR200/	180	AW200/014
5.47	14,851	78.832	4,781	K713_0790	MR200/	180	AW200/014
6.42	17,551	79.384	6,317	K813_0790	MR200/	180	AW200/014
7.83	21,259	78.832	4,781	K713_0790	MR250/	180 210	AW250/102
11.26	30,795	79.384	6,317	K813_0790	MR250/	180 210	AW250/102
12.93	35,365	79.384	6,317	K813_0790	MR300/	180 210 250 280	AW300/110

20 RPM Output (Approximate)

1.98	5,965	87.290	3,024	K513_0870	MR160/	050 140	AW160/012
2.03	6,105	87.290	3,024	K513_0870	MR200/	180	AW200/014
2.32	6,875	86.178	3,582	K613_0860	MR160/	050 140	AW160/012
2.76	7,972	85.034	2,998	K514_0850	MR160/	050 140	AW160/012
2.90	8,600	86.178	3,582	K613_0860	MR200/	180	AW200/014
3.34	9,512	83.843	3,549	K614_0840	MR160/	050 140	AW160/012
4.44	13,607	89.004	4,950	K713_0890	MR200/	180	AW200/014
4.83	14,803	89.004	4,950	K713_0890	MR250/	180 210	AW250/102
5.47	16,533	87.763	6,525	K813_0880	MR200/	180	AW200/014
6.54	19,755	89.061	4,950	K714_0890	MR200/	180	AW200/014
7.68	23,220	87.763	6,525	K813_0880	MR250/	180 210	AW250/102
12.34	37,204	88.885	6,525	K814_0890	MR250/	180 210	AW250/102

K

RIGHT ANGLE – Solid Shaft/Hollow Output

K Series: RIGHT ANGLE – Solid Shaft/Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

19 RPM Output (Approximate)

0.57	1,772	90.787	1,350	K203_0910	MR140/	050	AW140/010
0.99	3,100	91.226	1,575	K303_0910	MR140/	050	AW140/010
1.00	3,100	90.061	1,575	K303_0900	MR160/	050 140	AW160/012
1.32	4,148	91.226	2,520	K403_0910	MR140/	050	AW140/010
1.57	4,872	90.061	2,520	K403_0900	MR160/	050 140	AW160/012
2.50	7,972	94.145	3,026	K514_0940	MR160/	050 140	AW160/012
3.34	10,531	92.826	3,600	K614_0930	MR160/	050 140	AW160/012
6.54	20,801	93.777	14,625	K914_0940	MR200/	180	AW200/014
15.22	47,672	92.352	14,625	K914_0920	MR250/	180 210	AW250/102
20.18	65,598	94.329	18,000	K1013_0940	MR300/	180 210 250 280	AW300/110

18 RPM Output (Approximate)

1.98	6,604	96.643	3,026	K513_0970	MR160/	050 140	AW160/012
2.03	6,761	96.643	3,026	K513_0970	MR200/	180	AW200/014
2.32	7,612	95.412	3,600	K613_0950	MR160/	050 140	AW160/012
2.90	9,524	95.412	3,600	K613_0950	MR200/	180	AW200/014
4.44	15,065	98.540	4,950	K713_0990	MR200/	180	AW200/014
4.83	16,394	98.540	4,950	K713_0990	MR250/	180 210	AW250/102
5.47	18,305	97.166	6,525	K813_0970	MR200/	180	AW200/014
6.36	21,259	98.604	4,950	K714_0990	MR200/	180	AW200/014
7.68	25,708	97.166	6,525	K813_0970	MR250/	180 210	AW250/102
11.15	37,204	98.408	6,525	K814_0980	MR250/	180 210	AW250/102
11.26	37,012	95.412	14,625	K913_0950	MR250/	180 210	AW250/102
14.48	47,620	95.412	14,625	K913_0950	MR300/	180 210 250 280	AW300/110
20.18	65,598	94.329	18,000	K1013_0940	MR300/	180 210 250 280	AW300/110

16 RPM Output (Approximate)

0.47	1,772	109.471	1,350	K203_1090	MR140/	050	AW140/010
0.57	2,160	109.208	1,575	K303_1090	MR140/	050	AW140/010
0.83	3,100	107.814	1,575	K303_1080	MR160/	050 140	AW160/012
1.25	4,670	108.769	2,520	K403_1090	MR140/	050	AW140/010
1.32	4,872	107.381	2,520	K403_1070	MR160/	050 140	AW160/012
2.08	7,972	112.834	3,026	K514_1130	MR160/	050 140	AW160/012
3.34	12,621	111.254	3,600	K614_1110	MR160/	050 140	AW160/012
3.34	12,846	113.236	4,950	K714_1130	MR160/	050 140	AW160/012
5.47	21,259	114.700	4,950	K714_1150	MR200/	180	AW200/014
6.54	25,415	114.579	6,525	K814_1150	MR200/	180	AW200/014
9.72	37,204	112.838	6,525	K814_1130	MR250/	180 210	AW250/102

1) 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.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

14 RPM Output (Approximate)

1.88	7,972	124.924	3,026	K514_1250	MR160/	050 140	AW160/012
3.08	12,844	123.174	3,600	K614_1230	MR160/	050 140	AW160/012
3.34	14,222	125.368	4,950	K714_1250	MR160/	050 140	AW160/012
4.94	21,259	126.990	4,950	K714_1270	MR200/	180	AW200/014
6.54	27,901	125.788	14,625	K914_1260	MR200/	180	AW200/014
6.54	28,138	126.855	6,525	K814_1270	MR200/	180	AW200/014
8.78	37,204	124.927	6,525	K814_1250	MR250/	180 210	AW250/102
14.76	62,006	123.877	14,625	K914_1240	MR250/	180 210	AW250/102
15.22	62,789	121.636	18,000	K1014_1220	MR250/	180 210	AW250/102

13 RPM Output (Approximate)

0.38	1,772	135.335	1,350	K203_1350	MR140/	050	AW140/010
0.66	3,100	136.029	1,575	K303_1360	MR140/	050	AW140/010
0.67	3,100	134.292	1,575	K303_1340	MR160/	050 140	AW160/012
1.04	4,872	136.137	2,520	K403_1360	MR140/	050	AW140/010
1.05	4,872	134.399	2,520	K403_1340	MR160/	050 140	AW160/012
1.75	7,972	134.560	3,026	K514_1350	MR160/	050 140	AW160/012
2.83	12,844	133.827	3,600	K614_1340	MR160/	050 140	AW160/012
3.10	14,402	137.025	4,950	K714_1370	MR160/	050 140	AW160/012
4.52	21,259	138.797	4,950	K714_1390	MR200/	180	AW200/014
6.54	31,395	141.539	6,525	K814_1420	MR200/	180	AW200/014
7.87	37,204	139.388	6,525	K814_1390	MR250/	180 210	AW250/102

12 RPM Output (Approximate)

1.58	7,972	148.977	3,026	K514_1490	MR160/	050 140	AW160/012
2.56	12,844	148.165	3,600	K614_1480	MR160/	050 140	AW160/012
3.10	15,945	151.706	4,950	K714_1520	MR160/	050 140	AW160/012
6.54	33,049	148.996	14,625	K914_1490	MR200/	180	AW200/014
12.46	62,006	146.732	14,625	K914_1470	MR250/	180 210	AW250/102
15.22	76,857	148.889	18,000	K1014_1490	MR250/	180 210	AW250/102

11 RPM Output (Approximate)

4.08	21,259	153.668	4,950	K714_1540	MR200/	180	AW200/014
6.54	34,759	156.703	6,525	K814_1570	MR200/	180	AW200/014
7.11	37,204	154.322	6,525	K814_1540	MR250/	180 210	AW250/102

K

RIGHT ANGLE – Solid Shaft/Hollow Output

K Series: RIGHT ANGLE – Solid Shaft/Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

10 RPM Output (Approximate)

0.28	1,772	181.048	1,350	K203_1810	MR140/	050	AW140/010
0.49	3,048	181.048	1,575	K303_1810	MR140/	050	AW140/010
0.50	3,048	178.737	1,575	K303_1790	MR160/	050 140	AW160/012
0.76	4,737	181.372	2,520	K403_1810	MR140/	050	AW140/010
0.77	4,737	179.056	2,520	K403_1790	MR160/	050 140	AW160/012
1.40	7,972	168.200	3,026	K514_1680	MR160/	050 140	AW160/012
2.27	12,844	166.694	3,600	K614_1670	MR160/	050 140	AW160/012
2.63	15,514	174.209	4,950	K714_1740	MR160/	050 140	AW160/012
3.55	21,259	176.462	4,950	K714_1760	MR200/	180	AW200/014
5.81	34,132	173.313	6,525	K814_1730	MR200/	180	AW200/014
6.43	37,204	170.679	6,525	K814_1710	MR250/	180 210	AW250/102

9 RPM Output (Approximate)

1.26	7,972	186.221	3,026	K514_1860	MR160/	050 140	AW160/012
2.05	12,844	184.554	3,600	K614_1850	MR160/	050 140	AW160/012
2.63	17,176	192.874	4,950	K714_1930	MR160/	050 140	AW160/012
3.21	21,259	195.368	4,950	K714_1950	MR200/	180	AW200/014
5.72	37,204	191.882	6,525	K814_1920	MR200/	180	AW200/014
5.80	37,204	188.966	6,525	K814_1890	MR250/	180 210	AW250/102
6.54	42,515	191.670	14,625	K914_1920	MR200/	180	AW200/014
9.69	62,006	188.757	14,625	K914_1890	MR250/	180 210	AW250/102
13.15	83,494	187.236	18,000	K1014_1870	MR250/	180 210	AW250/102

8 RPM Output (Approximate)

0.19	1,407	217.538	1,350	K203_2180	MR140/	050	AW140/010
0.31	2,345	218.176	1,575	K303_2180	MR140/	050	AW140/010
0.50	3,752	218.176	2,520	K403_2180	MR140/	050	AW140/010
0.51	3,752	215.391	2,520	K403_2150	MR160/	050 140	AW160/012
1.04	7,972	225.417	3,026	K514_2250	MR160/	050 140	AW160/012
1.70	12,844	222.507	3,600	K614_2230	MR160/	050 140	AW160/012
2.36	18,092	226.472	4,950	K714_2260	MR160/	050 140	AW160/012
2.73	21,259	229.400	4,950	K714_2290	MR200/	180	AW200/014
4.60	36,082	231.404	6,525	K814_2310	MR200/	180	AW200/014
4.81	37,204	227.888	6,525	K814_2280	MR250/	180 210	AW250/102

1) 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.

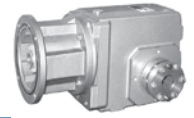
2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

7 RPM Output (Approximate)

0.94	7,972	249.569	3,026	K514_2500	MR160	50	AW160/012
1.29	11,639	265.917	3,600	K614_2660	MR160	50	AW160/012
						140	AW160/012
1.54	12,844	246.347	3,600	K614_2460	MR160	50	AW160/012
						140	AW160/012
2.50	21,259	250.737	4,950	K714_2510	MR160	50	AW160/012
						140	AW160/012
4.28	37,204	256.198	6,525	K814_2560	MR200	180	AW200/014
4.35	37,204	252.304	6,525	K814_2520	MR250	210	AW250/102
5.72	47,896	247.029	14,625	K914_2470	MR200	180	AW200/014
7.52	62,006	243.275	14,625	K914_2430	MR250	180	AW250/102
11.16	89,859	237.418	18,000	K1014_2370	MR250	180	AW250/102

6 RPM Output (Approximate)

0.13	1,172	271.923	1,350	K203_2720	MR140/	050	AW140/010
0.20	1,876	271.923	1,575	K303_2720	MR140/	050	AW140/010
0.35	3,283	271.572	2,520	K403_2720	MR140/	050	AW140/010
0.78	7,972	300.023	3,026	K514_3000	MR160/	050 140	AW160/012
0.79	7,268	270.989	3,026	K514_2710	MR160/	050 140	AW160/012
1.29	12,844	294.408	3,600	K614_2940	MR160/	050 140	AW160/012
2.06	21,259	304.817	4,950	K714_3050	MR160/	050 140	AW160/012
2.06	19,244	275.319	4,950	K714_2750	MR160/	050 140	AW160/012
3.35	31,935	280.830	6,525	K814_2810	MR200/	180	AW200/014
3.35	35,365	310.919	6,525	K814_3110	MR200/	180	AW200/014
3.41	31,935	276.563	6,525	K814_2770	MR250/	180 210	AW250/102
3.41	35,365	306.194	6,525	K814_3060	MR250/	180 210	AW250/102
4.82	47,993	293.764	14,625	K914_2940	MR200/	180	AW200/014
9.17	90,262	290.350	18,000	K1014_2900	MR250/	180 210	AW250/102

5 RPM Output (Approximate)

0.53	6,105	337.521	3,026	K514_3380	MR160/	050 140	AW160/012
0.53	6,761	373.684	3,026	K514_3740	MR160/	050 140	AW160/012
0.76	8,600	333.223	3,600	K614_3330	MR160/	050 140	AW160/012
0.76	9,524	368.926	3,600	K614_3690	MR160/	050 140	AW160/012
1.27	14,803	344.148	4,950	K714_3440	MR160/	050 140	AW160/012
3.76	47,620	373.696	14,625	K914_3740	MR200/	180	AW200/014

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

K
RIGHT ANGLE – Solid Shaft/Hollow Output

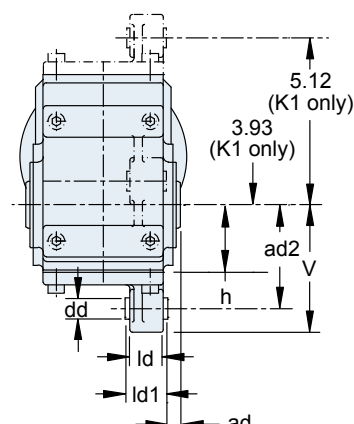
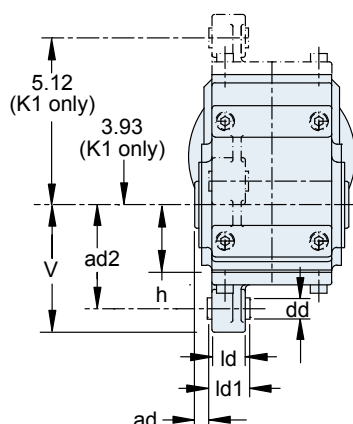
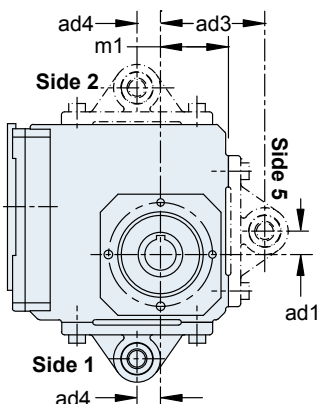
K Series with “A” Hollow Output Option

“GD” Torque Arm Housing Option (Torque arm supplied by others)

K102AGD thru K403AGD

Important:

On K102 thru K1014, brackets can be mounted on Side 1 (shown) or Side 5 (opposite input side).
On K102 ONLY, the bracket can also be mounted on Side 2 (top).



K513AGD thru K1014AGD

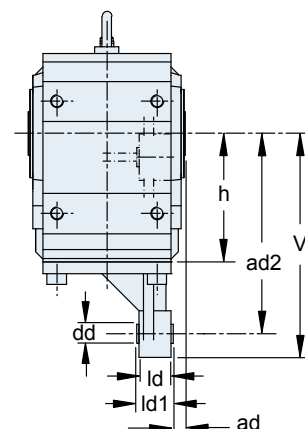
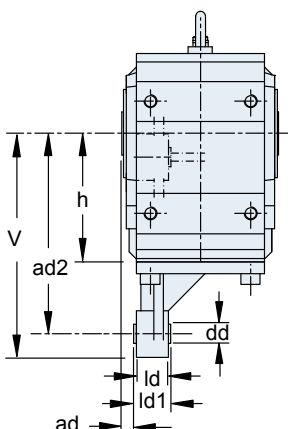
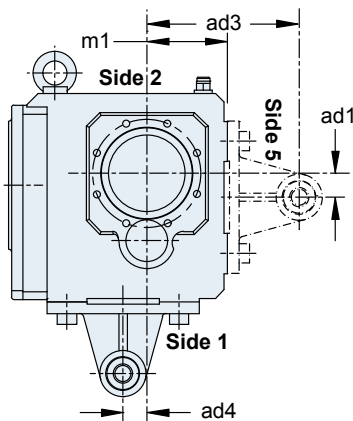


Table 1 “K” Series Dimensions (Inches) — “GD” Torque Arm Bracket

Base Module	ad	ad1	ad2	ad3	ad4	dd	H9	h	ld	ld1	m1	V
K1	0.51	0.59	3.54	3.54	0.59	0.47	+0.017/-0.000	2.36	0.94	1.10	2.36	4.39
K2	0.53	0.89	3.93	3.93	0.89	0.63	+0.017/-0.000	2.56	1.26	1.50	2.56	4.82
K3	0.47	0.98	4.72	4.72	0.98	0.63	+0.017/-0.000	2.95	1.26	1.50	2.95	5.61
K4	0.67	1.08	5.91	5.91	1.08	0.79	+0.020/-0.000	3.54	1.57	1.81	3.54	7.00
K5	0.67	1.18	9.84	7.48	1.18	0.79	+0.020/-0.000	6.30	1.57	1.81	3.93	10.98
K6	0.81	1.18	9.84	7.09	1.18	0.79	+0.020/-0.000	7.48	1.57	1.81	4.72	10.98
K7	0.91	1.38	11.81	8.39	1.38	0.79	+0.020/-0.000	8.35	2.52	2.76	4.92	13.15
K8	1.02	1.77	13.78	9.06	1.77	0.94	+0.020/-0.000	10.43	4.02	4.53	5.71	15.20
K9	1.02	1.77	17.72	12.40	1.77	0.94	+0.020/-0.000	12.40	4.02	4.53	7.09	19.20
K10	0.24	2.17	21.65	15.75	2.36	1.57	+0.024/-0.000	14.76	4.65	4.88	8.86	24.01



Dimensional Data

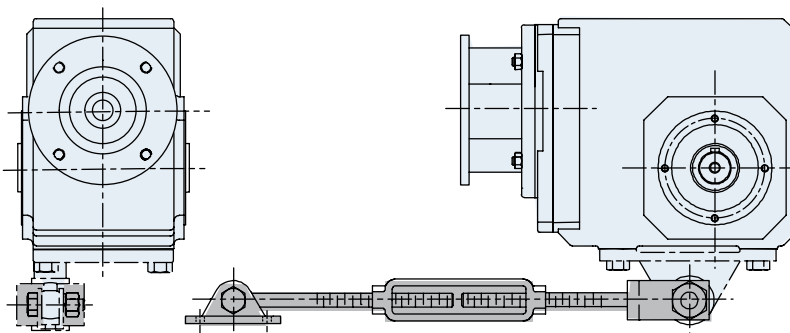
Torque Arm Mounting Methods

(STOBER can supply the torque arm bracket. The user has to supply the torque arm for Example 1 and 2)

The following mounting methods are recommended for stabilizing the reducer without compromising reducer life.

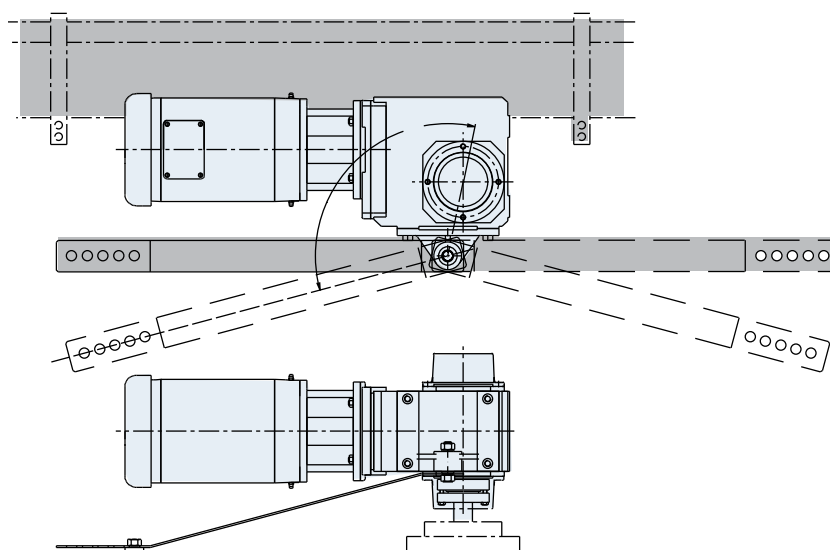
Example 1: Torque Arm Bracket with Turnbuckle Torque Arm

This method uses a turnbuckle assembly that pivots from the torque arm bracket to mount to an acceptable location.



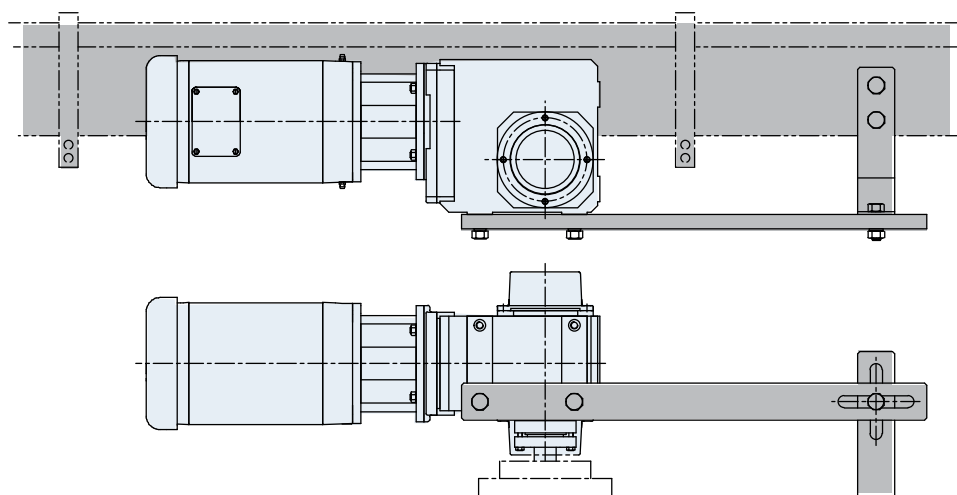
Example 2: Torque Arm Bracket with Fabricated Steel Torque Arm

The torque arm bracket can be ordered with the right angle reducer and the torque arm fabricated from thin steel by the customer to mount in an acceptable location.



Example 3: Fabricated Torque Arm

Using the mounting holes in the reducer housing, a torque arm can be fabricated to mount directly to the machinery. Notice that the fabrication must be 2 pieces with a slot in each piece to allow the connecting bolt to move in all directions.



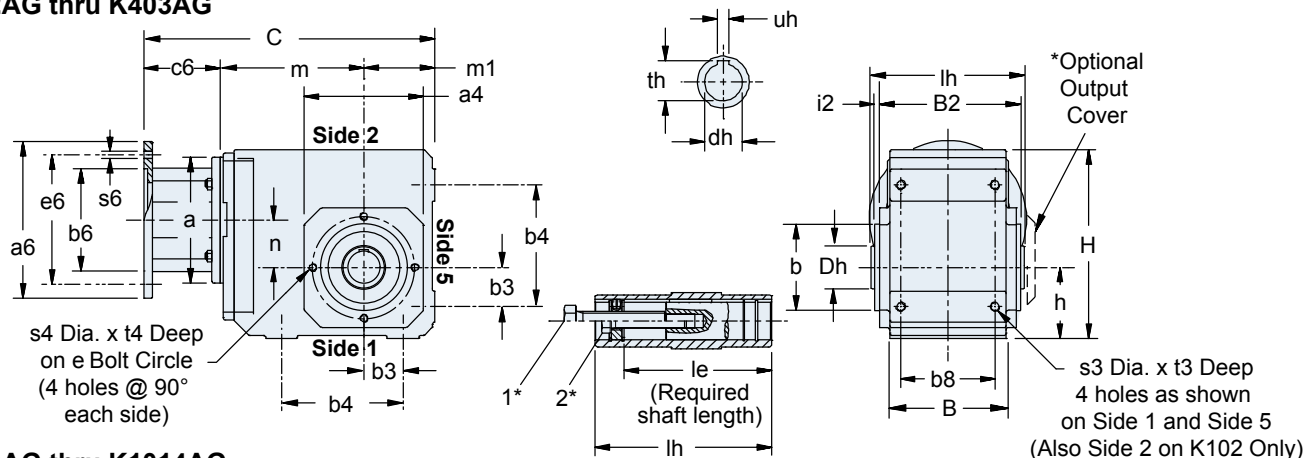
K

RIGHT ANGLE – Solid Shaft/Hollow Output

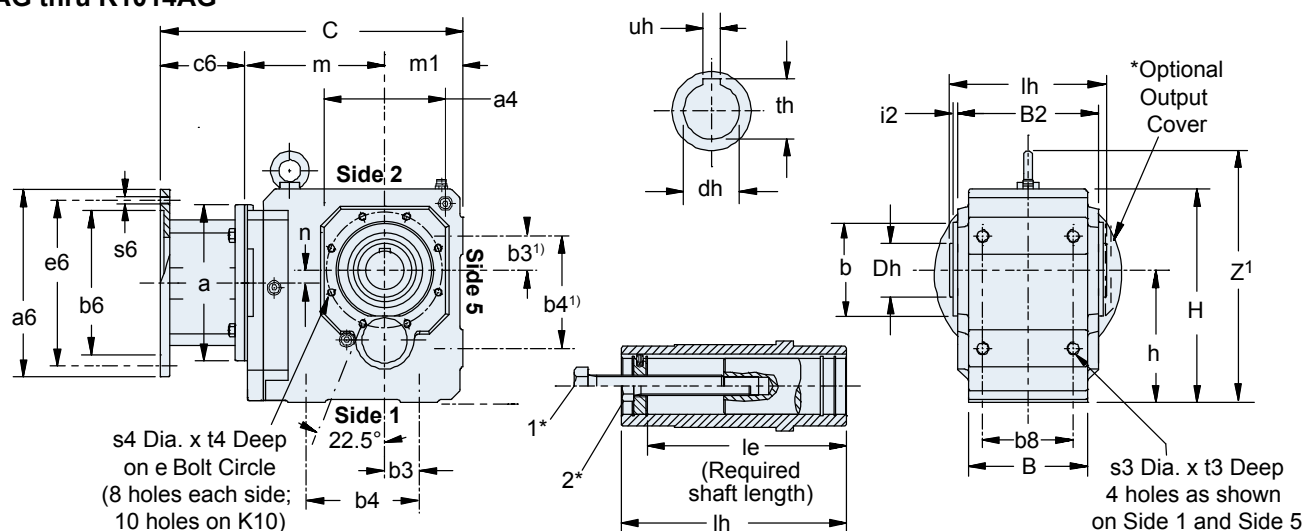
K Series with “A” Hollow Output Option

“G” Tapped Holes Housing Option

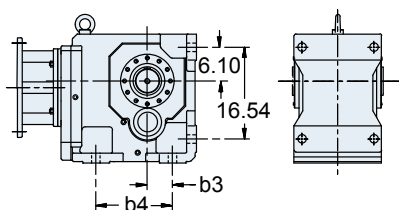
K102AG thru K403AG



K513AG thru K1014AG



Size K10 Mounting Feet (Dimensions b3 and b4)



²⁾ Mounting feet are integral on the K10 housing. Note that b3= 6.10 and b4 = 16.54 on Side 5 of the K10. Hole locations are as shown above.

* 1. Removal Bolt: not supplied. See Installation Guide for details.
2. Mounting Bolt: must be smaller than removal bolt.

See hollow output installation instructions for further details

Table 4 Motor Adapter Dimensions (Inches)

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs.
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR200/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/180	213/215TC		9.00	8.500		7.25		
MR300/180	182/184TC		9.00	8.500		7.25		
MR300/210	213/215TC		9.00	8.500		7.25		
MR300/250	254/256TC		9.00	8.500		7.25		
MR300/280	284/286TC		11.13	10.500		9.00		
MR350/320	324/326TC	13.78	13.37	12.500	7.09	11.00	0.70	133
MR350/360	364/365TC							



Dimensional Data

Table 1 K Series Unit Dimensions (Inches) — “G” Tapped Hole Housing

Base Module	a4	b	j6	B2	b3	b4	b8	e	H	h	lh	s3	s4	t3	t4
K1	4.13	2.953	+0.005/-0.0003	4.17	1.18	3.54	2.76	3.54	6.30	2.36	4.72	M8x1.25	M8x1.25	0.51	0.51
K2	4.57	3.228	+0.005/-0.0004	5.28	1.38	4.53	3.54	3.94	7.48	2.56	5.83	M10x1.5	M8x1.25	0.63	0.51
K3	5.20	3.740	+0.005/-0.0004	5.75	1.57	5.12	4.13	4.53	8.39	2.95	6.30	M10x1.5	M8x1.25	0.63	0.51
K4	5.98	4.331	+0.005/-0.0004	6.81	1.97	6.10	4.72	5.12	9.45	3.54	7.40	M12x1.75	M10x1.5	0.75	0.63
K5	5.71	4.331	+0.005/-0.0004	7.28	1.57	5.51	4.92	5.12	10.24	6.30	7.87	M16x2.0	M10x1.5	1.02	0.63
K6	7.09	5.512	+0.006/-0.0004	7.87	1.97	6.30	5.12	6.50	12.20	7.48	8.46	M16x2.0	M10x1.5	1.02	0.63
K7	7.68	6.102	+0.006/-0.0004	8.90	2.17	7.09	5.71	7.28	13.46	8.35	9.53	M20x2.5	M12x1.75	1.22	0.75
K8	8.90	7.283	+0.006/-0.0005	11.10	2.95	9.45	7.28	8.46	16.14	10.43	11.81	M24x3	M12x1.75	1.50	0.75
K9	11.02	9.055	+0.006/-0.0005	12.99	3.74	11.02	8.86	10.43	19.49	12.40	13.78	M30x3.5	M16x2	1.89	1.02
K10	13.38	9.843	+0.006/-0.0005	15.60	4.53 ¹⁾	13.78 ¹⁾	12.99	11.81	23.27	14.76	16.14	1.54 ²⁾	M20x2.5	1.77	1.30

¹⁾ Mounting feet are integral on the K10 housing as shown in inset drawing, facing page. Note b3 = 6.10 and b4 = 16.54 on Side 5 of the K10.

²⁾ For size K10, “J” are thru holes, not tapped. See side 5 view on Size K10 Mounting Feet drawing, facing page.

Table 2 K Series Unit Dimensions (Inches) — “G” Tapped Hole Housing

Base Module	B	Dh	i2	le	m1	Z ¹	Removal Bolt 1
K1	3.54	1.57	0.12	3.86	2.36	—	1/2 – 13
K2	4.53	1.77	0.12	4.78	2.56	—	1/2 – 13
K3	5.12	1.97	0.12	4.92	2.95	—	5/8 – 11
K4	5.83	2.17	0.14	6.18	3.54	—	3/4 – 10
K5	6.30	2.56	0.14	6.46	3.94	12.28	3/4 – 10
K6	6.61	2.76	0.14	7.05	4.72	14.25	3/4 – 10
K7	7.48	3.35	0.14	8.43	4.92	15.87	1 – 8
K8	9.25	3.94	0.16	10.35	5.71	18.54	1 – 8
K9	11.22	4.33	0.20	11.89	7.09	22.24	1 – 8
K10	15.59	5.12	0.28	14.25	8.86	26.77	1-1/4 – 7

Table 3 K Series Unit Dimensions (Inches) — Standard “A” Hollow Bore Output
(see page 43 for all other optional outputs)

Base Module	Stainless Steel			Carbon Steel		
	dh	th	uh	dh	th	uh
K1	1	1.11	1/4	1	1.11	1/4
K2	1-1/4	1.36	1/4	1-3/16	1.31	1/4
K3	1-3/8	1.52	5/16	1-3/8	1.52	5/16
K4	1-1/2	1.67	3/8	1-1/2	1.67	3/8
K5	2	2.13	1/2	2	2.13	1/2
K6	2	2.23	1/2	2	2.23	1/2
K7	—	—	—	2-3/8	2.66	5/8
K8	—	—	—	2-3/4	3.03	5/8
K9	—	—	—	3-1/4	3.59	3/4
K10	—	—	—	4	4.31	1

Table 5 K Series Unit Dimensions (inches) — “MR” Motor Adapter

Base Module	MR140/050			MR160/050 MR160/140			MR200/180			MR250/180 MR250/210			MR300/180 MR300/210 MR300/250 MR300/280			MR350/320 MR350/360			Wt. lbs.
	C	m	n	C	m	n	C	m	n	C	m	n	C	m	n	C	m	n	
K102	10.55	4.88	1.42	11.26	5.04	1.42	—	—	—	—	—	—	—	—	—	—	—	—	31
K202	11.50	5.63	1.81	12.21	5.79	1.81	13.23	5.87	1.81	—	—	—	—	—	—	—	—	—	40
K203	12.96	7.09	1.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	53
K302	12.68	6.42	2.07	13.38	6.57	2.07	14.40	6.65	2.07	—	—	—	—	—	—	—	—	—	67
K303	14.13	7.87	2.07	15.08	8.27	0.63	—	—	—	—	—	—	—	—	—	—	—	—	73
K402	—	—	—	14.76	7.36	2.36	15.74	7.44	2.36	16.41	7.56	2.36	—	—	—	—	—	—	93
K403	15.51	8.66	2.36	16.46	9.06	0.91	—	—	—	—	—	—	—	—	—	—	—	—	100
K513	—	—	—	14.57	6.77	0.59	15.59	6.85	0.59	16.22	6.97	0.59	—	—	—	—	—	—	106
K514	—	—	—	16.26	8.46	0.59	—	—	—	—	—	—	—	—	—	—	—	—	109
K613	—	—	—	16.10	7.52	0.71	17.12	7.60	0.71	17.75	7.72	0.71	19.49	8.27	0.71	—	—	—	170
K614	—	—	—	17.79	9.21	0.71	—	—	—	—	—	—	—	—	—	—	—	—	177
K713	—	—	—	—	—	—	18.42	8.70	0.79	19.05	8.82	0.79	20.75	9.33	0.79	—	—	—	221
K714	—	—	—	19.13	10.35	0.79	20.86	11.14	0.79	—	—	—	—	—	—	—	—	—	234
K813	—	—	—	—	—	—	20.23	9.72	0.94	20.82	9.80	0.94	22.52	10.31	0.94	—	—	—	309
K814	—	—	—	—	—	—	22.64	12.13	0.94	—	—	—	—	—	—	—	—	—	331
K913	—	—	—	—	—	—	—	—	—	23.97	11.57	0.98	25.68	12.09	0.98	27.17	12.99	0.98	508
K914	—	—	—	—	—	—	25.79	13.90	0.98	26.77	14.37	0.98	—	—	—	—	—	—	530
K1013	—	—	—	—	—	—	—	—	—	—	—	—	15.43	30.79	1.10	32.29	16.34	1.10	913
K1014	—	—	—	—	—	—	—	—	—	31.89	17.72	1.10	—	—	—	—	—	—	993

K

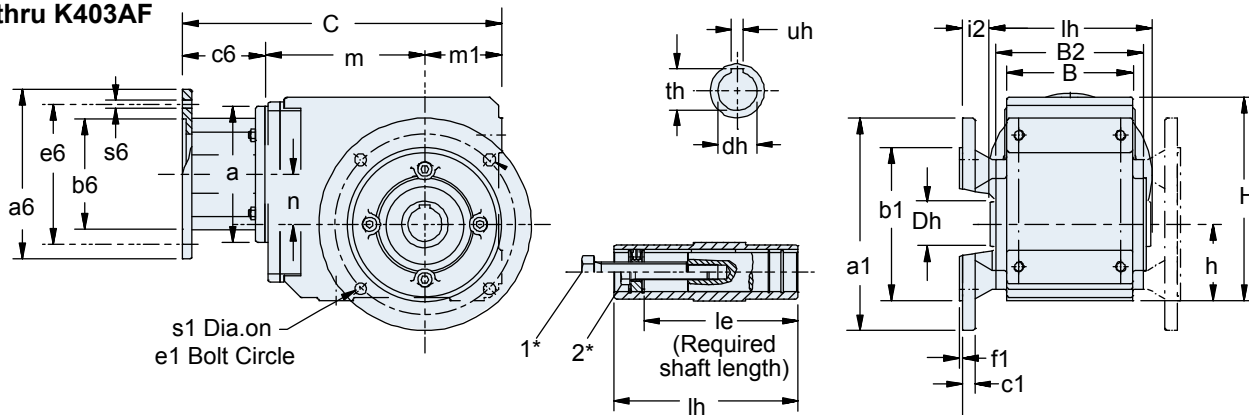
RIGHT ANGLE – Solid Shaft/Hollow Output

K Series with “A” Hollow Output Option

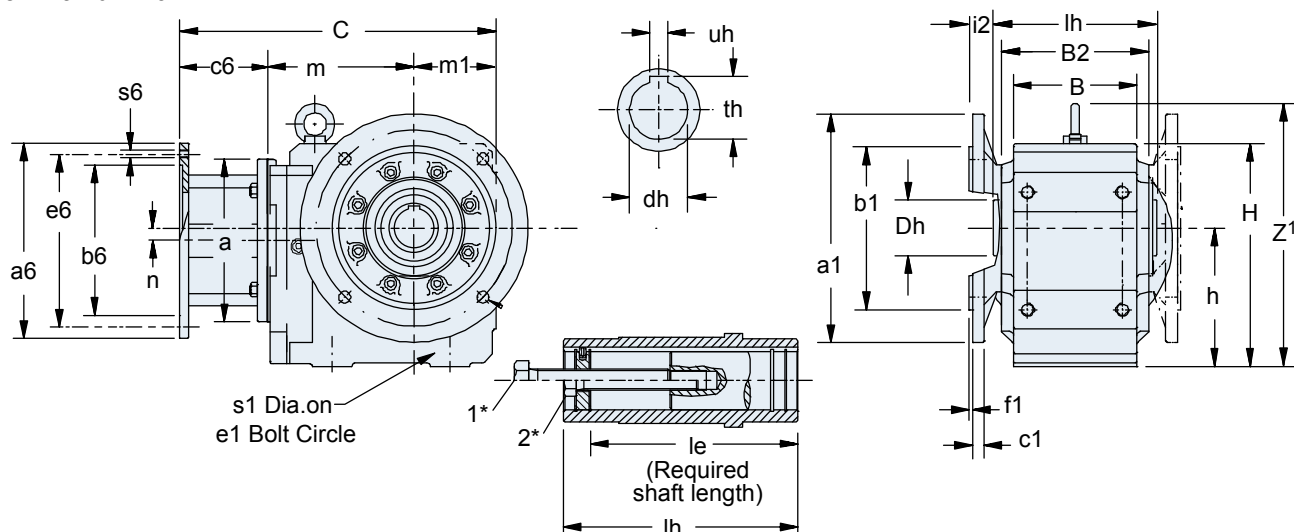
“F” Round Flange Housing Option

Other flange sizes available: for details see “Optional “F” Round Flange Housing Options for K Series” on page 84.

K102AF thru K403AF



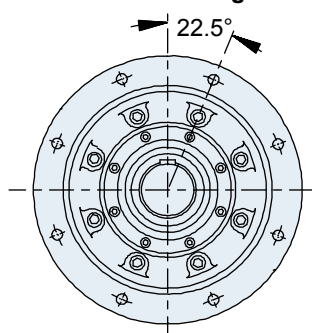
K513AF thru K1014AF



* 1. Removal Bolt: not supplied. See Installation Guide for details.
2. Mounting Bolt: must be smaller than removal bolt.

See hollow output installation instructions for further details

Size K9 and K10 Flange



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

Table 3 Motor Adapter Dimensions (Inches)

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs.
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR200/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/180	182/184TC		9.00	8.500		7.25		
MR250/210	213/215TC		9.00	8.500		7.25		
MR300/180	182/184TC		9.00	8.500		7.25		
MR300/210	213/215TC		9.00	8.500		7.25		
MR300/250	254/256TC		9.00	8.500		7.25		
MR300/280	284/286TC		11.13	10.500		9.00		
MR350/320	324/326TC	13.78	13.37	12.500	7.09	11.00	0.70	133
MR350/360	364/365TC							



Dimensional Data

Table 1 K Series Unit Dimensions (Inches) — “F” Round Flange Housing

Base Module	a1 ¹⁾	B	b1	B2	c1	Dh	e1	f1	H	h	i2	le	lh	m1	s1	z ¹	Removal Bolt 1
K1	6.30	3.54	4.331 +0.0005/-0.0004	4.17	0.39	1.57	5.12	0.14	6.30	2.36	1.26	3.86	4.72	2.36	0.35	—	1/2 – 13
K2	7.87	4.53	5.118 +0.0006/-0.0004	5.28	0.47	1.77	6.50	0.14	7.48	2.56	1.26	4.78	5.83	2.56	0.43	—	1/2 – 13
K3	7.87	5.12	5.118 +0.0006/-0.0004	5.75	0.55	1.97	6.50	0.14	8.39	2.95	1.50	4.92	6.30	2.95	0.43	—	5/8 – 11
K4	9.84	5.83	7.087 +0.0006/-0.0004	6.81	0.59	2.17	8.46	0.16	9.45	3.54	1.57	6.18	7.40	3.54	0.55	—	3/4 – 10
K5	9.84	6.30	7.087 +0.0006/-0.0004	7.28	0.59	2.56	8.46	0.16	10.24	6.30	1.56	6.46	7.87	3.94	0.55	12.28	3/4 – 10
K6	11.81	6.61	9.055 +0.0006/-0.0005	7.87	0.67	2.76	10.43	0.16	12.20	7.48	1.42	7.05	8.46	4.72	0.55	14.25	3/4 – 10
K7	13.78	7.48	9.842 +0.000/-0.001	8.90	0.71	3.35	11.81	0.20	13.46	8.35	1.73	8.43	9.53	4.92	0.71	15.87	1 – 8
K8	15.75	9.25	11.811 +0.000/-0.001	11.10	0.79	3.94	13.78	0.20	16.14	10.43	1.77	10.35	11.81	5.71	0.71	18.54	1 – 8
K9	17.72	11.22	13.780 +0.000/-0.001	12.99	0.91	4.33	15.75	0.20	19.49	12.40	1.97	11.89	13.78	7.09	0.71	22.24	1 – 8
K10	21.65	15.75	17.716 +0.000/-0.002	15.60	0.98	5.12	19.69	0.20	23.27	14.76	3.07	14.25	16.14	8.86	0.71	26.77	1-1/4 – 7

1) See page 84 for other flange sizes. Optional flanges are not available for all sizes.

Table 2 K Series Unit Dimensions (Inches) — Standard “A” Hollow Bore Output (see page 43 for all other optional outputs)

Base Module	Stainless Steel			Carbon Steel		
	dh	th	uh	dh	th	uh
K1	1	1.11	1/4	1	1.11	1/4
K2	1-1/4	1.36	1/4	1-3/16	1.31	1/4
K3	1-3/8	1.52	5/16	1-3/8	1.52	5/16
K4	1-1/2	1.67	3/8	1-1/2	1.67	3/8
K5	2	2.13	1/2	2	2.13	1/2
K6	2	2.23	1/2	2	2.23	1/2
K7	—	—	—	2-3/8	2.66	5/8
K8	—	—	—	2-3/4	3.03	5/8
K9	—	—	—	3-1/4	3.59	3/4
K10	—	—	—	4	4.31	1

Table 4 K Series Unit Dimensions (inches) — “MR” Motor Adapter

Base Module	MR140/050			MR160/050 MR160/140			MR200/180			MR250/180 MR250/210			MR300/180 MR300/210 MR300/250 MR300/280			MR350/320 MR350/360			Wt. lbs.
	C	m	n	C	m	n	C	m	n	C	m	n	C	m	n	C	m	n	
K102	10.55	4.88	1.42	11.26	5.04	1.42	—	—	—	—	—	—	—	—	—	—	—	—	31
K202	11.50	5.63	1.81	12.21	5.79	1.81	13.23	5.87	1.81	—	—	—	—	—	—	—	—	—	40
K203	12.96	7.09	1.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	53
K302	12.68	6.42	2.07	13.38	6.57	2.07	14.40	6.65	2.07	—	—	—	—	—	—	—	—	—	67
K303	14.13	7.87	2.07	15.08	8.27	0.63	—	—	—	—	—	—	—	—	—	—	—	—	73
K402	—	—	—	14.76	7.36	2.36	15.74	7.44	2.36	16.41	7.56	2.36	—	—	—	—	—	—	93
K403	15.51	8.66	2.36	16.46	9.06	0.91	—	—	—	—	—	—	—	—	—	—	—	—	100
K513	—	—	—	14.57	6.77	0.59	15.59	6.85	0.59	16.22	6.97	0.59	—	—	—	—	—	—	106
K514	—	—	—	16.26	8.46	0.59	—	—	—	—	—	—	—	—	—	—	—	—	109
K613	—	—	—	16.10	7.52	0.71	17.12	7.60	0.71	17.75	7.72	0.71	19.49	8.27	0.71	—	—	—	170
K614	—	—	—	17.79	9.21	0.71	—	—	—	—	—	—	—	—	—	—	—	—	177
K713	—	—	—	—	—	—	18.42	8.70	0.79	19.05	8.82	0.79	20.75	9.33	0.79	—	—	—	221
K714	—	—	—	19.13	10.35	0.79	20.86	11.14	0.79	—	—	—	—	—	—	—	—	—	234
K813	—	—	—	—	—	—	20.23	9.72	0.94	20.82	9.80	0.94	22.52	10.31	0.94	—	—	—	309
K814	—	—	—	—	—	—	22.64	12.13	0.94	—	—	—	—	—	—	—	—	—	331
K913	—	—	—	—	—	—	—	—	—	23.97	11.57	0.98	25.68	12.09	0.98	27.17	12.99	0.98	508
K914	—	—	—	—	—	—	25.79	13.90	0.98	26.77	14.37	0.98	—	—	—	—	—	—	530
K1013	—	—	—	—	—	—	—	—	—	—	—	—	15.43	30.79	1.10	32.29	16.34	1.10	913
K1014	—	—	—	—	—	—	—	—	—	31.89	17.72	1.10	—	—	—	—	—	—	993

K
RIGHT ANGLE – Solid Shaft/Hollow Output

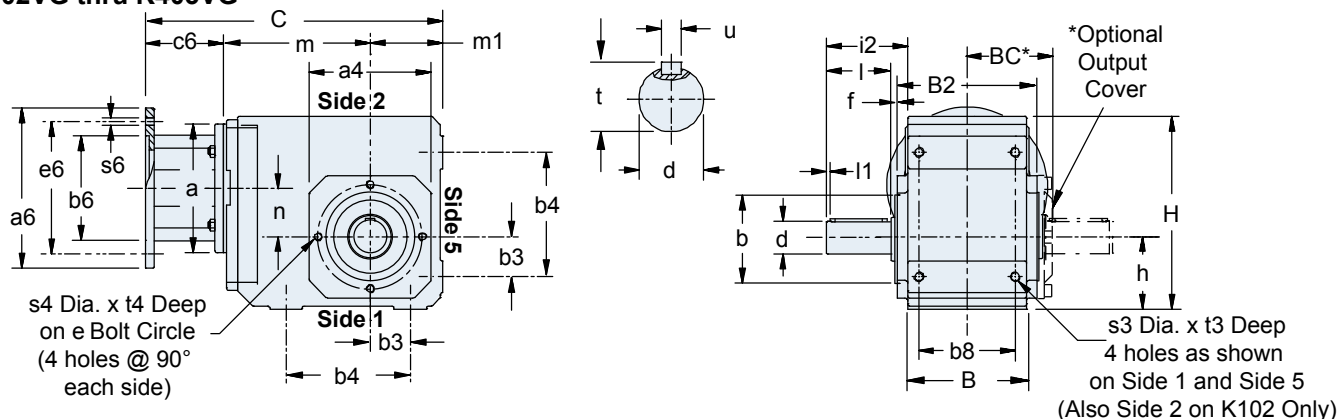
K Series: RIGHT ANGLE – Solid Shaft/Hollow Output

K Series with “V” Solid Shaft Output Option

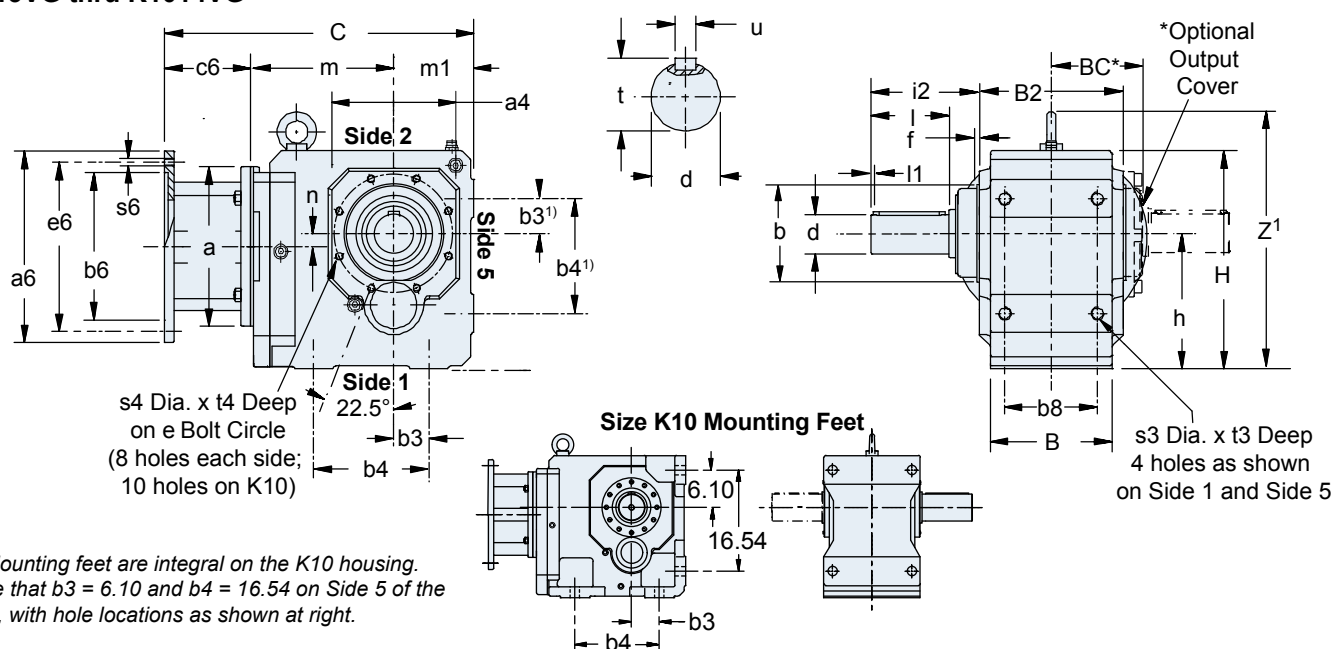
“G” Tapped Holes Housing Option

* Optional output cover is not a standard part of the V-G configuration and must be ordered separately. Dimension BC is from Center Side 5 to the outer edge of optional cover.

K102VG thru K403VG



K513VG thru K1014VG



²⁾ Mounting feet are integral on the K10 housing.
Note that b3 = 6.10 and b4 = 16.54 on Side 5 of the K10, with hole locations as shown at right.

Table 3 K Series — “V” Shaft Output (Carbon Steel)
(see page 43 for standard SS, and other optional outputs)

Base Module	Standard Shaft – inches			Optional Shaft – mm		
	d	t	u – Key	d	t	u – Key
K1	1	1.11	1/4x1/4x1-9/16	25k6	28	A8x7x40
K2	1-1/4	1.36	1/4x1/4x1-15/16	30k6	33	A8x7x50
K3	1-1/4	1.36	1/4x1/4x1-15/16	30k6	33	A8x7x50
K4	1-3/8	1.51	5/16x5/16x2-5/16	40k6	43	A12x8x70
K5	1-3/4	1.92	3/8x3/8x3-5/32	45k6	48.5	A14x9x80
K6	1-3/4	1.92	3/8x3/8x3-5/32	50k6	53.5	A14x9x90
K7	2-3/8	2.65	5/8x5/8x3-15/16	60k6	64	A18x11x110
K8	2-7/8	3.21	3/4x3/4x4-5/16	70m6	74.5	A20x12x125
K9	3-5/8	4.01	7/8x7/8x5-1/2	90m6	95	A25x14x140
K10	4-3/8	4.82	1x1x7-1/8	110m6	116	A28x16x180

Table 4 Motor Adapter Dimensions (Inches)

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs.
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR200/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/180	213/215TC		9.00	8.500		7.25		
MR300/180	213/215TC		9.00	8.500		7.25		
MR300/210	254/256TC		9.00	8.500		7.25	0.57	75
MR300/250	284/286TC		11.13	10.500		9.00		
MR350/320	324/326TC	13.78	13.37	12.500	7.09	11.00	0.70	133
MR350/360	364/365TC							



Dimensional Data

Table 1 K Series Unit Dimensions (Inches) — “G” Tapped Hole Housing

Base Module	a4	BC	B2	b3	b4	b8	e	H	h	l	t3	t4
K1	4.13	2.64	4.17	1.18	3.54	2.76	3.54	6.30	2.36	1.97	0.51	0.51
K2	4.57	3.23	5.28	1.38	4.53	3.54	3.94	7.48	2.56	2.36	0.63	0.51
K3	5.20	3.46	5.75	1.57	5.12	4.13	4.53	8.39	2.95	2.36	0.63	0.51
K4	5.98	4.08	6.81	1.97	6.10	4.72	5.12	9.45	3.54	2.76	0.75	0.63
K5	5.71	4.31	7.28	1.57	5.51	4.92	5.12	10.24	6.30	3.54	1.02	0.63
K6	7.09	4.61	7.87	1.97	6.30	5.12	6.50	12.20	7.48	3.54	1.02	0.63
K7	7.68	5.08	8.90	2.17	7.09	5.71	7.28	13.46	8.35	4.72	1.22	0.75
K8	8.90	6.26	11.10	2.95	9.45	7.28	8.46	16.14	10.43	5.51	1.50	0.75
K9	11.02	7.48	12.99	3.74	11.02	8.86	10.43	19.49	12.40	6.69	1.89	1.02
K10	13.38	9.59	15.60	4.53 ¹⁾	13.78 ¹⁾	12.99	11.81	23.27	14.76	8.27	1.77	1.30

¹⁾ Mounting feet are integral on the K10 housing as shown in Size K10 Mounting Feet drawing, facing page. Note b3 = 6.10 and b4 = 16.54 on Side 5 of the K10.

Table 2 K Series Unit Dimensions (Inches) — “G” Tapped Hole Housing

Base Module	B	b	j6	f	i2	l1	m1	s3	s4	z ¹
K1	3.54	2.953	+0.0005/-0.0003	0.16	2.32	0.16	2.36	M8 x 1.25	M8 x 1.25	—
K2	4.53	3.228	+0.0005/-0.0004	0.16	2.56	0.16	2.56	M10 x 1.5	M8 x 1.25	—
K3	5.12	3.740	+0.0005/-0.0004	0.16	2.60	0.16	2.95	M10 x 1.5	M8 x 1.25	—
K4	5.83	4.331	+0.0005/-0.0004	0.16	3.39	0.16	3.54	M12 x 1.75	M10 x 1.5	—
K5	6.30	4.331	+0.0005/-0.0004	0.16	5.10	0.16	3.94	M16 x 2.0	M10 x 1.5	12.28
K6	6.61	5.512	+0.0006/-0.0004	0.16	5.35	0.16	4.72	M16 x 2.0	M10 x 1.5	14.25
K7	7.48	6.102	+0.0006/-0.0004	0.18	6.46	0.16	4.92	M20 x 2.5	M12 x 1.75	15.87
K8	9.25	7.283	+0.0006/-0.0005	0.20	7.28	0.20	5.71	M24 x 3.0	M12 x 1.75	18.54
K9	11.22	9.055	+0.0006/-0.0005	0.20	8.66	0.31	7.09	M30 x 3.5	M16 x 2	22.24
K10	14.02	9.843	+0.0006/-0.0005	0.28	9.45	0.59	8.86	1.54*	M20 x 2.5	26.77

¹⁾ For size K10, “J” are thru holes, not tapped. See side 5 view on Size K10 Mounting Feet drawing, facing page.

Table 5 K Series Unit Dimensions (inches) — “MR” Motor Adapter

Base Module	MR140/050			MR160/050 MR160/140			MR200/180			MR250/180 MR250/210			MR300/180 MR300/210 MR300/250 MR300/280			MR350/320 MR350/360			Wt. lbs.
	C	m	n	C	m	n	C	m	n	C	m	n	C	m	n	C	m	n	
K102	10.55	4.88	1.42	11.26	5.04	1.42	—	—	—	—	—	—	—	—	—	—	—	—	31
K202	11.50	5.63	1.81	12.21	5.79	1.81	13.23	5.87	1.81	—	—	—	—	—	—	—	—	—	40
K203	12.96	7.09	1.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	53
K302	12.68	6.42	2.07	13.38	6.57	2.07	14.40	6.65	2.07	—	—	—	—	—	—	—	—	—	67
K303	14.13	7.87	2.07	15.08	8.27	0.63	—	—	—	—	—	—	—	—	—	—	—	—	73
K402	—	—	—	14.76	7.36	2.36	15.74	7.44	2.36	16.41	7.56	2.36	—	—	—	—	—	—	93
K403	15.51	8.66	2.36	16.46	9.06	0.91	—	—	—	—	—	—	—	—	—	—	—	—	100
K513	—	—	—	14.57	6.77	0.59	15.59	6.85	0.59	16.22	6.97	0.59	—	—	—	—	—	—	106
K514	—	—	—	16.26	8.46	0.59	—	—	—	—	—	—	—	—	—	—	—	—	109
K613	—	—	—	16.10	7.52	0.71	17.12	7.60	0.71	17.75	7.72	0.71	19.49	8.27	0.71	—	—	—	170
K614	—	—	—	17.79	9.21	0.71	—	—	—	—	—	—	—	—	—	—	—	—	177
K713	—	—	—	—	—	—	18.42	8.70	0.79	19.05	8.82	0.79	20.75	9.33	0.79	—	—	—	221
K714	—	—	—	19.13	10.35	0.79	20.86	11.14	0.79	—	—	—	—	—	—	—	—	—	234
K813	—	—	—	—	—	—	20.23	9.72	0.94	20.82	9.80	0.94	22.52	10.31	0.94	—	—	—	309
K814	—	—	—	—	—	—	22.64	12.13	0.94	—	—	—	—	—	—	—	—	—	331
K913	—	—	—	—	—	—	—	—	—	23.97	11.57	0.98	25.68	12.09	0.98	27.17	12.99	0.98	508
K914	—	—	—	—	—	—	25.79	13.90	0.98	26.77	14.37	0.98	—	—	—	—	—	—	530
K1013	—	—	—	—	—	—	—	—	—	—	—	—	15.43	30.79	1.10	32.29	16.34	1.10	913
K1014	—	—	—	—	—	—	—	—	—	31.89	17.72	1.10	—	—	—	—	—	—	993

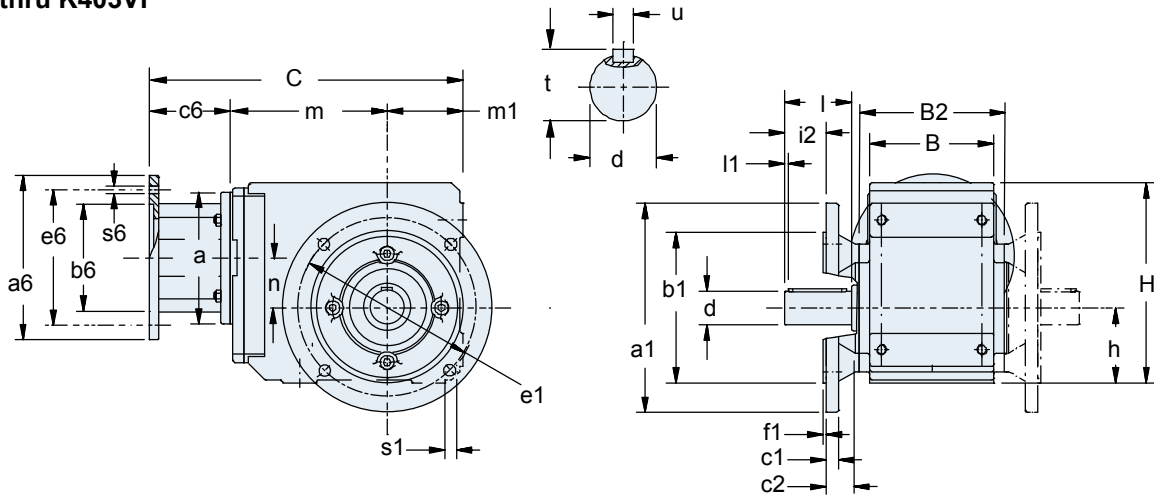
K
RIGHT ANGLE – Solid Shaft/Hollow Output

K Series with “V” Solid Shaft Output Option

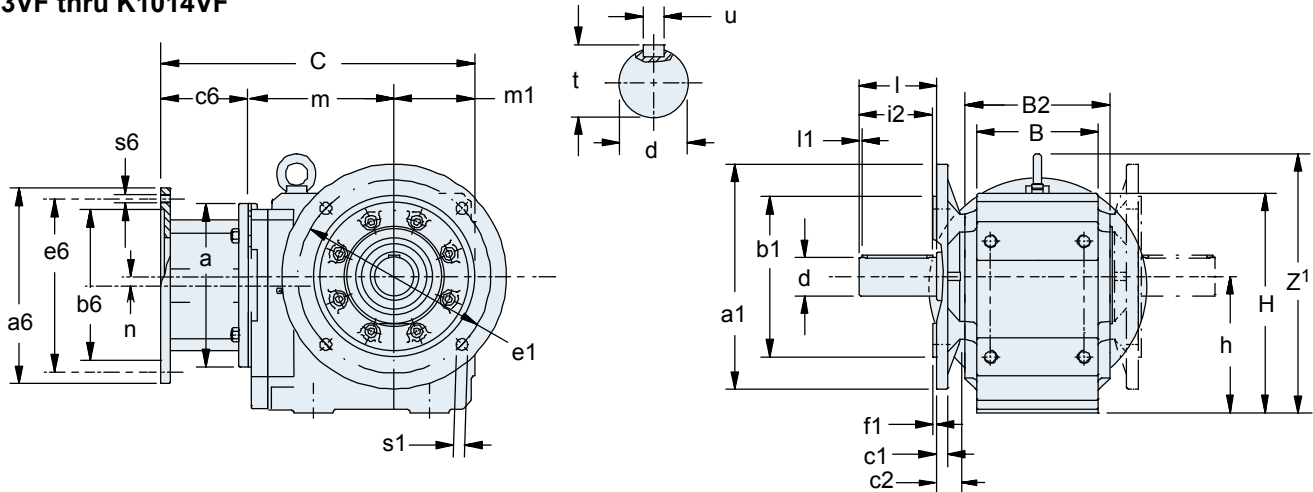
“F” Round Flange Housing Option

Other flange sizes available: for details see “Optional “F” Round Flange Housing Options for K Series” on page 84.

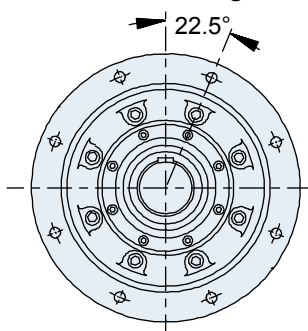
K102VF thru K403VF



K513VF thru K1014VF



Size K9 and K10 Flange



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

Table 3 Motor Adapter Dimensions (Inches)

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs.
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR200/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/180	182/184TC	11.81	9.00	8.500	6.50	7.25	0.57	75
MR250/210	213/215TC		9.00	8.500		7.25		
MR300/180	213/215TC		9.00	8.500		7.25		
MR300/210	254/256TC	13.78	11.13	10.500	7.09	9.00	0.70	133
MR300/280	284/286TC		13.37	12.500		11.00		
MR350/320	324/326TC							
MR350/360	364/365TC							



Dimensional Data

Table 1 K Series Unit Dimensions (Inches) — “F” Round Flange Housing

Base Module	a1 ¹⁾	B	b1	B2	c1	c2	e1	f1	H	h	i2	l	l1	m1	s1	z ¹
K1	6.30	3.54	4.331 +0.0005/-0.0004	4.17	0.39	1.26	5.12	0.14	6.30	2.36	1.18	1.97	0.16	2.36	0.35	—
K2	7.87	4.53	5.118 +0.0006/-0.0004	5.28	0.47	1.26	6.50	0.14	7.48	2.56	1.42	2.36	0.16	2.56	0.43	—
K3	7.87	5.12	5.118 +0.0006/-0.0004	5.75	0.55	1.50	6.50	0.14	8.39	2.95	1.22	2.36	0.16	2.95	0.43	—
K4	9.84	5.83	7.087 +0.0006/-0.0005	6.81	0.59	1.57	8.46	0.16	9.45	3.54	1.95	2.76	0.16	3.54	0.55	—
K5	9.84	6.30	7.087 +0.0006/-0.0005	7.28	0.59	1.56	8.46	0.16	10.24	6.30	3.54	3.54	0.16	3.54	0.55	12.28
K6	11.81	6.61	9.055 +0.0006/-0.0005	7.87	0.67	1.42	10.43	0.16	12.20	7.48	3.54	3.54	0.16	4.72	0.55	14.25
K7	13.78	7.48	9.842 +0.000/-0.001	8.90	0.71	1.73	11.81	0.20	13.46	8.35	4.72	4.72	0.16	4.92	0.71	15.87
K8	15.75	9.25	11.811 +0.000/-0.001	11.10	0.79	1.77	13.78	0.20	16.14	10.43	5.51	5.51	0.20	5.71	0.71	18.54
K9	17.72	11.22	13.780 +0.000/-0.001	12.99	0.91	1.97	15.75	0.20	19.49	12.40	6.69	6.69	0.31	7.09	0.71	22.24
K10	21.65	15.75	17.716 +0.000/-0.002	14.02	0.98	3.07	19.69	0.20	23.27	14.76	8.27	8.27	0.59	8.86	0.71	26.77

1) See page 84 for other flange sizes. Optional flanges are not available for all sizes.

Table 2 K Series Unit Dimensions — “V” Shaft Output (Carbon Steel)

(see page 43 for standard SS, and other optional outputs)

Base Module	Standard Shaft – inches			Optional Shaft – mm		
	d	t	u – Key	d	t	u – Key
K1	1	1.11	1/4 x 1/4 x 1-9/16	25k6	28	A8 x 7 x 40
K2	1-1/4	1.36	1/4 x 1/4 x 1-15/16	30k6	33	A8 x 7 x 50
K3	1-1/4	1.36	1/4 x 1/4 x 1-15/16	30k6	33	A8 x 7 x 50
K4	1-3/8	1.51	5/16 x 5/16 x 2-5/16	40k6	43	A12 x 8 x 70
K5	1-3/4	1.92	3/8 x 3/8 x 3-5/32	45k6	48.5	A14 x 9 x 80
K6	1-3/4	1.92	3/8 x 3/8 x 3-5/32	50k6	53.5	A14 x 9 x 90
K7	2-3/8	2.65	5/8 x 5/8 x 3-15/16	60k6	64	A18 x 11 x 110
K8	2-7/8	3.21	3/4 x 3/4 x 4-5/16	70m6	74.5	A20 x 12 x 125
K9	3-5/8	4.01	7/8 x 7/8 x 5-1/2	90m6	95	A25 x 14 x 140
K10	4-3/8	4.82	1 x 1 x 7-1/8	110m6	116	A28 x 16 x 180

Table 4 K Series Unit Dimensions (inches) — “MR” Motor Adapter

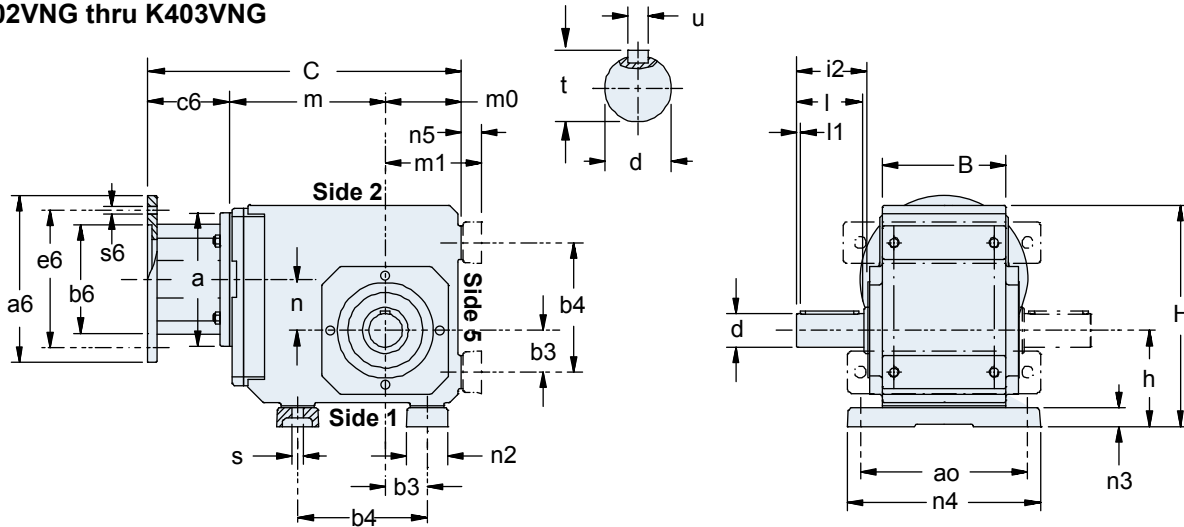
Base Module	MR140/050			MR160/050 MR160/140			MR200/180			MR250/180 MR250/210			MR300/180 MR300/210 MR300/250 MR300/280			MR350/320 MR350/360			Wt. lbs.
	C	m	n	C	m	n	C	m	n	C	m	n	C	m	n	C	m	n	
K102	10.55	4.88	1.42	11.26	5.04	1.42	—	—	—	—	—	—	—	—	—	—	—	—	31
K202	11.50	5.63	1.81	12.21	5.79	1.81	13.23	5.87	1.81	—	—	—	—	—	—	—	—	—	40
K203	12.96	7.09	1.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	53
K302	12.68	6.42	2.07	13.38	6.57	2.07	14.40	6.65	2.07	—	—	—	—	—	—	—	—	—	67
K303	14.13	7.87	2.07	15.08	8.27	0.63	—	—	—	—	—	—	—	—	—	—	—	—	73
K402	—	—	—	14.76	7.36	2.36	15.74	7.44	2.36	16.41	7.56	2.36	—	—	—	—	—	—	93
K403	15.51	8.66	2.36	16.46	9.06	0.91	—	—	—	—	—	—	—	—	—	—	—	—	100
K513	—	—	—	14.57	6.77	0.59	15.59	6.85	0.59	16.22	6.97	0.59	—	—	—	—	—	—	106
K514	—	—	—	16.26	8.46	0.59	—	—	—	—	—	—	—	—	—	—	—	—	109
K613	—	—	—	16.10	7.52	0.71	17.12	7.60	0.71	17.75	7.72	0.71	19.49	8.27	0.71	—	—	—	170
K614	—	—	—	17.79	9.21	0.71	—	—	—	—	—	—	—	—	—	—	—	—	177
K713	—	—	—	—	—	—	18.42	8.70	0.79	19.05	8.82	0.79	20.75	9.33	0.79	—	—	—	221
K714	—	—	—	19.13	10.35	0.79	20.86	11.14	0.79	—	—	—	—	—	—	—	—	—	234
K813	—	—	—	—	—	—	20.23	9.72	0.94	20.82	9.80	0.94	22.52	10.31	0.94	—	—	—	309
K814	—	—	—	—	—	—	22.64	12.13	0.94	—	—	—	—	—	—	—	—	—	331
K913	—	—	—	—	—	—	—	—	—	23.97	11.57	0.98	25.68	12.09	0.98	27.17	12.99	0.98	508
K914	—	—	—	—	—	—	25.79	13.90	0.98	26.77	14.37	0.98	—	—	—	—	—	—	530
K1013	—	—	—	—	—	—	—	—	—	—	—	—	15.43	30.79	1.10	32.29	16.34	1.10	913
K1014	—	—	—	—	—	—	—	—	—	31.89	17.72	1.10	—	—	—	—	—	—	993

K
RIGHT ANGLE – Solid Shaft/Hollow Output

K Series with “V” Solid Shaft Output Option

“NG” Foot Mounting Housing Option

K102VNG thru K403VNG



K513VNG thru K1014VNG

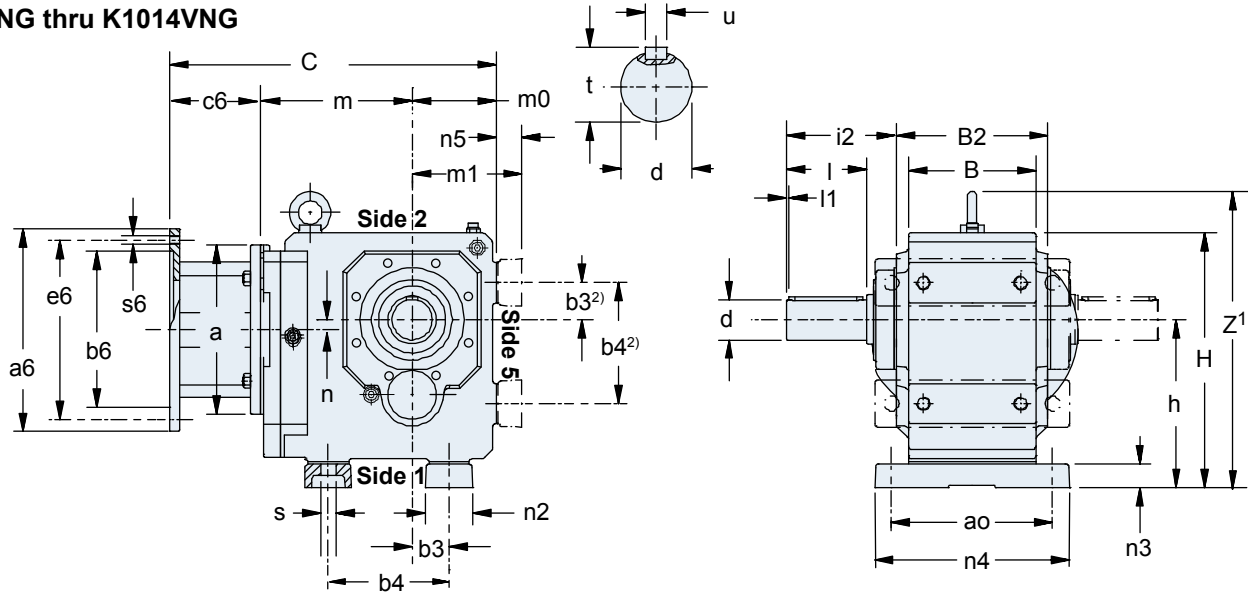
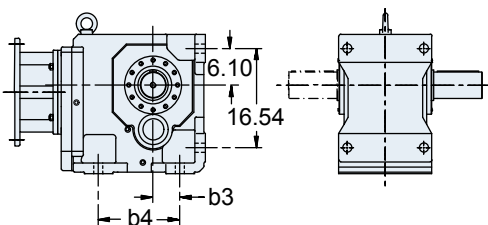


Table 3 Motor Adapter Dimensions (Inches)

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs.
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR200/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/180	182/184TC	11.81	9.00	8.500	6.50	7.25	0.57	75
MR250/210	213/215TC		9.00	8.500		7.25		
MR300/180	254/256TC		9.00	8.500		7.25		
MR300/210	284/286TC	13.78	11.13	10.500	7.09	9.00	0.70	133
MR300/250	324/326TC		13.37	12.500		11.00		
MR300/280	364/365TC							

Size K10 Mounting Feet (Dimensions F and FA)



²⁾ Mounting feet are integral on the K10 housing.
Note that b3 = 6.10 and b4 = 16.54 on Side 5 of the K10. Hole locations are as shown above.



Dimensional Data

Table 1 K Series Unit Dimensions (inches) — “NG” Foot Mounting Housing

Base Module	ao	B	B2	b3	b4	H	h	i2	l	l1	m0	m1	n2	n3	n4	n5	s	z ¹
K1	4.53	3.54	—	1.18	3.54 ¹⁾	6.81	2.95	2.32	1.97	0.16	2.36	2.95	1.18	0.51	5.51	0.59	0.35	—
K2	6.10	4.53	—	1.38	4.53	8.39	3.46	2.56	2.36	0.16	2.56	3.46	1.57	0.79	7.28	0.91	0.43	—
K3	6.69	5.12	—	1.57	5.12	9.29	3.86	2.60	2.36	0.16	2.95	3.86	1.77	0.79	7.87	0.91	0.43	—
K4	7.87	5.83	—	1.97	6.10	10.43	4.53	3.39	2.76	0.16	3.54	4.53	1.97	0.87	9.06	0.98	0.55	—
K5	7.87	6.30	7.28	1.57	5.51	11.42	7.48	5.10	3.54	0.16	3.54	5.12	2.36	1.06	9.45	1.18	0.71	13.46
K6	8.27	6.61	7.87	1.97	6.30	13.39	8.66	5.35	3.54	0.16	4.72	5.91	2.56	1.06	9.84	1.18	0.71	15.43
K7	9.45	7.48	8.90	2.17	7.09	14.96	9.84	6.46	4.72	0.16	4.92	6.42	2.76	1.38	11.42	1.50	0.87	17.36
K8	11.81	9.25	11.10	2.95	9.45	17.91	12.20	7.28	5.51	0.20	5.71	7.48	3.35	1.61	14.17	1.77	1.02	20.31
K9	14.17	11.22	12.99	3.74	11.02	21.46	14.37	8.66	6.69	0.31	7.09	9.06	3.74	1.81	16.93	1.97	1.30	24.21
K10	12.99	15.75	14.02	4.53 ²⁾	13.78 ²⁾	23.27	14.76	9.45	8.27	0.59	—	8.86	4.72	1.77	15.75	1.77	1.54	26.77

¹⁾ Mounting holes are also located on Side 2 of the K1 unit ONLY.

²⁾ Mounting feet are integral on the K10 housing as shown on inset drawing, facing page. Note b3 = 6.10 and b4 = 16.54 on Side 5 of the K10.

Table 2 K Series Unit Dimensions — “V” Shaft Output (Carbon Steel)

(see page 43 for standard SS, and other optional outputs)

Base Module	Standard Shaft – inches			Optional Shaft – mm		
	d	t	u – Key	d	t	u – Key
K1	1	1.11	1/4 x 1/4 x 1-9/16	25k6	28	A8 x 7 x 40
K2	1-1/4	1.36	1/4 x 1/4 x 1-15/16	30k6	33	A8 x 7 x 50
K3	1-1/4	1.36	1/4 x 1/4 x 1-15/16	30k6	33	A8 x 7 x 50
K4	1-3/8	1.51	5/16 x 5/16 x 2-5/16	40k6	43	A12 x 8 x 70
K5	1-3/4	1.92	3/8 x 3/8 x 3-5/32	45k6	48.5	A14 x 9 x 80
K6	1-3/4	1.92	3/8 x 3/8 x 3-5/32	50k6	53.5	A14 x 9 x 90
K7	2-3/8	2.65	5/8 x 5/8 x 3-15/16	60k6	64	A18 x 11 x 110
K8	2-7/8	3.21	3/4 x 3/4 x 4-5/16	70m6	74.5	A20 x 12 x 125
K9	3-5/8	4.01	7/8 x 7/8 x 5-1/2	90m6	95	A25 x 14 x 140
K10	4-3/8	4.82	1 x 1 x 7-1/8	110m6	116	A28 x 16 x 180

Table 4 K Series Unit Dimensions (inches) — “MR” Motor Adapter

Base Module	MR140/050			MR160/050 MR160/140			MR200/180			MR250/180 MR250/210			MR300/180 MR300/210 MR300/250 MR300/280			MR350/320 MR350/360			Wt. lbs.
	C	m	n	C	m	n	C	m	n	C	m	n	C	m	n	C	m	n	
K102	10.55	4.88	1.42	11.26	5.04	1.42	—	—	—	—	—	—	—	—	—	—	—	—	31
K202	11.50	5.63	1.81	12.21	5.79	1.81	13.23	5.87	1.81	—	—	—	—	—	—	—	—	—	40
K203	12.96	7.09	1.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	53
K302	12.68	6.42	2.07	13.38	6.57	2.07	14.40	6.65	2.07	—	—	—	—	—	—	—	—	—	67
K303	14.13	7.87	2.07	15.08	8.27	0.63	—	—	—	—	—	—	—	—	—	—	—	—	73
K402	—	—	—	14.76	7.36	2.36	15.74	7.44	2.36	16.41	7.56	2.36	—	—	—	—	—	—	93
K403	15.51	8.66	2.36	16.46	9.06	0.91	—	—	—	—	—	—	—	—	—	—	—	—	100
K513	—	—	—	14.57	6.77	0.59	15.59	6.85	0.59	16.22	6.97	0.59	—	—	—	—	—	—	106
K514	—	—	—	16.26	8.46	0.59	—	—	—	—	—	—	—	—	—	—	—	—	109
K613	—	—	—	16.10	7.52	0.71	17.12	7.60	0.71	17.75	7.72	0.71	19.49	8.27	0.71	—	—	—	170
K614	—	—	—	17.79	9.21	0.71	—	—	—	—	—	—	—	—	—	—	—	—	177
K713	—	—	—	—	—	—	18.42	8.70	0.79	19.05	8.82	0.79	20.75	9.33	0.79	—	—	—	221
K714	—	—	—	19.13	10.35	0.79	20.86	11.14	0.79	—	—	—	—	—	—	—	—	—	234
K813	—	—	—	—	—	—	20.23	9.72	0.94	20.82	9.80	0.94	22.52	10.31	0.94	—	—	—	309
K814	—	—	—	—	—	—	22.64	12.13	0.94	—	—	—	—	—	—	—	—	—	331
K913	—	—	—	—	—	—	—	—	—	23.97	11.57	0.98	25.68	12.09	0.98	27.17	12.99	0.98	508
K914	—	—	—	—	—	—	25.79	13.90	0.98	26.77	14.37	0.98	—	—	—	—	—	—	530
K1013	—	—	—	—	—	—	—	—	—	—	—	—	15.43	30.79	1.10	32.29	16.34	1.10	913
K1014	—	—	—	—	—	—	—	—	—	31.89	17.72	1.10	—	—	—	—	—	—	993

K

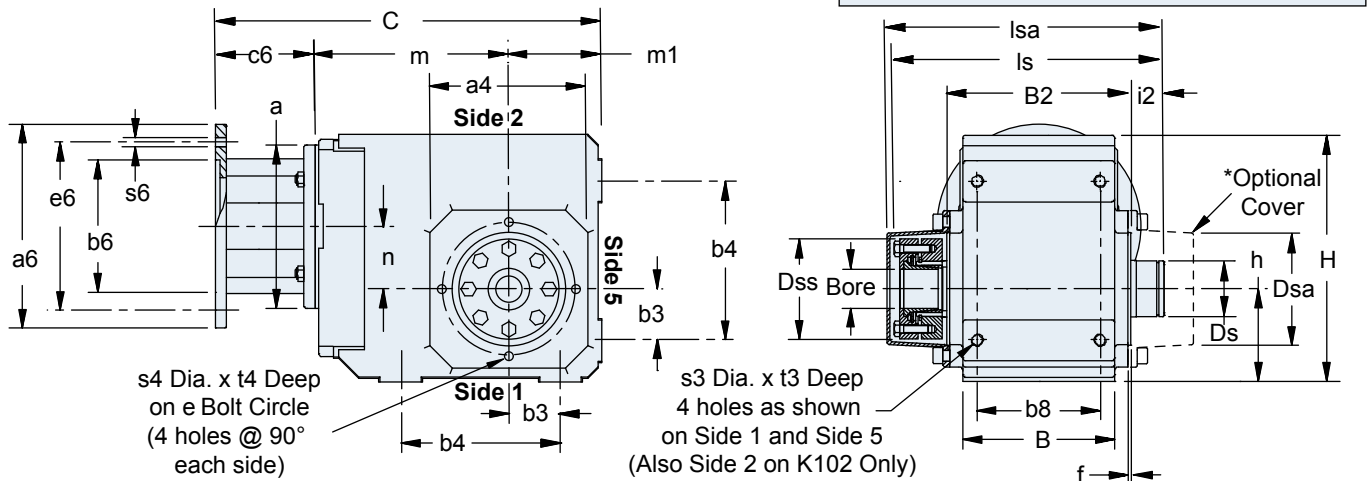
RIGHT ANGLE – Solid Shaft/Hollow Output

K Series: RIGHT ANGLE – Solid Shaft/Hollow Output

K Series with SINGLE “W” Wobble Free Bushing Output Option

“G” Tapped Holes Housing Option

K102WG thru K403WG



K513WG thru K814WG

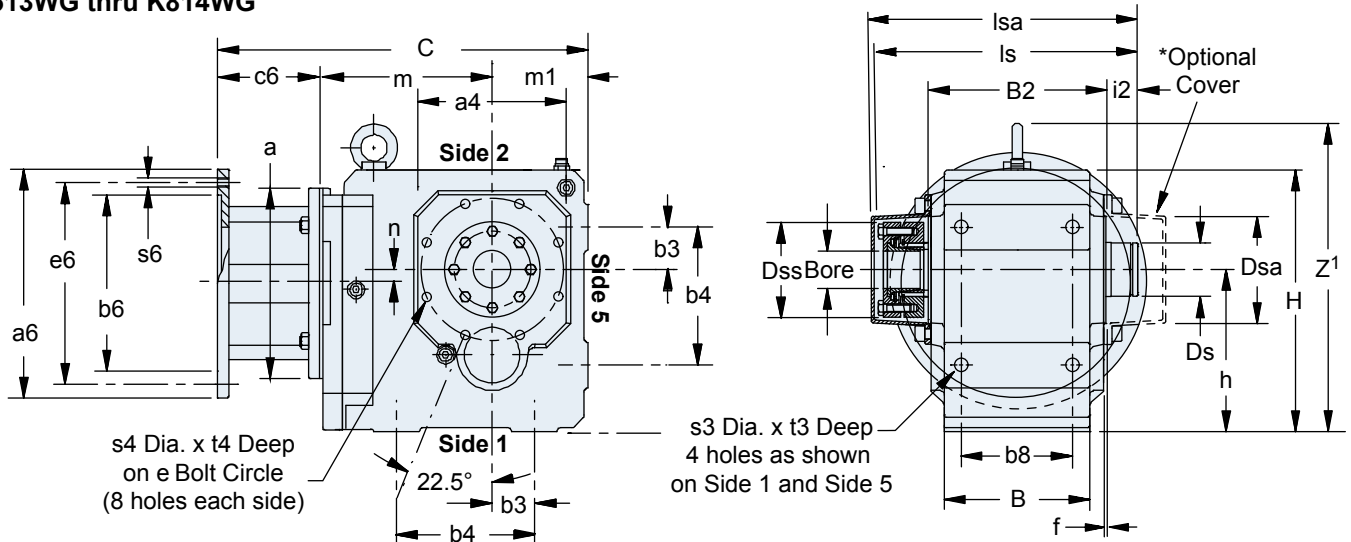


Table 4 Required Output Shaft Length*

Base Module	With Covers	Without Covers
K1	7.97	7.06
K2	9.23	8.32
K3	9.76	8.81
K4	11.42	10.26
K5	11.84	10.80
K6	12.98	11.81
K7	14.82	13.41
K8	17.60	16.20

* Important: A 1/32" x 45° chamfer minimum is recommended for the shaft end. The bushing will accept a shaft with a tolerance of +0.000/-0.005 in.

Table 5 Motor Adapter Dimensions (Inches)

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs.
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR200/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/180	182/184TC	11.81	9.00	8.500	6.50	7.25	0.57	75
MR250/210	213/215TC		9.00	8.500		7.25		
MR300/180	213/215TC		9.00	8.500		7.25		
MR300/210	254/256TC		9.00	8.500		7.25		
MR300/250	284/286TC	11.13	10.500			9.00		



Dimensional Data

Table 1 K Series Unit Dimensions (Inches) – “W” Single Side Wobble Free Bushing

Base Module	a4	B	B2	b3	b4	b8	Ds	Dsa	Dss	e	f
K1	4.13	3.54	4.17	1.18	3.54	2.76	1.54	3.07	2.76	3.54	1.97
K2	4.57	4.53	5.28	1.38	4.53	3.54	1.73	3.46	3.07	3.94	2.05
K3	5.20	5.12	5.75	1.57	5.12	4.13	1.93	3.78	3.31	4.53	2.09
K4	5.98	5.83	6.81	1.97	6.10	4.72	2.13	4.33	3.82	5.12	2.40
K5	5.71	6.30	7.28	1.57	5.51	4.92	2.56	4.53	4.13	5.12	2.40
K6	7.09	6.61	7.87	1.97	6.30	5.12	2.91	5.00	4.65	6.50	2.68
K7	7.68	7.48	8.90	2.17	7.09	5.71	3.35	5.75	5.43	7.28	2.91
K8	8.90	9.25	11.10	2.95	9.45	7.28	3.94	6.95	6.22	8.46	3.43

Table 2 K Series Unit Dimensions (Inches) – “W” Single Side Wobble Free Bushing

Base Module	H	h	i2	ls	lsa	m1	s3	s4	t3	t4	z ¹
K1	6.30	2.36	1.97	6.97	7.05	2.36	M8 x 1.25	M8 x 1.25	0.51	0.51	—
K2	7.48	2.57	2.05	8.23	8.46	2.56	M10 x 1.5	M8 x 1.25	0.63	0.51	—
K3	8.39	2.95	2.09	8.72	8.99	2.95	M10 x 1.5	M8 x 1.25	0.63	0.51	—
K4	9.45	3.54	2.40	10.22	10.49	3.54	M12 x 1.75	M10 x 1.5	0.75	0.63	—
K5	10.24	6.30	2.40	10.77	11.00	3.94	M16 x 2	M10 x 1.5	1.02	0.63	12.28
K6	12.20	7.48	2.68	11.46	11.73	4.72	M16 x 2	M10 x 1.5	1.02	0.63	14.25
K7	13.46	8.35	2.91	13.73	13.88	4.92	M20 x 2.5	M12 x 1.75	1.22	0.75	15.87
K8	16.14	10.43	3.43	16.59	16.92	5.71	M24 x 3	M12 x 1.75	1.50	0.75	18.54

Table 3 “WF” Single Side Bushings Stock Bore Sizes — Stainless Steel

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.

Base Module	Imperial – Inches																Metric – mm		
	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	25	30	35
K1	WF1-100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	WF1-25	—	—
K2	WF2-100	WF2-103	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	WF2-30	—
K3	WF3-100	WF3-103	WF3-104	WF3-106	WF3-107	WF3-108*	—	—	—	—	—	—	—	—	—	—	—	WF3-30	WF3-35
K4	WF4-100	WF4-103	WF4-104	WF4-106	WF4-107	WF4-108	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—

*Base module size K3 is also available with a carbon steel single side 1-1/2” bushing PN SWF3-108

Table 6 K Series Unit Dimensions (inches) — “MR” Motor Adapter

Base Module	MR140/050			MR160/050 MR160/140			MR200/180			MR250/180 MR250/210			MR300/180 MR300/210 MR300/250 MR300/280			MR350/320 MR350/360			Wt. lbs.
	C	m	n	C	m	n	C	m	n	C	m	n	C	m	n	C	m	n	
K102	10.55	4.88	1.42	11.26	5.04	1.42	—	—	—	—	—	—	—	—	—	—	—	—	31
K202	11.50	5.63	1.81	12.21	5.79	1.81	13.23	5.87	1.81	—	—	—	—	—	—	—	—	—	40
K203	12.96	7.09	1.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	53
K302	12.68	6.42	2.07	13.38	6.57	2.07	14.40	6.65	2.07	—	—	—	—	—	—	—	—	—	67
K303	14.13	7.87	2.07	15.08	8.27	0.63	—	—	—	—	—	—	—	—	—	—	—	—	73
K402	—	—	—	14.76	7.36	2.36	15.74	7.44	2.36	16.41	7.56	2.36	—	—	—	—	—	—	93
K403	15.51	8.66	2.36	16.46	9.06	0.91	—	—	—	—	—	—	—	—	—	—	—	—	100
K513	—	—	—	14.57	6.77	0.59	15.59	6.85	0.59	16.22	6.97	0.59	—	—	—	—	—	—	106
K514	—	—	—	16.26	8.46	0.59	—	—	—	—	—	—	—	—	—	—	—	—	109
K613	—	—	—	16.10	7.52	0.71	17.12	7.60	0.71	17.75	7.72	0.71	19.49	8.27	0.71	—	—	—	170
K614	—	—	—	17.79	9.21	0.71	—	—	—	—	—	—	—	—	—	—	—	—	177
K713	—	—	—	—	—	—	18.42	8.70	0.79	19.05	8.82	0.79	20.75	9.33	0.79	—	—	—	221
K714	—	—	—	19.13	10.35	0.79	20.86	11.14	0.79	—	—	—	—	—	—	—	—	—	234
K813	—	—	—	—	—	—	20.23	9.72	0.94	20.82	9.80	0.94	22.52	10.31	0.94	—	—	—	309
K814	—	—	—	—	—	—	22.64	12.13	0.94	—	—	—	—	—	—	—	—	—	331

K

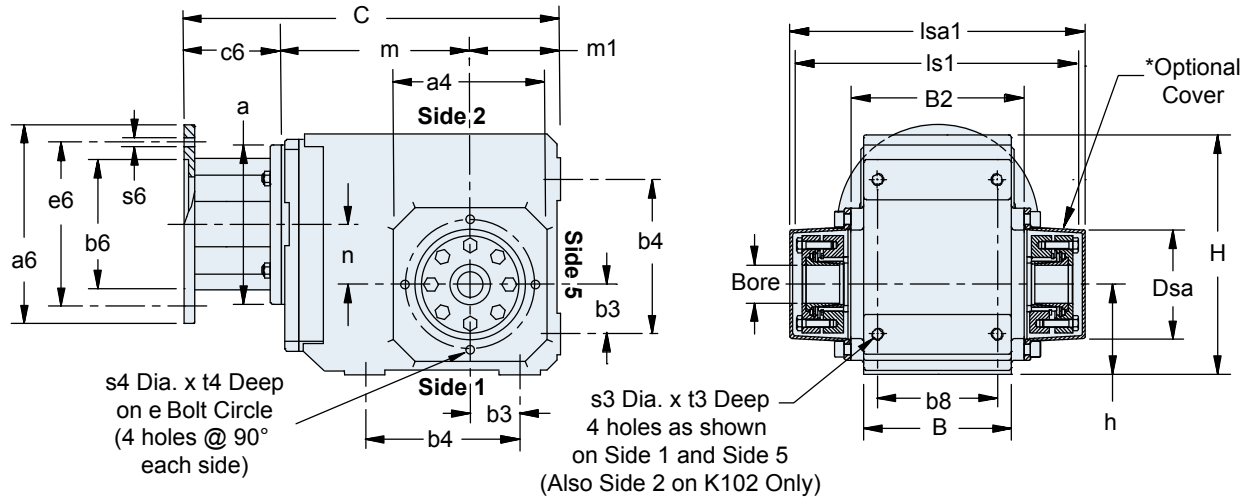
RIGHT ANGLE – Solid Shaft/Hollow Output

K Series: RIGHT ANGLE – Solid Shaft/Hollow Output

K Series with DOUBLE “W” Wobble Free Bushing Output Option

“G” Tapped Holes Housing Option

K102WG thru K403WG



K513WG thru K814WG

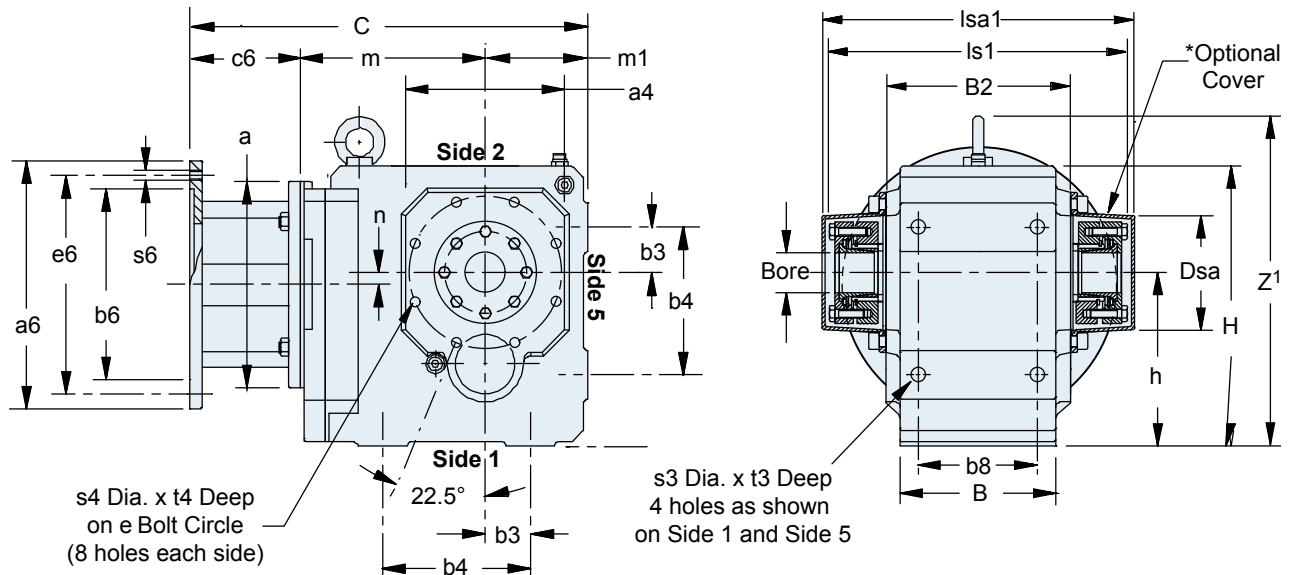


Table 4 Required Output Shaft Length*

Base Module	With Covers	Without Covers
K1	7.97	7.73
K2	9.23	8.99
K3	9.76	9.50
K4	11.42	11.11
K5	11.89	11.61
K6	12.99	12.75
K7	14.83	14.33
K8	17.60	17.29

* **Important:** A 1/32" x 45° chamfer minimum is recommended for the shaft end. The bushing will accept a shaft with a tolerance of +0.000/-0.005 in.

Table 5 Motor Adapter Dimensions (Inches)

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs.
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR200/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/180	182/184TC	11.81	9.00	8.500	6.50	7.25	0.57	75
MR250/210	213/215TC		9.00	8.500		7.25		
MR300/180	182/184TC		9.00	8.500		7.25		
MR300/210	213/215TC		9.00	8.500		7.25		
MR300/250	254/256TC	11.13	9.00	8.500	6.50	7.25	0.57	75
MR300/280	284/286TC		11.13	10.500		9.00		



Dimensional Data

Table 1 K Series Unit Dimensions (Inches) – “W” Double Wobble Free Bushing

Base Module	a4	B	B2	b3	b4	b8	Dsa	e	H	h
K1	4.13	3.54	4.17	1.18	3.54	2.76	3.07	3.54	6.30	2.36
K2	4.57	4.53	5.28	1.38	4.53	3.54	3.46	3.94	7.48	2.56
K3	5.20	5.12	5.75	1.57	5.12	4.13	3.78	4.53	8.39	2.95
K4	5.98	5.83	6.81	1.97	6.10	4.72	4.33	5.12	9.45	3.54
K5	5.71	6.30	7.28	1.57	5.51	4.92	4.54	5.12	10.24	6.30
K6	7.09	6.61	7.87	1.97	6.30	5.12	5.00	6.50	12.20	7.48
K7	7.68	7.48	8.90	2.17	7.09	5.71	5.75	7.28	13.46	8.35
K8	8.90	9.25	11.10	2.95	9.45	7.28	6.95	8.46	16.14	10.43

Table 2 K Series Unit Dimensions (Inches) – “W” Double Wobble Free Bushing

Base Module	Is1	Isa1	L	m1	s3	s4	t3	t4	z ¹
K1	7.64	7.80	3.66	2.36	M8 x 1.25	M8 x 1.25	0.51	0.51	—
K2	8.90	9.36	4.26	2.56	M10 x 1.5	M8 x 1.25	0.51	0.63	—
K3	9.41	9.95	4.54	2.95	M10 x 1.5	M8 x 1.25	0.51	0.63	—
K4	11.06	11.60	5.33	3.54	M12 x 1.75	M10 x 1.5	0.63	0.75	—
K5	11.63	12.09	5.61	3.94	M16 x 2.0	M10 x 1.5	0.63	1.02	12.28
K6	12.68	13.22	6.10	4.72	M16 x 2.0	M10 x 1.5	0.63	1.02	14.25
K7	15.06	15.36	7.29	4.92	M20 x 2.5	M12 x 1.75	0.75	1.22	15.87
K8	18.02	18.68	8.70	5.71	M24 x 3	M12 x 1.75	0.75	1.50	18.54

Table 3 “WFB” Double Side Bushings Stock Bore Sizes — Stainless Steel

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.

Base Module	Imperial – Inches																Metric – mm				
	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	25	30	35	40	
K1	WFB1-100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	WFB1-25	—	—	—	
K2	WFB2-100	WFB2-103	—	—	—	—	—	—	—	—	—	—	—	—	—	—	WFB2-25	WFB2-30	—	—	
K3	WFB3-100	WFB3-103	WFB3-104	WFB3-106	WFB3-107	WFB3-108*	—	—	—	—	—	—	—	—	—	—	—	WFB3-30	WFB3-35	—	
K4	WFB4-100	WFB4-103	WFB4-104	WFB4-106	WFB4-107	WFB4-108	—	—	—	—	—	—	—	—	—	—	—	—	—	WFB4-40	
K5	—	—	—	—	WFB5-107	WFB5-108	WFB5-110	WFB5-111	WFB5-112	WFB5-114	WFB5-115	WFB5-200	—	—	—	—	—	—	—	WFB5-40	
K6	—	—	—	—	WFB6-107	WFB6-108	WFB6-110	WFB6-111	WFB6-112	—	WFB6-115	WFB6-200	WFB6-203	—	—	—	—	—	—	WFB6-40	
K7	—	—	—	—	—	—	—	—	—	—	WFB7-115	WFB7-200	WFB7-203	WFB7-206	—	—	—	—	—	—	
K8	—	—	—	—	—	—	—	—	—	—	—	—	—	WFB8-203	WFB8-206	WFB8-207	WFB8-212	—	—	—	—

*Base module size K3 is also available with a carbon steel double side 1-1/2” bushing PN SWF3C-108

Table 6 K Series Unit Dimensions (inches) — “MR” Motor Adapter

Base Module	MR140/050			MR160/050 MR160/140			MR200/180			MR250/180 MR250/210			MR300/180 MR300/210 MR300/250 MR300/280			MR350/320 MR350/360			Wt. lbs.
	C	m	n	C	m	n	C	m	n	C	m	n	C	m	n	C	m	n	
K102	10.55	4.88	1.42	11.26	5.04	1.42	—	—	—	—	—	—	—	—	—	—	—	—	31
K202	11.50	5.63	1.81	12.21	5.79	1.81	13.23	5.87	1.81	—	—	—	—	—	—	—	—	—	40
K203	12.96	7.09	1.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	53
K302	12.68	6.42	2.07	13.38	6.57	2.07	14.40	6.65	2.07	—	—	—	—	—	—	—	—	—	67
K303	14.13	7.87	2.07	15.08	8.27	0.63	—	—	—	—	—	—	—	—	—	—	—	—	73
K402	—	—	—	14.76	7.36	2.36	15.74	7.44	2.36	16.41	7.56	2.36	—	—	—	—	—	—	93
K403	15.51	8.66	2.36	16.46	9.06	0.91	—	—	—	—	—	—	—	—	—	—	—	—	100
K513	—	—	—	14.57	6.77	0.59	15.59	6.85	0.59	16.22	6.97	0.59	—	—	—	—	—	—	106
K514	—	—	—	16.26	8.46	0.59	—	—	—	—	—	—	—	—	—	—	—	—	109
K613	—	—	—	16.10	7.52	0.71	17.12	7.60	0.71	17.75	7.72	0.71	19.49	8.27	0.71	—	—	—	170
K614	—	—	—	17.79	9.21	0.71	—	—	—	—	—	—	—	—	—	—	—	—	177
K713	—	—	—	—	—	—	18.42	8.70	0.79	19.05	8.82	0.79	20.75	9.33	0.79	—	—	—	221
K714	—	—	—	19.13	10.35	0.79	20.86	11.14	0.79	—	—	—	—	—	—	—	—	—	234
K813	—	—	—	—	—	—	20.23	9.72	0.94	20.82	9.80	0.94	22.52	10.31	0.94	—	—	—	309
K814	—	—	—	—	—	—	22.64	12.13	0.94	—	—	—	—	—	—	—	—	—	331

Optional “F” Round Flange Housing Options

“AF” Hollow Output with Flange Housing Option

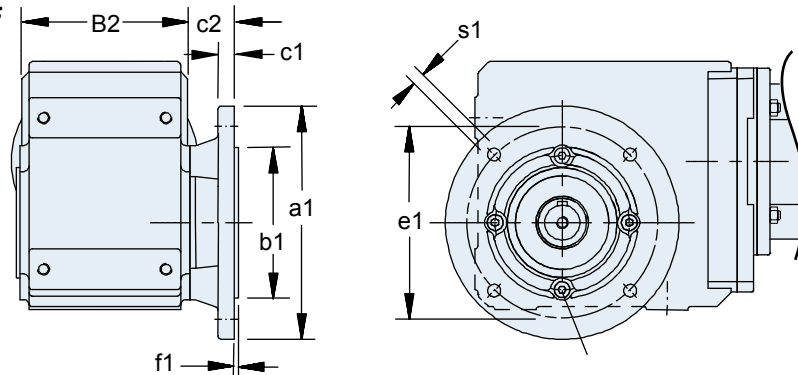
“VF” Shaft Output with Flange Housing Option

AF units shown.

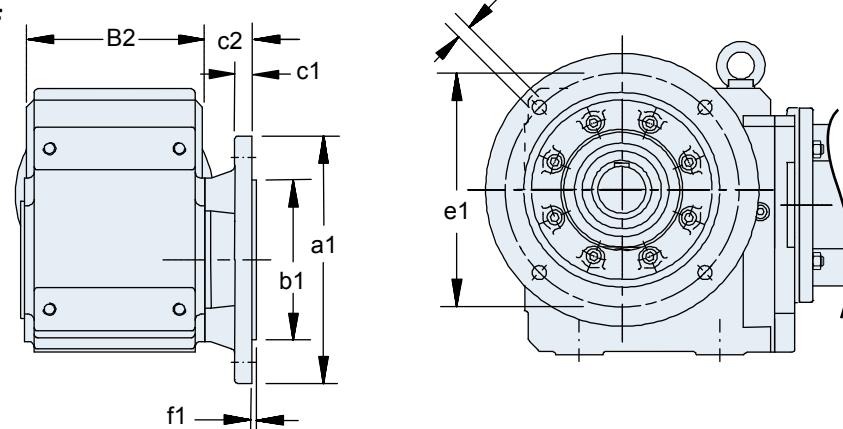
See page 72 for complete AF dimensions

See page 76 for complete VF dimensions

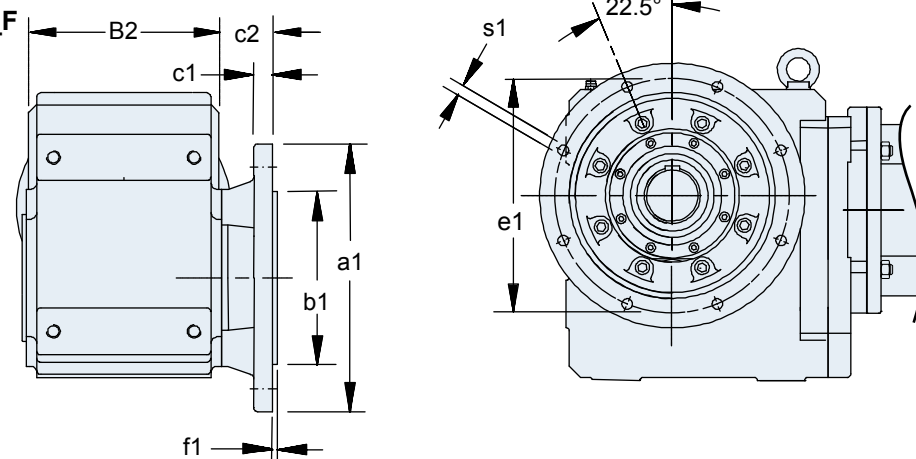
K102_F thru K403_F



K513_F thru K814_F



K913_F thru K1014_F





Dimensional Data

Table 1 Flange Dimensions (Inches) – Standard and Optional

Base Module	Flange Size	a1	b1	B2	c1	c2	e1	f1	s1
K1	140	5.512	3.740 +0.001/-0.0004	4.17	0.39	1.26	4.53	0.12	0.35
	160*	6.300	4.331 +0.001/-0.0004						
K2	160	6.300	4.331 +0.001/-0.0004	5.28	0.47	1.26	5.12	0.14	0.35
	200*	7.874	5.118 +0.001/-0.0004						
K3	160	6.300	4.331 +0.001/-0.0004	5.75	0.55	1.50	5.12	0.14	0.35
	200*	7.874	5.118 +0.001/-0.0004						
K4	250*	9.843	7.087 +0.001/-0.0004	6.81	0.59	1.57	8.46	0.16	0.55
K5	250*	9.843	7.087 +0.001/-0.0004	7.28	0.59	1.56	8.46	0.16	0.55
K6	300*	11.811	9.055 +0.001/-0.001	7.87	0.67	1.42	10.43	0.16	0.55
K7	300	11.811	9.055 +0.001/-0.001	8.90	0.71	1.73	10.43	0.20	0.55
	350*	13.780	9.842 +0.000/-0.001						
K8	350	13.780	9.842 +0.000/-0.001	11.10	0.79	1.77	11.81	0.20	0.71
	400*	15.748	11.811 +0.000/-0.001						
	450	17.717	13.781 +0.000/-0.001						
K9	450*	17.717	13.780 +0.000/-0.001	12.99	0.91	1.97	15.75	0.20	0.71
K10	550*	21.654	17.717 +0.000/-0.002	14.02	0.98	3.07	19.69	0.20	0.71

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

K

RIGHT ANGLE – Solid Shaft/Hollow Output

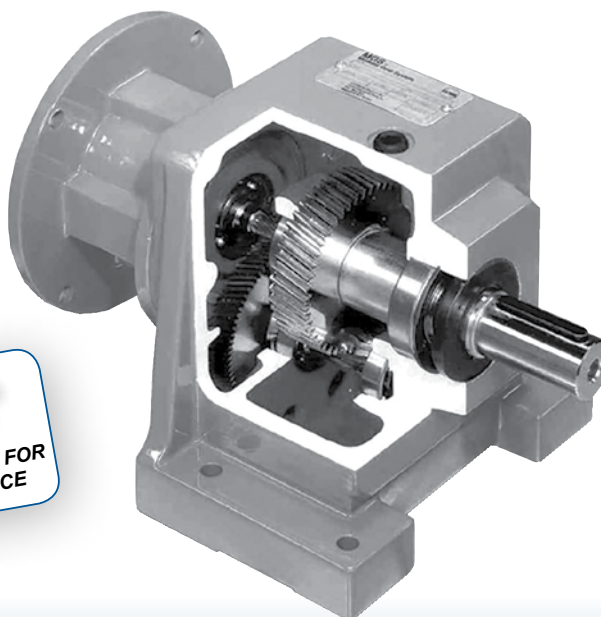
C Series: INLINE – Solid Shaft Output

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

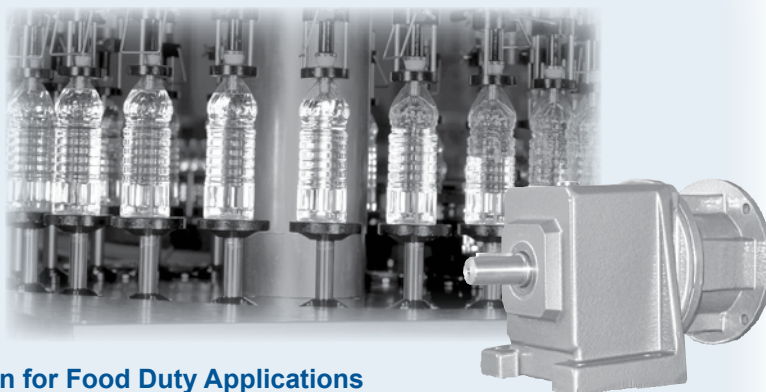
C Series Design Advantages

- 3 year standard warranty
- Up to 105 HP
- Standard output speeds available from 875 to 6.3 RPM; units can be combined to achieve slower speeds to meet your application needs
- Output torques to 53,000 in.lbs.
- Ratios of 2:1 to 276:1
- ≤20 arcmins backlash
- NEMA C-face for 56C thru 364/365TC
- Assembled in the U.S.A.
- One-piece precision machined housing
- 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
- 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
- Double lip seals keep oil in and contaminants out. Double seals available for severe duty applications
- Strategically located oil fill, drain and breather ports for optimum mounting flexibility. Oil sight glass available
- Magnetic drain plugs to help remove particles from oil
- Shipped filled with Mobilgear 600XP220 (standard) or Mobil SHC CIBUS 220 food grade oil (optional)
- Laser etched data on stainless steel nameplate

**SHIPS in
1 DAY!**
NO EXPEDITE FEE FOR
24 HOUR SERVICE



C Options for Food & Beverage



“F” Option for Food Duty Applications

- Totally enclosed unit — no breathers, maintenance free, lubricated for life
- Mobil SHC CIBUS 220 food grade oil
- Anti-microbial clear coat
- 316 stainless steel epoxy coating
- Stainless steel shaft, hollow bore or double bushing output
- USDA Accepted Equipment



“B” Option for Beverage Duty Applications

- Totally enclosed unit — no breathers, maintenance free, lubricated for life
- Mobil 600XP220 mineral oil
- 316 stainless steel epoxy coating
- Stainless steel shaft, hollow bore or double bushing output

Other C Series Design Options Available:

- BISC white epoxy coating
- Plated or stainless steel hardware
- IP69K certified

Overview



C Ordering Options At-a-Glance

C Series are available in a wide range of user-selected design options that tailor the speed reducer to your motor and exact application requirements. Use the appropriate order codes below to build a part number for the complete gearhead assembly.

Part Number Examples:

	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩*
Standard duty	C	2	0	2	N	0040	MR140/	050		EL1
Food duty	C	2	0	2	N	0040	MR140/	050	F	EL1

Design Option	Part Number Code	Description
① Series	C	Concentric helical (output and input in line/gears are all helical)
② Size	2	10 sizes of speed reducers (0 thru 9)
③ Generation	0 1	0 for sizes C0 thru C5; 1 for sizes C6 thru C9
④ # of Stages	2 3	Two or three stages (determined by ratio)
⑤ Housing	F G N Q	Output flange mount Tapped holes around output Foot mounting Square output flange (not bolt on)
⑥ Ratio	0040	Ratios range from 2:1 to 276:1 (refer to Selection Data tables) Note: if a slower speed is required, units can be combined to achieve the necessary ratio for low speed applications. Contact STOBBER Drives Inc.
⑦ Motor Adapter	MR140 thru MR350	Round motor adapter sizes (refer to Selection Data tables); optional solid shaft inputs and backstop bearings also available**
⑧ NEMA Frame Size (refer to Selection Data tables)	050 140 180 210 250 280 320 360	56C 143/145TC 182/184TC 213/215TC 254/256TC 284/286TC 324/326TC 364/365TC
⑨ Food & Beverage Option	F B	Food duty service Beverage duty service
⑩ Mounting Position* Refer to (page 89) illustrations	EL1 EL2 EL3 EL4 EL5 EL6 EL1234 EL5 EL6	Mounting positions for 3 year warranty

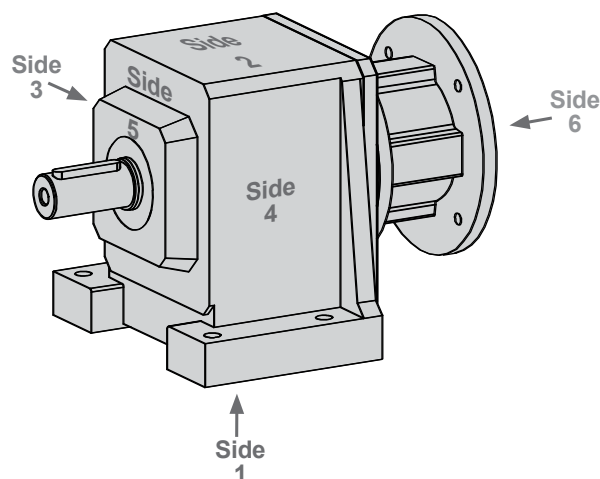
* Mounting position is added to "notes" section of order.

** Optional solid shaft inputs are available in place of motor adapters for all sizes. See page 90 for details.

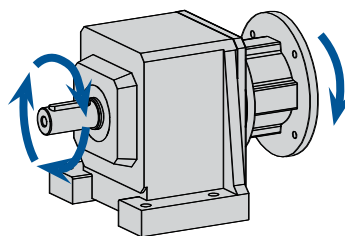
Optional backstop bearings are available on select sizes of motor adapters and solid shaft inputs to prevent inclined or vertical applications from backdriving in a power off situation (excluding manlifts). See page 90 for details.

C Series: INLINE – Solid Shaft Output

C Series Orientation

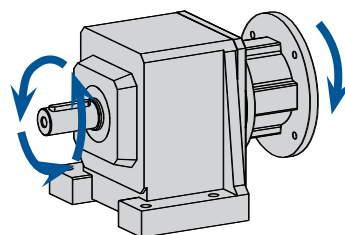


C Series Direction of Rotation



All 2 Stage Units

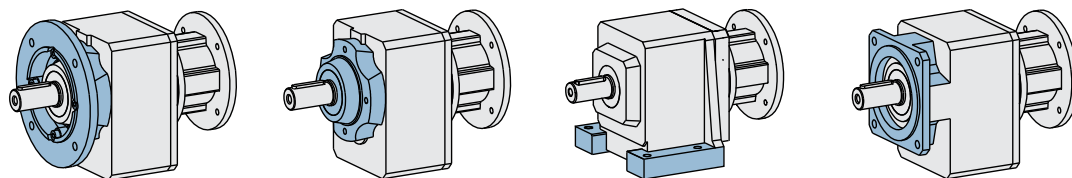
C002	C612
C102	C712
C202	C812
C302	C912
C402	
C502	



All 3 Stage Units

C103	C613
C203	C713
C303	C813
C403	C913
C503	

C Output and Housing Configurations



See Page	120	122	124	126
Housing Style	F Flange Mount	G Tapped Holes	N Foot Mount	Q Square Flange

Availability*

Standard Duty	C0-C9	C0-C9	C0-C9	C0-C4
Food & Beverage Duty	C0-C8	C0-C8	C0-C8	C0-C4

* Refer to Output Options chart below for standard and optional solid shaft options. Food and Beverage Duty require stainless steel.

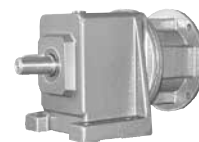
C Series Output Options

BLUE: standard output diameters in stock

BLACK: optional diameters in stock

Other options are available upon request. Please contact STOBER to learn about other options and their deliveries.

			C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
Solid Shaft	Carbon Steel	Inches	3/4	1	1-1/4	1-1/4	1-5/8	1-5/8	2-1/8	2-3/8	2-7/8	3-5/8
		Metric	20	25	30	30	40	40	50	60	70	90
	Stainless Steel	Inches	3/4	1	1-1/4	1-1/4	1-5/8	1-5/8	2-1/8	2-3/8	2-7/8	—
		Metric	—	—	—	25	—	—	—	—	—	—



Overview

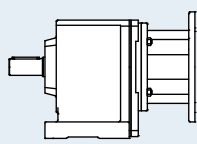
C Mounting Position Options

When ordering any C unit, the mounting position must be specified. Use one of the mounting position order codes illustrated below that corresponds to the intended application.

Standard Duty

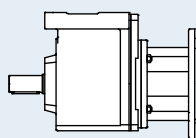
All STOBER standard duty units are filled with the correct amount of lubrication before shipping. In order to provide the proper lubrication quantity, the mounting position must be specified at the time the unit is ordered.

DO NOT mount any reducer in a position other than the mounting position specified on the order!



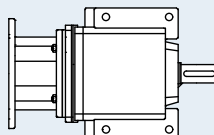
Side 1

EL1



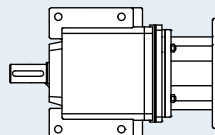
Side 2

EL2



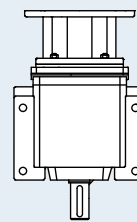
Side 3

EL3



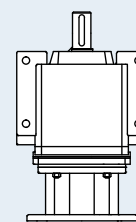
Side 4

EL4



Side 5

EL5



Side 6

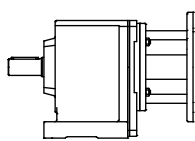
EL6

Food & Beverage Duty

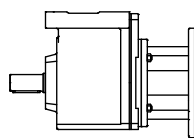
Food and Beverage duty units are equipped with specialized seals, higher oil level, and additional features compared to standard units. These added features enable all horizontal output positions (EL1, 2, 3 and 4) to be used interchangeably.

DO NOT mount horizontal Food and Beverage duty reducers in a vertical position, or mount vertical position reducers other than specified on the order!

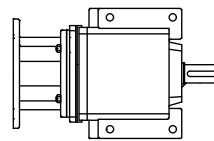
These mounting positions for "F" Food or "B" Beverage Duty are all interchangeable.



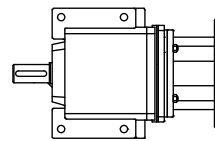
Side 1



Side 2

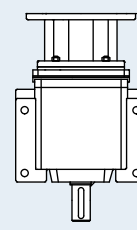


Side 3



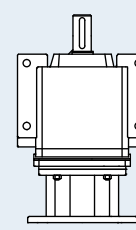
Side 4

EL1234



Side 5

EL5



Side 6

EL6

C
INLINE – Solid Shaft Output

C Series: INLINE – Solid Shaft Output

C Series Optional Backstops

Select sizes motor adapter and solid input shaft



Contact STOBER Drives for additional information.

The backstop option is a bearing that is added to the motor adapter or input shaft housing that prevents the gearbox from backdriving during a power off situation. Backstops are used primarily for inclined conveyor installations. (Not for use on man lifts!)

NOTE: To include a backstop, a “B” is added to the part number code. Gearbox output direction of rotation must be specified with order. Maximum HP limitation must not be exceeded. If the backstop is assembled for the standard rotation but rotates in the opposite direction at startup, damage to the backstop is certain.

Motor Adapter Sizes Available with Backstop

Adapter Part Number	NEMA Frame	Max HP* @1750 PRM
MRB160/050	56C	10.4
MRB160/140	143/145TC	
MRB200/050	56C	
MRB200/140	143/145TC	18.2
MRB200/180	182/184TC	

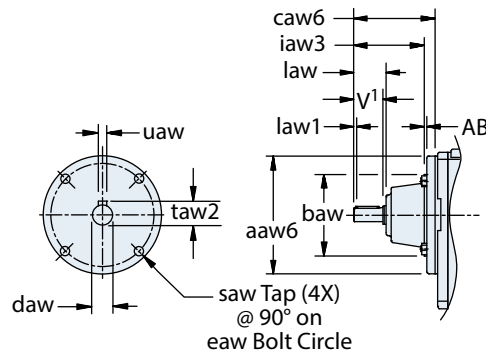
Input Shafts Sizes Available with Backstop

Adapter Part Number	Shaft Size (in)	Max HP* @1750 PRM
AWB160/012	3/4	10.4
AWB200/014	7/8	18.2

*Maximum HP must not be exceeded. Ratings are based on 2.0 service factor.

C Series Optional Input Shafts

All C Series gearboxes are available with an optional input shaft in place of the motor adapter. See Selection Data tables for specific sizes available for each size configuration.



“AW” Optional Input Shaft Dimensions (Inches)

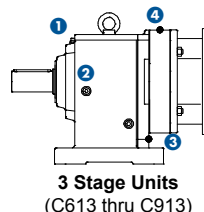
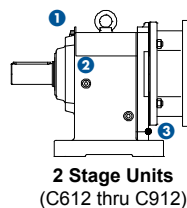
Part No.	aaw6	AB	baw	caw6	daw	eaw	iaw3	law	law1	saw	taw2	uaw (Key)	V ¹	Wt. (lbs)	Overhung Load (lbs)
AW140/010	5.51	0.16	3.740	4.02	0.6250	4.53	3.58	1.38	0.12	M8x1.25	0.71	3/16x3/16x31/32	1.25	8	98
AW160/012	6.30	0.18	4.331	4.69	0.7500	5.12	4.21	1.69	0.12	M8x1.25	0.83	3/16x3/16x1-7/32	1.50	12	196
AW200/014	7.87	0.16	5.118	5.51	0.8750	6.50	5.00	1.97	0.16	M10x1.5	0.96	3/16x3/16x1-7/16	1.75	18	333
AW250/102	9.84	0.16	7.087	7.80	1.1250	8.46	7.20	2.48	0.20	M12x1.75	1.24	1/4x4x1-15/16	2.25	31	680
AW300/110	11.81	0.20	9.055	9.02	1.6250	10.43	8.39	3.54	0.24	M12x1.75	1.79	3/8x3/8x2-7/8	3.25	51	1,072
AW350/202	13.78	0.24	9.842	11.61	2.1250	11.81	10.83	4.88	0.28	M16x2	2.35	1/2x1/2x3-15/16	4.50	100	1,569

C Series Lubrication Maintenance

C002 thru C502/C503 are supplied without breathers and are lubricated for life and maintenance free.

Breathers are provided on standard units C612/C613 thru C912/C913, located as shown*. STOBER recommends changing the lubrication in breather supplied units after 10,000 hours for normal operating conditions or every 5,000 hours for wet operating conditions.

*C612/C613 and larger units with the Food & Beverage option exclude a breather. Contact STOBER for details.



Drain Plug and Vent Location

Mounting Position	①	② *	②a *	③	④
EL1	Vent			Drain	
EL2	Drain			Vent	
EL3		Vent	Drain		
EL4		Drain	Vent		
EL5 C612-C912	Drain			Vent	
C613-C913	Drain				Vent
EL6	Vent			Drain	

* Position 2a is on the opposite side of 2.



Selection Data

C Sizing/Selection:

1. Find the **RPM Output (Approximate)** nearest the application requirement. (If the exact Output RPM is required, divide the Input RPM [1750] by the value listed in the Nominal Ratio column.)
- 2a. In the **Input HP** column, locate the rating that is greater than or equal to the required HP, or;
- 2b. If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.
3. Confirm that the **Overhung Load** is acceptable for the application.
4. Choose the appropriate **Base Module**, **Motor Adapter** and **NEMA C-Frame** part number order codes (see page 87 for complete ordering information). An optional input shaft, in place of the NEMA C-face motor adapter, is also available.

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾
875 RPM Output (Approximate)							
2.60	182	1.997	121	C002_0020	MR140/	050	AW140/010
2.61	184	2.018	218	C102_0020	MR140/	050	AW140/010
4.17*	291	1.997	121	C002_0020	MR160/	050 140	AW160/012
8.29*	585	2.018	218	C102_0020	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
9.22*	647	2.009	269	C202_0020	MR160/	050 140	AW160/012
9.22*	651	2.020	362	C302_0020	MR160/	050 140	AW160/012
12.70*	892	2.009	269	C202_0020	MR200/	180	AW200/014
19.97*	1,411	2.020	362	C302_0020	MR200/	180	AW200/014
20.71*	1,463	2.020	362	C302_0020	MR250/	180 210	AW250/102
21.97*	1,512	1.968	616	C402_0020	MR200/	180	AW200/014
24.58*	1,698	1.976	700	C502_0020	MR200/	180	AW200/014
30.65*	2,109	1.968	616	C402_0020	MR250/	180 210	AW250/102
39.32*	2,717	1.976	700	C502_0020	MR250/	180 210	AW250/102
47.38*	3,273	1.976	700	C502_0020	MR300/	180 210 250 280	AW300/110

C

INLINE – Solid Shaft Output

* Thermal HP Limit

Base Module Size	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
HP Limit	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.63	67.05

1) Overhung Load is measured at the center of the shaft extension.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes

C Series: INLINE – Solid Shaft Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

795 RPM Output (Approximate)

2.61	198	2.177	223	C102_0022	MR140/	050	AW140/010
7.88*	600	2.177	223	C102_0022	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
9.22	701	2.177	371	C302_0022	MR160/	050 140	AW160/012
9.22	704	2.184	276	C202_0022	MR160/	050 140	AW160/012
12.01*	917	2.184	276	C202_0022	MR200/	180	AW200/014
19.70*	1,499	2.177	371	C302_0022	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
21.97*	1,706	2.221	641	C402_0022	MR200/	180	AW200/014
24.58*	1,931	2.247	730	C502_0022	MR200/	180	AW200/014
28.28*	2,196	2.221	641	C402_0022	MR250/	180 210	AW250/102
39.32*	3,089	2.247	730	C502_0022	MR250/	180 210	AW250/102
43.49*	3,417	2.247	730	C502_0022	MR300/	180 210 250 280	AW300/110

730 RPM Output (Approximate)

7.40*	619	2.394	231	C102_0024	MR160/	050 140	AW160/012
					MR200/	180	AW200/014

705 RPM Output (Approximate)

8.73*	755	2.475	288	C202_0025	MR160/	050 140	AW160/012
9.22	809	2.510	389	C302_0025	MR160/	050 140	AW160/012
11.05*	956	2.475	288	C202_0025	MR200/	180	AW200/014
17.59*	1,544	2.510	389	C302_0025	MR200/	180	AW200/014
17.92*	1,572	2.510	389	C302_0025	MR250/	180 210	AW250/102
19.60*	1,683	2.456	663	C402_0025	MR200/	180	AW200/014
22.41*	1,920	2.450	752	C502_0025	MR200/	180	AW200/014
26.44*	2,271	2.456	663	C402_0025	MR250/	180 210	AW250/102
39.32*	3,368	2.450	752	C502_0025	MR250/	180 210	AW250/102
41.05*	3,516	2.450	752	C502_0025	MR300/	180 210 250 280	AW300/110

1) Overhung Load is measured at the center of the shaft extension.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

680 RPM Output (Approximate)

7.03*	635	2.582	236	C102_0026	MR160/	050 140	AW160/012
					MR200/	180	AW200/014

650 RPM Output (Approximate)

8.73*	821	2.690	296	C202_0027	MR160/	050 140	AW160/012
9.22	872	2.705	399	C302_0027	MR160/	050 140	AW160/012
10.45*	983	2.690	296	C202_0027	MR200/	180	AW200/014
17.04*	1,612	2.705	399	C302_0027	MR200/	180	AW200/014
					MR250/	180 210	AW250/102

630 RPM Output (Approximate)

2.61	252	2.769	135	C002_0028	MR140/	050	AW140/010
3.36*	325	2.769	135	C002_0028	MR160/	050 140	AW160/012
19.60*	1,898	2.771	691	C402_0028	MR200/	180	AW200/014
22.41*	2,184	2.787	785	C502_0028	MR200/	180	AW200/014
24.40*	2,364	2.771	691	C402_0028	MR250/	180 210	AW250/102
37.67*	3,671	2.787	785	C502_0028	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110

565 RPM Output (Approximate)

2.61	279	3.067	140	C002_0031	MR140/	050	AW140/010
2.61	282	3.091	251	C102_0031	MR140/	050	AW140/010
3.14*	336	3.067	140	C002_0031	MR160/	050 140	AW160/012
6.24*	674	3.091	251	C102_0031	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
7.92*	859	3.103	310	C202_0031	MR160/	050 140	AW160/012
8.73	949	3.110	418	C302_0031	MR160/	050 140	AW160/012
9.50*	1,031	3.103	310	C202_0031	MR200/	180	AW200/014
15.28*	1,661	3.110	418	C302_0031	MR200/	180	AW200/014
15.53*	1,689	3.110	418	C302_0031	MR250/	180 210	AW250/102
17.04*	1,846	3.099	717	C402_0031	MR200/	180	AW200/014
19.60	2,108	3.077	811	C502_0031	MR200/	180	AW200/014
22.64*	2,454	3.099	717	C402_0031	MR250/	180 210	AW250/102
34.42*	3,703	3.077	811	C502_0031	MR250/	180 210	AW250/102
35.26*	3,794	3.077	811	C502_0031	MR300/	180 210 250 280	AW300/110

* Thermal HP Limit

Base Module Size	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
HP Limit	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.63	67.05

C Series: INLINE – Solid Shaft Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾
525 RPM Output (Approximate)							
2.61	302	3.318	144	C002_0033	MR140/	050	AW140/010
2.61	304	3.334	257	C102_0033	MR140/	050	AW140/010
2.97*	345	3.318	144	C002_0033	MR160/	050 140	AW160/012
5.93*	691	3.334	257	C102_0033	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
520 RPM Output (Approximate)							
7.92*	933	3.373	319	C202_0034	MR160/	050 140	AW160/012
8.73	1,023	3.352	429	C302_0034	MR160/	050 140	AW160/012
8.99*	1,060	3.373	319	C202_0034	MR200/	180	AW200/014
14.77*	1,732	3.352	429	C302_0034	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
500 RPM Output (Approximate)							
17.04*	2,083	3.497	746	C402_0035	MR200/	180	AW200/014
19.60	2,399	3.501	847	C502_0035	MR200/	180	AW200/014
20.89*	2,554	3.497	746	C402_0035	MR250/	180 210	AW250/102
32.36*	3,961	3.501	847	C502_0035	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
450 RPM Output (Approximate)							
2.60	349	3.835	151	C002_0038	MR140/	050	AW140/010
2.61	354	3.883	271	C102_0039	MR140/	050	AW140/010
2.70	362	3.835	151	C002_0038	MR160/	050 140	AW160/012
5.36	727	3.883	271	C102_0039	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
6.87	934	3.888	335	C202_0039	MR160/	050 140	AW160/012
7.70	1,044	3.878	450	C302_0039	MR160/	050 140	AW160/012
8.18*	1,111	3.888	335	C202_0039	MR200/	180	AW200/014
8.46	1,151	3.894	773	C402_0039	MR160/	050 140	AW160/012
13.41*	1,818	3.878	450	C302_0039	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
14.86*	2,024	3.894	773	C402_0039	MR200/	180	AW200/014
17.24	2,330	3.867	875	C502_0039	MR200/	180	AW200/014
19.45*	2,648	3.894	773	C402_0039	MR250/	180 210	AW250/102
30.22*	4,086	3.867	875	C502_0039	MR250/	180 210	AW250/102
30.28*	4,094	3.867	875	C502_0039	MR300/	180 210 250 280	AW300/110

1) Overhung Load is measured at the center of the shaft extension.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

420 RPM Output (Approximate)

2.56	372	4.149	155	C002_0041	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.60	382	4.189	278	C102_0042	MR140/	050	AW140/010
5.09	746	4.189	278	C102_0042	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
6.87	1,016	4.226	344	C202_0042	MR160/	050 140	AW160/012
7.70	1,125	4.179	461	C302_0042	MR160/	050 140	AW160/012
7.73*	1,143	4.226	344	C202_0042	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
12.75*	1,864	4.179	461	C302_0042	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
24.58	3,595	4.184	1,307	C612_0042	MR200/	180	AW200/014
39.32*	5,752	4.184	1,307	C612_0042	MR250/	180 210	AW250/102
53.33*	7,802	4.184	1,307	C612_0042	MR300/	180 210 250 280	AW300/110
73.72*	10,891	4.225	2,458	C812_0042	MR300/	180 210 250 280	AW300/110
	15,541	4.225	2,458	C812_0042	MR350/	320 360	AW350/202
	15,254	4.147	3,013	C912_0041	MR350/	320 360	AW350/202

410 RPM Output (Approximate)

8.46	1,299	4.394	805	C402_0044	MR160/	050 140	AW160/012
14.86*	2,283	4.394	805	C402_0044	MR200/	180	AW200/014
17.24	2,651	4.399	913	C502_0044	MR200/	180	AW200/014
17.94*	2,756	4.394	805	C402_0044	MR250/	180 210	AW250/102
24.58	3,659	4.259	1,807	C712_0043	MR200/	180	AW200/014
27.79*	4,274	4.399	913	C502_0044	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
39.32	5,855	4.259	1,807	C712_0043	MR250/	180 210	AW250/102
73.72*	10,978	4.259	1,807	C712_0043	MR300/	180 210 250 280	AW300/110

C

INLINE – Solid Shaft Output

* Thermal HP Limit

Base Module Size	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
HP Limit	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.63	67.05

C Series: INLINE – Solid Shaft Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

375 RPM Output (Approximate)

2.37	387	4.680	161	C002_0047	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.61	424	4.658	288	C102_0047	MR140/	050	AW140/010
4.75	773	4.658	288	C102_0047	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.98	975	4.667	356	C202_0047	MR160/	050 140	AW160/012
6.66	1,088	4.675	479	C302_0047	MR160/	050 140	AW160/012
7.24	1,181	4.667	356	C202_0047	MR200/	180	AW200/014
7.57	1,238	4.682	822	C402_0047	MR160/	050 140	AW160/012
8.68	1,404	4.629	929	C502_0046	MR160/	050 140	AW160/012
11.62	1,899	4.675	479	C302_0047	MR200/	180	AW200/014
11.84	1,935	4.675	479	C302_0047	MR250/	180 210	AW250/102
13.28	2,174	4.682	822	C402_0047	MR200/	180	AW200/014
15.25	2,468	4.629	929	C502_0046	MR200/	180	AW200/014
17.20*	2,815	4.682	822	C402_0047	MR250/	180 210	AW250/102
26.64*	4,312	4.629	929	C502_0046	MR250/	180 210	AW250/102
26.86*	4,347	4.629	929	C502_0046	MR300/	180 210 250 280	AW300/110

345 RPM Output (Approximate)

2.25	397	5.063	165	C002_0051	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.61	458	5.025	295	C102_0050	MR140/	050	AW140/010
4.51	793	5.025	295	C102_0050	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.98	1,060	5.072	366	C202_0051	MR160/	050 140	AW160/012
6.66	1,173	5.038	491	C302_0050	MR160/	050 140	AW160/012
6.85	1,214	5.072	366	C202_0051	MR200/	180	AW200/014
11.26	1,983	5.038	491	C302_0050	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
24.58	4,367	5.083	1,394	C612_0051	MR200/	180	AW200/014
39.32*	6,988	5.083	1,394	C612_0051	MR250/	180 210	AW250/102
46.84*	8,325	5.083	1,394	C612_0051	MR300/	180 210 250 280	AW300/110

1) Overhung Load is measured at the center of the shaft extension.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

330 RPM Output (Approximate)

7.57	1,397	5.284	856	C402_0053	MR160/	050 140	AW160/012
8.68	1,597	5.265	970	C502_0053	MR160/	050 140	AW160/012
13.28	2,454	5.284	856	C402_0053	MR200/	180	AW200/014
15.25	2,807	5.265	970	C502_0053	MR200/	180	AW200/014
15.87*	2,931	5.284	856	C402_0053	MR250/	180 210	AW250/102
24.58	4,563	5.311	1,945	C712_0053	MR200/	180	AW200/014
24.65*	4,538	5.265	970	C502_0053	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
39.32	7,301	5.311	1,945	C712_0053	MR250/	180 210	AW250/102
73.72*	13,690	5.311	1,945	C712_0053	MR300/	180 210 250 280	AW300/110

325 RPM Output (Approximate)

73.72*	13,886	5.387	2,665	C812_0054	MR300/	180 210 250 280	AW300/110
105.20*	19,815	5.387	2,665	C812_0054	MR350/	320 360	AW350/202

300 RPM Output (Approximate)

2.05	416	5.824	173	C002_0058	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.61	527	5.791	382	C202_0058	MR140/	050	AW140/010
2.61	535	5.875	311	C102_0059	MR140/	050	AW140/010
4.07	835	5.875	311	C102_0059	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.12	1,036	5.791	382	C202_0058	MR160/	050 140	AW160/012
5.86	1,201	5.859	516	C302_0059	MR160/	050 140	AW160/012
6.27	1,269	5.791	382	C202_0058	MR200/	180	AW200/014
6.36	1,309	5.891	888	C402_0059	MR160/	050 140	AW160/012
7.39	1,510	5.850	1,005	C502_0059	MR160/	050 140	AW160/012
10.18	2,086	5.859	516	C302_0059	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
11.15	2,296	5.891	888	C402_0059	MR200/	180	AW200/014
12.98	2,656	5.850	1,005	C502_0059	MR200/	180	AW200/014
14.76*	3,039	5.891	888	C402_0059	MR250/	180 210	AW250/102
22.70*	4,642	5.850	1,005	C502_0059	MR250/	180 210	AW250/102
22.98*	4,700	5.850	1,005	C502_0059	MR300/	180 210 250 280	AW300/110

* Thermal HP Limit

Base Module Size	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
HP Limit	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.63	67.05

C Series: INLINE – Solid Shaft Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

275 RPM Output (Approximate)

1.94	427	6.300	178	C002_0063	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.61	573	6.295	393	C202_0063	MR140/	050	AW140/010
2.61	577	6.338	319	C102_0063	MR140/	050	AW140/010
3.87	856	6.338	319	C102_0063	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.12	1,127	6.295	393	C202_0063	MR160/	050 140	AW160/012
5.86	1,294	6.314	529	C302_0063	MR160/	050 140	AW160/012
5.93	1,305	6.295	393	C202_0063	MR200/	180	AW200/014
9.69	2,138	6.314	529	C302_0063	MR200/	180	AW200/014
					MR250/	180 210	AW250/102

265 RPM Output (Approximate)

6.36	1,478	6.648	924	C402_0066	MR160/	050 140	AW160/012
7.39	1,718	6.655	1,049	C502_0067	MR160/	050 140	AW160/012
11.15	2,591	6.648	924	C402_0066	MR200/	180	AW200/014
12.98	3,021	6.655	1,049	C502_0067	MR200/	180	AW200/014
13.61	3,164	6.648	924	C402_0066	MR250/	180 210	AW250/102
21.09*	4,906	6.655	1,049	C502_0067	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
21.48	4,895	6.518	1,515	C612_0065	MR200/	180	AW200/014
37.98*	8,656	6.518	1,515	C612_0065	MR250/	180 210	AW250/102
39.69*	9,045	6.518	1,515	C612_0065	MR300/	180 210 250 280	AW300/110
73.72*	17,193	6.670	2,862	C812_0067	MR300/	180 210 250 280	AW300/110
105.09*	24,508	6.670	2,862	C812_0067	MR350/	320 360	AW350/202

255 RPM Output (Approximate)

4.58	5,852	6.811	2,114	C712_0068	MR200/	180	AW200/014
39.32	9,363	6.811	2,114	C712_0068	MR250/	180 210	AW250/102
63.79*	15,191	6.811	2,114	C712_0068	MR300/	180 210 250 280	AW300/110

1) Overhung Load is measured at the center of the shaft extension.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

245 RPM Output (Approximate)

24.58	6,110	7.111	1,559	C612_0071	MR200/	180	AW200/014
24.58	6,321	7.357	2,169	C712_0074	MR200/	180	AW200/014
37.45*	9,311	7.111	1,559	C612_0071	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
39.32	10,114	7.357	2,169	C712_0074	MR250/	180 210	AW250/102
60.59*	15,587	7.357	2,169	C712_0074	MR300/	180 210 250 280	AW300/110
73.72*	18,827	7.304	2,950	C812_0073	MR300/	180 210 250 280	AW300/110
98.92*	25,261	7.304	2,950	C812_0073	MR350/	320 360	AW350/202

225 RPM Output (Approximate)

1.70	457	7.714	190	C002_0077	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.44	665	7.796	342	C102_0078	MR140/	050	AW140/010
2.61	710	7.800	422	C202_0078	MR140/	050	AW140/010
3.37	918	7.796	342	C102_0078	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
4.03	1,100	7.800	422	C202_0078	MR160/	050 140	AW160/012
4.65	1,274	7.841	569	C302_0078	MR160/	050 140	AW160/012
5.11	1,396	7.816	976	C402_0078	MR160/	050 140	AW160/012
					MR160	050 140	AW160/012
5.14	1,402	7.800	422	C202_0078	MR200/	180	AW200/014
5.97	1,621	7.763	1,104	C502_0078	MR160/	050 140	AW160/012
8.08	2,216	7.841	569	C302_0078	MR200/	180	AW200/014
8.38	2,299	7.841	569	C302_0078	MR250/	180 210	AW250/102
8.95	2,446	7.816	976	C402_0078	MR200/	180	AW200/014
10.48	2,846	7.763	1,104	C502_0078	MR200/	180	AW200/014
12.22	3,340	7.816	976	C402_0078	MR250/	180 210	AW250/102
18.30	4,966	7.763	1,104	C502_0078	MR250/	180 210	AW250/102
19.03	5,165	7.763	1,104	C502_0078	MR300/	180 210 250 280	AW300/110

C

INLINE – Solid Shaft Output

* Thermal HP Limit

Base Module Size	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
HP Limit	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.63	67.05

C Series: INLINE – Solid Shaft Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

210 RPM Output (Approximate)

1.85	531	8.235	194	C002_0082	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.61	753	8.263	348	C102_0083	MR140/	050	AW140/010
3.68	1,063	8.263	348	C102_0083	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
6.19	1,772	8.190	429	C202_0082	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
8.73	2,518	8.250	579	C302_0083	MR160/	050 140	AW160/012
9.78	2,822	8.250	579	C302_0083	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
16.37*	4,742	8.285	995	C402_0083	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
18.92	5,418	8.190	1,635	C612_0082	MR200/	180	AW200/014
19.60	5,661	8.263	1,127	C502_0083	MR200/	180	AW200/014
24.53*	7,086	8.263	1,127	C502_0083	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
33.39*	9,560	8.190	1,635	C612_0082	MR250/	180 210	AW250/102
34.08*	9,760	8.190	1,635	C612_0082	MR300/	180 210 250 280	AW300/110
105.20*	30,486	8.288	3,795	C912_0083	MR350/	320 360	AW350/202

205 RPM Output (Approximate)

22.11	6,564	8.490	2,275	C712_0085	MR200/	180	AW200/014
39.12	11,612	8.490	2,275	C712_0085	MR250/	180 210	AW250/102
55.08*	16,349	8.490	2,275	C712_0085	MR300/	180 210 250 280	AW300/110
73.72*	21,838	8.472	3,100	C812_0085	MR300/	180 210 250 280	AW300/110

195 RPM Output (Approximate)

21.48	6,848	9.118	1,694	C612_0091	MR200/	180	AW200/014
31.73*	10,115	9.118	1,694	C612_0091	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
73.72*	23,310	9.043	3,168	C812_0090	MR300/	180 210 250 280	AW300/110
85.79*	27,125	9.043	3,168	C812_0090	MR350/	320 360	AW350/202

1) Overhung Load is measured at the center of the shaft extension.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

190 RPM Output (Approximate)

1.65	531	9.228	202	C002_0092	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.61	849	9.326	363	C102_0093	MR140/	050	AW140/010
3.26	1,063	9.326	363	C102_0093	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.40	1,772	9.387	449	C202_0094	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
8.73	2,841	9.310	602	C302_0093	MR160/	050 140	AW160/012
9.03	2,938	9.310	602	C302_0093	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
15.05*	4,872	9.261	1,032	C402_0093	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
19.60	6,345	9.261	1,171	C502_0093	MR200/	180	AW200/014
21.89*	7,086	9.261	1,171	C502_0093	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
24.58	8,107	9.435	2,356	C712_0094	MR200/	180	AW200/014
39.32	12,971	9.435	2,356	C712_0094	MR250/	180 210	AW250/102
51.34*	16,934	9.435	2,356	C712_0094	MR300/	180 210 250 280	AW300/110

175 RPM Output (Approximate)

15.67	5,538	10.111	1,753	C612_0100	MR200/	180	AW200/014
19.85	6,879	9.912	2,395	C712_0099	MR200/	180	AW200/014
27.75	9,810	10.111	1,753	C612_0100	MR250/	180 210	AW250/102
29.62*	10,470	10.111	1,753	C612_0100	MR300	180 210 250 280	AW300/110
35.15	12,183	9.912	2,395	C712_0099	MR250/	180 210	AW250/102
49.68*	17,215	9.912	2,395	C712_0099	MR300/	180 210 250 280	AW300/110
73.72*	26,166	10.151	3,292	C812_0100	MR300/	180 210 250 280	AW300/110
79.43*	28,190	10.151	3,292	C812_0100	MR350/	320 360	AW350/202

* Thermal HP Limit

Base Module Size	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
HP Limit	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.63	67.05

C Series: INLINE – Solid Shaft Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

170 RPM Output (Approximate)

1.48	531	10.297	209	C002_0105	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.61	946	10.383	376	C102_0105	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.93	1,063	10.383	376	C102_0105	MR200/	180	AW200/014
					MR160/	050 140	AW160/012
4.94	1,772	10.260	463	C202_0105	MR200/	180	AW200/014
					MR160/	050 140	AW160/012
7.70	2,770	10.286	623	C302_0105	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
8.45	3,037	10.286	623	C302_0105	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
8.46	3,077	10.410	1,073	C402_0105	MR250/	180 210	AW250/102
					MR160/	050 140	AW160/012
13.39	4,872	10.410	1,073	C402_0105	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
17.24	6,257	10.383	1,216	C502_0105	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
19.52	7,086	10.383	1,216	C502_0105	MR300/	180 210 250 280	AW300/110

150 RPM Output (Approximate)

1.32	531	11.540	218	C002_0115	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.60	1,063	11.717	391	C102_0115	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
4.31	1,772	11.760	484	C202_0120	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
7.64	3,100	11.607	648	C302_0115	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180 210	AW250/102
8.46	3,440	11.636	1,114	C402_0115	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
11.98	4,872	11.636	1,114	C402_0115	MR250/	180 210	AW250/102
17.24	7,012	11.636	1,263	C502_0115	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
17.42	7,086	11.636	1,263	C502_0115	MR300/	180 210 250 280	AW300/110
18.92	7,579	11.457	1,828	C612_0115	MR200/	180	AW200/014
22.11	9,093	11.761	2,536	C712_0120	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
27.25	10,915	11.457	1,828	C612_0115	MR300/	180 210 250 280	AW300/110
39.12	16,086	11.761	2,536	C712_0120	MR250/	180 210	AW250/102
43.08*	17,716	11.761	2,536	C712_0120	MR300/	180 210 250 280	AW300/110
73.14*	29,376	11.487	3,431	C812_0115	MR300/	180 210 250 280	AW300/110
					MR350/	320 360	AW350/202
105.20*	43,313	11.775	4,266	C912_0120	MR350/	320 360	AW350/202

1) Overhung Load is measured at the center of the shaft extension.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

140 RPM Output (Approximate)

1.21	531	12.567	224	C002_0125	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.44	1,063	12.455	399	C102_0125	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
4.11	1,772	12.315	492	C202_0125	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
6.66	2,887	12.400	663	C302_0125	MR160/	050 140	AW160/012
7.15	3,100	12.400	663	C302_0125	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
7.57	3,311	12.519	1,141	C402_0125	MR160/	050 140	AW160/012
8.68	3,771	12.429	1,291	C502_0125	MR160/	050 140	AW160/012
11.13	4,872	12.519	1,141	C402_0125	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
13.54	5,956	12.581	1,886	C612_0125	MR200/	180	AW200/014
15.25	6,626	12.429	1,291	C502_0125	MR200/	180	AW200/014
16.31	7,086	12.429	1,291	C502_0125	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
23.91	10,518	12.581	1,886	C612_0125	MR250/	180 210	AW250/102
25.60	11,261	12.581	1,886	C612_0125	MR300/	180 210 250 280	AW300/110
35.15	15,670	12.749	3,552	C812_0125	MR250/	180 210	AW250/102
62.77*	27,978	12.749	3,552	C812_0125	MR300/	180 210 250 280	AW300/110
68.23*	30,415	12.749	3,552	C812_0125	MR350/	320 360	AW350/202

130 RPM Output (Approximate)

15.67	7,220	13.182	2,634	C712_0130	MR200/	180	AW200/014
19.85	9,529	13.730	2,670	C712_0135	MR200/	180	AW200/014
27.75	12,790	13.182	2,634	C712_0130	MR250/	180 210	AW250/102
35.15	16,876	13.730	2,670	C712_0135	MR250/	180 210	AW250/102
36.90	17,716	13.730	2,670	C712_0135	MR300/	180 210 250 280	AW300/110
41.08*	18,932	13.182	2,634	C712_0130	MR300/	180 210 250 280	AW300/110

* Thermal HP Limit

Base Module Size	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
HP Limit	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.63	67.05

C Series: INLINE – Solid Shaft Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

125 RPM Output (Approximate)

1.08	531	14.083	233	C002_0140	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.16	1,063	14.056	416	C102_0140	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
3.59	1,772	14.115	514	C202_0140	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
6.34	3,100	13.993	690	C302_0140	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180 210	AW250/102
7.57	3,701	13.993	1,185	C402_0140	MR160/	050 140	AW160/012
8.68	4,226	13.929	1,341	C502_0140	MR160/	050 140	AW160/012
9.96	4,872	13.993	1,185	C402_0140	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
14.55	7,086	13.929	1,341	C502_0140	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
15.67	7,748	14.145	1,961	C612_0140	MR200/	180	AW200/014
23.28	11,515	14.145	1,961	C612_0140	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
64.84*	31,201	13.763	3,644	C812_0140	MR300/	180 210 250 280	AW300/110
					MR350/	320 360	AW350/202
105.20*	51,158	13.908	4,510	C912_0140	MR350/	320 360	AW350/202

115 RPM Output (Approximate)

0.97	531	15.637	241	C002_0155	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.94	1,063	15.708	432	C102_0155	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.61	1,392	15.283	528	C202_0155	MR140/	050	AW140/010
3.32	1,772	15.283	528	C202_0155	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.71	3,100	15.543	715	C302_0155	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180 210	AW250/102
7.39	4,056	15.708	1,396	C502_0155	MR160/	050 140	AW160/012
12.90	7,086	15.708	1,396	C502_0155	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110

1) Overhung Load is measured at the center of the shaft extension.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

105 RPM Output (Approximate)

6.36	3,501	15.750	1,232	C402_0160	MR160/	050	AW160/012
8.85	4,872	15.750	1,232	C402_0160	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
11.33	6,419	16.203	2,052	C612_0160	MR200/	180	AW200/014
13.54	7,922	16.734	2,852	C712_0165	MR200/	180	AW200/014
19.95	11,300	16.203	2,052	C612_0160	MR250/	180 210	AW250/102
21.63	12,252	16.203	2,052	C612_0160	MR300/	180 210 250 280	AW300/110
23.91	13,989	16.734	2,852	C712_0165	MR250/	180 210	AW250/102
27.75	16,592	17.101	3,917	C812_0170	MR250/	180 210	AW250/102
35.04	20,499	16.734	2,852	C712_0165	MR300/	180 210 250 280	AW300/110
49.56	29,635	17.101	3,917	C812_0170	MR300/	180 210 250 280	AW300/110
56.10*	33,543	17.101	3,917	C812_0170	MR350/	320 360	AW350/202
58.79	33,841	16.463	4,770	C912_0165	MR300/	180 210 250 280	AW300/110
78.29*	45,063	16.463	4,770	C912_0165	MR350/	320 360	AW350/202

100 RPM Output (Approximate)

0.87	531	17.525	250	C002_0175	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.72	1,063	17.727	449	C102_0175	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.61	1,595	17.517	553	C202_0175	MR140/	050	AW140/010
2.89	1,772	17.517	553	C202_0175	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.06	3,100	17.540	744	C302_0175	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180 210	AW250/102
6.36	3,913	17.604	1,279	C402_0175	MR160/	050 140	AW160/012
7.39	4,545	17.604	1,450	C502_0175	MR160/	050 140	AW160/012
7.92	4,872	17.604	1,279	C402_0175	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
11.51	7,086	17.604	1,450	C502_0175	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
13.54	8,332	17.600	2,109	C612_0175	MR200/	180	AW200/014
18.71	11,515	17.600	2,109	C612_0175	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
35.15	21,248	17.287	3,931	C812_0175	MR250/	180 210	AW250/102
52.76	31,889	17.287	3,931	C812_0175	MR300/	180 210 250 280	AW300/110
					MR350/	320 360	AW350/202
86.13*	53,148	17.648	4,882	C912_0175	MR350/	320 360	AW350/202

* Thermal HP Limit

Base Module Size	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
HP Limit	2.95	5.36	7.38	12.34	14.75	20.12	29.50	40.23	53.63	67.05

C
INLINE – Solid Shaft Output

C Series: INLINE – Solid Shaft Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

90 RPM Output (Approximate)

9.98	6,844	19.607	2,187	C612_0195	MR200/	180	AW200/014
15.67	10,002	18.261	2,936	C712_0185	MR200/	180	AW200/014
17.49	11,987	19.607	2,187	C612_0195	MR250/	180 210	AW250/102
18.74	12,844	19.607	2,187	C612_0195	MR300/	180 210 250 280	AW300/110
24.72	17,511	20.257	4,145	C812_0200	MR250/	180 210	AW250/102
27.75	17,716	18.261	2,936	C712_0185	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
43.99	31,156	20.257	4,145	C812_0200	MR300/	180 210 250 280	AW300/110
50.11	35,491	20.257	4,145	C812_0200	MR350/	320 360	AW350/202
50.44	35,541	20.152	5,103	C912_0200	MR300/	180 210 250 280	AW300/110

85 RPM Output (Approximate)

0.73	531	20.714	264	C002_0210	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.46	1,063	20.844	474	C102_0210	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.46	1,772	20.583	583	C202_0210	MR200/	180	AW200/014
					MR140/	050	AW140/010
4.26	3,100	20.800	787	C302_0210	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.11	3,732	20.899	1,354	C402_0210	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.97	4,353	20.844	1,534	C502_0210	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
6.67	4,872	20.899	1,354	C402_0210	MR250/	180 210	AW250/102
					MR200/	180	AW200/014
9.72	7,086	20.844	1,534	C502_0210	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
11.33	8,189	20.672	3,060	C712_0210	MR200/	180	AW200/014
19.95	14,416	20.672	3,060	C712_0210	MR250/	180 210	AW250/102
29.41	21,259	20.672	3,060	C712_0210	MR300/	180 210 250 280	AW300/110

1) Overhung Load is measured at the center of the shaft extension.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

75 RPM Output (Approximate)

0.65	531	23.214	275	C002_0230	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.29	1,063	23.523	494	C102_0240	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.15	1,772	23.593	611	C202_0240	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
3.78	3,100	23.472	820	C302_0230	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180 210	AW250/102
5.11	4,172	23.359	1,405	C402_0230	MR160/	050 140	AW160/012
5.97	4,872	23.359	1,405	C402_0230	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
5.97	4,879	23.359	1,594	C502_0230	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180 210	AW250/102
11.33	8,979	22.667	2,295	C612_0230	MR300/	180 210 250 280	AW300/110
					MR200/	180	AW200/014
13.54	10,975	23.182	3,179	C712_0230	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
14.53	11,515	22.667	2,295	C612_0230	MR300/	180 210 250 280	AW300/110
					MR250/	180 210	AW250/102
21.86	17,716	23.182	3,179	C712_0230	MR300/	180 210 250 280	AW300/110
					MR250/	180 210	AW250/102
27.75	22,498	23.188	4,336	C812_0230	MR300/	180 210 250 280	AW300/110
					MR350/	320 360	AW350/202
39.33	31,889	23.188	4,336	C812_0230	MR350/	320 360	AW350/202
58.79	48,080	23.390	5,363	C912_0230	MR300/	180 210 250 280	AW300/110
64.99	53,148	23.390	5,363	C912_0230	MR350/	320 360	AW350/202

C
INLINE – Solid Shaft Output

C Series: INLINE – Solid Shaft Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾
70 RPM Output (Approximate)							
0.61	531	24.972	281	C002_0250	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.21	1,063	25.133	505	C102_0250	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.06	1,772	24.641	619	C202_0250	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
3.58	3,100	24.800	835	C302_0250	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180 210	AW250/102
4.50	3,925	24.923	1,436	C402_0250	MR160/	050 140	AW160/012
5.11	4,478	25.073	1,632	C502_0250	MR160/	050 140	AW160/012
5.59	4,872	24.923	1,436	C402_0250	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
8.00	6,971	24.928	2,369	C612_0250	MR200/	180	AW200/014
8.08	7,086	25.073	1,632	C502_0250	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
9.98	8,835	25.313	3,274	C712_0250	MR200/	180	AW200/014
14.04	12,235	24.928	2,369	C612_0250	MR250/	180 210	AW250/102
14.74	12,844	24.928	2,369	C612_0250	MR300/	180 210 250 280	AW300/110
17.49	15,476	25.313	3,274	C712_0250	MR250/	180 210	AW250/102
19.95	18,173	26.058	4,508	C812_0260	MR250/	180 210	AW250/102
24.02	21,259	25.313	3,274	C712_0250	MR300/	180 210 250 280	AW300/110
35.44	32,285	26.058	4,508	C812_0260	MR300/	180 210 250 280	AW300/110
41.49	36,763	25.342	5,508	C912_0250	MR300/	180 210 250 280	AW300/110

1) Overhung Load is measured at the center of the shaft extension.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

60 RPM Output (Approximate)

0.54	531	27.986	292	C002_0280	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.07	1,063	28.364	526	C102_0280	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
1.79	1,772	28.243	648	C202_0280	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
3.17	3,100	27.986	869	C302_0280	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180 210	AW250/102
4.50	4,388	27.857	1,490	C402_0280	MR160/	050 140	AW160/012
5.00	4,872	27.857	1,490	C402_0280	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
5.11	5,018	28.099	1,695	C502_0280	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
7.21	7,086	28.099	1,695	C502_0280	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
					MR200/	180	AW200/014
9.98	9,574	27.429	2,446	C612_0270	MR200/	180	AW200/014
11.33	11,344	28.636	3,411	C712_0290	MR200/	180	AW200/014
12.01	11,515	27.429	2,446	C612_0270	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
17.69	17,716	28.636	3,411	C712_0290	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
24.72	23,744	27.467	4,587	C812_0270	MR250/	180 210	AW250/102
33.21	31,889	27.467	4,587	C812_0270	MR300/	180 210 250 280	AW300/110
					MR350/	320 360	AW350/202
50.44	50,495	28.631	5,737	C912_0290	MR300/	180 210 250 280	AW300/110
53.09	53,148	28.631	5,737	C912_0290	MR350/	320 360	AW350/202

C
INLINE – Solid Shaft Output

C Series: INLINE – Solid Shaft Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾
55 RPM Output (Approximate)							
0.49	531	31.256	303	C002_0310	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
0.98	1,063	31.071	542	C102_0310	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
1.65	1,772	30.692	666	C202_0310	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.86	3,100	31.040	900	C302_0310	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180 210	AW250/102
3.74	4,071	31.154	1,547	C402_0310	MR160/	050 140	AW160/012
4.22	4,602	31.231	1,756	C502_0310	MR160/	050 140	AW160/012
4.47	4,872	31.154	1,547	C402_0310	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
6.42	7,270	32.406	2,585	C612_0320	MR200/	180	AW200/014
6.49	7,086	31.231	1,756	C502_0310	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
11.26	12,755	32.406	2,585	C612_0320	MR250/	180 210	AW250/102
11.34	12,844	32.406	2,585	C612_0320	MR300/	180 210 250 280	AW300/110
34.03	38,232	32.134	5,962	C912_0320	MR300/	180 210 250 280	AW300/110

1) Overhung Load is measured at the center of the shaft extension.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

50 RPM Output (Approximate)

0.43	531	35.028	315	C002_0350	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
0.87	1,063	35.065	564	C102_0350	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
1.44	1,772	35.179	697	C202_0350	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.53	3,100	35.028	937	C302_0350	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180 210	AW250/102
3.74	4,551	34.821	1,605	C402_0350	MR160/	050 140	AW160/012
4.00	4,872	34.821	1,605	C402_0350	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
4.22	5,158	35.000	1,824	C502_0350	MR160/	050 140	AW160/012
5.79	7,086	35.000	1,824	C502_0350	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
7.37	8,714	33.797	3,605	C712_0340	MR200/	180	AW200/014
8.00	9,751	34.872	2,649	C612_0350	MR200/	180	AW200/014
9.45	11,515	34.872	2,649	C612_0350	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
9.98	12,239	35.065	3,649	C712_0350	MR200/	180	AW200/014
13.00	15,356	33.797	3,605	C712_0340	MR250/	180 210	AW250/102
14.45	17,716	35.065	3,649	C712_0350	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
15.85	18,615	33.585	4,905	C812_0340	MR250/	180 210	AW250/102
17.99	21,259	33.797	3,605	C712_0340	MR300/	180 210 250 280	AW300/110
19.95	24,641	35.333	4,989	C812_0350	MR250/	180 210	AW250/102
25.81	31,889	35.333	4,989	C812_0350	MR300/	180 210 250 280	AW300/110
28.20	33,114	33.585	4,905	C812_0340	MR300/	180 210 250 280	AW300/110
41.49	52,231	36.005	6,192	C912_0360	MR300/	180 210 250 280	AW300/110
42.22	53,148	36.005	6,192	C912_0360	MR350/	320 360	AW350/202

C
INLINE – Solid Shaft Output

C Series: INLINE – Solid Shaft Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾
45 RPM Output (Approximate)							
0.36	531	41.774	334	C002_0420	MR140/	050	AW140/010
0.73	1,063	41.567	597	C102_0420	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.24	1,772	40.850	733	C202_0410	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.14	3,100	41.354	990	C302_0410	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.84	4,141	41.751	1,705	C402_0420	MR160/	050 140	AW160/012
3.34	4,872	41.751	1,705	C402_0420	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
3.36	4,894	41.688	1,933	C502_0420	MR160/	050 140	AW160/012
4.86	7,086	41.688	1,933	C502_0420	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
5.47	7,530	39.396	2,759	C612_0390	MR200/	180	AW200/014
6.42	9,201	41.016	3,845	C712_0410	MR200/	180	AW200/014
7.85	10,812	39.396	2,759	C612_0390	MR250/	180 210	AW250/102
11.26	16,144	41.016	3,845	C712_0410	MR250	180 210	AW250/102
12.94	18,554	41.016	3,845	C712_0410	MR300/	180 210 250 280	AW300/110
14.04	19,603	39.938	5,197	C812_0400	MR250/	180 210	AW250/102
23.56	32,904	39.938	5,197	C812_0400	MR300/	180 210 250 280	AW300/110
28.20	38,747	39.298	6,375	C912_0390	MR300/	180 210 250 280	AW300/110

1) Overhung Load is measured at the center of the shaft extension.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

40 RPM Output (Approximate)

0.33	531	46.815	347	C002_0470	MR140/	050	AW140/010
0.65	1,063	46.909	621	C102_0470	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.08	1,772	46.822	767	C202_0470	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
1.90	3,100	46.667	1,031	C302_0470	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.84	4,629	46.667	1,770	C402_0470	MR160/	050 140	AW160/012
2.99	4,872	46.667	1,770	C402_0470	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
3.36	5,485	46.719	2,008	C502_0470	MR160/	050 140	AW160/012
4.34	7,086	46.719	2,008	C502_0470	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
6.42	10,169	45.333	2,891	C612_0450	MR200/	180	AW200/014
7.27	11,515	45.333	2,891	C612_0450	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
7.37	12,071	46.818	4,019	C712_0470	MR200/	180	AW200/014
10.82	17,716	46.818	4,019	C712_0470	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
15.85	25,241	45.538	5,429	C812_0460	MR250/	180 210	AW250/102
20.03	31,889	45.538	5,429	C812_0460	MR300/	180 210 250 280	AW300/110
33.29	53,148	45.655	6,702	C912_0460	MR300/	180 210 250 280	AW300/110

35 RPM Output (Approximate)

0.30	531	49.944	355	C002_0500	MR140/	050	AW140/010
0.61	1,063	49.944	635	C102_0500	MR140/	050	AW140/010
1.03	1,772	49.227	780	C202_0490	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.78	3,100	49.745	1,053	C302_0500	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.43	4,270	50.192	1,813	C402_0500	MR160/	050 140	AW160/012
2.78	4,872	50.192	1,813	C402_0500	MR200/	180	AW200/014
2.84	4,942	49.821	2,051	C502_0500	MR160/	050 140	AW160/012
4.07	7,086	49.821	2,051	C502_0500	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
6.54	11,105	49.277	2,973	C613_0490	MR200/	180	AW200/014
12.13	21,259	50.845	4,131	C713_0510	MR250/	180 210	AW250/102
15.22	25,789	49.176	5,570	C813_0490	MR250/	180 210	AW250/102

C
INLINE – Solid Shaft Output

C Series: INLINE – Solid Shaft Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

30 RPM Output (Approximate)

0.27	531	55.972	368	C002_0560	MR140/	050	AW140/010
0.54	1,063	56.364	661	C102_0560	MR140/	050	AW140/010
0.90	1,772	56.424	816	C202_0560	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.58	3,100	56.136	1,096	C302_0560	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.43	4,773	56.101	1,882	C402_0560	MR160/	050 140	AW160/012
2.48	4,872	56.101	1,882	C402_0560	MR200/	180	AW200/014
2.84	5,538	55.833	2,131	C502_0560	MR160/	050 140	AW160/012
3.63	7,086	55.833	2,131	C502_0560	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
5.47	10,534	55.111	3,086	C612_0550	MR200/	180	AW200/014
5.98	11,515	55.111	3,086	C612_0550	MR250/	180 210	AW250/102
6.42	12,746	56.818	4,286	C712_0570	MR200/	180	AW200/014
8.92	17,716	56.818	4,286	C712_0570	MR250/	180 210	AW250/102
					MR300/	180 210 250 280	AW300/110
14.04	26,581	54.154	5,752	C812_0540	MR250/	180 210	AW250/102
16.84	31,889	54.154	5,752	C812_0540	MR300/	180 210 250 280	AW300/110
27.23	53,148	55.833	7,167	C912_0560	MR300/	180 210 250 280	AW300/110

28 RPM Output (Approximate)

0.24	531	62.35	382	C002_0620	MR140/	050	AW140/010
0.48	1,054	62.431	684	C102_0620	MR140/	050	AW140/010
0.77	1,658	61.354	840	C202_0610	MR140/	050	AW140/010
1.35	2,932	61.920	1,133	C302_0620	MR160/	050 140	AW160/012
1.98	4,335	62.515	1,951	C402_0630	MR160/	050 140	AW160/012
2.03	4,440	62.515	1,951	C402_0630	MR200/	180	AW200/014
2.32	5,054	62.431	2,212	C502_0620	MR160/	050 140	AW160/012
2.90	6,325	62.431	2,212	C502_0620	MR200/	180	AW200/014
5.87	12,844	63.462	3,234	C613_0630	MR200/	180	AW200/014
9.56	21,259	64.547	4,473	C713_0650	MR250/	180 210	AW250/102
15.22	34,593	65.963	6,143	C813_0660	MR250/	180 210	AW250/102

1) Overhung Load is measured at the center of the shaft extension.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8
Shaft Ø						



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

25 RPM Output (Approximate)

0.22	531	69.875	397	C002_0700	MR140/	050	AW140/010
0.43	1,063	70.455	712	C102_0700	MR140/	050	AW140/010
0.72	1,772	70.324	879	C202_0700	MR140/	050	AW140/010
1.27	3,100	69.875	1,179	C302_0700	MR160/	050 140	AW160/012
1.98	4,845	69.875	2,025	C402_0700	MR160/	050 140	AW160/012
1.99	4,872	69.875	2,025	C402_0700	MR200/	180	AW200/014
2.32	5,664	69.965	2,297	C502_0700	MR160/	050 140	AW160/012
2.90	7,086	69.965	2,297	C502_0700	MR200/	180	AW200/014
4.44	10,686	68.889	3,324	C612_0690	MR200/	180	AW200/014
4.78	11,515	68.889	3,324	C612_0690	MR250/	180 210	AW250/102
5.47	13,293	69.545	4,585	C712_0700	MR200/	180	AW200/014
7.29	17,716	69.545	4,585	C712_0700	MR250/	180 210	AW250/102
11.26	27,115	68.889	6,233	C812_0690	MR250/	180 210	AW250/102
13.24	31,889	68.889	6,233	C812_0690	MR300/	180 210 250 280	AW300/110
20.18	49,367	69.965	7,727	C912_0700	MR300/	180 210 250 280	AW300/110

22 RPM Output (Approximate)

0.38	1,063	81.638	748	C103_0820	MR140/	050	AW140/010
0.64	1,772	80.618	920	C203_0810	MR140/	050	AW140/010
0.65	1,772	79.589	916	C203_0800	MR160/	050 140	AW160/012
1.11	3,100	81.467	1,241	C303_0810	MR140/	050	AW140/010
1.12	3,100	80.427	1,236	C303_0800	MR160/	050 140	AW160/012
1.75	4,872	80.810	2,125	C403_0810	MR160/	050 140	AW160/012
2.55	7,086	80.596	2,408	C503_0810	MR160/	050 140	AW160/012
3.10	8,085	75.814	3,432	C613_0760	MR160/	050 140	AW160/012
4.85	12,844	76.795	3,447	C613_0770	MR200/	180	AW200/014
6.54	17,879	79.339	6,533	C813_0790	MR200/	180	AW200/014
6.54	18,245	80.965	4,824	C713_0810	MR200/	180	AW200/014
7.74	21,259	79.734	4,799	C713_0800	MR250/	180 210	AW250/102
13.67	36,804	78.133	6,500	C813_0780	MR250/	180 210	AW250/102
15.22	40,763	77.728	8,003	C913_0780	MR250/	180 210	AW250/102

C

INLINE – Solid Shaft Output

C Series: INLINE – Solid Shaft Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

20 RPM Output (Approximate)

0.34	1,063	92.131	765	C103_0920	MR140/	050	AW140/010
0.56	1,772	92.404	945	C203_0920	MR140/	050	AW140/010
0.56	1,772	91.225	945	C203_0910	MR160/	050 140	AW160/012
0.98	3,100	91.933	1,271	C303_0920	MR140/	050	AW140/010
0.99	3,100	90.759	1,271	C303_0910	MR160/	050 140	AW160/012
1.57	4,872	90.323	2,183	C403_0900	MR160/	050 140	AW160/012
2.28	7,086	90.323	2,475	C503_0900	MR160/	050 140	AW160/012
3.34	10,101	87.644	3,600	C613_0880	MR160/	050 140	AW160/012
3.76	11,515	88.778	3,600	C613_0890	MR200/	180	AW200/014
5.75	17,716	89.416	4,950	C713_0890	MR250/	180 210	AW250/102
6.54	20,466	90.821	6,750	C813_0910	MR200/	180	AW200/014
10.35	31,889	89.441	6,750	C813_0890	MR250/	180 210	AW250/102
15.22	47,314	90.219	8,325	C913_0900	MR250/	180 210	AW250/102

18 RPM Output (Approximate)

3.82	12,844	97.634	3,600	C613_0980	MR200/	180	AW200/014
5.80	19,811	99.141	4,950	C713_0990	MR200/	180	AW200/014
6.32	21,259	97.634	4,950	C713_0980	MR250/	180 210	AW250/102
10.74	37,204	100.511	6,750	C813_1010	MR250/	180 210	AW250/102

16 RPM Output (Approximate)

0.28	1,063	111.091	765	C103_1110	MR140/	050	AW140/010
0.47	1,772	110.619	945	C203_1110	MR140/	050	AW140/010
0.47	1,772	109.206	945	C203_1090	MR160/	050 140	AW160/012
0.82	3,100	109.612	1,271	C303_1100	MR140/	050	AW140/010
0.83	3,100	108.213	1,271	C303_1080	MR160/	050 140	AW160/012
1.31	4,872	107.714	2,183	C403_1080	MR160/	050 140	AW160/012
1.89	7,086	108.649	2,475	C503_1090	MR160/	050 140	AW160/012
3.10	11,310	106.057	3,600	C613_1060	MR160/	050 140	AW160/012
3.11	11,515	107.429	3,600	C613_1070	MR200/	180	AW200/014
4.66	17,716	110.455	4,950	C713_1100	MR250/	180 210	AW250/102
6.54	24,243	107.578	6,750	C813_1080	MR200/	180	AW200/014
8.74	31,889	105.943	6,750	C813_1060	MR250/	180 210	AW250/102
13.97	53,148	110.434	8,325	C913_1100	MR250/	180 210	AW250/102

1) Overhung Load is measured at the center of the shaft extension.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

13 RPM Output (Approximate)

0.22	1,063	137.338	765	C103_1370	MR140/	050	AW140/010
0.37	1,772	137.786	945	C203_1380	MR140/	050	AW140/010
0.38	1,772	136.027	945	C203_1360	MR160/	050 140	AW160/012
0.66	3,100	137.192	1,271	C303_1370	MR140/	050	AW140/010
0.66	3,100	135.441	1,271	C303_1350	MR160/	050 140	AW160/012
1.05	4,872	134.643	2,183	C403_1350	MR160/	050 140	AW160/012
1.52	7,086	135.333	2,475	C503_1350	MR160/	050 140	AW160/012
2.45	11,515	136.581	3,600	C613_1370	MR200/	180	AW200/014
2.48	11,515	134.838	3,600	C613_1350	MR160/	050 140	AW160/012
2.94	12,844	126.924	3,600	C613_1270	MR200/	180	AW200/014
3.74	17,716	137.338	4,950	C713_1370	MR200/	180	AW200/014
3.80	17,716	135.25	4,950	C713_1350	MR250/	180 210	AW250/102
4.59	20,942	132.371	4,950	C713_1320	MR200/	180	AW200/014
4.73	21,259	130.359	4,950	C713_1300	MR250/	180 210	AW250/102
6.54	31,186	138.389	6,750	C813_1380	MR200/	180	AW200/014
6.79	31,889	136.286	6,750	C813_1360	MR250/	180 210	AW250/102
8.33	37,204	129.541	6,750	C813_1300	MR250/	180 210	AW250/102
11.11	53,148	138.876	8,325	C913_1390	MR250/	180 210	AW250/102

10 RPM Output (Approximate)

1.88	11,515	177.556	3,600	C613_1780	MR200/	180	AW200/014
1.91	11,515	175.289	3,600	C613_1750	MR160/	050 140	AW160/012
5.19	31,889	178.359	6,750	C813_1780	MR200/	180	AW200/014
5.27	31,889	175.648	6,750	C813_1760	MR250/	180 210	AW250/102
8.76	53,148	176.097	8,325	C913_1760	MR250/	180 210	AW250/102

9.5 RPM Output (Approximate)

0.17	1,063	183.727	765	C103_1840	MR140/	050	AW140/010
0.28	1,772	183.387	945	C203_1830	MR140/	050	AW140/010
0.28	1,772	181.046	945	C203_1810	MR160/	050 140	AW160/012
0.49	3,100	182.778	1,271	C303_1830	MR140/	050	AW140/010
0.50	3,100	180.444	1,271	C303_1800	MR160/	050 140	AW160/012
0.78	4,872	180.444	2,183	C403_1800	MR160/	050 140	AW160/012
1.14	7,086	180.646	2,475	C503_1810	MR160/	050 140	AW160/012
2.80	17,716	183.371	4,950	C713_1830	MR200/	180	AW200/014
2.85	17,716	180.584	4,950	C713_1810	MR250/	180 210	AW250/102

C Series: INLINE – Solid Shaft Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Optional Input Shaft ³⁾

8 RPM Output (Approximate)

0.14	1,063	220.758	765	C103_2210	MR140/	050	AW140/010
0.23	1,772	220.995	945	C203_2210	MR140/	050	AW140/010
0.41	3,100	219.867	1,271	C303_2200	MR140/	050	AW140/010
0.41	3,100	217.061	1,271	C303_2170	MR160/	050 140	AW160/012
0.65	4,872	216.925	2,183	C403_2170	MR160/	050 140	AW160/012
0.95	7,086	215.889	2,475	C503_2160	MR160/	050 140	AW160/012
1.57	11,515	213.096	3,600	C613_2130	MR160/	050 140	AW160/012
2.31	17,716	222.538	4,950	C713_2230	MR200/	050 140	AW200/014
2.35	17,716	219.156	4,950	C713_2190	MR250/	180 210	AW250/102
4.36	31,889	212.103	6,750	C813_2120	MR200/	180	AW200/014
4.43	31,889	208.879	6,750	C813_2090	MR250/	180 210	AW250/102
7.16	53,148	215.357	8,325	C913_2150	MR250/	180 210	AW250/102

6 RPM Output (Approximate)

0.11	1,063	275.947	765	C103_2760	MR140/	050	AW140/010
0.19	1,772	275.436	945	C203_2750	MR140/	050	AW140/010
0.33	3,100	273.677	1,271	C303_2740	MR140/	050	AW140/010
0.52	4,872	270.183	2,183	C403_2700	MR160/	050 140	AW160/012
0.76	7,086	270.532	2,475	C503_2710	MR160/	050 140	AW160/012
1.26	11,515	266.37	3,600	C613_2660	MR160/	050 140	AW160/012
3.43	31,889	269.815	6,750	C813_2700	MR200/	180	AW200/014
3.48	31,889	265.714	6,750	C813_2660	MR250/	180 210	AW250/102

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

1) Overhung Load is measured at the center of the shaft extension.

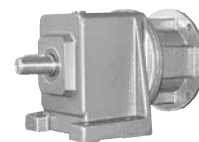
2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102	110	202
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8	2-1/8

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes



Dimensional Data

Optional Output Flanges

For “F” Round Output Flange Units Only

(Note: optional flanges are not available on all sizes)

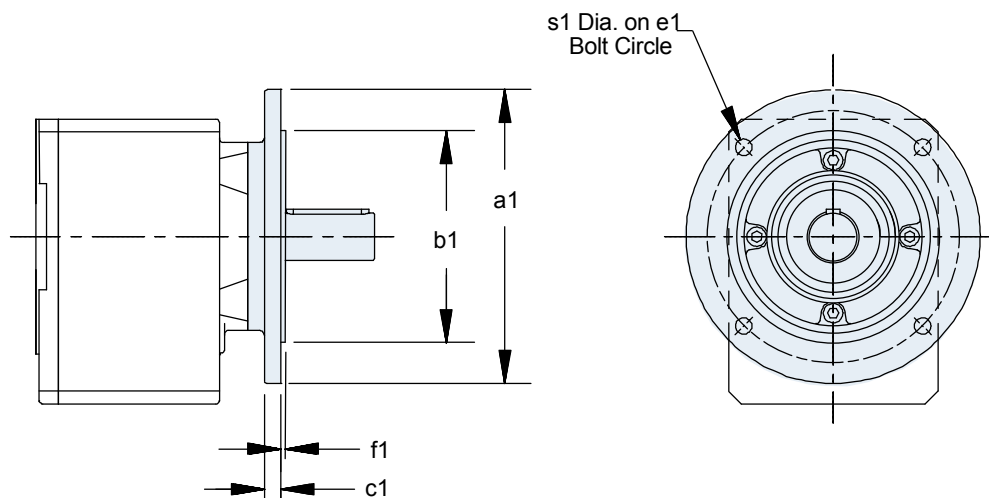


Table 1 Flange Dimensions (Inches) – Standard and Optional

Base Module	Flange Size	a1	b1	c1	e1	f1	s1
C0	120	4.724	3.150				0.28
	140	5.512	3.740	+0.001/-0.0004	0.39	0.12	0.35
	160*	6.300	4.331		5.12		0.35
C1	140	5.512	3.740		0.32		0.35
	160	6.300	4.331	+0.001/-0.0004	0.39	0.14	0.35
	200*	7.874	5.118		0.47		0.43
C2	160	6.300	4.331		0.39	0.14	0.35
	200*	7.874	5.118	+0.001/-0.0004	0.47	0.14	0.43
	250	9.843	7.087		0.47	0.16	0.55
C3	160	6.300	4.331		0.39	0.14	0.35
	200	7.874	5.118	+0.001/-0.0004	0.47	0.14	0.43
	250*	9.843	7.087		0.47	0.16	0.55
C4	200	7.874	5.118	+0.001/-0.0004			0.43
	250*	9.843	7.087	+0.001/-0.0004	0.55	0.16	0.55
	300	11.811	9.055	+0.001/-0.001			0.55
C5	250	9.843	7.087	+0.001/-0.0004	0.55		0.55
	300*	11.811	9.055	+0.001/-0.001	0.63	0.16	
C6	300*	11.811	9.055	+0.001/-0.001	0.67	0.16	0.55
C7	350*	13.780	9.842	+0.000/-0.001	0.71	0.20	0.71
C8	350	13.780	9.842		0.71		
	400*	15.748	11.811	+0.000/-0.001	0.79	0.20	0.71
	450	17.717	13.780		0.79		
C9	450*	17.717	13.780	+0.000/-0.001	0.91	0.20	0.71

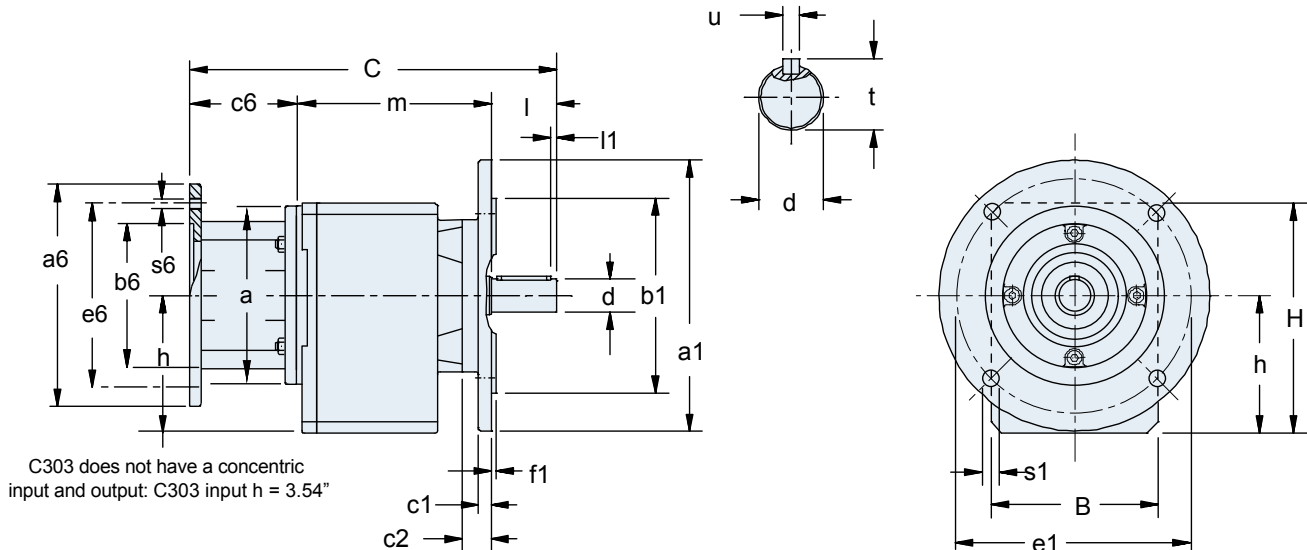
* This is the standard flange and will be shipped unless otherwise specified. Optional flanges are not available for all sizes.

Please contact STOBBER for ordering assistance.

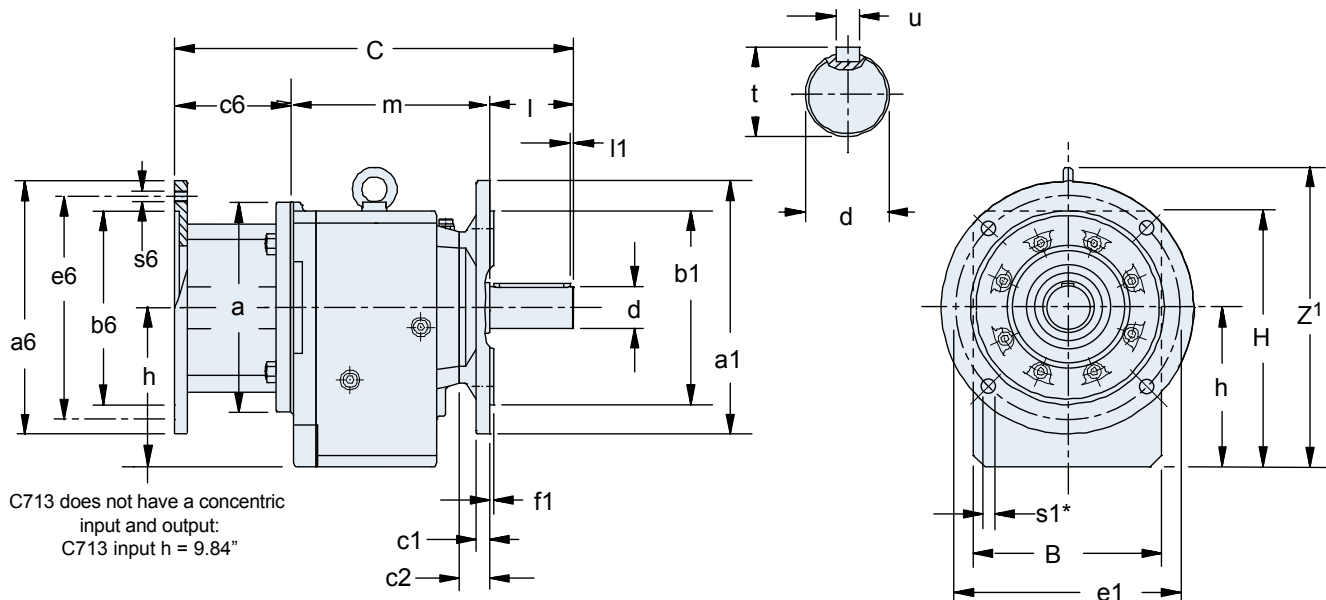
“F” Round Output Flange —

C002F thru C503F

Optional Output Flanges available on most models, see page 119 for details.



C612F thru C913F



* NOTE: Instead of 4 holes as shown in the drawing, the C912 and C913 output flange has 8 $\varnothing$ "s1" mounting holes on "e1" bolt circle (located 22.5° from horizontal).



Dimensional Data

Table 1 C Series Unit Dimensions (Inches) – “F” Round Flange Housing

Base Module	a1*	B	b1	c1	c2	e1	f1	H	h	l	l1	s1	z ¹
C0	6.30	3.82	4.331	0.39	0.71	5.12	0.12	5.55	3.11	1.57	0.16	0.35	—
C1	7.87	5.12	5.118	0.47	0.83	6.50	0.14	6.89	3.94	1.97	0.16	0.43	—
C2	7.87	5.59	5.118	0.47	1.06	6.50	0.14	7.56	4.41	2.36	0.16	0.43	—
C3	9.84	6.06	7.087	0.47	1.06	8.46	0.16	8.35	5.00 ¹⁾	2.36	0.16	0.55	—
C4	9.84	7.01	7.087	0.55	1.10	8.46	0.16	9.55	5.61	3.15	0.16	0.55	—
C5	11.81	7.68	9.055	0.63	1.14	10.43	0.16	11.26	6.54	3.15	0.16	0.55	—
C6	11.81	8.86	9.055	0.67	1.42	10.43	0.16	11.97	7.44	3.94	0.20	0.55	14.01
C7	13.78	10.43	9.842	0.71	1.73	11.81	0.20	14.61	9.09 ¹⁾	4.72	0.20	0.71	17.00
C8	15.75	12.20	11.811	0.79	1.77	13.78	0.20	17.52	11.22	5.51	0.39	0.71	19.92
C9	17.72	14.37	13.780	0.91	1.97	15.75 ²⁾	0.20	20.63	13.15	6.69	0.39	0.71 ²⁾	23.39

* See page 119 for other available output flanges.

1) C303 and C713 do not have a concentric input and output. Refer to the h input height dimension on the drawing for these units.

2) C912 and C913 have 8 mounting holes in the output flange instead of 4 as shown in the drawing.

Table 2 C Series — Shaft Output (Carbon Steel)

(see page 88 for standard SS, and other optional outputs)

Base Module	Standard Shaft - inches			Optional Shaft - mm		
	d	t	u	d	t	u
C0	3/4	0.83	3/16x3/16x1-7/32	20k6	22.5	A6x6x32
C1	1	1.11	1/4x1/4x1-9/16	25k6	28	A8x7x40
C2	1-1/4	1.36	1/4x1/4x1-15/16	30k6	33	A8x7x50
C3	1-1/4	1.36	1/4x1/4x1-15/16	30k6	33	A8x7x50
C4	1-5/8	1.79	3/8x3/8x2-7/8	40k6	43	A12x8x70
C5	1-5/8	1.79	3/8x3/8x2-7/8	40k6	43	A12x8x70
C6	2-1/8	2.35	1/2x1/2x3-5/32	50k6	53.5	A14x9x90
C7	2-3/8	2.65	5/8x5/8x3-15/16	60m6	64	A18x11x100
C8	2-7/8	3.21	3/4x3/4x4-5/16	70m6	74.5	A20x12x125
C9	3-5/8	4.01	7/8x7/8x5-1/2	90m6	95	A25x14x140

Table 3 Motor Adapter Dimensions (Inches)

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs.
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR200/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/180	213/215TC	11.81	9.00	8.500	6.50	7.25	0.57	75
MR250/210	213/215TC		9.00	8.500		7.25		
MR300/180	182/184TC		9.00	8.500		7.25		
MR300/210	213/215TC		9.00	8.500		7.25		
MR300/250	254/256TC	13.78	11.13	10.500	7.09	9.00	0.70	133
MR300/280	284/286TC		11.13	10.500		9.00		
MR350/320	324/326TC	13.78	13.37	12.500	7.09	11.00	0.70	133
MR350/360	364/365TC	13.78	13.37	12.500	7.09	11.00	0.70	133

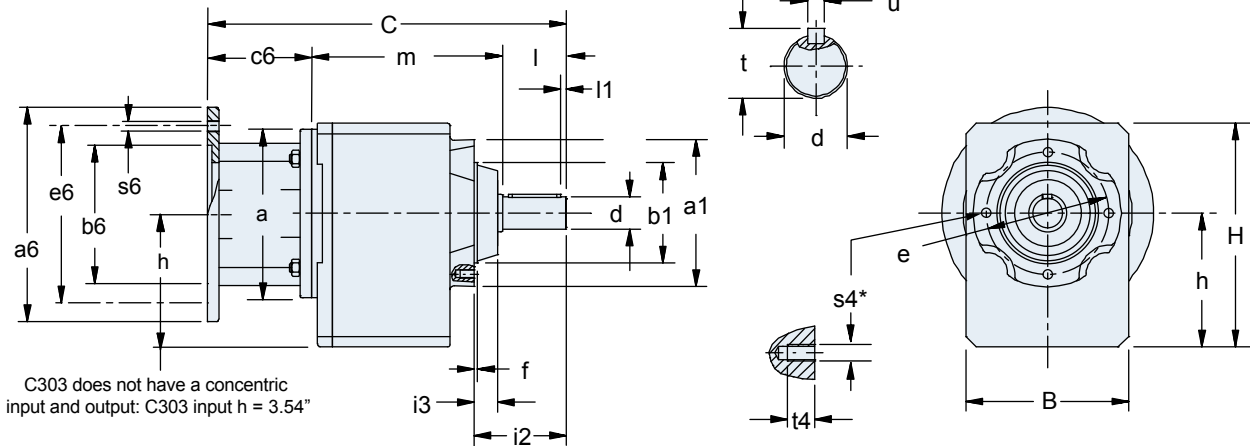
Table 4 C Series Unit Dimensions (Inches) – “MR” Motor Adapter

Base Module	MR140/050			MR160/050 MR160/140			MR200/180			MR250/180 MR250/210			MR300/180 MR300/210 MR300/250 MR300/280			MR350/320 MR350/360			Approx. Wt. lbs.
	C	I	m	C	I	m	C	I	m	C	I	m	C	I	m	C	I	m	
C002	9.37	1.57	4.49	10.08	1.57	4.65	—	—	—	—	—	—	—	—	—	—	—	—	18
C102	10.67	1.97	5.39	11.38	1.97	5.55	12.40	1.97	5.63	—	—	—	—	—	—	—	—	—	29
C103	12.13	1.97	6.85	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	34
C202	11.77	2.36	6.10	12.48	2.36	6.26	13.50	2.36	6.34	—	—	—	—	—	—	—	—	—	38
C203	13.23	2.36	7.56	14.17	2.36	7.95	—	—	—	—	—	—	—	—	—	—	—	—	45
C302	—	—	—	13.23	2.36	7.01	14.25	2.36	7.09	14.88	2.36	7.21	—	—	—	—	—	—	49
C303	13.98	2.36	8.31	14.92	2.36	8.70	—	—	—	—	—	—	—	—	—	—	—	—	56
C402	—	—	—	15.12	3.15	8.11	16.14	3.15	8.19	16.77	3.15	8.31	—	—	—	—	—	—	71
C403	—	—	—	16.81	3.15	9.80	—	—	—	—	—	—	—	—	—	—	—	—	78
C502	—	—	—	15.95	3.15	8.94	16.97	3.15	9.02	17.59	3.15	9.13	19.33	3.15	9.68	—	—	—	95
C503	—	—	—	17.64	3.15	10.63	—	—	—	—	—	—	—	—	—	—	—	—	111
C612	—	—	—	—	—	—	17.91	3.94	9.17	18.54	3.94	9.29	20.24	3.94	9.80	—	—	—	115
C613	—	—	—	18.62	3.94	10.82	20.35	3.94	11.61	—	—	—	—	—	—	—	—	—	159
C712	—	—	—	—	—	—	20.00	4.72	10.48	20.59	4.72	10.56	22.29	4.72	11.07	—	—	—	199
C713	—	—	—	—	—	—	22.40	4.72	12.88	23.38	4.72	13.35	—	—	—	—	—	—	221
C812	—	—	—	—	—	—	—	—	—	23.22	5.51	12.40	24.53	5.51	12.52	26.42	5.51	13.82	322
C813	—	—	—	—	—	—	25.04	5.51	14.73	26.02	5.51	15.20	—	—	—	—	—	—	342
C912	—	—	—	—	—	—	—	—	—	—	—	—	27.56	6.69	14.37	29.06	6.69	15.28	596
C913	—	—	—	—	—	—	—	—	—	27.87	6.69	15.87	—	—	—	—	—	—	678

INLINE – Solid Shaft Output

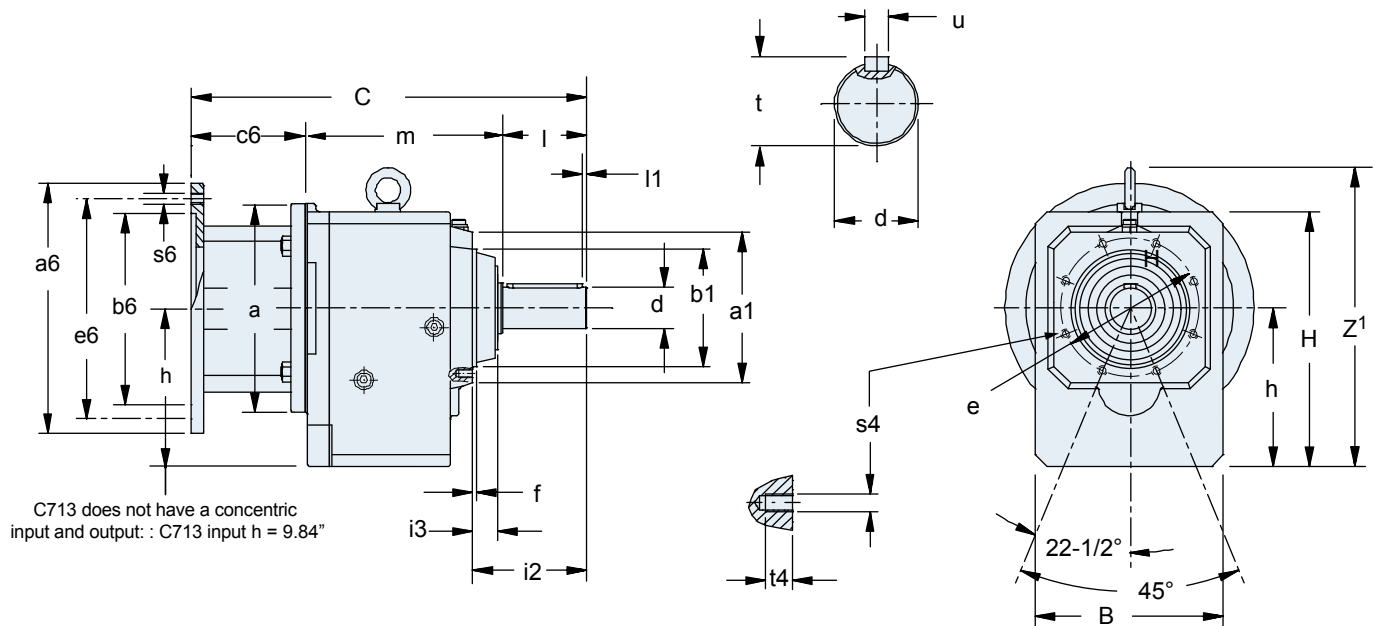
“G” Tapped Holes Around Output —

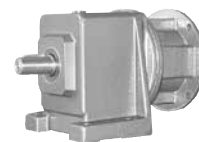
C002G thru C503G



† NOTE: Instead of 4 holes as shown in the drawing, the C502/C503 has 8 holes located as shown in drawing below for C612G – C913G.

C612G thru C913G





Dimensional Data

Table 1 C Series Unit Dimensions (Inches) – “G” Tapped Holes Housing

Base Module	a1	B	b1	e	f	H	h	i2	i3	l	l1	t4	s4	Z1
C0	3.43	3.82	2.165	2.95	0.12	5.55	3.11	2.28	0.55	1.57	0.16	0.39	M6x1	—
C1	4.72	5.12	3.150	3.94	0.12	6.89	3.94	2.80	0.67	1.97	0.16	0.51	M6x1	—
C2	5.51	5.59	3.740	4.53	0.12	7.56	4.41	3.43	0.87	2.36	0.16	0.51	M8x1.25	—
C3	5.51	6.06	3.740	4.53	0.12	8.35	5.00 ¹⁾	3.43	0.87	2.36	0.16	0.51	M8x1.25	—
C4	6.30	7.01	4.331	5.12	0.14	9.55	5.61	4.25	0.87	3.15	0.16	0.63	M10x1.5	—
C5	7.56	7.68	5.118	6.50 ²⁾	0.14	11.26	6.54	4.29	0.91	3.15	0.16	0.63	M10x1.5	—
C6	7.09	8.86	5.512	6.50	0.20	11.97	7.44	5.35	1.18	3.94	0.20	0.63	M10x1.5	14.01
C7	7.68	10.43	6.102	7.28	0.31	14.61	9.09 ¹⁾	6.46	1.46	4.72	0.20	0.75	M12x1.75	17.00
C8	8.90	12.20	7.283	8.46	0.20	17.52	11.22	7.28	1.46	5.51	0.39	0.75	M12x1.75	19.92
C9	11.02	14.37	9.055	10.43	0.20	20.63	13.15	8.66	1.65	6.69	0.39	1.02	M16x2	23.39

1) C303 and C713 do not have a concentric input and output. Refer to the h input height dimension on the drawing for these units.

2) C502 and C503 have 8 mounting holes in the output flange instead of 4 as shown in the drawing.

Table 2 C Series — Shaft Output (Carbon Steel)

(see page 88 for standard SS, and other optional outputs)

Base Module	Standard Shaft - inches			Optional Shaft - mm		
	d	t	u	d	t	u
C0	3/4	0.83	3/16x3/16x1-7/32	20k6	22.5	A6x6x32
C1	1	1.11	1/4x1/4x1-9/16	25k6	28	A8x7x40
C2	1-1/4	1.36	1/4x1/4x1-15/16	30k6	33	A8x7x50
C3	1-1/4	1.36	1/4x1/4x1-15/16	30k6	33	A8x7x50
C4	1-5/8	1.79	3/8x3/8x2-7/8	40k6	43	A12x8x70
C5	1-5/8	1.79	3/8x3/8x2-7/8	40k6	43	A12x8x70
C6	2-1/8	2.35	1/2x1/2x3-5/32	50k6	53.5	A14x9x90
C7	2-3/8	2.65	5/8x5/8x3-15/16	60m6	64	A18x11x100
C8	2-7/8	3.21	3/4x3/4x4-5/16	70m6	74.5	A20x12x125
C9	3-5/8	4.01	7/8x7/8x5-1/2	90m6	95	A25x14x140

Table 3 Motor Adapter Dimensions (Inches)

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs.
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR200/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/180	213/215TC	11.81	9.00	8.500	6.50	7.25	0.57	75
MR250/210	213/215TC		9.00	8.500		7.25		
MR300/180	182/184TC		9.00	8.500		7.25		
MR300/210	213/215TC		9.00	8.500		7.25		
MR300/250	254/256TC	13.78	11.13	10.500	7.09	9.00	0.70	133
MR300/280	284/286TC		11.13	10.500		9.00		
MR350/320	324/326TC		13.37	12.500		11.00		
MR350/360	364/365TC							

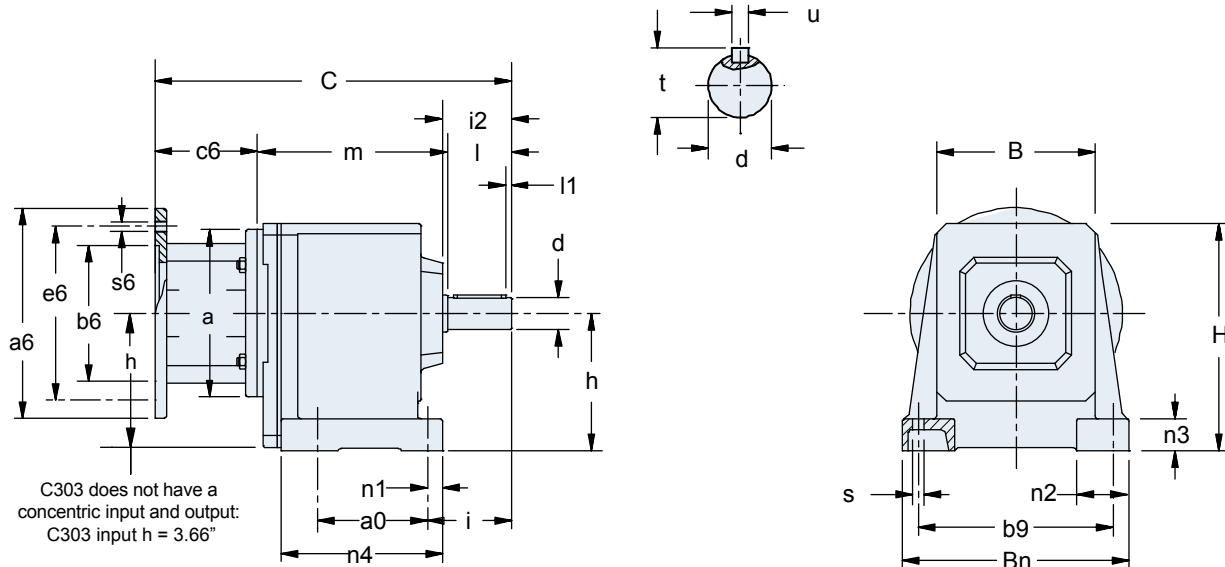
Table 4 C Series Unit Dimensions (Inches) – “MR” Motor Adapter

Base Module	MR140/050			MR160/050 MR160/140			MR200/180			MR250/180 MR250/210			MR300/180 MR300/210 MR300/250 MR300/280			MR350/320 MR350/360			Approx. Wt. lbs.
	C	I	m	C	I	m	C	I	m	C	I	m	C	I	m	C	I	m	
C002	9.37	1.57	4.49	10.08	1.57	4.65	—	—	—	—	—	—	—	—	—	—	—	—	18
C102	10.67	1.97	5.39	11.38	1.97	5.55	12.40	1.97	5.63	—	—	—	—	—	—	—	—	—	29
C103	12.13	1.97	6.85	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	34
C202	11.77	2.36	6.10	12.48	2.36	6.26	13.50	2.36	6.34	—	—	—	—	—	—	—	—	—	38
C203	13.23	2.36	7.56	14.17	2.36	7.95	—	—	—	—	—	—	—	—	—	—	—	—	45
C302	—	—	—	13.23	2.36	7.01	14.25	2.36	7.09	14.88	2.36	7.21	—	—	—	—	—	—	49
C303	13.98	2.36	8.31	14.92	2.36	8.70	—	—	—	—	—	—	—	—	—	—	—	—	56
C402	—	—	—	15.12	3.15	8.11	16.14	3.15	8.19	16.77	3.15	8.31	—	—	—	—	—	—	71
C403	—	—	—	16.81	3.15	9.80	—	—	—	—	—	—	—	—	—	—	—	—	78
C502	—	—	—	15.95	3.15	8.94	16.97	3.15	9.02	17.59	3.15	9.13	19.33	3.15	9.68	—	—	—	95
C503	—	—	—	17.64	3.15	10.63	—	—	—	—	—	—	—	—	—	—	—	—	111
C612	—	—	—	—	—	—	17.91	3.94	9.17	18.54	3.94	9.29	20.24	3.94	9.80	—	—	—	115
C613	—	—	—	18.62	3.94	10.82	20.35	3.94	11.61	—	—	—	—	—	—	—	—	—	159
C712	—	—	—	—	—	—	20.00	4.72	10.48	20.59	4.72	10.56	22.29	4.72	11.07	—	—	—	199
C713	—	—	—	—	—	—	22.40	4.72	12.88	23.38	4.72	13.35	—	—	—	—	—	—	221
C812	—	—	—	—	—	—	—	—	—	23.22	5.51	12.40	24.53	5.51	12.52	26.42	5.51	13.82	322
C813	—	—	—	—	—	—	25.04	5.51	14.73	26.02	5.51	15.20	—	—	—	—	—	—	342
C912	—	—	—	—	—	—	—	—	—	—	—	—	27.56	6.69	14.37	29.06	6.69	15.28	596
C913	—	—	—	—	—	—	—	—	—	27.87	6.69	15.87	—	—	—	—	—	—	678

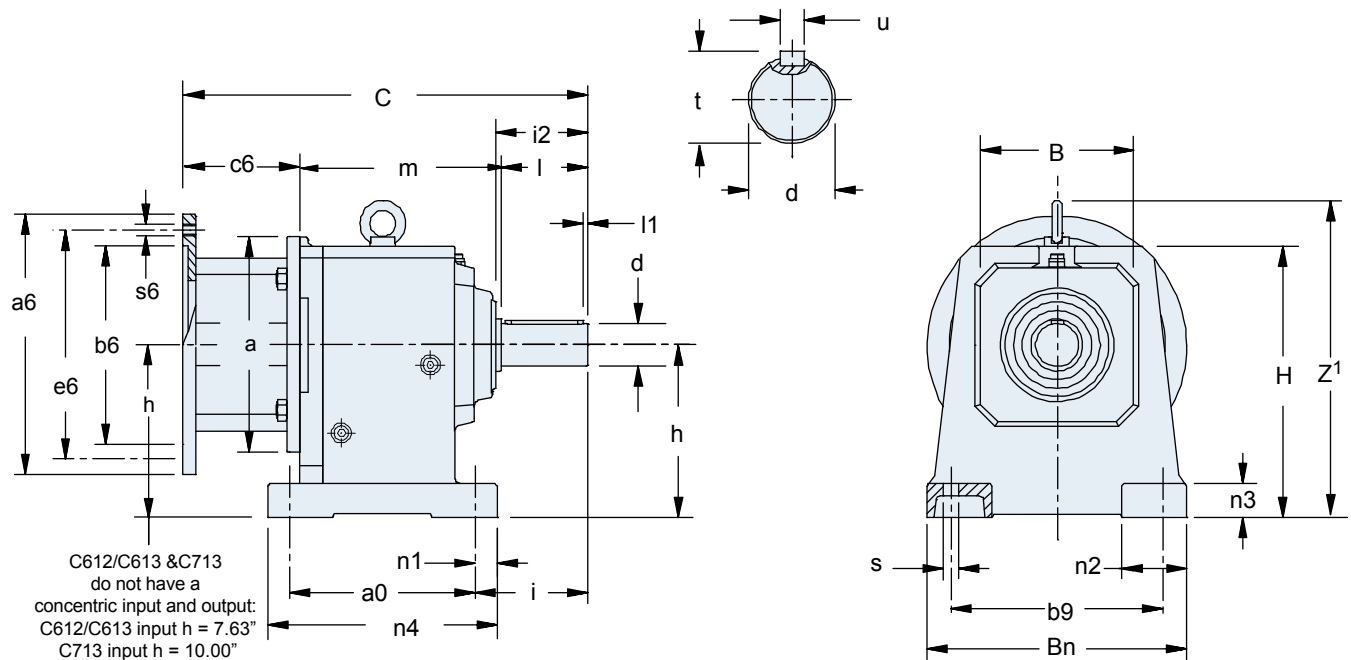
C
INLINE – Solid Shaft Output

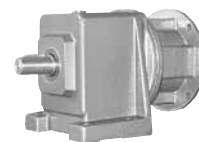
“N” Foot Mount —

C002N thru C503N



C612N thru C913N





Dimensional Data

Table 1 C Series Unit Dimensions (Inches) – “N” Foot Mount Housing

Base Module	a0	B	Bn	b9	H	h	i	i2	l	l1	n1	n2	n3	n4	s	Z1
C0	2.44	3.62	5.20	4.33	5.67	3.23	2.17	1.73	1.57	0.16	0.43	1.38	0.79	3.74	0.28	—
C1	2.76	4.88	6.93	5.91	6.97	4.02	2.64	2.13	1.97	0.16	0.51	1.65	0.98	4.65	0.35	—
C2	3.35	5.43	7.87	6.69	7.68	4.53	3.11	2.56	2.36	0.16	0.55	1.97	1.18	5.31	0.43	—
C3	4.13	5.91	8.46	7.28	8.46	5.12 ¹⁾	3.11	2.56	2.36	0.16	0.55	1.97	1.18	6.06	0.43	—
C4	4.33	6.89	10.04	8.66	9.65	5.71	4.13	3.39	3.15	0.16	0.75	2.36	1.38	7.09	0.55	—
C5	5.12	7.56	11.42	9.65	11.42	6.69	4.25	3.39	3.15	0.16	0.87	2.76	1.57	7.76	0.71	—
C6	8.46	6.97	11.81	9.65	12.40	7.87 ¹⁾	5.12	4.17	3.94	0.20	0.98	2.95	1.57	10.43	0.71	14.44
C7	9.25	7.56	14.37	11.81	14.76	9.25 ¹⁾	6.42	5.00	4.72	0.20	0.98	3.54	1.97	11.22	0.71	17.16
C8	11.81	8.78	17.13	13.39	17.72	11.42	7.48	5.83	5.51	0.39	1.14	3.74	2.17	14.17	0.87	20.12
C9	13.39	10.91	20.08	15.75	20.87	13.39	8.74	7.01	6.69	0.39	1.34	4.33	2.36	16.14	1.02	23.63

1) C303, C612/C613 and C713 do not have a concentric input and output. Refer to the h input height dimension on the drawing for these units.

Table 2 C Series — Shaft Output (Carbon Steel)

(see page 88 for standard SS, and other optional outputs)

Base Module	Standard Shaft - inches			Optional Shaft - mm		
	d	t	u	d	t	u
C0	3/4	0.83	3/16x3/16x1-7/32	20k6	22.5	A6x6x32
C1	1	1.11	1/4x1/4x1-9/16	25k6	28	A8x7x40
C2	1-1/4	1.36	1/4x1/4x1-15/16	30k6	33	A8x7x50
C3	1-1/4	1.36	1/4x1/4x1-15/16	30k6	33	A8x7x50
C4	1-5/8	1.79	3/8x3/8x2-7/8	40k6	43	A12x8x70
C5	1-5/8	1.79	3/8x3/8x2-7/8	40k6	43	A12x8x70
C6	2-1/8	2.35	1/2x1/2x3-5/32	50k6	53.5	A14x9x90
C7	2-3/8	2.65	5/8x5/8x3-15/16	60m6	64	A18x11x100
C8	2-7/8	3.21	3/4x3/4x4-5/16	70m6	74.5	A20x12x125
C9	3-5/8	4.01	7/8x7/8x5-1/2	90m6	95	A25x14x140

Table 3 Motor Adapter Dimensions (Inches)

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs.
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR200/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/180	182/184TC	11.81	9.00	8.500	6.50	7.25	0.57	75
MR250/210	213/215TC		9.00	8.500		7.25		
MR300/180	182/184TC		9.00	8.500		7.25		
MR300/210	213/215TC	13.78	11.13	10.500	7.09	11.00	0.70	133
MR300/250	254/256TC		11.13	10.500		9.00		
MR300/280	284/286TC		13.37	12.500		11.00		
MR350/320	324/326TC							
MR350/360	364/365TC							

Table 4 C Series Unit Dimensions (Inches) – “MR” Motor Adapter

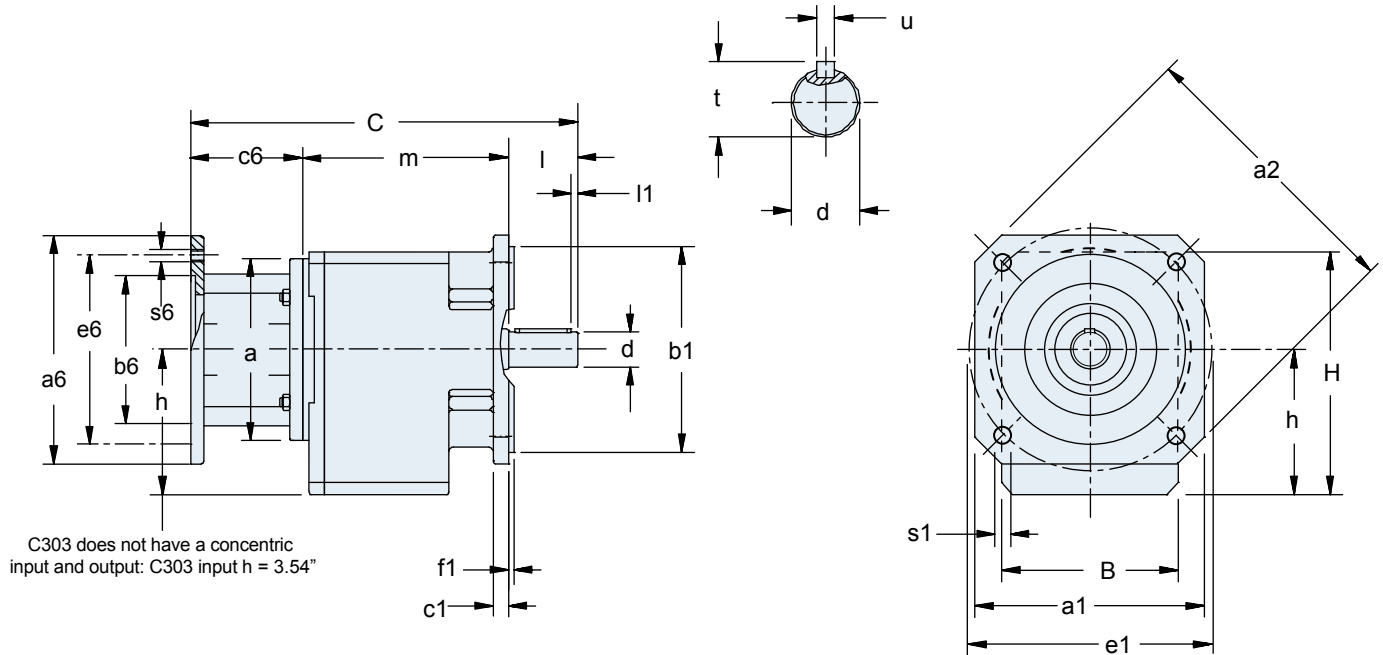
Base Module	MR140/050			MR160/050 MR160/140			MR200/180			MR250/180 MR250/210			MR300/180 MR300/210 MR300/250 MR300/280			MR350/320 MR350/360			Approx. Wt. lbs.
	C	I	m	C	I	m	C	I	m	C	I	m	C	I	m	C	I	m	
C002	9.37	1.57	4.49	10.08	1.57	4.65	—	—	—	—	—	—	—	—	—	—	—	—	18
C102	10.67	1.97	5.39	11.38	1.97	5.55	12.40	1.97	5.63	—	—	—	—	—	—	—	—	—	29
C103	12.13	1.97	6.85	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	34
C202	11.77	2.36	6.10	12.48	2.36	6.26	13.50	2.36	6.34	—	—	—	—	—	—	—	—	—	38
C203	13.23	2.36	7.56	14.17	2.36	7.95	—	—	—	—	—	—	—	—	—	—	—	—	45
C302	—	—	—	13.23	2.36	7.01	14.25	2.36	7.09	14.88	2.36	7.21	—	—	—	—	—	—	49
C303	13.98	2.36	8.31	14.92	2.36	8.70	—	—	—	—	—	—	—	—	—	—	—	—	56
C402	—	—	—	15.12	3.15	8.11	16.14	3.15	8.19	16.77	3.15	8.31	—	—	—	—	—	—	71
C403	—	—	—	16.81	3.15	9.80	—	—	—	—	—	—	—	—	—	—	—	—	78
C502	—	—	—	15.95	3.15	8.94	16.97	3.15	9.02	17.59	3.15	9.13	19.33	3.15	9.68	—	—	—	95
C503	—	—	—	17.64	3.15	10.63	—	—	—	—	—	—	—	—	—	—	—	—	111
C612	—	—	—	—	—	—	17.91	3.94	9.17	18.54	3.94	9.29	20.24	3.94	9.80	—	—	—	115
C613	—	—	—	18.62	3.94	10.82	20.35	3.94	11.61	—	—	—	—	—	—	—	—	—	159
C712	—	—	—	—	—	—	20.00	4.72	10.48	20.59	4.72	10.56	22.29	4.72	11.07	—	—	—	199
C713	—	—	—	—	—	—	22.40	4.72	12.88	23.38	4.72	13.35	—	—	—	—	—	—	221
C812	—	—	—	—	—	—	—	—	—	23.22	5.51	12.40	24.53	5.51	12.52	26.42	5.51	13.82	322
C813	—	—	—	—	—	—	25.04	5.51	14.73	26.02	5.51	15.20	—	—	—	—	—	—	342
C912	—	—	—	—	—	—	—	—	—	—	—	—	27.56	6.69	14.37	29.06	6.69	15.28	596
C913	—	—	—	—	—	—	—	—	—	27.87	6.69	15.87	—	—	—	—	—	—	678

C

INLINE – Solid Shaft Output

“Q” Square Output Flange

C002Q thru C403Q





Dimensional Data

Table 1 C Series Unit Dimensions (Inches) – “Q” Square Flange Housing

Base Module	a1	a2	B	b1	c1	e1	f1	H	h	l	l1	s1
C0	4.88	6.30	3.82	4.33	0.35	5.12	0.14	5.55	3.11	1.57	0.16	0.35
C1	5.71	7.56	5.12	5.12	0.43	6.50	0.14	6.89	3.94	1.97	0.16	0.43
C2	5.71	7.56	5.59	5.12	0.43	6.50	0.14	7.56	4.41	2.36	0.16	0.43
C3	7.87	9.84	6.06	7.09	0.55	8.46	0.16	8.35	5.00 ¹⁾	2.36	0.16	0.55
C4	7.87	9.84	7.01	7.09	0.55	8.46	0.16	9.55	5.61	3.15	0.16	0.55

1) C303 does not have a concentric input and output. Refer to the h input height dimension on the drawing for these units.

Table 2 C Series — Shaft Output (Carbon Steel)

(see page 88 for standard SS, and other optional outputs)

Base Module	Standard Shaft - inches			Optional Shaft - mm		
	d	t	u	d	t	u
C0	3/4	0.83	3/16x3/16x1-7/32	20k6	22.5	A6x6x32
C1	1	1.11	1/4x1/4x1-9/16	25k6	28	A8x7x40
C2	1-1/4	1.36	1/4x1/4x1-15/16	30k6	33	A8x7x50
C3	1-1/4	1.36	1/4x1/4x1-15/16	30k6	33	A8x7x50
C4	1-5/8	1.79	3/8x3/8x2-7/8	40k6	43	A12x8x70

Table 3 Motor Adapter Dimensions (Inches)

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs.
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR200/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/180	213/215TC							
MR250/210								

Table 4 C Series Unit Dimensions (Inches) – “MR” Motor Adapter

Base Module	MR140/050			MR160/050 MR160/140			MR200/180			MR250/180 MR250/210			Approx. Wt. lbs.
	C	l	m	C	l	m	C	l	m	C	l	m	
C002	9.37	1.57	4.49	10.08	1.57	4.65	—	—	—	—	—	—	18
C102	10.67	1.97	5.39	11.38	1.97	5.55	12.40	1.97	5.63	—	—	—	29
C103	12.13	1.97	6.85	—	—	—	—	—	—	—	—	—	34
C202	11.77	2.36	6.10	12.48	2.36	6.26	13.50	2.36	6.34	—	—	—	38
C203	13.23	2.36	7.56	14.17	2.36	7.95	—	—	—	—	—	—	45
C302	—	—	—	13.23	2.36	7.01	14.25	2.36	7.09	14.88	2.36	7.21	49
C303	13.98	2.36	8.31	14.92	2.36	8.70	—	—	—	—	—	—	56
C402	—	—	—	15.12	3.15	8.11	16.14	3.15	8.19	16.77	3.15	8.31	71
C403	—	—	—	16.81	3.15	9.8	—	—	—	—	—	—	78

C

INLINE – Solid Shaft Output

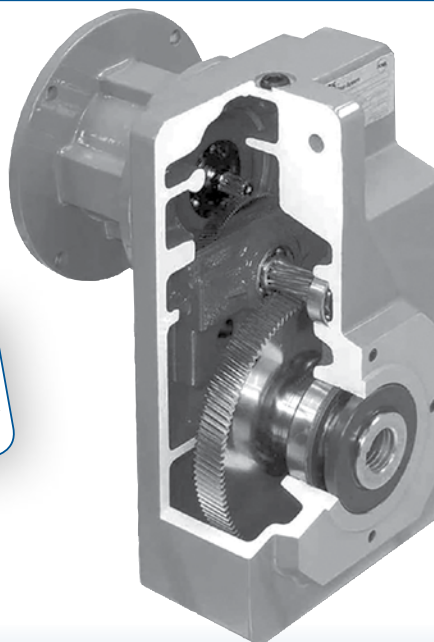
F Series: OFFSET – Solid Shaft/Hollow Output

Compact size and flexibility make these gear drives a popular choice for applications that require high performance, efficiency, and durability. F Series 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 installation costs today— and maintenance costs tomorrow.

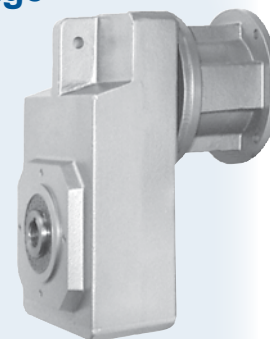
F Series Design Advantages

- 3 year standard warranty
- Up to 33 HP
- Standard output speeds available from 406 to 3 RPM; units can be combined to achieve slower speeds to meet your application needs
- Output torques to 9,743 in.lbs.
- Ratios of 4.3:1 to 552:1
- ≤11 arcmins backlash
- NEMA C-face for 56C thru 213/215TC
- Assembled in the U.S.A.
- One-piece precision machined housing
- 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
- 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
- Double lip seals keep oil in and contaminants out. Double seals available for severe duty applications
- Magnetic drain plugs to help remove particles from oil
- Shipped filled with Mobilgear 600XP220 (standard); Mobil SHC CIBUS 220 food grade oil or Mobil Synthetic Oil SHC630 (optional)
- Laser etched data on stainless steel nameplate

**SHIPS in
1 DAY!**
NO EXPEDITE FEE FOR
24 HOUR SERVICE



F Series Options for Food & Beverage



“F” Option for Food Duty Applications

- Totally enclosed unit — no breathers, maintenance free, lubricated for life
- Mobil SHC CIBUS 220 food grade oil
- Anti-microbial clear coat
- 316 stainless steel epoxy coating
- Stainless steel shaft, hollow bore or double bushing output
- USDA Accepted Equipment



“B” Option for Beverage Duty Applications

- Totally enclosed unit — no breathers, maintenance free, lubricated for life
- Mobil 600XP220 mineral oil
- 316 stainless steel epoxy coating
- Stainless steel shaft, hollow bore or double bushing output

Other F Series Design Options Available:

- BISC white epoxy coating
- Plated or stainless steel hardware
- IP69K certified



Overview

F Ordering Options At-a-Glance

F Series are available in a wide range of user-selected design options that tailor the speed reducer to your motor and exact application requirements. Use the appropriate order codes below to build a part number for the complete gearhead assembly.

Part Number Examples:

	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪*
Standard duty	F	2	0	2	A	G	0043	MR140/	050		EL1
Food duty	F	2	0	2	A	G	0043	MR140/	050	F	EL1

Design Option	Part Number Code	Description
① Series	F	Offset helical (output is offset from input; gears are all helical)
② Size	2	5 sizes of speed reducers (1, 2, 3, 4, 6)
③ Generation	0	First generation
④ # of Stages	2 3	Two or three stages (determined by ratio)
⑤ Output	A V W	Hollow bore output Solid shaft output (only available with output flange housing) Single or double wobble-free bushing
⑥ Housing	F G NG	Output flange mount Tapped holes around output Foot mounting (with tapped holes for side mounting)
⑦ Ratio	0043	Ratios range from 4.3:1 to 552:1 (refer to Selection Data tables) Note: if a slower speed is required, units can be combined to achieve the necessary ratio for low speed applications. Contact STOBBER Drives Inc.
⑧ Motor Adapter	MR140 thru MR250	Round motor adapter sizes (refer to Selection Data tables); optional solid shaft inputs and backstop bearings also available**
⑨ NEMA Frame Size (refer to Selection Data tables)	050 140 180 210	56C 143/145TC 182/184TC 213/215TC
⑩ Food & Beverage Option	F B	Food duty service Beverage duty service
⑪ Mounting Position* Refer to page 131 illustrations	EL1 EL2 EL3 EL4 EL5 EL6 EL1234 EL5 EL6	Mounting positions for 3 year warranty

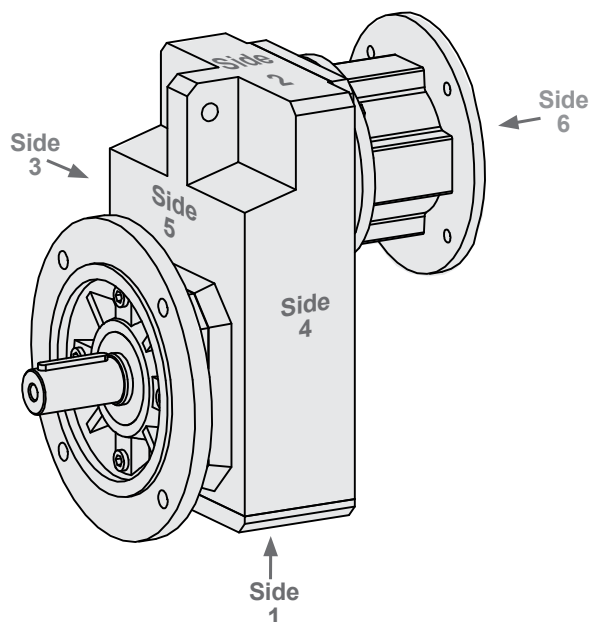
* Mounting position is added to "notes" section of order.

** Optional solid shaft inputs are available in place of motor adapters for all sizes. See page 132 for details.

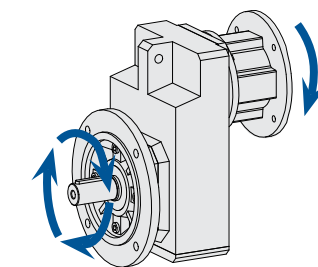
Optional backstop bearings are available on select sizes of motor adapters and solid shaft inputs to prevent inclined or vertical applications from backdriving in a power off situation (excluding manlifts). See page 132 for details.

F Series: OFFSET – Solid Shaft/Hollow Output

F Series Orientation

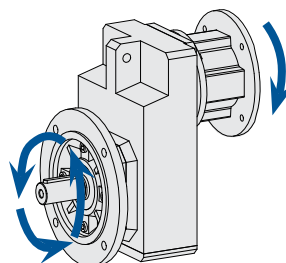


F Series Direction of Rotation



All 2 Stage Units

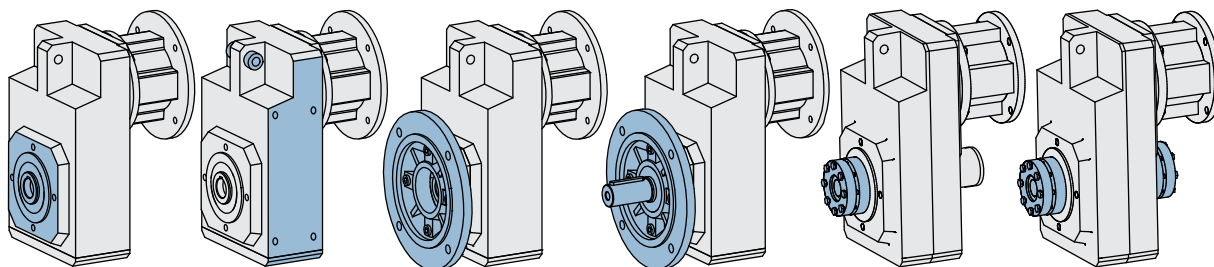
F102
F202
F302
F402
F602



All 3 Stage Units

F203
F303
F403
F603

F Output and Housing Configurations



See Page	141	142	144	145	146	148
Output	A Hollow Bore	A Hollow Bore	A Hollow Bore	V Solid Shaft	W Wobble Free Single Bushing*	W Wobble Free Double Bushing*
Housing	G Tapped Holes	NG Foot Mount (Sides 3 & 4) (Rubber Buffer Option for user-supplied torque arm)	F Flange Mount	F Flange Mount	G Tapped Holes	G Tapped Holes

* Single and double bushing outputs can be configured on side 5 (as shown); or on side 6 for two stage units only (same side as input). Please specify with order..

Availability*

Standard Duty	F1-F6	F1-F6	F1-F6	F1-F6	F1-F6	F1-F6 (2 stage units only)
Food & Beverage Duty	F2-F4	F2-F4	F2-F4	—	F1-F6	F1-F6 (2 stage units only)

* See Output Options Chart page 131 for standard and optional solid shaft, hollow bore and wobble free bushing options.



Overview

F Series Output Options

BLUE: standard output diameters in stock

BLACK: optional diameters in stock

Other options are available upon request. Please contact STOBBER to learn about other options and their deliveries.

			F1	F2	F3	F4	F6
"Y" Solid Shaft	Carbon Steel	Inches	1	1-1/4	1-3/8	1-5/8	2-1/8
		Metric	—	—	—	—	—
	Stainless Steel	Inches	—	—	—	—	—
		Metric	—	—	—	—	—
"A" Hollow Bore	Carbon Steel	Inches	3/4	1	1-1/4	1-1/2	2
		Metric	20	25	30	40	50
	Stainless Steel	Inches	—	1	1-1/4	1-1/2	—
		Metric	—	—	—	—	—
"W" Wobble Free Bushing	Stainless Steel Single & Double Bushings (Double Bushings only available with two stage units)	Inches	3/4	1 1-3/16	1 1-3/16 1-1/4 1-3/8 1-7/16 1-1/2	1 1-3/16 1-1/4 1-3/8 1-7/16 1-1/2	1-7/16 1-1/2 1-5/8 1-11/16 1-3/4 1-7/8 1-15/16 2
		Metric	20	30	30 35	40*	40*

* Double bushing only

F Mounting Position Options

When ordering any F unit, the mounting position must be specified. Use one of the mounting position order codes illustrated below that corresponds to the intended application.

Standard Duty

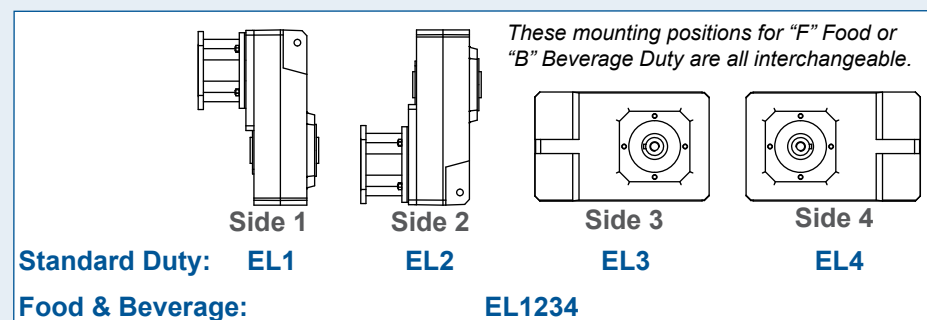
All STOBBER standard duty units are filled with the correct amount of lubrication before shipping. In order to provide the proper lubrication quantity, the mounting position must be specified at the time the unit is ordered.

Food & Beverage Duty

Food and Beverage duty units are equipped with specialized seals, higher oil level, and additional features compared to standard units. These added features enable all horizontal output positions (EL1, 2, 3 and 4) to be used interchangeably.

DO NOT mount any reducer in a position other than the mounting position specified on the order!

The only exception are the horizontal "F" & "B" duty reducers illustrated below.



OFFSET – Solid Shaft/Hollow Output

F Series: OFFSET – Solid Shaft/Hollow Output

F Series Optional Backstops

Select sizes motor adapter and solid input shaft

The backstop option is a bearing that is added to the motor adapter or input shaft housing that prevents the gearbox from backdriving during a power off situation. Backstops are used primarily for inclined conveyor installations. **(Not for use on man lifts!)**

NOTE: To include a backstop, a “B” is added to the part number code. Gearbox output direction of rotation must be specified with order. Maximum HP limitation must not be exceeded. If the backstop is assembled for the standard rotation but rotates in the opposite direction at startup, damage to the backstop is certain.



Contact STOBER Drives for additional information.

Motor Adapter Sizes Available with Backstop

Adapter Part Number	NEMA Frame	Max HP* @1750 PRM
MRB160/050	56C	10.4
MRB160/140	143/145TC	
MRB200/050	56C	
MRB200/140	143/145TC	18.2
MRB200/180	182/184TC	

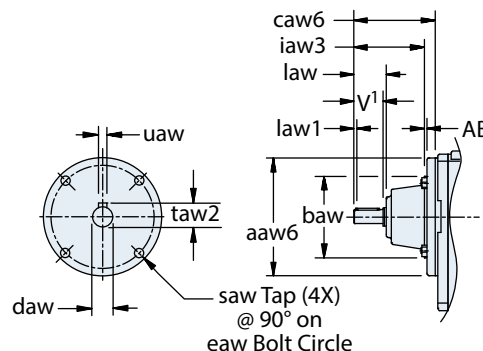
Input Shafts Sizes Available with Backstop

Adapter Part Number	Shaft Size (in)	Max HP* @1750 PRM
AWB160/012	3/4	10.4
AWB200/014	7/8	18.2

*Maximum HP must not be exceeded. Ratings are based on 2.0 service factor.

F Series Optional Input Shafts

All F Series gearboxes are available with an optional input shaft in place of the motor adapter. See Selection Data tables for specific sizes available for each size configuration.



“AW” Optional Input Shaft Dimensions (Inches)

Part No.	aaw6	AB	baw	caw6	daw	eaw	iaw3	law	law1	saw	taw2	uaw (Key)	V ¹	Wt. (lbs)	Overhung Load (lbs)
AW140/010	5.51	0.16	3.740	4.02	0.6250	4.53	3.58	1.38	0.12	M8x1.25	0.71	3/16x3/16x31/32	1.25	8	98
AW160/012	6.30	0.18	4.331	4.69	0.7500	5.12	4.21	1.69	0.12	M8x1.25	0.83	3/16x3/16x1-7/32	1.50	12	196
AW200/014	7.87	0.16	5.118	5.51	0.8750	6.50	5.00	1.97	0.16	M10x1.5	0.96	3/16x3/16x1-7/16	1.75	18	333
AW250/102	9.84	0.16	7.087	7.80	1.1250	8.46	7.20	2.48	0.20	M12x1.75	1.24	1/4x4x1-15/16	2.25	31	680
AW300/110	11.81	0.20	9.055	9.02	1.6250	10.43	8.39	3.54	0.24	M12x1.75	1.79	3/8x3/8x2-7/8	3.25	51	1,072
AW350/202	13.78	0.24	9.842	11.61	2.1250	11.81	10.83	4.88	0.28	M16x2	2.35	1/2x1/2x3-15/16	4.50	100	1,569



Selection Data

F Sizing/Selection:

1. Find the **RPM Output (Approximate)** nearest the application requirement. (If the exact Output RPM is required, divide the Input RPM [1750] by the value listed in the Nominal Ratio column.)
- 2a. In the **Input HP** column, locate the rating that is greater than or equal to the required HP, or;
- 2b. If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.
3. Confirm that the **Overhung Load** is acceptable for the application.
4. Choose the appropriate **Base Module**, **Motor Adapter** and **NEMA C-Frame** part number order codes (see page 129 for complete ordering information). An optional input shaft, in place of the NEMA C-face motor adapter, is also available.

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Input Shaft ³⁾

405 RPM Output (Approximate)

2.61	392	4.308	275	F102_0043	MR140/	050	AW140/010
3.83*	577	4.308	275	F102_0043	MR160/	050 140	AW160/012

385 RPM Output (Approximate)

21.97*	3,492	4.546	833	F602_0045	MR200/	180	AW200/014
33.79*	5,371	4.546	833	F602_0045	MR250/	180 210	AW250/102

375 RPM Output (Approximate)

2.61	426	4.680	363	F202_0047	MR140/	050	AW140/010
7.22*	1,180	4.680	363	F202_0047	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
9.22*	1,496	4.644	503	F302_0046	MR160/	050 140	AW160/012
9.22*	1,507	4.678	622	F402_0047	MR160/	050 140	AW160/012
12.07*	1,960	4.644	503	F302_0046	MR200/	180	AW200/014
19.84*	3,244	4.678	622	F402_0047	MR200/	180	AW200/014
					MR250/	180 210	AW250/102

315 RPM Output (Approximate)

6.44*	1,250	5.552	385	F202_0056	MR160/	050 140	AW160/012
					MR200/	180	AW200/014

1) Overhung Load is measured at the center of the shaft extension. Hollow bore output units are not intended to support overhung loads. If a load rating is required, use 50% of the published overhung load.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM	Order Code	050	140	180	210
	C-Frame	56C	143/145TC	182/184TC	213/215TC
	HP	1/3 to 1-1/2	1, 1-1/2, 2	3, 5	7-1/2, 10

3) Optional Input Shaft	AW Code	010	012	014	102
Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes	Shaft Ø	5/8	3/4	7/8	1-1/8

* Thermal HP Limit					
Base Module Size	F1	F2	F3	F4	F6
HP Limit	2.95	5.36	7.38	12.34	14.75

F

OFFSET – Solid Shaft/Hollow Output

F Series: OFFSET – Solid Shaft/Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Input Shaft ³⁾
305 RPM Output (Approximate)							
8.73*	1,746	5.720	540	F302_0057	MR160/	050 140	AW160/012
9.22	1,873	5.813	669	F402_0058	MR160/	050 140	AW160/012
10.50*	2,101	5.720	540	F302_0057	MR200/	180	AW200/014
17.16*	3,488	5.813	669	F402_0058	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
19.60*	3,887	5.673	897	F602_0057	MR200/	180	AW200/014
29.15*	5,782	5.673	897	F602_0057	MR250/	180 210	AW250/102
270 RPM Output (Approximate)							
2.61	589	6.462	315	F102_0065	MR140/	050	AW140/010
2.92	661	6.462	315	F102_0065	MR160/	050 140	AW160/012
244 RPM Output (Approximate)							
2.61	652	7.156	326	F102_0072	MR140/	050	AW140/010
2.61	653	7.167	419	F202_0072	MR140/	050	AW140/010
2.73	683	7.156	326	F102_0072	MR160/	050 140	AW160/012
5.43*	1,361	7.167	419	F202_0072	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
7.92*	1,985	7.172	582	F302_0072	MR160/	050 140	AW160/012
8.73	2,198	7.202	719	F402_0072	MR160/	050 140	AW160/012
9.03*	2,265	7.172	582	F302_0072	MR200/	180	AW200/014
14.88*	3,746	7.202	719	F402_0072	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
17.04*	4,264	7.159	969	F602_0072	MR200/	180	AW200/014
24.96*	6,248	7.159	969	F602_0072	MR250/	180 210	AW250/102
195 RPM Output (Approximate)							
2.35	736	8.948	351	F102_0089	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.61	820	9.006	452	F202_0090	MR140/	050	AW140/010
4.66	1,468	9.006	452	F202_0090	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
6.87	2,159	8.986	627	F302_0090	MR160/	050 140	AW160/012
7.70	2,418	8.980	773	F402_0090	MR160/	050 140	AW160/012
7.77*	2,442	8.986	627	F302_0090	MR200/	180	AW200/014
8.46	2,659	8.995	1,046	F602_0090	MR160/	050 140	AW160/012
12.84*	4,032	8.980	773	F402_0090	MR200/	180	AW200/014
					MR250/	180 210	AW250/102
14.86*	4,674	8.995	1,046	F602_0090	MR200/	180	AW200/014
21.44*	6,742	8.995	1,046	F602_0090	MR250/	180 210	AW250/102

1) Overhung Load is measured at the center of the shaft extension.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

AW Code	010	012	014	102
Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes	5/8	3/4	7/8	1-1/8
Shaft Ø				



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Input Shaft ³⁾

160 RPM Output (Approximate)

2.06	787	10.920	375	F102_0110	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.61	984	10.803	480	F202_0110	MR140/	050	AW140/010
4.13	1,560	10.803	480	F202_0110	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.98	2,253	10.785	667	F302_0110	MR160/	050 140	AW160/012
6.66	2,520	10.825	823	F402_0110	MR160/	050 140	AW160/012
6.88	2,595	10.785	667	F302_0110	MR200/	180	AW200/014
7.57	2,861	10.818	1,112	F602_0110	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
11.34	4,291	10.825	823	F402_0110	MR250/	180 210	AW250/102
13.28	5,024	10.818	1,112	F602_0110	MR200/	180	AW200/014
18.96*	7,170	10.818	1,112	F602_0110	MR250/	180 210	AW250/102

130 RPM Output (Approximate)

1.78	846	13.588	403	F102_0135	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.61	1,219	13.384	716	F302_0135	MR140/	050	AW140/010
2.61	1,241	13.625	519	F202_0135	MR140/	050	AW140/010
3.54	1,686	13.625	519	F202_0135	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.12	2,395	13.384	716	F302_0135	MR160/	050 140	AW160/012
5.86	2,781	13.569	887	F402_0135	MR160/	050 140	AW160/012
5.96	2,789	13.384	716	F302_0135	MR200/	180	AW200/014
6.36	3,025	13.609	1,200	F602_0135	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
9.75	4,627	13.569	887	F402_0135	MR250/	180 210	AW250/102
11.15	5,304	13.609	1,200	F602_0135	MR200/	180	AW200/014
16.27*	7,740	13.609	1,200	F602_0135	MR250/	180 210	AW250/102

95 RPM Output (Approximate)

1.45	937	18.457	446	F102_0185	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.61	1,699	18.651	576	F202_0185	MR140/	050	AW140/010
2.87	1,872	18.651	576	F202_0185	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
4.76	3,122	18.774	802	F302_0190	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
7.90	5,142	18.620	986	F402_0185	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180 210	AW250/102
13.25	8,578	18.522	1,330	F602_0185	MR200/	180	AW200/014
					MR250/	180 210	AW250/102

* Thermal HP Limit

Base Module Size	F1	F2	F3	F4	F6
HP Limit	2.95	5.36	7.38	12.34	14.75

F
OFFSET – Solid Shaft/Hollow Output

F Series: OFFSET – Solid Shaft/Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Input Shaft ³⁾

75 RPM Output (Approximate)

1.25	1,010	23.080	481	F102_0230	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.47	2,020	23.434	622	F202_0230	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
4.09	3,365	23.520	864	F302_0240	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
6.82	5,534	23.214	1,061	F402_0230	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180 210	AW250/102
8.46	6,880	23.272	1,436	F602_0230	MR160/	050 140	AW160/012
11.38	9,256	23.272	1,436	F602_0230	MR200/	180	AW200/014
					MR250/	180 210	AW250/102

60 RPM Output (Approximate)

1.08	1,063	28.167	514	F102_0280	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.16	2,126	28.112	660	F202_0280	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
3.59	3,543	28.230	919	F302_0280	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
6.02	5,890	27.986	1,130	F402_0280	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180 210	AW250/102
7.57	7,401	27.986	1,527	F602_0280	MR160/	050 140	AW160/012
9.96	9,744	27.986	1,527	F602_0280	MR200/	180	AW200/014
					MR250/	180 210	AW250/102

1) Overhung Load is measured at the center of the shaft extension.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes

AW Code	010	012	014	102
Shaft Ø	5/8	3/4	7/8	1-1/8



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Input Shaft ³⁾

50 RPM Output (Approximate)

0.87	1,063	35.049	553	F102_0350	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.72	2,126	35.455	714	F202_0350	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.61	3,191	35.034	987	F302_0350	MR140/	050	AW140/010
2.89	3,543	35.034	987	F302_0350	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.06	6,201	35.079	1,218	F402_0350	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180 210	AW250/102
6.36	7,825	35.208	1,648	F602_0350	MR160/	050 140	AW160/012
7.92	9,744	35.208	1,648	F602_0350	MR200/	180	AW200/014
					MR250/	180 210	AW250/102

35 RPM Output (Approximate)

0.65	1,063	46.429	607	F102_0460	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.29	2,126	47.045	784	F202_0470	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.15	3,543	47.185	1,090	F302_0470	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
3.78	6,201	46.944	1,342	F402_0470	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180 210	AW250/102
5.11	8,344	46.719	1,811	F602_0470	MR160/	050 140	AW160/012
5.97	9,744	46.719	1,811	F602_0470	MR200/	180	AW200/014
					MR250/	180 210	AW250/102

F

OFFSET – Solid Shaft/Hollow Output

F Series: OFFSET – Solid Shaft/Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Input Shaft ³⁾

30 RPM Output (Approximate)

0.54	1,063	55.972	646	F102_0560	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.07	2,126	56.727	835	F202_0570	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
1.79	3,543	56.486	1,158	F302_0560	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.15	3,543	47.185	1,090	F302_0470	MR200/	180	AW200/014
3.17	6,201	55.972	1,423	F402_0560	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180 210	AW250/102
4.50	8,775	55.714	1,920	F602_0560	MR160/	050 140	AW160/012
5.00	9,744	55.714	1,920	F602_0560	MR200/	180	AW200/014
					MR250/	180 210	AW250/102

25 RPM Output (Approximate)

0.43	1,063	70.056	696	F102_0700	MR140/	050	AW140/010
				F102_0700	MR160/	050 140	AW160/012
0.87	2,126	70.130	896	F202_0700	MR140/	050	AW140/010
				F202_0700	MR160/	050 140	AW160/012
				F202_0700	MR200/	180	AW200/014
1.44	3,543	70.359	1,245	F302_0700	MR140/	050	AW140/010
				F302_0700	MR160/	050 140	AW160/012
				F302_0700	MR200/	180	AW200/014
2.53	6,201	70.056	1,534	F402_0700	MR160/	050 140	AW160/012
				F402_0700	MR200/	180	AW200/014
				F402_0700	MR250/	180 210	AW250/102
3.74	9,102	69.643	2,069	F602_0700	MR160/	050 140	AW160/012
4.00	9,744	69.643	2,069	F602_0700	MR200/	180	AW200/014
				F602_0700	MR250/	180 210	AW250/102

1) Overhung Load is measured at the center of the shaft extension.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes

AW Code	010	012	014	102
Shaft Ø	5/8	3/4	7/8	1-1/8



Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Input Shaft ³⁾

19 RPM Output (Approximate)

0.33	1,063	93.631	767	F102_0940	MR140/	050	AW140/010
0.65	2,126	93.818	987	F202_0940	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.08	3,543	93.644	1,370	F302_0940	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
					MR200/	180	AW200/014
1.90	6,201	93.333	1,688	F402_0930	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.84	9,258	93.333	2,281	F602_0930	MR160/	050 140	AW160/012
2.99	9,744	93.333	2,281	F602_0930	MR200/	180	AW200/014
					MR250/	180 210	AW250/102

15 RPM Output (Approximate)

0.27	1,063	111.944	814	F102_1120	MR140/	050	AW140/010
0.54	2,126	112.727	1,049	F202_1130	MR140/	050	AW140/010
0.90	3,543	112.848	1,458	F302_1130	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.58	6,201	112.273	1,795	F402_1120	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
2.43	9,546	112.202	2,425	F602_1120	MR160/	050 140	AW160/012
2.48	9,744	112.202	2,425	F602_1120	MR200/	180	AW200/014

13 RPM Output (Approximate)

0.22	1,063	139.750	877	F102_1400	MR140/	050	AW140/010
0.43	2,126	140.909	1,130	F202_1410	MR140/	050	AW140/010
0.72	3,543	140.648	1,569	F302_1410	MR140/	050	AW140/010
1.27	6,201	139.750	1,931	F402_1400	MR160/	050 140	AW160/012
1.98	9,690	139.750	2,609	F602_1400	MR160/	050 140	AW160/012
1.99	9,744	139.750	2,609	F602_1400	MR200/	180	AW200/014

10 RPM Output (Approximate)

0.34	2,126	184.261	1,215	F203_1840	MR140/	050	AW140/010
0.56	3,543	184.809	1,688	F303_1850	MR140/	050	AW140/010
0.56	3,543	182.449	1,688	F303_1820	MR160/	050 140	AW160/012
0.98	6,201	183.866	2,081	F403_1840	MR140/	050	AW140/010
0.99	6,201	181.519	2,081	F403_1820	MR160/	050 140	AW160/012
1.57	9,744	180.646	2,813	F603_1810	MR160/	050 140	AW160/012

F

OFFSET – Solid Shaft/Hollow Output

F Series: OFFSET – Solid Shaft/Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Input Shaft ³⁾

8 RPM Output (Approximate)

0.28	2,126	222.182	1,215	F203_2220	MR140/	050	AW140/010
0.47	3,543	221.237	1,688	F303_2210	MR140/	050	AW140/010
0.47	3,543	218.413	1,688	F303_2180	MR160/	050 140	AW160/012
0.82	6,201	219.225	2,081	F403_2190	MR140/	050	AW140/010
0.83	6,201	216.426	2,081	F403_2160	MR160/	050 140	AW160/012
1.31	9,744	215.429	2,813	F603_2150	MR160/	050 140	AW160/012

6 RPM Output (Approximate)

0.22	2,126	274.675	1,215	F203_2750	MR140/	050	AW140/010
0.37	3,543	275.573	1,688	F303_2760	MR140/	050	AW140/010
0.38	3,543	272.055	1,688	F303_2720	MR160/	050 140	AW160/012
0.66	6,201	274.384	2,081	F403_2740	MR140/	050	AW140/010
0.66	6,201	270.881	2,081	F403_2710	MR160/	050 140	AW160/012
1.05	9,744	269.286	2,813	F603_2690	MR160/	050 140	AW160/012

5 RPM Output (Approximate)

0.17	2,126	367.455	1,215	F203_3670	MR140/	050	AW140/010
0.28	3,543	366.774	1,688	F303_3670	MR140/	050	AW140/010
0.28	3,543	362.092	1,688	F303_3620	MR160/	050 140	AW160/012
0.49	6,201	365.556	2,081	F403_3660	MR140/	050	AW140/010
0.50	6,201	360.889	2,081	F403_3610	MR160/	050 140	AW160/012
0.78	9,744	360.889	2,813	F603_3610	MR160/	050 140	AW160/012

4 RPM Output (Approximate)

0.14	2,126	441.515	1,215	F203_4420	MR140/	050	AW140/010
0.23	3,543	441.990	1,688	F303_4420	MR140/	050	AW140/010
0.41	6,201	439.735	2,081	F403_4400	MR140/	050	AW140/010
0.41	6,201	434.121	2,081	F403_4340	MR160/	050 140	AW160/012
0.65	9,744	433.849	2,813	F603_4340	MR160/	050 140	AW160/012

3 RPM Output (Approximate)

0.11	2,126	551.894	1,215	F203_5520	MR140/	050	AW140/010
0.19	3,543	550.872	1,688	F303_5510	MR140/	050	AW140/010
0.33	6,201	547.354	2,081	F403_5470	MR140/	050	AW140/010
0.52	9,744	540.367	2,813	F603_5400	MR160/	050 140	AW160/012

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

1) Overhung Load is measured at the center of the shaft extension.

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) Optional Input Shaft

Use AW Code in place of Motor Adapter & NEMA C-Frame Order Codes

AW Code	010	012	014	102
Shaft Ø	5/8	3/4	7/8	1-1/8



Dimensional Data

“A” Hollow Output with “G” Tapped Holes Around Output — All Sizes

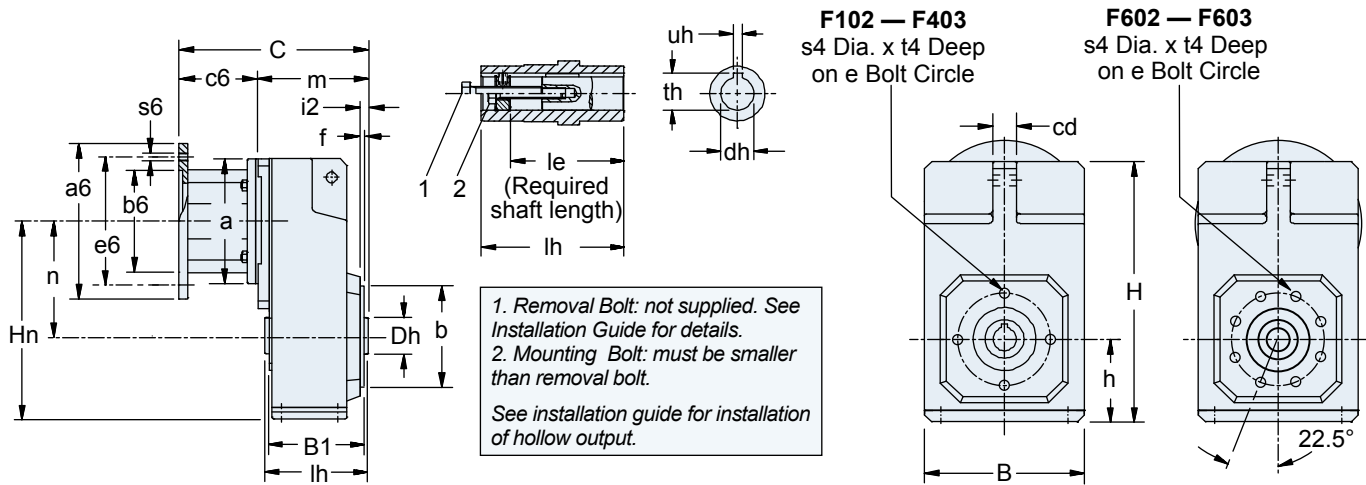


Table 1 F Series Unit Dimensions (Inches) — “G” Tapped Holes Housing

Base Module	B	b	B1	cd	Dh	e	f	H	h	Hn	i2	le	lh	n	s4	t4	Removal Bolt 1
F1	5.71	2.756	3.43	0.79	1.38	3.35	0.10	9.37	2.91	6.93	0.26	2.87	3.74	4.02	M8x1.25	0.51	3/8 – 16
F2	7.09	3.740	4.13	0.87	1.77	4.53	0.12	11.77	3.66	8.82	0.31	3.62	4.53	5.16	M8x1.25	0.51	1/2 – 13
F3	8.11	4.331	4.72	1.18	1.97	5.12	0.14	13.23	4.17	10.06	0.33	4.06	5.12	5.89	M10x1.5	0.63	1/2 – 13
F4	9.06	4.331	5.31	1.18	2.17	5.12	0.14	14.57	4.57	11.22	0.33	4.49	5.71	6.65 ¹⁾	M10x1.5	0.63	3/4 – 10
F6	10.43	5.118	6.54	1.38	2.76	6.50	0.14	17.64	5.39	13.11	0.41	5.63	7.09	7.72	M10x1.5	0.63	3/4 – 10

¹⁾ CD is 5.19 for F403 with MR160/050 or MR160/140 input

Table 2 F Series Unit Dimensions (Inches) — Standard “A” Hollow Bore Output
(see page 131 for all other optional outputs)

Base Module	Stainless Steel			Carbon Steel		
	dh	th	uh	dh	th	uh
F1	—	—	—	3/4	0.84	3/16
F2	1	1.12	1/4	1	1.12	1/4
F3	1-1/4	1.37	1/4	1-1/4	1.37	1/4
F4	1-1/2	1.67	3/8	1-1/2	1.67	3/8
F6	—	—	—	2	2.23	1/2

Table 3 F Series Unit Dimensions (inches) — “MR” Motor Adapter

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs.
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR200/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/180	213/215TC	—	—	—	—	—	—	—
MR250/210	—	—	—	—	—	—	—	—

Table 4 Motor Adapter Dimensions (Inches)

Base Module	MR140/050		MR160/050 MR160/140		MR200/180		MR250/180 MR250/210		Approx. Wt. lbs.
	C	m	C	m	C	m	C	m	
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

F Series: OFFSET – Solid Shaft/Hollow Output

“A” Hollow Output with “NG” Foot Mounting — All Sizes

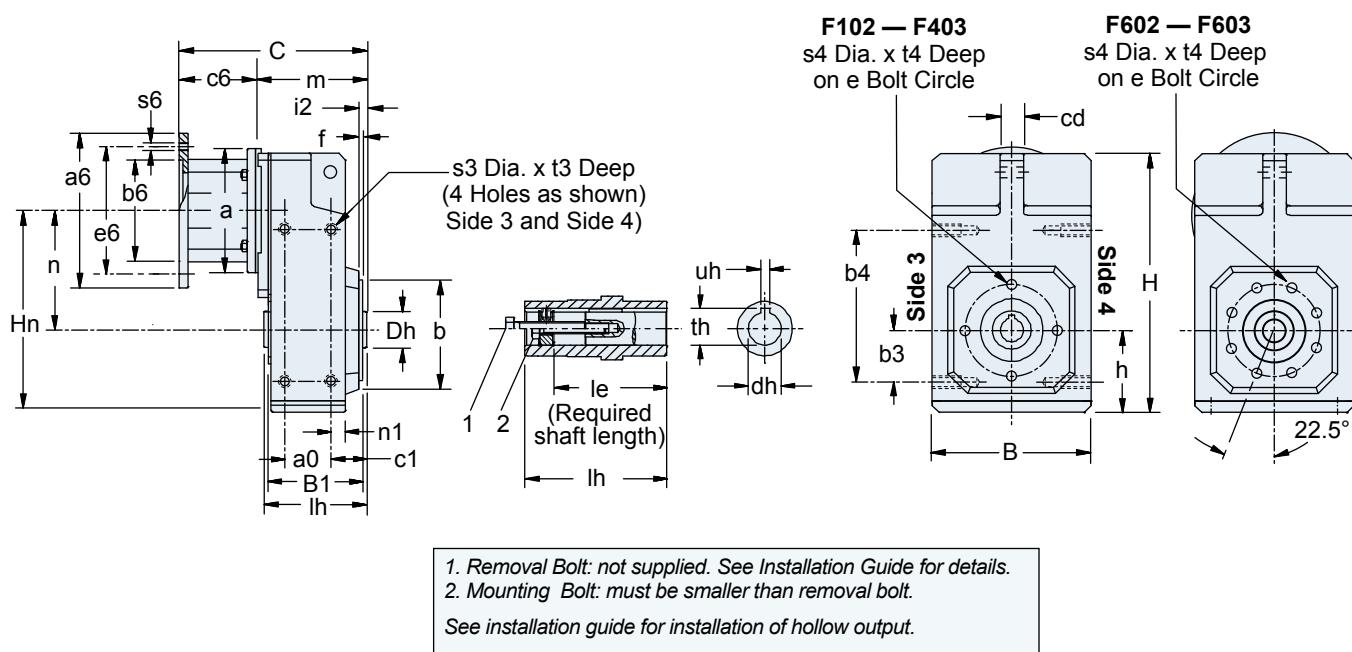


Table 1 F Series Unit Dimensions (Inches) — “NG” Foot Mount Housing

Base Module	a0	B	b	B1	b3	b4	C1	cd	Dh	e	f	H
F1	1.97	5.71	2.756	3.43	1.57	5.51	1.14	0.79	1.38	3.35	0.10	9.37
F2	2.52	7.09	3.740	4.13	2.17	6.89	1.32	0.87	1.77	4.53	0.12	11.77
F3	2.83	8.11	4.331	4.72	2.36	7.87	1.48	1.18	1.97	5.12	0.14	13.23
F4	3.43	9.06	4.331	5.31	2.76	8.66	1.48	1.18	2.17	5.12	0.14	14.57
F6	4.25	10.43	5.118	6.54	3.35	10.63	1.83	1.38	2.76	6.50	0.14	17.64

¹⁾ CD is 5.19 for F403 with MR160/050 or MR160/140 input

Table 2 F Series Unit Dimensions (Inches) — “NG” Foot Mount Housing

Base Module	h	Hn	i2	le	lh	n	n1	s3	s4	t3	t4	Removal Bolt 1
F1	2.91	6.93	0.26	2.87	3.74	4.02	0.39	M6	M8x1.25	0.43	0.51	3/8 – 16
F2	3.66	8.82	0.31	3.62	4.53	5.16	0.41	M8	M8x1.25	0.51	0.51	1/2 – 13
F3	4.17	10.06	0.33	4.06	5.12	5.89	0.49	M10	M10x1.5	0.63	0.63	1/2 – 13
F4	4.57	11.22	0.33	4.49	5.71	6.65 ¹⁾	0.49	M10	M10x1.5	0.63	0.63	3/4 – 10
F6	5.39	13.11	0.41	5.63	7.09	7.72	0.61	M12	M10x1.5	0.75	0.63	3/4 – 10



Dimensional Data

Table 3 F Series Unit Dimensions (Inches) — Standard “A” Hollow Bore Output
(see page 131 for all other optional outputs)

Base Module	Stainless Steel			Carbon Steel		
	dh	th	uh	dh	th	uh
F1	—	—	—	3/4	0.84	3/16
F2	1	1.12	1/4	1	1.12	1/4
F3	1-1/4	1.37	1/4	1-1/4	1.37	1/4
F4	1-1/2	1.67	3/8	1-1/2	1.67	3/8
F6	—	—	—	2	2.23	1/2

Table 4 F Series Unit Dimensions (inches) — “MR” Motor Adapter

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs.
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	6.30	6.50	4.500	3.86	5.87	0.41	16
MR200/180	182/184TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR250/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/210	213/215TC	9.84	9.00	8.500	5.31	7.25	0.55	36

Table 5 Motor Adapter Dimensions (Inches)

Base Module	MR140/050		MR160/050 MR160/140		MR200/180		MR250/180 MR250/210		Approx. Wt. lbs.
	C	m	C	m	C	m	C	m	
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

Rubber Buffer Option for Torque Arm Mounting with “A-NG” Configuration

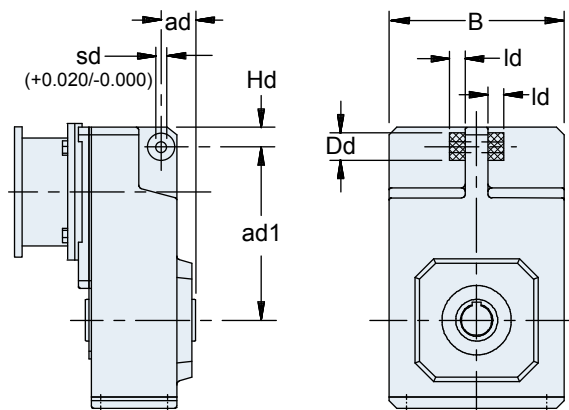


Table 1 F Series Unit Dimensions (Inches) – Rubber Buffer Option

Base Module	Part Number	ad	ad1	B	Dd	Hd	Id	sd
F1	25192	1.38	5.91	5.72	1.18	0.55	0.59	0.43
F2	25192	1.57	7.12	7.10	1.18	0.98	0.59	0.43
F3	25193	1.77	8.07	8.12	1.57	0.96	0.79	0.55
F4	25193	1.77	8.98	9.06	1.57	1.02	0.79	0.55
F6	25194	2.77	10.63	10.44	2.36	1.02	1.18	0.57

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

F

OFFSET – Solid Shaft/Hollow Output

F Series: OFFSET – Solid Shaft/Hollow Output

“A” Hollow Output with “F” Output Flange — All Sizes

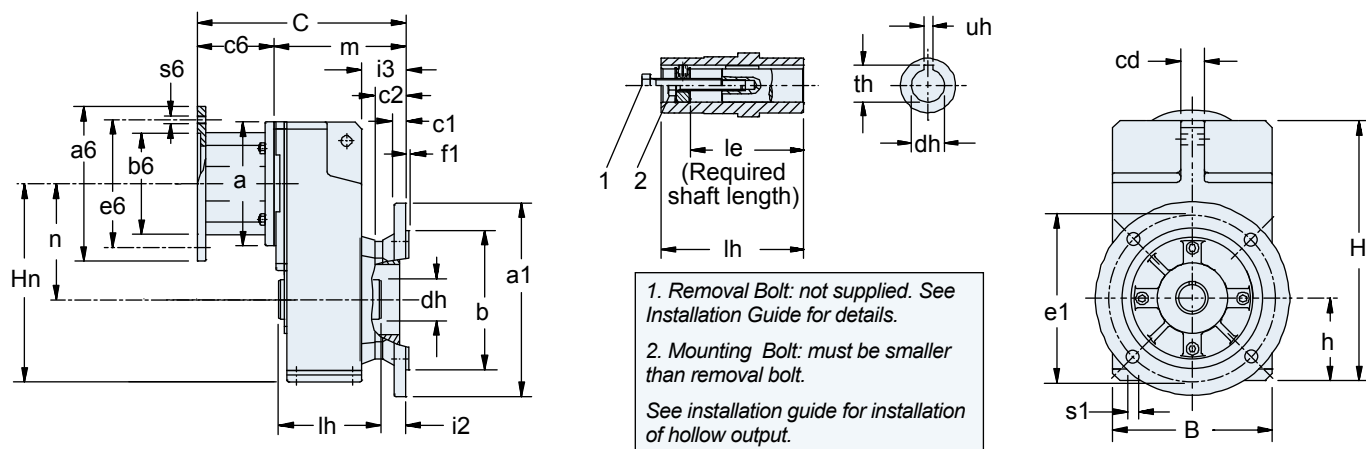


Table 1 F Series Unit Dimensions (Inches) — “F” Round Flange Housing

Base Module	a1	B	b	cd	c1	c2	dh	e1	f1	H
F1	6.30	5.71	4.331	0.79	0.39	0.26	1.38	5.12	0.14	9.37
F2	7.87	7.09	5.118	0.87	0.55	0.31	1.77	6.50	0.14	11.77
F3	9.84	8.11	7.087	1.18	0.59	0.33	1.97	8.46	0.16	13.23
F4	9.84	9.06	7.087	1.18	0.59	0.33	2.17	8.46	0.16	14.57
F6	11.81	10.43	9.055	1.38	0.67	0.41	2.76	10.43	0.16	17.64

1) CD is 5.19 for F403 with MR160/050 or MR160/140 input

Table 2 F Series Unit Dimensions (Inches) — “F” Round Flange Housing

Base Module	h	Hn	i2	i3	le	lh	n	s1	Removal Bolt 1
F1	2.91	6.93	1.00	1.75	2.87	3.74	4.02	M8x1.25	3/8 – 16
F2	3.66	8.82	1.18	2.09	3.62	4.53	5.16	M8x1.25	1/2 – 13
F3	4.17	10.06	1.24	2.22	4.06	5.12	5.89	M10x1.5	1/2 – 13
F4	4.57	11.22	1.24	2.22	4.49	5.71	6.65 ¹⁾	M10x1.5	3/4 – 10
F6	5.39	13.11	1.16	2.38	5.63	7.09	7.72	M10x1.5	3/4 – 10

Table 3 F Series Unit Dimensions (Inches) — Standard “A” Hollow Bore Output
(see page 131 for all other optional outputs)

Base Module	Stainless Steel			Carbon Steel		
	dh	th	uh	dh	th	uh
F1	—	—	—	3/4	0.84	3/16
F2	1	1.12	1/4	1	1.12	1/4
F3	1-1/4	1.37	1/4	1-1/4	1.37	1/4
F4	1-1/2	1.67	3/8	1-1/2	1.67	3/8
F6	—	—	—	2	2.23	1/2

Table 4 F Series Unit Dimensions (inches) — “MR” Motor Adapter

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs.
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR200/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/180	182/184TC	—	—	—	—	—	—	—
MR250/210	213/215TC	—	—	—	—	—	—	—

Table 5 Motor Adapter Dimensions (Inches)

Base Module	MR140/050		MR160/050		MR160/140		MR200/180		MR250/180		Approx. Wt. lbs.
	C	m	C	m	C	m	C	m	C	m	
F102	8.43	5.12	9.13	5.27	—	—	—	—	—	—	38
F202	9.34	6.03	10.04	6.18	11.06	6.26	—	—	—	—	51
F203	10.79	7.48	—	—	—	—	—	—	—	—	64
F302	10.00	6.69	10.71	6.85	11.73	6.93	—	—	—	—	67
F303	11.46	8.15	12.38	8.52	—	—	—	—	—	—	73
F402	—	—	11.30	7.44	12.32	7.52	12.95	7.64	—	—	84
F403	12.05	8.74	12.99	9.13	—	—	—	—	—	—	91
F602	—	—	12.52	8.66	13.54	8.74	14.17	8.86	—	—	165
F603	—	—	14.21	10.35	—	—	—	—	—	—	177



Dimensional Data

“V” Shaft Output with “F” Output Flange — All Sizes

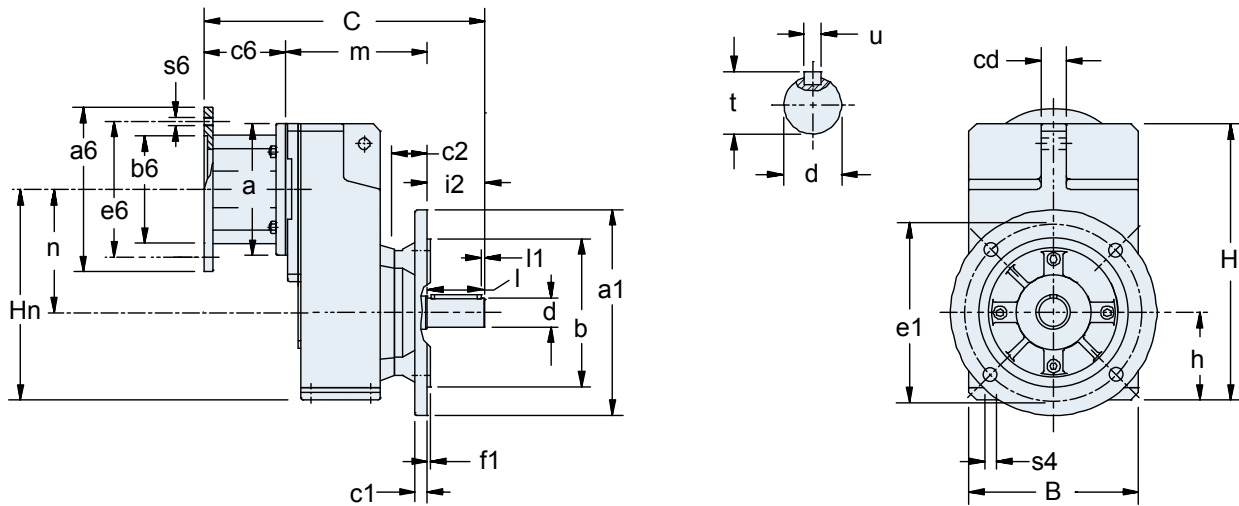


Table 1 F Series Unit Dimensions (Inches) — “F” Round Flange Housing

Base Module	a1	B	b	cd	c1	c2	e1	f1	H	h	Hn	i2	l	l1	n	s4
F1	6.30	5.71	4.331	0.79	0.39	0.26	5.12	0.14	9.37	2.91	6.93	1.97	1.97	0.16	4.02	0.35
F2	7.87	7.09	5.118	0.87	0.55	0.31	6.50	0.14	11.77	3.66	8.82	2.36	2.36	0.16	5.16	0.43
F3	9.84	8.11	7.087	1.18	0.59	0.33	8.46	0.16	13.23	4.17	10.06	2.75	2.76	0.16	5.89	0.55
F4	9.84	9.06	7.087	1.18	0.59	0.33	8.46	0.16	14.57	4.57	11.22	3.15	3.15	0.16	6.65 ¹⁾	0.55
F6	11.81	10.43	9.055	1.38	0.67	0.41	10.43	0.16	17.64	5.39	13.11	3.94	3.94	0.20	7.72	0.55

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

Table 2 Series Unit Dimensions (Inches) — Standard “V” Solid Shaft Output

Base Module	Carbon Steel		
	d	t	u
F1	1	1.11	1/4x1/4x1-9/16
F2	1-1/4	1.36	1/4x1/4x1-15/16
F3	1-3/8	1.51	5/16x5/16x2-5/16
F4	1-5/8	1.79	3/8x3/8x2-7/8
F6	2-1/8	2.35	1/2x1/2x3-5/32

Table 3 F Series Unit Dimensions (inches) — “MR” Motor Adapter

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs.
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR200/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/180	182/184TC							
MR250/210	213/215TC							

Table 4 Motor Adapter Dimensions (Inches)

Base Module	MR140/050			MR160/050 MR160/140			MR200/180			MR250/180 MR250/210			Approx. Wt. lbs.
	C	l	m	C	l	m	C	l	m	C	l	m	
F102	10.40	1.97	5.12	11.10	1.97	5.27	—	—	—	—	—	—	38
F202	11.70	2.36	6.03	12.40	2.36	6.18	13.42	2.36	6.26	—	—	—	51
F203	13.15	2.36	7.48	—	—	—	—	—	—	—	—	—	64
F302	12.76	2.76	6.69	13.47	2.76	6.85	14.49	2.76	6.93	—	—	—	67
F303	14.22	2.76	8.15	15.13	2.76	8.52	—	—	—	—	—	—	73
F402	—	—	—	14.45	3.15	7.44	15.47	3.15	7.52	16.10	3.15	7.64	84
F403	15.20	3.15	8.74	16.14	3.15	9.13	—	—	—	—	—	—	91
F602	—	—	—	16.46	3.94	8.66	17.48	3.94	8.74	18.11	3.94	8.86	165
F603	—	—	—	18.15	3.94	10.35	—	—	—	—	—	—	177

F

OFFSET – Solid Shaft/Hollow Output

F Series: OFFSET – Solid Shaft/Hollow Output

“W” Single Bushing with “G” Tapped Holes Around Output — All Sizes

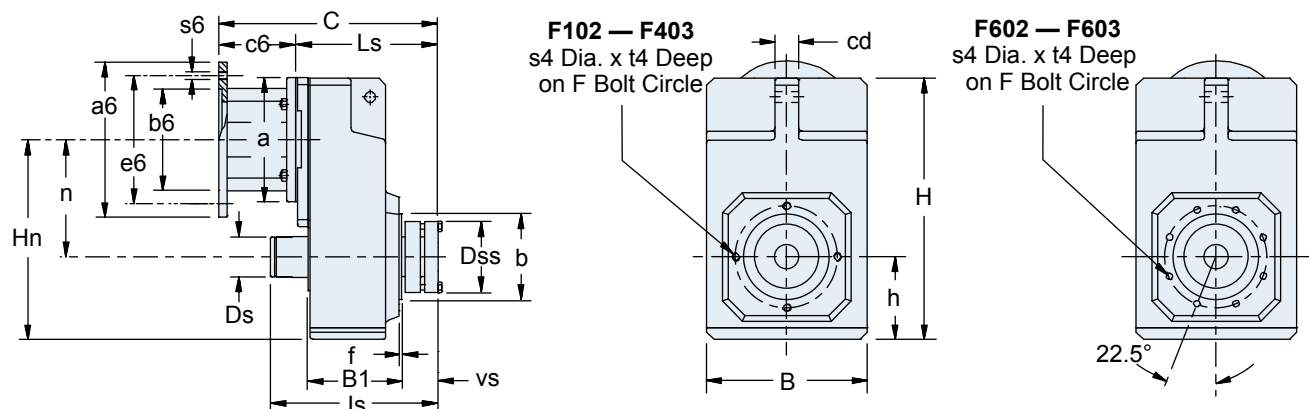


Table 1 F Series Unit Dimensions (Inches) — “W” Single Side Wobble Free Bushing

Base Module	B	b	B1	cd	Ds	Dss	e	f
F1	5.71	2.953	3.43	0.79	1.35	2.68	3.54	0.10
F2	7.09	3.740	4.13	0.87	1.74	3.07	4.53	0.12
F3	8.11	4.331	4.72	1.18	1.90	3.31	5.12	0.14
F4	9.06	4.331	5.31	1.18	2.14	3.82	5.12	0.14
F6	10.43	5.118	6.54	1.38	2.53	4.13	6.50	0.14

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

Table 2 F Series Unit Dimensions (Inches) — “W” Single Side Wobble Free Bushing

Base Module	H	h	Hn	l _s	n	s4	t4	vs
F1	9.37	2.91	6.93	6.40	4.02	M8x1.25	0.51	1.18
F2	11.77	3.66	8.82	7.26	5.16	M8x1.25	0.51	1.54
F3	13.23	4.17	10.06	7.95	5.89	M10x1.5	0.63	1.54
F4	14.57	4.57	11.22	8.93	6.65 ¹⁾	M10x1.5	0.63	1.78
F6	17.64	5.39	13.11	10.24	7.72	M10x1.5	0.63	1.77

Table 3 Bushing Capscrew Dimensions

Base Module	Bushing Capscrew Qty – Size x Length (mm)	Tightening Torque	
		in. lbs	Nm
F1	6 – M6 x 1 x 25	89	10
F2	8 – M6 x 1 x 30	89	10
F3	8 – M6 x 1 x 30	89	10
F4	8 – M8 x 1.25 x 30	221	25
F6	8 – M10 x 1.5 x 35	434	49

Table 4 Required Output Shaft Length*

Base Module	Length (in)
F1	6.57
F2	7.51
F3	8.20
F4	9.18
F6	10.48

* **Important:** A $1/32"$ x 45° chamfer minimum is recommended for the shaft end. The bushing will accept a shaft with a tolerance of $+0.000/-0.005$ in.



Dimensional Data

Table 5 F Series Unit Dimensions (inches) — “MR” Motor Adapter

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs.
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC							
MR200/180	182/184TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR250/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/210	213/215TC							

Table 6 Motor Adapter Dimensions (Inches)

Base Module	MR140/050		MR160/050 MR160/140		MR200/180		MR250/180 MR250/210		Approx. Wt. lbs.
	C	Ls	C	Ls	C	Ls	C	Ls	
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

Table 7 “WF” Single Side Bushings Stock Bore Sizes — Stainless Steel

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. The bushing will accept a shaft with a tolerance of +0.000/-0.005.

Base Module	Imperial — Inches													Metric – mm		
	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	20	30	35
F1	WF1-075	—	—	—	—	—	—	—	—	—	—	—	—	WF1-20	—	—
F2	—	WF2-100	WF2-103	—	—	—	—	—	—	—	—	—	—	—	WF2-30	—
F3	—	WF3-100	WF3-103	WF3-104	WF3-106	WF3-107	WF3-108	—	—	—	—	—	—	—	WF3-30	WF3-35
F4	—	WF4-100	WF4-103	WF4-104	WF4-106	WF4-107	WF4-108	—	—	—	—	—	—	—	—	—
F6	—	—	—	—	—	WF5-107	WF5-108	WF5-110	WF5-111	WF5-112	WF5-114	WF5-115	WF5-200	—	—	—

F

OFFSET – Solid Shaft/Hollow Output

F Series: OFFSET – Solid Shaft/Hollow Output

“W” Double Bushing with “G” Tapped Holes Around Output — Two Stage Units Only

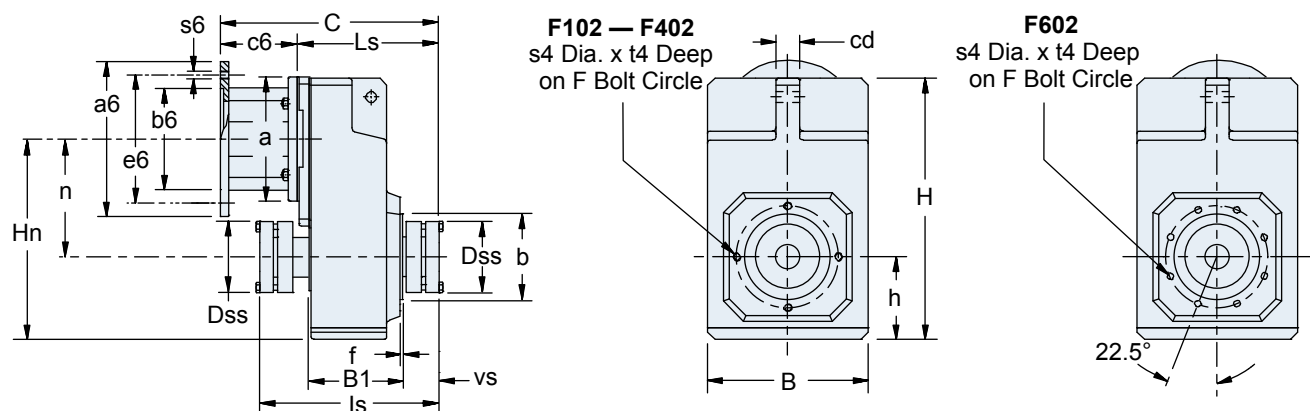


Table 1 F Series Unit Dimensions (Inches) — “W” Single Side Wobble Free Bushing

Base Module	B	b	B1	cd	Dss	e	f
F102	5.71	2.953	3.43	0.79	2.68	3.54	0.10
F202	7.09	3.740	4.13	0.87	3.07	4.53	0.12
F302	8.11	4.331	4.72	1.18	3.31	5.12	0.14
F402	9.06	4.331	5.31	1.18	3.82	5.12	0.14
F602	10.43	5.118	6.54	1.38	4.13	6.50	0.14

Table 2 F Series Unit Dimensions (Inches) — “W” Single Side Wobble Free Bushing

Base Module	H	h	Hn	ls	n	s4	t4	vs
F102	9.37	2.91	6.93	6.73	4.02	M8x1.25	0.51	1.18
F202	11.77	3.66	8.82	7.77	5.16	M8x1.25	0.51	1.54
F302	13.23	4.17	10.06	8.46	5.89	M10x1.5	0.63	1.54
F402	14.57	4.57	11.22	9.57	6.65	M10x1.5	0.63	1.78
F602	17.64	5.39	13.11	10.84	7.72	M10x1.5	0.63	1.77

Table 3 Bushing Capscrew Dimensions

Base Module	Bushing Capscrew Qty – Size x Length (mm)	Tightening Torque	
		in. lbs	Nm
F102	6 – M6 x 1 x 25	89	10
F202	8 – M6 x 1 x 30	89	10
F302	8 – M6 x 1 x 30	89	10
F402	8 – M8 x 1.25 x 30	221	25
F602	8 – M10 x 1.5 x 35	434	49

Table 4 Required Output Shaft Length*

Base Module	Length (in)
F102	7.04
F202	8.18
F302	8.89
F402	10.03
F602	11.30

**Important: A 1/32" x 45° chamfer minimum is recommended for the shaft end. The bushing will accept a shaft with a tolerance of +0.000/-0.005 in.*



Dimensional Data

Table 5 F Series Unit Dimensions (inches) — “MR” Motor Adapter

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs.
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC							
MR200/180	182/184TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR250/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/210	213/215TC							

Table 6 Motor Adapter Dimensions (Inches)

Base Module	MR140/050		MR160/050 MR160/140		MR200/180		MR250/180 MR250/210		Approx. Wt. lbs.
	C	Ls	C	Ls	C	Ls	C	Ls	
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

Table 7 “WFN” Double Side Bushings Stock Bore Sizes — Stainless Steel

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. The bushing will accept a shaft with a tolerance of +0.000/-0.005.

Base Module	Imperial — Inches														Metric – mm			
	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	20	30	35	40	
F102	WFN1-075	—	—	—	—	—	—	—	—	—	—	—	—	WFN1-20	—	—	—	
F202	—	WFN2-100	WFN2-103	—	—	—	—	—	—	—	—	—	—	—	WFN2-30	—	—	
F302	—	WFN3-100	WFN3-103	WFN3-104	WFN3-106	WFN3-107	WFN3-108	—	—	—	—	—	—	—	WFN3-30	WFN3-35	—	
F402	—	WFN4-100	WFN4-103	WFN4-104	WFN4-106	WFN4-107	WFN4-108	—	—	—	—	—	—	—	—	—	WFN4-40	
F602	—	—	—	—	—	WFN5-107	WFN5-108	WFN5-110	WFN5-111	WFN5-112	WFN5-114	WFN5-115	WFN5-200	—	—	—	WFN5-40	

F

OFFSET – Solid Shaft/Hollow Output

S Series: RIGHT ANGLE – Solid Shaft/Hollow Output

S Series speed reducer offer durability combined with economy and versatility for a wide range of applications. MGS helical-before-worm gearing offers twice the efficiency of two-stage worm drives.

S Series Design Advantages

- 3 year standard warranty
- Up to 8.19 HP
- Standard output speeds available from 190 to 2.5 RPM; units can be combined to achieve slower speeds to meet your application needs
- Output torques to 7,086 in.lbs.
- Ratios of 9.2:1 to 683:1
- ≤ 20 arcmins backlash
- NEMA C-face for 56C thru 213/215TC
- Assembled in the U.S.A.
- One-piece precision machined housing
- 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
- 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
- Double lip seals keep oil in and contaminants out. Double seals available for severe duty applications
- Magnetic drain plugs to help remove particles from oil
- Shipped filled with Mobilgear 600XP220
- Laser etched data on stainless steel nameplate

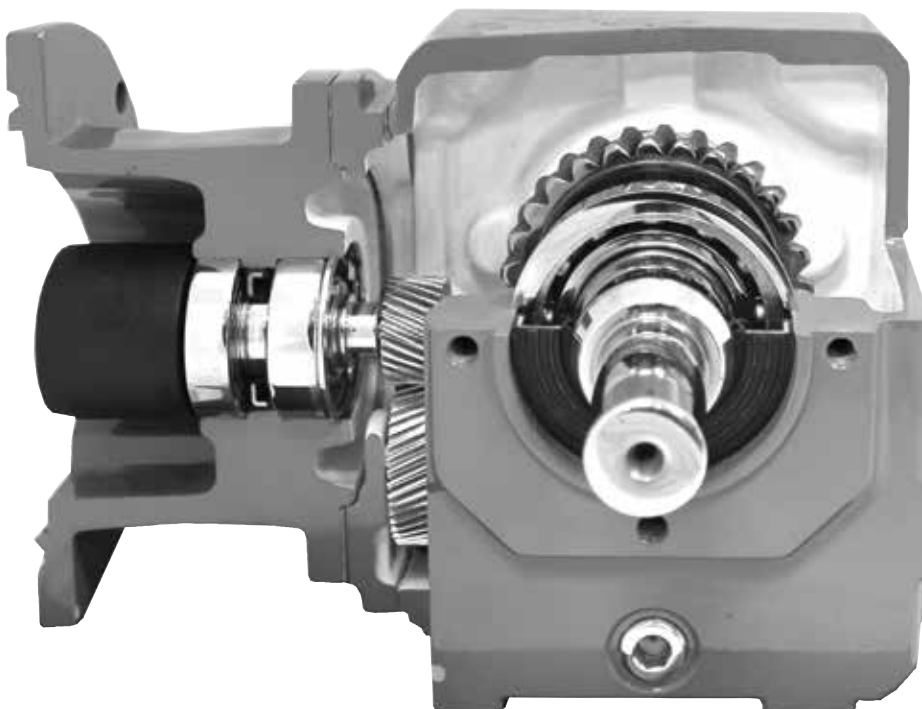


**SHIPS in
1 DAY!**
NO EXPEDITE FEE FOR
24 HOUR SERVICE

S Series Design Options Available:

- Anti-microbial clear coat
- 316 stainless steel epoxy coating
- BISC white epoxy coating
- Plated or stainless steel hardware

Note: With these design options, the S Series is not a true food duty unit because the outputs are carbon steel, not stainless



Overview



S Ordering Options At-a-Glance

S Series are available in a wide range of user-selected design options that tailor the speed reducer to your motor and exact application requirements. Use the appropriate order codes below to build a part number for the complete gearhead assembly.

Part Number Examples:

Standard duty with standard warranty

①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩*
S	2	0	2	A	G	0043	MR140/	050	EL1

Design Option	Part Number Code	Description
① Series	S	Right angle helical/worm (output is at a right angle to input; gears are helical and a worm gear set)
② Size	2	4 sizes of speed reducers (1, 2, 3, 4)
③ Generation	0	First generation
④ # of Stages	2 3	Two or three stages (determined by ratio)
⑤ Output	A V	Hollow bore output Solid shaft output (specify side 3, 4 or double sided)
⑥ Housing	F G GD NG	Output flange mount (specify side 3 or 4) Tapped holes around output Torque arm mounting (specify side 1 or 5) Foot mounting (specify side 1 or 5)
⑦ Ratio	0043	Ratios range from 9.2:1 to 683:1 (refer to Selection Data tables) Note: if a slower speed is required, units can be combined to achieve the necessary ratio for low speed applications. Contact STOBBER Drives Inc.
⑧ Motor Adapter	MR140 thru MR250	Round motor adapter sizes (refer to Selection Data tables); optional solid shaft inputs and backstop bearings also available**
⑨ NEMA Frame Size (refer to Selection Data tables)	050 140 180 210	56C 143/145TC 182/184TC 213/215TC
⑩ Mounting Position* Refer to page 153 illustrations	EL1 EL2 EL3 EL4 EL5 EL6	Mounting positions for 3 year warranty

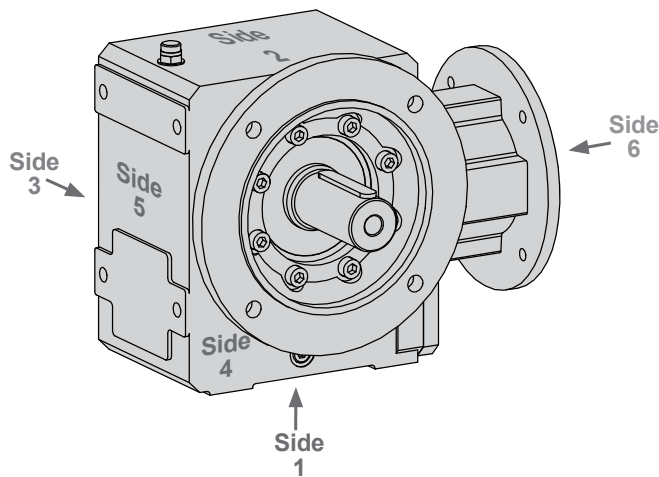
* Mounting position is added to "notes" section of order.

** Optional solid shaft inputs are available in place of motor adapters for all sizes. See page 153 for details.

Optional backstop bearings are available on select sizes of motor adapters and solid shaft inputs to prevent inclined or vertical applications from backdriving in a power off situation (excluding manlifts). See page 153 for details.

S Series: RIGHT ANGLE – Solid Shaft/Hollow Output

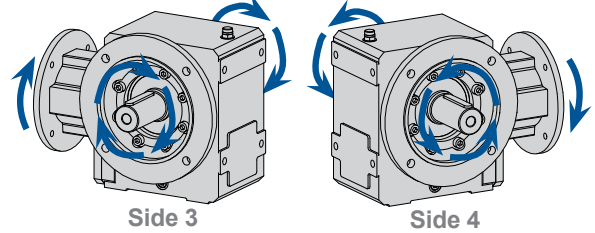
S Series Orientation



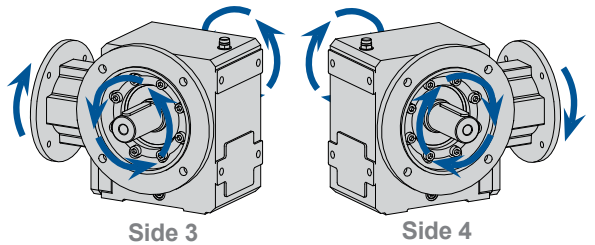
S Series Direction of Rotation

Output available on side 3, 4 or both. Note: With a double output, the shaft rotation of both shafts will be the SAME direction when viewed from Side 5.

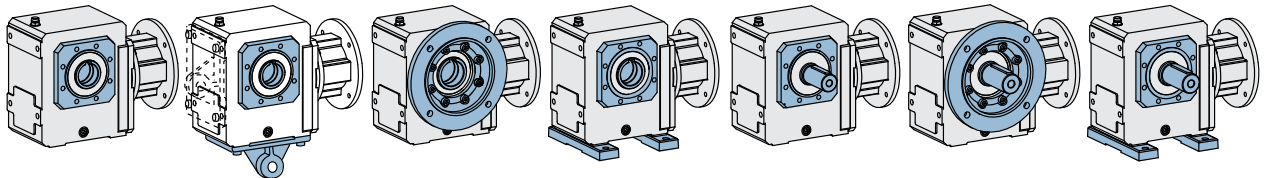
2 Stage
S102
S202
S302
S402



3 Stage
S203
S303
S403



S Output and Housing Configurations



See Page	158	159	160	161	162	163	164
Output	A Hollow Bore	A Hollow Bore	A Hollow Bore	A Hollow Bore	V Solid Shaft	V Solid Shaft	V Solid Shaft
Housing	G Tapped Holes	GD Torque Arm	F Flange Mount	NG Foot Mount	G Tapped Holes	F Flange Mount	NG Foot Mount

S Output Options

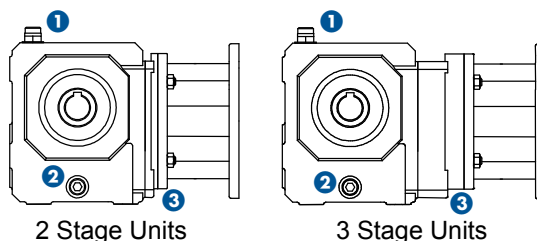
BLUE: standard output diameters in stock

BLACK: optional diameters in stock

			S1		S2		S3		S4	
			Inches	Metric	Inches	Metric	Inches	Metric	Inches	Metric
Solid Shaft	Carbon Steel	Inches	1		1-1/4		1-3/8		1-3/4	
		Metric	25		30		40		45	
Hollow Bore	Carbon Steel	Inches	1		1-3/8		1-1/2		1-3/4	
		Metric	20 25		35		40		50	

S Series Lubrication Maintenance

STOBER recommends changing the lubrication in breather supplied units after 10,000 hours for normal operating conditions or every 5,000 hours for wet operating conditions.



Drain Plug and Vent Location

Mounting Position	1	2 *	2a *	3
EL1	Vent	Drain		
EL2	Drain	Vent		
EL3		Vent	Drain	
EL4		Drain	Vent	
EL5	Drain			Vent
EL6	Vent			Drain

* Position 2a is on the opposite side of 2.



Overview

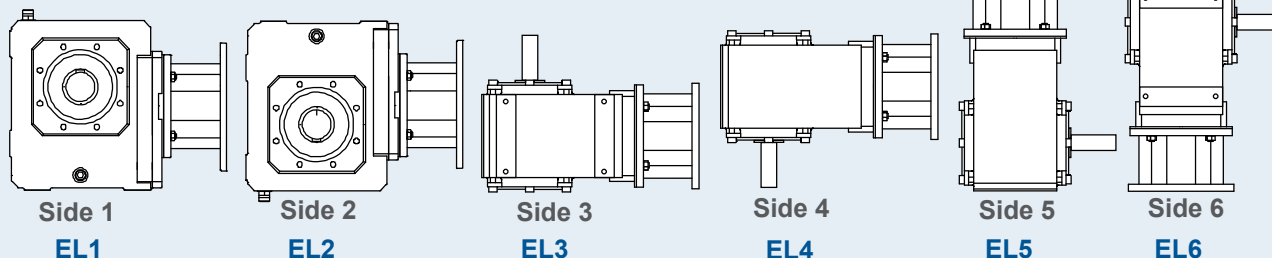
S Series Mounting Position Options

When ordering any S unit, the mounting position must be specified. (All STOBBER 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.)

Use one of the mounting position order codes illustrated below that corresponds to the intended application and the selected warranty.

DO NOT mount the reducer in a position other than the mounting position specified on the order!

Standard 3 Year Warranty



S Series Optional Backstops

Select sizes motor adapter and solid input shaft



Contact STOBBER Drives for additional information.

The backstop option is a bearing that is added to the motor adapter or input shaft housing that prevents the gearbox from backdriving during a power off situation. Backstops are used primarily for inclined conveyor installations. (**Not for use on man lifts!**)

NOTE: To include a backstop, a "B" is added to the part number code. Gearbox output direction of rotation must be specified with order. Maximum HP limitation must not be exceeded. If the backstop is assembled for the standard rotation but rotates in the opposite direction at startup, damage to the backstop is certain.

Motor Adapter Sizes Available with Backstop

Adapter Part Number	NEMA Frame	Max HP* @1750 PRM
MRB160/050	56C	10.4
MRB160/140	143/145TC	
MRB200/050	56C	18.2
MRB200/140	143/145TC	
MRB200/180	182/184TC	

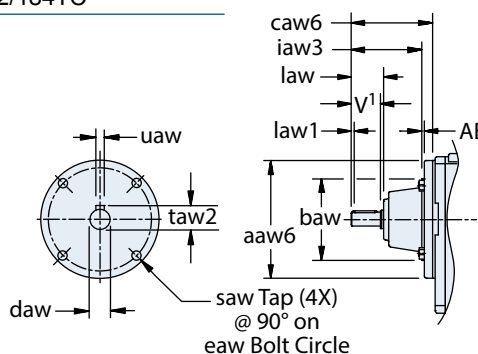
Input Shafts Sizes Available with Backstop

Adapter Part Number	Shaft Size (in)	Max HP* @1750 PRM
AWB160/012	3/4	10.4
AWB200/014	7/8	18.2

*Maximum HP must not be exceeded. Ratings are based on 2.0 service factor.

S Series Optional Input Shafts

All S Series gearboxes are available with an optional input shaft in place of the motor adapter. See Selection Data tables for specific sizes available for each size configuration.



"AW" Optional Input Shaft Dimensions (Inches)

Part No.	aaw6	AB	baw	caw6	daw	eaw	iaw3	law	law1	saw	taw2	uaw (Key)	V ¹	Wt. (lbs)	Overhung Load (lbs)
AW140/010	5.51	0.16	3.740	4.02	0.6250	4.53	3.58	1.38	0.12	M8x1.25	0.71	3/16x3/16x31/32	1.25	8	98
AW160/012	6.30	0.18	4.331	4.69	0.7500	5.12	4.21	1.69	0.12	M8x1.25	0.83	3/16x3/16x1-7/32	1.50	12	196
AW200/014	7.87	0.16	5.118	5.51	0.8750	6.50	5.00	1.97	0.16	M10x1.5	0.96	3/16x3/16x1-7/16	1.75	18	333
AW250/102	9.84	0.16	7.087	7.80	1.1250	8.46	7.20	2.48	0.20	M12x1.75	1.24	1/4x1/4x1-15/16	2.25	31	680
AW300/110	11.81	0.20	9.055	9.02	1.6250	10.43	8.39	3.54	0.24	M12x1.75	1.79	3/8x3/8x2-7/8	3.25	51	1,072
AW350/202	13.78	0.24	9.842	11.61	2.1250	11.81	10.83	4.88	0.28	M16x2	2.35	1/2x1/2x3-15/16	4.50	100	1,569

S

RIGHT ANGLE – Solid Shaft/Hollow Output

S Sizing/Selection:

- Find the **RPM Output (Approximate)** nearest the application requirement. (If the exact Output RPM is required, divide the Input RPM [1750] by the value listed in the Nominal Ratio column.)
- In the **Input HP** column, locate the rating that is greater than or equal to the required HP, or;
 - If selection is based on Torque instead of HP, find an **Output Torque** that is equal to or greater than required.
- Confirm that the **Overhung Load** is acceptable for the application.
- Choose the appropriate **Base Module**, **Motor Adapter** and **NEMA C-Frame** part number order codes (see page 151 for complete ordering information). An optional input shaft, in place of the NEMA C-face motor adapter, is also available.

Selection Data

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP*	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Input Shaft ³⁾

190 RPM Output (Approximate)

1.78	511	9.200	593	S102_0092	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
3.26	939	9.232	862	S202_0092	MR140/	050	AW140/010
3.47	998	9.232	862	S202_0092	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.17	1,499	9.310	1,078	S302_0093	MR160/	050 140	AW160/012
					MR200/	180	AW200/014

150 RPM Output (Approximate)

1.68	598	11.500	627	S102_0115	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
3.16	1,131	11.600	912	S202_0115	MR140/	050	AW140/010
3.26	1,165	11.600	912	S202_0115	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.20	1,877	11.660	1,141	S302_0115	MR160/	050 140	AW160/012

125 RPM Output (Approximate)

1.61	689	14.040	657	S102_0140	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
3.04	1,307	13.910	956	S202_0140	MR140/	050	AW140/010
3.07	1,319	13.910	956	S202_0140	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.20	2,253	14.000	1,196	S302_0140	MR160/	050 140	AW160/012
					MR200/	180	AW160/012
8.00	3,479	13.950	1,554	S402_0140	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180 210	AW250/102

* Thermal HP Limit

Base Module Size	S1	S2	S3	S4
HP Limit	2.95	5.36	7.38	12.34

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) AW Code

Shaft Ø	010	012	014	102	110
	5/8	3/4	7/8	1-1/8	1-5/8

- 1) 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.

Selection Data



1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP*	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Input Shaft ³⁾

100 RPM Output (Approximate)

1.43	762	17.470	695	S102_0175	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.89	1,544	17.550	1,011	S202_0175	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
3.02	1,625	17.370	1,264	S302_0175	MR140/	050	AW140/010
4.85	2,614	17.370	1,264	S302_0175	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
7.67	4,143	17.490	1,644	S402_0175	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180 210	AW250/102

75 RPM Output (Approximate)

1.19	837	23.140	747	S102_0230	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.42	1,709	23.290	1,087	S202_0230	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.88	2,056	23.400	1,359	S302_0230	MR140/	050	AW140/010
4.05	2,887	23.400	1,359	S302_0230	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
6.38	4,566	23.400	1,767	S402_0230	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180	AW250/102

60 RPM Output (Approximate)

1.06	890	27.900	782	S102_0280	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.15	1,819	28.080	1,138	S202_0280	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.78	2,369	28.010	1,422	S302_0280	MR140/	050	AW140/010
3.60	3,065	28.010	1,422	S302_0280	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
5.39	4,610	27.900	1,849	S402_0280	MR160/	050 140	AW160/012
5.66	4,841	27.900	1,849	S402_0280	MR200/	180	AW200/014

50 RPM Output (Approximate)

0.92	960	34.920	826	S102_0350	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.86	1,953	34.710	1,202	S202_0350	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.67	2,820	34.890	1,503	S302_0350	MR140/	050	AW140/010
3.12	3,298	34.890	1,503	S302_0350	MR160/	050 140	AW160/012
4.92	5,217	34.920	1,954	S402_0350	MR160/	050 140	AW160/012
					MR200/	180	AW200/014

S

RIGHT ANGLE – Solid Shaft/Hollow Output

S Series: RIGHT ANGLE – Solid Shaft/Hollow Output

1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP*	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Input Shaft ³⁾

40 RPM Output (Approximate)

0.82	995	43.680	874	S102_0440	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.42	1,751	43.880	1,272	S202_0440	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.63	3,301	43.440	1,590	S302_0430	MR160/	050 140	AW160/012
					MR160/	050 140	AW160/012
3.86	4,893	43.710	2,067	S402_0440	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180	AW250/102

30 RPM Output (Approximate)

0.69	1,100	57.860	940	S102_0580	MR140/	050	AW140/010
					MR160/	050 140	AW140/010
1.19	1,945	58.220	1,367	S202_0580	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.25	3,725	58.500	1,709	S302_0590	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
3.29	5,500	58.500	2,222	S402_0590	MR160/	050 140	AW160/012
					MR200/	180	AW200/014
					MR250/	180	AW250/102

25 RPM Output (Approximate)

0.62	1,183	69.750	983	S102_0700	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.09	2,128	70.200	1,431	S202_0700	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.03	4,009	70.030	1,789	S302_0700	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.97	5,927	69.750	2,325	S402_0700	MR160/	050 140	AW160/012

20 RPM Output (Approximate)

0.54	1,262	87.300	1,039	S102_0870	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
0.95	2,297	86.790	1,512	S202_0870	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.76	4,293	87.230	1,890	S302_0870	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.59	6,374	87.300	2,457	S402_0870	MR160/	050 140	AW160/012

15 RPM Output (Approximate)

0.43	1,340	116.700	1,117	S102_1170	MR140/	050	AW140/010
0.78	2,478	116.100	1,625	S202_1160	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.42	4,580	116.100	2,031	S302_1160	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
2.09	6,817	116.300	2,640	S402_1160	MR160/	050 140	AW160/012

* Thermal HP Limit

Base Module Size	S1	S2	S3	S4
HP Limit	2.95	5.36	7.38	12.34

2) Motor HP for TEFC NEMA C-Frame @ 1750 RPM

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

3) AW Code

	010	012	014	102	110
Shaft Ø	5/8	3/4	7/8	1-1/8	1-5/8

1) 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.

Selection Data



1750 RPM Input		Nominal Ratio	Overhung Load Output Shaft ¹⁾ (lbs.)	Part Number Codes			
Input HP*	Output Torque (in. lbs.)			Base Module	Motor Adapter	Compatible NEMA C-Frame ²⁾	Input Shaft ³⁾

12 RPM Output (Approximate)

0.38	1,378	139.500	1,164	S102_1400	MR140/	050	AW140/010
0.68	2,557	136.300	1,693	S203_1360	MR140/	050	AW140/010
0.69	2,567	139.500	1,693	S202_1400	MR140/	050	AW140/010
1.21	4,584	139.900	2,117	S302_1400	MR140/	050	AW140/010
					MR160/	050 140	AW160/012
1.83	7,000	134.900	2,752	S403_1350	MR160/	050 140	AW160/012
1.84	7,041	139.900	2,752	S402_1400	MR160/	050 140	AW160/012

10 RPM Output (Approximate)

0.25	1,143	174.100	1,230	S102_1740	MR140/	050	AW140/010
0.57	2,651	171.800	1,789	S203_1720	MR140/	050	AW140/010
1.03	4,848	167.900	2,236	S303_1680	MR160/	050 140	AW160/012
1.03	4,855	170.100	2,236	S303_1700	MR140/	050	AW140/010
1.49	7,086	169.000	2,907	S403_1690	MR160/	050 140	AW160/012

7 RPM Output (Approximate)

0.26	1,253	242.000	1,237	S102_2420	MR140/	050	AW140/010
0.43	2,657	228.000	1,800	S203_2280	MR140/	050	AW140/010
0.78	4,872	226.200	2,250	S303_2260	MR160/	050 140	AW160/012
1.12	7,086	229.100	2,925	S403_2290	MR140/	050	AW140/010
1.12	7,086	226.200	2,925	S403_2260	MR160/	050 140	AW160/012

6 RPM Output (Approximate)

0.22	1,300	289.300	1,237	S102_2890	MR140/	050	AW140/010
0.36	2,657	275.000	1,800	S203_2750	MR140/	050	AW140/010
0.65	4,872	274.300	2,250	S303_2740	MR140/	050	AW140/010
0.65	4,872	270.800	2,250	S303_2710	MR160/	050 140	AW160/012
0.94	7,086	273.200	2,925	S403_2730	MR140/	050	AW140/010

5 RPM Output (Approximate)

0.19	1,348	361.200	1,237	S102_3610	MR140/	050	AW140/010
0.29	2,657	339.900	1,800	S203_3400	MR140/	050	AW140/010
0.53	4,872	337.300	2,250	S303_3370	MR160/	050 140	AW160/012
0.53	4,872	341.700	2,250	S303_3420	MR140/	050	AW140/010
0.76	7,086	337.600	2,925	S403_3380	MR160/	050 140	AW160/012
0.76	7,086	341.900	2,925	S403_3420	MR140/	050	AW140/010

4 RPM Output (Approximate)

0.22	2,657	454.700	1,800	S203_4550	MR140/	050	AW140/010
0.40	4,872	454.700	2,250	S303_4550	MR140/	050	AW140/010
0.57	7,086	455.500	2,925	S403_4560	MR140/	050	AW140/010

3 RPM Output (Approximate)

0.18	2,655	546.400	1,800	S203_5460	MR140/	050	AW140/010
0.30	4,475	548.000	2,250	S303_5480	MR140/	050	AW140/010
0.48	7,086	541.000	2,925	S403_5410	MR160/	050 140	AW160/012

2.5 RPM Output (Approximate)

0.12	2,208	683.000	1,800	S203_6830	MR140/	050	AW140/010
0.34	6,303	682.100	2,925	S403_6820	MR140/	050	AW140/010

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

S Series: RIGHT ANGLE – Solid Shaft/Hollow Output

“A” Hollow Output with “G” Tapped Holes Around Output

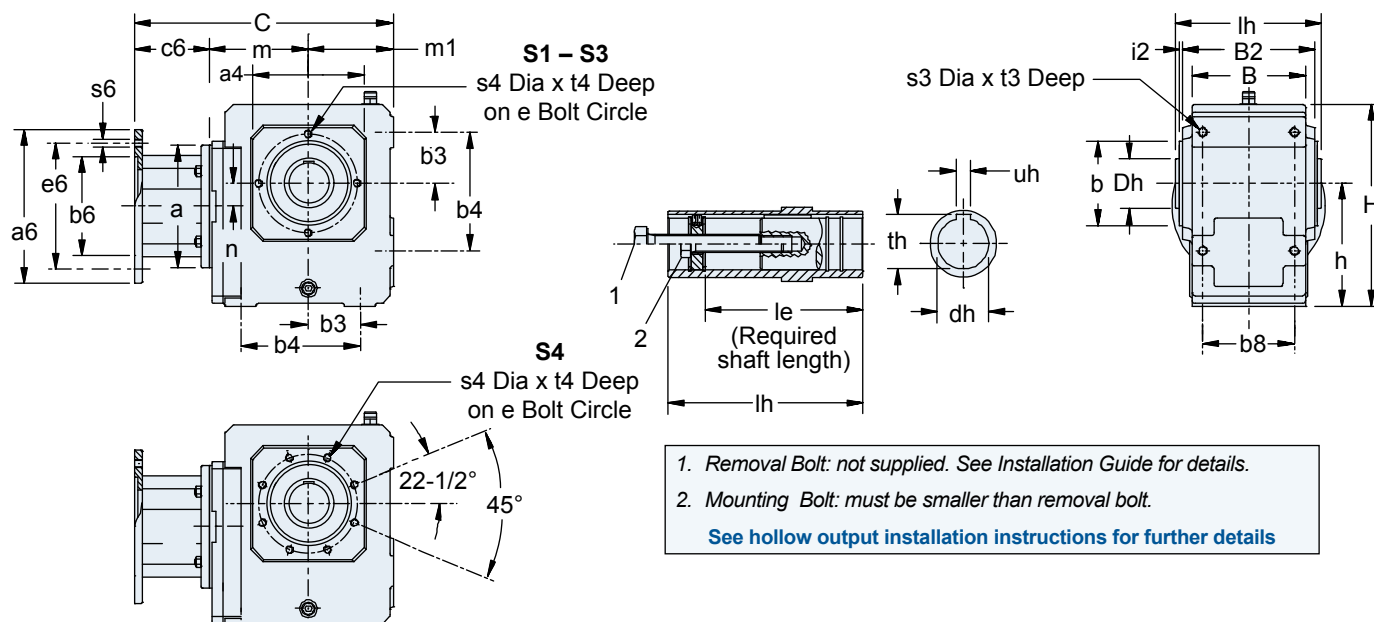


Table 1 S Series Unit Dimensions (Inches) — “G” Tapped Holes Housing

Base Module	a4	B	B2	b	b3	b4	b8	Dh	e	H	h	i2	le	lh	m1	s3	s4 ¹⁾	t3	t4	Removal Bolt 1
S1	4.13	3.54	4.17	2.953	1.57	3.54	2.76	1.57	3.54	6.57	3.94	0.12	3.86	4.72	2.76	M8x1.25	M8x1.25	0.51	0.51	1/2-13
S2	5.20	4.53	5.28	3.740	2.05	4.53	3.54	1.97	4.53	7.87	4.72	0.16	4.69	5.91	3.35	M10x1.5	M8x1.25	0.63	0.51	5/8-11
S3	5.98	5.12	6.02	4.331	2.05	5.12	4.13	2.17	5.12	9.17	5.51	0.14	5.39	6.61	3.94	M10x1.5	M10x1.5	0.63	0.63	3/4-10
S4	5.71	5.83	6.81	4.331	2.64	6.10	4.72	2.56	5.12	10.35	6.30	0.14	6.24	7.48	4.33	M12x1.75	M10x1.5	0.75	0.63	3/4-10

1) S102 through S303 has 4 tapped holes, S4 has 8.

Table 2 S Series Unit Dimensions (Inches) — “A” Hollow Bore Output

Base Module	Standard Bore - inches			Optional Bore - mm		
	dh	th	uh	dh	th	uh
S1	1	1.11	1/4	25H7	28.3	8JS9
S2	1-3/8	1.52	5/16	35H7	38.3	10JS9
S3	1-1/2	1.67	3/8	40H7	43.3	12JS9
S4	1-3/4	1.92	3/8	50H7	53.8	14JS9

Table 3 S Series Unit Dimensions (inches) — “MR” Motor Adapter

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR200/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/180	213/215TC							
MR250/210								

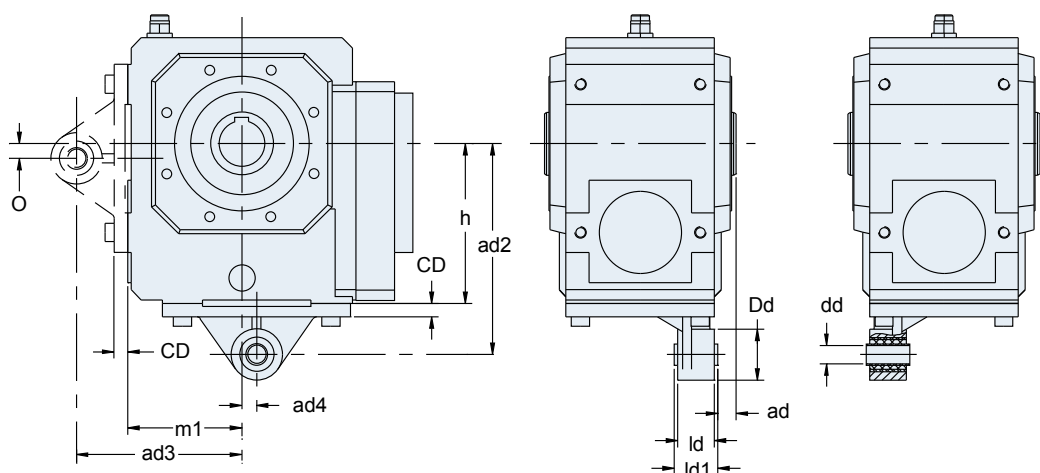
Table 4 Motor Adapter Dimensions (Inches)

Base Module	MR140/050			MR160/050 MR160/140			MR200/180			MR250/180 MR250/210			Approx. Wt. lbs.
	C	m	n	C	m	n	C	m	n	C	m	n	
S102	9.34	3.27	0.55	10.05	3.43	0.55	—	—	—	—	—	—	31
S202	10.52	3.86	0.67	11.23	4.02	0.67	12.24	4.09	0.67	—	—	—	49
S203	11.97	5.31	0.67	—	—	—	—	—	—	—	—	—	53
S302	11.70	4.45	1.00	12.41	4.61	1.00	13.43	4.69	1.00	—	—	—	60
S303	13.16	5.91	1.00	14.10	6.30	2.44	—	—	—	—	—	—	67
S402	—	—	—	13.27	5.08	1.18	14.29	5.16	1.18	14.88	5.24	1.18	80
S403	14.02	6.38	1.18	14.96	6.77	2.64	—	—	—	—	—	—	95



Dimensional Data

“A” Hollow Output with “GD” Torque Arm Bracket Housing (torque arm supplied by others)



Refer to “A-G” dimension drawing, page 158, for all additional unit, hollow bore and motor adapter dimensions.

Table 1 S Series Unit Dimensions (Inches) — “GD” Torque Arm Bracket

Base Module	ad	ad2	ad3	ad4	CD	Dd	dd	H9	h	ld	ld1	m1
S1	0.51	5.12	3.93	0.20	0.39	1.69	0.47	+0.017/-0.000	3.93	0.94	1.10	2.76
S2	0.57	6.10	4.72	0.22	0.47	1.77	0.63	+0.017/0-.000	4.72	1.26	1.50	3.35
S3	0.63	7.28	5.71	0.51	0.47	1.77	0.63	+0.017/-0.000	5.51	1.26	1.50	3.93
S4	0.71	8.66	6.69	0.41	0.55	2.17	0.79	+0.020/-0.000	6.30	1.57	1.81	4.33

S

RIGHT ANGLE – Solid Shaft/Hollow Output

S Series: RIGHT ANGLE – Solid Shaft/Hollow Output

“A” Hollow Output with “F” Flange Mount Housing

Optional Output Flanges available, see page 165 for details.

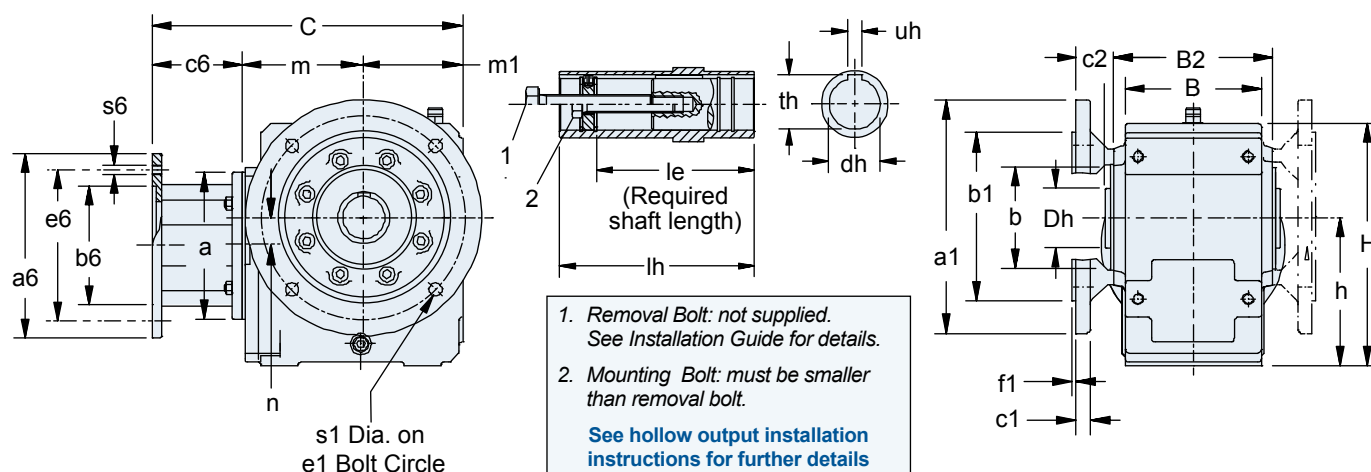


Table 1 S Series Unit Dimensions (Inches) — “F” Flange Mount Housing

Base Module	a1	B	b	b1	B2	c1	c2	Dh	e1	f1	H	h	le	lh	m1	s1	Removal Bolt 1
S1	6.30	3.54	2.953	4.331	4.17	0.39	1.26	1.57	5.12	0.14	6.57	3.94	3.86	4.72	2.76	0.35	1/2-13
S2	7.87	4.53	3.740	5.118	5.28	0.55	1.50	1.97	6.50	0.14	7.87	4.72	4.69	5.91	3.35	0.43	5/8-11
S3	9.84	5.12	4.331	7.087	6.02	0.59	1.57	2.17	8.46	0.16	9.17	5.51	5.39	6.61	3.94	0.55	3/4-10
S4	9.84	5.83	4.331	7.087	6.81	0.59	1.55	2.56	8.46	0.16	10.35	6.30	6.24	7.48	4.33	0.55	3/4-10

Table 2 S Series Unit Dimensions (Inches) — “A” Hollow Bore Output

Base Module	Standard Bore - inches			Optional Bore - mm		
	dh	th	uh	dh	th	uh
S1	1	1.11	1/4	25H7	28.3	8JS9
S2	1-3/8	1.52	5/16	35H7	38.3	10JS9
S3	1-1/2	1.67	3/8	40H7	43.3	12JS9
S4	1-3/4	1.92	3/8	50H7	53.8	14JS9

Table 3 S Series Unit Dimensions (inches) — “MR” Motor Adapter

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	6.30	6.50	4.500	3.86	5.87	0.41	16
MR200/180	182/184TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR250/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/210	213/215TC	9.84	9.00	8.500	5.31	7.25	0.55	36

Table 4 Motor Adapter Dimensions (Inches)

Base Module	MR140/050			MR160/050 MR160/140			MR200/180			MR250/180 MR250/210			Approx. Wt. lbs.
	C	m	n	C	m	n	C	m	n	C	m	n	
S102	9.34	3.27	0.55	10.05	3.43	0.55	—	—	—	—	—	—	31
S202	10.52	3.86	0.67	11.23	4.02	0.67	12.24	4.09	0.67	—	—	—	49
S203	11.97	5.31	0.67	—	—	—	—	—	—	—	—	—	53
S302	11.70	4.45	1.00	12.41	4.61	1.00	13.43	4.69	1.00	—	—	—	60
S303	13.16	5.91	1.00	14.10	6.30	2.44	—	—	—	—	—	—	67
S402	—	—	—	13.27	5.08	1.18	14.29	5.16	1.18	14.88	5.24	1.18	80
S403	14.02	6.38	1.18	14.96	6.77	2.64	—	—	—	—	—	—	95



Dimensional Data

“A” Hollow Output with “NG” Foot Mount Housing

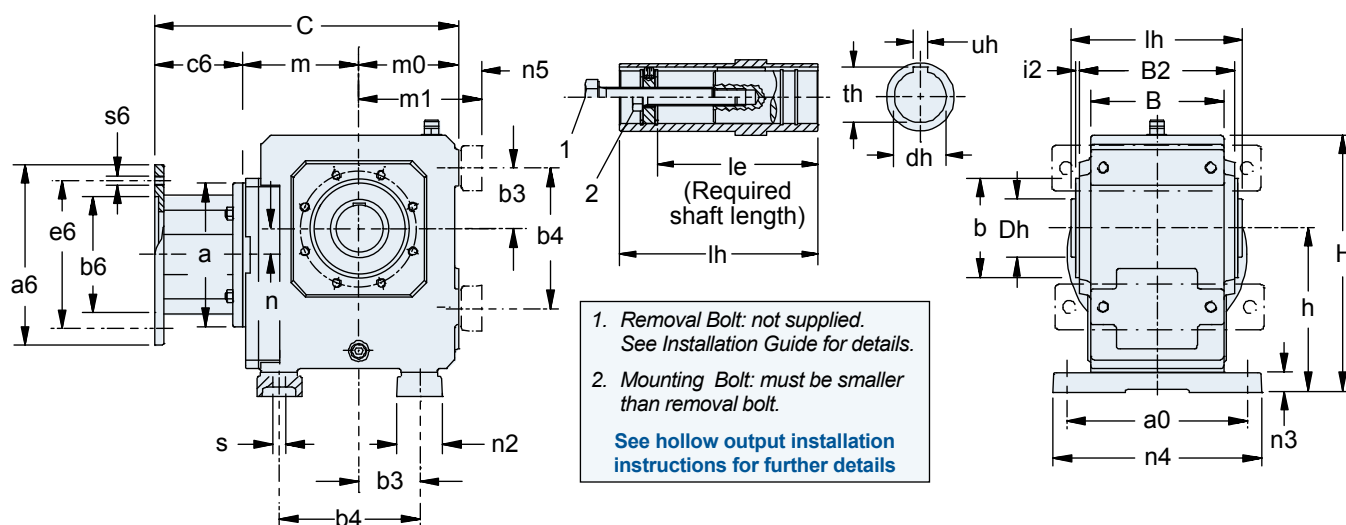


Table 1 S Series Unit Dimensions (Inches) — “NG” Foot Mounting

Base Module	a0	B	b	B2	b3	b4	Dh	H	h	i2	le	lh	m0	m1	n2	n3	n4	n5	s	Removal Bolt 1
S1	4.53	3.54	2.953	4.17	1.57	3.54	1.57	7.17	4.53	0.12	3.86	4.72	2.76	3.35	1.18	0.51	5.51	0.59	0.35	1/2-13
S2	6.10	4.53	3.740	5.28	2.05	4.53	1.97	8.78	5.63	0.16	4.69	5.91	3.35	4.25	1.57	0.79	7.28	0.91	0.43	5/8-11
S3	6.69	5.12	4.331	6.02	2.05	5.12	2.17	10.08	6.42	0.14	5.39	6.61	3.94	4.84	1.77	0.79	7.87	0.91	0.43	3/4-10
S4	7.87	5.83	4.331	6.81	2.64	6.10	2.56	11.34	7.28	0.14	6.24	7.48	4.33	5.31	1.97	0.87	9.06	0.98	0.55	3/4-10

Table 2 S Series Unit Dimensions (Inches) — “A” Hollow Bore Output

Base Module	Standard Bore - inches			Optional Bore - mm		
	dh	th	uh	dh	th	uh
S1	1	1.11	1/4	25H7	28.3	8JS9
S2	1-3/8	1.52	5/16	35H7	38.3	10JS9
S3	1-1/2	1.67	3/8	40H7	43.3	12JS9
S4	1-3/4	1.92	3/8	50H7	53.8	14JS9

Table 3 S Series Unit Dimensions (inches) — “MR” Motor Adapter

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR200/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/180	182/184TC							
MR250/210	213/215TC							

Table 4 Motor Adapter Dimensions (Inches)

Base Module	MR140/050			MR160/050 MR160/140			MR200/180			MR250/180 MR250/210			Approx. Wt. lbs.
	C	m	n	C	m	n	C	m	n	C	m	n	
S102	9.34	3.27	0.55	10.05	3.43	0.55	—	—	—	—	—	—	31
S202	10.52	3.86	0.67	11.23	4.02	0.67	12.24	4.09	0.67	—	—	—	49
S203	11.97	5.31	0.67	—	—	—	—	—	—	—	—	—	53
S302	11.70	4.45	1.00	12.41	4.61	1.00	13.43	4.69	1.00	—	—	—	60
S303	13.16	5.91	1.00	14.10	6.30	2.44	—	—	—	—	—	—	67
S402	—	—	—	13.27	5.08	1.18	14.29	5.16	1.18	14.88	5.24	1.18	80
S403	14.02	6.38	1.18	14.96	6.77	2.64	—	—	—	—	—	—	95

S Series: RIGHT ANGLE – Solid Shaft/Hollow Output

“V” Shaft Output with “G” Tapped Holes Around Output

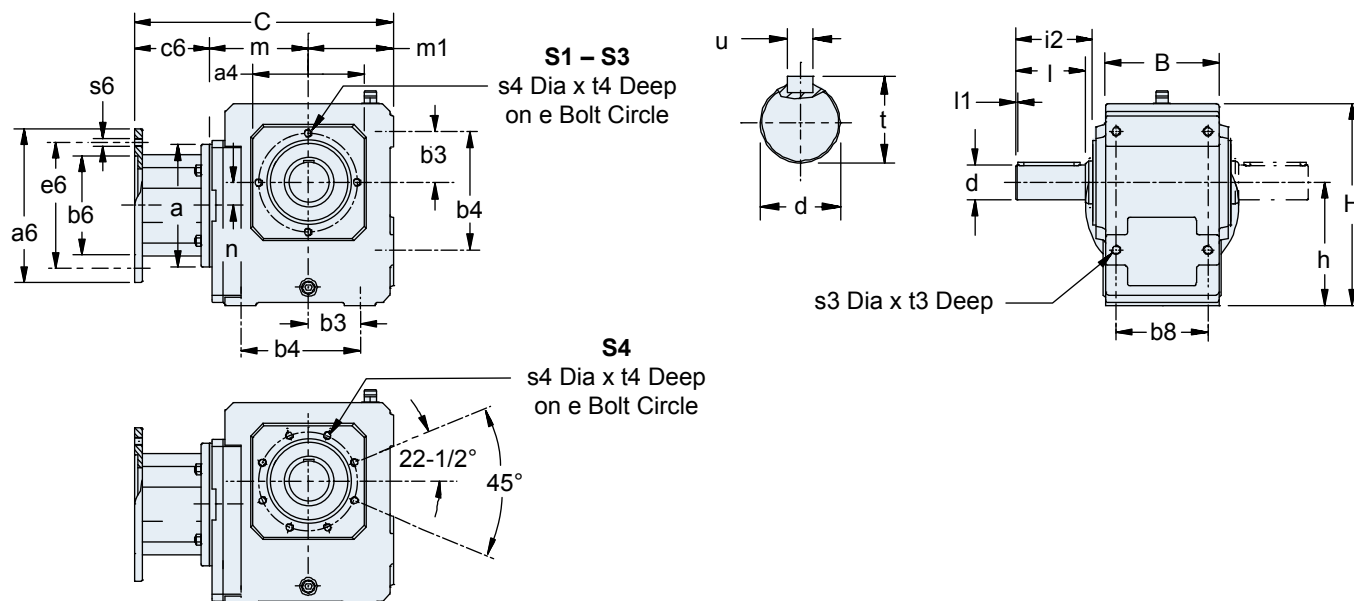


Table 1 S Series Unit Dimensions (Inches) — “G” Tapped Holes Housing

Base Module	a4	B	b3	b4	b8	e	H	h	i2	I	I1	m1	s3	s4 ¹⁾	t3	t4
S1	4.13	3.54	1.57	3.54	2.76	3.54	6.57	3.94	2.32	1.97	0.16	2.76	M8x1.25	M8x1.25	0.51	0.51
S2	5.20	4.53	2.05	4.53	3.54	4.53	7.87	4.72	2.64	2.36	0.16	3.35	M10x1.5	M8x1.25	0.63	0.51
S3	5.98	5.12	2.05	5.12	4.13	5.12	9.17	5.51	3.54	3.15	0.16	3.94	M10x1.5	M10x1.5	0.63	0.63
S4	5.71	5.83	2.64	6.10	4.72	5.12	10.35	6.30	3.94	3.54	0.16	4.33	M12x1.75	M10x1.5	0.75	0.63

1) S102 through S303 has 4 tapped holes, S4 has 8.

Table 2 S Series Unit Dimensions (Inches) — “V” Solid Shaft Output

Base Module	Standard Shaft - inches			Optional Shaft - mm		
	d	t	u	d	t	u
S1	1	1.11	1/4x1/4x1-1/2	25k6	28.0	A8x7x40
S2	1-1/4	1.36	1/4x1/4x1-15/16	30k6	33.0	A8x7x50
S3	1-3/8	1.51	5/16x5/16x2-5/16	40k6	43.0	A12x8x70
S4	1-3/4	1.92	3/8x3/8x3-5/32	45k6	48.5	A14x9x80

Table 3 S Series Unit Dimensions (inches) — “MR” Motor Adapter

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR200/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/180	182/184TC							
MR250/210	213/215TC							

Table 4 Motor Adapter Dimensions (Inches)

Base Module	MR140/050			MR160/050 MR160/140			MR200/180			MR250/180 MR250/210			Approx. Wt. lbs.
	C	m	n	C	m	n	C	m	n	C	m	n	
S102	9.34	3.27	0.55	10.05	3.43	0.55	—	—	—	—	—	—	31
S202	10.52	3.86	0.67	11.23	4.02	0.67	12.24	4.09	0.67	—	—	—	49
S203	11.97	5.31	0.67	—	—	—	—	—	—	—	—	—	53
S302	11.70	4.45	1.00	12.41	4.61	1.00	13.43	4.69	1.00	—	—	—	60
S303	13.16	5.91	1.00	14.10	6.30	2.44	—	—	—	—	—	—	67
S402	—	—	—	13.27	5.08	1.18	14.29	5.16	1.18	14.88	5.24	1.18	80
S403	14.02	6.38	1.18	14.96	6.77	2.64	—	—	—	—	—	—	95



Dimensional Data

“V” Shaft Output with “F” Flange Mount Housing

Optional Output Flanges available, see page 165 for details.

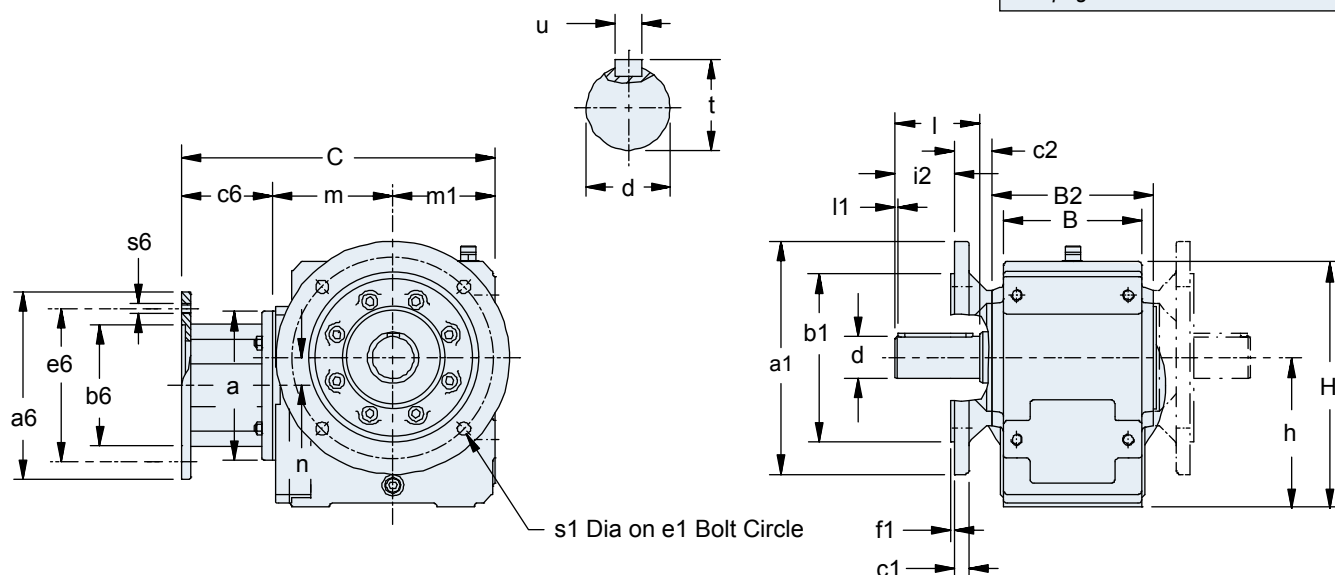


Table 1 S Series Unit Dimensions (Inches) — “F” Round Flange Housing

Base Module	a1	B	b1	B2	c1	c2	e1	f1	H	h	i2	l	l1	m1	s1
S1	6.30	3.54	4.331	4.17	0.39	1.26	5.12	0.14	6.57	3.94	1.18	1.97	0.16	2.76	0.35
S2	7.87	4.53	5.118	5.28	0.55	1.50	6.50	0.14	7.87	4.72	1.30	2.36	0.16	3.35	0.43
S3	9.84	5.12	7.087	6.02	0.59	1.57	8.46	0.16	9.17	5.51	2.11	3.15	0.16	3.94	0.55
S4	9.84	5.83	7.087	6.81	0.59	1.55	8.46	0.16	10.35	6.30	2.52	3.54	0.16	4.33	0.55

Table 2 S Series Unit Dimensions (Inches) — “V” Solid Shaft Output

Base Module	Standard Shaft - inches			Optional Shaft - mm		
	d	t	u	d	t	u
S1	1	1.11	1/4x1/4x1-1/2	25k6	28.0	A8x7x40
S2	1-1/4	1.36	1/4x1/4x1-15/16	30k6	33.0	A8x7x50
S3	1-3/8	1.51	5/16x5/16x2-5/16	40k6	43.0	A12x8x70
S4	1-3/4	1.92	3/8x3/8x3-5/32	45k6	48.5	A14x9x80

Table 3 S Series Unit Dimensions (inches) — “MR” Motor Adapter

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC	6.30	6.50	4.500	3.86	5.87	0.41	16
MR200/180	182/184TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR250/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/210	213/215TC	9.84	9.00	8.500	5.31	7.25	0.55	36

Table 4 Motor Adapter Dimensions (Inches)

Base Module	MR140/050			MR160/050 MR160/140			MR200/180			MR250/180 MR250/210			Approx. Wt. lbs.
	C	m	n	C	m	n	C	m	n	C	m	n	
S102	9.34	3.27	0.55	10.05	3.43	0.55	—	—	—	—	—	—	31
S202	10.52	3.86	0.67	11.23	4.02	0.67	12.24	4.09	0.67	—	—	—	49
S203	11.97	5.31	0.67	—	—	—	—	—	—	—	—	—	53
S302	11.70	4.45	1.00	12.41	4.61	1.00	13.43	4.69	1.00	—	—	—	60
S303	13.16	5.91	1.00	14.10	6.30	2.44	—	—	—	—	—	—	67
S402	—	—	—	13.27	5.08	1.18	14.29	5.16	1.18	14.88	5.24	1.18	80
S403	14.02	6.38	1.18	14.96	6.77	2.64	—	—	—	—	—	—	95

S

RIGHT ANGLE – Solid Shaft/Hollow Output

“V” Shaft Output with “NG” Foot Mount Housing

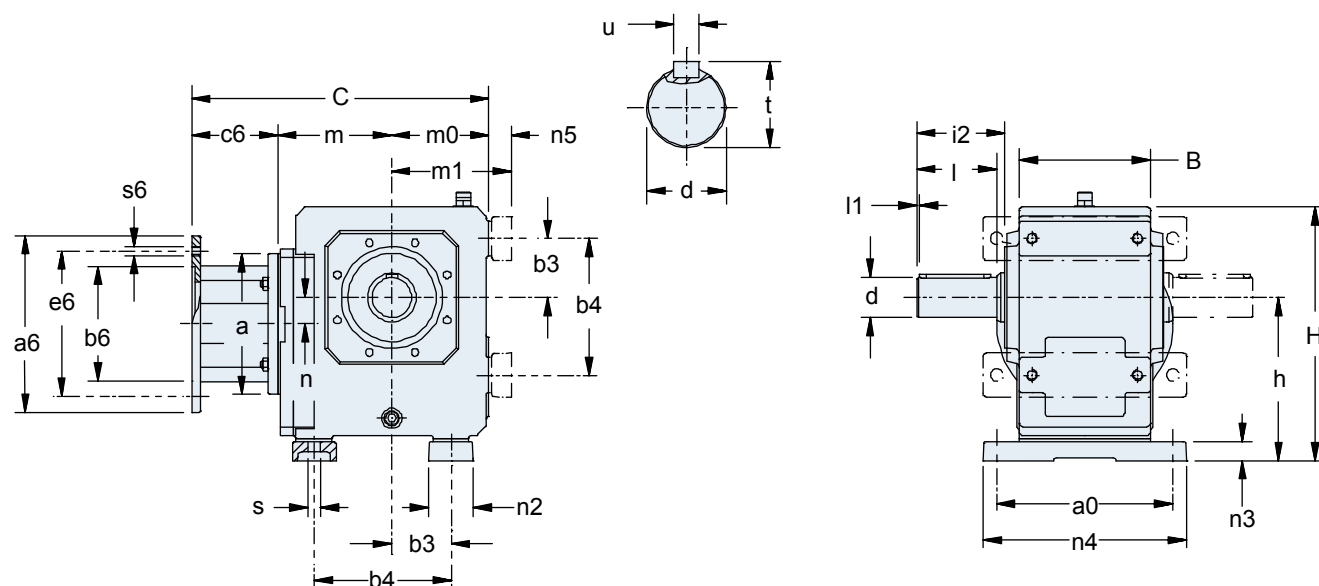


Table 1 S Series Unit Dimensions (Inches) — “NG” Foot Mounting

Base Module	a0	B	b3	b4	H	h	i2	l	l1	m0	m1	n2	n3	n4	n5	s
S1	4.53	3.54	1.57	3.54	7.17	4.53	2.32	1.97	0.16	2.76	3.35	1.18	0.51	5.51	0.59	0.35
S2	6.10	4.53	2.05	4.53	8.78	5.63	2.64	2.36	0.16	3.35	4.25	1.57	0.79	7.28	0.91	0.43
S3	6.69	5.12	2.05	5.12	10.08	6.42	3.54	3.15	0.16	3.94	4.84	1.77	0.79	7.87	0.91	0.43
S4	7.87	5.83	2.64	6.10	11.34	7.28	3.94	3.54	0.16	4.33	5.31	1.97	0.87	9.06	0.98	0.55

Table 2 S Series Unit Dimensions (Inches) — “V” Solid Shaft Output

Base Module	Standard Shaft - inches			Optional Shaft - mm		
	d	t	u	d	t	u
S1	1	1.11	1/4x1/4x1-1/2	25k6	28.0	A8x7x40
S2	1-1/4	1.36	1/4x1/4x1-15/16	30k6	33.0	A8x7x50
S3	1-3/8	1.51	5/16x5/16x2-5/16	40k6	43.0	A12x8x70
S4	1-3/4	1.92	3/8x3/8x3-5/32	45k6	48.5	A14x9x80

Table 3 S Series Unit Dimensions (inches) — “MR” Motor Adapter

Motor Adapter	NEMA C-Flange	a	a6	b6	c6	e6	s6	Wt. lbs
MR140/050	56C	5.51	6.50	4.500	3.31	5.87	0.41	9
MR160/050	56C	6.30	6.50	4.500	3.86	5.87	0.41	16
MR160/140	143/145TC							
MR200/180	182/184TC	7.87	9.00	8.500	4.80	7.25	0.55	23
MR250/180	182/184TC	9.84	9.00	8.500	5.31	7.25	0.55	36
MR250/210	213/215TC							

Table 4 Motor Adapter Dimensions (Inches)

Base Module	MR140/050			MR160/050 MR160/140			MR200/180			MR250/180 MR250/210			Approx. Wt. lbs.
	C	m	n	C	m	n	C	m	n	C	m	n	
S102	9.34	3.27	0.55	10.05	3.43	0.55	—	—	—	—	—	—	31
S202	10.52	3.86	0.67	11.23	4.02	0.67	12.24	4.09	0.67	—	—	—	49
S203	11.97	5.31	0.67	—	—	—	—	—	—	—	—	—	53
S302	11.70	4.45	1.00	12.41	4.61	1.00	13.43	4.69	1.00	—	—	—	60
S303	13.16	5.91	1.00	14.10	6.30	2.44	—	—	—	—	—	—	67
S402	—	—	—	13.27	5.08	1.18	14.29	5.16	1.18	14.88	5.24	1.18	80
S403	14.02	6.38	1.18	14.96	6.77	2.64	—	—	—	—	—	—	95



Dimensional Data

Optional Output Flanges

For “F” Round Output Flange Units Only

(Note: optional flanges are not available on all sizes)

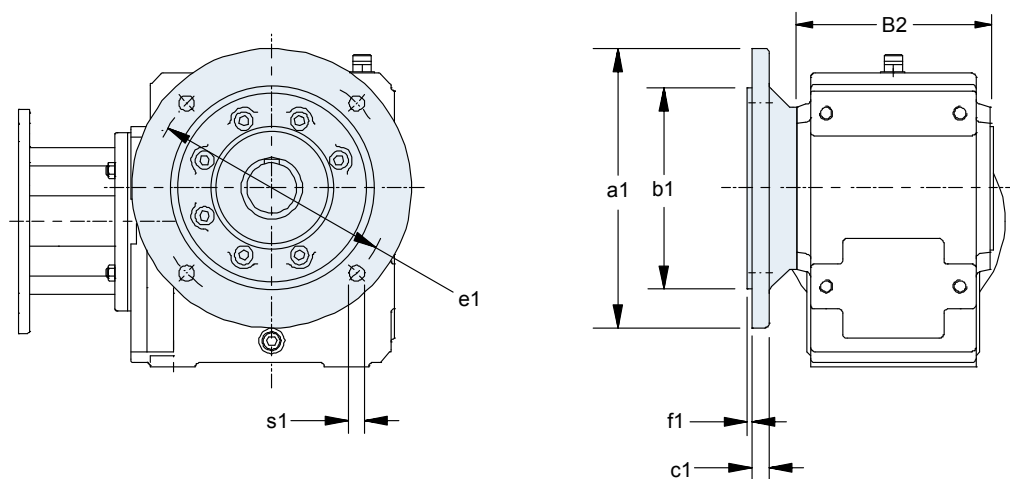


Table 1 Flange Dimensions (Inches) – Standard and Optional

Base Module	Flange Size	a1	b1	B2	c1	e1	f1	s1
S1	140	5.512	3.740	4.17	0.39	4.53	0.12	0.35
	160*	6.300	4.331 +0.001/-0.0004			5.12	0.14	
S2	160	6.300	4.331 +0.001/-0.0004	5.28	0.55	5.12	0.14	0.35
	200*	7.874	5.118			6.50	0.14	0.43
S3	250*	9.843	7.087 +0.001/-0.0004	6.02	0.59	8.46	0.16	0.55
S4	250*	9.843	7.087 +0.001/-0.0004	6.81	0.59	8.46	0.16	0.55

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

Please contact STOBBER for ordering assistance.

S

RIGHT ANGLE – Solid Shaft/Hollow Output

Output Options

BLUE: standard output diameters in stock

BLACK: optional diameters in stock

Other options are available upon request. Please contact STOBER to learn about other options and their deliveries.

KSS Series (Stainless Steel)

		KSS1	KSS2	KSS3
Solid Shaft	Inches	1	1-1/4	1-1/4
Hollow Bore	Inches	1	1-1/4 1-3/8	1 1-1/4 1-3/8 1-7/16
Wobble Free Bushing	Inches	1	1 1-3/16 1-1/4 1-3/8 1-7/16 1-1/2	1 1-3/16 1-1/4 1-3/8 1-7/16 1-1/2
	Metric	25	30 35	30 35

KL Series

			KL2
Solid Shaft	Carbon Steel	Inches	3/4
		Metric	20
	Stainless Steel	Inches	3/4
		Metric	20
Hollow Bore	Carbon Steel	Inches	3/4
		Metric	20
	Stainless Steel	Inches	3/4
		Metric	20
Wobble Free Double Bushing	Stainless Steel	Inches	3/4

PSS Series (Stainless Steel)

		PSS5	PSS7
Solid Shaft	Inches	1-1/4	1-1/2

K Series

			K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
Solid Shaft	Carbon Steel	Inches	1	1-1/4	1-1/4	1-3/8	1-3/4	1-3/4	2-3/8	2-7/8	3-5/8	4-3/8
		Metric	25	30	30	40	45	50	60	70	90	110
	Stainless Steel	Inches	1	1-1/4	1-1/4	1-3/8	1-3/4	1-3/4	2-3/8	2-7/8	3-5/8	—
		Metric	25	30	—	—	45	—	—	—	—	—
Hollow Bore	Carbon Steel	Inches	1	1-3/16 1-1/4	1-3/8 1-7/16	1-7/16 1-1/2	2	2	2-3/8	2-3/4	3-1/4	4
		Metric	25	30	30 35	40	40 50	50	60	70	70	—
	Stainless Steel	Inches	1	1-1/8 1-1/4	1 1-1/4 1-3/8 1-7/16	1-1/2	1-1/2 2	2	—	—	2-15/16 3 3-7/16	—
		Metric	25	30	35	40	40 50	—	60	70	75	—
Wobble Free Bushing (Stainless Steel except where noted)	Inches	Single & Double	1	1 1-3/16	1* 1-3/16* 1-1/4* 1-3/8* 1-7/16* 1-1/2*	1 1-3/16 1-1/4 1-3/8 1-7/16 1-1/2	1-7/16 1-1/2 1-5/8 1-11/16 1-3/4 1-7/8 1-15/16 2	1-7/16 1-1/2 1-5/8 1-11/16 1-3/4 1-15/16 2 2-3/16	1-15/16 2 2-3/8 2-3/8	2-3/16 2-3/8 2-7/16 2-3/4	—	—
	Metric	Single	25	30	30 35	—	—	—	—	—	—	—
					30 35	40	40	40	—	—	—	—

*Also available in carbon steel

C Series

			C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
Solid Shaft	Carbon Steel	Inches	3/4	1	1-1/4	1-1/4	1-5/8	1-5/8	2-1/8	2-3/8	2-7/8	3-5/8
		Metric	20	25	30	30	40	40	50	60	70	90
	Stainless Steel	Inches	3/4	1	1-1/4	1-1/4	1-5/8	1-5/8	2-1/8	2-3/8	2-7/8	—
		Metric	—	—	—	25	—	—	—	—	—	—

F Series

			F1	F2	F3	F4	F6
Solid Shaft	Carbon Steel	Inches	1	1-1/4	1-3/8	1-5/8	2-1/8
		Metric	—	—	—	—	—
	Stainless Steel	Inches	—	—	—	—	—
		Metric	—	—	—	—	—

Hollow Bore	Carbon Steel	Inches	3/4	1	1-1/4	1-1/2	2
		Metric	20	25	30	40	50
	Stainless Steel	Inches	—	1	1-1/4	1-1/2	—
		Metric	—	—	—	—	—

Wobble Free Bushing (Single & Double Bushings*)	Stainless Steel	Inches	3/4	1 1-3/16	1	1	1-7/16
					1-3/16	1-3/16	1-1/2
					1-1/4	1-1/4	1-5/8
					1-3/8	1-3/8	1-11/16
					1-7/16	1-7/16	1-3/4
					1-1/2	1-1/2	1-7/8
							1-15/16
							2
		Metric	20	30	30	40**	40**
					35		

* Double bushings only available with two stage units ** Double bushing only

S Series

			S1	S2	S3	S4
Solid Shaft	Carbon Steel	Inches	1	1-1/4	1-3/8	1-3/4
		Metric	25	30	40	45
Hollow Bore	Carbon Steel	Inches	1	1-3/8	1-1/2	1-3/4
		Metric	20 25	35	40	50

Standard & Optional Output Flange Sizes

K Series

Base Module	Flange Size	
	w/Solid Shaft Units	w/Hollow Shaft Units
K1	140	160*
K2	160	200*
K3	160	200*
K4	250*	
K5	250*	
K6	300*	
K7	300	350*
K8	350	400* 450
K9	450*	
K10	550*	

C Series

Base Module	Flange Size		
C0	120	140	160*
C1	140	160	200*
C2	160	200*	250
C3	160	200	250*
C4	200	250*	300
C5	250	300*	
C6	300*		
C7	350*		
C8	350	400*	450
C9	450*		

S Series

Base Module	Flange Size	
S1	140	160*
S2	160	200*
S3	250*	
S4	250*	

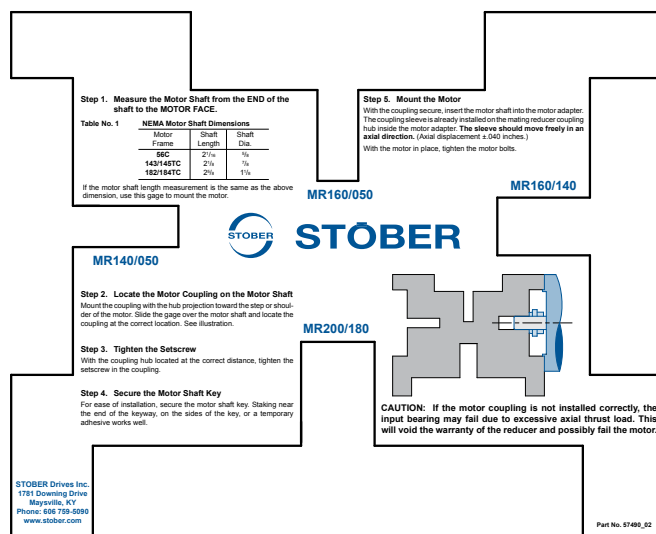
* This is the standard flange size and will be shipped unless otherwise specified. Optional flanges are not available for all sizes.

STOBER Motor Hub Mounting Gage

For ease of motor coupling hub location and installation, the STOBER motor hub mounting gage is designed to fit most sizes of “MR” style motor adapters (used with C, F, K and S units).

This simple-to-use gage makes it easy to position the motor coupling hub on the shaft quickly and accurately, insuring maximum motor/speed reducer performance and life.

A paper motor hub mounting gage is included with each MGS speed reducer order. Stainless steel motor hub mounting gages are also available. Contact STOBER to order, using the appropriate part number listed below.



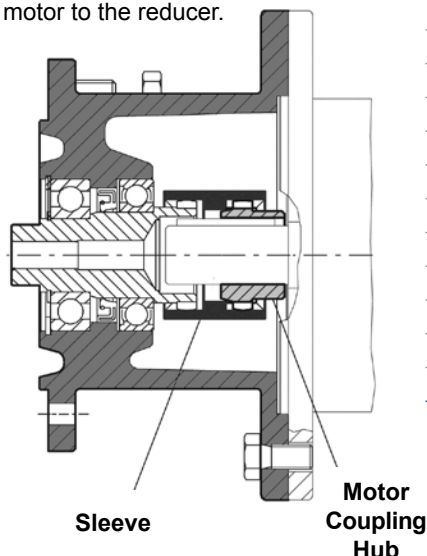
Stainless steel motor hub mounting gages

Part # Description

57490	For use with MR140/050, MR160/050, MR160/140 and MR200/180 adapters
213000	For use with MR 250/210 and MR300/250 adapters

Motor Adapter Coupling Hub and Sleeve

Motor coupling hub and sleeves are provided with the motor adapter. These parts, with a coupling shaft component that is part of the reducer, make a complete coupling to connect the motor to the reducer.



“MR” Motor Adapters (K, C, F, S)

Adapter	NEMA Frame	Motor Hub	Sleeve
MR140/050	56C	M-19 x 5/8	M-19
MR160/050	56C	M-24 x 5/8	M-24
MR160/140	143/145TC	M-24 x 7/8	M-24
MR200/050	56C	M-32 x 5/8	M-32
MR200/140	143/145TC	M-32 x 7/8	M-32
MR200/180	182/184TC	M-32 x 1-1/8	M-32
MR250/180	182/184TC	M-38 x 1-1/8	M-38
MR250/210	213/215TC	M-38 x 1-3/8	M-38
MR300/180	182/184TC	M-48 x 1-1/8	M-48
MR300/210	213/215TC	M-48 x 1-3/8	M-48
MR300/250	254/256TC	M-48 x 1-5/8	M-48
MR300/280	284/286TC	M-48 x 1-7/8	M-48
MR350/320	324/326TC	M-65 x 2-1/8	M-65
MR350/360	364/365TC	M-65 x 2-3/8	M-65

“MS_R” Motor Adapters (KSS, PSS)

Adapter	NEMA Frame	Motor Hub	Sleeve
MS1R050	56C	M-19 x 5/8	M-19
MS2R050	56C	M-24 x 5/8	M-24
MS2R140	143/145TC	M-24 x 7/8	M-24
MS3R050	56C	M-24 x 5/8	M-24
MS3R140	143/145TC	M-24 x 7/8	M-24
MS3R180	182/184TC	M-32 x 1-1/8	M-32
MS4R050	56C	M-24 x 5/8	M-24
MS4R140	143/145TC	M-24 x 7/8	M-24
MS5R050	56C	M-32 x 5/8	M-32
MS5R140	143/145TC	M-32 x 7/8	M-32
MS5R180	182/184TC	M-32 x 1-1/8	M-32
MS7R180	182/184TC	M-32 x 1-1/8	M-32

“ML” Motor Adapters (KL)

Adapter	NEMA Frame	Motor Hub	Sleeve
ML2R050	56C	M-19 x 5/8	M-19

Conversions

Imperial to Metric

1 inch x 25.4 = mm
1 in ² x 645.16 = mm ²
1 lb x 0.453 = kg
1 US gal x 3.785 = L
1 HP x 0.746 = kW
1 lb x 4.45 = N
1 lb in x 0.113 = Nm
1 lb ft x 1.36 = Nm
1 lb ft x .1383 = kgm
1 lb in x .0115 = kgm
1 lb in ² x 0.00029 = kgm ²
1 PSI x 0.0689 = bar
1 PSI x 0.00689 = N/mm ²
°F = 32 + 9/5 x °C

Metric to Imperial

mm x 0.03937 = inch
1 mm ² x 0.0015 = in ²
1 kg x 2.205 = lb
1 L x 0.264 = US gal
1 kW x 1.341 = HP
1 N x 0.225 = lb
1 Nm x 8.85 = lb in
1 Nm x 0.737 = lb ft
1 kgm x 7.233 = lb ft
1 kgm x 86.798 = lb ft
1 kgm ² (J) x 3418.0 = lb in ² (WR ²)
1 bar x 14.5 = PSI
1 N/mm ² x 145.04 = PSI
°C = 5/9 (°F-32)

Formulas

1 HP =	36 in.lbs @ 1750 RPM
1 HP =	54 in.lbs @ 1160 RPM
HP =	Force x FPM / 33,000
HP =	T (in.lbs) x RPM / 63,025
HP =	T (ft.lbs) x RPM / 5,252
T (in.lbs) =	63,025 x HP / RPM
T (ft.lbs) =	5,252 x HP / RPM
Feet/Minute =	0.2618 x Dia. (in) x RPM
Meters/Minute =	0.00314 x Dia. (mm) x RPM
RPM =	Feet/Minute / 0.2618 x Dia. (in)
RPM =	63,025 x HP / Torque
T =	Force x Lever Arm
F =	Torque / Radius

Thermal Ratings

HP	kW	Series - Size				
		KSS	K	C	F	S
2.95	2.2	1	1	0	1	1
5.36	4.0	2	2	1	2	2
7.38	5.5	3	3	2	3	3
12.34	9.2	—	4	3	4	4
14.75	11.0	—	5	4	5	—
20.12	15.0	—	6	5	6	—
29.50	22.0	—	7	6	—	—
40.23	30.0	—	8	7	—	—
53.64	40.0	—	9	8	—	—
67.05	50.0	—	10	9	—	—

Calculating HP

Use this equation to calculate the HP required for an application:

$$HP = \frac{1.732 \times \text{Volts} \times \text{Amps} \times \text{Eff} \times \text{PF}}{746}$$

Where: **Volts** = Motor Running Volts (i.e. 230V or 460V)

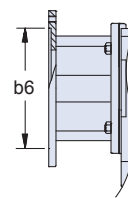
Amps = Measured Full Load Amps

Eff = Motor Efficiency

PF = Motor Power Factor

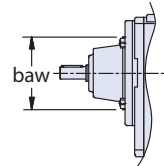
Tolerances

Motor Adapter (KSS, PSS, KL, K, C, F, S)



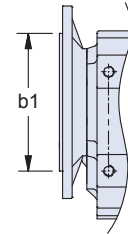
Bore (in)	Pilot Bore Diameter b6
1.96 — 3.15	+0.0007/-0.0005
3.15 — 4.72	+0.0008/-0.0006
4.72 — 7.09	+0.0010/-0.0007
7.09 — 9.84	+0.0012/-0.0008
9.84 — 12.40	+0.0014/-0.0009

Optional Input Shaft (K, C, F, S)



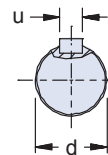
Diameter (in)	Pilot Diameter baw
3.15 — 4.72	+0.0007/-0.0005
4.72 — 7.09	+0.0008/-0.0006
7.09 — 9.06	+0.0010/-0.0007
9.06 — 12.40	+0.0012/-0.0008
12.40 — Up	+0.0014/-0.0009

Output – Flange Mount (KSS, KL, K, C, F, S)



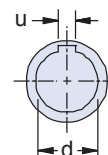
Diameter (in)	Pilot Diameter b1
>1.96 — 3.15	+0.0005/-0.0003
>3.15 — 4.72	+0.0005/-0.0004
>4.72 — 7.09	+0.0006/-0.0004
>7.09 — 9.84	+0.0006/-0.0005
>9.84 — 12.40	+0.0006/-0.0006
>12.40 — 15.74	+0.0007/-0.0007

Output – Solid Shaft (KSS, PSS, KL, K, C, F, S)



Diameter (in)	d	u
0.39 — 0.71	+0.0000/-0.0005	+0.0019 /-0.0000
0.71 — 1.18	+0.0000/-0.0006	
1.18 — 1.97	+0.0000/-0.0007	
1.97 — 3.15	+0.0000/-0.0008	
3.15 — Up	+0.0000/-0.0009	

Output – Hollow Bore (KSS, KL, K, C, F, S)



Bore (in)	d	u
0.39 — 0.71	+0.0007/-0.0000	+0.0019/ -0.0000
0.71 — 1.18	+0.0008/-0.0000	
1.18 — 1.97	+0.0010/-0.0000	
1.97 — 3.15	+0.0012/-0.0000	
3.15 — Up	+0.0014/-0.0000	

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

Other Products from **STOBER**



ServoStop

Motor Adapter with Integrated Brake

Motor adapter integrated brake module provides redundant braking during power failures or emergency stops in hazardous situations. Available with ServoFit P, PA, PH, PHA, PK, PHK, C, F and K Series Gearheads.

- Saves braking at EMERGENCY STOP and power cut
- Prevents accidental sliding or falling of vertical axis with gravity load absolutely reliable
- Manual hand release available
- Fits all standard servo motors
- IP54 Rated; CSA Approved
- Higher safety for vertical applications per EN ISO 13849, Category 1, 2 & 3



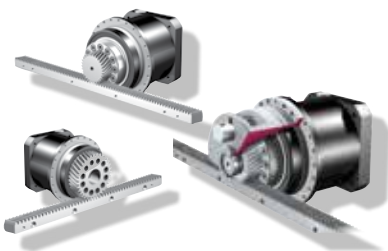
Spindle Nut Direct Drive

- Axial angular contact ball bearing absorbs high axial forces from the ball screw
- Flange meets DIN 69051-5 requirements
- Liquid cooling channel available as an option for added performance



ServoFit® Gear Reducers

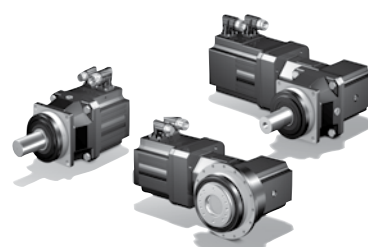
- Inline concentric, offset or right angle
- Helical, bevel or worm gear driven
- Input RPM up to 8,000
- Output torques to +200,000 in. lbs.
- Ratios from 3:1 to 600:1
- Backlash as low as <1 arc minute
- Food and beverage duty, stainless steel available



Rack and Pinion Systems

STOBER and Atlanta partner on ZV, ZR, ZTR, ZTRS Series high efficiency rack and pinion drives which feature an innovative pinion bearing for high linear force applications.

- Gear unit and rack optimally mated together as a system
- Ready to install drive solutions
- Easy selection and calculations done by STOBER for a total engineered solution
- Optimize inertia mismatch by changing the gear ratio or pinion tooth count
- Forces up to 122 kN or 27,400 lbs.
- Precision linear backlash as low as 7 μ m
- Gearing size ranges from Mod. 2 – 10



Servo Gearmotors

ED and EZ Series are compact, highly-dynamic, electronically commutated, permanent magnet brushless servo motors coupled to STOBER gearheads.

- Mounting the motor directly to the gearbox eliminates a motor coupling and housing, adapter or additional input seals and bearings to reduce inertia up to 75%
- Smoother running for optimal performance; dynamic, minimal torque/speed ripple; UL/CE/CSA approved
- Options include: washdown, food coatings, spring and magnetic brakes, forced air cooling, water cooling, high dynamic performance with low inertia, encoder options, PTC or KTY winding protection, high inertia option, motor speeds up to 6000 RPM, and high torque density



Hollow Bore Motors

- Flanged hollow shaft motor features a large internal hollow shaft (28 to 42 mm) that allows feeding of supply lines, including not only power cables, hydraulic pipes and pneumatic hoses, but also shafts and laser beams.
- 2 sizes – 5 and 7
- Extremely compact



STÖBER

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MGS® V.24



STOBER MGS® Speed Reducers