

# Stainless Steel Power Transmission Products

## Gear Drives / Motors & Gear Motors / Bearings & Couplings



**IP67 and  
IP69K  
Products**

**REDUCER  
EXPRESS**

**SAME DAY  
GUARANTEED  
SHIPMENT**



The original  
**Domed Crown™**  
Design

## BOSTON GEAR AND BAUER GEAR MOTOR PROVIDE POWER TRANSMISSION SOLUTIONS FOR THE FOOD AND BEVERAGE INDUSTRY

Tightened federal regulations regarding food safety and hygiene in food processing and beverage industries has led producers to continue to adapt their equipment to meet those changing requirements.

The areas in production facilities where drive systems are located are often the areas that have the most stringent requirements for hygiene and sanitation, due to their proximity to the food product. The key to food safety is prevention of microbial contamination and bacteria growth. Equipment in these areas needs to be resistant to alkali or acid based cleaning agents and disinfectants.



For installations where the drive system is located at or above the food product, there is a higher risk of product contamination due to rigorous cleaning standards. For these installations special attention must be given to drive design & materials, so that bacterial growth on surfaces will be avoided. Drive systems with the most extreme protection are often utilized in these applications. Stainless steel exterior materials, rounded edges, domed crowns, and enhanced sealing are critical design features that will ensure long equipment life, the sustainability of your process and the safety of your product.

Some producers use highly caustic wash down solutions; others use high-pressure hot water. Equipment can also be exposed to process by-products such as sugar, seasonings, brines, or animal blood. Whatever challenges the integrity of your drive system, Altra has a solution for you. The family of gearing & motor products manufactured by Boston Gear and Bauer Gear Motor provide the level of protection needed for the harsh elements increasingly used in the prevention of microbial contamination and bacterial growth in hygiene sensitive environments.

[www.AltraFoodandBeverage.com](http://www.AltraFoodandBeverage.com)



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Product Page

## Section







## Pages

### New Products


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### GEAR DRIVES




#### RIGHT ANGLE

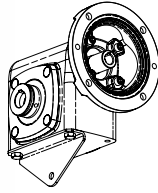
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### GEAR MOTORS

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## New Accessories for SS700

- Economical Torque Arm (bracket-style kit) now available for all sizes
- 2-Bolt mount to either left or right Base Holes makes installation quick and easy

## New Sizes of SS2000R Series - Helical Bevel

- Compact 2033R frame size with full compliment of mounting options
- Rugged 2073R frame size has expanded torque capacity and hollow output shaft bore sizes up to 2.000 inches



## New Helical Multiplier

- C-Face mounts to any SS700, SS2000R or SS2000 product for more flexible ratio expansion
- Range of low ratios can be used as compact, stand-alone speed reducer for low reduction requirements

## New AQT AquaTRUE™ Planetary Gearhead

- RediMount™ design for use with servo motors in precision applications
- 4 frame sizes with ratios from 3:1 thru 100:1



## New SS Hiflex Helical Bevel Gear Motors

- 3 frame sizes with integrated motor options including asynchronous and permanent magnet
- Non-vented, totally-enclosed exterior with ability to integrate a brake or encoder

## New SS AC Motor Design

- Welded and rounded conduit box for better sealing and washdown runoff
- Stainless slinger to protect shaft seal
- New size: 1/3 HP



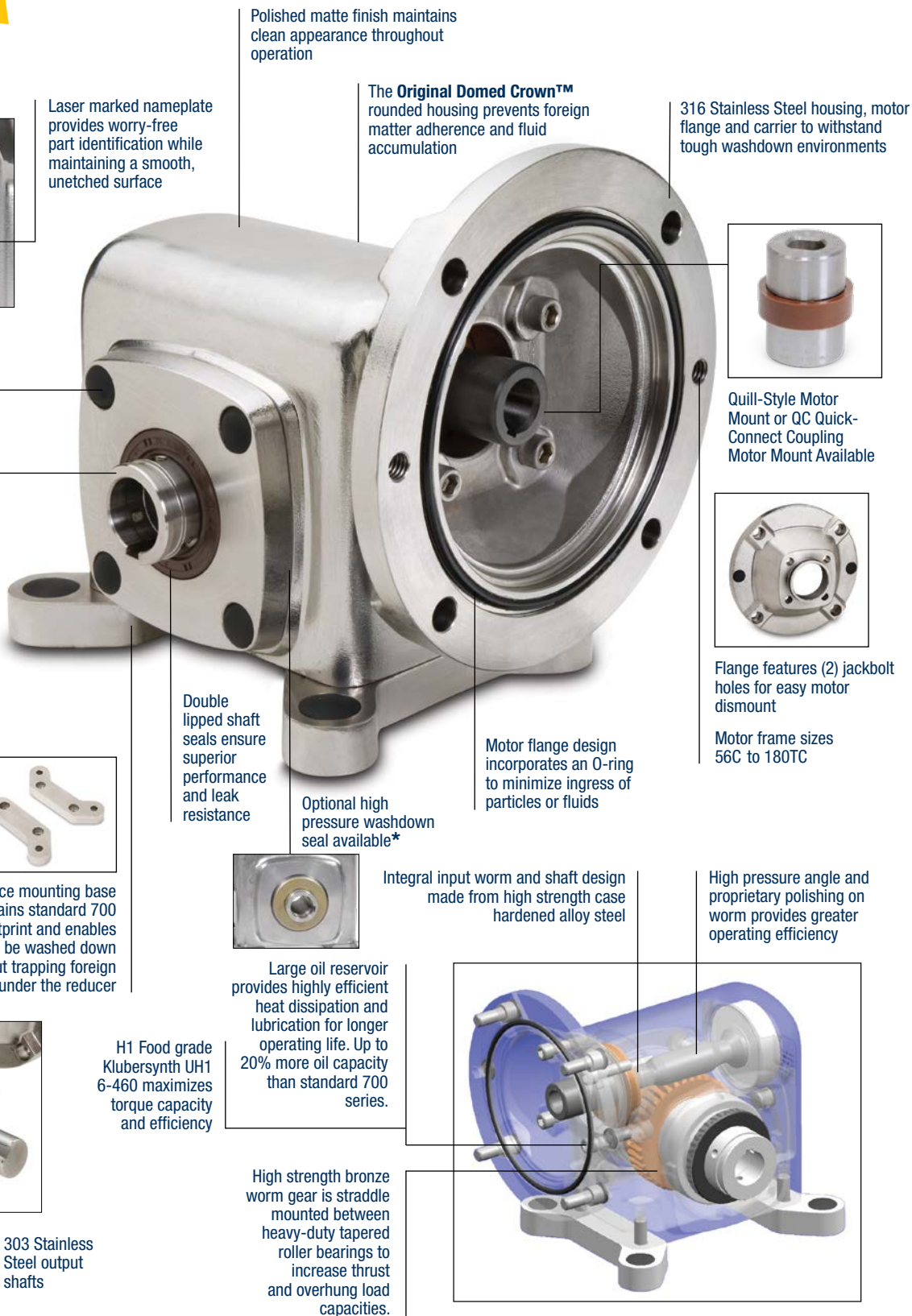
# SS700 Series Worm Gear Speed Reducers **A1**

## Trusted Worm Gearing with a Revolutionary Smooth Exterior

**IP69K**

When ordered with high pressure washdown seal option\*

### NSF International Certified



Polished matte finish maintains clean appearance throughout operation

The **Original Domed Crown™** rounded housing prevents foreign matter adherence and fluid accumulation

316 Stainless Steel housing, motor flange and carrier to withstand tough washdown environments

Laser marked nameplate provides worry-free part identification while maintaining a smooth, unetched surface



Quill-Style Motor Mount or QC Quick-Connect Coupling Motor Mount Available



Flange features (2) jackbolt holes for easy motor dismount

Motor frame sizes 56C to 180TC

Optional high pressure washdown seal available\*

Motor flange design incorporates an O-ring to minimize ingress of particles or fluids

Double lipped shaft seals ensure superior performance and leak resistance

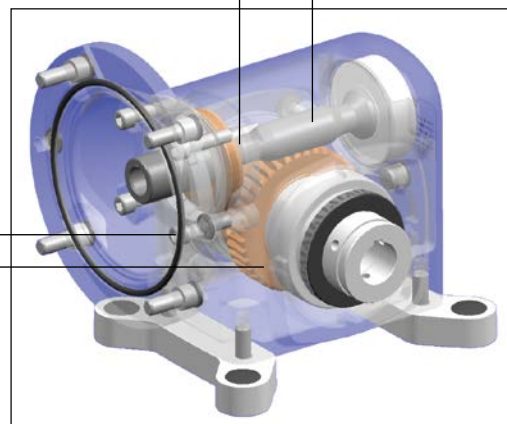
Integral input worm and shaft design made from high strength case hardened alloy steel

High pressure angle and proprietary polishing on worm provides greater operating efficiency



Large oil reservoir provides highly efficient heat dissipation and lubrication for longer operating life. Up to 20% more oil capacity than standard 700 series.

H1 Food grade Klubersynth UH1 6-460 maximizes torque capacity and efficiency



High strength bronze worm gear is straddle mounted between heavy-duty tapered roller bearings to increase thrust and overhung load capacities.

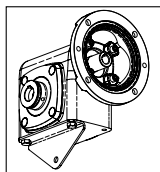
Two-piece mounting base maintains standard 700 Series footprint and enables the unit to be washed down without trapping foreign matter under the reducer



Metal detectable covers for all hardware and counter bored holes prevent particle accumulation and pooling fluids to optimize washdown efficiency



Optional Stainless Steel output flange or torque arm mounting



Available in hollow and solid output shafts

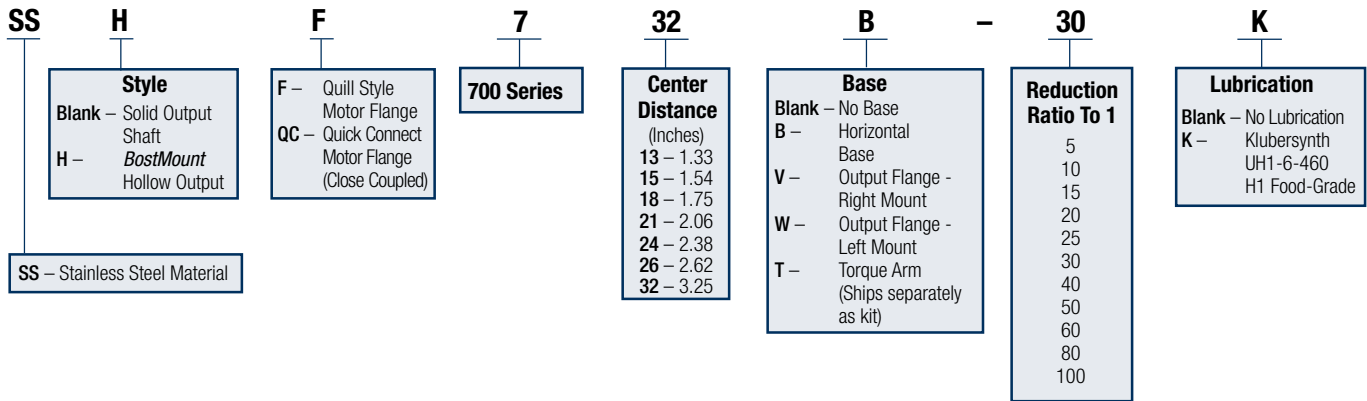
303 Stainless Steel output shafts

# A1 SS700 Series Worm Gear Speed Reducers

## Ordering Information

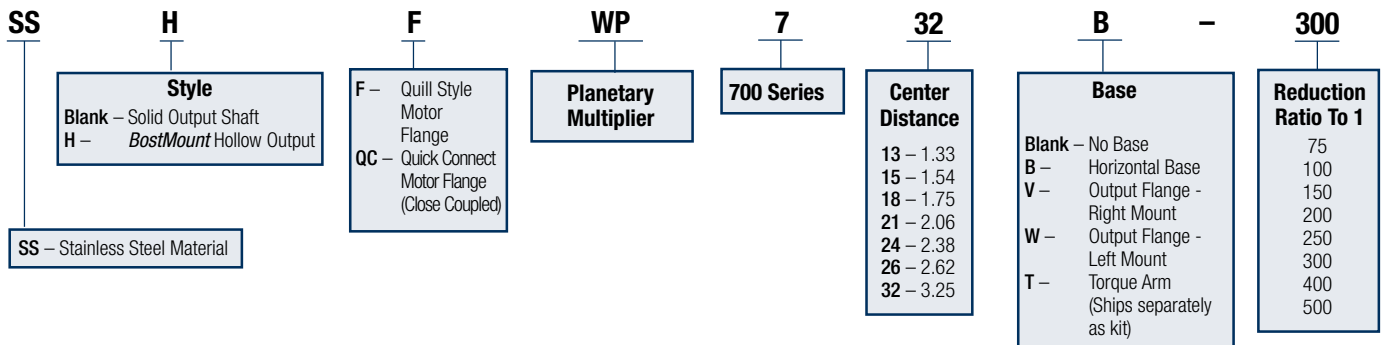
### Single Reduction Worm Speed Reducer

Example: **SSHF732B-30KT-B7-HS1-P20-KUTFSS-3**



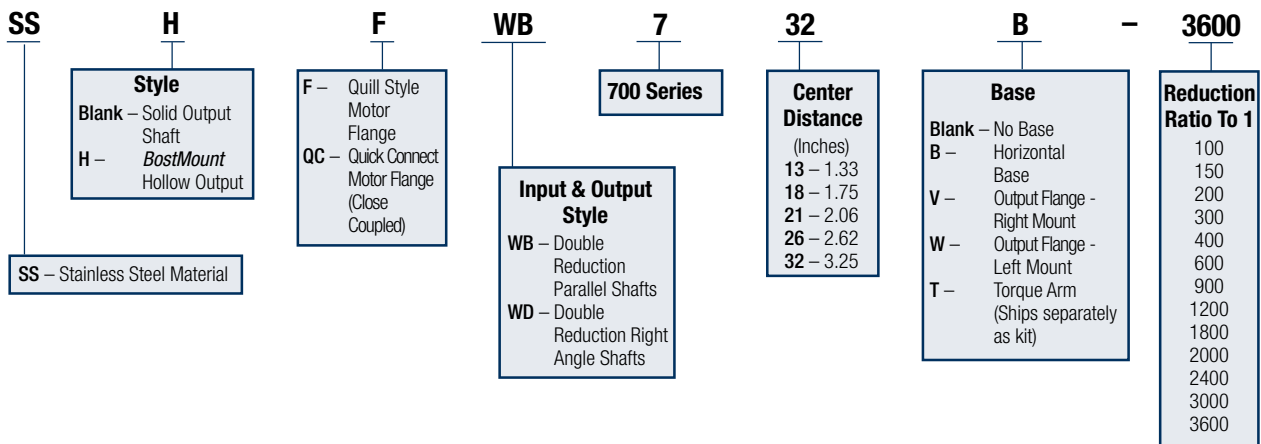
### Double Reduction Worm - Planetary Speed Reducer

Example: **SSHFWP732B-300KT-B5-HS1-P20**



### Double Reduction Worm - Worm Speed Reducer

Example: **SSHFWB732B-3600KT-B5-LS1-P20**



**T** - **B7** - **HS** - **1** - **P20** - **KUTFSS** - **3**

**Seal Options**  
 Blank – Standard Seals  
**T** – Double Input Seals  
**C** – High pressure washdown output seals and double input seals  
**IP69K**

**Output Shaft**  
 303 Stainless Steel (when facing input)  
**GS** – Stainless Output Projection - Left  
**HS** – Stainless Double Output Projection  
**JS** – Stainless Output Projection - Right

**Mounting Positions**  
**1** – Standard Mounting (Worm Over)  
**2-6** – Refer to Mounting Positions on Page 7

**BostMount Output Bore Code**  
 Blank -Solid Output Shaft  
 Specified in 1/16" increments.  
 See Table 1 on Page 7  
 Ex: 1-1/4" = P20

**Motor C-Face Motor**  
 Blank – No Motor  
 See Table 2 on Page 7

**NEMA Motor Mounting**

BORE CODE	NEMA MOUNTING	INPUT BORE	KEYWAY SIZES
<b>B4</b>	42CZ	.500	1/8 x 1/16
<b>B5</b>	56C	.625	3/16 x 3/32
<b>B7</b>	140TC/180C	.875	3/16 x 3/32
<b>B9</b>	180TC/210C	1.125	1/4 x 1/8

**Motor Conduit Box Orientation**  
 (When looking at fan end of motor and gearbox is in mounting position #1)

<b>0</b> –	12 O'clock
<b>3</b> –	3 O'clock (standard for G & H shaft assemblies)
<b>6</b> –	6 O'clock
<b>9</b> –	9 O'clock (standard for J shaft assemblies)

**K** - **T** - **B5** - **HS** - **1** - **P20** -

**Lubrication**  
 Blank – No Lubrication  
**K** – Klubersynth UH1-6-460 H1 Food-Grade

**Seal Options**  
 Blank – Standard Seals  
**T** – Double Input Seals  
**C** – High pressure washdown output seals and double input seals  
**IP69K**

**Output Shaft**  
 303 Stainless Steel (when facing input)  
**GS** – Stainless Output Projection - Left  
**HS** – Stainless Double Output Projection  
**JS** – Stainless Output Projection - Right

**Mounting Positions**  
**1** – Standard Mounting (Worm Over)  
**2-6** – Refer to Mounting Positions on Page 7

**BostMount Output Bore Code**  
 Blank -Solid Output Shaft  
 Specified in 1/16" increments.  
 See Table 1 on Page 7  
 Ex: 1-1/4" = P20

**Motor C-Face Motor**  
 Blank – No Motor  
 See Table 2 on Page 7

**NEMA Motor Mounting**

BORE CODE	NEMA MOUNTING	INPUT BORE	KEYWAY SIZES
<b>B5</b>	56C	.625	3/16 x 3/32

**Motor Conduit Box Orientation**  
 (When looking at fan end of motor and gearbox is in mounting position #1)

<b>0</b> –	12 O'clock
<b>3</b> –	3 O'clock (standard for G & H shaft assemblies)
<b>6</b> –	6 O'clock
<b>9</b> –	9 O'clock (standard for J shaft assemblies)

**K** - **T** - **B5** - **LS** - **1** - **P20** -

**Lubrication**  
 Blank – No Lubrication Provided  
**K** – Klubersynth UH1-6-460 H1 Food-Grade

**Seal Options**  
 Blank – Standard Seals  
**T** – Double Input Seals  
**C** – High pressure washdown output seals and double input seals  
**IP69K**

**Output Shaft**  
 303 Stainless Steel (when facing input of base housing)  
**MS** – Stainless Output Projection - Left  
**LS** – Stainless Double Output Projection  
**KS** – Stainless Output Projection - Right

**Mounting Positions**  
**1** – Standard Mounting (Worm Over)  
**2-6** – Refer to Mounting Positions on Page 7

**BostMount Output Bore Code**  
 Blank -Solid Output Shaft  
 Specified in 1/16" increments.  
 See Table 1 on Page 7  
 Ex: 1-1/4" = P20

**Motor C-Face Motor**  
 Blank – No Motor  
 See Table 2 on Page 7

**NEMA Motor Mounting**

BORE CODE	NEMA MOUNTING	INPUT BORE	KEYWAY SIZES
<b>B4</b>	42CZ	.500	1/8 x 1/16
<b>B5</b>	56C	.625	3/16 x 3/32
<b>B7</b>	140TC/180C	.875	3/16 x 3/32

**Motor Conduit Box Orientation**  
 (When looking at fan end of motor and gearbox is in mounting position #1)

<b>0</b> –	12 O'clock
<b>3</b> –	3 O'clock (standard for M & L shaft assemblies)
<b>6</b> –	6 O'clock
<b>9</b> –	9 O'clock (standard for K shaft assemblies)

## Ordering Information

### Horizontal Base Kits for SS700 Series

(If ordered separately)

Size	Kit	
713	J00877	XSS713-11H-BK
715	J00878	XSS715-11H-BK
718	J00304	XSS718-11H-BK
721	J00305	XSS721-11H-BK
724	J00879	XSS724-11H-BK
726	J00306	XSS726-11H-BK
732	J00307	XSS732-11H-BK

Kit includes (2) feet, (4) attaching bolts and (4) hardware covers.

### Replacement Hardware Covers

Size	Housing Oil Plugs	Bearing Carrier	Mounting Feet	Output Flange	Motor Flange B5/B7 (56C/140TC)	Motor Flange B9 (180TC)
713	J00195	N/A	N/A	J00195	J00195	J00195 & J00196
715	J00195	J00195	J00196	J00195	J00195	J00195 & J00196
718	J00195	J00195	J00196	J00195	J00195	J00195 & J00196
721	J00195	J00195	J00196	J00195	J00195	J00195 & J00196
724	J00195	J00195	J00196	J00195	J00195	J00195 & J00196
726	J00195	J00195	J00196	J00195	J00195	J00195 & J00196
732	J00195	J00195	J00196	J00196	J00195	J00195 & J00196

J00195 has nominal O.D. of 0.605"

J00196 has nominal O.D. of 0.812"

Material: Stainless Steel disk (metal detectable) with over-molded rubber

**Table 1: Hollow Output Shaft Bore Codes**

Fraction Size	Output Bore Code	713	715	718	721	724	726	732	Decimal Size*	Key Size†
5/8	P10	S							.6250	.187 x .125 x 1.00
3/4	P12	•	•	•	•	•			.7500	.187 x .156 x 1.00
7/8	P14	•	•	•	•	•			.8750	.187 x .156 x 1.00
15/16	P15	•	•	•	•	•	•		.9375	.25 x .218 x 1.37
1	P16	S	S	S	S	S	•		1.0000	.25 x .218 x 1.37
1-1/8	P18			•	•	•			1.1250	.25 x .218 x 1.37
1-3/16	P19			S	S	S	•		1.1875	.25 x .218 x 1.37
1-1/4	P20			S	S	S	•		1.2500	.25 x .218 x 1.37
1-7/16	P23			S	S	S	S		1.4375	.375 x .312 x 1.75
1-1/2	P24			S	S	S	S		1.5000	.375 x .312 x 1.75
1-15/16	P31						•	S	1.9375	.50 x .375 x 2.00
2	P32							•	2.0000	.50 x .375 x 2.00
2 3/16	P35							•	2.1875	.50 x .375 x 2.00

\*Bore tolerance +.0015 / - .0000

S Standard Bore – Included in Express Program

• Optional Bore

† Rectangular key is provided with reducer to fit hollow shaft. Drive shaft requires standard width and depth keyway.

Note: For all other bore sizes, contact factory.

**Table 2: Stainless Steel AC Motors**

Part #	HP	Type	Frame Size
EUT-SS	0.33	TENV	56C
FUT-SS	0.5	TENV	56C
FUTF-SS	0.5	TEFC	56C
GUT-SS	0.75	TENV	56C
HUT5/8-SS	1.0	TENV	56C
HUTF5/8-SS	1.0	TEFC	56C
HUT-SS	1.0	TENV	140TC
HUTF-SS	1.0	TEFC	140TC
JUTF-SS	1.5	TEFC	140TC
KUTF-SS	2.0	TEFC	140TC
LUTF-SS	3.0	TEFC	180TC
MUTF-SS	5.0	TEFC	180TC

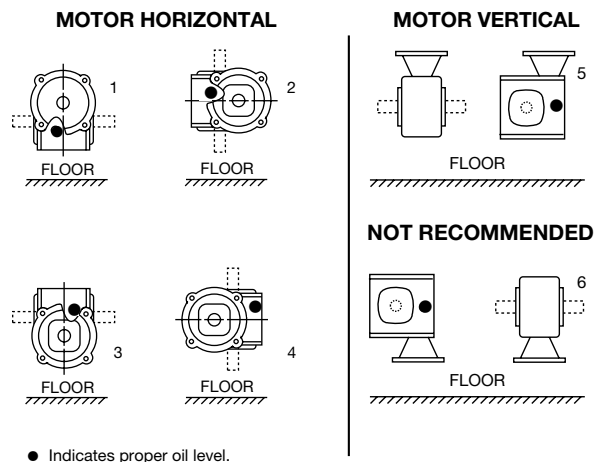
TENV = Totally enclosed, non-ventilated

TEFC = Totally enclosed, fan-cooled

## Mounting Positions & Lubrication

### Oil Levels For Typical Mounting Positions

(Examples shown for single-reduction models only)



NOTE: Double input seals are required for all positions except #1 and #5.

### Enclosed Worm Gear Reducers Lubricant Available from Boston Gear

Ambient (Room) Temp.	Recommended Oil (or equivalent)	Viscosity Range SUS @ 100°F	ISO Viscosity Grade No.	Klubersynth UH1 6-460 Qt. Part No.
-20° to 225°F** (-29° to 107°C)	Klubersynth* UH1 6-460 Synthetic H1 Food Grade Oil	1950/2500	460	65159

\* Synthetic recommendation is exclusively Klubersynth UH1 6-460, other lubricants will reduce performance ratings.

\*\* The Klubersynth UH1 6-460 lubricant will perform at temperatures considerably higher than 225°F. However, the factory should always be consulted prior to operating at higher temperatures, as damage may occur to oil seals and other components.

### Oil Capacity in Fluid Ounces

Unit Size	Positions				
	1	2	3	4	5 & 6
713	3.2	3.2	4.8	3.2	3.2
715	11.2	13.6	17.6	13.6	13.6
718	14.4	17.6	20.8	17.6	17.6
721	17.6	20.8	22.4	20.8	20.8
724	21.0	22.5	25.5	22.5	22.5
726	37.0	37.0	41.5	37.0	37.0
732	81.5	85.0	93.0	85.0	85.0

Double reduction stainless gearboxes require the primary and secondary boxes to be filled independently to their respective mounting position.



## Ratios and Performance

### Single Reduction

Series Size			713			715			718			721			724			726			732		
Ratio	Input RPM	Output RPM	Input HP	Output		Input HP	Output		Input HP	Output		Input HP	Output		Input HP	Output		Input HP	Output		Input HP	Output	
				HP	Torque (in-lbs)		HP	Torque (in-lbs)		HP	Torque (in-lbs)		HP	Torque (in-lbs)		HP	Torque (in-lbs)		HP	Torque (in-lbs)		HP	Torque (in-lbs)
5	1750	350	1.39	1.31	235	1.72	1.62	291	2.55	2.40	432	3.66	3.44	620	4.94	4.65	838	6.11	5.74	1034	10.05	9.54	1716
	1150	230	0.84	0.73	200	1.15	1.04	285	1.42	1.28	350	2.33	2.10	575	3.05	2.74	750	4.05	3.64	1000	8.43	7.91	2165
	690	138	0.50	0.45	205	0.80	0.72	330	0.97	0.87	400	1.64	1.47	670	2.25	2.01	920	3.04	2.74	1250	6.53	6.02	2749
	100	20	0.09	0.08	240	0.14	0.12	370	0.17	0.14	460	0.30	0.26	820	0.43	0.38	1200	0.58	0.51	1600	1.38	1.19	3735
10	1750	175	0.86	0.78	281	1.20	1.10	397	1.61	1.49	536	2.34	2.19	789	3.18	2.97	1069	3.94	3.74	1345	6.22	5.85	2106
	1150	115	0.51	0.44	243	0.73	0.64	350	0.98	0.87	480	1.49	1.32	725	2.09	1.87	1025	2.82	2.54	1390	4.41	3.92	2150
	690	69	0.33	0.29	266	0.47	0.42	384	0.66	0.58	534	1.00	0.89	814	1.46	1.31	1200	1.97	1.75	1600	3.17	2.85	2600
	100	10	0.06	0.05	296	0.09	0.07	432	0.12	0.10	610	0.19	0.15	968	0.27	0.23	1430	0.37	0.31	1960	0.62	0.52	3300
15	1750	116.7	0.66	0.58	305	0.91	0.79	428	1.13	1.02	552	1.72	1.56	840	2.34	2.15	1159	2.95	2.71	1465	4.65	4.34	2344
	1150	76.7	0.37	0.32	262	0.53	0.46	376	0.67	0.57	472	1.06	0.91	752	1.51	1.29	1060	2.01	1.73	1425	3.15	2.74	2250
	690	46	0.26	0.21	288	0.36	0.30	415	0.46	0.39	534	0.72	0.61	832	1.05	0.90	1239	1.41	1.22	1675	2.35	2.04	2800
	100	6.7	0.05	0.03	322	0.07	0.05	468	0.09	0.06	597	0.13	0.10	968	0.19	0.15	1463	0.28	0.22	2057	0.48	0.39	3700
20	1750	87.5	0.52	0.43	308	0.72	0.60	435	0.97	0.82	590	1.40	1.24	892	1.95	1.71	1233	2.34	2.06	1483	3.71	3.35	2413
	1150	57.5	0.29	0.24	265	0.43	0.35	380	0.58	0.48	525	0.86	0.72	782	1.27	1.06	1160	1.63	1.36	1500	2.77	2.37	2600
	690	34.5	0.19	0.16	286	0.28	0.23	420	0.38	0.32	580	0.57	0.48	875	0.83	0.70	1280	1.11	0.94	1725	1.99	1.70	3100
	100	5	0.04	0.03	330	0.06	0.04	485	0.08	0.06	690	0.11	0.08	1018	0.17	0.12	1550	0.20	0.16	2050	0.41	0.30	3846
25	1750	70	0.43	0.34	307	0.60	0.49	437	0.76	0.64	574	1.16	0.97	875	1.55	1.33	1199	1.94	1.68	1514	3.08	2.71	2443
	1150	46	0.24	0.19	260	0.35	0.27	375	0.48	0.36	500	0.72	0.58	790	1.03	0.84	1150	1.31	1.11	1525	2.29	1.90	2600
	690	27.6	0.15	0.12	280	0.22	0.18	410	0.30	0.24	540	0.47	0.38	875	0.69	0.56	1280	0.93	0.77	1750	1.51	1.27	2900
	100	4	0.03	0.02	310	0.04	0.03	451	0.06	0.04	660	0.10	0.07	975	0.14	0.10	1500	0.18	0.13	2075	0.31	0.22	3500
30	1750	58.3	0.39	0.29	311	0.54	0.41	446	0.65	0.53	573	0.99	0.81	871	1.33	1.11	1200	1.68	1.41	1521	2.64	2.27	2456
	1150	38.3	0.21	0.16	270	0.31	0.23	388	0.40	0.32	530	0.62	0.48	795	0.89	0.70	1170	1.20	0.96	1575	2.80	2.23	2675
	690	23	0.14	0.11	300	0.20	0.17	460	0.29	0.22	600	0.41	0.32	880	0.60	0.47	1300	0.81	0.65	1790	1.41	1.16	3200
	100	3.3	0.03	0.02	340	0.04	0.03	496	0.06	0.04	710	0.09	0.06	1050	0.12	0.08	1500	0.16	0.11	2100	0.30	0.21	4000
40	1750	43.8	0.31	0.21	307	0.43	0.31	441	0.57	0.42	609	0.81	0.61	876	1.08	0.84	1206	1.33	1.05	1512	2.10	1.70	2444
	1150	28.8	0.18	0.12	265	0.24	0.17	380	0.33	0.24	525	0.49	0.36	785	0.70	0.53	1160	0.89	0.68	1500	1.52	1.19	2600
	690	17.3	0.10	0.08	286	0.15	0.11	420	0.22	0.16	580	0.33	0.24	875	0.46	0.35	1280	0.61	0.47	1725	1.08	0.85	3100
	100	2.5	0.03	0.01	330	0.04	0.02	485	0.05	0.03	690	0.07	0.04	1018	0.11	0.06	1550	0.14	0.08	2050	0.25	0.15	3846
50	1750	35	0.25	0.17	297	0.35	0.24	429	0.44	0.32	573	0.66	0.48	857	0.87	0.65	1177	1.08	0.82	1484	1.70	1.33	2403
	1150	23	0.12	0.09	248	0.18	0.13	360	0.24	0.17	470	0.38	0.27	750	0.56	0.40	1100	0.75	0.54	1482	1.21	0.89	2450
	690	13.8	0.08	0.06	265	0.12	0.09	390	0.17	0.12	520	0.26	0.18	840	0.37	0.26	1225	0.51	0.37	1675	0.87	0.61	2800
	100	2	0.02	0.01	300	0.03	0.01	440	0.04	0.02	590	0.06	0.03	970	0.08	0.05	1425	0.11	0.06	1975	0.19	0.10	3325
60	1750	29.2	0.22	0.13	271	0.28	0.18	399	0.35	0.24	527	0.55	0.38	826	0.73	0.52	1128	0.89	0.64	1385	1.40	1.06	2281
	1150	19.2	0.17	0.09	201	0.16	0.10	312	0.21	0.13	440	0.34	0.22	730	0.49	0.32	1040	0.64	0.42	1390	1.05	0.70	2300
	690	11.5	0.10	0.05	253	0.11	0.06	338	0.14	0.08	480	0.23	0.15	805	0.33	0.21	1154	0.44	0.29	1570	0.71	0.48	2650
	100	1.7	0.02	0.01	285	0.022	0.01	371	0.03	0.01	530	0.06	0.03	930	0.07	0.04	1330	0.10	0.05	1840	0.16	0.08	3100
80	1750	21.9	0.15	0.08	222	0.21	0.11	318	0.23	0.13	375	0.38	0.22	634	-	-	-	0.76	0.38	1100	0.95	0.62	1795
	1150	14.4	0.12	0.06	246	0.17	0.08	358	0.16	0.09	390	0.31	0.17	734	-	-	-	0.47	0.29	1252	0.81	0.50	2171
	690	8.6	0.09	0.04	266	0.12	0.05	392	0.10	0.05	350	0.23	0.11	819	-	-	-	0.35	0.18	1340	0.61	0.34	2512
	100	1.3	0.02	0.01	293	0.03	0.01	440	0.02	0.01	470	0.05	0.02	942	-	-	-	0.07	0.03	1600	0.14	0.06	3030
100	1750	17.5	0.08	0.04	138	0.15	0.07	251	0.17	0.09	323	0.27	0.14	503	-	-	-	0.39	0.21	757	0.65	0.39	1414
	1150	11.5	0.07	0.028	152	0.12	0.05	283	0.14	0.07	360	0.22	0.11	580	-	-	-	0.34	0.17	913	0.56	0.31	1711
	690	6.9	0.05	0.02	164	0.09	0.03	309	0.10	0.04	391	0.16	0.07	646	-	-	-	0.26	0.12	1054	0.43	0.22	1980
	100	1	0.01	0.00	180	0.02	0.01	347	0.02	0.01	435	0.04	0.01	744	-	-	-	0.06	0.02	1267	0.10	0.04	2387

Overhung Load\*     200 lbs     300 lbs     500 lbs     700 lbs.     900 lbs     1000 lbs     1300 lbs  
Output Shaft Thrust Load     300 lbs     400 lbs     500 lbs     700 lbs     800 lbs     900 lbs     1100 lbs

Ratings shown reflect maximum gear capacity based on AGMA standards (Service Factor = 1.0) with Klubersynth UH1 6-460.  
\*Overhung Load is at centerline of output shaft projection and with NO THRUST Load.  
Note: For input speeds above 1750 RPM, do NOT exceed maximum listed input horsepower.

# A1 SS700 Series Double Reduction

## Ratios and Performance

### Worm-Planetary Double Reduction (WP)

Series Size			SS_WP713			SS_WP715			SS_WP718			SS_WP721			SS_WP724			SS_WP726			SS_WP732		
Ratio	Input RPM	Output RPM	Input HP	Output		Input HP	Output		Input HP	Output		Input HP	Output		Input HP	Output		Input HP	Output		Input HP	Output	
				HP	Torque (in-lbs)		HP	Torque (in-lbs)		HP	Torque (in-lbs)		HP	Torque (in-lbs)		HP	Torque (in-lbs)		HP	Torque (in-lbs)		HP	Torque (in-lbs)
75	1750	23.3	0.15	0.11	293	0.24	0.16	446	0.27	0.21	570	0.44	0.34	910	0.66	0.51	1367	0.75	0.57	1542	0.75	0.57	1542
100	1750	17.5	0.13	0.09	311	0.19	0.13	457	0.25	0.18	643	0.38	0.27	957	0.56	0.40	1435	0.74	0.53	1912	0.75	0.54	2072
150	1750	11.7	0.10	0.06	300	0.16	0.09	509	0.18	0.12	663	0.26	0.18	978	0.40	0.26	1415	0.53	0.36	1969	0.75	0.51	2747
200	1750	8.8	0.08	0.04	309	0.13	0.07	520	0.14	0.09	643	0.20	0.13	957	0.35	0.20	1435	0.42	0.27	1912	0.75	0.49	3509
250	1750	7	0.07	0.03	312	0.11	0.06	505	0.10	0.06	560	0.16	0.10	915	0.27	0.15	1340	0.33	0.21	1848	0.54	0.34	3103
300	1750	5.8	0.06	0.03	273	0.09	0.04	477	0.09	0.05	510	0.15	0.08	877	0.24	0.12	1255	0.30	0.16	1726	0.50	0.27	2909
400	1750	4.4	0.05	0.02	251	0.08	0.03	419	0.07	0.03	413	0.13	0.06	890	-	-	-	0.22	0.10	1490	0.44	0.20	2811
500	1750	3.5	0.03	0.01	197	0.05	0.02	330	0.05	0.02	416	0.09	0.04	702	-	-	-	0.16	0.07	1177	0.28	0.12	2215
Overhung Load*			200 lbs			300 lbs			500 lbs			700 lbs			900 lbs			1000 lbs			1300 lbs		
Output Shaft Thrust Load			300 lbs			400 lbs			500 lbs			700 lbs			800 lbs			900 lbs			1100 lbs		

Stand-Alone Planetary			SSFSP5 and SSFSP5A		
Ratio	Input RPM	Output RPM	Input HP	Output	
				HP	Torque (in-lbs)
5	1750	350	0.75	0.69	124

Ratings shown reflect maximum gear capacity based on AGMA standards (Service Factor = 1.0) with Klubersynth UH1 6-460.

Worm-Planetary and Stand-Alone Planetary gearing is not recommended for use in applications with repetitive vibrational or impact loading.

\*Overhung Load is at centerline of output shaft projection and with NO THRUST Load.

Note: For input speeds above 1750 RPM, do NOT exceed maximum listed input horsepower.

### Worm-Worm Double Reduction (WB & WD)

Series Size			SS_WB/WD713			SS_WB/WD718			SS_WB/WD721			SS_WB/WD726			SS_WB/WD732		
Ratio	Input RPM	Output RPM	Input HP	Output		Input HP	Output		Input HP	Output		Input HP	Output		Input HP	Output	
				HP	Torque (in-lbs)		HP	Torque (in-lbs)		HP	Torque (in-lbs)		HP	Torque (in-lbs)		HP	Torque (in-lbs)
100	1750	17.5	0.16	0.08	275	0.23	0.16	570	0.41	0.25	910	0.75	0.50	1785	1.33	0.96	3450
150	1750	11.7	0.13	0.05	280	0.23	0.11	580	0.30	0.17	940	0.56	0.34	1840	1.00	0.67	3600
200	1750	8.8	0.12	0.05	320	0.19	0.09	660	0.25	0.14	990	0.47	0.26	1875	0.81	0.53	3800
300	1750	5.8	0.10	0.03	335	0.16	0.06	690	0.20	0.09	1025	0.37	0.18	1950	0.61	0.36	3950
400	1750	4.4	0.09	0.02	330	0.12	0.05	690	0.17	0.02	1025	0.31	0.14	1950	0.48	0.27	3900
600	1750	2.9	0.08	0.02	340	0.10	0.03	710	0.13	0.05	1025	0.25	0.09	2000	0.36	0.18	4025
900	1750	1.9	0.07	0.01	340	0.08	0.02	710	0.11	0.03	1050	0.21	0.06	2000	0.28	0.12	4025
1200	1750	1.5	0.07	0.01	330	0.07	0.02	690	0.10	0.02	1025	0.19	0.05	1950	0.23	0.09	3900
1800	1750	1	-	-	-	-	-	-	0.08	0.01	900	0.16	0.03	1775	0.19	0.06	3750
2000	1750	0.9	-	-	-	0.052	0.008	590	-	-	-	0.16	0.03	1940	0.22	0.05	3880
2400	1750	0.7	-	-	-	-	-	-	0.05	0.01	900	0.15	0.02	1864	0.17	0.04	3143
3000	1750	0.6	-	-	-	-	-	-	-	-	-	0.14	0.02	1800	0.15	0.04	3750
3600	1750	0.5	-	-	-	-	-	-	-	-	-	0.13	0.01	1865	0.14	0.02	3154
Overhung Load*			200 lbs.			500 lbs.			700 lbs.			1000 lbs.			1300 lbs.		
Output Shaft Thrust Load			300 lbs.			500 lbs.			700 lbs.			900 lbs.			1100 lbs.		

Ratings shown reflect maximum gear capacity based on AGMA standards (Service Factor = 1.0) with Klubersynth UH1 6-460.

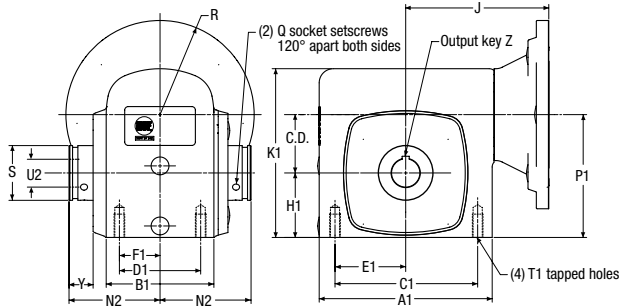
\*Overhung Load is at centerline of output shaft projection and with NO THRUST Load.

Note: For input speeds above 1750 RPM, do NOT exceed maximum listed input horsepower.

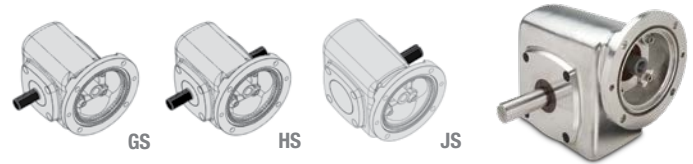
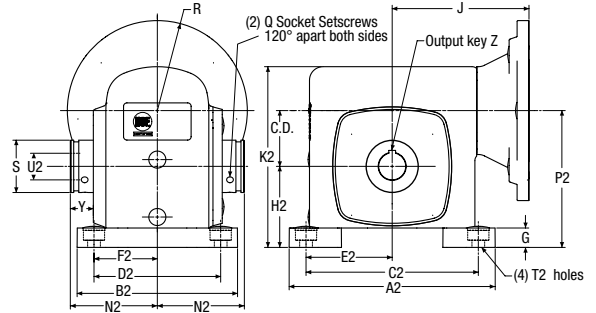
## Dimensions



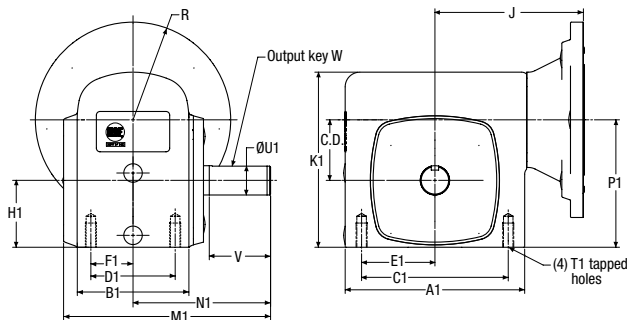
### SSH700 & SSHQC700 Hollow Shaft without Base



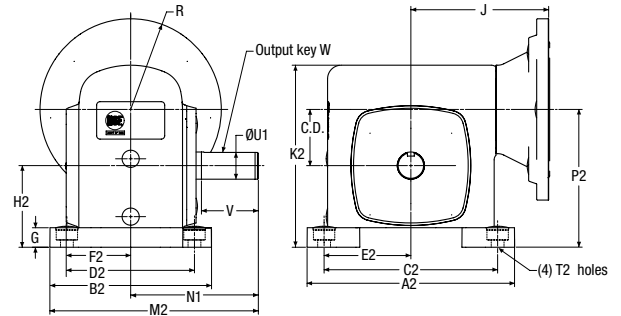
### SSH700 & SSHQC700 Hollow Shaft with Base



### SSF700 & SSQC700 GS Solid Shaft without Base



### SSF700 & SSQC700 GS Solid Shaft with Base



SIZE	C.D.	A1	A2	B1	B2	C1	C2	D1	D2	E1	E2	F1	F2
713	1.33	4.35	5.25	2.87	4.19	3.25	4.38	2.00	3.31	1.63	2.19	1.00	1.66
715	1.54	5.26	6.46	3.69	5.5	4.19	5.25	2.75	4.31	2.09	2.63	1.38	2.16
718	1.75	5.63	7.00	3.69	5.75	4.19	5.75	2.75	4.50	2.09	2.88	1.38	2.25
721	2.06	6.12	7.62	3.81	5.94	5.00	6.38	2.88	4.69	2.50	3.19	1.44	2.34
724	2.38	6.52	8.37	4.06	6.18	5.00	7.06	2.88	4.88	2.5	3.53	1.44	2.44
726	2.62	7.58	9.25	4.44	6.50	6.38	8.00	3.38	5.25	3.19	4.00	1.69	2.63
732	3.25	9.20	11.00	5.88	7.62	7.50	9.50	4.00	6.13	3.75	4.75	2.00	3.06

SIZE	G	H1	H2	J				K1	K2	M1	M2	N1	N2	P1	P2	Q
				F700		QC700 †										
				56C/140TC	180TC	56C/140TC	180TC									
713	0.53	1.72	2.25	3.94	-	5.46	-	4.27	4.8	5.88	6.10	4.00	2.50	3.06	3.59	#10-32
715	0.59	1.91	2.5	4.50	-	6.11	-	5.48	6.08	6.71	7.06	4.31	3.03	3.44	4.06	#10-32
718	0.69	2.06	2.75	4.69	-	6.29	-	5.31	6.00	6.74	7.19	4.31	3.03	3.81	4.50	#10-32
721	0.72	2.28	3.00	5.06	-	6.76	-	5.97	6.69	7.09	7.66	4.69	3.22	4.34	5.06	1/4-28
724	0.75	2.5	3.25	5.25	5.69	6.95	7.81	7.04	7.79	7.61	8.18	5.09	3.22	4.88	5.63	1/4-28
726	0.75	2.94	3.69	5.75	6.19	7.39	7.81	7.50	8.25	8.33	8.87	5.63	3.44	5.56	6.31	5/16-24
732	0.88	3.50	4.38	6.56	7.00	8.20	8.77	9.25	10.13	10.49	10.99	7.06	4.31	6.75	7.63	5/16-24

SIZE	R †		S	T1	C <sup>Bore</sup> /Hole Dias.	U1	Max U2*	V	W	Y	Z	Approx. Weight (lbs.)			
	56C/140TC	180TC/210TC										SSF700	SSH700	SSF700B	SSH700B
	713	3.33										-	1.38	5/16-18	-
715	3.33	-	1.38	5/16-18	.60 / .41	0.750	1.0000	1.78	3/16 x 1	0.63	*	21	24	23	26
718	3.33	-	1.38	5/16-18	.60 / .41	0.875	1.0000	1.78	3/16 x 1	0.60	*	22	25	25	28
721	3.33	-	2.00	3/8-16	.78 / .47	1.000	1.4375	2.09	1/4 x 1-1/4	0.82	*	27	30	30	33
724	3.33	4.63	2.00	3/8-16	.78 / .47	1.125	1.4375	2.38	1/4 x 1-1/4	0.70	*	37	42	41	46
726	3.33	4.63	2.50	3/8-16	.78 / .53	1.125	1.9375	2.63	1/4 x 1-15/16	0.73	*	40	47	44	51
732	3.33	4.63	2.88	7/16-14	.78 / .53	1.375	2.1875	3.25	5/16 x 2-7/16	0.89	*	63	76	70	83

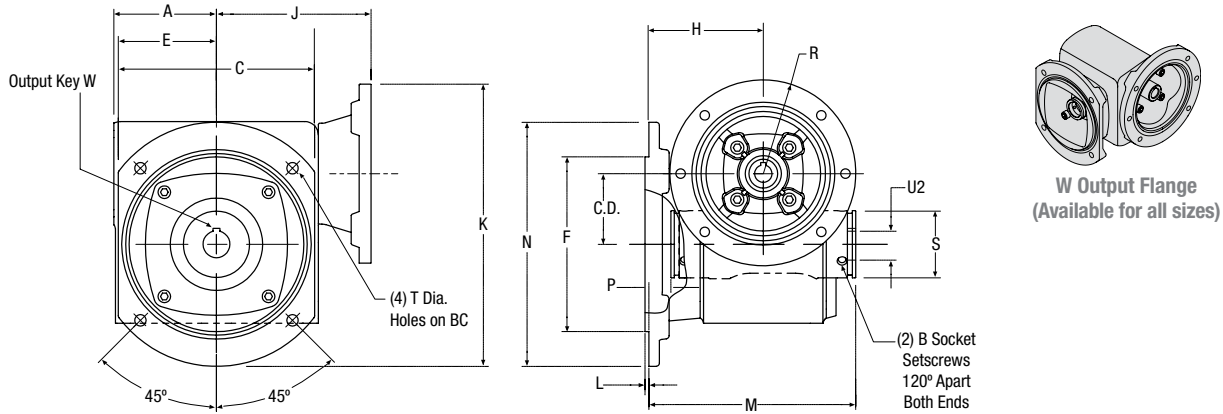
\* Refer to Table 1 on page 7. † 42CZ Flange Dimensions: (QC713 Only) J= 4.15; R=2.16

# A1 SS700 Series Single Reduction, With Output Flange

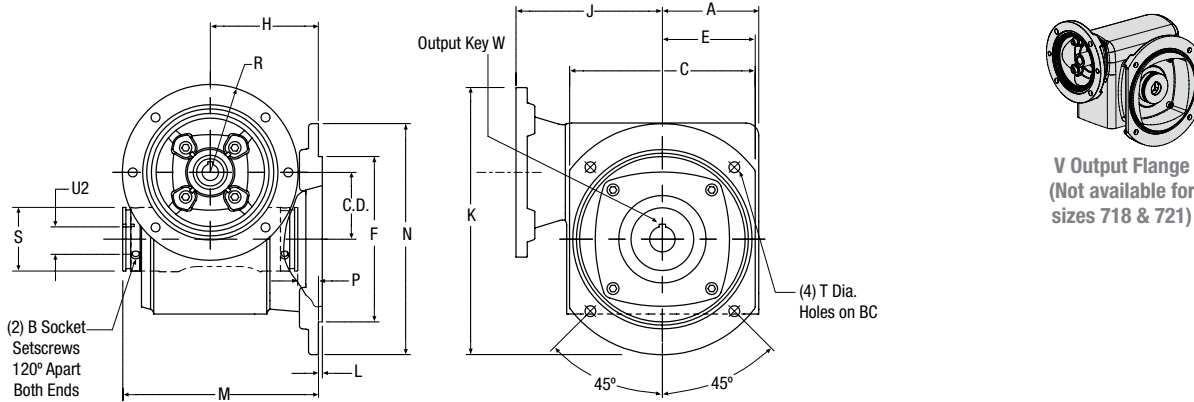
## Dimensions



### SSHF700W & SSHQC700W Hollow Output Shaft, W Position



### SSHF700V & SSHQC700V Hollow Output Shaft, V Position



SIZE	C.D.	A	B	C	B.C.	E	F	H	J				K	L
									F700		QC700 † <b>NEW</b>			
									56C/140TC	180TC	56C/140TC	180TC		
713	1.33	2.18	#10-32	4.75	5.00	2.38	4.125	3.18	3.94	-	5.46	-	7.55	0.15
715	1.54	2.63	#10-32	5.54	5.88	2.77	4.750	4.08	4.50	-	6.11	-	8.34	0.15
718	1.75	2.82	#10-32	5.53	5.88	2.77	4.750	3.62	4.69	-	6.29	-	8.55	0.15
721	2.06	3.06	1/4-28	6.03	6.50	3.02	5.250	3.94	5.06	-	6.76	-	9.17	0.15
724	2.38	3.25	1/4-28	6.80	7.50	3.40	5.500	4.22	5.25	5.69	6.95	7.81	9.94	0.15
726	2.62	3.80	5/16-24	7.29	8.00	3.65	6.500	4.45	5.75	6.19	7.39	7.81	10.50	0.15
732	3.25	4.60	5/16-24	8.79	10.00	4.40	8.000	5.50	6.56	7.00	8.20	8.77	12.22	0.15

SIZE	M	N	P	R †		S	T**		Low Speed Shaft			Approx Weight (lbs.)
				56C/140TC	180TC/210TC		Hole Dia	C-Bore Dia	Hollow Bore Output			
									Max U2*	W - Key		
								Sq.		Length		
713	5.68	5.80	0.68	3.33	-	1.38	0.362	0.600	1.0000	*	*	16
715	7.11	6.94	1.05	3.33	-	1.38	0.362	0.600	1.0000	*	*	26
718	0.65	6.94	0.59	3.33	-	1.38	0.362	0.600	1.0000	*	*	29
721	7.16	7.56	0.72	3.33	-	2.00	0.425	0.600	1.4375	*	*	34
724	7.44	8.60	1.00	3.33	4.63	2.00	0.425	0.600	1.4375	*	*	48
726	7.89	9.08	1.01	3.33	4.63	2.50	0.425	0.600	1.9375	*	*	51
732	9.81	11.28	1.19	3.33	4.63	2.88	0.535	0.808	2.1875	*	*	80

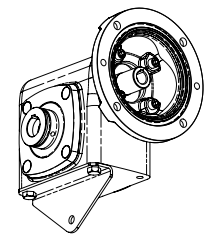
\* Refer to Table 1 on page 7. \*\* Designed for use with socket head capscrews.

† 42CZ Flange Dimensions: (QC713 Only) J= 4.15; R=2.16

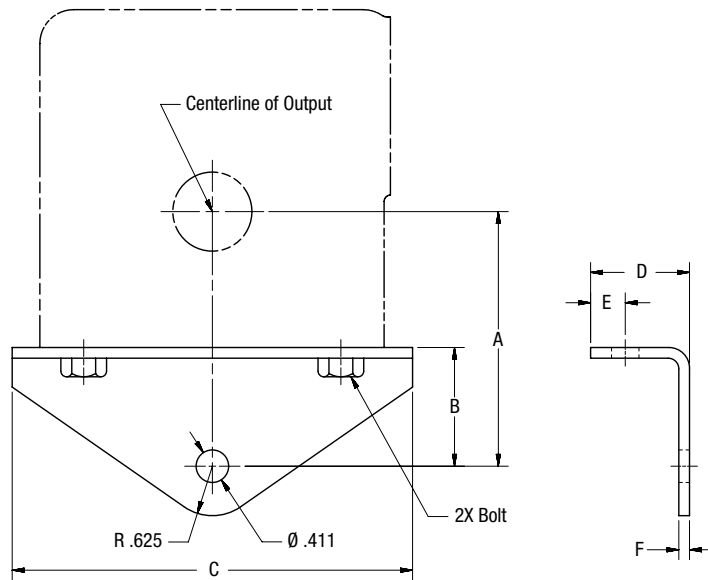
# SS700 Series Single Reduction, With Torque Arm **A1**

## Dimensions

### SSH700T & SSHQC700T Hollow Output Shaft, T Torque Arm



T Torque Arm  
(Shown assembled to SSH700 but ships separately as kit)



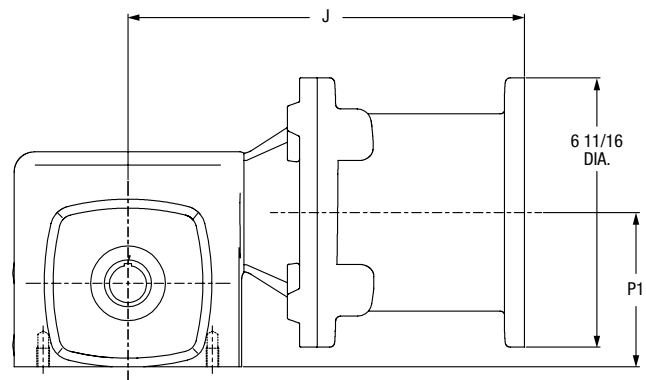
Size	Kit Catalog Number	A	B	C	D	E	F	Bolt*
713	XHSS718-34-KIT	3.22	1.50	5.06	1.12	.44	.135	5/16-18 X 1/2
715	XHSS718-34-KIT	3.41	1.50	5.06	1.12	.44	.135	5/16-18 X 1/2
718	XHSS718-34-KIT	3.56	1.50	5.06	1.12	.44	.135	5/16-18 X 1/2
721	XHSS724-34-KIT	4.28	2.00	6.00	1.25	.50	.135	3/8-16 X 5/8
724	XHSS724-34-KIT	4.50	2.00	6.00	1.25	.50	.135	3/8-16 X 5/8
726	XHSS726-34-KIT	5.44	2.50	8.68	1.68	.59	.250	3/8-16 X 3/4
732	XHSS732-34-KIT	6.00	2.50	8.68	1.68	.59	.250	7/16-14 X 7/8

\*Stainless hex head bolt (x2) supplied.

## SS700 WP Series Double Reduction

### SSHFWP700 & SSHQCWP700 Hollow Output Shaft

Size	C.D.	J		P1
		F700	QC700 <b>NEW</b>	
		56C/140TC	56C/140TC	
713	1.33	9.07	10.59	3.06*
715	1.54	9.63	11.24	3.44
718	1.75	9.82	11.42	3.81
721	2.06	10.19	11.89	4.34
724	2.38	10.38	12.08	4.88
726	2.62	10.88	12.52	5.56
732	3.25	11.69	13.33	6.75



\*Motor flange will drop below the bottom of the speed reducer.

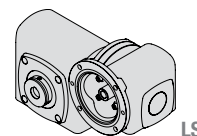
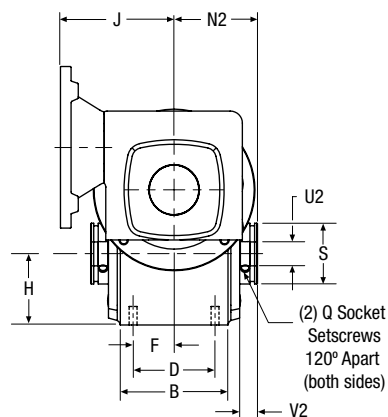
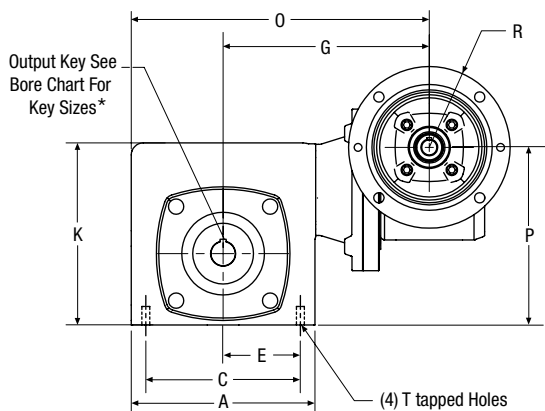
Same dimensions for SSHFWP700 & SSQCWP700 Solid Output Shaft Models.

# A1 SS700 WB Series Double Reduction, Parallel Shafts

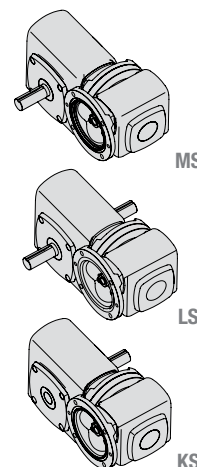
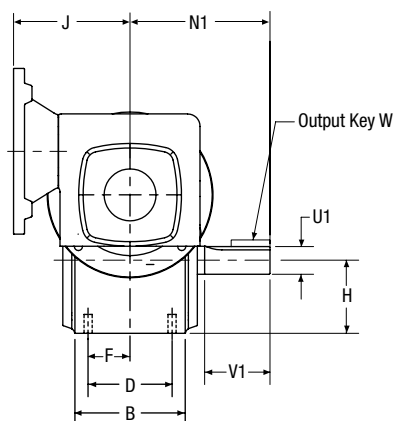
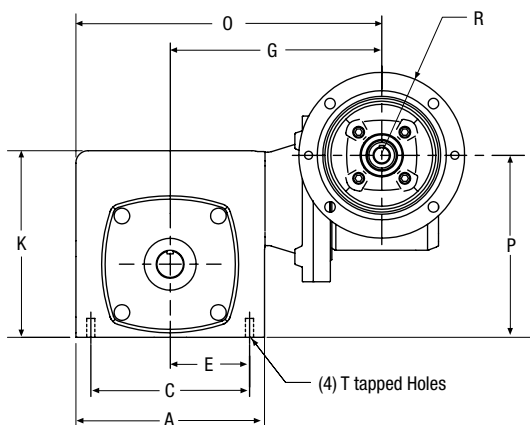
## Dimensions



### SSHFWB700 & SSHQCWB700 Hollow Output Shaft



### SSFWB700 & SSQCWB700 Solid Output Shaft



SIZE	A	B	C	D	E	F	G	H	J		K	N1	N2	O	P
									F700	QC700 † <b>NEW</b>					
									56C/140TC	56C/140TC					
713	4.35	2.87	3.25	2.00	1.63	1.00	7.00	1.72	3.94	5.46	4.27	4.00	2.50	9.18	4.39
718	5.63	3.69	4.19	2.75	2.09	1.38	7.75	2.06	3.94	5.46	5.31	4.31	3.03	10.57	5.14
721	6.12	3.81	5.00	2.88	2.50	1.44	8.12	2.28	3.94	5.46	5.97	4.69	3.22	11.18	5.67
726	7.58	4.44	6.38	3.38	3.19	1.69	8.56	2.94	4.68	6.29	7.50	5.63	3.44	12.35	7.32
732	9.20	5.88	7.50	4.00	3.75	2.00	9.37	3.50	4.68	6.29	9.25	7.06	4.31	13.97	8.50

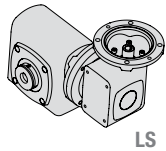
SIZE	Q	R † 56C/140TC	S	Low Speed Shaft								Approx Weight (lbs.)	
				T Tap Size	Solid Output Shaft				Hollow Bore Output		SSHFWB	SSHFWB	
					U1	V1	W - Key		Max U2*	V2			
							Sq.	Length					
713	#10-32	3.33	1.38	5/16-18	0.625	2.13	3/16	1	1.0000	0.63	28	30	
718	#10-32	3.33	1.38	5/16-18	0.875	1.78	3/16	1	1.0000	0.60	37	40	
721	1/4-28	3.33	2.00	3/8-16	1.000	2.09	1/4	1-1/4	1.4375	0.82	42	45	
726	5/16-24	3.33	2.50	3/8-16	1.125	2.63	1/4	1-15/16	1.9375	0.73	62	69	
732	5/16-24	3.33	2.88	7/16-14	1.375	3.25	5/16	2-7/16	2.1875	0.88	85	98	

\* Refer to Table 1 on page 7. † 42CZ Flange Dimensions: (QC713 Only) J= 4.15; R=2.16

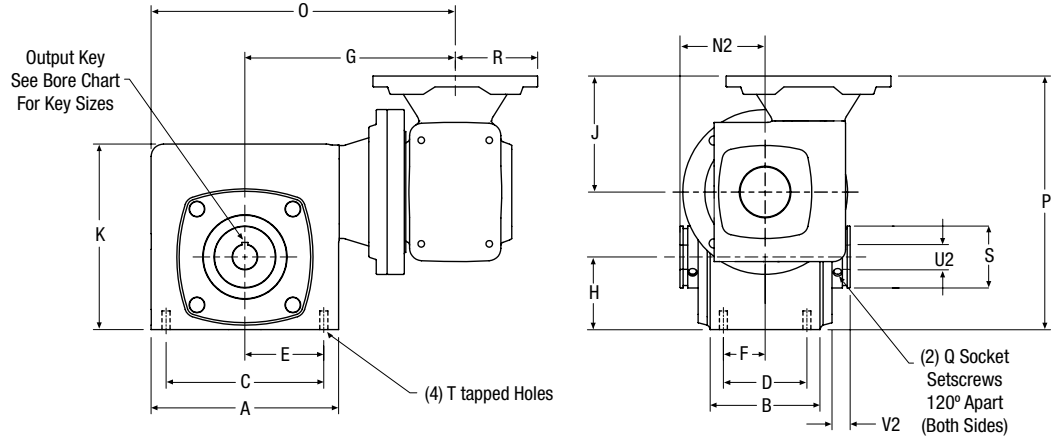
## Dimensions



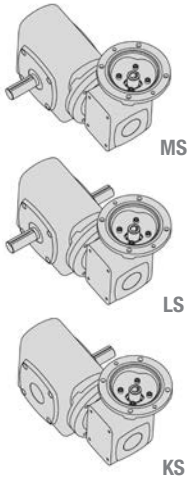
### SSHFWD700 & SSHQCWD700 Hollow Output Shaft



LS



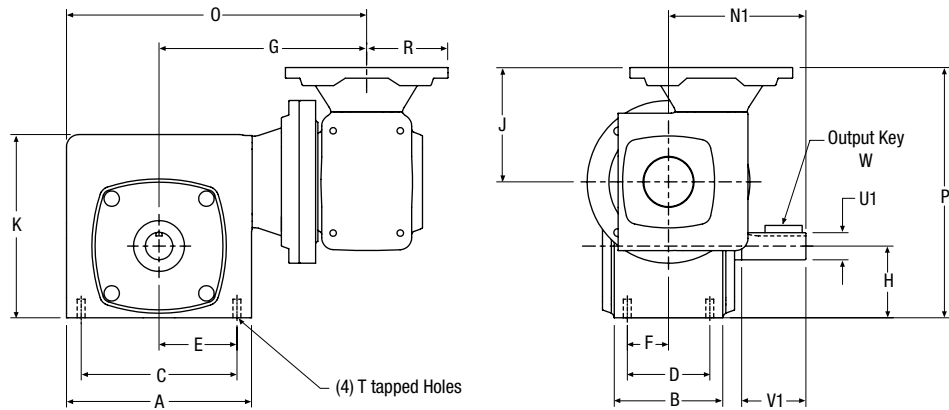
### SSFWD700 & SSQCWD700 Solid Output Shaft



MS

LS

KS



SIZE	A	B	C	D	E	F	G	H	J †			K	N1	N2	O	P †	
									F700	QC700 <b>NEW</b>	K					F700	QC700 <b>NEW</b>
									56C/140TC	56C/140TC						56C/140TC	56C/140TC
713	4.35	2.87	3.25	2.00	1.63	1.00	7.00	1.72	3.94	5.46	4.27	4.00	2.50	9.18	6.99	8.51	
718	5.63	3.69	4.19	2.75	2.09	1.38	7.75	2.06	3.94	5.46	5.31	4.31	3.03	10.57	7.75	9.27	
721	6.12	3.81	5.00	2.88	2.50	1.44	8.12	2.28	3.94	5.46	5.97	4.69	3.22	11.18	8.28	9.80	
726	7.58	4.44	6.38	3.38	3.19	1.69	8.56	2.94	4.68	6.29	7.50	5.63	3.44	12.35	10.25	11.77	
732	9.20	5.88	7.50	4.00	3.75	2.00	9.37	3.50	4.68	6.29	9.25	7.06	4.31	13.97	11.44	12.96	

SIZE	Q	R † 56C/140TC	S	T Tap Size	Low Speed Shaft						Approx Weight (lbs.)	
					Solid Output Shaft			Hollow Bore Output			SSFWD	SSHFWD
					U1	V1	W - Key		Max U2*	V2		
							Sq.	Length				
713	#10-32	3.33	1.38	5/16-18	0.625	2.13	3/16	1	1.0000	0.63	28	30
718	#10-32	3.33	1.38	5/16-18	0.875	1.78	3/16	1	1.0000	0.60	37	40
721	1/4-28	3.33	2.00	3/8-16	1.000	2.09	1/4	1-1/4	1.4375	0.82	42	45
726	5/16-24	3.33	2.50	3/8-16	1.125	2.63	1/4	1-15/16	1.9375	.73	62	69
732	5/16-24	3.33	2.88	7/16-14	1.375	3.25	5/16	2-7/16	2.1875	.88	85	98

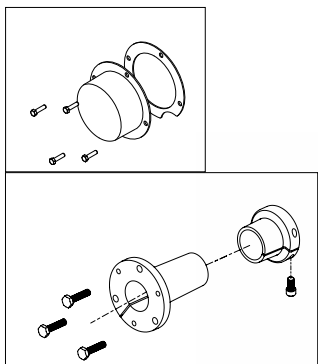
\* Refer to Table 1 on page 7 † 42CZ Flange Dimensions: (QC713 Only) J= 4.15; R=2.16; P=7.20





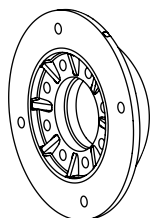
# SS2000R Series Helical Bevel Gear Drives A2

Optional gasketed shaft cover available to eliminate food traps

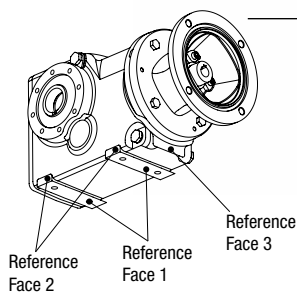


Optional keyless **Tapered Bushing** (shown) provides longer shaft life and faster installation

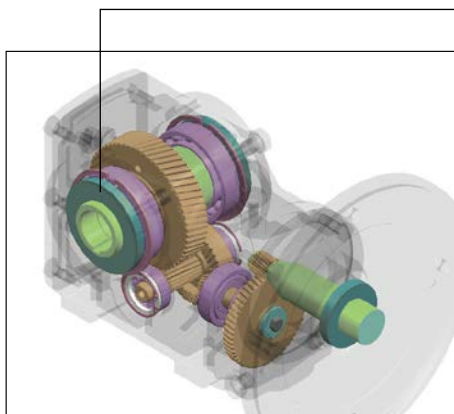
303 Stainless steel shafts



Optional piloted output flange available



Unique **Mounting Registers** allow for quick precision alignment



Laser marked nameplate provide worry-free part identification while maintaining a smooth, unetched surface

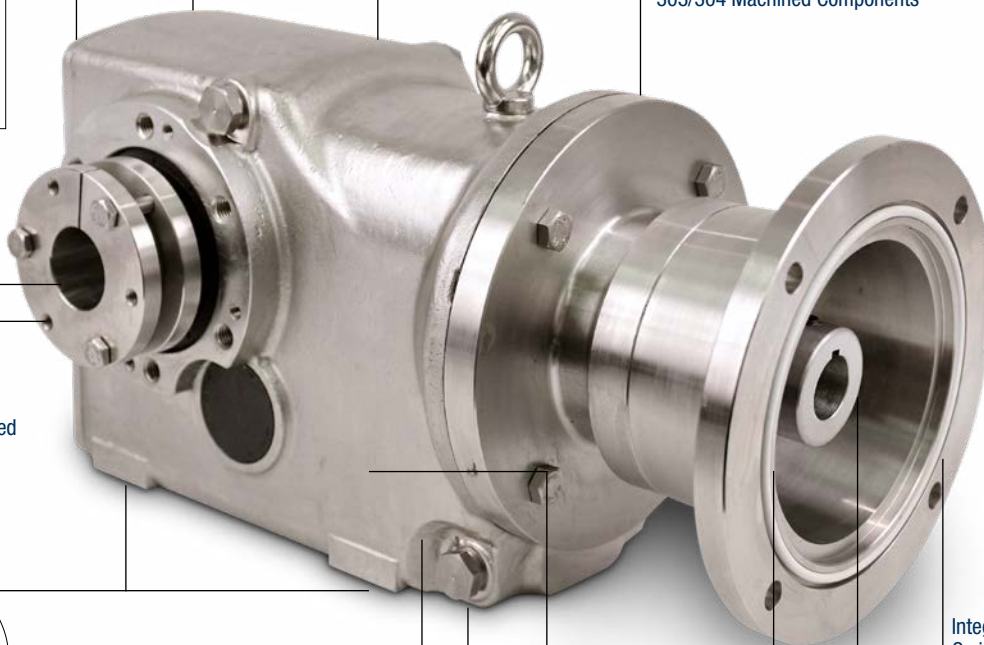
**Rare Earth Magnets** near gear mesh provide automatic entrapment of wear debris ensuring longer life

The **Original Domed Crown™** unique rounded housing prevents foreign matter adherence and fluid accumulation

Stainless Steel Exterior  
316 Castings  
303/304 Machined Components



**IP69K**  
When ordered with high pressure washdown seal option\*



H1 food grade Klubersynth UH1 6-460 maximizes torque capacity and efficiency

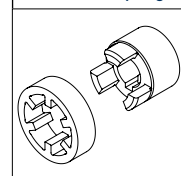
Larger diameter oil fill/drain holes for faster oil changes

NEMA or IEC C-Face motor input

Polished matte finish maintains clean appearance throughout operation

Integrated O-rings

3-Jaw Coupling



Optional high pressure washdown seal available\*

## Energy Efficient Design

With efficiency of 98% per gear mesh, Series 2000 helical bevel reducers are ideal for use in applications with:

- continuous or high duty cycle operations
- high-ratio reduction
- limited access applications where long life is a necessity

# A2 SS2000R Series Helical Bevel Gear Drives

## Ordering Information

Example: SSRF2043RF-40KC-B7-GS5 - P22 Z - HUTFSS - 9

<b>SS</b> Exterior SS Stainless Steel	<b>RF</b> Style RF - C-Face Coupling Mount	<b>2043R</b> Size 2033R 2043R 2063R 2073R	<b>F - 40</b> Base Blank - None F - Output Flange T - Torque B - Base Mounting Feet	<b>K</b> Lubrication K - Klubersynth UH1-6-460 H1 Food Grade	<b>C</b> Seal Option Blank - Standard C - High Pressure Washdown Output Seals <b>IP69K</b>	<b>B7</b> Motor Input Mounting Nema Mounting B5 56C B7 140TC/180C B9 180TC/210C B11 210TC/250UC IEC (B5) Mounting M14F IEC71 M19F IEC80 M24F IEC90S/90L M28F IEC100/112 M38F IEC132S/132M	<b>5</b> Mounting Positions See page 18 1 2 3 4 5 6	<b>P22</b> Output Shaft Code Hollow Shaft See Chart 1 P24 Inch - spec'd in 1/16" increments PM40 Metric - spec'd in mm increments Solid Shaft See Chart 1 D24 OD - spec'd in 1/16" increments DM40 OD - spec'd in mm increments Tapered Bushing Hollow Output Shaft See Chart 1 TP22 Inch - Bore - spec'd in 1/16" increments TM35 Metric - Bore - spec'd in mm increments	<b>Z - HUTFSS - 9</b> C-Face Motor See Chart 2 Blank - No Motor Motor Conduit Box Location See Chart 3 Blank - No Motor 0 - 12 o'clock 3 - 3 o'clock 6 - 6 o'clock 9 - 9 o'clock Shaft Cover Blank - No Cover Z - Shallow Cover (Fits Solid & Hollow Shafts) Y - Tapered Bushing Cover X - Deep Cover
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Chart 1: Available Output Shaft Codes

Size	Hollow Shaft Bore Codes		Solid Shaft OD Codes		Tapered Bushing Bore Codes	
	Inch	Metric	Inch	Metric	Inch	Metric
2033R	P16	PM25	D16	DM25	TP16	TM25
	P20	PM30	D20	DM30		
2043R	P20	PM30	D20	DM30	TP19	TM30
	P22	PM35	D22	DM35	TP20	
2063R	P23	PM40	D26	DM40	TP22	TM35
	P24		D32	DM50	TP23	
2073R	P31	PM50	D32	DM45	TP28	TM40
	P32		D34	DM50		

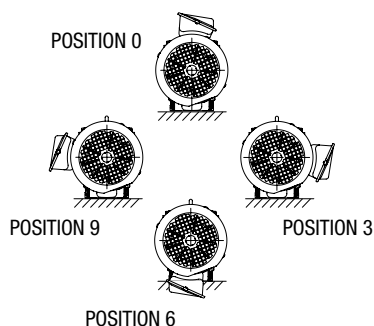
Additional Shaft and Bore sizes available upon request.

Chart 2: Stainless Steel AC Motors

Part #	HP	Type	Frame Size
EUT-SS	0.33	TENV	56C
FUT-SS	0.5	TENV	56C
FUTF-SS	0.5	TEFC	56C
GUT-SS	0.75	TENV	56C
HUT5/8-SS	1.0	TENV	56C
HUTF5/8-SS	1.0	TEFC	56C
HUT-SS	1.0	TENV	140TC
HUTF-SS	1.0	TEFC	140TC
JUTF-SS	1.5	TEFC	140TC
KUTF-SS	2.0	TEFC	140TC
LUTF-SS	3.0	TEFC	180TC
MUTF-SS	5.0	TEFC	180TC
NUTF-SS	7.5	TEFC	210TC
PUTF-SS	10.0	TEFC	210TC

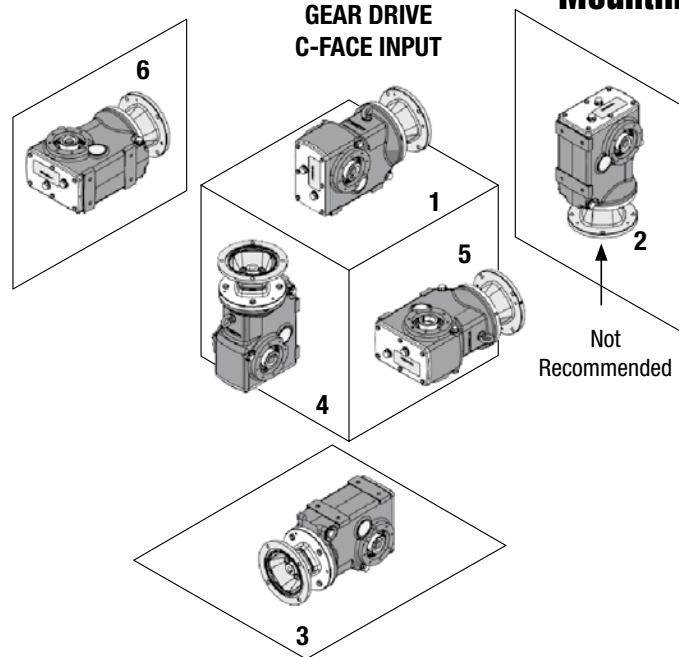
TENV = Totally enclosed, non-ventilated  
TEFC = Totally enclosed, fan-cooled

Chart 3: Conduit Box Positions



When looking into motor fan cover with gear drive in mounting position 1.

## Mounting Positions & Lubrication



### Lubrication

Klubersynth UH1 6-460 is recommended for the SS2000R Series gear drives for optimum performance. Normal full-load operating temperatures range between 130°F - 150°F. During initial break-in of the gear drive, higher than normal operating temperatures may result. All gear drives are supplied with UH1 6-460 synthetic oil (unless specified otherwise) with quantity listed below for standard mounting position 1 or to mounting specified at time of order. These gear drives are designed with internal features to

reduce the impact of metallic wear debris, which should increase maintenance intervals. Relubrication is recommended for 10,000 hours or more frequently when operating in highly contaminated environments. Satisfactory performance may be obtained in some applications with non-synthetic oils, but will require more frequent oil changes. Recommendations are based on input speeds of 1800 RPM nominal. For higher input speeds, consult factory.

RECOMMENDED LUBRICANT	Reducer Designation	Ambient (Room) Temperature	ISO Viscosity Grade No.	Viscosity Range SUS @ 100F	Part Number (Quart)	Comments
<b>Klubersynth UH1 6-460 Synthetic</b>	K	-20°F to +225°F (-29°C to 107°C)	460	1950/2500	65159	H1 Food-Grade

Notes: Upper temperature limit is dictated by reducer components and not the oil.

	Mounting Position					
	1	2	3	4	5	6
<b>Plug A</b>	Oil-Fill	Opt. Vent	—	Oil Drain	Oil-Fill	—
<b>Plug B</b>	—	Opt. Vent	Oil-Fill	Oil Drain	—	Oil-Fill
<b>Plug C</b>	Opt. Vent	Oil-Fill	Oil Drain	—	Oil Drain	Opt. Vent
<b>Plug D</b>	Oil Drain	Oil Drain	Opt. Vent	Oil-Fill	Oil Drain	Opt. Vent
<b>Plug E</b>	Oil Drain	Oil Drain	Opt. Vent	Oil-Fill	Opt. Vent	Oil Drain
<b>Plug F</b>	Opt. Vent	Oil-Fill	Oil Drain	—	Opt. Vent	Oil Drain

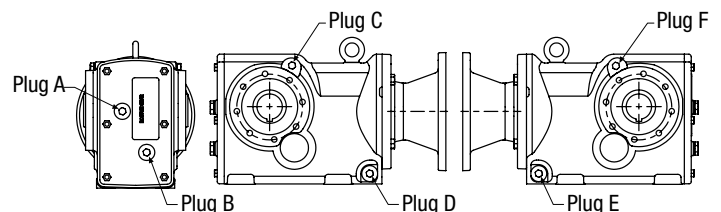
Notes:

- Oil-Fill** Plugged from factory. Port used during regular maintenance intervals for Oil-Fill. Defines approximate oil-level during operation.
  - Opt. Vent** Plugged from factory. A 5psi pressure vent plug is supplied uninstalled with each product. Defines optional location for installation of that pressure vent.
  - Oil Drain** Plugged from factory. Port used during regular maintenance intervals for draining used oil. Re-plug prior to oil-fill.
  - Position 2\*** Not preferred and not recommended as a Mounting Position
  - Position 4\*** Consult factory for venting options.
- All products supplied from factory lubed for Position 1 unless specified otherwise

### Lube Capacity in Quarts

	Mounting Position					
	1	2	3	4	5	6
<b>2033R</b>	0.43	0.95	1.40	1.58	1.25	1.38
<b>2043R</b>	0.70	1.77	2.23	2.47	2.00	2.00
<b>2063R</b>	1.25	2.32	3.30	4.08	2.82	3.02
<b>2073R</b>	1.60	3.58	5.46	6.27	4.86	5.16

### Oil Plug and Vent Plug Location Details



## Ratios and Performance

### 3 Reductions

■ Available Options    ○ Optional

Model No.	Output Speed (1750 rpm Input)	Actual Ratio	Ratio used in Part No.	Input Power (HP)	Output Torque Rating (lbf-in)	NEMA C-Face Input				IEC C-Face Input				
						B5	B7	B9	B11	M14F	M19F	M24F	M28F	M38F
SSRF2033R	326	5.36	5.4	7.29	1,320	○	○	■		○	○	○	■	
	273	6.42	6.4	6.47	1,400	■	■	○		■	■	■	○	
	259	6.76	6.8	6.22	1,420	■	■	○		■	■	■	○	
	220	7.96	8.0	5.42	1,460	■	■	○		■	■	■	○	
	196	8.91	8.9	5.01	1,510	■	■	○		■	■	■	○	
	164	10.67	11	4.21	1,520	■	■	○		■	■	■	○	
	144	12.14	12	3.60	1,480	■	■	○		■	■	■	○	
	134	13.02	13	3.47	1,530	■	■	○		■	■	■	○	
	114	15.32	15	3.23	1,670	■	■	○		■	■	■	○	
	102	17.15	17	2.93	1,700	■	■			■	■	■		
	85	20.54	21	2.63	1,830	■	■			■	■	■		
	75	23.36	23	2.32	1,830	■	■			■	■	■		
	70	24.99	25	2.17	1,840	■	■			■	■	■		
	61	28.83	29	1.89	1,850	■	■			■	■	■		
	58	29.96	30	1.82	1,850	■	■			■	■	■		
	49	35.85	36	1.53	1,860	■	■			■	■	■		
	46	37.79	38	1.46	1,870	■	■			■	■	■		
	39	44.46	44	1.24	1,880	■	■			■	■	■		
	35	49.79	50	1.11	1,880	■	■			■	■	■		
	29	59.61	60	0.93	1,890	■				■	■			
26	67.80	68	0.82	1,900	■				■	■				
24	72.54	73	0.77	1,900	■				■	■				
21	83.69	84	0.67	1,910	■				■					
18	97.81	98	0.58	1,920	■				■					
16	106.38	106	0.53	1,920	■				■					
SSRF2043R	311	5.62	5.6	12.1	2,310		○	■	■			○	■	■
	266	6.58	6.6	11.2	2,490		○	■	■			○	■	■
	238	7.36	7.4	10.4	2,590		○	■	■			○	■	■
	203	8.63	8.6*	8.10	2,370		○	■	■			○	■	■
	193	9.06	9.1*	7.91	2,430		○	■	■			○	■	■
	166	10.56	11*	7.09	2,530		○	■				○	■	
	149	11.77	11.8*	6.60	2,620		○	■				○	■	
	144	12.19	12	8.40	3,460			○	■			○	■	
	128	13.65	14	7.50	3,480			○	■			○	■	
	109	15.99	16*	6.46	3,500	■	■	■		○	○	■	■	
	104	16.80	17*	6.16	3,510	■	■	■		○	○	■	■	
	89	19.58	20	5.32	3,530	■	■	■		○	○	■	■	
	80	21.81	22	4.80	3,550	■	■	■		○	○	■	■	
	72	24.42	24	4.30	3,560	■	■	■		○	○	■	■	
	68	25.91	26	4.06	3,570	■	■	■		○	○	■	■	
	60	29.30	29	3.61	3,590	■	■	■		○	○	■	■	
	58	30.23	30	3.50	3,590	■	■	■		○	○	■	■	
	49	35.39	35	3.01	3,610	■	■	■		○	○	■	■	
	44	39.61	40	2.70	3,630	■	■			■	■	■		
	38	46.41	46	2.31	3,650	■	■			■	■	■		
	36	48.75	49	2.20	3,650	■	■			■	■	■		
	31	56.83	57	1.90	3,670	■	■			■	■	■		
	28	63.30	63	1.71	3,680	■	■			■	■	■		
	25	70.89	71	1.53	3,690	■	■			■	■	■		
	23	75.20	75	1.50	3,700	■	■			■	■	■		
	21	85.12	85	1.28	3,710	■	■			■	■	■		
19	90.86	91	1.20	3,720	■	■			■	■	■			
17	104.37	104	1.05	3,740	■	■			■	■	■			
14	121.48	121	0.91	3,750	■				■	■				
13	131.87	132	0.84	3,760	■				■	■				

Ratings shown reflect maximum gear capacity based on AGMA Standards (Service Factor = 1.0) with Klybersynth UH1 6-460.

For input speeds above 1750 RPM, do not exceed maximum listed input horsepower.

\* Depending on the input option chosen, reducer ratios denoted with \* may have an overall capacity lower than the values shown (values represent gear capacity). Contact factory for details.

# SS2000R Series Helical Bevel Gear Drives A2

## Ratios and Performance

### 3 Reductions

■ Available Options    ○ Optional

Model No.	Output Speed (1750 rpm Input)	Actual Ratio	Ratio used in Part No.	Input Power (HP)	Output Torque Rating (lbf-in)	NEMA C-Face Input				IEC C-Face Input				
						B5	B7	B9	B11	M14F	M19F	M24F	M28F	M38F
SSRF2063R	240	7.28	7.3	17.6	4,330		○	■	■			○	■	■
	209	8.37	8.4	15.5	4,400		○	■	■			○	■	■
	181	9.66	9.7	13.5	4,440		○	■	■			○	■	■
	165	10.63	11*	12.4	4,460		○	■	■			○	■	■
	141	12.41	12*	10.7	4,490		○	■	■			○	■	■
	132	13.22	13	15.5	6,930		○	■	■			○	■	■
	115	15.19	15	14.0	7,230		○	■	■			○	■	■
	100	17.53	18	12.9	7,680		○	■	■			○	■	■
	91	19.29	19*	12.0	7,830		○	■	■			○	■	■
	78	22.53	23*	10.5	8,050		○	■	■			○	■	■
	74	23.60	24*	10.2	8,170		○	■	■			○	■	■
	64	27.27	27*	9.10	8,410		■	■	■			■	■	■
	58	30.21	30*	7.72	7,910		■	■	■			■	■	■
	49	35.61	36	5.30	6,340	○	■	■		○	○	■	■	
	46	38.39	38	5.79	7,550	○	■	■		○	○	■	■	
	39	44.32	44	5.04	7,580	○	■	■		○	○	■	■	
	36	48.77	49	4.59	7,600	■	■	■		■	■	■	■	
	31	56.97	57	3.95	7,630	■	■	■		■	■	■	■	
	29	59.67	60	3.78	7,650	■	■	■		■	■	■	■	
	25	68.95	69	3.28	7,670	■	■	■		■	■	■	■	
23	76.37	76	2.97	7,700	■	■	■		■	■	■	■		
19	90.04	90	2.53	7,720	■	■	■		■	■	■	■		
17	101.43	101	2.25	7,750	■	■	■		■	■	■	■		
16	108.03	108	2.11	7,750	■	■	■		■	■	■	■		
14	123.54	124	1.85	7,770	■	■	■		■	■	■	■		
12	143.20	143	1.60	7,800	■	■	■		■	■	■	■		
SSRF2073R	242	7.24	7.2	31	7500			○	■				○	■
	206	8.48	8.5*	29	8300			○	■				○	■
	183	9.56	9.6*	27	8730			○	■				○	■
	161	10.84	11	25	9010			○	■				○	■
	142	12.35	12	22	9010			○	■				○	■
	129	13.52	14	27	12300			○	■				○	■
	110	15.84	16	25	13500			○	■				○	■
	98	17.86	18	22	13600			○	■				○	■
	86	20.24	20	19.9	13700			○	■				○	■
	76	23.08	23	17.6	13700			○	■				○	■
	69	25.2	25*	16.2	13800		○	■	■			○	■	■
	60	29.12	29*	13.5	13300		○	■	■			○	■	■
	58	30.4	30*	13	13400		○	■	■			○	■	■
	50	34.84	35*	11.4	13500		○	■	■			○	■	■
	46	38.39	38*	10.8	14000		○	■	■			○	■	■
	44	40.04	40	10.4	14000		○	■	■			○	■	■
	39	45.16	45	9.2	14100		○	■	■			○	■	■
	34	51.18	51	8.2	14200		○	■	■			○	■	■
	30	58.34	58	7.2	14200		○	■	■			○	■	■
	27	63.71	64*	6.6	14300	■	■	■	■	■	■	■	■	■
	24	73.62	74	5.7	14300	■	■	■	■	■	■	■	■	■
	23	76.87	77	5.5	14400	■	■	■	■	■	■	■	■	■
	20	88.08	88	4.8	14400	■	■	■	■	■	■	■	■	■
	18	97.05	97	4.4	14500	■	■	■	■	■	■	■	■	■
	15	113.56	114	3.8	14500	■	■	■	■	■	■	■	■	■
	14	127.32	127	3.4	14600	■	■	■	■	■	■	■	■	■
13	135.28	135	3.2	14600	■	■	■	■	■	■	■	■	■	
11	154.02	154	2.8	14400	■	■	■	■	■	■	■	■	■	
10	177.76	178	2.4	14600	■	■	■	■	■	■	■	■	■	
9	192.18	192	2.3	14700	■	■	■	■	■	■	■	■	■	

Ratings shown reflect maximum gear capacity based on AGMA Standards (Service Factor = 1.0) with Klybersynth UH1 6-460.

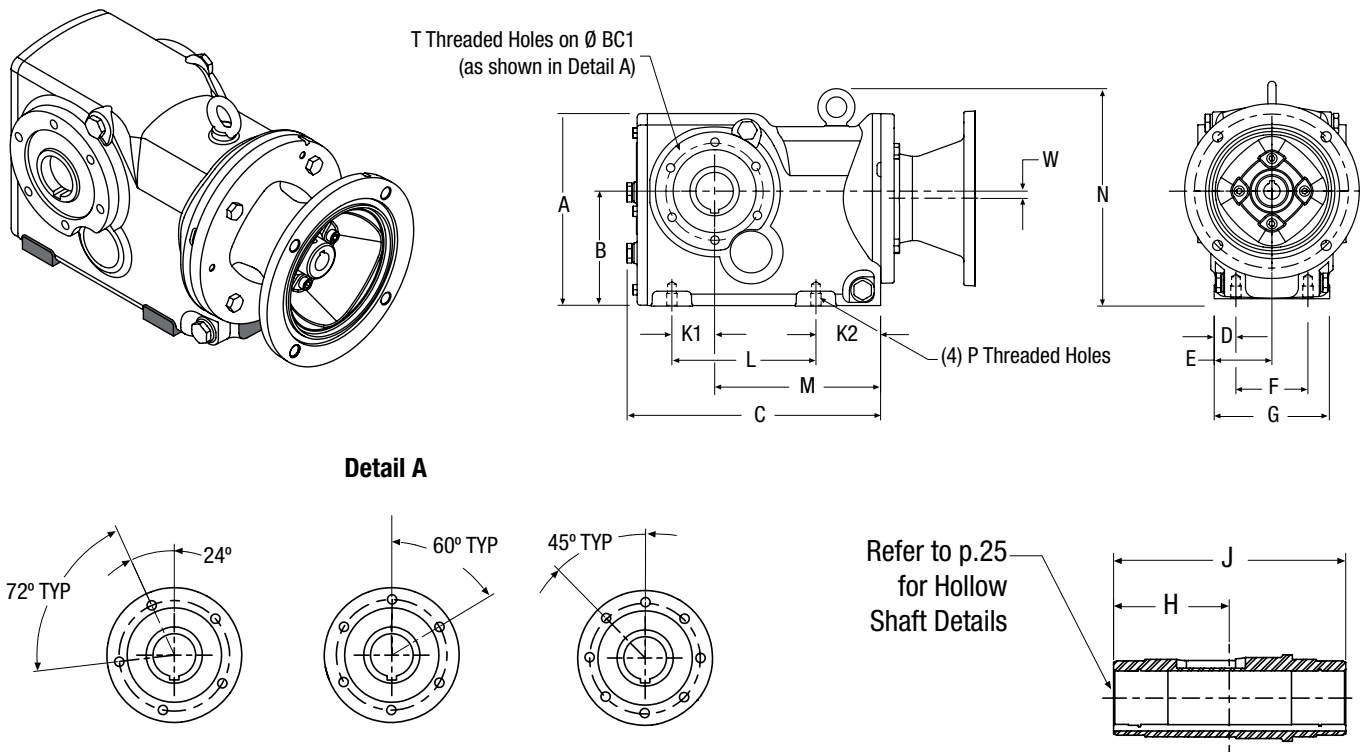
For input speeds above 1750 RPM, do not exceed maximum listed input horsepower.

\* Depending on the input option chosen, reducer ratios denoted with \* may have an overall capacity lower than the values shown (values represent gear capacity). Contact factory for details.

# A2 SS2000R Series Helical Bevel Gear Drives

## Mounting Details

(Shown with Hollow Output Shaft Option)



Solid output shaft details shown on p. 23  
Tapered bushing output shaft details shown on p. 24

## Dimensions in inches (mm)

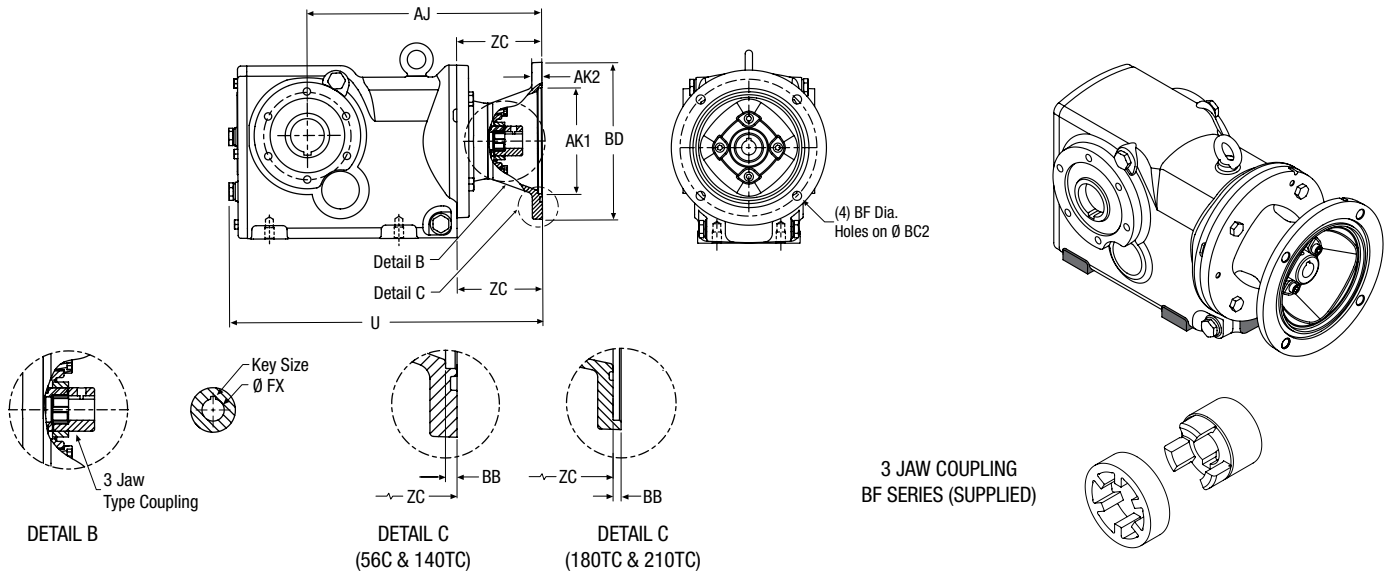
CATALOG NO.	A	B +/- 0.005 (+/- 0.13)	C	D	E +/- 0.010 (+/- 0.25)	F	L	G	H	J
SSRF2033R	6.4 (163)	3.923 (99.64)	8.7 (221)	0.83 (21.1)	2.010 (51.05)	2.360 (59.94)	4.610 (117.09)	4.01 (101.9)	2.55 (64.8)	5.09 (129.3)
SSRF2043R	7.4 (188)	4.400 (111.76)	9.7 (246)	0.83 (21.1)	2.210 (56.13)	2.756 (70.00)	5.512 (140.00)	4.42 (112.3)	3.03 (77.0)	6.06 (153.9)
SSRF2063R	8.9 (226)	5.510 (139.95)	11.4 (290)	0.90 (22.9)	2.630 (66.80)	3.460 (87.88)	5.984 (151.99)	5.25 (133.3)	3.50 (88.9)	7.00 (177.8)
SSRF2073R	11.3 (287)	7.081 (179.86)	12.9 (328)	1.06 (26.9)	3.070 (77.98)	4.020 (102.11)	6.69 (169.93)	6.14 (156.0)	4.13 (104.9)	8.27 (210.1)

CATALOG NO.	K1	K2	M +/- 0.005 (+/- 0.13)	N	P		T		BC1	W	Approx. Weight (LBS)
					Dia. (mm)	Depth	Dia. (mm)	Depth			
SSRF2033R	1.38 (35.1)	2.34 (59.5)	5.574 (141.58)	7.1 (180)	M10	0.65 (16.5)	M8	0.58 (14.8)	3.70 (94.0)	0.33 (8.4)	32
SSRF2043R	1.57 (39.9)	2.41 (61.3)	6.354 (161.39)	8.3 (211)	M10	0.65 (16.5)	M10	0.52 (13.3)	3.75 (95.3)	0.28 (7.1)	58
SSRF2063R	1.65 (41.9)	3.01 (76.6)	7.348 (186.64)	8.9 (226)	M12	0.78 (19.8)	M12	0.78 (19.8)	4.60 (116.8)	0.80 (20.3)	80
SSRF2073R	1.89 (48.0)	3.63 (92.1)	8.425 (214.00)	11.4 (290)	M16	1.00 (26.0)	M12	0.78 (19.8)	5.59 (142.0)	1.23 (31.2)	138

# SS2000R Series Helical Bevel Gear Drives **A2**

## Motor Flange and Coupling Details

(Shown with Hollow Output Shaft Option)



### NEMA Sizes - Dimensions in inches (mm)

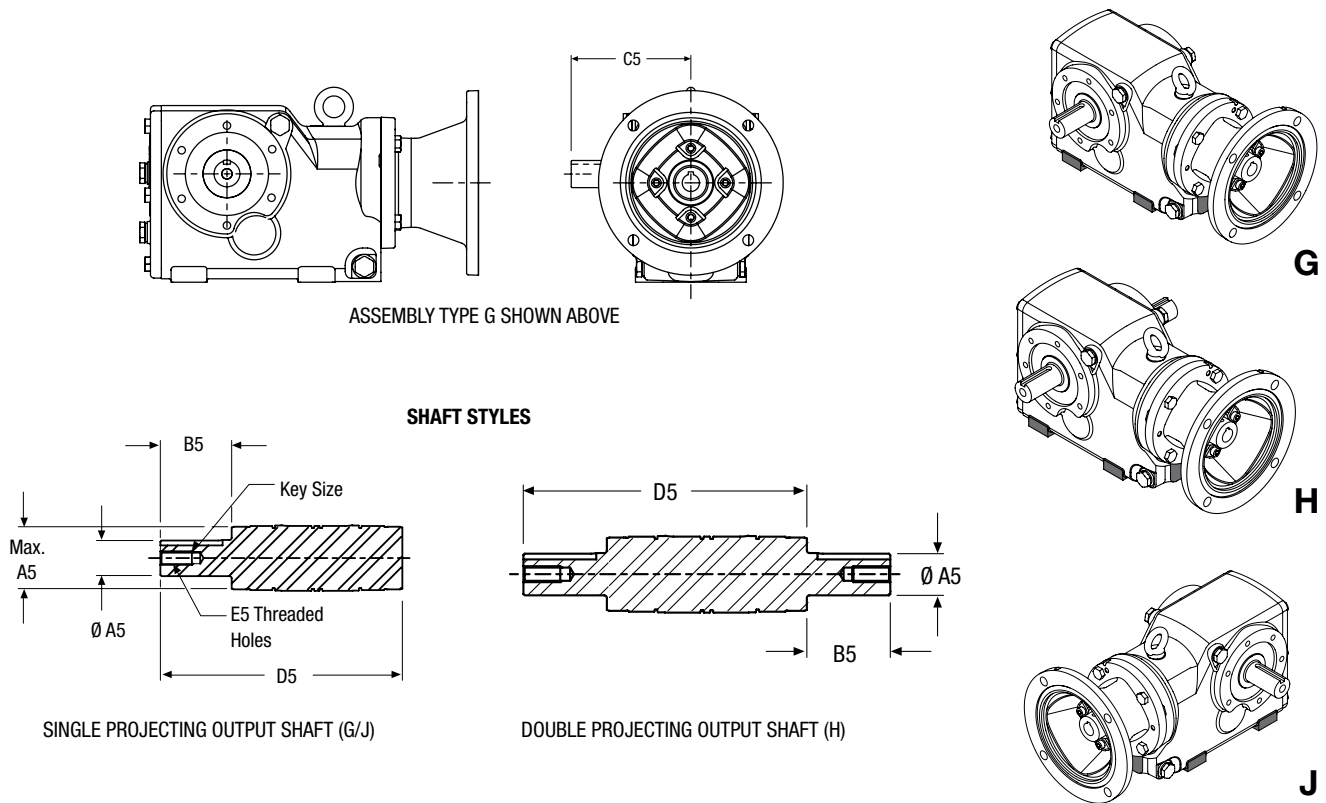
CATALOG NO.	INPUT SIZE	U	AJ	AK1	AK2	BB	BD	BF	BC2	ZC	FX	KEY SIZE	
												SQ.	LENGTH
SSRF2033R	B5 (56C)	12.3 (312)	9.1 (231)	4.500 (114.3)	0.43 (10.9)	0.18 (4.60)	6.69 (169.9)	0.39 (9.9)	5.88 (149.4)	3.53 (89.7)	0.625 (15.88)	3/16	1-3/8
	B7 (140TC)	13.2 (335)	10 (254)	4.500 (114.3)	0.47 (11.9)	0.18 (4.60)	6.69 (169.9)	0.39 (9.9)	5.88 (149.4)	4.460 (113.3)	0.875 (22.22)	3/16	1-3/8
SSRF2043R	B5 (56C)	13.3 (338)	10.0 (254)	4.500 (114.3)	0.43 (10.9)	0.18 (4.60)	6.69 (169.9)	0.39 (9.9)	5.88 (149.4)	3.62 (91.9)	0.625 (15.88)	3/16	1-3/8
	B7 (140TC)	14.3 (363)	10.9 (277)	4.500 (114.3)	0.47 (11.9)	0.18 (4.60)	6.69 (169.9)	0.39 (9.9)	5.88 (149.4)	4.540 (115.3)	0.875 (22.22)	3/16	1-3/8
	B9 (180TC)	15.7 (399)	12.4 (315)	8.500 (215.9)	0.59 (15.0)	0.20 (5.10)	8.98 (228.1)	0.53 (13.5)	7.25 (184.1)	6.000 (152.4)	1.125 (28.57)	1/4	1-3/4
	B11 (210TC)	17.8 (452)	14.4 (366)	8.500 (215.9)	0.59 (15.0)	0.20 (5.10)	8.98 (228.1)	0.53 (13.5)	7.25 (184.1)	8.080 (205.2)	1.375 (34.92)	5/16	2-3/8
SSRF2063R	B5 (56C)	14.5 (368)	10.5 (267)	4.500 (114.3)	0.43 (10.9)	0.18 (4.60)	6.69 (169.9)	0.39 (9.9)	5.88 (149.4)	3.14 (79.8)	0.625 (15.88)	3/16	1-3/8
	B7 (140TC)	15.5 (394)	11.4 (290)	4.500 (114.3)	0.47 (11.9)	0.18 (4.60)	6.69 (169.9)	0.39 (9.9)	5.88 (149.4)	4.060 (103.1)	0.625 (15.88)	3/16	1-3/8
	B9 (180TC)	17.0 (432)	12.9 (328)	8.500 (215.9)	0.59 (15.0)	0.20 (5.10)	8.98 (228.1)	0.53 (13.5)	7.25 (184.1)	5.520 (140.2)	1.125 (28.57)	1/4	1-3/4
	B11 (210TC)	19.0 (483)	15.0 (381)	8.500 (215.9)	0.59 (15.0)	0.20 (5.10)	8.98 (228.1)	0.53 (13.5)	7.25 (184.1)	7.600 (193.0)	1.375 (34.92)	5/16	2-3/8
SSRF2073R	B5 (56C)	15.8 (401)	11.3 (287)	4.500 (114.3)	0.43 (10.9)	0.18 (4.60)	6.69 (169.9)	0.39 (9.9)	5.88 (149.4)	2.84 (72.1)	0.625 (15.88)	3/16	1-3/8
	B7 (140TC)	16.7 (424)	12.2 (310)	4.500 (114.3)	0.47 (11.9)	0.18 (4.60)	6.69 (169.9)	0.39 (9.9)	5.88 (149.4)	3.76 (95.5)	0.625 (15.88)	3/16	1-3/8
	B9 (180TC)	18.1 (460)	13.6 (345)	8.500 (215.9)	0.59 (15)	0.2 (5.10)	8.98 (228.1)	0.53 (13.5)	7.25 (184.1)	5.220 (132.6)	1.125 (28.57)	1/4	1-3/4
	B11 (210TC)	20.2 (513)	15.7 (399)	8.500 (215.9)	0.59 (15)	0.2 (5.10)	8.98 (228.1)	0.53 (13.5)	7.25 (184.1)	7.300 (185.4)	1.375 (34.92)	5/16	2-3/8

### IEC Sizes - Dimensions in mm

CATALOG NO.	PART NO. IDENTIFIER	FRAME SIZE	U	AJ	AK1	AK2	BB	BD	BF	BC2	ZC	FX	KEY SIZE	
													SQ.	LENGTH
SSRF2033R	M14F	71	299.00	219.00	110	10.92	4.64	160	11.00	130	77.09	14	5x5	20
	M19F	80	328.00	248.00	130	11.94	4.64	200	13.50	165	106.63	19	6x6	25
SSRF2043R	M14F	71	326.00	241.00	110	10.92	4.64	160	11.00	130	79.22	14	5x5	20
	M19F	80	355.00	270.00	130	11.94	4.64	200	13.50	165	108.66	19	6x6	25
	M24F	90S/90L	387.00	302.00	130	15.00	5.15	200	13.50	165	140.23	24	8x7	32
	M28F	100L/112M	432.00	347.00	180	16.51	5.15	250	15.50	215	185.67	28	8x7	40
SSRF2063R	M14F	71	356.00	254.00	110	10.92	4.64	160	11.00	130	67.13	14	5x5	20
	M19F	80	386.00	283.00	130	11.94	4.64	200	13.50	165	96.67	19	6x6	25
	M24F	90S/90L	417.00	315.00	130	15.00	5.15	200	13.50	165	128.14	24	8x7	32
	M28F	100L/112M	463.00	360.00	180	16.51	5.15	250	15.50	215	173.58	28	8x7	40
SSRF2073R	M14F	71	387.32	273.40	110	10.92	4.64	160	11.00	130	59.41	14	5x5	20
	M19F	80	416.86	302.94	130	11.94	4.64	200	13.50	165	88.95	19	6x6	25
	M24F	90S/90L	448.34	334.41	130	15.00	5.15	200	13.50	165	120.42	24	8x7	32
	M28F	100L/112M	493.78	379.85	180	16.51	5.15	250	15.50	215	165.86	28	8x7	40

# A2 SS2000R Series Helical Bevel Gear Drives

## Output Options – Projecting Solid Output Shaft Details



### Dimensions in inches

SIZE	PART NO. IDENTIFIER	A5	A5 Tolerance	Max. A5	B5	C5	D5	E5		KEY SIZE	
								Thread	Depth	SQ.	Length
2033R	D16	1.000	+0.0000 -0.0005	1.732	1.97	4.33	6.69	3/8-16	0.87	1/4	1-5/16
	D20	1.250		1.732	2.36	4.72	7.08	1/2-13	0.87	1/4	1-11/16
2043R	D20	1.250		1.890	2.28	5.33	8.26	1/2-13	1.12	1/4	1-11/16
	D22	1.375		1.890	2.68	5.73	8.66	1/2-13	1.12	5/16	1-13/16
2063R	D22	1.375	+0.0000 -0.0010	2.126	2.68	6.34	9.76	1/2-13	1.12	5/16	1-13/16
	D26	1.625		2.126	3.07	6.73	10.15	5/8-11	1.38	3/8	2-1/4
2073R	D32	2.000		2.126	3.86	7.52	10.94	3/4-10	1.61	1/2	2-5/8
	D28	1.750		2.717	3.54	7.72	11.81	5/8-11	0.94	3/8	2-1/4
	D32	2.000	2.717	3.94	8.12	12.21	3/4-10	1.61	1/2	2-5/8	
	D34	2.125	2.717	3.94	8.12	12.21	3/4-10	1.61	1/2	2-5/8	

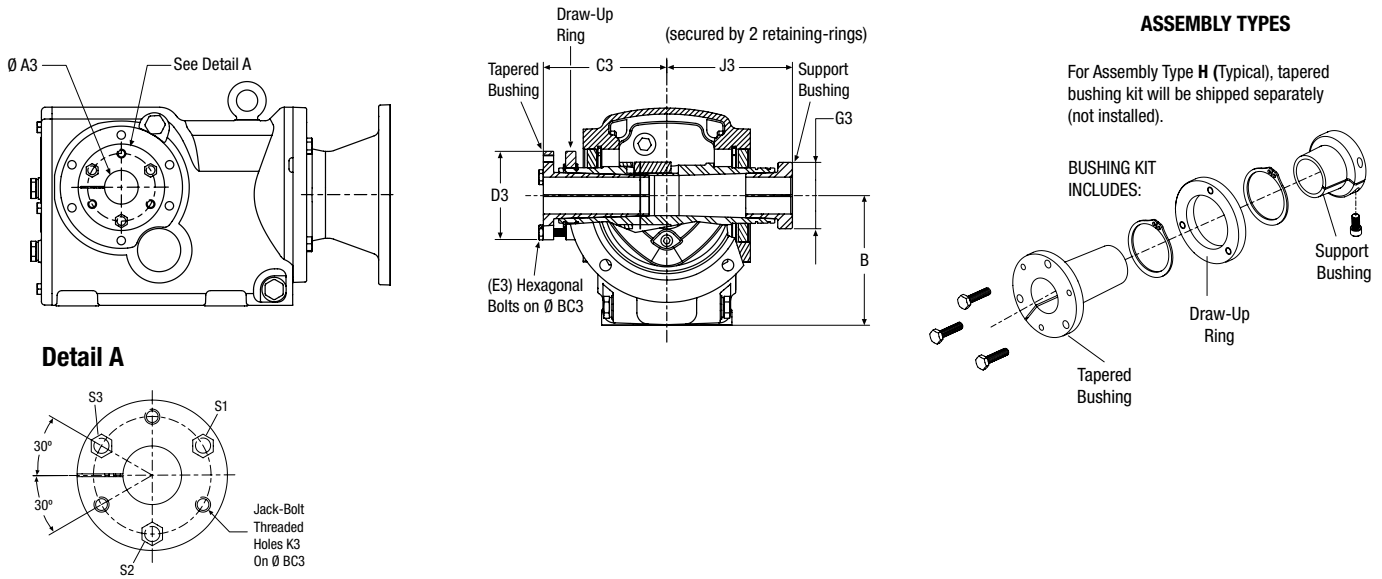
### Dimensions in mm

SIZE	PART NO. IDENTIFIER	A5	A5 Tolerance	Max. A5	B5	C5	D5	E5		KEY SIZE	
								Thread	Depth	Rect.	Length
2033R	DM25	25.0	-0.015 -0.002	44	50	110.0	169.9	M10	22.0	8X7	40
	DM30	30.0		44	60	120.0	179.9	M10	22.0	8X7	50
2043R	DM30	30.0		48	58	135.3	209.9	M10	22.0	8 X 7	50
	DM35	35.0	48	68	145.3	219.9	M12	28.0	10 X 8	56	
2063R	DM35	35.0	-0.018 -0.002	54	68	161.0	247.8	M12	28.0	10 X 8	56
	DM40	40.0		54	78	171.0	257.8	M16	36.0	12 X 8	70
2073R	DM50	50.0		54	98	191.0	277.8	M16	36.0	14 X 9	80
	DM45	45.0		+0.018	69	90	196.1	310.0	M16	36.0	14x9
	DM50	50.0	+0.002	69	100	206.1	300.0	M16	36.0	14x9	80

Output shaft key is provided with gear drive. Customer's driven shaft requires standard width and depth keyway.



## Output Options – Tapered Bushing Hollow Output Shaft Details



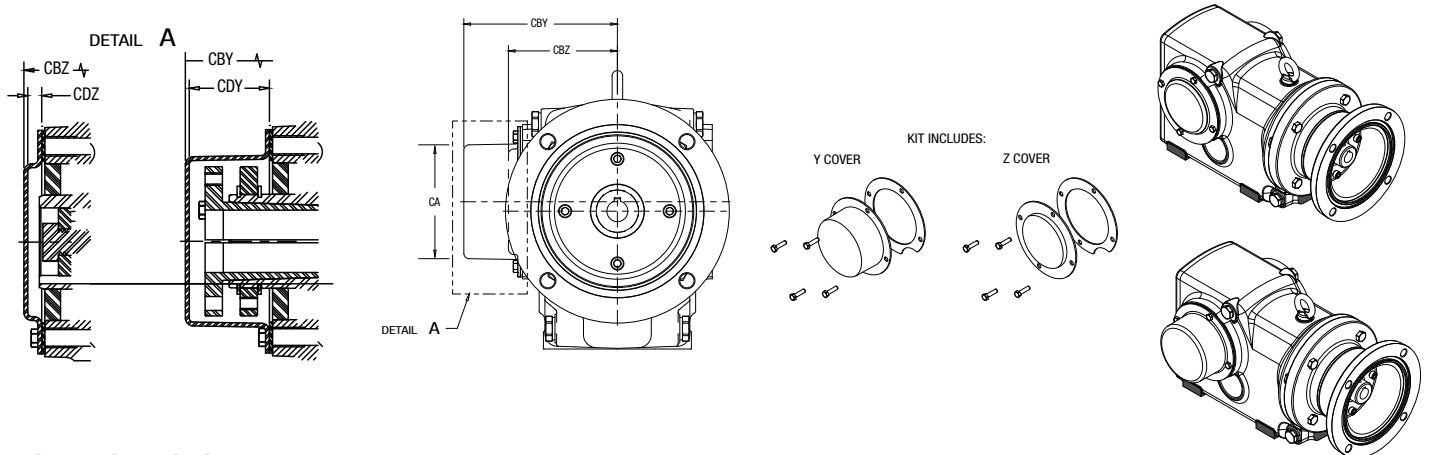
### Dimensions in inches

SIZE	TYPE	DRIVEN SHAFT DIA. +/- 0.002	B	C3	D3	E3		BC3	G3	J3	K3	KIT PART #
						SPEC.	LENGTH					
2033R	TP16	1.000	3.92	3.63	2.85	#10-24	1.00	2.25	2.50	3.84	#10-24	2030R-63K-P16
2043R	TP20	1.250	4.40	4.19	3.00	1/4-20	1.13	2.50	2.50	4.29	1/4-20	2040R-63K-P20
2063R	TP23	1.438	5.51	5.01	3.94	3/8-16	1.38	3.00	3.00	5.23	3/8-16	2060R-63K-P23
2073R	TP28	1.750	7.08	5.91	4.38	3/8-16	1.63	3.50	3.50	6.06	3/8-16	2070R-63K-P28

### Bolt Tightening Sequence Table

SIZE	STEP 1 Apply Initial Torque - ft.lbs.			STEP 2 Apply Secondary Torque - ft.lbs.			STEP 3 Apply Final Torque - ft.lbs.		
	S1	S2	S3	S1	S2	S3	S1	S2	S3
2033R	1.5	1.5	1.5	3.0	3.0	3.0	5.0	5.0	5.0
2043R	2.7	2.7	2.7	5.5	5.5	5.5	9.0	9.0	9.0
2063R	7.5	7.5	7.5	15.0	15.0	15.0	30.0	30.0	30.0
2073R	7.5	7.5	7.5	15.0	15.0	15.0	30.0	30.0	30.0

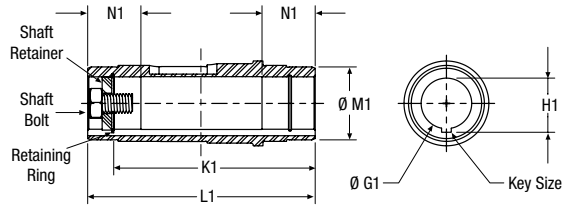
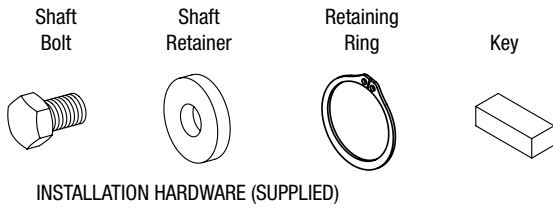
### Shaft Covers



### Dimensions in inches

SIZE	TYPE	CA	CBY	CDY	Y-KIT PART #	CBZ	CDZ	Z-KIT PART #
2033R	TP16	3.16	4.13	1.58	2033R-33-A-K	2.90	0.35	2033R-33-B-K
2043R	TP20	3.40	4.59	1.61	2043R-33-A-K	3.26	0.28	2043R-33-B-K
2063R	TP23	4.34	5.43	1.95	2063R-33-A-K	3.70	0.22	2063R-33-B-K
2073R	TP28	4.78	6.50	2.30	2073R-33-A-K	4.54	0.34	2073R-33-B-K

## Output & Mounting Options – Hollow Output Shaft Details



### Dimensions in inches

SIZE	PART NO. IDENTIFIER	G1 +0.0005/ +0.0015	Key Size		H1	Shaft Bolt		K1	L1	M1	N1	
			Sq.	Length		Spec.	Length					
2033R	P20	1.2500	1/4	FULL LENGTH	1.37	1/2-13	1.25	4.41	5.09	1.73	1.38	
	P20	1.2500	1/4		1.37	7/16-14	1.00	5.30	6.06	1.89	1.46	
2043R	P22	1.3750	5/16		1.53	1/2-13	1.00	6.40	7.16	2.13	1.46	
	P23	1.4375	3/8		1.61	1/2-13	1.00	7.20	8.27	2.72	1.96	
2063R	P24	1.5000	3/8		1.68	5/8-11	1.75					
	P31	1.9375	1/2		2.17	1/2-13	1.25					
2073R	P32	2.0000	1/2	2.23								

### Dimensions in mm

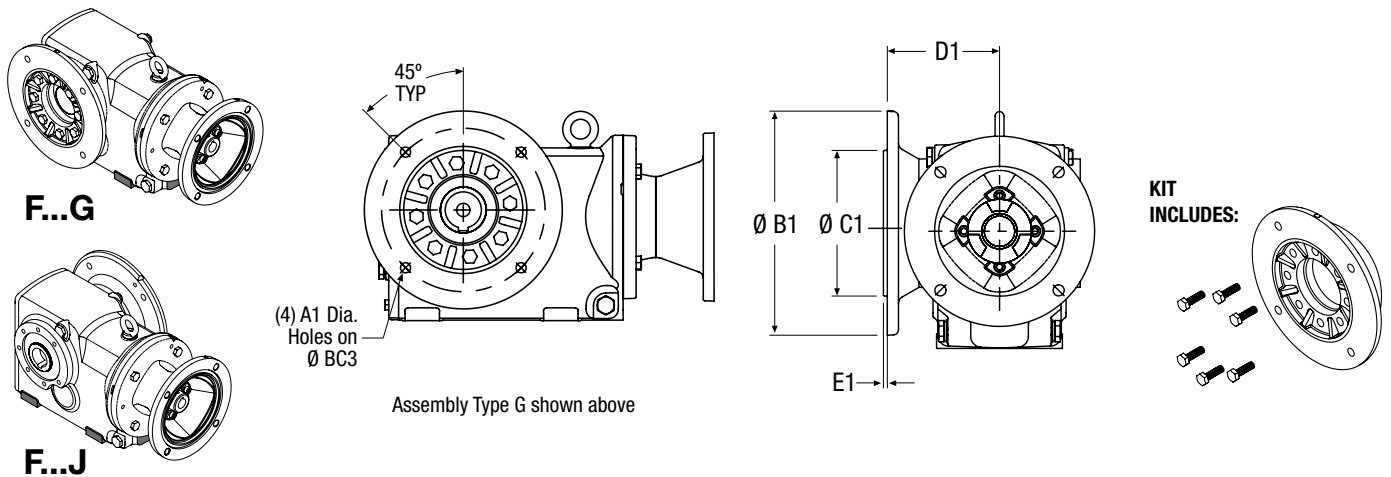
SIZE	PART NO. IDENTIFIER	G1	Key Size		H1	Shaft Bolt		K1	L1	M1	N1	
			Rect.	Length		Spec.	Length					
2033R	PM30	30.00	8x7	FULL LENGTH	33.4	M16x1.5	30	111.9	129.3	44.0	35.05	
	PM30	30.00	8x7		33.4	M16 X 1.5	30	134.6	153.9	48.0	37.08	
2043R	PM35	35.00	10x8		38.4			162.6	181.9	54.0	37.08	
	PM40	40.00	12x8		43.4	182.8	210.0	69.0	49.78			
2063R												
	PM50	50.00	14x9		53.9	M16x1.5	30					

Output shaft key is provided with gear drive. Customer's driven shaft requires standard width and depth keyway.

## Output Flange Details

### ASSEMBLY TYPES

Shown with hollow output shaft option

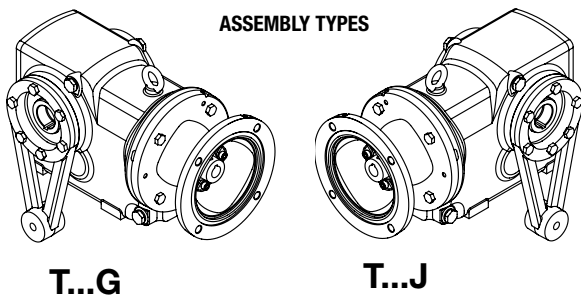


### Dimensions in inches (mm)

SIZE	A1	BC3	B1	C1 +0 / -0.001 (+0 / -0.03)	D1	E1	KIT PART #
SSRF2033R-F	0.35 (8.9)	5.12 (130)	6.30 (160)	4.331 (110)	3.49 (88.6)	0.14 (3.6)	SS2030R-21K-160
SSRF2043R-F	0.43 (10.9)	6.50 (165)	7.87 (200)	5.119 (130)	3.94 (100)	0.14 (3.6)	SS2040R-21K-200
SSRF2063R-F	0.53 (13.5)	8.46 (215)	9.84 (250)	7.087 (180)	4.45 (113)	0.16 (4.1)	SS2060R-21K-250
SSRF2073R-F	0.53 (13.5)	10.43 (265)	11.81 (300)	9.056 (230)	5.59 (142)	0.16 (4.1)	SS2070R-21K-300

Note: Output flange will be shipped assembled to gear drive, unless ordered separately using the kit part number.

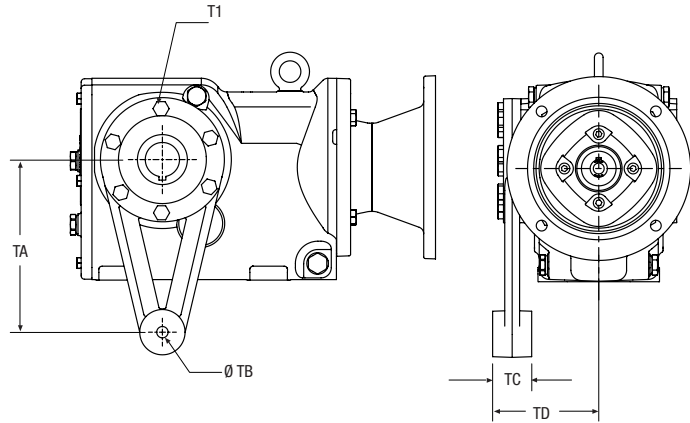
## Mounting Options – Torque Arm Details



**T...G**

**T...J**

For Assembly Type H (Typical), torque arm kit will be shipped separately (not installed).



### Dimensions in inches

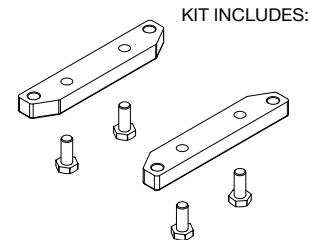
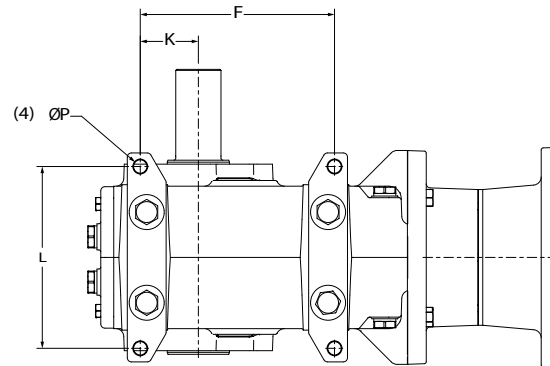
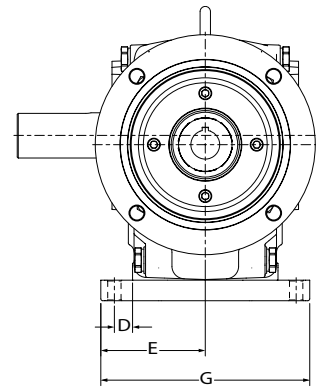
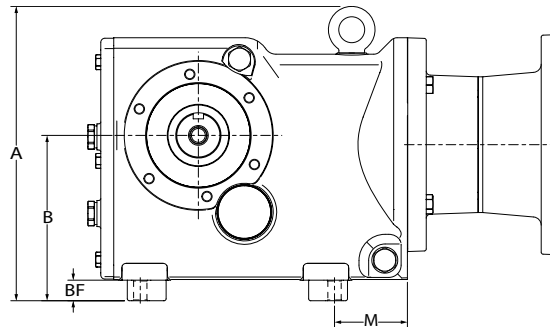
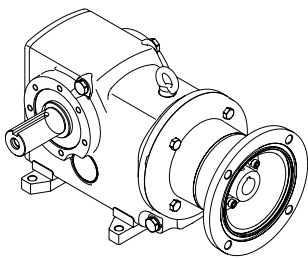
SIZE	TA	T1 (mm)		TB	TC	TD	Degrees of Rotation
		Spec.	Length				
SSRF2033R-T	5.51	M8	25	0.42	1.42	3.44	72°
SSRF2043R-T	6.30	M10	25	0.42	1.1	3.63	60°
SSRF2063R-T	7.87	M12	30	0.66	1.5	4.45	60°
SSRF2073R-T	9.84	M12	35	0.66	2.36	5.55	45°

KIT PART #
SS2030R-76K
SS2040R-76K
SS2060R-76K
SS2070R-76K

Early versions of this design were manufactured from plate with welded gussets which have a "TD" dimension of 3.54" (For SSRF2043-R-T) and 4.30" (For SSRF2063R-T). Note: To avoid damage during transit, all torque arms will be shipped disassembled from gear drive.

## Base Mounting Feet Details

Shown with solid output shaft option (Assembly Type G)



### Dimensions in inches

SIZE	A	B	M	BF	D	E	G	F	L	K	P
SSRF2033R-B	7.68	4.55	2.20	0.63	0.55	2.98	5.95	4.89	5.12	1.52	0.41
SSRF2043R-B	8.95	5.03	2.22	0.63	0.55	3.18	6.35	5.90	5.53	1.77	0.41
SSRF2063R-B	9.87	6.15	2.38	0.64	0.63	3.71	7.42	7.25	6.51	2.28	0.49
SSRF2073R-B	12.20	7.88	3.23	0.80	0.91	4.40	8.80	7.47	7.72	2.28	0.65

KIT PART #
SS2030R-11HK
SS2040R-11HK
SS2060R-11HK
SS2070R-11HK

\* Kit Part # can be used if ordering separately.

## Installation Aids

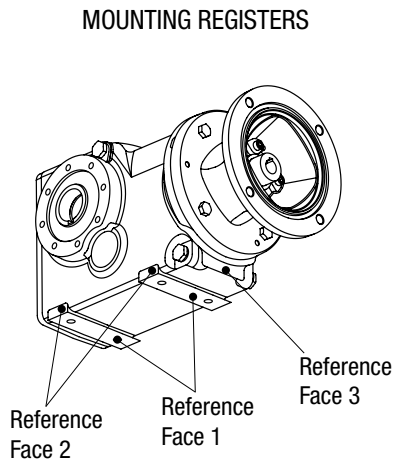
### Mounting Registers (Standard Feature)

Mounting Registers on the 2000 Series products enable a simpler installation for Base Mounted units.

Use the following steps to assist in the alignment between the reducer output shaft and the shaft being driven (driven shaft).

1. Establish a reference edge that is parallel to the driven shaft using Dimension M from page 21 as the offset.
2. Bank Reference Face 3 of the reducer against your reference edge.
3. Use Reference Face 2 of the reducer for any fine angular (yaw) or lateral adjustments.

**Contacting thumbscrews against Reference Face 2 is a clever method for higher precision alignment requirements.**



### Tapered Bushing Option

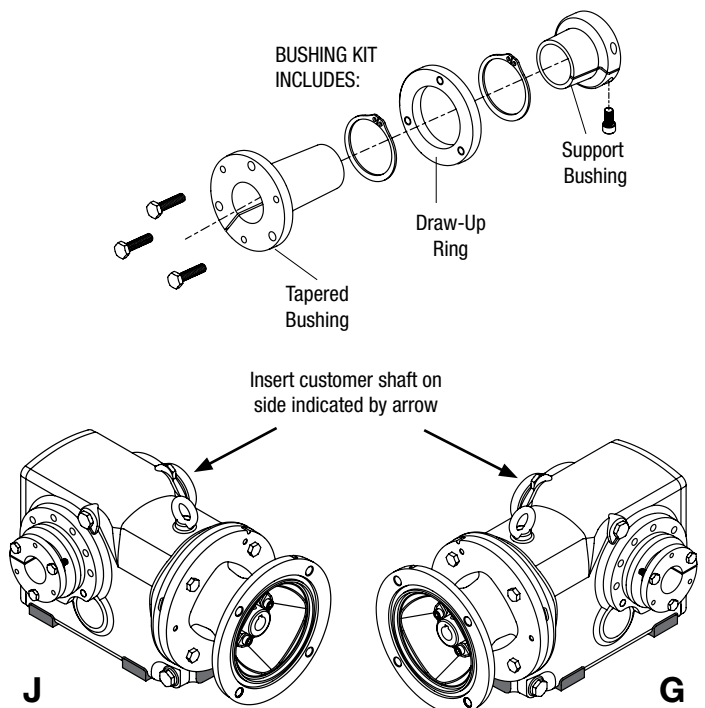
The Tapered Bushing is a valuable option that ensures a simple and secure installation for Shaft Mounted units.

Use the following steps to assist in the alignment between the reducer output shaft and the shaft being driven (driven shaft). See page 24 for additional reference.

1. Make a score mark on your Driven Shaft at a length equal to the Table 1 dimension from the mounting end.
2. Slide Support Bushing onto driven shaft, flange first, until the flange reaches the score mark & secure with clamp screw.
3. Mount Reducer onto Driven Shaft allowing it to slide through the Tapered Bushing on the opposite end.  
**Expect the Tapered Bushing to be pushed outward from the reducer as it expands inside the outer bore.**
4. Align the holes between the Tapered Bushing and the Draw-Up Ring.
5. Using a mallet, tap the Tapered Bushing inward until the bolts are able to engage the Draw-Up Ring threads.
6. Tighten bolts evenly in sequence indicated in Bolt Tightening Sequence Table on page 24.
7. Readjust Support Bushing as needed to ensure full engagement of taper and re-secure clamp screw.

**Table 1**

	Used Length of Driven Shaft	
	(in)	(mm)
2033R	7.47	190
2043R	8.48	216
2063R	10.24	260
2073R	12.04	306



## Ratios and Performance

### 4 Reductions

■ Available Options    ○ Optional

Model No.	Output Speed (1750 rpm Input)	Actual Ratio	Ratio used in Part No.	Input Power (HP)	Output Torque Rating (lbf-in)	NEMA C-Face Input
						B5
SSRFPW2033R	14	125.00	125	0.43	1840	■
	12	144.15	144	0.38	1850	■
	12	149.80	150	0.36	1850	■
	9.8	179.25	179	0.30	1860	■
	9.3	188.95	189	0.29	1870	■
	7.9	222.30	222	0.25	1880	■
	7.0	248.95	249	0.22	1880	■
	5.9	298.05	298	0.18	1890	■
	5.2	339.00	339	0.16	1900	■
	4.8	362.70	363	0.15	1900	■
	4.2	418.45	418	0.13	1910	■
3.6	489.05	489	0.11	1920	■	
3.3	531.90	532	0.10	1920	■	
SSRFPW2043R	12	146.50	147	0.72	3580	■
	12	151.15	151	0.7	3590	■
	10	176.95	177	0.6	3610	■
	8.8	198.05	198	0.54	3620	■
	7.5	232.05	232	0.46	3640	■
	7.2	243.75	244	0.44	3650	■
	6.2	284.15	284	0.38	3660	■
	5.5	316.50	317	0.34	3680	■
	4.9	354.45	354	0.3	3690	■
	4.7	376.00	376	0.3	3700	■
	4.1	425.60	426	0.25	3710	■
	3.9	454.30	454	0.24	3720	■
	3.4	521.85	522	0.21	3730	■
2.9	607.40	607	0.18	3750	■	
2.7	659.35	659	0.16	3750	■	
SSRFPW2063R	12	151.05	151	0.75	8340	■
	10	178.05	178	0.75	6340	■
	9.1	191.95	192	0.75	7540	■
	7.9	221.60	222	0.75	7570	■
	7.2	243.85	244	0.75	7600	■
	6.1	284.85	285	0.75	7630	■
	5.9	298.35	298	0.75	7650	■
	5.1	344.75	345	0.65	7670	■
	4.6	381.85	382	0.59	7690	■
	3.9	450.20	450	0.5	7720	■
	3.5	507.15	507	0.45	7740	■
	3.2	540.15	540	0.42	7750	■
	2.8	617.70	618	0.37	7770	■
2.4	716.00	716	0.32	7790	■	
SSRFPW2073R	8.7	200.20	200	0.75	4800	■
	7.8	225.80	226	0.75	5400	■
	6.8	255.90	256	0.75	6100	■
	6.0	291.70	292	0.75	7000	■
	5.5	318.55	319	0.75	7600	■
	4.8	368.10	368	0.75	8800	■
	4.6	384.35	384	0.75	9200	■
	4.0	440.40	440	0.75	10600	■
	3.6	485.25	485	0.75	11600	■
	3.1	567.80	568	0.75	13600	■
	2.7	636.60	637	0.66	14600	■
	2.6	676.40	676	0.62	14600	■
	2.3	770.10	770	0.54	14400	■
2.0	888.80	889	0.47	14600	■	
1.8	960.90	961	0.45	14700	■	

Ratings shown reflect maximum gear capacity based on AGMA Standards (Service Factor = 1.0) with Klybersynth UH1 6-460.

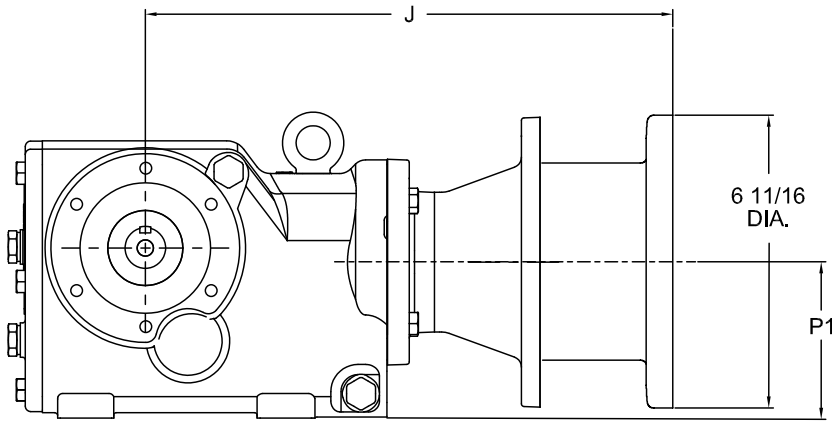
For input speeds above 1750 RPM, do not exceed maximum listed input horsepower.

Not recommended for use in applications with repetitive vibrational or impact loading.

# A2 SS2000R Series Helical Bevel Gear Drives

## Dimensions

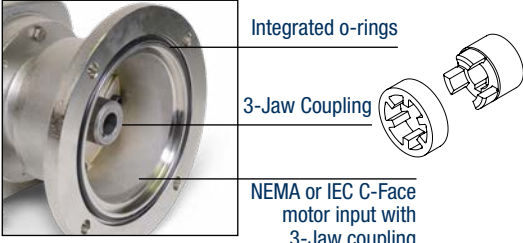
4 Reductions



Size	NEMA C-Face Input	J	P1
SSRFWP2033R	B5	14.2	3.59
SSRFWP2043R	B5	15.1	4.12
SSRFWP2063R	B5	15.6	4.71
SSRFWP2073R	B5	16.4	5.85

# SS2000 Series Helical Inline Gear Drives **B1**

**IP69K**  
When ordered with high pressure washdown seal option\*



Integrated o-rings

3-Jaw Coupling

NEMA or IEC C-Face motor input with 3-Jaw coupling

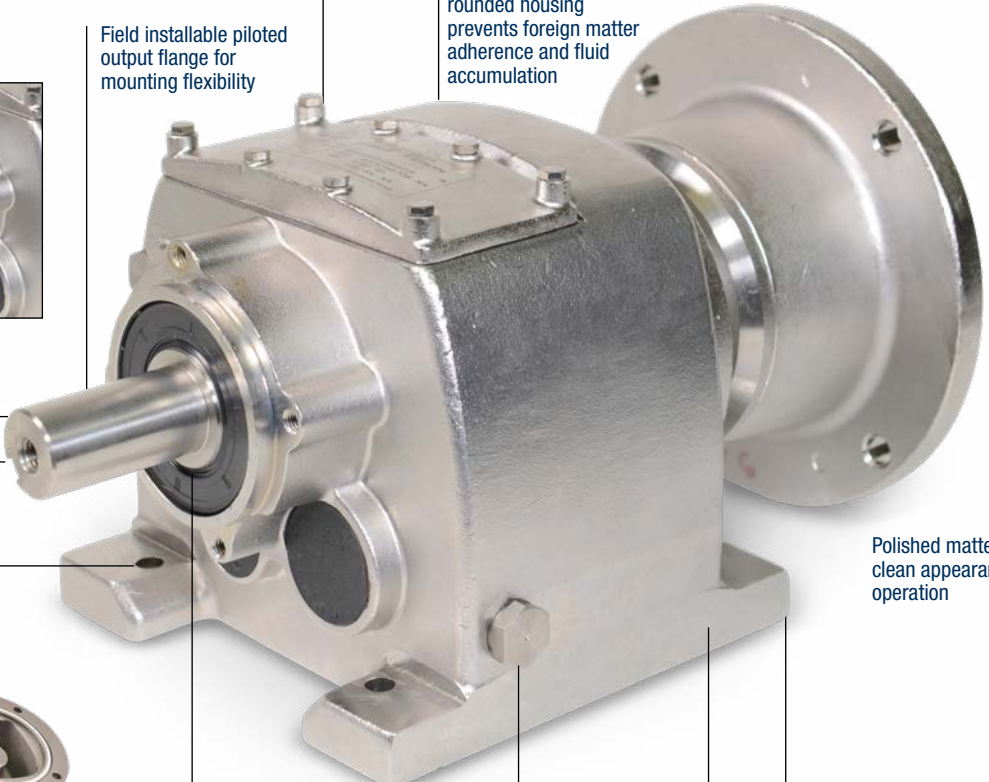


Laser marked nameplate provides worry-free part identification while maintaining a smooth, unetched surface



Field installable piloted output flange for mounting flexibility

The **Original Domed Crown™** unique rounded housing prevents foreign matter adherence and fluid accumulation



Stainless Steel Exterior  
316 Castings  
303/304 Machined Components

Larger shaft diameters available

303 Stainless Steel Shaft

H1 Food grade Klubersynth UH1 6-460 maximizes torque capacity and efficiency

Polished matte finish maintains clean appearance throughout operation



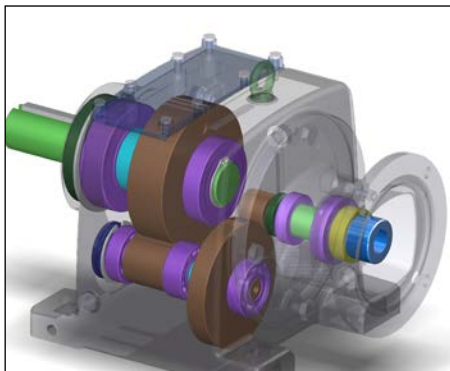
Unique **Mounting Registers** allow for quick precision alignment

Optional high pressure washdown seal available\*

Large diameter oil fill/drain holes for faster oil change

NEMA or IEC C-Face motor input with 3-Jaw coupling

**Rare-Earth Magnets** near gear mesh provide automatic entrapment of wear debris ensuring longer life



## Energy Efficient Design

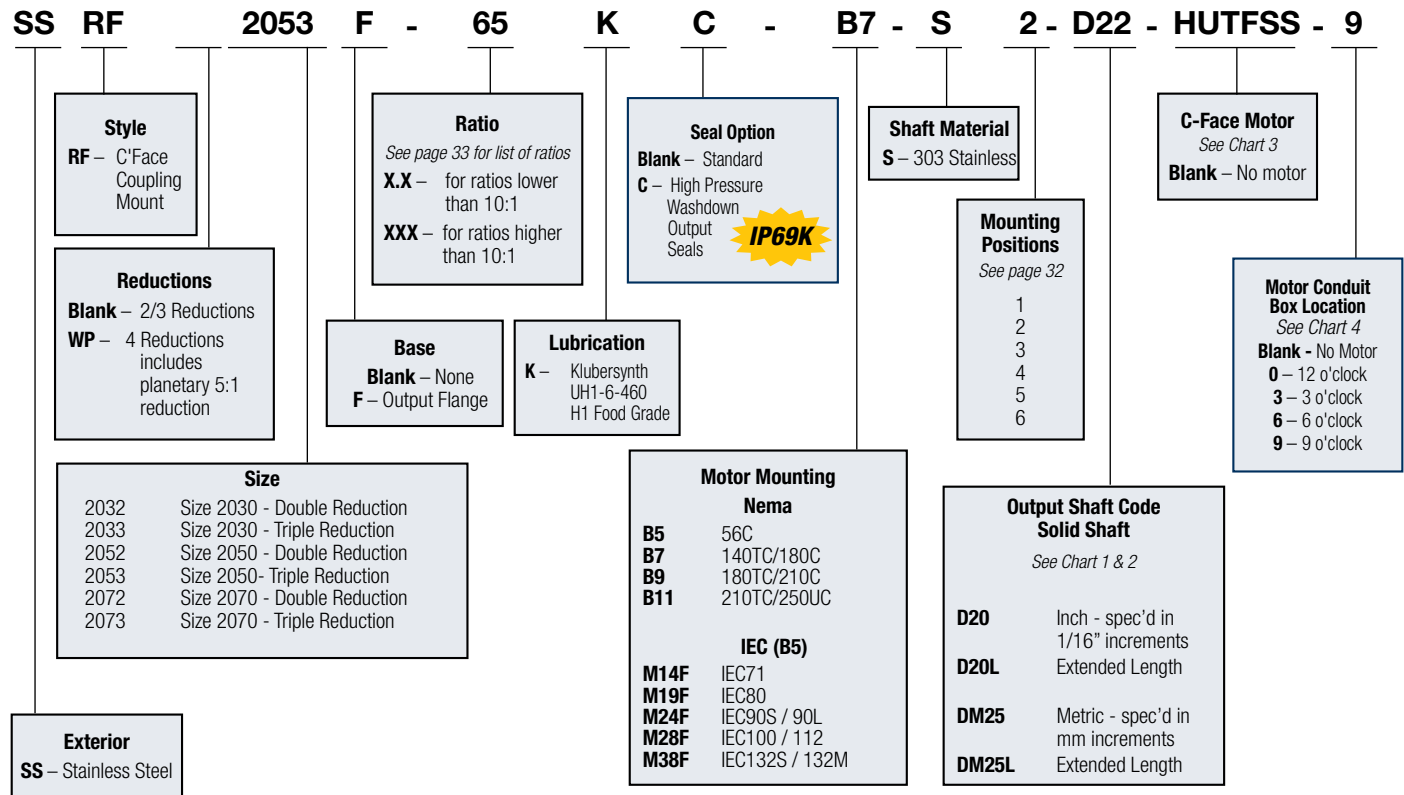
With efficiency of 98% per gear mesh, Series 2000 Inline Helical Gear Drives and Gear Motors are ideal for use in applications with:

- continuous or high duty cycle operations
- high-ratio reduction
- limited access applications where long life is a necessity

# B1 SS2000 Series Helical Inline Gear Drives

## Ordering Information

Example: **SSRF2053F-65KC-B7-S-2-D22-HUTFSS-9**



**Chart 1: Solid Output Shaft Codes – Inch Sizes**

Nominal Diameter	Output Shaft Code	2032/2033	2052/2053	2072/2073	Decimal Size	Key Size
1	D16	S			1.0000	.25x.25x1.31
1-1/8	D18	•			1.1250	.25x.25x1.64
1-3/16	D19	•			1.1875	.25x.25x1.65
1-1/4	D20	S	S		1.2500	.25x.25x1.66
1-3/8	D22		S		1.3750	.31x.31x1.81
1-7/16	D23		•		1.4375	.38x.38x2.00
1-1/2	D24		•		1.5000	.38x.38x2.00
1-5/8	D26		S	S	1.6250	.38x.38x2.25
1-3/4	D28			S	1.7500	.38x.38x2.75
1-15/16	D31			•	1.9375	.50x.50x2.00
2	D32			S	2.0000	.50x.50x2.62

S = Standard • = Optional

Additional shaft diameter sizes available upon request.  
Output shaft key is provided with gear drive.  
Customer's driven shaft requires standard width and depth keyway.

**Chart 2: Solid Output Shaft Codes – Metric Sizes**

Nominal Diameter (mm)	Output Shaft Code	2032/2033	2052/2053	2072/2073	Decimal Size	Key Size
25	DM25	S			25.00	8x7x40
30	DM30	S	S		30.00	8x7x50
35	DM35		S		35.00	10x8x56
40	DM40		S	S	40.00	12x8x70
50	DM50			S	50.00	14x9x80

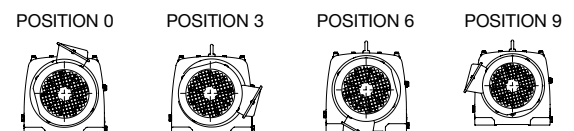
Additional shaft diameter sizes available upon request.

**Chart 3: Stainless Steel AC Motors**

Part #	HP	Type	Frame Size
EUT-SS	0.33	TENV	56C
FUT-SS	0.5	TENV	56C
FUTF-SS	0.5	TEFC	56C
GUT-SS	0.75	TENV	56C
HUT5/8-SS	1.0	TENV	56C
HUTF5/8-SS	1.0	TEFC	56C
HUT-SS	1.0	TENV	140TC
HUTF-SS	1.0	TEFC	140TC
JUTF-SS	1.5	TEFC	140TC
KUTF-SS	2.0	TEFC	140TC
LUTF-SS	3.0	TEFC	180TC
MUTF-SS	5.0	TEFC	180TC
KUTF-SS	7.5	TEFC	210TC
PUTF-SS	10.0	TEFC	210TC

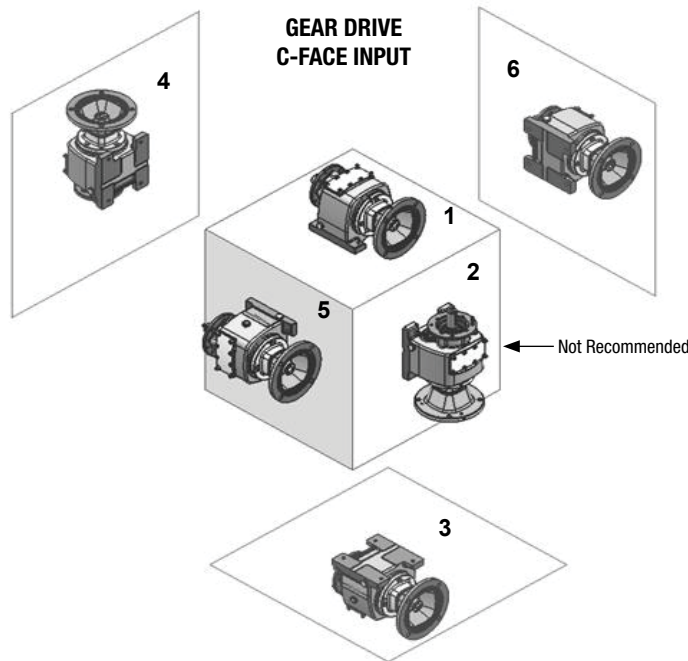
TENV = Totally enclosed, non-ventilated  
TEFC = Totally enclosed, fan-cooled

**Chart 4: Conduit Box Locations**





## Mounting Positions & Lubrication



### Lubrication

Klubersynth UH1 6-460 is recommended for the SS2000 Series gear drives for optimum performance. Normal full-load operating temperatures range between 130°F -150°F. During initial break-in of the gear drive, higher than normal operating temperatures may result. All gear drives are supplied with UH1 6-460 synthetic oil (unless specified otherwise) with quantity listed below for standard mounting position 1 or to mounting specified at time of order. These gear drives are designed with internal features to

reduce the impact of metallic wear debris, which should increase maintenance intervals. Relubrication is recommended for 10,000 hours or more frequently when operating in highly contaminated environments. Satisfactory performance may be obtained in some applications with non-synthetic oils, but will require more frequent oil changes. Recommendations are based on input speed of 1800 RPM nominal. For higher input speeds, consult factory.

RECOMMENDED LUBRICANT	Reducer Designation	Ambient (Room) Temperature	ISO Viscosity Grade No.	Viscosity Range SUS @ 100F	Part Number (Quart)	Comments
Klubersynth UH1 6-460 Synthetic	K	-20°F to +225°F (-29°C to 107°C)	460	1950/2500	65159	H1 Food-Grade

Notes: Upper temperature limit is dictated by reducer components and not the oil.

	Mounting Position					
	1	2	3	4	5	6
Plug A	Opt. Vent	Opt. Vent	Oil Drain	Oil Drain	Oil-Fill	—
Plug B	—	Oil-Fill	Oil-Fill	—	Oil Drain	Oil-Fill
Plug C	Oil-Fill	—	—	—	Opt. Vent	Oil Drain
Plug D	Oil Drain	Oil Drain	Opt. Vent	Oil-Fill	Opt. Vent	Oil Drain

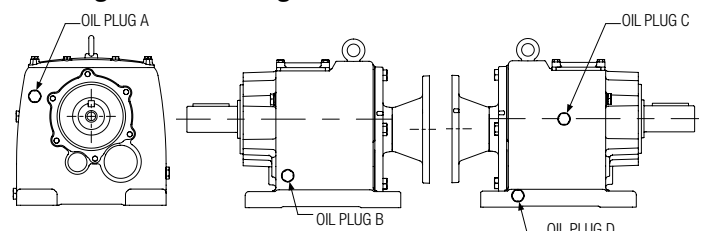
Notes:

- Oil-Fill** Plugged from factory. Port used during regular maintenance intervals for Oil-Fill. Defines approximate oil-level during operation.
  - Opt. Vent** Plugged from factory. A 5psi pressure vent plug is supplied uninstalled with each product. Defines optional location for installation of that pressure vent.
  - Oil Drain** Plugged from factory. Port used during regular maintenance intervals for draining used oil. Re-plug prior to oil-fill.
  - Position 2\*** Not preferred and not recommended as a Mounting Position
  - Position 4\*** Consult factory for venting options.
  - Position 6\*** Consult factory for venting options.
- All products supplied from factory lubed for Position 1 unless specified otherwise

### Lube Capacity in Quarts

	Mounting Position					
	1	2	3	4	5	6
2032/2033	0.5	1.25	1.13	1.2	0.79	1.2
2052/2053	0.88	1.75	2.25	2.63	2.25	2.25
2072/2073	2.1	4.12	2.51	5.1	2.51	2.51

### Oil Plug and Vent Plug Location Details



## Ratios and Performance

### 2 and 3 Reductions

■ Standard ○ Optional

Model No.	Output Speed (RPM)	Actual Ratio	Ratio used in Part No.	Input Power (HP)	Output Torque Rating (lb-in)	NEMA C-Face Input				IEC C-Face Input				
						B5	B7	B9	B11	M14F	M19F	M24F	M28F	M38F
SSRF2032 (2 Reductions)	590	2.97	3.0*	10.6	1,080	■	■	○		■	■	○		
	513	3.41	3.4*	8.7	1,020	■	■	○		■	■	○		
	429	4.05	4.1*	7.7	1,090	■	■	○		■	■	○		
	407	4.32	4.3*	7.5	1,110	■	■	○		■	■	○		
	346	5.06	5.1*	6.9	1,220	■	■	○		■	■	○		
	309	5.67	5.7*	6.5	1,270	■	■	○		■	■	○		
	258	6.67	6.8	5.3	1,230	■	■	○		■	■	○		
	219	7.97	8.0	5.2	1,420	■	■	○		■	■	○		
	183	9.47	9.5	4.6	1,520	■	■	○		■	■	○		
	174	10.11	10	4.5	1,560	■	■	○		■	■	○		
	148	11.83	12	4.1	1,660	■	■	○		■	■	○		
	132	13.25	13	3.8	1,730	■	■	○		■	■	○		
	110	15.60	16	3.4	1,840	■	■	○		■	■	○		
	97	18.05	18	2.9	1,830	■	■			■	■			
	91	19.31	19	2.8	1,870	■	■			■	■			
	79	22.27	22	2.4	1,830	■	■			■	■			
	67	26.03	26	2.0	1,760	■	■			■	■			
62	28.32	28	1.8	1,780	■	■			■	■				
73	24.13	24	2.2	1,840	■	■			■	■				
61	28.73	29	1.9	1,860	■	■			■	■				
54	32.40	32	1.7	1,860	■	■			■	■				
48	36.72	37	1.5	1,860	■	■			■	■				
45	39.17	39	1.4	1,860	■	■			■	■				
39	44.81	45	1.2	1,860	■	■			■	■				
36	48.08	48	1.1	1,860	■	■			■	■				
31	55.76	56	1.0	1,860	■	■			■	■				
29	61.18	61	0.90	1,860	■	■			■	■				
25	69.33	69	0.79	1,860	■	■			■	■				
24	73.96	74	0.74	1,860	■	■			■	■				
21	84.61	85	0.65	1,860	■	■			■	■				
19	90.77	91	0.60	1,860	■	■			■	■				
17	105.28	105	0.52	1,860	■	■			■	■				
14	123.66	124	0.44	1,860	■	■			■	■				
13	134.82	135	0.41	1,860	■	■			■	■				
542	3.23	3.2	20	2,240	○	○	■	■	○	○	■	■	○	
472	3.71	3.7	18.5	2,370	○	○	■	■	○	○	■	■	○	
399	4.39	4.4	16.8	2,550	○	○	■	■	○	○	■	■	○	
347	5.05	5.0	15.9	2,780	○	○	■	■	○	○	■	■	○	
300	5.82	5.8	14.5	2,930	○	○	■	■	○	○	■	■	○	
273	6.41	6.4*	13.7	3,030	■	■	■	■	■	■	■	■	■	
234	7.49	7.5*	12.3	3,180	■	■	■	■	■	■	■	■	■	
223	7.84	7.8*	11.7	3,180	■	■	■	■	■	■	■	■	■	
193	9.06	9.1*	10.4	3,260	■	■	■	■	■	■	■	■	■	
187	9.35	9.4	10.5	3,390	■	■	■	■	■	■	■	■	■	
162	10.79	11	9.5	3,540	■	■	■	■	■	■	■	■	■	
147	11.88	12*	8.9	3,670	■	■	■	■	■	■	■	■	■	
126	13.88	14*	8.1	3,890	■	■	■	■	■	■	■	■	■	
120	14.53	15*	7.8	3,930	■	■	■	■	■	■	■	■	■	
104	16.79	17*	7.1	4,130	■	■	■	■	■	■	■	■	■	
94	18.60	19*	6.4	4,130	■	■	■	■	■	■	■	■	■	
80	21.93	22	5.3	3,980	■	■	■	■	■	■	■	■	■	
71	24.70	25	4.7	4,060	■	■	■	■	■	■	■	■	■	
67	26.31	26	4.5	4,070	■	■	■	■	■	■	■	■	■	
65	26.97	27	4.5	4,090	○	○	■	■	○	○	■	■	○	
58	30.18	30	4.1	4,150	■	■	■	■	■	■	■	■	■	
49	35.36	35	3.5	4,190	■	■	■	■	■	■	■	■	■	
47	37.14	37	3.2	4,050	■	■	■	■	■	■	■	■	■	
40	43.30	43	2.8	4,100	■	■	■	■	■	■	■	■	■	
36	48.23	48	2.5	4,100	■	■	■	■	■	■	■	■	■	
32	54.01	54	2.2	4,090	■	■	■	■	■	■	■	■	■	
31	57.29	57	2.1	4,080	■	■	■	■	■	■	■	■	■	
27	64.85	65	1.8	3,990	■	■	■	■	■	■	■	■	■	
25	69.23	69	1.7	3,940	■	■	■	■	■	■	■	■	■	
22	80.55	81	1.5	4,190	■	■	■	■	■	■	■	■	■	
20	89.71	90	1.4	4,150	■	■	■	■	■	■	■	■	■	
17	100.46	100	1.2	4,220	■	■	■	■	■	■	■	■	■	
16	106.58	107	1.1	4,130	■	■	■	■	■	■	■	■	■	
15	120.63	121	1.0	4,160	■	■	■	■	■	■	■	■	■	
14	128.77	129	0.95	4,120	■	■	■	■	■	■	■	■	■	
12	147.92	148	0.84	4,210	■	■	■	■	■	■	■	■	■	
10	172.17	172	0.71	4,170	■	■	■	■	■	■	■	■	■	
9	186.89	187	0.66	4,190	■	■	■	■	■	■	■	■	■	

Ratings shown reflect maximum gear capacity based on AGMA standards (service factor = 1.0) with Klubersynth UH1-6-460.

For input speeds above 1750 RPM, Dd not exceed maximum listed input horsepower.

\* Depending on the input option chosen, reducer ratios denoted with \* may have an overall capacity lower than the values shown (values represent gear capacity). Contact factory for details

# SS2000 Series Inline Helical Gear Drives **B1**

■ Standard ○ Optional

## 2 and 3 Reductions

## Ratios and Performance

Model No.	Output Speed (RPM)	Actual Ratio	Ratio used in Part No.	Input Power (HP)	Output Torque Rating (lb-in)	NEMA C-Face Input					IEC C-Face Input					
						B5	B7	B9	B11	B13	M14F	M19F	M24F	M28F	M38F	M42F
SSRF2072 (2 Reductions)	407	4.29	4.3*	30	4,430			■	■	○			■	■	○	○
	361	4.84	4.8*	27	4,500			■	■	○			■	■	○	○
	329	5.31	5.3	25	4,640			■	■	○			■	■	○	○
	292	5.99	6.0	24	4,920			■	■	○			■	■	○	○
	258	6.79	6.8	22	5,280			■	■	○			■	■	○	○
	226	7.74	7.7	21	5,530			■	■	○			■	■	○	○
	207	8.45	8.5*	18.5	5,420			■	■	○			■	■	○	○
	182	9.64	9.6	17.2	5,730			■	■	○			■	■	○	○
	161	10.88	11	16.1	6,040			■	■	○			■	■	○	○
	142	12.33	12	14.8	6,310			■	■				■	■		
	125	14.05	14	13.5	6,580			■	■				■	■		
	114	15.34	15*	12.6	6,670	■	■	■	■		■	■	■	■		
	99	17.73	18*	11.6	7,110	■	■	■	■		■	■	■	■		
	95	18.51	19*	10.9	6,970	■	■	■	■		■	■	■	■		
	83	21.21	21*	10.1	7,380	■	■	■	■		■	■	■	■		
	75	23.37	23*	9.2	7,440	■	■	■	■		■	■	■	■		
SSRF2073 (3 Reductions)	69	25.23	25	8.2	7,050	○	○	■	■		○	○	■	■		
	60	29.00	29	7.5	7,410	○	○	■			○	○	■			
	52	33.47	33	6.6	7,450	○	○	■			○	○	■			
	48	36.83	37	6.0	7,500	■	■	■			■	■	■			
	41	43.03	43	5.0	7,340	■	■	■			■	■	■			
	39	45.06	45	4.7	7,250	■	■	■			■	■	■			
	34	52.07	52	4.2	7,390	■	■	■			■	■	■			
	30	57.68	58	3.8	7,370	■	■	■			■	■	■			
	27	65.77	66	3.3	7,470	■	■	■			■	■	■			
	23	76.82	77	2.9	7,630	■	■				■	■				
	22	80.46	80	2.7	7,240	■	■				■	■				
	19	92.97	93	2.4	7,480	■	■				■	■				
	17	102.99	103	2.1	7,330	■	■				■	■				
	14	121.42	121	1.8	7,480	■	■				■	■				
	13	136.78	137	1.7	7,740	■	■				■	■				
	12	145.67	146	1.5	7,570	■	■				■	■				
11	166.59	167	1.3	7,590	■					■	■					
9	193.10	193	1.2	7,560	■					■	■					

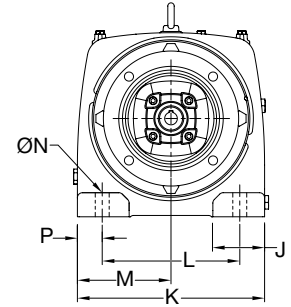
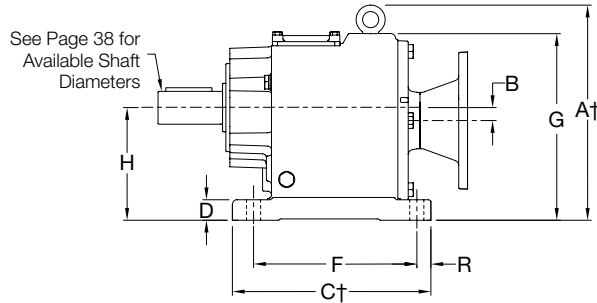
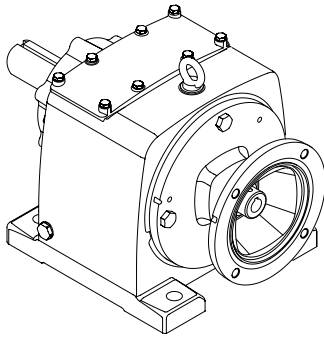
Ratings shown reflect maximum gear capacity based on AGMA standards (service factor = 1.0) with Klubersynth UH1-6-460.

For input speeds above 1750 RPM, do not exceed maximum listed input horsepower.

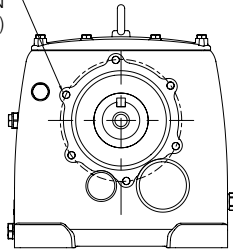
\* Depending on the input option chosen, reducer ratios denoted with \* may have an overall capacity lower than the values shown (values represent gear capacity). Contact factory for details

# B1 SS2000 Series Helical Inline Gear Drives

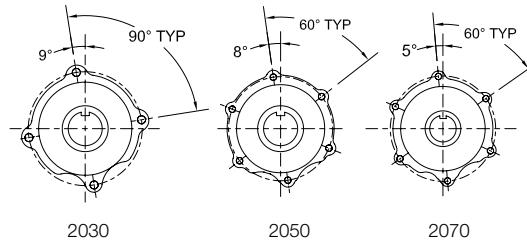
## Mounting Details



T TAPPED HOLES  
ON Ø BC1  
(AS SHOWN IN  
DETAIL A)



DETAIL A



## Dimensions in inches (mm)

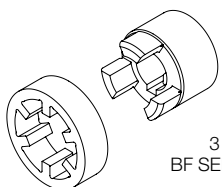
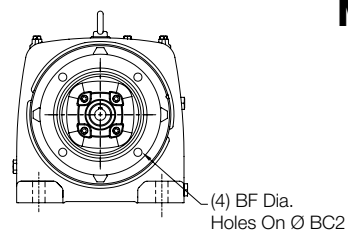
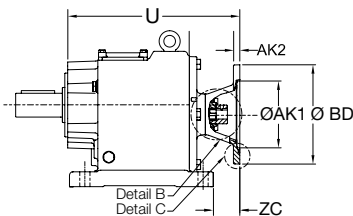
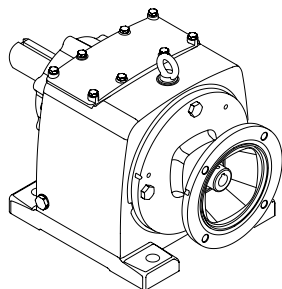
SIZE	A	B	C	D	F	L	G	H +/-0.010 (+/-0.25)	J	K
SSRF2032 SSRF2033	-	0.39 (10.0)	6.30 (160.0)	0.71 (18.0)	5.12 (130.0)	4.33 (110.0)	5.90 (149.9)	3.530 (89.66)	1.60 (40.5)	6.28 (159.5)
SSRF2052 SSRF2053	8.80 (223.6)	0.45 (11.4)	7.83 (198.8)	0.80 (20.3)	6.50 (165.1)	5.31 (134.9)	7.34 (186.4)	4.520 (114.81)	2.41 (61.2)	7.95 (202.0)
SSRF2072 SSRF2073	10.50 (266.8)	0.63 (16.1)	9.69 (246.1)	1.00 (25.4)	8.07 (205.0)	6.69 (169.9)	9.12 (231.5)	5.500 (139.70)	2.51 (63.8)	9.25 (235.1)

SIZE	M +/-0.010 (+/-0.25)	N	P +/-0.010 (+/-0.25)	R +/-0.010 (+/-0.25)	T		BC1	APPROX. WEIGHT LBS (Kg)
					DIA(mm)	DEPTH		
SSRF2032 SSRF2033	3.140 (79.76)	0.35 (8.9)	0.974 (24.74)	0.527 (13.39)	M6	0.39 (10.0)	3.33 (84.5)	33 (15)
SSRF2052 SSRF2053	3.977 (101.02)	0.53 (13.5)	1.322 (33.58)	0.645 (16.38)	M6	0.39 (10.0)	3.80 (96.5)	53 (24)
SSRF2072 SSRF2073	4.627 (117.53)	0.68 (17.4)	1.282 (32.56)	0.715 (18.16)	M8	0.52 (13.3)	5.25 (133.4)	82 (37)

Note: Refer to Page 38 for Shaft details.  
† Dimensions A and C are reference dimensions.

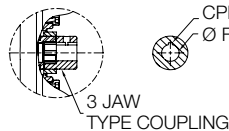
# SS2000 Series Helical Inline Gear Drives **B1**

## Motor Flange and Coupling Details NEMA

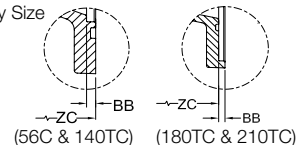


3 JAW COUPLING  
BF SERIES (SUPPLIED)

DETAIL B



DETAIL C



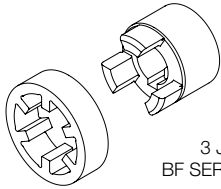
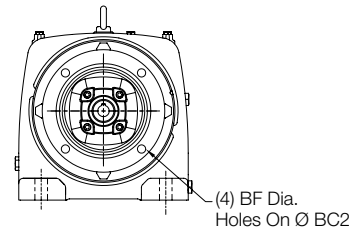
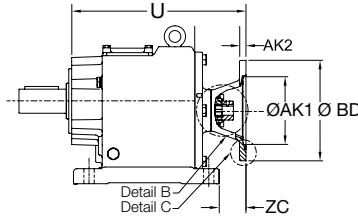
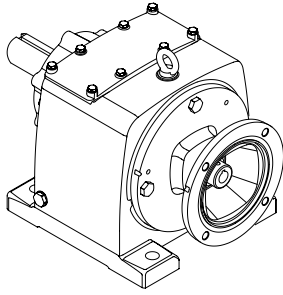
### Dimensions in inches (mm)

INPUT SIZE	U	AK1 +0.005/-0 (+0.13/-0)	AK2	BB	BD	BF	BC2	ZC	FX	CPL KEY SIZE (INCHES)		
										SQ.	LENGTH	
SSRF2032 SSRF2033	B5 (56C)	9.74 (247.4)	4.500 (114.30)	0.430 (10.92)	0.183 (4.64)	6.686 (169.82)	0.391 (9.93)	5.875 (149.23)	3.10 (78.7)	0.625 (15.88)	3/16	1-3/8
	B7 (140TC)	10.64 (270.3)	4.500 (114.30)	0.470 (11.94)	0.183 (4.64)	6.686 (169.82)	0.391 (9.93)	5.875 (149.23)	4.00 (101.6)	0.875 (22.23)	3/16	1-3/8
SSRF2052 SSRF2053	B5 (56C)	10.74 (272.8)	4.500 (114.30)	0.430 (10.92)	0.183 (4.64)	6.686 (169.82)	0.391 (9.93)	5.875 (149.23)	2.40 (61.0)	0.625 (15.88)	3/16	1-3/8
	B7 (140TC)	11.64 (295.7)	4.500 (114.30)	0.470 (11.94)	0.183 (4.64)	6.686 (169.82)	0.391 (9.93)	5.875 (149.23)	3.30 (83.8)	0.875 (22.23)	3/16	1-3/8
	B9 (180TC)	13.34 (338.8)	8.500 (215.90)	0.590 (14.99)	0.203 (5.14)	8.976 (227.99)	0.531 (13.49)	7.250 (184.15)	5.00 (127.0)	1.125 (28.58)	1/4	1-3/4
	B11 (210TC)	15.44 (392.2)	8.500 (215.90)	0.590 (14.99)	0.203 (5.14)	8.980 (228.09)	0.531 (13.49)	8.181 (207.78)	7.10 (180.3)	1.375 (34.93)	5/16	2-3/8

Output shaft key is provided with gear drive. Customer's driven element requires standard width and depth keyway.

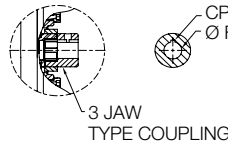
# B1 SS2000 Series Helical Inline Gear Drives

## Motor Flange and Coupling Details NEMA

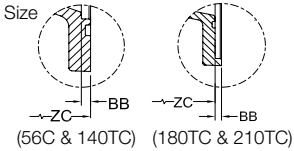


3 JAW COUPLING  
BF SERIES (SUPPLIED)

DETAIL B



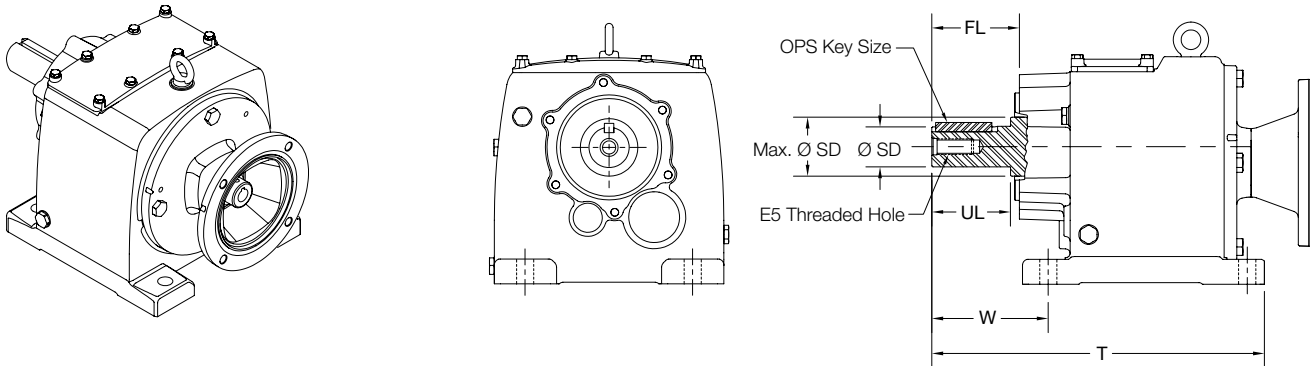
DETAIL C



## Dimensions in inches (mm)

INPUT SIZE	U	AK1 +0.005/-0 (+0.13/-0)	AK2	BB	BD	BF	BC2	ZC	FX	CPL KEY SIZE (INCHES)		
										SQ.	LENGTH	
SSRF2072 SSRF2073	B5 (56C)	11.96 (303.8)	4.500 (114.30)	0.430 (10.92)	0.183 (4.64)	6.686 (169.82)	0.391 (9.93)	5.875 (149.23)	1.80 (45.7)	0.625 (15.88)	3/16	1-3/8
	B7 (140TC)	12.86 (326.6)	4.500 (114.30)	0.470 (11.94)	0.183 (4.64)	6.686 (169.82)	0.391 (9.93)	5.875 (149.23)	2.70 (68.6)	0.875 (22.23)	3/16	1-3/8
	B9 (180TC)	14.56 (369.8)	8.500 (215.90)	0.590 (14.99)	0.203 (5.14)	8.976 (227.99)	0.531 (13.49)	7.250 (184.15)	4.40 (111.8)	1.125 (28.58)	1/4	1-3/4
	B11 (210TC)	16.76 (425.7)	8.500 (215.90)	0.590 (14.99)	0.203 (5.14)	8.980 (228.09)	0.531 (13.49)	8.181 (207.78)	6.60 (167.6)	1.375 (34.93)	5/16	2-3/8

Output shaft key is provided with gear drive. Customer's driven element requires standard width and depth keyway.



### Dimensions in inches

SIZE	SHAFT SIZE	SD	SD Tolerance	Max. SD	UL	W	T	FL	E5		OPS KEY SIZE	
									Thread	Depth	SQ.	Length
SSRF2032 SSRF2033	D16	1.000	+0	1.378	1.720	2.950	8.597	2.219	3/8 -16	0.870	1/4	1-5/16
	D16L	1.000		1.378	3.150	4.330	9.977	3.599	3/8 -16	0.870	1/4	1-5/16
	D20	1.250		1.378	2.110	3.340	8.987	2.609	1/2 -13	1.120	1/4	1-11/16
SSRF2052 SSRF2053	D20	1.250	-0.0005	1.772	2.110	3.540	10.685	2.658	1/2 -13	1.120	1/4	1-11/16
	D20L	1.250	1.772	2.900	3.150	11.475	3.448	1/2 -13	1.120	1/4	1-11/16	
	D22	1.375	1.772	2.510	2.760	11.085	3.058	1/2 -13	1.120	5/16	1-13/16	
SSRF2072 SSRF2073	D26	1.625	+0	1.772	2.900	3.150	11.475	3.448	5/8 -11	1.380	3/8	2-1/4
	D26L	1.625	-0.0010	2.362	2.900	4.534	13.319	3.506	5/8 -11	1.380	3/8	2-1/4
	D32	2.000	2.362	3.690	5.324	14.109	4.296	3/4 -10	1.610	1/2	2-5/8	

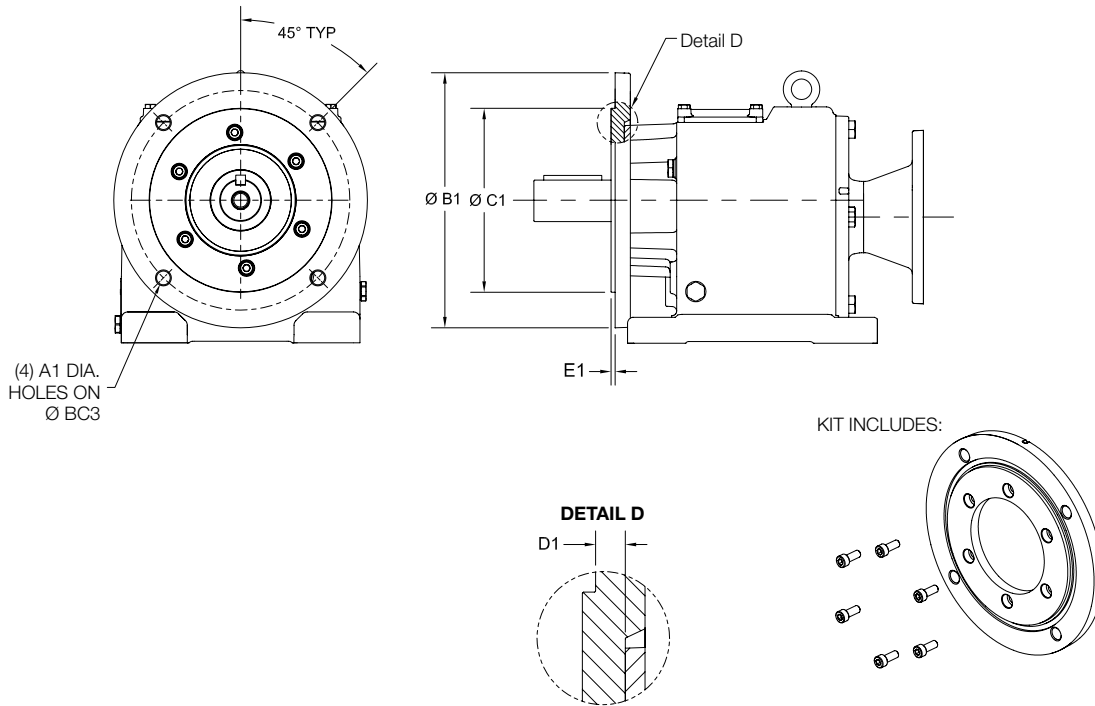
### Dimensions in mm

SIZE	SHAFT SIZE	SD	SD Tolerance	Max. SD	UL	W	T	FL	E5		OPS KEY SIZE	
									Thread	Depth	Rect.	Length
SSRF2032 SSRF2033	DM25	25.000	-0.015	35.005	43.65	74.89	218.31	56.31	M10	22.0	8 x 7	40
	DM25L	25.000		35.005	78.65	109.89	253.31	91.31	M10	22.0	8 x 7	40
	DM30	30.000		35.005	53.65	84.89	228.32	66.32	M10	22.0	8 x 7	50
SSRF2052 SSRF2053	DM30	30.000	-0.002	45.005	63.65	70.00	281.46	77.57	M10	22.0	8 x 7	50
	DM30L	30.000	45.005	73.65	80.01	291.47	87.58	M10	22.0	8 x 7	50	
	DM35	35.000	45.005	63.65	70.10	281.46	77.57	M12	28.0	10 x 8	56	
SSRF2072 SSRF2073	DM40	40.000	-0.018	45.005	73.65	80.01	291.47	87.58	M16	36.0	12 x 8	70
	DM40L	40.000	-0.002	59.995	73.65	115.16	338.30	89.05	M16	36.0	12 x 8	70
	DM40L	40.000	59.995	123.65	165.16	388.29	139.04	M16	36.0	12 x 8	70	
DM50	50.000	59.995	93.65	135.16	358.29	109.04	M16	36.0	14 x 9	80		

Output shaft key is provided with gear drive. Customer's driven element requires standard width and depth keyway.

# B1 SS2000 Series Helical Inline Gear Drives

## Output Flange Details



### Dimensions in inches (mm)

SIZE	A1	BC3	B1	C1 +/- 0.001 (+/- 0.03)	D1	E1	KIT PART #
SSRF2032 SSRF2033	0.26 (6.6)	3.94 (100)	4.72 (120)	3.150 (80.00)	0.49 (12.4)	0.12 (3.0)	SS2030-21K
SSRF2052 SSRF2053	0.35 (9.0)	5.12 (130)	6.30 (160)	4.330 (110.00)	0.30 (7.6)	0.14 (3.5)	SS2050-21K
SSRF2072 SSRF2073	0.53 (13.5)	8.47 (215)	9.84 (250)	7.090 (180.00)	0.35 (8.9)	0.16 (4.0)	SS2070-21K



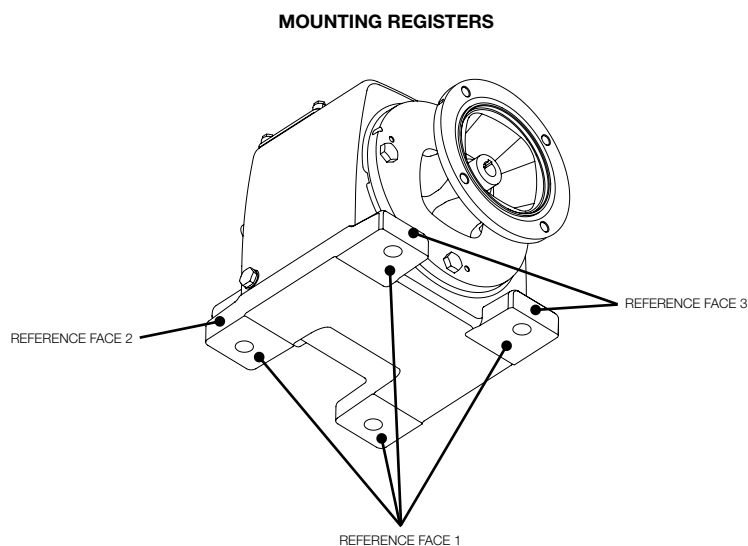
### Mounting Registers

Mounting Registers on the 2000 Series products enable a simpler installation for Base Mounted units.

Use the following steps to assist in the alignment between the reducer output shaft and the shaft being driven (driven shaft).

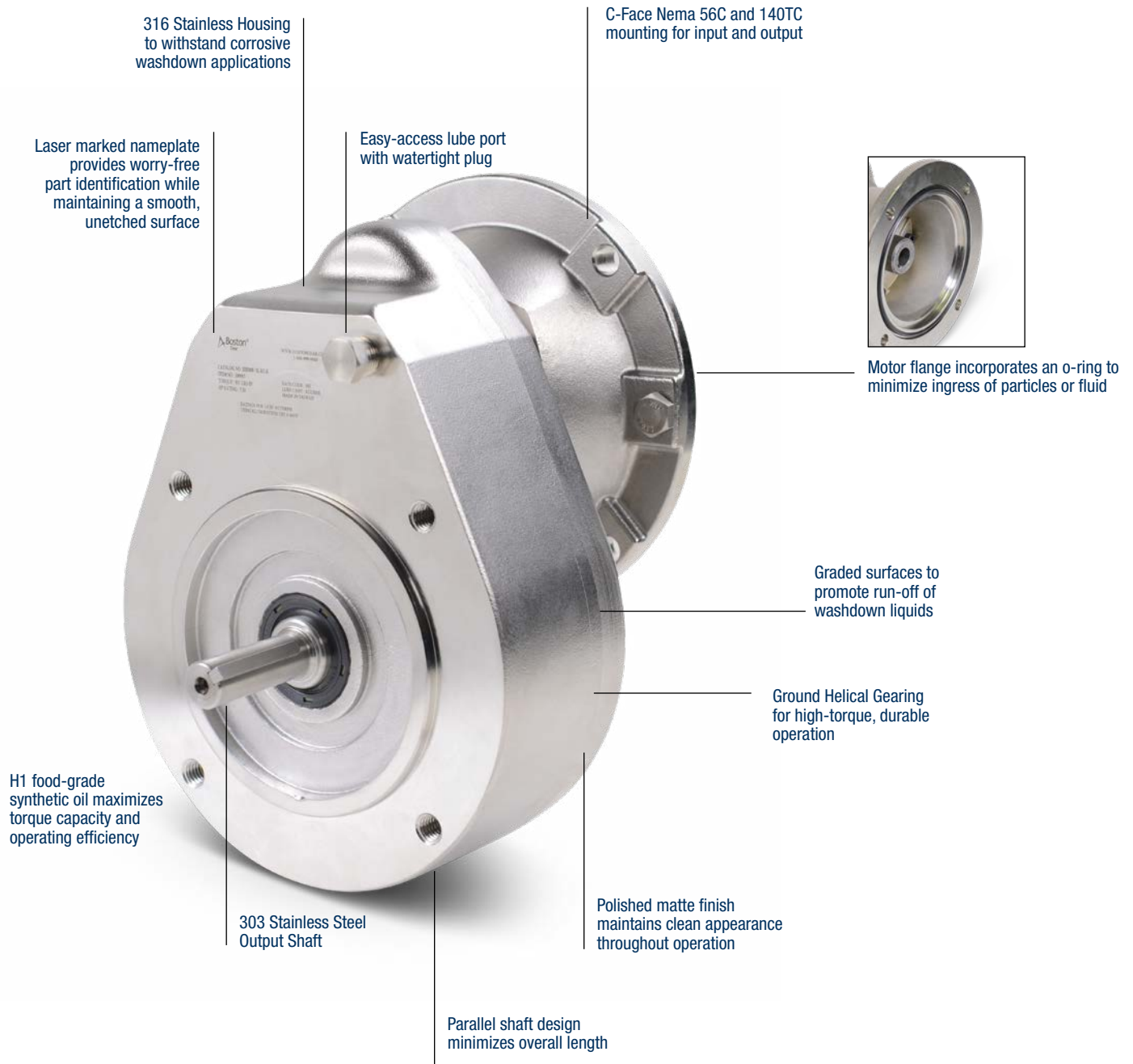
1. Establish a reference edge that is parallel to the driven shaft using dimension M on page 35 as the offset.
2. Bank Reference Face 2 of the reducer against your reference edge.
3. Use Reference Face 3 of the reducer for any fine angular (yaw) or lateral adjustments.

Contacting thumbscrews against Reference Face 2 or 3 is a clever method for finer adjustment of alignment.





## Single Stage Parallel Shaft Reduction (Stand-Alone or Prefix for other SS Product Families)

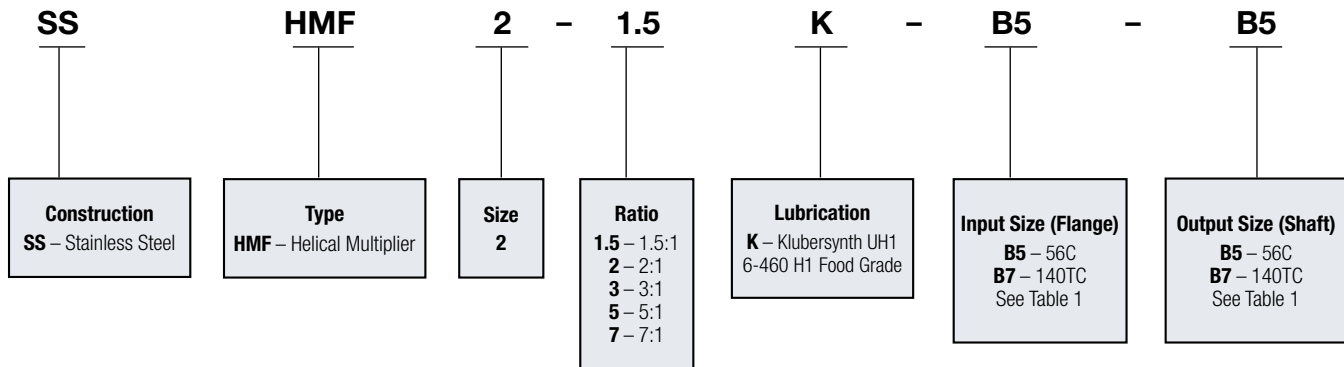


# B2 SSHMF Series Helical Multiplier

## Ordering Information

**Stainless Steel Stand-Alone Helical Multiplier**

**Example: SSHMF2-1.5K-B5-B5**



**Table 1: Available Ratio-Input-Output Combinations**

Ratio	Input	Output
1.5	B5	B5
2	B5	B5
	B7	B7
3	B5	B5
5	B5	B5
	B7	B7
7	B5	B5

## Lubrication

All SSHMF Helical Multipliers are supplied as Lubricated for Life for maximum efficiency, maintenance-free operation. The small cavity design offers the ideal mix of heat dissipation and lubrication contact in all mounting configurations. Normal full load operating temperatures range between 130°F and 150°F. Recommendations are based on input speed of 1800 RPM nominal. For higher input speeds, consult factory.

RECOMMENDED LUBRICANT	Reducer Designation	Ambient (Room) Temperature	ISO Viscosity Grade No.	Viscosity Range SUS @ 100F	Part Number (Quart)	Comments
Klubersynth UH1 6-460 Synthetic	K	-20°F to +225°F (-29°C to 107°C)	460	1950/2500	65159	H1 Food-Grade

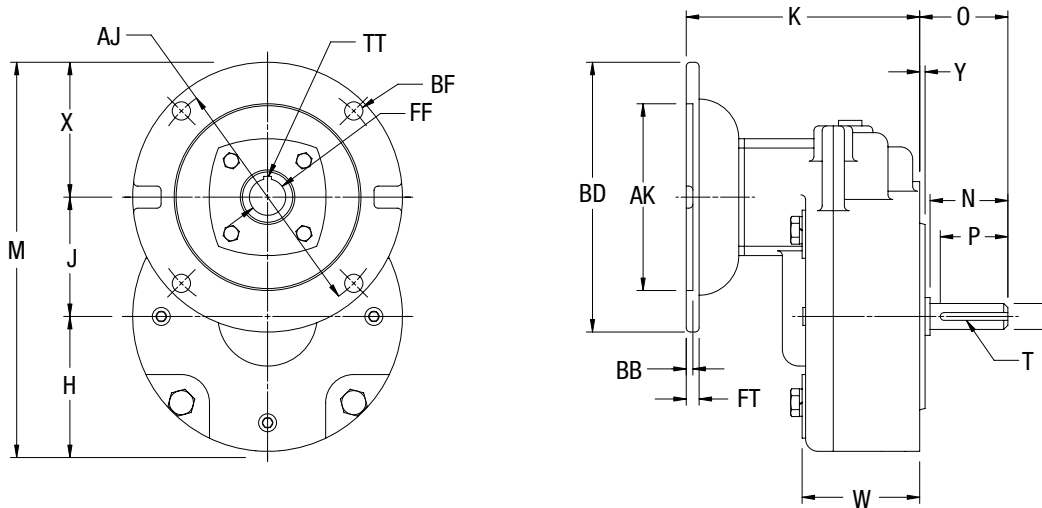
Notes: Upper temperature limit is dictated by reducer components and not the oil.

## Performance Data

Size	Output RPM	Ratio	Motor HP (1750 RPM Input)	Output		Output Shaft Loading (lbs)		
				HP	Torque (lb.ins)	Thrust	Overhung Load (B5 Output)	Overhung Load (B7 Output)
SSHMF2	1167	1.5	13.60	13.19	712	230	375	750
	875	2	11.76	11.41	822	253	375	750
	583	3	9.48	9.20	944	289	375	750
	350	5	5.06	4.91	884	345	375	750
	250	7	1.55	1.46	365	358	375	750

Ratings shown reflect maximum gear capacity based on AGMA standards (service factor = 1.0) with Klubersynth UH1 6-460. Overhung Load is measured at the centerline of the output shaft projection and ratings are based on no thrust load applied. Ratings based on input speed of 1750 rpm.

## Dimensions



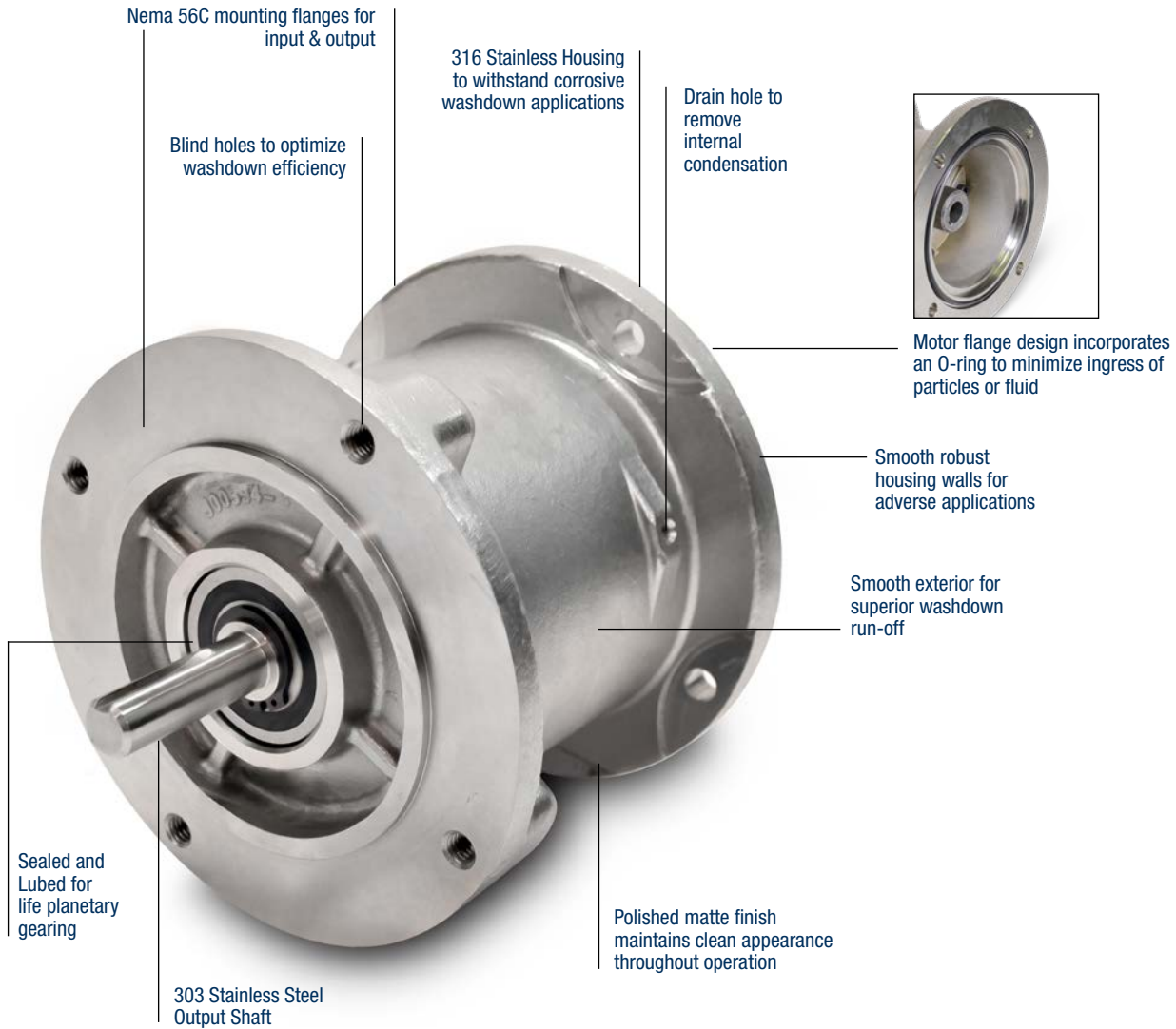
## Dimensions in Inches

Size	Output Size (Shaft)	F	H	J	K	M	N	O	P	T	W	X	Y
SSHMF2	B5	0.625	3.37	2.875	5	9.49	1.84	1.9	1.57	3/16X3/32	3	3.25	0.16
	B7	0.875	3.37	2.875	5	9.49	1.84	1.9	1.57	3/16X3/32	3	3.25	0.16

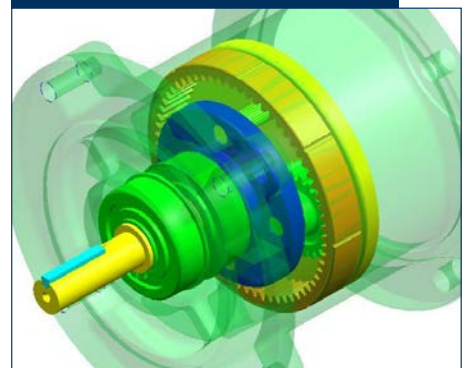
Size	Input Size (Flange)	AJ	AK	BD	BF	BB	FF	FT	TT
SSHMF2	B5	5.875	4.5	6.5	0.41	0.16	0.625	0.43	3/16X3/32
	B7	5.875	4.5	6.5	0.41	0.16	0.875	0.43	3/16X3/32



## Expanded Speed Reduction while Maintaining Operating Efficiency



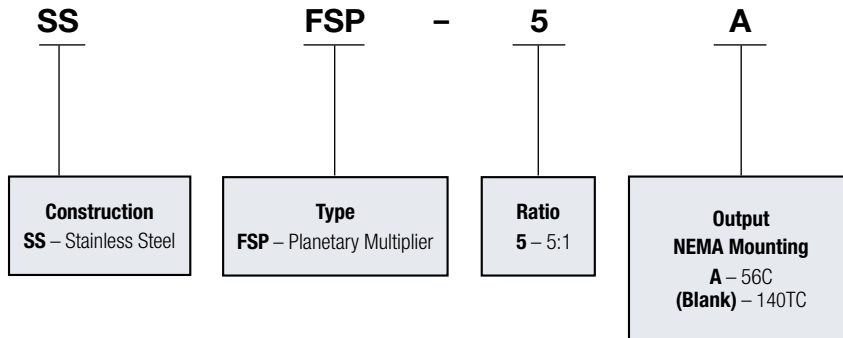
### High Efficiency, Quiet Operation Planetary Gearing



# B3 SSFSP Series Planetary Multiplier

## Ordering Information

**Stainless Steel Stand - Alone Planetary Multiplier** Example: SSFSP-5A



## Lubrication

All SSFSP Series Planetary Multipliers are supplied as Lubricated-for-Life for maximum efficiency, maintenance-free operation. The inherent design of planetary gearing is conducive to the use of grease as a lubricant, because the rotation of the sun and planet gears inside of the internal ring gear promotes even distribution of the lubricant and consistent recirculation. The lubricant we apply at the time of assembly is Klubersynth UH1 14-222 grease which has the characteristics shown below.

LUBRICANT	Type	Operating Temperature Range	Certifications	Comments
Klubersynth UH1 14-222	Synthetic Grease, NLGI2	-15F to +225F (-25C to +107C)	FDA 21CFR178.3570 compliant, NSF registered	H1 Food-Grade

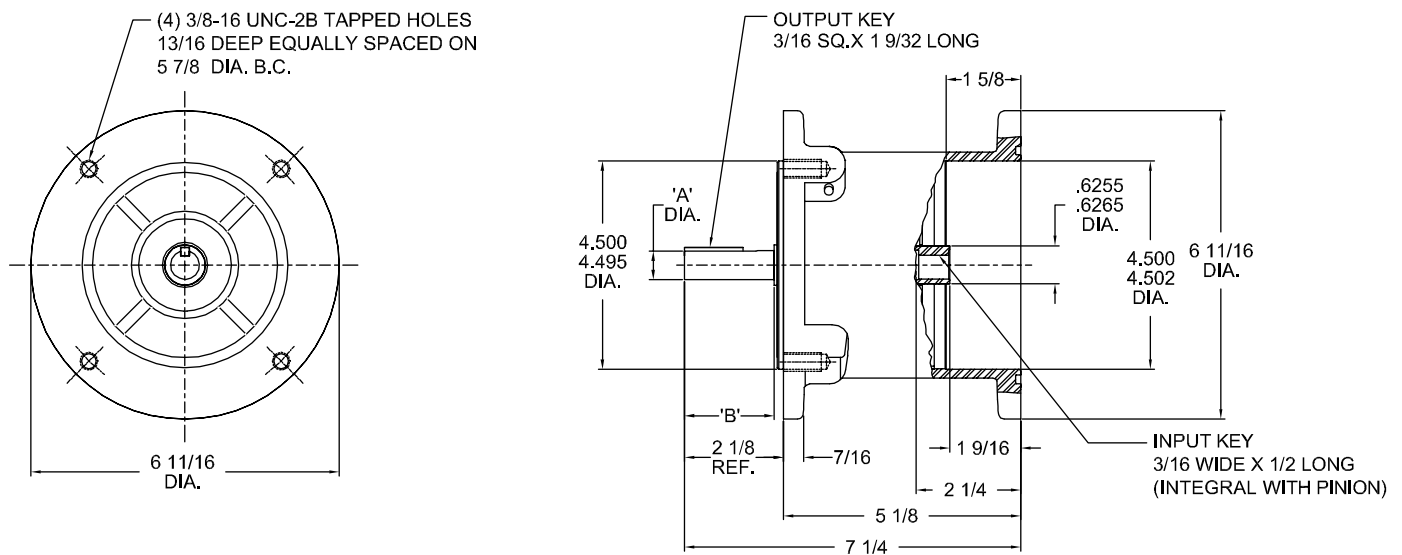
Notes: Temperature limit is dictated by multiplier components and not the lubricant.



## Performance Data

Output RPM	Ratio	Motor HP (1750 RPM Input)	Output		Multiplier Catalog Number
			HP	Torque (lb.ins)	
350	5	1/6	.14	25	SSFSP-5 OR SSFSP-5A
		1/4	.21	38	
		1/3	.29	56	
		1/2	.45	81	
		3/4	.69	124	

## Dimensions



## Dimensions in Inches

Catalog Number	A Shaft Dia.	B Shaft Length	Output NEMA Frame Size	Input NEMA Frame Size
SSFSP-5A	.6245 / .6240	1-15/16	56C	56C
SSFSP-5	.8745 / .8740	2	140TC	56C



# Micron AquaTRUE™ AQT Series Planetary Gearheads **B4**

## High Precision, Low Backlash, Compact-Sized Reduction for Servo Motors

### NSF International Certified

**IP69K**



Laser-marked nameplate

304 Stainless Steel Housing

Silicone gasket to seal Motor-Gearhead interface

1pc Housing - No External Seams

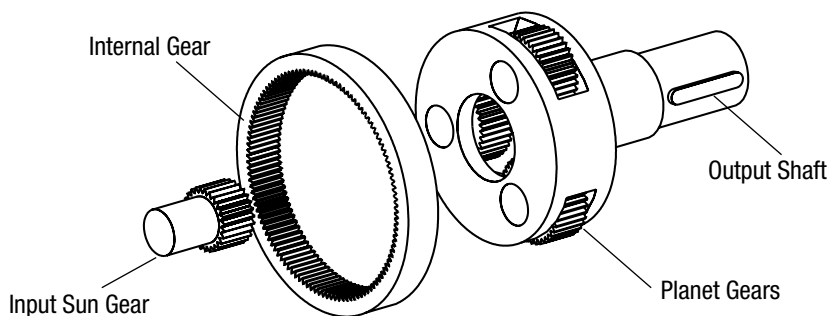
Round and Square Motor Mounts

Contact lip seal for maximum protection

17-4PH Stainless Steel output shaft (corrosion resistance comparable to 304SS)

Tested and Certified for IP66, IP67 and IP69K protection

### TRUE Planetary Gearing

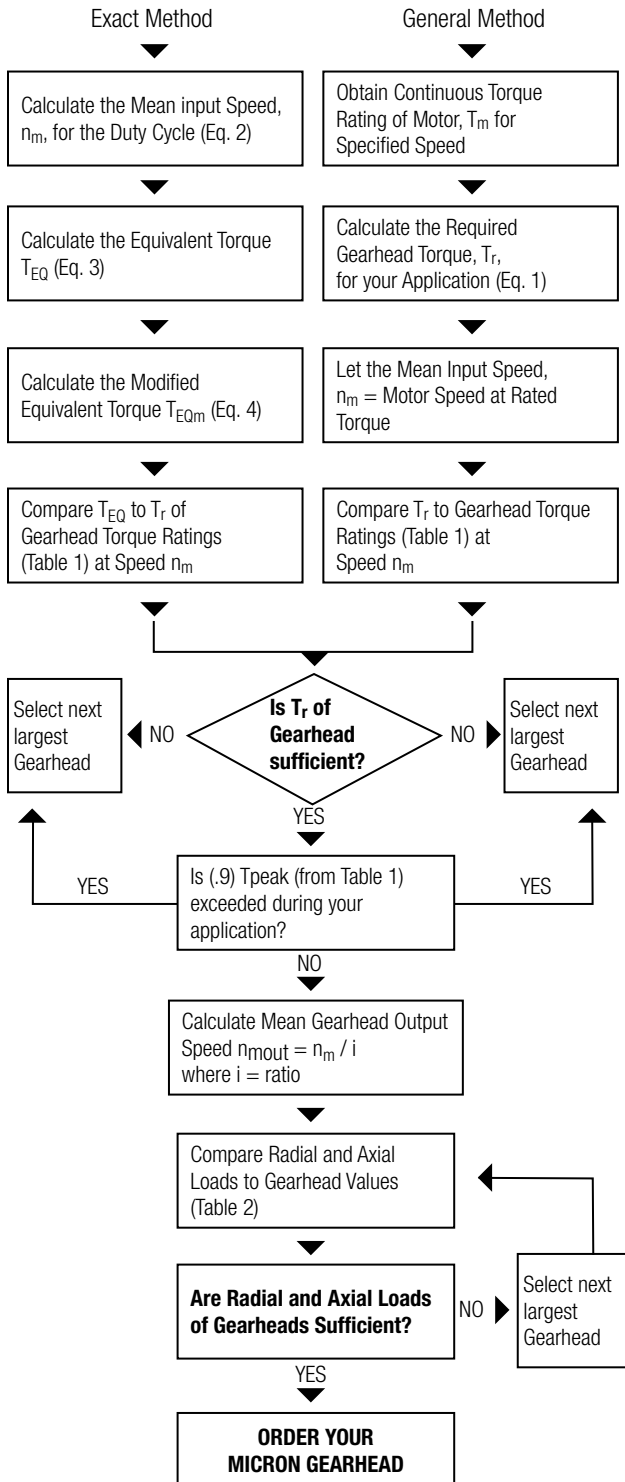


## Sizing and Selection

**Step 1:** Select the required precision class and gearhead configuration (in-line or right angle).

**Step 2:** Select the proper gearhead using exact or general method.

For continuous duty applications, please contact Applications Engineering.



## General Method:

### Required Gearhead Torque(T<sub>r</sub>)

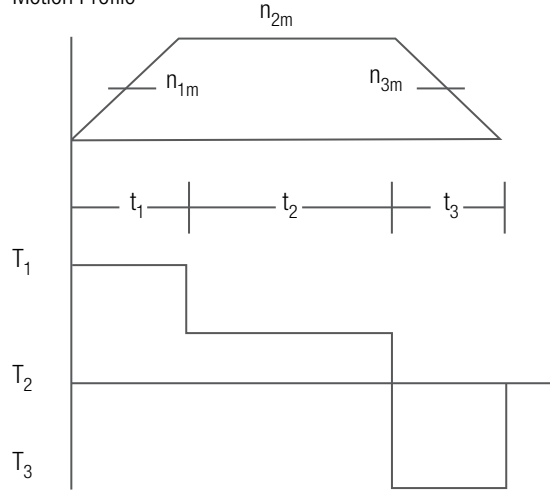
$$(1) T_r = T_M * i * e$$

where:  $T_M$  = continuous torque of motor  
 $i$  = Gearhead ratio  
 $e$  = efficiency of Gearhead

\* Since many motors are capable of exceeding their continuous torque rating for extended lengths of time, the value for  $T_M$  will only provide a starting point for Gearhead selection. Only use the general method if the continuous motor rating is not exceeded in the application.

## Exact Method

Motion Profile



$t_n$  = time period n

$n_{nm}$  = mean speed during time period  $t_n$

$T_n$  = torque during time period  $t_n$

### Mean input speed (n<sub>m</sub>)

$$(2) n_m = \frac{n_{1m}t_1 + n_{2m}t_2 + n_{3m}t_3 + \dots + n_{nm}t_n}{t_t}$$

where  $t_t = t_1 + t_2 + t_3 + \dots + t_n$

### Equivalent torque (T<sub>EQ</sub>)

$$(3) T_{EQ} = \sqrt[8.7]{T_1^{8.7} \frac{n_{1m}t_1}{n_m t_t} + T_2^{8.7} \frac{n_{2m}t_2}{n_m t_t} + T_3^{8.7} \frac{n_{3m}t_3}{n_m t_t} + \dots + T_n^{8.7} \frac{n_{nm}t_n}{n_m t_t}}$$

### Modified equivalent torque (T<sub>EQm</sub>)

$$(4) T_{EQm} = (T_{EQ})/Q$$

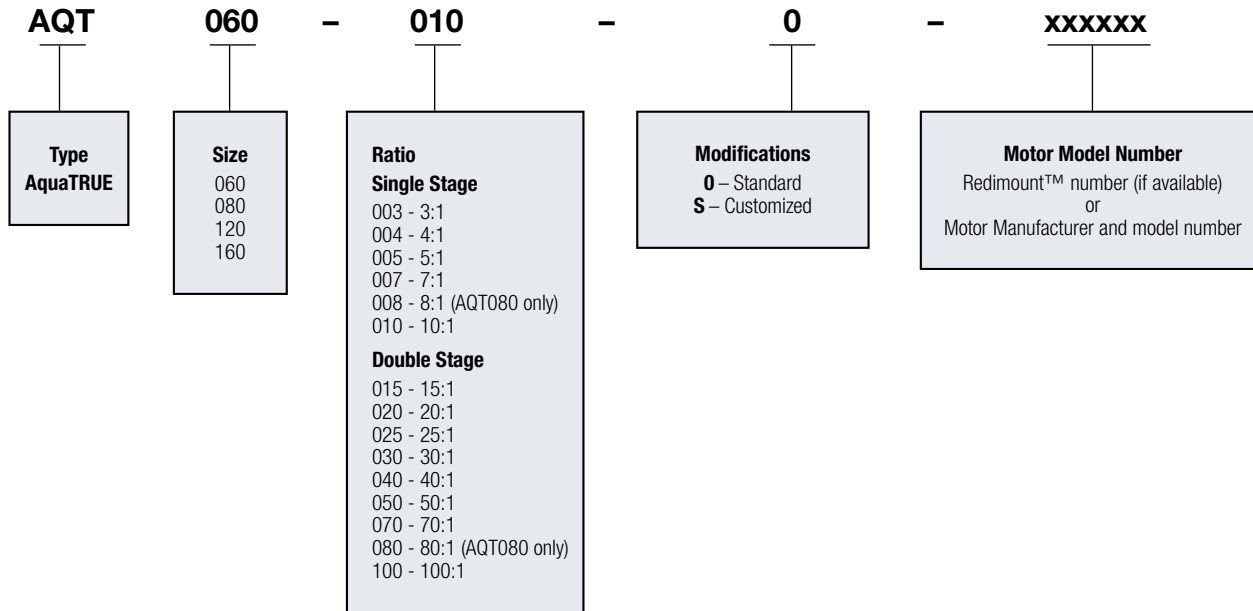
where Q is:

Q	# of cycles/hr
1,0	>0
0,9	>1000
0,7	>2500
0,5	>5000

For applications > 10,000 cycles/hour or for continuous duty operation, please contact application engineering.

### Stainless Steel True Planetary Gearhead

**Example: AQT060-010-0-MMR725**



### Modifications

Micron offers many different customization options to allow customers to meet the unique challenges of their applications.

#### Simple modifications that usually have little or no impact to price and lead time

- Output shaft modifications (shorter length or smaller diameter)
- Output shaft modifications (longer length or larger diameter would be product dependent)
- Custom output shaft designs (spline shafts, tapped holes)
- Higher precision options
- New ratio combinations (three stage designs, new ratios)
- Custom greases (food grade, low temperature, vacuum prep)
- Stainless steel, nickel plating or paint options

#### Other modifications that may require volume or longer lead time

- Envelope-size reductions (shorter length or width)
- Machined and mounted output gears
- Heavy shock and vibration requirements
- White paper, ground-up designs

# B4 Micron AquaTRUE™ AQT Series Planetary Gearheads

## Performance Specifications

Part Number	Ratio	20,000 Hour Life				T Peak Nm [in.-lb.]	J kg-cm2 [in.-lb. sec <sup>2</sup> *10 <sup>-4</sup> ]	Torsional Stiffness Nm/arc-min [in.-lb./arc-min]	
		Tr (1000 rpm) Nm [in.-lb.]	Tr (2000 rpm) Nm [in.-lb.]	Tr (3000 rpm) Nm [in.-lb.]	Tr (4000 rpm) Nm [in.-lb.]				
AQT060	AQT060-003	3:1	16 [139]	13 [112]	12 [102]	11 [93]	55 [483]	0.572 [5.066]	1.49 [13.17]
	AQT060-004	4:1	20 [177]	17 [149]	15 [130]	14 [121]	46 [409]	0.457 [4.047]	1.47 [12.97]
	AQT060-005	5:1	18 [158]	15 [130]	13 [112]	12 [102]	48 [427]	0.408 [3.615]	1.45 [12.79]
	AQT060-007	7:1	17 [149]	14 [121]	12 [102]	11 [93]	43 [381]	0.367 [3.245]	1.40 [12.41]
	AQT060-010	10:1	16 [139]	15 [130]	14 [121]	13 [112]	47 [418]	0.347 [3.068]	1.36 [12.07]
	AQT060-015	15:1	26 [232]	21 [186]	19 [167]	17 [149]	55 [483]	0.387 [3.424]	1.49 [13.14]
	AQT060-020	20:1	27 [242]	25 [223]	22 [195]	21 [186]	48 [427]	0.385 [3.408]	1.47 [13.00]
	AQT060-025	25:1	25 [223]	23 [204]	20 [177]	19 [167]	55 [483]	0.384 [3.400]	1.45 [12.85]
	AQT060-030	30:1	29 [260]	26 [232]	23 [204]	21 [186]	55 [483]	0.340 [3.006]	1.49 [13.18]
	AQT060-040	40:1	28 [251]	27 [242]	27 [242]	25 [223]	48 [427]	0.339 [3.002]	1.47 [13.04]
AQT080	AQT060-050	50:1	26 [232]	25 [223]	25 [223]	23 [204]	55 [483]	0.339 [3.001]	1.46 [12.88]
	AQT060-070	70:1	25 [223]	24 [214]	24 [214]	22 [195]	48 [427]	0.339 [2.999]	1.38 [12.23]
	AQT060-100	100:1	21 [186]	20 [177]	19 [167]	18 [158]	43 [381]	0.339 [2.998]	1.29 [11.41]
	AQT080-003	3:1	59 [520]	48 [427]	43 [381]	39 [344]	165 [1459]	2.433 [21.5]	6.21 [54.96]
	AQT080-004	4:1	70 [623]	58 [511]	53 [465]	48 [427]	165 [1459]	1.929 [17.1]	6.19 [54.81]
	AQT080-005	5:1	65 [576]	53 [465]	47 [418]	43 [381]	165 [1459]	1.692 [15.0]	6.12 [54.18]
	AQT080-007	7:1	63 [558]	50 [446]	45 [400]	40 [353]	165 [1459]	1.472 [13.0]	5.70 [50.41]
	AQT080-008	8:1	62 [549]	49 [434]	45 [398]	42 [372]	165 [1460]	1.426 [12.6]	5.53 [48.98]
	AQT080-010	10:1	54 [474]	48 [427]	45 [400]	43 [381]	165 [1459]	1.387 [12.3]	5.83 [51.62]
	AQT080-015	15:1	90 [799]	78 [688]	69 [613]	63 [558]	175 [1552]	1.605 [14.2]	6.18 [54.70]
AQT120	AQT080-020	20:1	92 [818]	88 [781]	81 [716]	75 [660]	175 [1552]	1.598 [14.1]	6.18 [54.67]
	AQT080-025	25:1	87 [771]	83 [734]	76 [669]	69 [613]	175 [1552]	1.594 [14.1]	6.11 [54.10]
	AQT080-030	30:1	100 [883]	90 [799]	85 [753]	78 [688]	175 [1552]	1.367 [12.1]	6.18 [54.68]
	AQT080-040	40:1	96 [846]	92 [818]	90 [799]	88 [781]	175 [1552]	1.365 [12.1]	6.18 [54.67]
	AQT080-050	50:1	90 [799]	87 [771]	85 [753]	83 [734]	175 [1552]	1.364 [12.1]	6.11 [54.10]
	AQT080-070	70:1	88 [781]	85 [753]	83 [734]	82 [725]	175 [1552]	1.363 [12.1]	5.37 [48.28]
	AQT080-080	80:1	84 [743]	80 [708]	78 [690]	74 [655]	175 [1549]	1.363 [12.1]	5.33 [47.21]
	AQT080-100	100:1	72 [641]	67 [595]	63 [558]	61 [539]	175 [1552]	1.363 [12.1]	5.58 [49.34]
	AQT120-003	3:1	90 [799]	74 [650]	65 [576]	59 [520]	298 [2639]	9.014 [79.8]	13.58 [120.15]
	AQT120-004	4:1	107 [948]	89 [790]	79 [697]	74 [650]	298 [2639]	7.286 [64.5]	13.49 [119.36]
AQT160	AQT120-005	5:1	99 [873]	81 [716]	71 [632]	65 [576]	298 [2639]	6.484 [57.4]	13.37 [118.32]
	AQT120-007	7:1	97 [855]	79 [697]	68 [604]	63 [558]	298 [2639]	5.746 [50.9]	12.96 [114.65]
	AQT120-010	10:1	87 [771]	79 [697]	74 [650]	69 [613]	298 [2639]	5.376 [47.6]	12.12 [107.27]
	AQT120-015	15:1	146 [1292]	119 [1050]	105 [929]	96 [846]	298 [2639]	6.161 [54.5]	13.40 [118.60]
	AQT120-020	20:1	169 [1496]	139 [1227]	124 [1097]	114 [1013]	298 [2639]	6.137 [54.3]	13.32 [117.90]
	AQT120-025	25:1	161 [1422]	130 [1152]	116 [1022]	106 [939]	298 [2639]	6.199 [54.9]	13.38 [118.36]
	AQT120-030	30:1	180 [1589]	146 [1292]	129 [1143]	119 [1050]	298 [2639]	5.298 [46.9]	13.39 [115.53]
	AQT120-040	40:1	187 [1654]	169 [1496]	150 [1329]	139 [1227]	298 [2639]	5.292 [46.8]	13.47 [119.22]
	AQT120-050	50:1	179 [1580]	161 [1422]	142 [1254]	130 [1152]	298 [2639]	5.289 [46.8]	13.40 [118.57]
	AQT120-070	70:1	176 [1561]	159 [1403]	140 [1236]	128 [1134]	298 [2639]	5.274 [46.7]	13.00 [115.05]
AQT120-100	100:1	120 [1059]	109 [966]	104 [920]	100 [883]	298 [2639]	5.281 [46.7]	12.22 [108.18]	
AQT160	AQT160-003	3:1	317 [2806]	257 [2277]	228 [2016]	209 [1849]	876 [7750]	36.396 [322.13]	46.71 [413.39]
	AQT160-004	4:1	371 [3280]	305 [2695]	272 [2407]	251 [2221]	876 [7750]	26.642 [235.80]	46.16 [408.73]
	AQT160-005	5:1	350 [3094]	284 [2509]	251 [2221]	230 [2035]	876 [7750]	22.246 [196.89]	45.43 [402.08]
	AQT160-007	7:1	344 [3048]	278 [2463]	246 [2174]	225 [1989]	876 [7750]	18.551 [164.19]	43.44 [384.46]
	AQT160-010	10:1	222 [1961]	198 [1756]	185 [1635]	175 [1552]	876 [7750]	16.606 [146.97]	40.98 [362.68]
	AQT160-015	15:1	508 [4498]	417 [3689]	370 [3271]	339 [3001]	876 [7750]	19.892 [176.06]	45.19 [399.89]
	AQT160-020	20:1	513 [4544]	481 [4256]	428 [3791]	395 [3494]	876 [7750]	19.721 [174.55]	46.39 [410.38]
	AQT160-025	25:1	492 [4358]	460 [4070]	407 [3605]	374 [3308]	876 [7750]	19.632 [173.75]	45.62 [403.72]
	AQT160-030	30:1	562 [4971]	508 [4498]	455 [4024]	417 [3689]	876 [7750]	15.971 [141.36]	46.82 [413.83]
	AQT160-040	40:1	536 [4739]	513 [4544]	500 [4423]	481 [4256]	876 [7750]	15.971 [141.36]	46.37 [410.36]
AQT160	AQT160-050	50:1	515 [4553]	492 [4358]	479 [4237]	460 [4070]	876 [7750]	15.971 [141.35]	45.60 [403.59]
	AQT160-070	70:1	509 [4507]	487 [4312]	474 [4191]	455 [4024]	876 [7750]	15.952 [141.18]	45.53 [385.27]
	AQT160-100	100:1	306 [2704]	279 [2472]	265 [2342]	254 [2249]	876 [7750]	15.941 [141.09]	40.95 [362.45]

Tr = Rated output torque at rated speed for specific hours of life.

Specifications subject to change without notice.

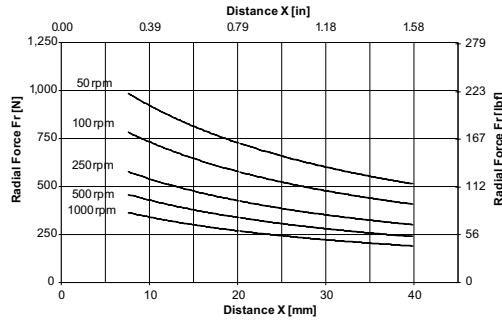
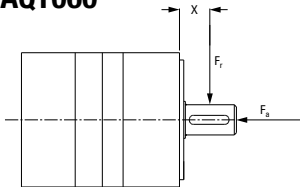
T<sub>peak</sub> = Allowable momentary peak torque for emergency stop or heavy shock loading.

J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

## Performance Specifications

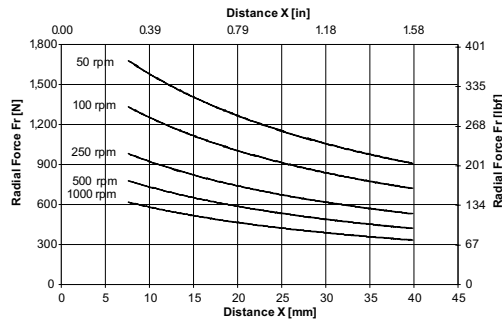
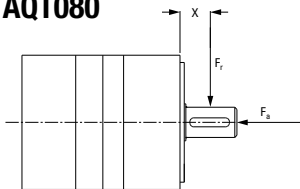
### Radial and Axial Load Ratings

**AQT060**



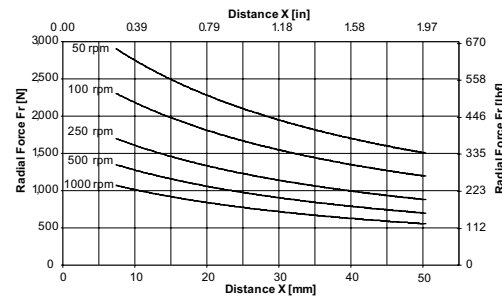
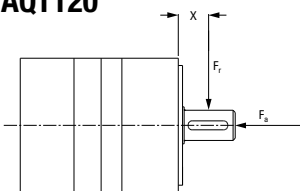
Speed rpm	Axial Load, $F_a$ N [lb.]
50	2542 [571]
100	2017 [454]
250	1486 [334]
500	1180 [265]
1000	936 [211]

**AQT080**



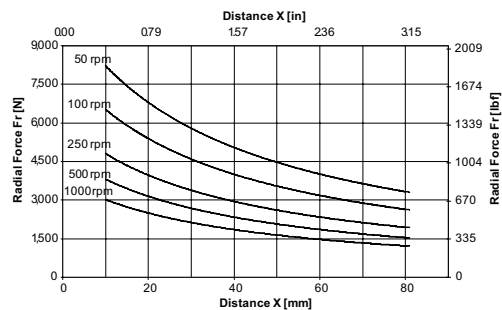
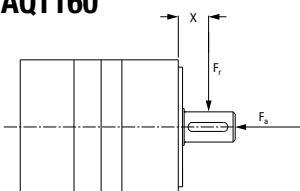
Speed rpm	Axial Load, $F_a$ N [lb.]
50	3780 [850]
100	3000 [675]
250	2211 [497]
500	1755 [394]
1000	1393 [313]

**AQT120**



Speed rpm	Axial Load, $F_a$ N [lb.]
50	6894 [1550]
100	5471 [1230]
250	4034 [907]
500	3203 [720]
1000	2540 [571]

**AQT160**

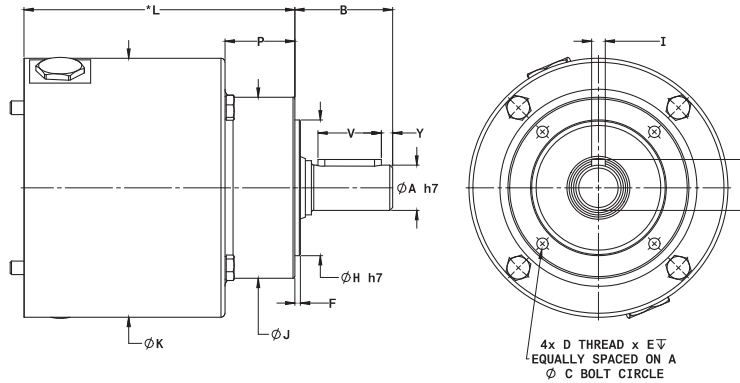


Speed rpm	Axial Load, $F_a$ N [lb.]
50	14,122 [3175]
100	11,209 [2520]
250	8260 [1857]
500	6556 [1474]
1000	5204 [1170]

These graphs display the allowable radial load at a given distance (X) from the mounting surface based on an  $L_{10}$  life of 20,000 hours for the mean output speed.

# B4 Micron AquaTRUE™ AQT Series Planetary Gearheads

## Dimensions



\* 'L' Dimension will change depending on motor being used.  
Note: Mounting adapters available for both round and square motors.

## Dimensions

Part Number	A Output Shaft Diameter mm [in.]	B Output Shaft Length mm [in.]	Y Shaft End Distance mm [in.]	V Keyway Length mm [in.]	R Keyway Height mm [in.]	I Key Width mm [in.]	H Pilot Diameter mm [in.]	J Body Diameter mm [in.]
AQT060	14 [0.55]	36.8 [1.45]	2.5 [0.10]	25 [0.98]	16 [0.63]	5 [0.20]	43 [1.69]	60 [2.36]
AQT080	20 [0.79]	43.2 [1.70]	4.0 [0.16]	28 [1.10]	22.5 [0.89]	6 [0.24]	60 [2.36]	80 [3.15]
AQT120	25 [0.98]	58.4 [2.30]	5 [0.20]	40 [1.57]	28 [1.10]	8 [0.31]	80 [3.15]	110.5 [4.36]
AQT160	40 [1.57]	90.3 [3.56]	8.0 [0.32]	65 [2.55]	43 [1.69]	12 [0.47]	105 [4.13]	140 [5.50]

Part Number	F Pilot Length mm [in.]	D Output Housing Thread	E Thread Depth mm [in.]	K Input Body Diameter mm [in.]	* L Standard Length mm [in.]		C Bolt Circle mm [in.]	P Output Body Length mm [in.]
					ratio 3:1 - 10:1	ratio 15:1 - 100:1		
AQT060	2.5 [0.098]	M5x0.8-6H	8.1 [0.32]	92 [3.62]	91.7 [3.61]	109 [4.29]	52 [2.05]	38.5 [1.51]
AQT080	2.5 [0.098]	M6x1.0-6H	10.1 [0.40]	114.5 [4.51]	119.7 [4.71]	142.7 [5.62]	70 [2.76]	30.8 [1.21]
AQT120	4.0 [0.157]	M10x1.5-6H	16 [0.63]	150 [5.9]	148.2 [5.83]	179.3 [7.06]	95 [3.74]	56.1 [2.21]
AQT160	5.0 [0.197]	M12x1.75-6H	21.6 [0.85]	188.7 [7.43]	195.8 [7.71]	243.8 [9.60]	124 [4.88]	76 [2.99]

## Specifications

Part Number	Stages	Backlash (arc-min)	Efficiency	Weight		Ratio Availability
				kg	[lbs.]	
AQT060	1	13	93%	2.4	[5.4]	3:1, 4:1, 5:1, 7:1; 10:1
	2	15	88%	3.3	[7.3]	15:1, 20:1, 25:1, 30:1, 40:1, 50:1; 70:1; 100:1
AQT080	1	13	93%	5.7	[12.7]	3:1, 4:1, 5:1, 7:1; 8:1; 10:1
	2	15	88%	7.2	[15.9]	15:1, 20:1, 25:1, 30:1, 40:1, 50:1; 70:1; 80:1; 100:1
AQT120	1	13	93%	12.0	[26.5]	3:1, 4:1, 5:1, 7:1; 10:1
	2	15	88%	15.4	[33.9]	15:1, 20:1, 25:1, 30:1, 40:1, 50:1; 70:1; 100:1
AQT160	1	13	93%	24.8	[53.8]	3:1, 4:1, 5:1, 7:1; 10:1
	2	15	88%	31.2	[68.8]	15:1, 20:1, 25:1, 30:1, 40:1, 50:1; 70:1; 100:1

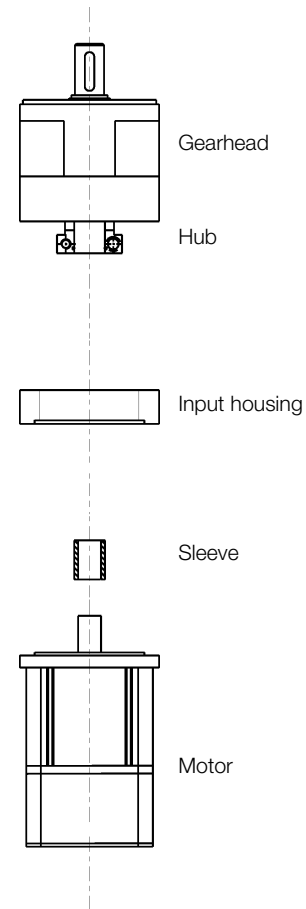
$T_r$  = Rated output torque at rated speed for specific hours of life.  
 $T_{peak}$  = Allowable momentary peak torque for emergency stop or heavy shock loading.  
 $J$  = Mass moment of inertia reflected to the input shaft (including pinion assembly).  
 Specifications subject to change without notice.



## Installation

### Mounting Instructions

1. Slide the provided sleeve into the hub and align the slot in the bushing with the slot in the hub.
2. Set the motor on a work surface or hold fixture with the output shaft facing straight up. If there is a key on the motor, remove it and align the keyway with the slot in the hub. Slide the gearhead down onto the motor shaft.
3. Rotate the hub to align the input housing access holes with the hub clamping bolts.
4. Using a torque wrench, tighten the hub bolts to the pre-torque value indicated in the table.
5. Bolt the motor to the gearhead with the bolts provided.
6. Gradually tighten the hub bolts in three steps, increasing the torque each time until reaching the final tightening torque in the table.
7. Incorrectly mounted motor and gearbox void the warranty



### Hub Bolt Tightening Torques

Gearhead Model	Gearhead Frame Size	Pre-Tightening Torque		Final Tightening Torque	
		in.-lb.	[Nm]	in.-lb.	[Nm]
AquaTRUE™	060	2	0.2	39	4.4
	080	4	0.4	76	8.5
	120	16	1.8	316	36
	160	32	3.6	636	72

Gearhead must be mounted in vertical orientation.

### Lubrication

All AQT Series Planetary Gearheads are supplied as Lubricated-for-Life for maximum efficiency, maintenance-free operation. The inherent design of planetary gearing is conducive to the use of grease as a lubricant, because the rotation of the sun and planet gears inside of the internal ring gear promotes even distribution of the lubricant and consistent recirculation. The lubricant we apply at the time of assembly is Lubriplate FGL-1 grease which has the characteristics shown below.

LUBRICANT	Type	Operating Temperature Range	Certifications	Comments
<b>Klubersynth FGL-1</b>	Mineral-base, NLGI Grade 1	0 to 360°F	NSF International H-1 Registered	H1 Food-Grade

Notes: Temperature limit is dictated by multiplier components and not the lubricant.

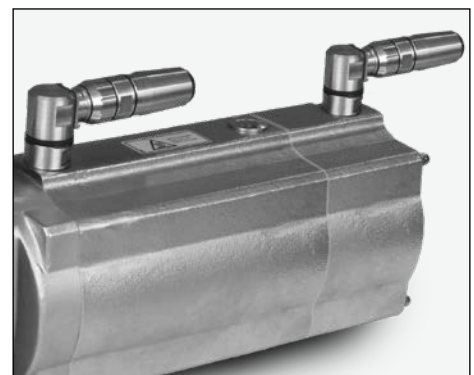
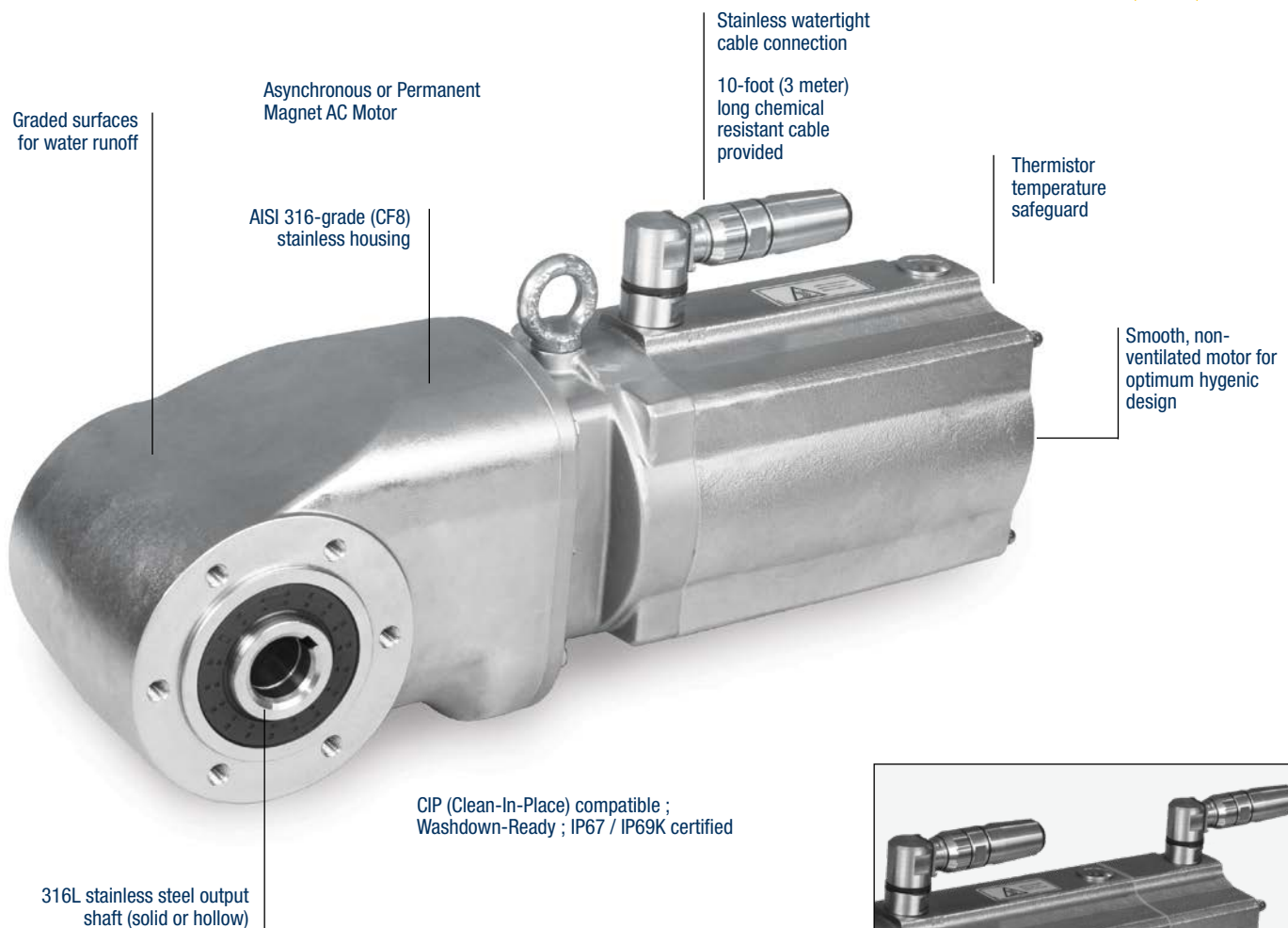


# SS Hiflex Helical Bevel Gear Motors

C

Fully-integrated, non-ventilated, highly efficient Gear Motor

**IP67/  
IP69K**



Fully encapsulated brakes or encoders are available upon request

## Sizing and Selection

1. Identify Output RPM, Output Torque and Duty Cycle required for application.
2. Identify any application constraints.
3. Use Performance charts (p.61-62) to select Model # that meets Output RPM, Output Torque and Duty Cycle
4. Build full part number (p.60) with mounting and feature preferences.
5. Use Specification tables (p.60) to identify electrical requirements for operation.
6. Ensure available envelope with Dimensions table (p.64).



## Ordering Information

GEARING OPTIONS				MOTOR OPTIONS			SHAFT OPTIONS					
<b>BK</b>	<b>08</b>	<b>-</b>	<b>Z</b>	<b>4</b>	<b>/</b>	<b>DAPE09XA4</b>	<b>-</b>	<b>TF</b>	<b>/</b>	<b>AV</b>	<b>/</b>	<b>VA</b>
Type	Size	Mounting		Shaft Style		Type (see Chart 1)	Feature		Shaft Options		Stainless Exterior	
BK - Helical Bevel	04 08 17	7 - Shaft mount machined face		1 - Solid		DAPE08YA4-2	Blank - none TF (thermistors)		AV - Inch AM - Metric			
				4 - Hollow		DAPE09XA4						
						DA09XA4						
						SA5E08MA4						
						SA5E09SA4						
						SA5E09XA4						
						SA09XA4						

**Customer must provide selected OUTPUT RPM from Selection Table on pages 61-62, along with SUPPLY VOLTAGE at time of order.**

### Part Number Examples:

BK04-74/DAPE08YA4-2/AV/VA  
BK17-71/SA5E09SA4-TF/AV/VA

### Gearbox Specifications

Model	Torque Rating (lbf-in)	Solid Shaft Sizes	
		Inch AV Option	Metric AM Option
BK04-71 (Solid)	700	1"	25mm
BK08-71 (Solid)	1770	1.25"	30mm
BK17-71 (Solid)	2920	1.375"	35mm

Model	Torque Rating (lbf-in)	Hollow Bore Sizes	
		Inch AV Option	Metric AM Option
BK04-74 (Hollow)	700	0.75"	20mm
BK08-74 (Hollow)	1770	1.375"	35mm*
BK17-74 (Hollow)	2920	1.50"	40mm*

\* Indicates max value shown

### Chart 1

Motor Type	Gearing Size			Description
	BK04	BK08	BK17	
DAPE08YA4-2	X	X		ASM Asynchronous
DAPE09XA4		X	X	ASM Asynchronous
DA09XA4		X	X	ASM Asynchronous
SA5E08MA4	X	X		PMSM Permanent Magnet
SA5E09SA4		X	X	PMSM Permanent Magnet
SA5E09XA4		X	X	PMSM Permanent Magnet
SA09XA4		X	X	PMSM Permanent Magnet

### Motor Specifications

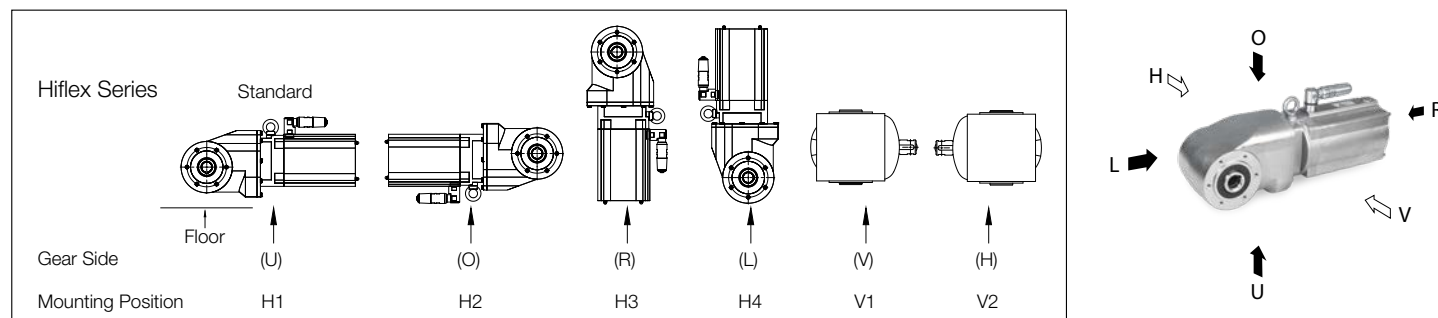
Type	Voltage	Nominal Motor Speed	Frequency	Enclosure	Turndown (for short durations)
ASM Asynchronous	230V or 460V**	1800rpm	50/60Hz	TENV	up to 20:1
PMSM Permanent Magnet*	460V** (230-500V)	1800rpm (0-3600rpm)	50/60Hz (0 - 120Hz)	TENV	full torque at virtually zero speed

\* Requires use of VFD Variable Frequency Drive suitable for use with Permanent Magnet Motors.  
\*\* Contact factory for voltages not shown

### Important Ordering Comments:

- Additional Output Shaft options are also available (contact factory for more info)
- Additional Motor Options (contact factory for more info): Brakes; encoders; special voltages; Non-std cable exits; variable cable lengths
- Supplied with H1 food grade synthetic oil
- Unless advised, Right-Angle Gearmotors are specified for standard H1 mounting position (see table below)

### Right-Angle Mounting Positions



## Ratios and Performance: ASM Asynchronous Motor Selection Tables

### 0.5HP

S1 Continuous Duty

Output RPM	Ratio	Output Torque (in-lbs)	Model
395	4.44	73	BK08 / DAPE08YA4-2
290	6.02	99	
240	7.25	119	BK04 / DAPE08YA4-2
180	9.71	159	
150	11.67	190	
114	15.29	248	
97	18.00	288	
81	21.54	345	
67	26.36	416	
53	33.33	531	
46	38.18	611	
36.5	47.78	761	
36	48.96	770	
28.5	61.68	974	BK08 / DAPE08YA4-2
24.5	72.31	1115	
20	89.30	1389	

### 0.75HP

S1 Continuous Duty

Output RPM	Ratio	Output Torque (in-lbs)	Model
395	4.44	108	BK08 / DAPE09XA4
290	6.02	146	
230	7.68	186	
186	9.40	226	
164	10.70	257	
147	11.93	292	
121	14.50	345	
104	16.92	403	
95	18.52	443	
78	22.65	540	
61	28.76	681	
51	34.25	814	
43	40.79	965	
36	48.96	1142	
28.5	61.68	1451	
24.5	72.31	1664	
23	76.79	1770	
20	88.12	1991	
16.5	108.60	2390	

### 1.0HP

S3 60% - Intermittent Duty

Output RPM	Ratio	Output Torque (in-lbs)	Model	
395	4.44	148	BK08 / DA09XA4	
290	6.02	201		
230	7.68	256		
186	9.40	314		
164	10.70	349		
147	11.93	398		
121	14.50	474		
104	16.92	553		
95	18.52	605		
78	22.65	740		
61	28.76	939		
51	34.25	1118		
43	40.79	1332		
36	48.96	1581		
34.5	51.22	1654		BK17 / DA09XA4
29	61.30	1980		
23	76.79	2452		
20	88.12	2782		
16.5	108.60	3389		

### 1.5HP

S3 40% - Intermittent Duty

Output RPM	Ratio	Output Torque (in-lbs)	Model	
395	4.44	199	BK08 / DA09XA4	
290	6.02	270		
230	7.68	344		
186	9.40	421		
164	10.70	217		
147	11.93	534		
121	14.50	635		
104	16.92	741		
95	18.52	811		
78	22.65	992		
61	28.76	1260		
51	34.25	1500		
43	40.79	1787		
41	42.70	1871		
34.5	51.22	2219		BK17 / DA09XA4
29	61.30	2656		
23	76.79	3289		

### 2.0HP

S3 20% - Intermittent Duty

Output RPM	Ratio	Output Torque (in-lbs)	Model	
395	4.44	296	BK08 / DA09XA4	
290	6.02	402		
230	7.68	513		
186	9.40	628		
164	10.70	699		
147	11.93	796		
121	14.50	947		
104	16.92	1105		
95	18.52	1210		
78	22.65	1479		
73	24.29	1586		BK17 / DA09XA4
62	28.66	1872		
48	36.69	2396		
41	42.70	2789		
34.5	51.22	3308		

Above tables based on 60Hz supply and ambient temperature of up to 40°C (104°F).

Ratings are thermally limited based on the duty cycle noted in accordance with EN 60034-1.

All continuous duty rated gearmotors have an efficiency rating of IE3

Intermittent duty defines the percentage of time over a 10 minute cycle that the gearmotor can be operating at full rated torque with the remainder of the cycle at dwell.

For operating conditions not listed above, please contact the factory.

Service factor > 1.0 for all values except those in italics font.

## Ratios and Performance: PMSM Permanent Magnet Motor Selection Tables

### 0.5HP

S1 Continuous Duty

Output RPM	Ratio	Output Torque (in-lbs)	Model
395	4.44	87	BK08 / SA5E08MA4
290	6.02	117	
240	7.25	142	BK04 / SA5E08MA4
180	9.71	186	
150	11.67	226	
114	15.29	292	
97	18.00	341	
81	21.54	412	
67	26.36	496	
53	33.33	628	
46	38.18	726	
36.5	47.78	903	
36	48.96	920	BK08 / SA5E08MA4
28.5	61.68	1159	
24.5	72.31	1345	
20	89.30	1646	

### 0.75HP

S1 Continuous Duty

Output RPM	Ratio	Output Torque (in-lbs)	Model
395	4.44	126	BK08 / SA5E08MA4
290	6.02	171	
240	7.25	204	BK04 / SA5E08MA4
180	9.71	274	
150	11.67	332	
114	15.29	429	
97	18.00	496	
81	21.54	593	
67	26.36	735	
61	28.76	797	
51	34.25	947	
43	40.79	1133	
36	48.96	1345	BK08 / SA5E08MA4
28.5	61.68	1699	
23	76.79	2080	
20	88.12	2345	
16.5	108.60	2876	BK17 / SA5E09SA4

### 1.0HP

S1 Continuous Duty

Output RPM	Ratio	Output Torque (in-lbs)	Model
395	4.44	173	BK08 / SA5E09SA4
290	6.02	235	
230	7.68	296	
186	9.40	367	
164	10.70	407	
147	11.93	460	
121	14.50	549	
104	16.92	646	
95	18.52	708	
78	22.65	858	
61	28.76	1097	
51	34.25	1301	
43	40.79	1558	
41	42.70	1628	
34.5	51.22	1903	
29	61.30	2301	
23	76.79	2832	
20	88.12	3230	
16.5	108.60	3938	

### 1.5HP

S1 Continuous Duty

Output RPM	Ratio	Output Torque (in-lbs)	Model
395	4.44	252	BK08 / SA5E09XA4
290	6.02	341	
230	7.68	434	
186	9.40	531	
164	10.70	593	
147	11.93	673	
121	14.50	805	
104	16.92	938	
95	18.52	1027	
78	22.65	1257	
61	28.76	1602	BK17 / SA5E09XA4
48	36.69	2036	
41	42.70	2345	
34.5	51.22	2788	
29	61.30	3363	
23	76.79	4160	

### 2.0HP

S3 60% - Intermittent Duty

Output RPM	Ratio	Output Torque (in-lbs)	Model
395	4.44	345	BK08 / SA09XA4
290	6.02	468	
230	7.68	597	
186	9.40	731	
164	10.70	814	
147	11.93	928	
121	14.50	1103	
104	16.92	1287	
95	18.52	1409	
78	22.65	1723	
73	24.29	1848	BK17 / SA09XA4
62	28.66	2180	
48	36.69	2791	
41	42.70	3248	
34.5	51.22	3853	

**(Requires use of VFD Variable Frequency Drive suitable for use with Permanent Magnet Motors)**

Above tables based on 60Hz supply and ambient temperature of up to 40°C (104°F).

Ratings are thermally limited based on the duty cycle noted in accordance with EN 60034-2.

All continuous duty rated gearmotors have an efficiency rating of IE5.

Intermittent duty defines the percentage of time over a 10 minute cycle that the gearmotor can be operating at full rated torque with the remainder of the cycle at dwell.

For operating conditions not listed above, please contact the factory.

Service factor > 1.0 for all values except those in italics font.

Contact the factory for recommendations of VFD Variable Frequency Drives suitable for use with permanent magnet motors.

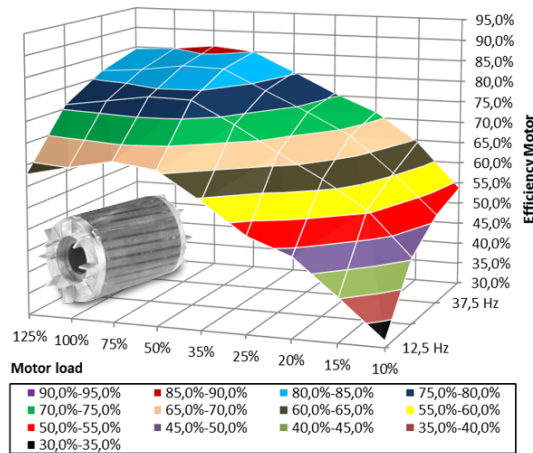
## Motor Options

### Sustainable Performance Motor Design

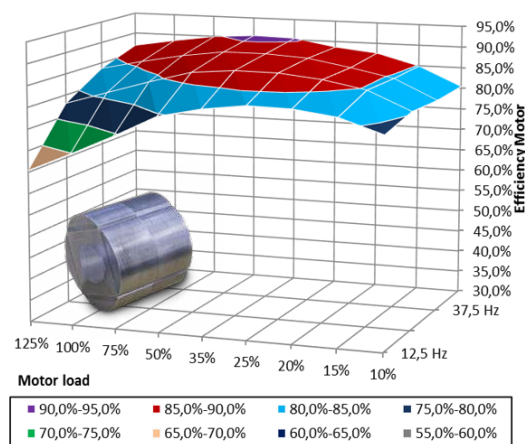
- Smooth motor housing and graded surfaces promote water runoff and easy cleaning.
- Non-ventilated motor avoids contaminant dispersion common to fan-cooled models.
- ASM Asynchronous motor offer simple install and start-up for a wide range of applications, providing reliable, high efficiency operation.
- PMSM Permanent Magnet motors offer savings of up to 40% on energy consumption based on variation of loading common in many applications when utilized with a VFD. By using its turndown capability, the PMSM motor allows the user to consolidate a wide range of ratios into one stocked gearmotor and maintain high efficiency across the expanded RPM range.



Efficiency ASM; 1.5HP; IE3



Efficiency PMSM; 1.5HP; IE3



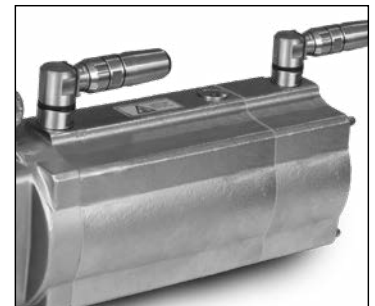
### CleanConnect™ Plug Connector

- The CleanConnect™ stainless steel plug meets the toughest requirements for corrosion protection and allows rapid installation of the drive in a few easy steps.
- The stainless steel connector maintains the ingress protection of the drive. It ensures reliable connection without accidental detachment, along with a high IP67/IP69K protection rating.
- The associated power cable, as counterpart to the stainless steel plug, resists cleaning agents from pH2 to pH12 and can be assembled in any desired length.



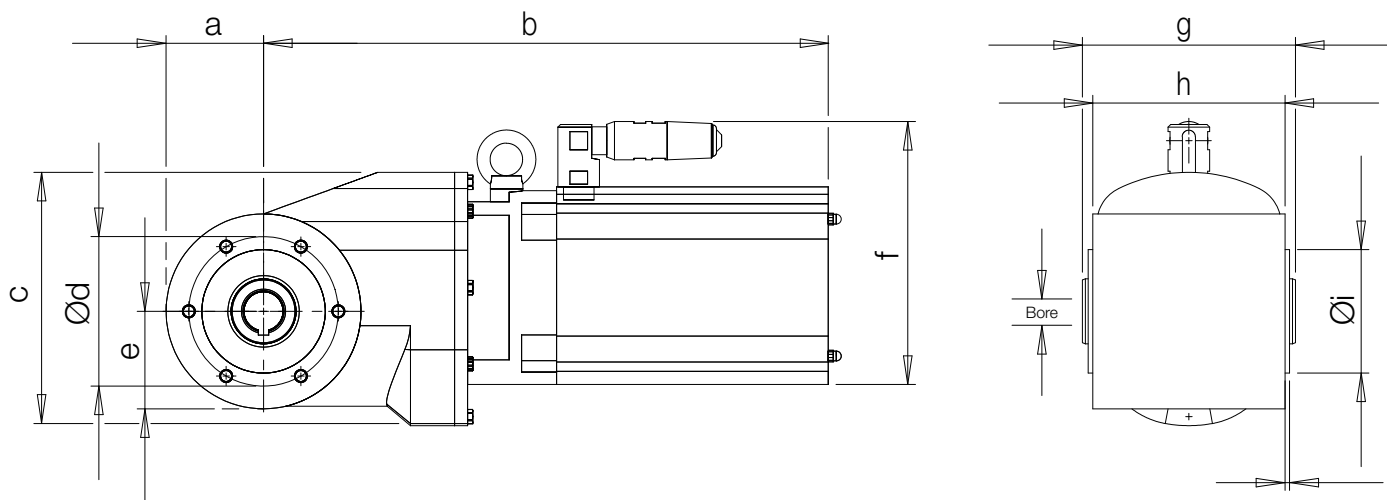
### Brake or Encoder Options

- Brake design is spring set and electro-mechanically released. Types include holding or dynamic. Spring-loaded pressure plate instantaneously releases when power is removed to lock the rotor shaft. Pressure plate automatically resets when power is restored.
- Encoder design is optical incremental. There are various options depending on the desired signal waveform and required resolution.
- Brakes or encoders are completely integrated into the motor housing, i.e. the high protection rating IP67/IP69K and the aseptic design are completely retained.
- Contact factory to add brake or encoder options. Customer must provide application details for review to reduce the risk of exceeding thermal limits.





## Dimensions



Hollow output shaft option shown

### Dimensions (mm)

Type	a	b	c	d	e	f	g	h	i	j
BK04... / DAPE08YA4-2	59	356	152	85	59	205.5	131	122	70	2.5
BK04... / SA5E08MA4	59	356	152	85	59	205.5	131	122	70	2.5
BK08... / DAPE08YA4-2	62.5	374	167	100	62.5	205.5	150	134	80	3.5
BK08... / SA5E08MA4	62.5	374	167	100	62.5	205.5	150	134	80	3.5
BK08... / DAPE09SA4	62.5	413.5	167	100	62.5	216	150	134	80	3.5
BK08... / SA5E09SA4	62.5	413.5	167	100	62.5	216	150	134	80	3.5
BK08... / SA5E09XA4	62.5	413.5	167	100	62.5	216	150	134	80	3.5
BK17... / DAPE09XA4	75	434.5	195	115	75	216	164	148	95	3.5
BK17... / SA5E09SA4	75	434.5	195	115	75	216	164	148	95	3.5
BK17... / SA5E09XA4	75	434.5	195	115	75	216	164	148	95	3.5

Brake or Encoder option will add 100mm of additional length to "b" dimension. Contact factory for these options.

### Metric Shaft Options (mm)

Gearbox	Hollow Bore	Solid	
		Diameter	Length
	H7 Tolerance	k6 Tolerance	
BK04	20	25	50
BK08	35	30	60
BK17	40	35	70

### Inch Shaft Options (inches)

Gearbox	Hollow Bore	Solid	
		Diameter	Length
BK04	0.75	1.00	1.97
BK08	1.375	1.25	2.36
BK17	1.50	1.375	2.76

# C Notes

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## Value Engineered for Washdown Performance

**CE / UL / cUL Certified**

**IP69K**



### Exterior Construction

300 Series stainless steel housing, end bells, output shaft and conduit box

### Interior Features

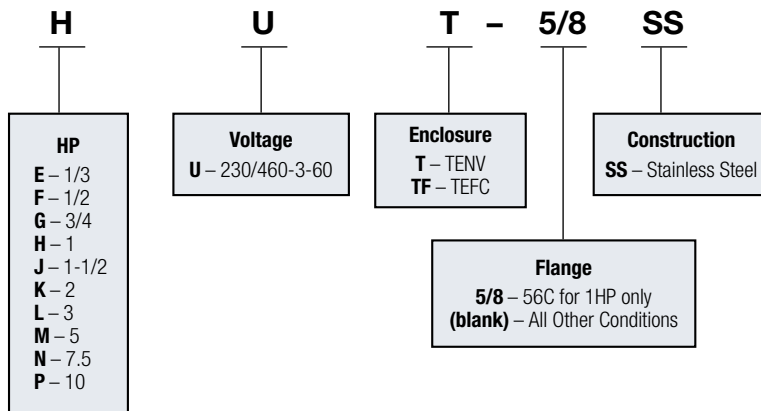
- Meets NEMA MG 1-2016 Standards
- Inverter Duty
- Class F insulation
- Class "B" rise @ 1.15 service factor
- Thermal overload protected
- Epoxy-coated windings
- Internally-locked bearings to eliminate unwanted axial movement

# D Stainless Steel AC Motors

## Ordering Information

**Stainless Steel AC Motors**

**Example: HUT-5/8 SS**



## Performance Data

Part #	HP	Type	RPM	Frame	Voltage AC	Efficiency*	Full Load Amps (230/460)	Weight (lbs.)
EUT-SS	0.33	TENV	1760	56C	208-230/460-3-60	82.5%	1.07/0.55	26.2
FUT-SS	0.5	TENV	1760	56C	208-230/460-3-60	82.5%	1.56/0.78	33.1
FUTF-SS	0.5	TEFC	1760	56C	208-230/460-3-60	84.0%	1.56/0.78	33.9
GUT-SS	0.75	TENV	1760	56C	208-230/460-3-60	82.5%	2.26/1.13	33.3
HUT-5/8-SS	1	TENV	1760	56C	208-230/460-3-60	82.5%	2.98/1.5	38.4
HUTF-5/8-SS	1	TEFC	1760	56C	208-230/460-3-60	84.0%	2.98/1.5	39.2
HUT-SS	1	TENV	1760	143TC	208-230/460-3-60	85.5%	2.98/1.5	38.4
HUTF-SS	1	TEFC	1760	143TC	208-230/460-3-60	85.5%	2.98/1.5	38.6
JUTF-SS	1.5	TEFC	1750	145TC	208-230/460-3-60	86.5%	4.5/2.25	44.5
KUTF-SS	2	TEFC	1760	145TC	208-230/460-3-60	86.5%	5.63/2.82	48.3
LUTF-SS	3	TEFC	1760	182TC	208-230/460-3-60	89.5%	7.66/3.83	103.6
MUTF-SS	5	TEFC	1760	184TC	208-230/460-3-60	89.5%	12.5/6.3	119.0
NUTF-SS	7.5	TEFC	1760	213TC	208-230/460-3-60	91.0%	18.2/9.09	179.2
PUTFSS	10	TEFC	1760	215TC	208-230/460-3-60	91.7%	24.27/12.13	201.1

Ratings are for continuous duty at Max Ambient Temperature of 40°C  
 TENV = Totally enclosed, non-ventilated  
 TEFC = Totally enclosed, fan-cooled

All motors are inverter-duty rated at Service Factor of 1.15  
 Motors can be run at 50 Hz with a derating factor applied.  
 Efficiency meets or exceeds NEMA MG 1-2016

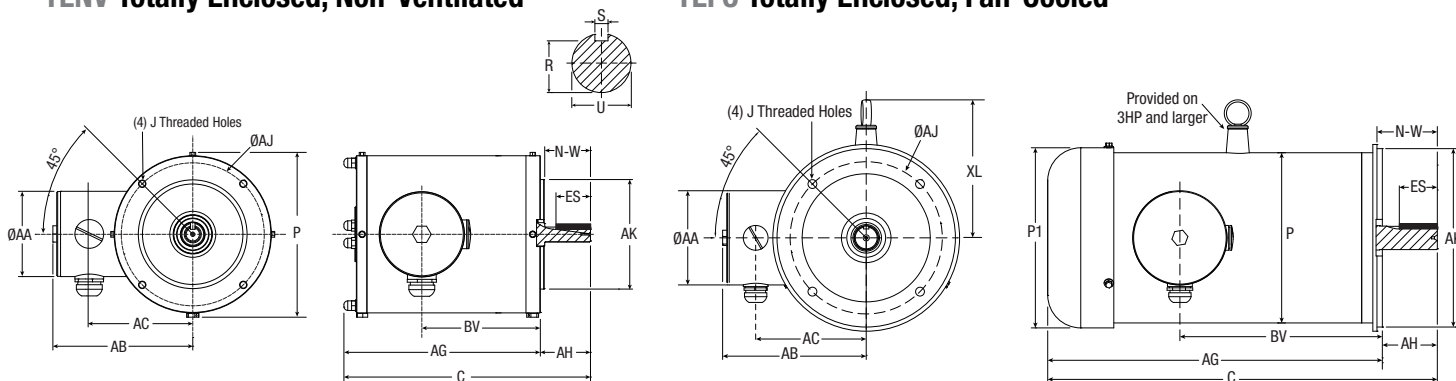


Stainless conduit box thread adaptor 25mm X 1.5 to 1/2"  
 NPT available separately as Boston Gear item J22770

## Dimensions

### TENV Totally Enclosed, Non-Ventilated

### TEFC Totally Enclosed, Fan-Cooled



End bell shown is 180TC and larger

### NEMA Frame Dimensions in inches

Boston Gear Bore Code	NEMA Frame	U	AK	AH	N-W	Key			AJ	J
						S	ES	R		
B5	56C	.6250	4.5000	2-1/16	1.88	3/16	1.41	0.517	5.875	3/8-16
		.6240	4.4970							
B7	143TC	.8750	4.5000	2-1/8	1.96	3/16	1.41	0.765	5.875	3/8-16
	145TC	.8740	4.4970							
B9	182TC	1.1250	8.5000	2-5/8	2.88	1/4	1.81	0.986	7.250	1/2-13
	184TC	1.1240	8.4970							
B11	213TC	1.3750	8.5000	3-1/8	3.38	5/16	2.44	1.201	7.250	1/2-13
	215TC	1.3740	8.4970							

### Motor Dimensions in inches

Catalog No.	HP	Type	NEMA Frame	Mounting				Conduit Box				
				C	P	P1	AG	AA Dia.	AB	AC	BV	XL
EUT-SS	1/3	TENV	56C	10.11	6.45	—	8.05	3.48	5.79	4.29	4.45	—
FUT-SS	1/2	TENV	56C	10.11	6.45	—	8.05	3.48	5.79	4.29	4.45	—
FUTF-SS	1/2	TEFC	56C	11.69	6.45	6.93	9.63	3.48	5.79	4.29	4.45	—
GUT-SS	3/4	TENV	56C	10.11	6.45	—	8.05	3.48	5.79	4.29	4.45	—
HUT-5/8-SS	1	TENV	56C	11.29	6.45	—	9.23	3.48	5.79	4.29	5.63	—
HUTF-5/8-SS	1	TEFC	56C	12.87	6.45	6.93	10.81	3.48	5.79	4.29	4.45	—
HUT-SS	1	TENV	143TC	11.36	6.45	—	9.23	3.48	5.79	4.29	4.45	—
HUTF-SS	1	TEFC	143TC	12.95	6.45	6.93	10.84	3.48	5.79	4.29	5.63	—
JUTF-SS	1-1/2	TEFC	145TC	13.75	6.45	6.93	11.62	3.48	5.79	4.29	6.42	—
KUTF-SS	2	TEFC	145TC	13.75	6.45	6.93	11.62	3.48	5.79	4.29	6.42	—
LUTF-SS	3	TEFC	182TC	17.2	8.11	8.58	14.58	4.47	6.85	5.24	8.07	6.6
MUTF-SS	5	TEFC	184TC	18.58	8.11	8.58	15.96	4.47	6.85	5.24	9.45	6.6
NUTF-SS	7-1/2	TEFC	213TC	19.45	9.6	10.08	16.33	4.47	7.56	6.1	9.61	7.4
PUTF-SS	10	TEFC	215TC	20.44	9.6	10.08	17.32	4.47	7.56	6.1	9.61	7.4

Conduit box threads M25 X 1.5



More Models  
Now Available with  
Eccentric Locking  
Collar



## Product Features

- Synthetic lip seal with stainless steel flinger provides superior protection for high pressure washdown conditions
- Pre-filled with NSF H1 food grade grease
- Cast stainless steel housing
- Laser marked
- M6 grease fitting

Ask about our Kilian line of  
Polymer Housing Stainless  
Steel Mounted Bearings

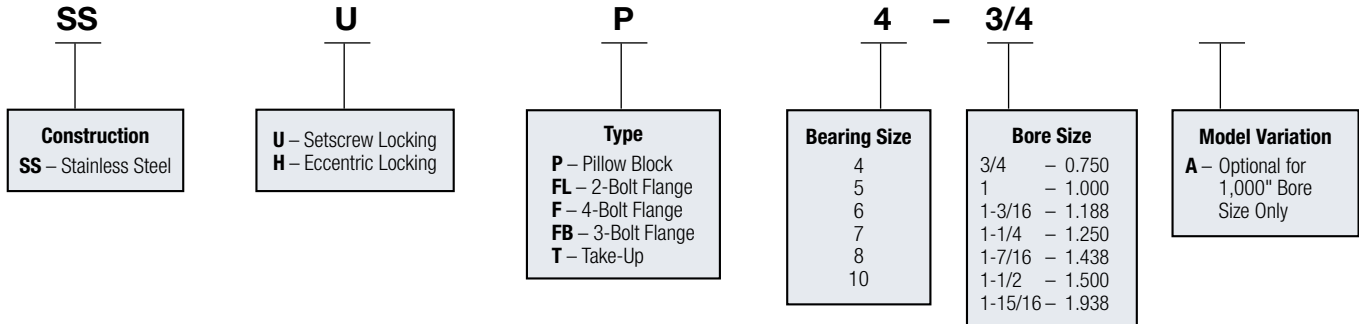


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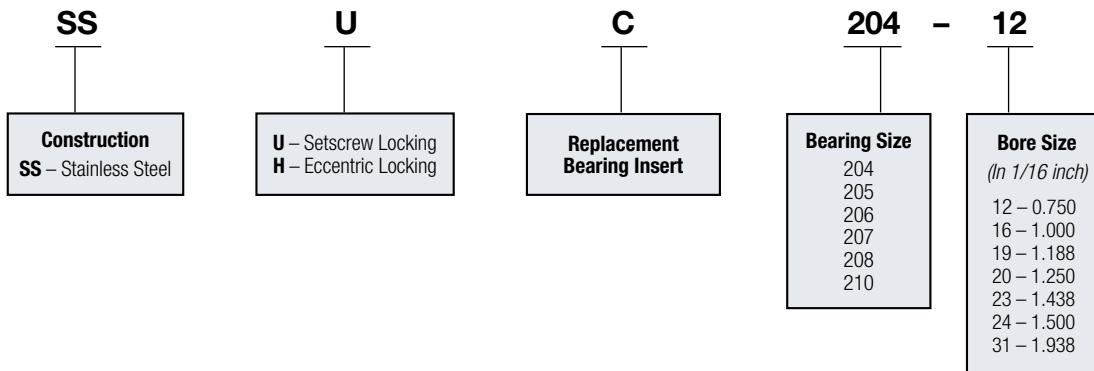
# Stainless Steel Mounted Bearings

## Ordering Information

### Mounted Bearings Example: SSUP4-3/4

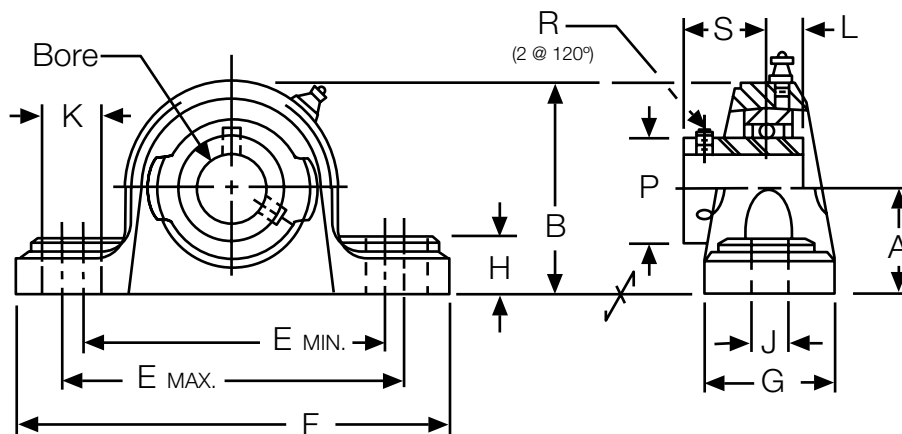


### Replacement Bearing Insert Example: SSUC204-12





### 2 Bolt Pillow Block - Setscrew Locking Extended Inner Race



Bore Size	Mounted Bearing		Bearing Insert	
	Catalog Number	Item Code	Catalog Number	Item Code
3/4	SSUP4-3/4	G01140	SSUC204-12	G01171
1	SSUP5-1	G01141	SSUC205-16	G01172
1-3/16	SSUP6-1-3/16	G01142	SSUC206-19	G01173
1-1/4	SSUP7-1-1/4	G01143	SSUC207-20	G01174
1-7/16	SSUP7-1-7/16	G01144	SSUC207-23	G01175
1-1/2	SSUP8-1-1/2	G05900	SSUC208-24	G05922
1-15/16	SSUP10-1-15/16	G05901	SSUC210-31	G05923

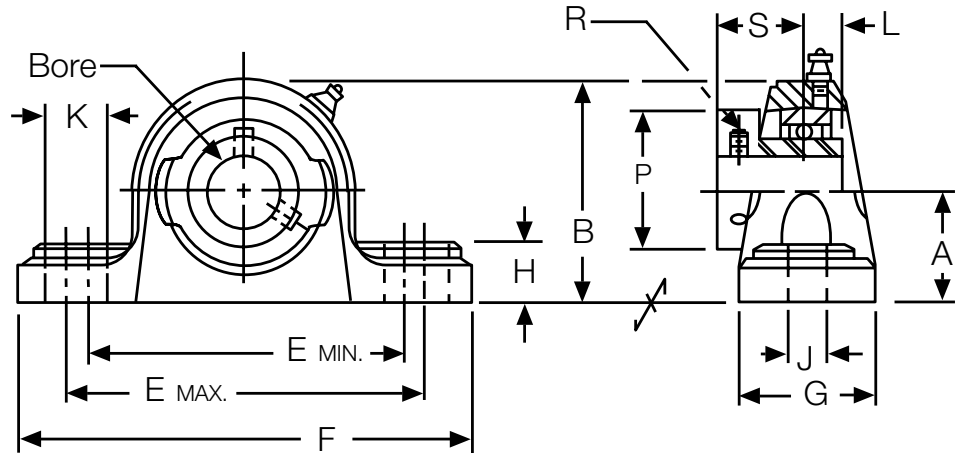
Stainless Steel Material	
AISI 304	AISI 440
Housing, cage, shield, setscrew, seal	Balls, inner/outer ring

Catalog Number	Bore Size	Dimensions (in)														Load Rating* (lbf)	
		A	B	E <sub>max</sub>	E <sub>min</sub>	F	G	H	J	K	L	P	R (UNF)	S	Bolt Size	CR	CO
SSUP4-3/4	3/4	1-5/16	2-9/16	4-1/8	3-3/8	5	1-1/2	9/16	1/2	3/4	0.500	1.142	1/4-28	0.721	3/8	2,901	1,507
SSUP5-1	1	1-7/16	2-25/32	4-1/2	3-3/4	5-1/2	1-1/2	19/32	1/2	3/4	0.563	1.339	1/4-28	0.780	3/8	3,175	1,782
SSUP6-1-3/16	1-3/16	1-11/16	3-1/4	5-1/32	4-15/32	6-1/2	1-7/8	21/32	43/64	25/32	0.626	1.591	1/4-28	0.874	1/2	4,431	2,558
SSUP7-1-1/4	1-1/4	1-7/8	3-21/32	5-9/32	4-23/32	6-9/16	1-7/8	45/64	43/64	25/32	0.689	1.866	5/16-24	1.000	1/2	5,847	3,472
SSUP7-1-7/16	1-7/16	1-7/8	3-21/32	5-9/32	4-23/32	6-9/16	1-7/8	45/64	43/64	25/32	0.689	1.866	5/16-24	1.000	1/2	5,847	3,472
SSUP8-1-1/2	1-1/2	1-15/16	3-15/16	5-11/16	5-1/8	7-1/4	2-1/8	45/64	43/64	25/32	0.748	2.075	5/16-24	1.189	1/2	6,632	4,069
SSUP10-1-15/16	1-15/16	2-1/4	4-29/64	6-17/32	5-31/32	8-1/8	2-3/8	53/64	25/32	29/32	0.748	2.465	3/8-24	1.284	5/8	7,868	5,216

Notes: Bore tolerance: +.001"/-.000".  
 Recommended shaft tolerance: Nominal +.000"/-.001".  
 Max recommended speed is 5000 RPM.  
 \*CR=dynamic load rating, CO=static load rating.

## Pillow Blocks

### 2 Bolt Pillow Block - Eccentric Locking Collar For Superior Shaft Holding Power



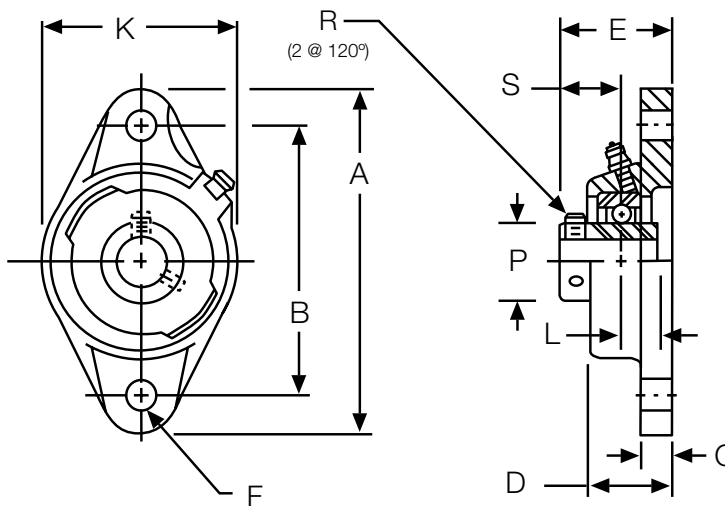
Bore Size	Mounted Bearing		Bearing Insert	
	Catalog Number	Item Code	Catalog Number	Item Code
3/4	SSHP4-3/4	G01145	SSHC204-12	G01176
1	SSHP5-1	G01146	SSHC205-16	G01177
1-3/16	SSHP6-1-3/16	G01147	SSHC206-19	G01178
1-1/4	SSHP7-1-1/4	G01148	SSHC207-20	G01179
1-7/16	SSHP7-1-7/16	G01149	SSHC207-23	G01180
1-1/2	SSHP8-1-1/2	G05902	SSHC208-24	G05924
1-15/16	SSHP10-1-15/16	G05903	SSHC210-31	G05925

Stainless Steel Material	
AISI 304	AISI 440
Housing, cage, shield, setscrew, seal, collar	Balls, inner/outer ring

Catalog Number	Bore Size	Dimensions (in)													Load Rating* (lbf)		
		A	B	E <sub>max</sub>	E <sub>min</sub>	F	G	H	J	K	L	P	R (UNF)	S	Bolt Size	CR	CO
SSHP4-3/4	3/4	1-5/16	2-9/16	4-1/8	3-3/8	5	1-1/2	9/16	1/2	3/4	0.673	1.311	1/4-28	1.047	3/8	2,901	1,507
SSHP5-1	1	1-7/16	2-25/32	4-1/2	3-3/4	5-1/2	1-1/2	19/32	1/2	3/4	0.689	1.500	1/4-28	1.059	3/8	3,175	1,782
SSHP6-1-3/16	1-3/16	1-11/16	3-1/4	5-1/32	4-15/32	6-1/2	1-7/8	21/32	43/64	25/32	0.720	1.713	1/4-28	1.186	1/2	4,431	2,558
SSHP7-1-1/4	1-1/4	1-7/8	3-21/32	5-9/32	4-23/32	6-9/16	1-7/8	45/64	43/64	25/32	0.740	2.087	5/16-24	1.272	1/2	5,847	3,472
SSHP7-1-7/16	1-7/16	1-7/8	3-21/32	5-9/32	4-23/32	6-9/16	1-7/8	45/64	43/64	25/32	0.740	2.087	5/16-24	1.272	1/2	5,847	3,472
SSHP8-1-1/2	1-1/2	1-15/16	3-15/16	5-11/16	5-1/8	7-1/4	2-1/8	45/64	43/64	25/32	0.748	2.283	5/16-24	1.378	1/2	6,632	4,069
SSHP10-1-15/16	1-15/16	2-1/4	4-29/64	6-17/32	5-31/32	8-1/8	2-3/8	53/64	25/32	29/32	0.969	2.697	3/8-24	1.500	5/8	7,868	5,216

Notes: Bore tolerance: +.001"/-.000".  
 Recommended shaft tolerance: Nominal +.000"/-.001".  
 Max recommended speed is 5000 RPM.  
 \*CR=dynamic load rating, Co=static load rating.

### 2 Bolt Flange - Setscrew Locking Extended Inner Race



Bore Size	Mounted Bearing		Bearing Insert	
	Catalog Number	Item Code	Catalog Number	Item Code
3/4	SSUFL4-3/4	G01150	SSUC204-12	G01171
1	SSUFL5-1	G01151	SSUC205-16	G01172
1	SSUFL5-1A	G05970	SSUC205-16	G01172
1-3/16	SSUFL6-1-3/16	G01152	SSUC206-19	G01173
1-1/4	SSUFL7-1-1/4	G01153	SSUC207-20	G01174
1-7/16	SSUFL7-1-7/16	G01154	SSUC207-23	G01175
1-1/2	SSUFL8-1-1/2	G05904	SSUC208-24	G05922
1-15/16	SSUFL10-1-15/16	G05905	SSUC210-31	G05923

Stainless Steel Material	
AISI 304	AISI 440
Flange, cage, shield, setscrew, seal	Balls, inner/outer ring

Catalog Number	Bore Size	Dimensions (in)										Load Rating* (lbf)		
		A	B	C	D	E	Bolt Size F**	K	L	P	R (UNF)	S	CR	CO
SSUFL4-3/4	3/4	4-7/16	3-35/64	7/16	1.000	1-5/16	3/8	2-3/8	0.500	1.142	1/4-28	0.721	2,901	1,507
†† SSUFL5-1	1	5-1/8	3-57/64	1/2	1.063	1-13/32	1/2	2-11/16	0.563	1.339	1/4-28	0.780	3,175	1,782
SSUFL5-1A	1	5-1/8	3-57/64	1/2	1.063	1-13/32	3/8	2-11/16	0.563	1.339	1/4-28	0.780	3,175	1,782
†† SSUFL6-1-3/16	1-3/16	5-13/16	4-39/64	1/2	1.219	1-19/32	1/2	3-5/32	0.626	1.591	1/4-28	0.874	4,431	2,558
SSUFL7-1-1/4	1-1/4	6-11/32	5-1/8	35/64	1.344	1-3/4	1/2	3-35/64	0.689	1.866	5/16-24	1.000	5,847	3,472
†† SSUFL7-1-7/16	1-7/16	6-11/32	5-1/8	35/64	1.344	1-3/4	1/2	3-35/64	0.689	1.866	5/16-24	1.000	5,847	3,472
SSUFL8-1-1/2	1-1/2	6-7/8	5-43/64	35/64	1.422	2-1/64	1/2	3-15/16	0.748	2.075	5/16-24	1.189	6,632	4,069
SSUFL10-1-15/16	1-15/16	7-3/4	6-3/16	19/32	1.578	2-5/32	5/8	4-17/32	0.748	2.465	3/8-24	1.284	7,868	5,216

Notes: Bore tolerance: +.001"/-.000".  
 Recommended shaft tolerance: Nominal +.000"/-.001".  
 Max recommended speed is 5000 RPM.  
 \*CR=dynamic load rating, CO=static load rating.  
 \*\* Smaller bolt sizes are acceptable with the use of flat washers

†† Models available with eccentric locking collar (See Table 1 for new dimensions)

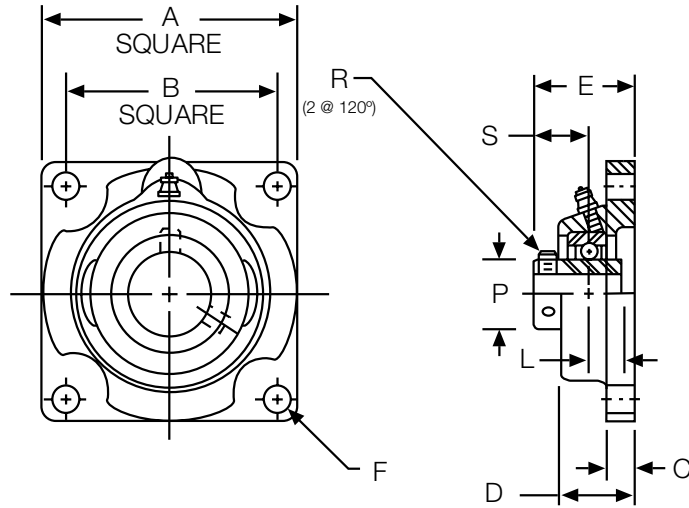


**Table 1**  
Dimensions if ordered with eccentric locking collar

Catalog Number	L	P	S
SSHFL5-1	0.689	1.500	1.059
SSHFL6-1-3/16	0.720	1.713	1.186
SSHFL7-1-7/16	0.740	2.087	1.272

## Flanged Unit

### 4 Bolt Flange - Setscrew Locking Extended Inner Race



Bore Size	Mounted Bearing		Bearing Insert	
	Catalog Number	Item Code	Catalog Number	Item Code
3/4	SSUF4-3/4	G01155	SSUC204-12	G01171
1	SSUF5-1	G01156	SSUC205-16	G01172
1-3/16	SSUF6-1-3/16	G01157	SSUC206-19	G01173
1-1/4	SSUF7-1-1/4	G01158	SSUC207-20	G01174
1-7/16	SSUF7-1-7/16	G01159	SSUC207-23	G01175
1-1/2	SSUF8-1-1/2	G05906	SSUC208-24	G05922
1-15/16	SSUF10-1-15/16	G05907	SSUC210-31	G05923

Stainless Steel Material	
AISI 304	AISI 440
Flange, cage, shield, setscrew, seal	Balls, inner/outer ring

Catalog Number	Bore Size	Dimensions (in)										Load Rating* (lbf)	
		A	B	C	D	E	Bolt Size F**	L	P	R (UNF)	S	CR	CO
SSUF4-3/4	3/4	3-3/8	2-33/64	15/32	1.000	1-5/16	3/8	0.500	1.142	1/4-28	0.721	2,901	1,507
†† SSUF5-1	1	3-3/4	2-3/4	35/64	1.063	1-13/32	3/8	0.563	1.339	1/4-28	0.780	3,175	1,782
†† SSUF6-1-3/16	1-3/16	4-1/4	3-17/64	35/64	1.219	1-19/32	3/8	0.626	1.591	1/4-28	0.874	4,431	2,558
SSUF7-1-1/4	1-1/4	4-39/64	3-5/8	5/8	1.344	1-3/4	7/16	0.689	1.866	5/16-24	1.000	5,847	3,472
†† SSUF7-1-7/16	1-7/16	4-39/64	3-5/8	5/8	1.344	1-3/4	7/16	0.689	1.866	5/16-24	1.000	5,847	3,472
SSUF8-1-1/2	1-1/2	5-1/8	4-1/64	5/8	1.422	2-1/64	1/2	0.748	2.075	5/16-24	1.189	6,632	4,069
SSUF10-1-15/16	1-15/16	5-13/32	4-3/8	23/32	1.578	2-5/32	1/2	0.748	2.465	3/8-24	1.284	7,868	5,216

Notes: Bore tolerance:  $+.001"/-.000"$ .  
 Recommended shaft tolerance: Nominal  $+.000"/-.001"$ .  
 Max recommended speed is 5000 RPM.  
 \*CR=dynamic load rating, Co=static load rating.  
 \*\* Smaller bolt sizes are acceptable with the use of flat washers

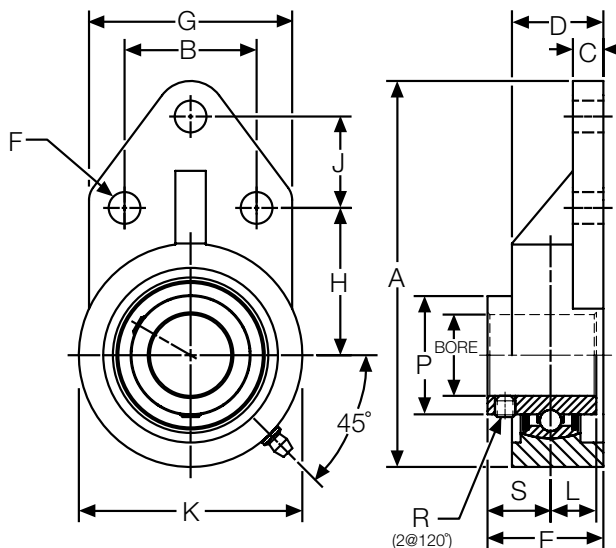
†† Models available with eccentric locking collar (See Table 1 for new dimensions)



**Table 1**  
Dimensions if ordered with eccentric locking collar

Catalog Number	L	P	S
SSHF5-1	0.689	1.500	1.059
SSHF6-1-3/16	0.720	1.713	1.186
SSHF7-1-7/16	0.740	2.087	1.272

### 3 Bolt Flange - Setscrew Locking Extended Inner Race



Bore Size	Mounted Bearing		Bearing Insert	
	Catalog Number	Item Code	Catalog Number	Item Code
3/4	SSUFB4-3/4	G05908	SSUC204-12	G01171
1	SSUFB5-1	G05909	SSUC205-16	G01172
1-3/16	SSUFB6-1-3/16	G05910	SSUC206-19	G01173
1-1/4	SSUFB7-1-1/4	G05911	SSUC207-20	G01174
1-7/16	SSUFB7-1-7/16	G05912	SSUC207-23	G01175
1-1/2	SSUFB8-1-1/2	G05913	SSUC208-24	G05922
1-15/16	SSUFB10-1-15/16	G05914	SSUC210-31	G05923

Stainless Steel Material	
AISI 304	AISI 440
Flange, cage, shield, setscrew, seal	Balls, inner/outer ring

Catalog Number	Bore Size	Dimensions (in)														Load Rating* (lbf)	
		A	B	C	D	E	Bolt Size F**	G	H	J	K	L	P	R (UNF)	S	CR	CO
SSUFB4-3/4	3/4	4-1/4	1-1/2	5/16	1	1.35	5/16	2-3/8	1-11/16	7/8	2-1/2	0.500	1.142	1/4-28	0.850	2,901	1,507
SSUFB5-1	1	4-3/4	1-5/8	3/8	1-5/64	1.43	5/16	2-1/2	1-13/16	1-1/8	2-3/4	0.563	1.339	1/4-28	0.867	3,175	1,782
SSUFB6-1-3/16	1-3/16	5-3/8	1-7/8	3/8	1-7/64	1-19/32	5/16	2-3/4	2-1/16	1-1/4	3-1/4	0.626	1.591	1/4-28	0.968	4,431	2,558
SSUFB7-1-1/4	1-1/4	6-1/8	2	1/2	1-1/4	1-3/4	7/16	3-1/4	2-3/8	1-1/4	3-3/4	0.689	1.866	5/16-24	1.061	5,847	3,472
SSUFB7-1-7/16	1-7/16	6-1/8	2	1/2	1-1/4	1-3/4	7/16	3-1/4	2-3/8	1-1/4	3-3/4	0.689	1.866	5/16-24	1.061	5,847	3,472
SSUFB8-1-1/2	1-1/2	6-15/32	1-31/32	5/8	1-13/32	2-1/64	3/8	3-1/16	2-3/8	1-5/8	3-15/16	0.748	2.075	5/16-24	1.267	6,632	4,069
SSUFB10-1-15/16	1-15/16	7-1/2	2-3/4	1/2	1-1/2	2-5/32	7/16	4	2-15/16	1-5/8	4-5/8	0.748	2.465	3/8-24	1.408	7,868	5,216

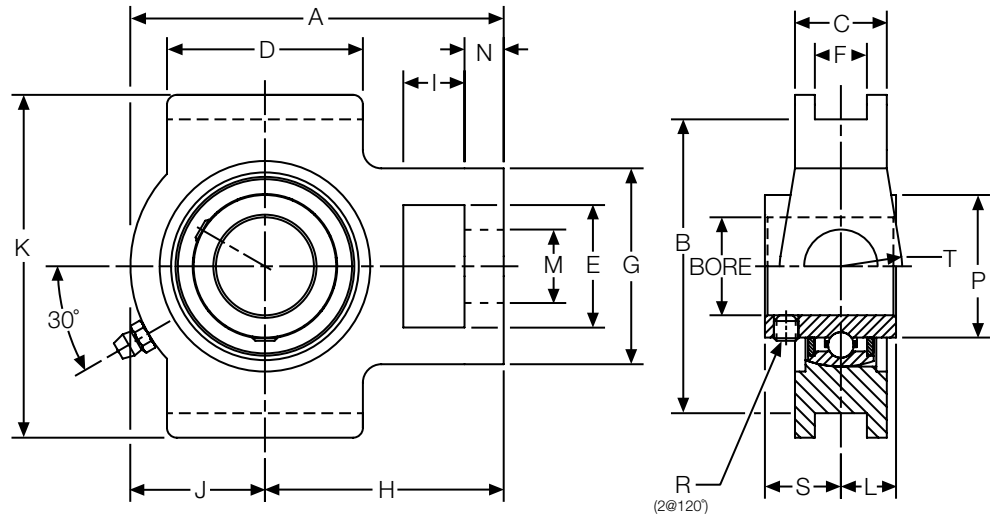
Notes: Bore tolerance: +.001"/-.000".  
 Recommended shaft tolerance: Nominal +.000"/-.001".  
 Max recommended speed is 5000 RPM.  
 \*CR=dynamic load rating, CO=static load rating.  
 \*\* Smaller bolt sizes are acceptable with the use of flat washers

# E

# Stainless Steel Mounted Bearings

## Take Up Unit

### Wide Slot Take Up Unit - Setscrew Locking Extended Inner Race



Bore Size	Mounted Bearing		Bearing Insert	
	Catalog Number	Item Code	Catalog Number	Item Code
3/4	SSUT4-3/4	G05915	SSUC204-12	G01171
1	SSUT5-1	G05916	SSUC205-16	G01172
1-3/16	SSUT6-1-3/16	G05917	SSUC206-19	G01173
1-1/4	SSUT7-1-1/4	G05918	SSUC207-20	G01174
1-7/16	SSUT7-1-7/16	G05919	SSUC207-23	G01175
1-1/2	SSUT8-1-1/2	G05920	SSUC208-24	G05922
1-15/16	SSUT10-1-15/16	G05921	SSUC210-31	G05923

Stainless Steel Material	
AISI 304	AISI 440
Flange, cage, shield, setscrew, seal	Balls, inner/outer ring

Catalog Number	Bore Size	Dimensions (in)																Load Rating* (lbf)		
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	R (UNF)	S	CR	CO
SSUT4-3/4	3/4	3-11/16	2-63/64	13/16	2-1/64	1.250	0.469	2-1/64	2-13/32	0.625	1-9/32	3-1/2	0.500	0.750	0.391	1.142	1/4-28	0.721	2,901	1,507
SSUT5-1	1	3-13/16	2-63/64	15/16	2-1/64	1.250	0.469	2-1/64	2-7/16	0.625	1-3/8	3-1/2	0.563	0.750	0.391	1.339	1/4-28	0.780	3,175	1,782
SSUT6-1-3/16	1-3/16	4-29/64	3-1/2	1-3/32	2-1/4	1.453	0.469	2-7/32	2-3/4	0.625	1-45/64	4-1/64	0.626	0.859	0.391	1.591	1/4-28	0.874	4,431	2,558
SSUT7-1-1/4	1-1/4	5-5/64	3-1/2	1-3/16	2-33/64	1.453	0.469	2-33/64	3-5/64	0.625	2	4-1/64	0.689	0.859	0.516	1.866	5/16-24	1.000	5,847	3,472
SSUT7-1-7/16	1-7/16	5-5/64	3-1/2	1-3/16	2-33/64	1.453	0.469	2-33/64	3-5/64	0.625	2	4-1/64	0.689	0.859	0.516	1.866	5/16-24	1.000	5,847	3,472
SSUT8-1-1/2	1-1/2	5-43/64	4-1/64	1-5/16	3-17/64	1.938	0.625	3-17/64	3-1/2	0.750	2-11/64	4-31/64	0.748	1.141	0.625	2.075	5/16-24	1.189	6,632	4,069
SSUT10-1-15/16	1-15/16	5-55/64	4-1/64	1-15/32	3-17/64	1.938	0.625	3-17/64	3-35/64	0.750	2-5/16	4-39/64	0.748	1.141	0.625	2.465	3/8-24	1.284	7,868	5,216

Notes: Bore tolerance: +.001"/-.000".  
 Recommended shaft tolerance: Nominal +.000"/-.001".  
 Max recommended speed is 5000 RPM.  
 \*CR=dynamic load rating, Co=static load rating.



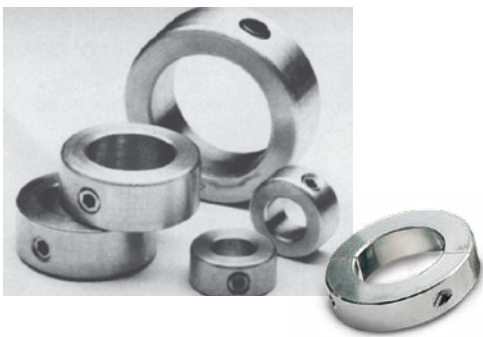
## SSFC Series - Insert (3 Jaw) Type Coupling

- 316 stainless steel with passivated finish
- Precision machined bore or solid hubs
- Three types of inserts for different service requirements
- No lubrication needed
- Stocked bores complete with keyway and stainless setscrew
- Custom bore sizes available on request



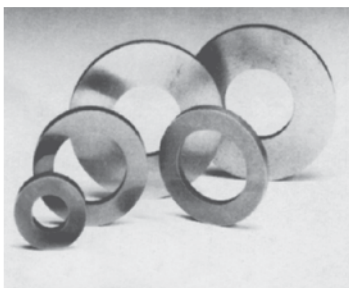
## JS Series - Pin and Block Type Universal Joints

- Connect shafts at angles up to 30 degrees and speeds up to 2,000 RPM
- Precision machined bore or solid hubs
- Self-locking assembly rings (hubs 7/8" and larger)
- Riveted bearing pin (hubs 3/4" and smaller)
- Joint covers keep dirt/moisture out and lubricant in



## SSC/CSSC/2SSC Series - Collars

- Setscrew, 1-piece clamp & 2-piece clamp styles for locking
- Setscrew type suitable for temps up to 800° F, ideal for autoclaved hygienic equipment
- Clamp type conform to OSHA with recessed screw heads, provide convenient adjusting and removal



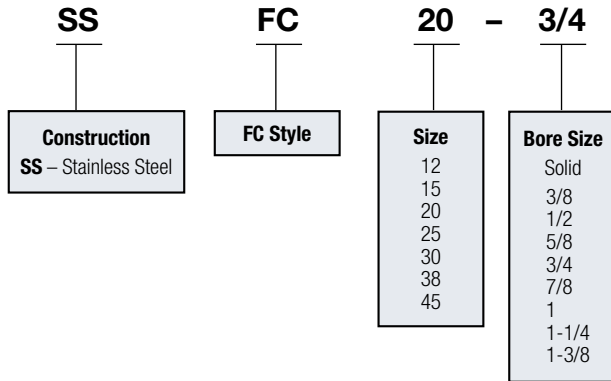
## SAO Series - Thrust Washers & Thrust Ball Bearings

- Hardened and ground surface
- Ideal as a radial bearing surface
- Negligible friction when used as a set with thrust bearing sandwiched between 2 thrust washers

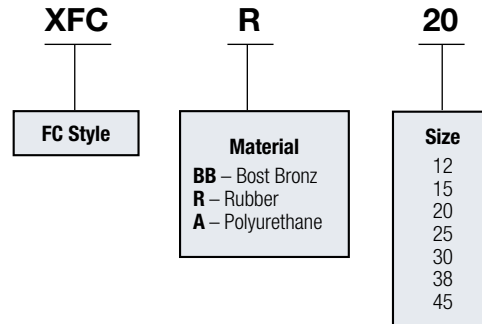
## Ordering Information

### Couplings

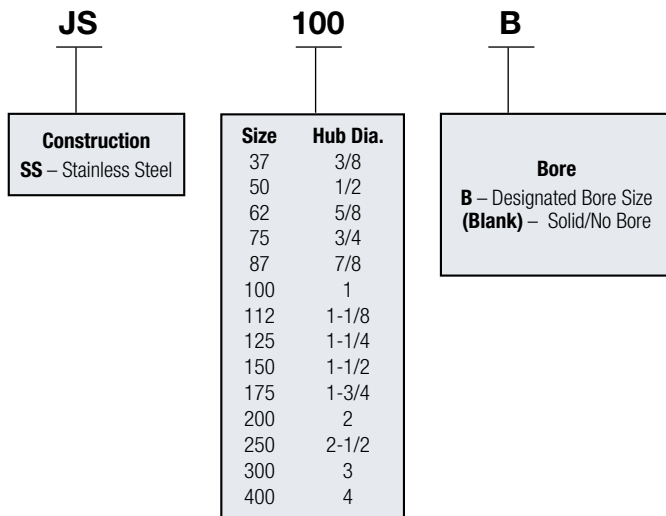
#### Halves



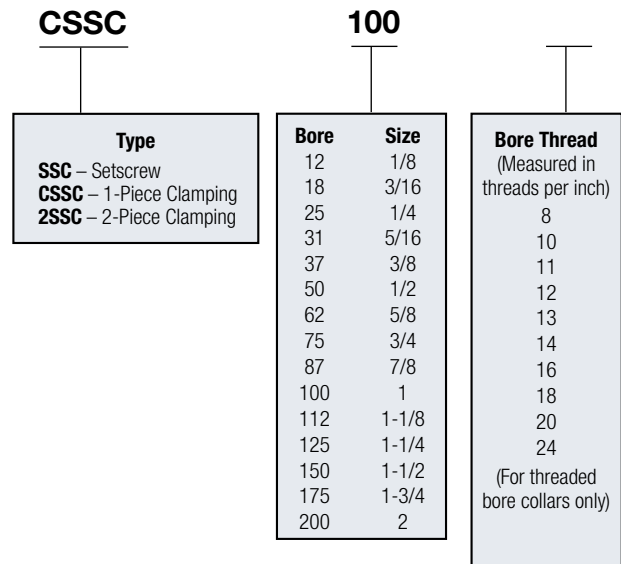
#### Inserts



### Universal Joints



### Collars



### Thrust Washers

#### SAO 8 Washer

1	3/16 Bore
5	1/4 Bore
8	5/16 Bore
10	3/8 Bore
16	1/2 Bore

### Thrust Ball Bearings

#### SAO 8 CN

1	3/16 Bore
5	1/4 Bore
8	5/16 Bore
10	3/8 Bore
16	1/2 Bore



- Oil-Impregnated Bost-Bronz – recommended for high torque loads, particularly at slower speeds.
- Oil-Resistant Synthetic Rubber – recommended when quietness is desired, particularly at motor speeds.
- Polyurethane – recommended where moderate to heavy shock loads are encountered.

**Load Rating Table**

Coupling Size	Maximum Horsepower Rating at RPM*								Misalignment Tolerances		Max Torque (lb-in)
	50	100	300	690	870	1150	1750	3450	Lateral/Parallel	Angular	
XFCBB BOST-BRONZ INSERTS											
SSFC12	0.16	0.32	0.95	2.2	2.8	3.6	5.6	—	.001	.011	200
SSFC15	0.40	0.79	2.4	5.5	6.9	9.1	13.9	—		.013	500
SSFC20	0.79	1.6	4.8	10.9	13.8	18.2	—	—		.018	1000
SSFC25	1.4	2.9	8.6	19.7	24.8	—	—	—		.022	1800
SSFC30	2.5	5.1	15.2	35.0	—	—	—	—		.026	3200
SSFC38	5.6	11.1	33.3	—	—	—	—	—		.032	7000
SSFC45	8.7	17.5	—	—	—	—	—	—		.039	11000
XFCR RUBBER INSERTS											
SSFC12	—	0.10	0.31	0.71	0.90	1.2	1.8	3.6	.002	.033	65
SSFC15	—	0.20	0.60	1.4	1.7	2.3	3.5	56.8		.039	125
SSFC20	—	0.40	1.2	2.7	3.5	4.6	6.9	13.7		.053	250
SSFC25	—	0.71	2.1	4.9	6.2	8.2	12.5	24.6		.066	450
SSFC30	—	1.3	3.8	8.8	11.0	14.6	22.2	43.8		.078	800
SSFC38	—	2.5	7.6	17.5	22.1	29.2	44.4	—		.097	1600
SSFC45	—	4.4	13.3	30.7	38.7	51.1	77.7	—		.117	2800
XFCA POLYURETHANE INSERTS											
SSFC12	0.09	0.19	0.56	1.2	1.6	2.0	3.0	5.7	.002	.022	125
SSFC15	0.18	0.37	1.1	2.5	3.1	4.0	6.0	11.3		.026	250
SSFC20	0.35	0.70	2.1	4.6	5.7	7.5	11.1	20.7		.035	470
SSFC25	0.62	1.2	3.7	8.1	10.1	13.1	19.3	35.8		.044	845
SSFC30	1.1	2.2	6.5	14.4	17.9	23.3	34.3	63.6		.052	1500
SSFC38	2.2	4.3	12.9	28.4	35.3	45.8	67.3	—		.065	3000
SSFC45	3.7	7.5	22.4	49.2	61.0	79.0	115.9	—		.078	5250

\*For uniform load.

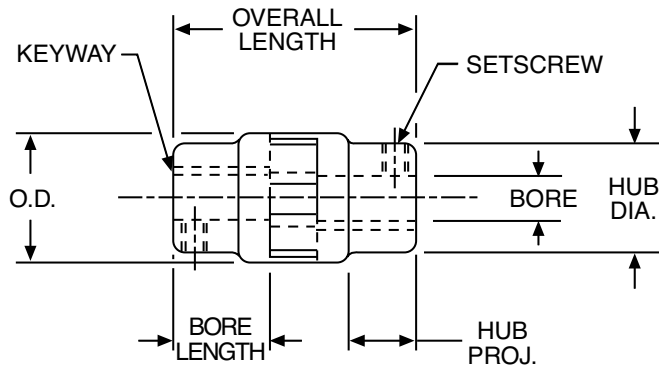
### Selection Procedure

1. From Table select Service Factor.
2. Determine Design Load  
 $\text{Design HP} = \text{Application HP} \times \text{S.F.}$   
 or  
 $\text{Design Torque} = \text{Application Torque} \times \text{S.F.}$
3. Select coupling size from Load Rating Table which has a rating equal to or greater than the design load

### COUPLING SERVICE FACTOR

Load Classification	Service Factor
Uniform	1
Moderate Shock	1.75
Heavy Shock	2.5

## Dimensions



**All Dimensions in Inches**  
**Order By Catalog Number or Item Code**  
**To order complete coupling order two coupling halves and one coupling insert**

Coupling Size	Bore	Max. Bore	Bore Length *	OD	Overall Length **	Hub		Assy. Clearance	Standard Keyway Size	Standard Setscrew Size	Coupling Halves		Insert					
						Dia.	Proj.				Catalog Number	Item Code	Bost-Bronz		Rubber		Polyurethane	
													Catalog Number	Item Code	Catalog Number	Item Code	Catalog Number	Item Code
SSFC12	SOLID	5/8	N/A	1-1/4	2-5/16	1	5/8	3-3/16	N/A	N/A	SSFC12 SOLID	G89785	XFCBB12	08064	XFCR12	08078	XFCA12	08050
	3/8		3/32 x 3/64						10-32	SSFC12-3/8	G89783							
	1/2		1/8 x 1/16						1/4-20	SSFC12-1/2	G89784							
SSFC15	SOLID	7/8	N/A	1-1/2	2-3/4	1-1/4	3/4	3-3/4	N/A	N/A	SSFC15 SOLID	G89789	XFCBB15	08066	XFCR15	08080	XFCA15	08052
	1/2		1/8 x 1/16						1/4-20	SSFC15-1/2	G89786							
	5/8		3/16 x 3/32						5/16-18	SSFC15-5/8	G89787							
	3/4		3/16 x 3/32						5/16-18	SSFC15-3/4	G89788							
SSFC20	SOLID	1-1/8	N/A	2	3-11/16	1-3/4	1-1/8	4-13/16	N/A	N/A	SSFC20 SOLID	G89794	XFCBB20	08068	XFCR20	08082	XFCA20	08054
	5/8		3/16 x 3/32						5/16-18	SSFC20-5/8	G89790							
	3/4		3/16 x 3/32						5/16-18	SSFC20-3/4	G89791							
	7/8		3/16 x 3/32						5/16-18	SSFC20-7/8	G89792							
	1		1/4 x 1/8						3/8-16	SSFC20-1	G89793							
SSFC25	SOLID	1-3/8	N/A	2-1/2	4-1/8	2-1/4	1-1/4	5-3/8	N/A	N/A	SSFC25 SOLID	G89798	XFCBB25	08070	XFCR25	08084	XFCA25	08056
	3/4		3/16 x 3/32						5/16-18	SSFC25-3/4	G89795							
	1		1/4 x 1/8						3/8-16	SSFC25-1	G89796							
	1-1/4		1/4 x 1/8						3/8-16	SSFC25-1-1/4	G89797							
SSFC30	SOLID	1-5/8	N/A	3	5-15/32	2-3/4	1-11/16	7	N/A	N/A	SSFC30 SOLID	G89802	XFCBB30	08072	XFCR30	08086	XFCA30	08058
	1		1/4 x 1/8						3/8-16	SSFC30-1	G89799							
	1-1/4		1/4 x 1/8						3/8-16	SSFC30-1-1/4	G89800							
	1-3/8		5/16 x 5/32						7/16-14	SSFC30-1-3/8	G89801							
SSFC38	SOLID	1-7/8	N/A	3-3/4	6-5/16	3-1/2	1-7/8	8-3/16	N/A	N/A	SSFC38 SOLID	G89809	XFCBB38	08074	XFCR38	08088	XFCA38	08060
SSFC45	SOLID	2-1/8	N/A	4-1/2	7-3/16	4	2-1/8	9-5/16	N/A	N/A	SSFC45 SOLID	G89810	XFCBB45	08076	XFCR45	08090	XFCA45	08062

\*Length of hole in each half. \*\*Total length of assembled coupling with jaws engaged to full depth.

Notes: Bore tolerance: +.001"/-.000".  
 Recommended shaft tolerance: Nominal +.000"/-.001".

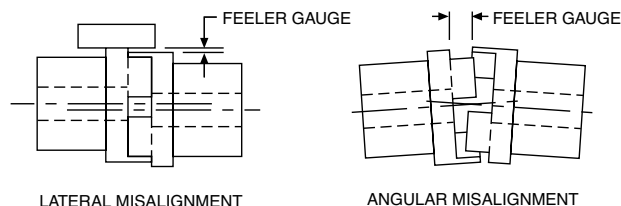


Contact the factory for bore sizes not listed above.  
 Inch and metric options available.

### Alignment

Alignment of Boston couplings should be performed by the following steps to meet lateral and angular misalignment specifications below.

1. Align shafts and supports to give minimum lateral and angular misalignment.
2. Assemble coupling halves to shaft.
3. Slide couplings together and check lateral misalignment using straight edge and feeler gauge over coupling outside diameter. This should be within specifications below.
4. Lock couplings on shaft and check distance using feeler gauges between drive lug on one half and space between on other coupling half. Rotate coupling and check gap at a minimum of 3 other coupling positions. The difference between any two readings should be within specifications below.



### Misalignment Tolerances

Coupling Series	Lateral	Angular
FC - Bronze Insert	.001	See Chart Below
FC - Urethane Insert	.002	
FC - Rubber Insert	.002	

#### FC Series ANGULAR MISALIGNMENT

Chart reflects maximum angular misalignment of 1-1/2° for rubber, 1° for urethane and 1/2° for bronze.

### Maximum Reading Differential

Size	Rubber	Insert Urethane	Bronze
FC12	.033	.022	.011
FC15	.039	.026	.013
FC20	.053	.035	.018
FC25	.066	.044	.022
FC30	.078	.052	.026
FC38	.097	.065	.032
FC45	.117	.078	.039

## Performance & Selection

Boston Gear precision machined JS Series Universal Joints are designed for connecting shafts at angles up to 30 degrees and speeds up to 2000 RPM. All sizes are stocked with both solid and bored hubs.



### Selection

Torque ratings may be calculated from data in tables. The tables indicate the Rated Static Torque (Lb. Ins.) and Speed-Angle factors suggested for various operating conditions.

The approximate service torque rating of a particular joint is obtained by dividing the Rated Static Torque by the appropriate Speed-Angle factor.

Selecting a universal to satisfy a specified torque requirement is also made convenient with the data provided.

The designated torque load should be multiplied by the appropriate Speed-Angle factor to obtain an equivalent static torque load.

A universal with a rated static torque equal to or greater than the calculated torque load would then be selected.

### Example:

A pair of universal joints are desired to transmit 1/2 HP from one shaft running at 500 RPM to another located at an angle of 10 degrees (from a straight line).

The joints will be connected by an intermediate shaft and arranged to operate at equal angles of 5 degrees.

A Speed-Angle factor of 9 is indicated in the table for an operating angle of 5 degrees and a speed of 500 RPM.

$$\text{Torque Load} = \frac{63025 \times \text{HP}}{\text{RPM}} = \frac{63025 \times 1/2}{500} = 63 \text{ Lb. Ins.}$$

JS175 size stainless steel universals would be suggested for this application.

### Speed-Angle Factors

Speed in RPM	Operating Angle - Degrees (Deviation From Straight Line)														
	0	1/2	1	2	3	4	5	6	8	10	12	15	20	25	30
2000	21	22	23.2	25.2	27.4	29.4	31.6	-	-	-	-	-	-	-	-
1800	19	20	21.0	22.8	24.8	26.6	28.6	30.4	-	-	-	-	-	-	-
1600	17	17.8	18.8	20.4	22.2	23.8	25.6	27.2	-	-	-	-	-	-	-
1400	15	15.8	16.6	18.0	19.6	21.0	22.6	24.0	27	-	-	-	-	-	-
1200	13	13.6	14.4	15.6	17.0	18.2	19.6	20.8	23.4	-	-	-	-	-	-
1000	11	11.6	12.2	13.2	14.4	15.4	16.6	17.6	19.8	22	-	-	-	-	-
900	10	10.6	11.0	12.0	13.0	14.0	15.0	16.0	18.0	20	22	-	-	-	-
800	9.0	9.4	10.0	10.8	11.8	12.6	13.6	14.4	16.2	18	19.8	-	-	-	-
700	8.0	8.4	8.8	9.6	10.4	11.2	12.0	12.8	14.4	16	17.6	20	-	-	-
600	7.0	7.4	7.8	8.4	9.2	9.8	10.6	11.2	12.6	14	15.4	17.6	-	-	-
500	6.0	6.4	6.6	7.2	7.8	8.4	9.0	9.6	10.8	12	13.2	15.0	18	-	-
400	5.0	5.2	5.6	6.0	6.6	7.0	7.6	8.0	9.0	10	11.0	12.6	15	17.6	-
300	4.0	4.2	4.4	4.8	5.2	5.6	6.0	6.4	7.2	8.0	8.8	10.0	12	14.0	16
200	3.0	3.2	3.4	3.6	4.0	4.2	4.6	4.8	5.4	6.0	6.6	7.6	9.0	10.6	12
100	2.0	2.2	2.2	2.4	2.6	2.8	3.0	3.2	3.6	4.0	4.4	5.0	6.0	7.0	8.0
50	1.5	1.6	1.7	1.8	2.0	2.2	2.2	2.4	2.8	3.0	3.4	3.8	4.6	5.2	6.0
25	1.3	1.3	1.4	1.5	1.6	1.8	1.9	2.0	2.2	2.6	2.8	3.2	3.8	4.4	5.0
10	1.1	1.2	1.2	1.3	1.4	1.5	1.7	1.8	2.0	2.2	2.4	2.8	3.4	3.8	4.4
0	1.0	1.1	1.1	1.2	1.3	1.4	1.5	1.6	1.8	2.0	2.2	2.6	3.0	3.6	4.0

### Rated Static Torque (Lb. Ins.)

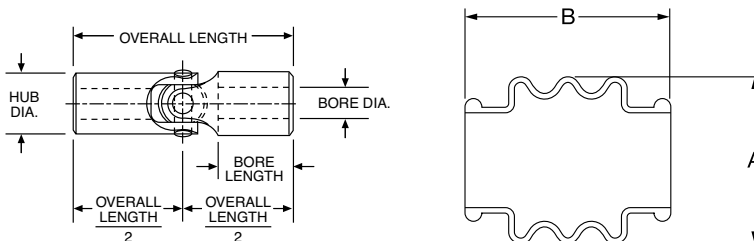
### Stainless Steel Universal Joints

Catalog Number	JS37	JS50	JS62	JS75	JS87	JS100	JS112	JS125	JS150	JS175	JS200	JS250	JS300	JS400
Torque - Lb. Ins.	6	24	50	96	110	180	200	310	500	750	1320	1900	3100	7360

### Pin and Block Type; Stainless Steel

#### Standard Tolerances

Dimensions		Tolerance
Bore	All	±.001
Hub Dia.	All	±.020
Bore Length	All	±1/64
Overall Length	1-3/4 - 4-1/4	±1/64
	5 - 10-5/8	±1/32



**All Dimensions in Inches  
Order By Catalog Number or Item Code**

Stainless Steel		Universal Joints					Boot Kits† ††			
Catalog Number	Item Code	Bore**	Bore Length*	Hub Dia.	Overall Length	Approx. Weight Lbs.	A	B	Catalog Number	Item Code
JS37B	08472	3/16	11/16	3/8	1-3/4	.04	0.72	0.88	UB37	47602
JS37	08452	-	-	3/8	1-3/4	.05				
JS50B	08474	1/4	3/4	1/2	2	.08	0.95	0.88	UB50	47603
JS50	08454	-	-	1/2	2	.10				
JS62B	08476	5/16	13/16	5/8	2-1/4	.14	1.13	1.03	UB62	47604
JS62	08456	-	-	5/8	2-1/4	.18				
JS75B	08478	3/8	31/32	3/4	2-11/16	.24	1.38	1.25	UB75	47605
JS75	08458	-	-	3/4	2-11/16	.30				
JS87B	08480	7/16	1-1/32	7/8	3	.31	1.50	1.38	UB87	47606
JS87	08460	-	-	7/8	3	.45				
JS100B	08482	1/2	1-3/16	1	3-3/8	.50	1.50	1.50	UB100	47607
JS100	08462	-	-	1	3-3/8	.66				
JS112B	72483	9/16	1-7/32	1-1/8	3-1/2	.69	1.75	1.63	UB112	72491
JS112	72484	-	-	1-1/8	3-1/2	.88				
JS125B	08484	5/8	1-1/4	1-1/4	3-3/4	.88	1.88	2.09	UB125	47608
JS125	08464	-	-	1-1/4	3-3/4	1.15				
JS150B	08486	3/4	1-11/32	1-1/2	4-1/4	1.44	2.25	2.06	UB150	47609
JS150	08466	-	-	1-1/2	4-1/4	1.81				
JS175B	08488	7/8	1-9/16	1-3/4	5	2.31	2.69	2.63	UB175	47610
JS175	08468	-	-	1-3/4	5	2.86				
JS200B	08490	1	1-5/8	2	5-7/16	3.31	2.69	3.00	UB200	47611
JS200	08470	-	-	2	5-7/16	4.06				
JS250B	72485	1-1/4	2-3/32	2-1/2	7	6.81	3.50	4.00	UB250	47612
JS250	72486	-	-	2-1/2	7	8.25				
JS300B	72487	1-1/2	2-27/32	3	9	12.5	4.25	4.63	UB300	47613
JS300	72488	-	-	3	9	15.25				
JS400B	72489	2	3-1/8	4	10-5/8	25.8	6.00	5.50	UB400	47614
JS400	72490	-	-	4	10-5/8	31.3				

\*Approximate Hub Projection

†Each Kit contains (2) Boots and (4) Ties together with complete instructions for installation and lubrication.

\*\*Style B includes bore only. Units without a B letter have a solid bore.

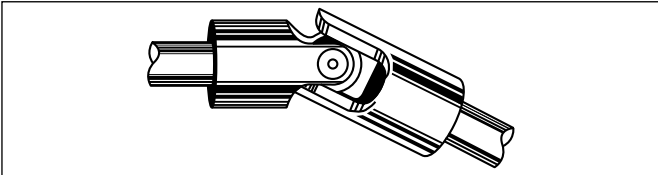
†† Assemble the boot to be positioned central to the joint.

The shape of the boot may vary from the image shown above.

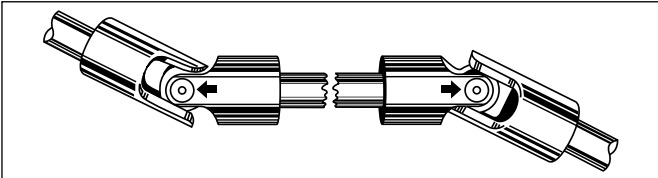
## Installation & Maintenance

### Mounting

A single universal joint (rotating at uniform speed) operating at an angle will introduce periodic variations of angular velocity to the driven shaft. These cyclic speed fluctuations (two per revolution) cause vibration, higher shaft stresses and bearing loads which will be more severe with larger angles of operation.



The detrimental effects of these rotational deviations can be reduced, and uniform speed restored by using two joints (and an intermediate shaft) to connect shafts at an angle or misaligned in a parallel direction.



For connecting shafts in the same plane the joints should be arranged to operate at equal angles and with the bearing pins of the yokes on the intermediate shaft in line with each other.

### Lubrication

#### PIN and BLOCK TYPE

**These universal joints are not lubricated when shipped.**

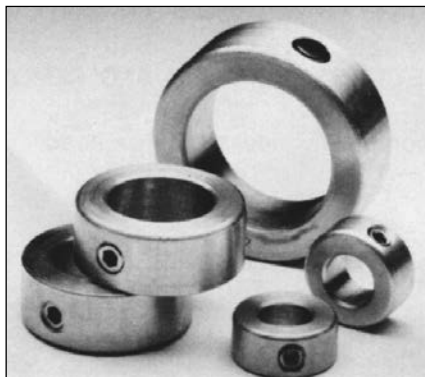
Many applications are considered severe when in harsh environments and when a combination of speed, dirt contamination and inaccessible locations make it impractical to maintain proper lubrication.

It is in these instances when the Boot Kits become a desirable alternative. For satisfactory performance, all booted joints should be used with a LITH-EP-000 grease for an ambient temperature range of 40° to 225°F.

### Volume of Lubrication for Booted Joints

Size	Volume (Ozs.)	Size	Volume (Ozs.)	Size	Volume (Ozs.)
37	.4	100	2.0	250	25.0
50	.5	125	3.5	300	30.0
62	.75	150	4.5	400	50.1
75	1.0	175	7.0		
87	1.5	200	15.0		

NOTE: Joints should be initially lubricated with a 90 weight oil before being packed with grease.



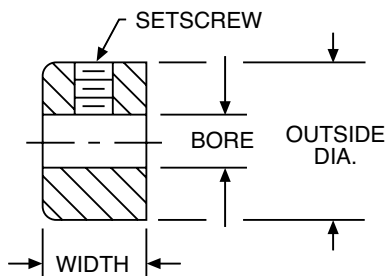
## Stainless Steel Bore Sizes from 1/8" to 2"

**Stainless Steel Collars are Corrosion-Resistant and Non-Magnetic** suitable for temperatures up to 800°F. Ideal for applications requiring hygienic cleanliness.

**All Collars Complete with Standard Hollow Point Setscrews.**

### All Dimensions in Inches Order By Catalog Number or Item Code

Bore	Outside Diameter	Width	Stainless Steel	
			Catalog Number	Item Code
1/8	3/8	1/4	SSC12	67740
3/16	7/16	1/4	SSC18	67741
1/4	1/2	5/16	SSC25	67742
5/16	5/8	11/32	SSC31	67743
3/8	3/4	3/8	SSC37	67744
1/2	1	7/16	SSC50	67745
5/8	1-1/8	1/2	SSC62	67746
3/4	1-1/4	9/16	SSC75	67747
7/8	1-1/2	9/16	SSC87	67748
1	1-1/2	5/8	SSC100	67749
1-1/8	1-3/4	5/8	SSC112	67784
1-1/4	2	11/16	SSC125	67785
1-1/2	2-1/4	3/4	SSC150	67788
1-3/4	2-5/8	7/8	SSC175	67789
2	3	7/8	SSC200	67790



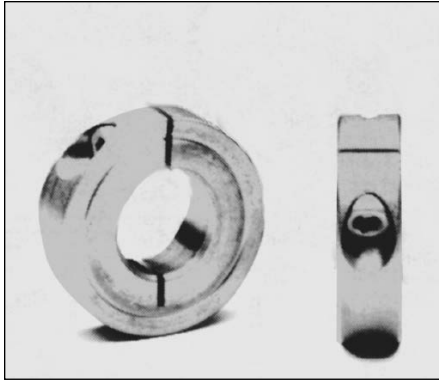
## Standard Tolerances

Dimensions		Tolerance
Bore	1/8-1	-.001/ + .003
	1-1/8-2	-.001/ + .004

## Materials

Stainless Steel—Type 303 Austenitic.

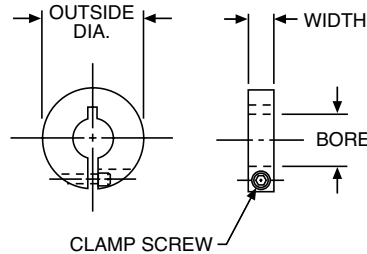
## Smooth Bore



**Design Provides Convenient Setting, Adjusting and Removal** prevents shaft damage.

**OSHA Conformance** collars have completely recessed screw head.

**Bore From 1/8" to 2"**



All Dimensions in Inches

Order By Catalog Number or Item Code

Bore	O.D.	Width	Clamp Screws	Stainless Steel	
				Catalog Number	Item Code
1/8	13/16	1/4	4-40	CSSC12	49094
3/16				CSSC18	49095
1/4				CSSC25	49096
5/16				CSSC31	49097
3/8	1-1/16	5/16	6-32	CSSC37	49098
7/16				CSSC43	49099
1/2	1-1/4	3/8	8-32	CSSC50	49100
9/16				CSSC56	49101
5/8	1-1/2	13/32	10-32	CSSC62	49102
3/4	1-3/4			CSSC75	49104
7/8	1-7/8			CSSC87	49106
15/16		CSSC93	49107		
1	2			CSSC100	49108
1-1/16		CSSC106	49109		
1-1/8	2-1/8	1/2	1/4-28	CSSC112	49110
1-3/16				CSSC118	49111
1-5/16	2-3/8			CSSC143	49115
1-1/2	2-1/2			CSSC150	49116
1-15/16	3-1/4	5/8	5/16-24	CSSC193	49123
2				CSSC200	49124

Dimension in Inches

Bore	Axial Load Capacity (Lbs.)	Screw Size	Recommended Screw Torque (Lb. Ins.)	
			Steel	Stainless Steel
1/8-5/16	400	4-40	20	16
3/8-7/16	600	6-32	30	24
1/2-9/16	1400	8-32	55	35
5/8	1800	10-32	90	72
3/4-1-1/2	4000	1/4-28	220	170
1-15/16-2	6500	5/16-24	435	340

## Materials

Stainless—Type 303 Austenitic

## Load Data

Capacity is based on a standard steel, one-piece collar mounted with recommended screw torque on a lightly oiled shaft. Capacity is load to move collar .010". Data shown is for guidance only. In applications involving control of axial loads, capacity should be determined experimentally on actual parts involved.

## Standard Tolerances

Dimensions		Tolerance
Bore	All	-.000 / +.003

## Threaded Bore



Order By Catalog Number or Item Code

Bore	O.D.	Width	Clamp Screws	Stainless Steel	
				Catalog Number	Item Code
1/4-20	13/16	1/4	4-40	CSSC25-20	49265
3/8-16	1-1/16	5/16	6-32	CSSC37-16	49269
3/8-24				CSSC37-24	49270
1/2-13	1-1/4	3/8	8-32	CSSC50-13	49271
1/2-20				CSSC50-20	49272
5/8-11	1-1/2	13/32	10-32	CSSC62-11	49273
5/8-18				CSSC62-18	49274
3/4-10	1-3/4	1/2	1/4-28	CSSC75-10	49275
3/4-16				CSSC75-16	49276
1-8	2	1/2	1/4-28	CSSC100-8	49279
1-14				CSSC100-14	49280
1-1/4-12	2-1/4	1/2	1/4-28	CSSC125-12	49284

## Materials

Stainless—Type 303 Austenitic

## Bore Threads From 1/4-20UNC To 1-1/4 - 12UNC



# 2SSC Series Stainless Steel Clamping Collars (2-Piece)

F

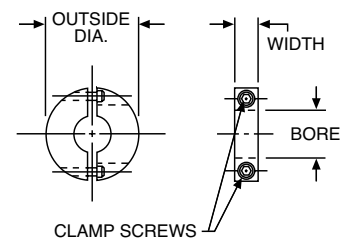
**Design Provides Convenient Setting, Adjusting And Removal**  
prevents shaft damage.

**OSHA Conformance** collars have completely recessed screw head.

**Bores From 1/4" To 2"**

**All Dimensions in Inches**  
**Order By Catalog Number or Item Code**

Bore	O.D.	Width	Clamp Screws	Stainless Steel	
				Catalog Number	Item Code
1/4	13/16	1/4	4-40	2SSC25	49190
5/16				2SSC31	49191
3/8	1-1/16	5/16	6-32	2SSC37	49192
7/16				2SSC43	49193
1/2	1-1/4	3/8	8-32	2SSC50	49194
9/16				2SSC56	49195
5/8	1-1/2	13/32	10-32	2SSC62	49196
11/16				2SSC68	49197
3/4	1-3/4	1/2	1/4-28	2SSC75	49198
7/8	1-7/8			2SSC87	49200
1	2			2SSC100	49202
1-1/16				2SSC106	49203
1-1/8	2-1/8			2SSC112	49204
1-3/16				2SSC118	49205
1-1/4	2-1/4			2SSC125	49206
1-5/16				2SSC131	49207
1-7/16	2-3/8			2SSC143	49209
1-1/2	2-1/2			2SSC150	49210
1-7/8	3-1/4	5/8	5/16-24	2SSC187	49216
1-15/16				2SSC193	49217
2				2SSC200	49218



## Standard Tolerances

Dimensions		Tolerance
Bore	All	-.000 / +.003

## Materials

Stainless—Type 303 Austenitic

## Load Data

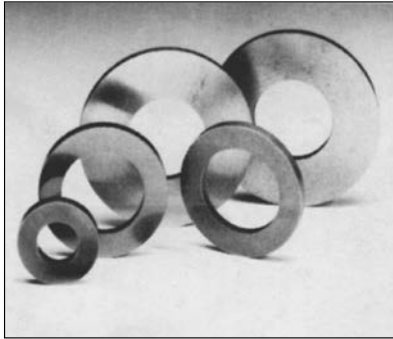
Capacity is based on a standard, one-piece collar mounted with recommended screw torque on a lightly oiled shaft. Capacity is load to move collar .010".

Data shown is for guidance only. In applications involving control of axial loads, capacity should be determined experimentally on actual parts involved.

## Dimension in Inches

Bore	Axial Load Capacity (Lbs.)	Screw Size	Recommended Screw Torque (Lb. Ins.)
			Stainless Steel
1/4-5/16	400	4-40	16
3/8-7/16	600	6-32	24
1/2-9/16	1400	8-32	35
5/8-11/16	1800	10-32	72
3/4-1-1/2	4000	1/4-28	170
1-7/8-2	6500	5/16-24	340

## Thrust Washer Only



### Hardened and Ground Stainless Steel Bore Sizes From 3/16" to 1/2"

All Dimensions in Inches  
Order By Catalog Number or Item Code

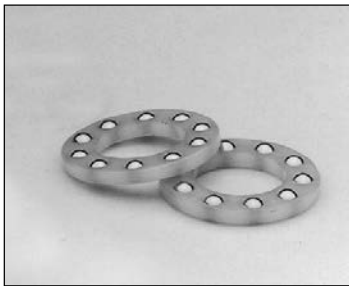
Bore	O.D.	Thickness	Catalog Number
Stainless Steel†			
3/16	7/16	1/16	06760
1/4	9/16	1/16	06762
5/16	5/8	5/64	06764
3/8	11/16	3/32	06766
1/2	7/8	1/8	06770

†These washers also listed with SAO Bearings.

## Standard Tolerances

Dimensions	Tolerance
Bore	+ .0015 + .0070
O.D.	+ .000 - .005
Thickness	+ .000 - .005

## Thrust Washers & Thrust Ball Bearing



### Hardened Stainless Steel — SAO Series For Light Loads

**High Quality Hardened Steel Balls**, retained in a nylon cage.

**Hardened Thrust Washers**, are ground both sides to provide smooth, flat, parallel ball raceway surfaces.

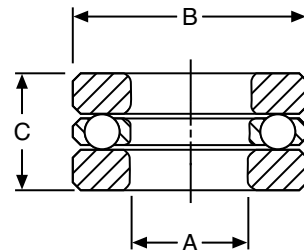
**Quality and Number Of Balls** assure high load carrying capacity.

**Nylon Retainer** assures minimum frictional losses.

## Standard Tolerances

Dimensions	Tolerance
A*	All +.002 + .007
B	All +.000 - .005
C	All +.000 - .010

\*SAO 16 +.002 to +.010



## Load Data

The indicated load ratings are based on 2500 hours average life ( $L_{50}$ ). To determine the load ratings at 3500 and 5000 hours, 90 percent and 80 percent respectively, of the above ratings should be used.

Basic Bearing Number	Thrust Capacity (lbs.)			
	Revolutions Per Minute			
	50	100	500	1000
SAO1	30	25	14	11
SAO5	64	56	31	25
SAO8	68	60	34	27
SAO10	85	72	42	32
SAO16	250	125	70	58

### All Dimensions in inches Order by Item Code (2 Washers and 1 Nylon Cage)

A	B	C	Balls		Basic Bearing Number	SAO Series Stainless Steel	
			Number	Diameter		Washer	Nylon Cage
3/16	7/16	3/16	9	1/16	SAO1	06760	56813
1/4	9/16	7/32	10	3/32	SAO5	06762	56814
5/16	5/8	1/4	10	3/32	SAO8	06764	56815
3/8	11/16	9/32	12	3/32	SAO10	06766	56816
1/2	7/8	3/8	10	1/8	SAO16	06770	56818

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