

HELICAL INLINE GEARBOX (HXI)

FULL MODULARITY, STOCK INVENTORY

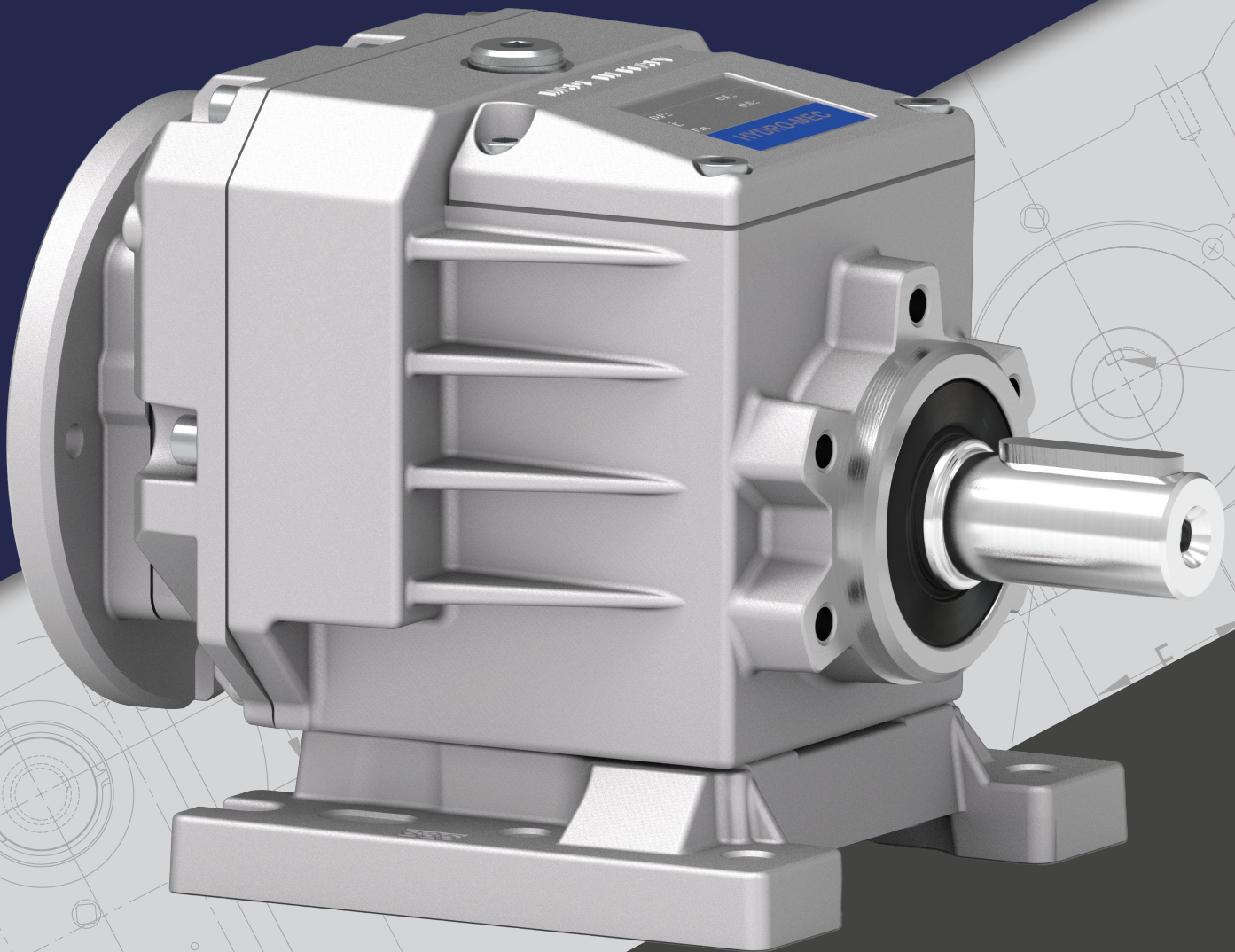


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HELICAL INLINE GEARBOX (HXI)

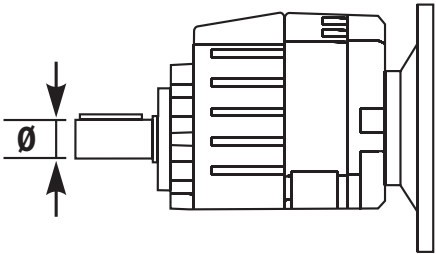
Winsmith Helical Inline Gearbox (HXI) has been designed with full modularity. It includes a NEMA C flange to optimize installation space while enhancing performance. Winsmith HXI Units are built to order with available stock inventory including available accessories which allow for quick shipment within 1-3 days from our Asheville, NC gearing facility.

- Precision ground and hardened gears to provide optimal durability and efficiency, ensuring long operating life, low noise and minimal energy losses.
- Single-piece aluminum housing design provides excellent corrosion protection and leak free operation. While it does not require a secondary finish, it easily accommodates paint for aesthetic purposes.
- Precision machining guarantees the proper alignment of bearings and gears, which is crucial for optimal operation and reliability.
- Featuring a removable inspection cover that facilitates regular gear inspections during maintenance, ensuring optimal performance over time.
- Fully modular design with input motor C Flange and input shaft for NEMA standard motors.
- Shipped with food grade synthetic oil (Mobil SHC Cibus 320).
- Standard options and accessories to accommodate a variety of mounting configurations.

MODULAR BASE

SIZE	TORQUE (lbf-in)	Ø BORE SIZE OUTPUT SHAFT (in)
412A	1460	0.750 or 1.000*
413A	1550	0.750 or 1.000*
512A	3091	1.250
513A	3091	1.250
612A	4550	1.375
613A	4550	1.375

*Ask for additional available diameter shafts.



AVAILABLE ACCESSORIES



OUTPUT FLANGE



FEET

See full list of product Warnings and Cautions on page 24.

HXI FEATURES

Motor Flange NEMA

- Coupled motor input for fret free operation and ease of replacement

Hardened and Ground Gears

- Optimal durability, low noise and minimal energy loss

Aluminum Alloy Housing

- Combines light weight with high tensile strength
- Vacuum impregnated (MIL-STD 276) for protection and sealing
- No secondary finish required but readily accepts paint
- Precision machined for alignment of bearings and gearing

Lubrication

- Lubricated for life with synthetic oil with operating temperature range of 5° to 266°F

Removable Inspection Cover

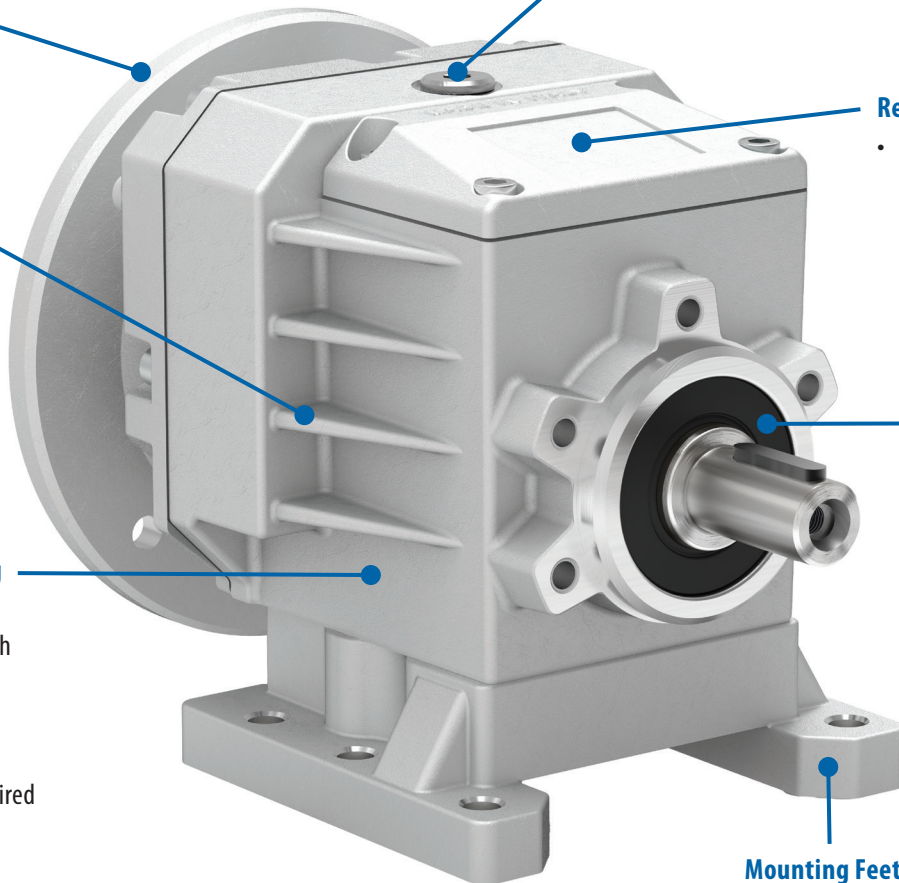
- Allows for periodic inspection of gearing during routine maintenance

Oil Seals

- Double oil seals optional

Mounting Feet

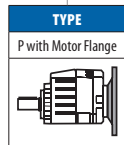
- Interchangeable with common industry standards



NOMENCLATURE

P412A-N03QN-WB3ST

P	412A	-N	03	Q	N	-W	B3	ST
---	------	----	----	---	---	----	----	----



SIZE	TORQUE (LB-IN)
412A	1460
413A	1549
512A	3091
513A	3091
612A	4550
613A	4550

MOUNTING
-N = without Flange/Feet
-F = Output Flange Mounted
See table below

OUTPUT SHAFT DIAMETER (IN)
412A, 413A
Q = ø0.750
Q = ø1.000
512A, 513A
T = ø1.250
612A, 613A
Z = ø1.3750

OUTPUT FLANGE (IN)
N = Without Flange
412A, 413A
2 = ø5.51
U = ø6.50
512A, 513A, 612A, 613A
3 = ø6.30
4 = ø7.87
5 = ø9.84

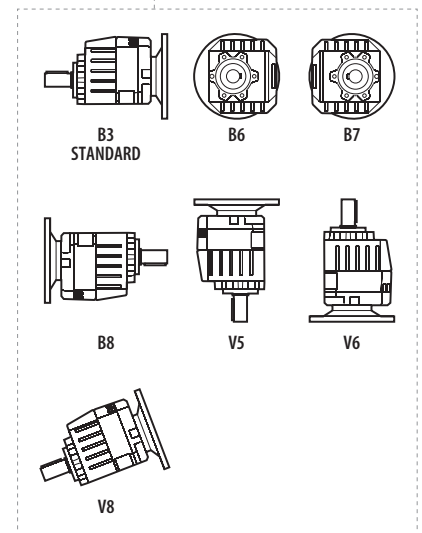
MOTOR FRAME SIZE (IN)
NEMA
-W = 56C
-X = 143/5TC
-Y = 182/4TC

MOUNTING POSITIONS
B3 = Standard
B6 = Mount Left
B7 = Mount Right
B8 = Ceiling Mount
V5 = Input Up
V6 = Input Down
V8 = TBD

INPUT BORE
ST = Standard

Without Flange / Feet -N	Feet Code	Market Reference
	B2	Bonfiglioli C20, Bonfiglioli Mas 20
	B3	Bonfiglioli C31
	S1	SEW R17, SITI HL25, NORD B. SK272/3
	S2	SEW R27/R37, SITI HL25, NORD B.SK272/3-SK372/3, STM 50
	S4	SEW R47/R57, SITI HL30, NORD B. SK472/3-SK572/3, STM 60, MOTOVARIO 042/3-052/3

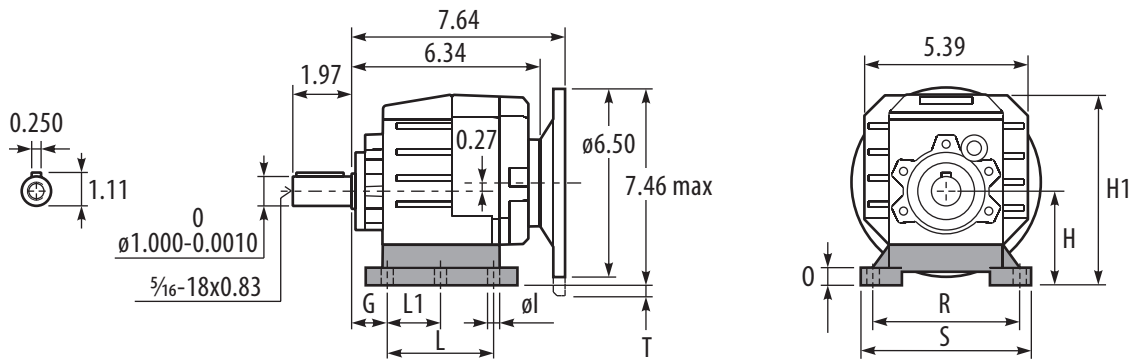
RATIO							RATIO							RATIO						
HXI	SIZE						HXI	SIZE						HXI	SIZE					
	412A	413A	512A	513A	612A	613A		412A	413A	512A	513A	612A	613A		412A	413A	512A	513A	612A	613A
CODE	RATIO						CODE	RATIO						CODE	RATIO					
1	3.52		3.61	39.79	3.61		11	15.37	86.66	16.62	136.62	16.62	76.69	19	38.37	216.31	60.9	480.16	60.9	145.68
2	4.37	38.4	4.23	47.22	4.23		26	16.33						20	46.87					157.4
3	5.56	43.69	5.01	54.73	5.01		23	18.04						21	50.67					165.29
4	6.36	50.64	6.07	66.22	6.07		12		96.85	20.1	165.29	20.1	82.3	22	61.89					185.29
5	7.33	53.36	6.81	76.69	6.81	39.79	20			24.61		24.61		23						205.43
6	7.89	61.21		83.59		47.22	13		102.89		180.4		83.59	24						224.18
7		61.85	7.96	92.78	7.96	54.73	14	21.54		29.41	218.26	29.41	92.78	25						241.82
8	10.06	70.95	9.45	104.68	9.45	57.13	17		126.4					26						278.62
9	11.66	73.43	11.43	117.22	11.43	66.22	15	22.29	135.69	35.58	241.82	35.58	104.68	27						292.57
10	13.26	74.77		126.65	14.00	71.01	16	26.31	165.74	40.5	292.57	40.5	117.22	28						363.63
21			14.00				17	29.4		44.23	319.32	44.23	126.65							
25	13.68						18	35.91	177.09	49	386.33	49	135.74							



SERVICE FACTOR (S.F.) ASSOCIATED WITH FREQUENCY OF START AND HOURS OF OPERATION

TYPE OF LOAD AND STARTS PER HOUR			HOURS OF OPERATION PER DAY		
			3	10	24
Continuous or intermittent application with starts / hour	≤ 10	Uniform	0.80	1.00	1.25
		Moderate	1.00	1.25	1.50
		Heavy	1.25	1.50	1.75
Intermittent application with starts / hour	> 10	Uniform	1.00	1.25	1.50
		Moderate	1.25	1.50	1.75
		Heavy	1.50	1.75	2.15

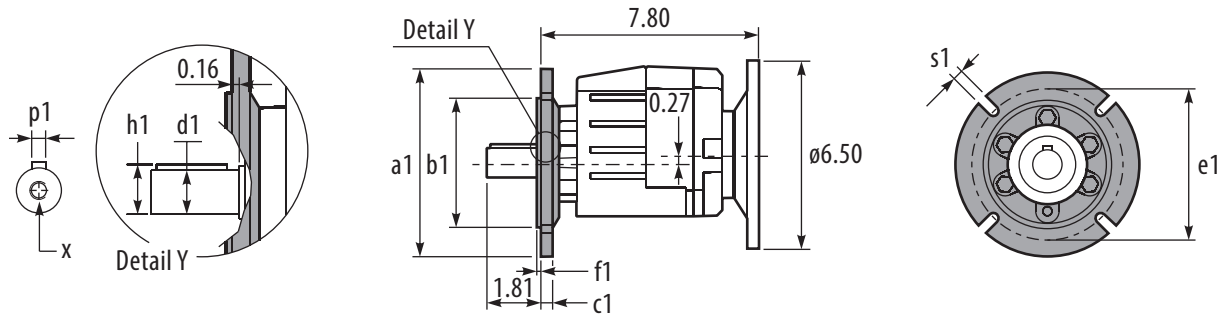
Basic Gearbox with Feet (B2, S1, S2)



FEET CODE	G	H	R	L	L1	S	H1	0	ϕl	T*	KIT CODE
B2	0.71	3.94	5.12	4.23	2.36	6.1	7.18	0.67	0.43		KC409025
S1	0.71	2.95	4.33	4.33	1.97	5.71	6.12	0.59	0.35	0.03	KC409022
S2	0.98	3.54	4.33	5.12		5.71	6.79	0.79	0.35		KC409024

*Only with Motor Flange

F Output Flange



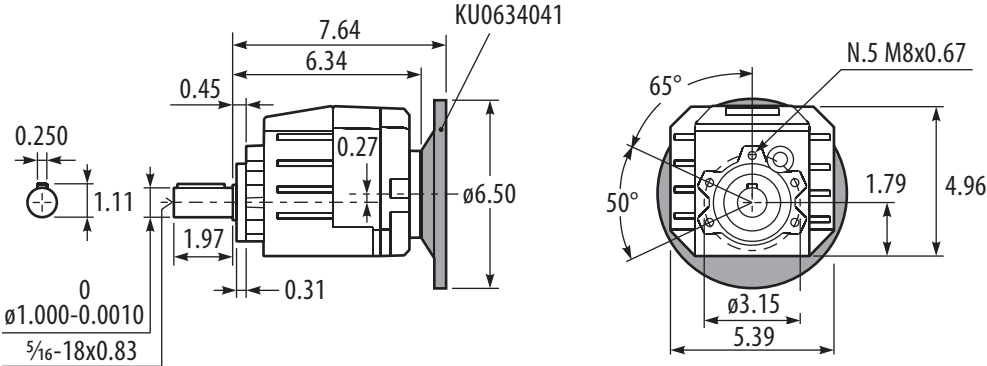
AVAILABLE OUTPUT SHAFT

	SHAFT d1	p1	h1	x
STANDARD	$\phi 1.000 \times 1.97$	0.25	1.11	$\frac{5}{16}-18 \times 0.83$
ON REQUEST	$\phi 0.075 \times 1.57$	0.118	0.83	$\frac{1}{8}-20 \times 0.71$

AVAILABLE OUTPUT FLANGES

$\phi a1$	$\phi b1$		c1	$\phi e1$	f1	s1	KIT CODE	TYPE
6.50	4.50	-0.0017	0.39	5.87	0.13	$\frac{3}{8}-16$	KU5119012	NEMA
		-0.0033						
6.30	4.33	-0.0014	0.39	5.12	0.14	0.35	KC409012	Metric
		-0.0028						
5.51	3.74	-0.0014	0.39	4.53	0.12	0.35	KC409011	Metric
		-0.0028						

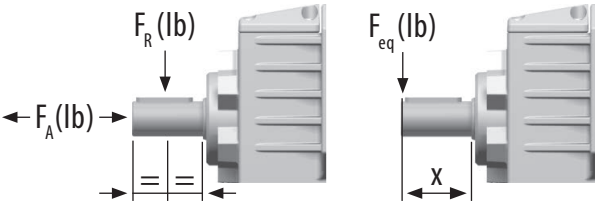
N Basic Gearbox (No Feet)



NEMA FLANGES	FLANGE KIT CODE
56C	KU0634041
143/145TC	KU0634041

RADIAL AND AXIAL LOADS

Output Shaft



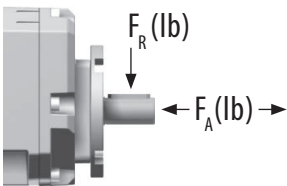
$$F_{eq} = F_R \left(\frac{1.81}{X + 0.83} \right)$$

RPM	F_A (lb)	F_R (lb)
300	70	348
250	74	371
200	81	404

RPM	F_A (lb)	F_R (lb)
140	91	456
120	101	503
85	108	539

RPM	F_A (lb)	F_R (lb)
70	121	607
40	135	674
15	135	674

Input Shaft



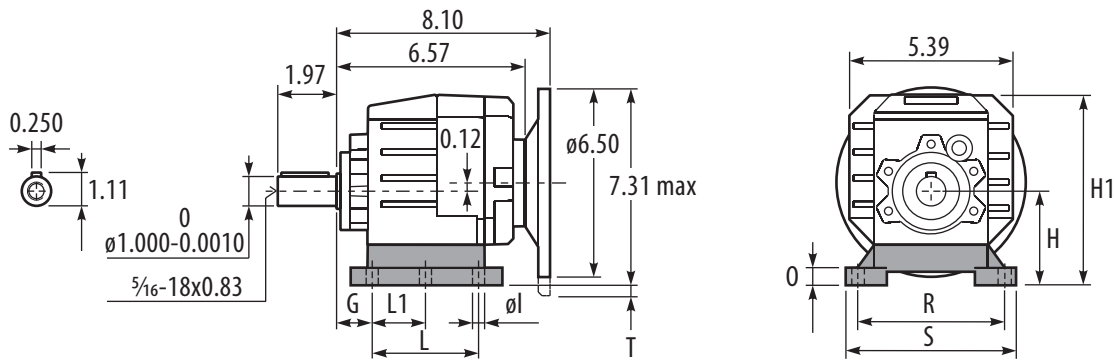
RPM	F_A (lb)	F_R (lb)
1750	54	270
1140	63	315

LUBRICATION

Mobil SHC Cibus 320

STANDARD SUPPLIED	FOR THESE MOUNTING POSITIONS SPECIFY IN THE ORDER OR ADD OIL (oz)					
B3	B6	B7	B8	V5	V6	V8
9	12	14	16	14	18	Contact Winsmith

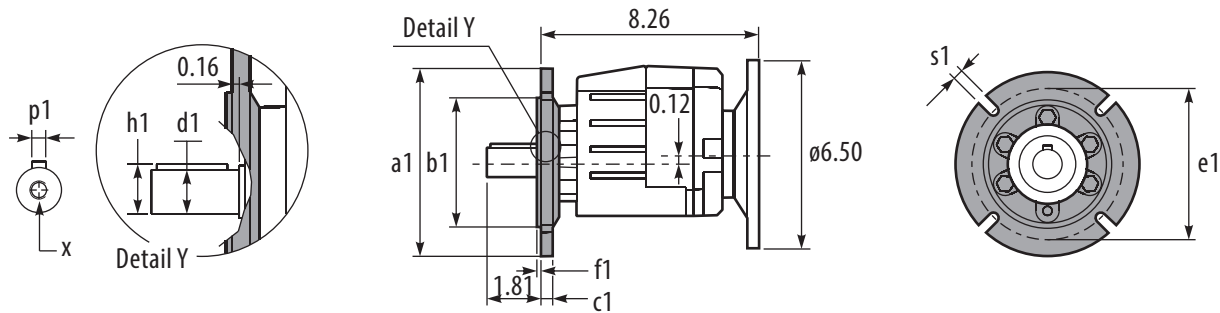
Basic Gearbox with Feet (B2, S1, S2)



FEET CODE	G	H	H1	R	L	L1	S	0	ØI	T*	KIT CODE
B2	0.71	3.94	7.19	5.12	4.23	2.36	6.1	0.67	0.43		KC409025
S1	0.71	2.95	6.12	4.33	4.33	1.97	5.71	0.59	0.35	0.03	KC409022
S2	0.98	3.54	6.79	4.33	5.12		5.71	0.79	0.35		KC409024

*Only with Motor Flange

F Output Flange



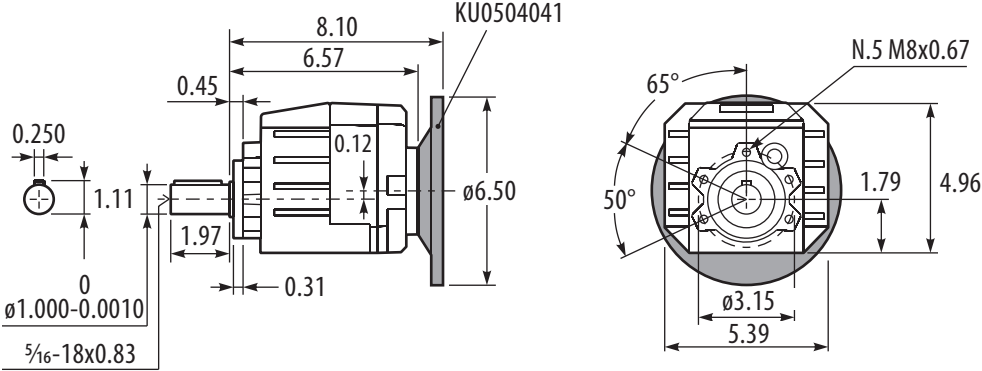
AVAILABLE OUTPUT SHAFT

	SHAFT d1	p1	h1	x
STANDARD	Ø1.000 x 1.97	0.25	1.11	5/16-18 x 0.83
ON REQUEST	Ø0.075x1.57	0.118	0.83	1/3-20 x 0.71

AVAILABLE OUTPUT FLANGES

øa1	øb1		c1	øe1	f1	s1	KIT CODE	TYPE
6.50	4.50	-0.0017	0.39	5.87	0.13	⅜-16	KU5119012	NEMA
		-0.0033						
6.30	4.33	-0.0014	0.39	5.12	0.14	0.35	KC409012	Metric
		-0.0028						
5.51	3.74	-0.0014	0.39	4.53	0.12	0.35	KC409011	Metric
		-0.0028						

N Basic Gearbox (No Feet)



NEMA FLANGES	FLANGE KIT CODE	SHAFT KIT CODE
56C	KU0504041	KC355035U

RADIAL AND AXIAL LOADS

Output Shaft



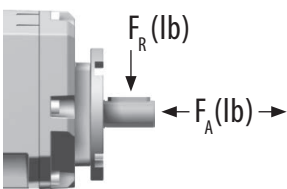
$$F_{eq} = F_R \left(\frac{1.81}{X + 0.83} \right)$$

RPM	F_A (lb)	F_R (lb)
300	70	348
250	74	371
200	81	404

RPM	F_A (lb)	F_R (lb)
140	91	456
120	101	503
85	108	539

RPM	F_A (lb)	F_R (lb)
70	121	607
40	135	674
15	135	674

Input Shaft



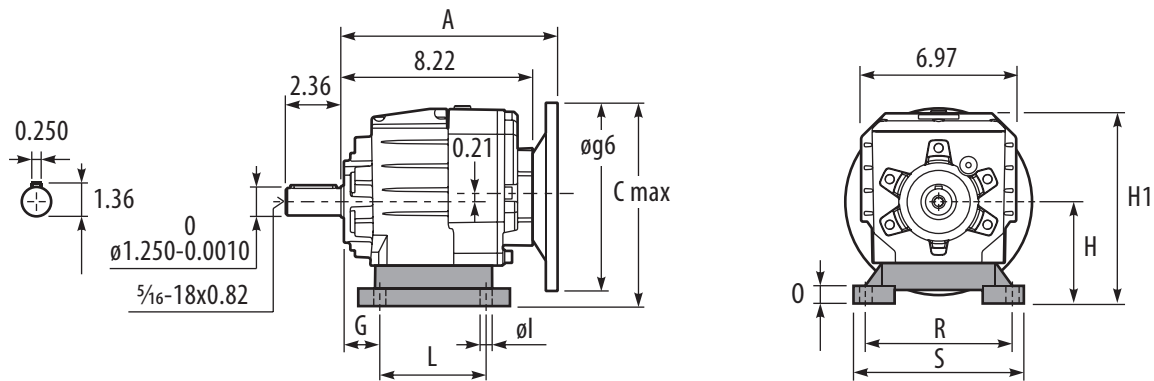
RPM	F_A (lb)	F_R (lb)
1750	32	157
1140	36	180

LUBRICATION

Mobil SHC Cibus 320

STANDARD SUPPLIED	FOR THESE MOUNTING POSITIONS SPECIFY IN THE ORDER OR ADD OIL (oz)					
B3	B6	B7	B8	V5	V6	V8
11	12	16	16	16	19	Contact Winsmith

Basic Gearbox with Feet (B3, S4)

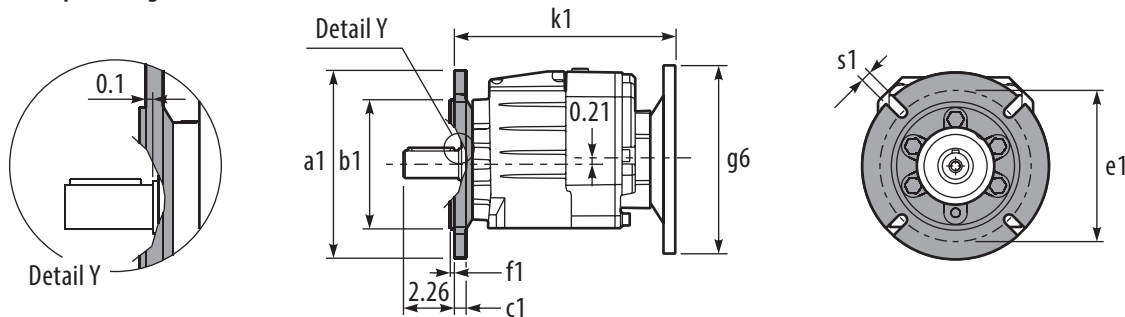


FEET CODE	G	H	R	L	S	H1	O	ϕl	KIT CODE
B3	0.71	4.33	6.3	5.12	7.48	8.31	0.79	0.43	KC509024
S4	1.18	4.53	5.31	6.5	6.69	8.5	0.98	0.53	KC509022

NEMA FLANGES	C MAX	$\phi g6$	KIT CODE
56C-143/145TC	8.58	6.5	KU0854041
182/184TC	9.77	8.88	KU0854042

For dimension A, reference basic gearbox drawing.

F Output Flange

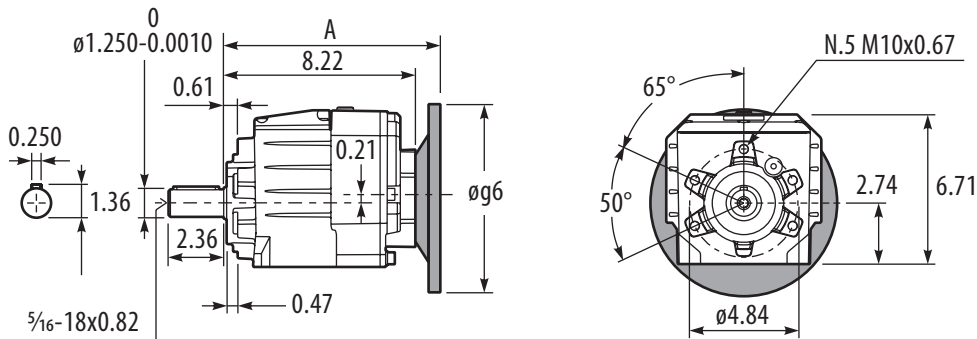


AVAILABLE OUTPUT FLANGES

$\phi a1$	$\phi b1$		c1	$\phi e1$	f1	s1	KIT CODE	TYPE
7.87	5.118	-0.0017	0.51	6.5	0.14	0.43	KC509012	Metric
		-0.0033						
9.84	7.087	-0.0017	0.61	8.46	0.16	0.55	KC509013	
		-0.0033						

NEMA FLANGES	k1	$\phi g6$	KIT CODE
56C-143/5TC	9.31	6.5	KU0854041
182/4TC	10	8.88	KU0854042

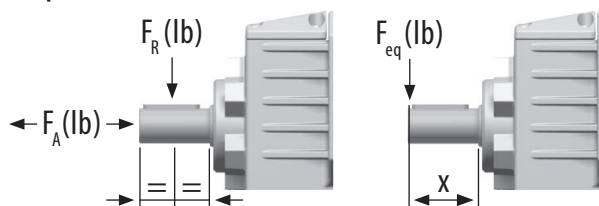
N Basic Gearbox (No Feet)



NEMA FLANGES	A	ø6	FLANGE KIT CODE	SHAFT KIT CODE
56C	9.21	6.5	KU0854041	KC505035U
143/145TC	9.21	6.5	KU0854041	KC505036U
182/184TC	9.91	8.88	KU0854042	KC505037U

RADIAL AND AXIAL LOADS

Output Shaft



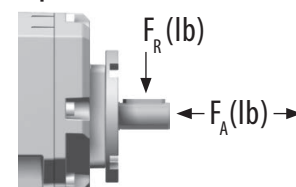
$$F_{eq} = F_R \left(\frac{2.13}{X + 0.94} \right)$$

RPM	F _A (lb)	F _R (lb)
300	103	517
250	108	539
200	117	584

RPM	F _A (lb)	F _R (lb)
140	135	674
120	139	697
85	157	786

RPM	F _A (lb)	F _R (lb)
70	175	876
40	202	1011
15	225	1123

Input Shaft



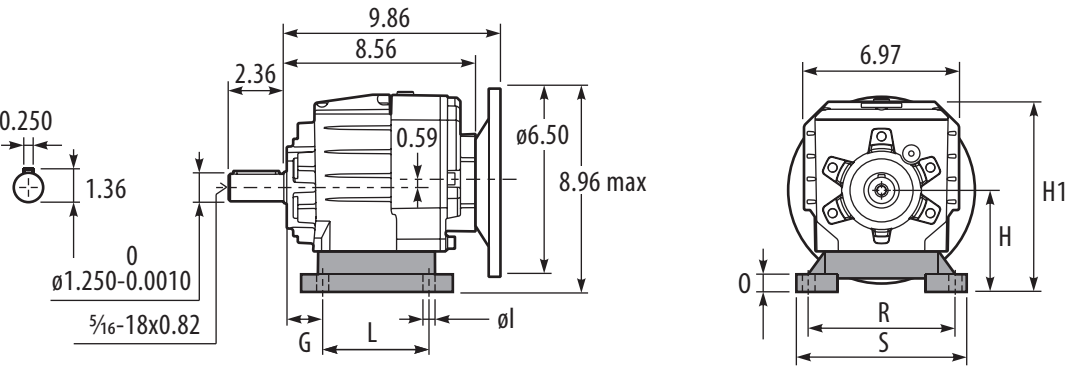
RPM	F _A (lb)	F _R (lb)
1750	101	506
1140	112	562

LUBRICATION

Mobil SHC Cibus 320

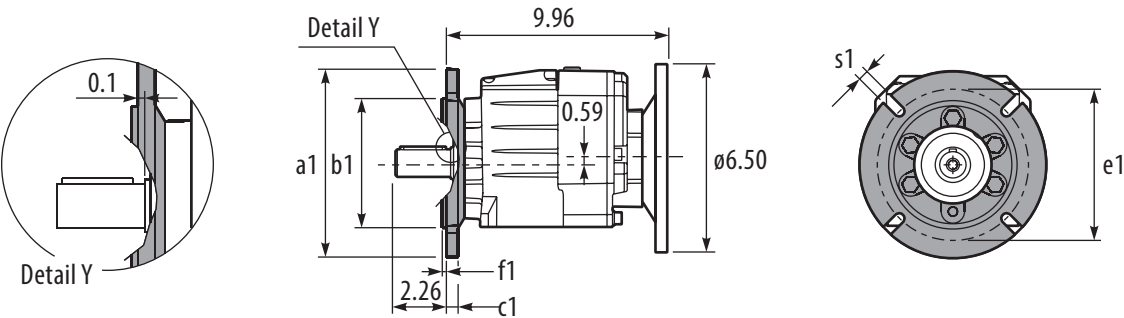
STANDARD SUPPLIED	FOR THESE MOUNTING POSITIONS SPECIFY IN THE ORDER OR ADD OIL (oz)					
B3	B6	B7	B8	V5	V6	V8
25	28	40	42	40	44	Contact Winsmith

Basic Gearbox with Feet (B3, S4)



FEET CODE	G	H	R	L	S	H1	0	ϕl	KIT CODE
B3	0.71	4.33	6.3	5.12	7.48	8.31	0.79	0.43	KC509024
S4	1.18	4.53	5.31	6.5	6.69	8.5	0.98	0.55	KC509022

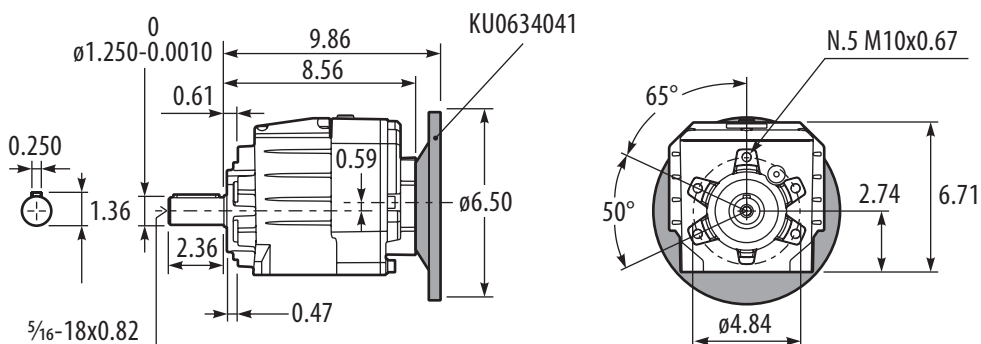
F Output Flange



AVAILABLE OUTPUT FLANGES

øa1	øb1		c1	øe1	f1	s1	KIT CODE	TYPE
7.87	5.118	-0.0017	0.51	6.5	0.18	0.43	KC509012	Metric
		-0.0033						
9.84	7.087	-0.0017	0.61	8.46	0.16	0.55	KC509013	
		-0.0033						

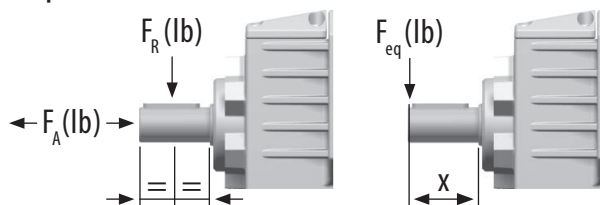
N Basic Gearbox (No Feet)



NEMA FLANGES	FLANGE KIT CODE	SHAFT KIT CODE
56C	KU0634041	KC405035U
143/145TC	KU0634041	KC405036U

RADIAL AND AXIAL LOADS

Output Shaft



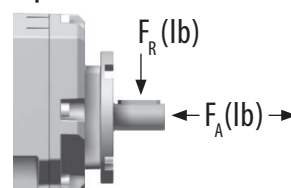
$$F_{eq} = F_R \left(\frac{2.13}{X+0.94} \right)$$

RPM	F _A (lb)	F _R (lb)
300	103	517
250	108	539
200	117	584

RPM	F _A (lb)	F _R (lb)
140	135	674
120	139	697
85	157	786

RPM	F _A (lb)	F _R (lb)
70	175	876
40	202	1011
15	225	1123

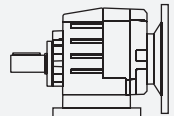
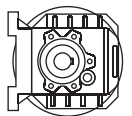
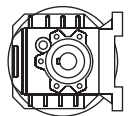
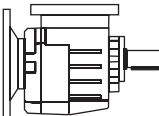
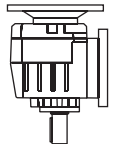
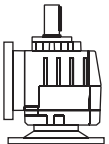
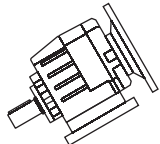
Input Shaft



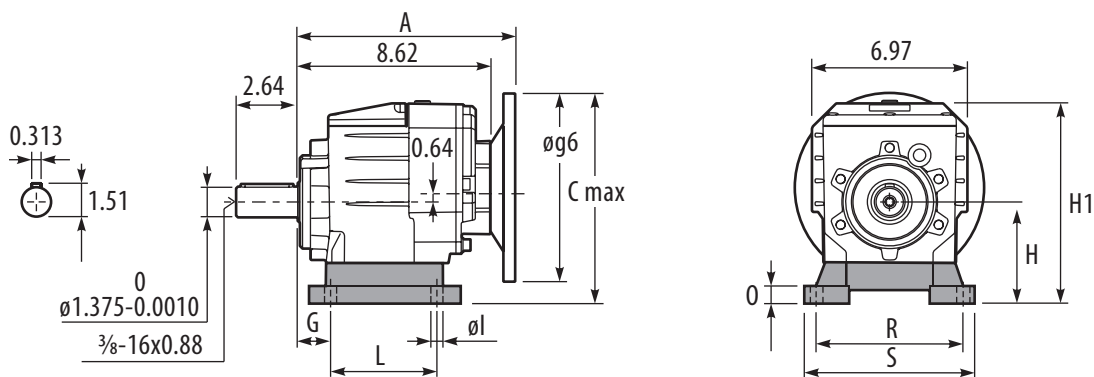
RPM	F _A (lb)	F _R (lb)
1750	90	449
1140	99	495

LUBRICATION

Mobil SHC Cibus 320

STANDARD SUPPLIED	FOR THESE MOUNTING POSITIONS SPECIFY IN THE ORDER OR ADD OIL (oz)					
B3	B6	B7	B8	V5	V6	V8
35	32	44	40	51	49	Contact Winsmith
						

Basic Gearbox with Feet (S4)

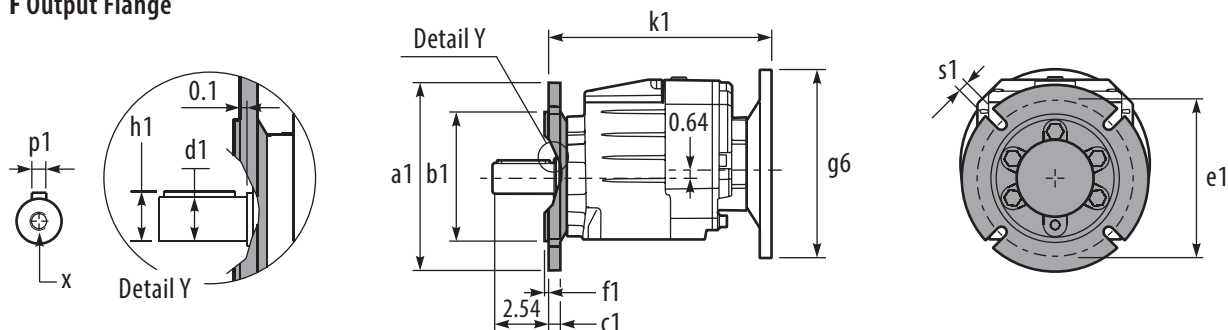


FEET CODE	G	H	R	L	S	H1	O	ØI	KIT CODE
S4	1.18	4.53	5.31	5.31	6.69	8.94	0.98	0.55	KC509022

NEMA FLANGES	C MAX	øg6	KIT CODE
56C-143/5TC	9.4	6.5	KU0854041
182/4TC	10.59	8.88	KU0854042

For dimension A, reference basic gearbox drawing.

F Output Flange



AVAILABLE OUTPUT SHAFT

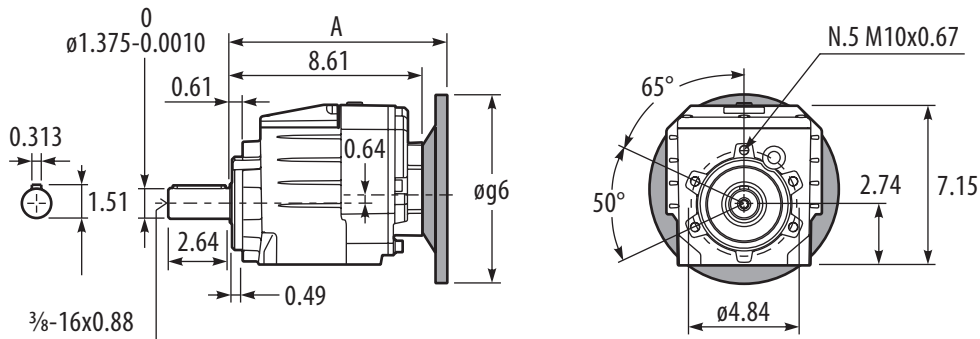
	SHAFT d1	p1	h1	x
STANDARD	ø1.375 x 2.64	0.313	1.51	⅜-16 x 0.88

AVAILABLE OUTPUT FLANGES

øa1	øb1		c1	øe1	f1	s1	KIT CODE	TYPE
7.87	5.118	-0.0017	0.51	6.5	0.14	0.43	KC509012	Metric
		-0.0033						
9.84	7.087	-0.0017	0.61	8.46	0.16	0.55	KC509013	
		-0.0033						

NEMA FLANGES	k1	øg6	KIT CODE
56C-143/145TC	9.7	6.5	KU0854041
182/184TC	10.41	8.46	KU0854042

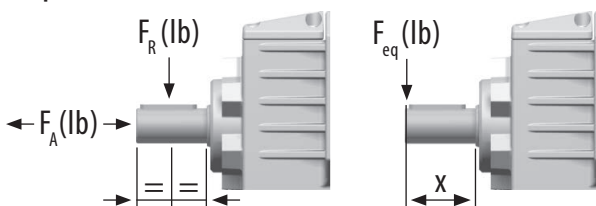
N Basic Gearbox (No Feet)



NEMA FLANGES	A	øg6	FLANGE KIT CODE	SHAFT KIT CODE
56C	9.6	6.5	KU0854041	KC505035U
143/5TC	9.6	6.5	KU0854041	KC505036U
182/4TC	10.31	8.88	KU0854042	KC505037U

RADIAL AND AXIAL LOADS

Output Shaft



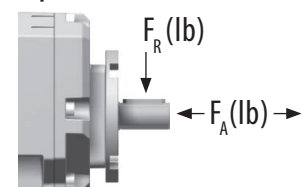
$$F_{eq} = F_R \left(\frac{2.38}{X+1.01} \right)$$

RPM	F _A (lb)	F _R (lb)
300	126	629
250	135	674
200	144	719

RPM	F _A (lb)	F _R (lb)
140	166	831
120	171	854
85	189	899

RPM	F _A (lb)	F _R (lb)
70	200	944
40	261	1303
15	292	1460

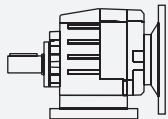
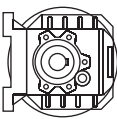
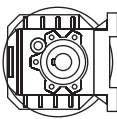
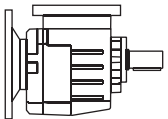
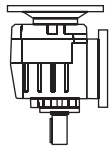
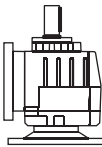
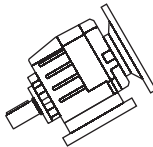
Input Shaft



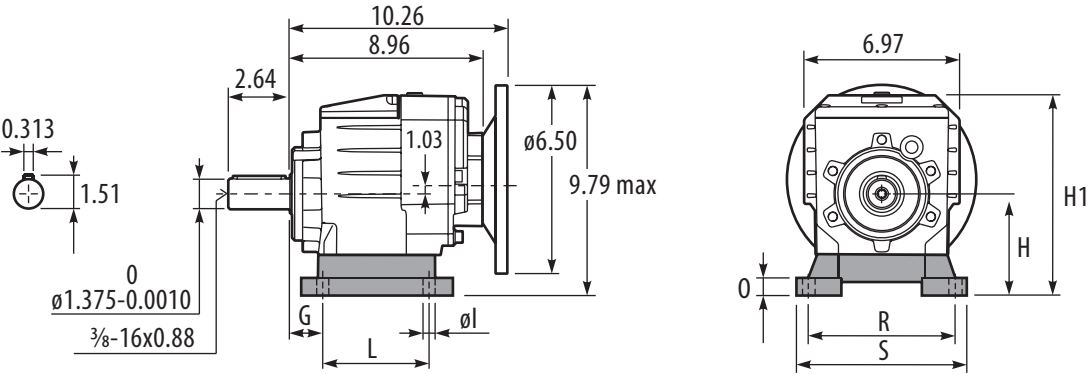
RPM	F_A (lb)	F_R (lb)
1750	101	506
1140	112	562

LUBRICATION

Mobil SHC Cibus 320

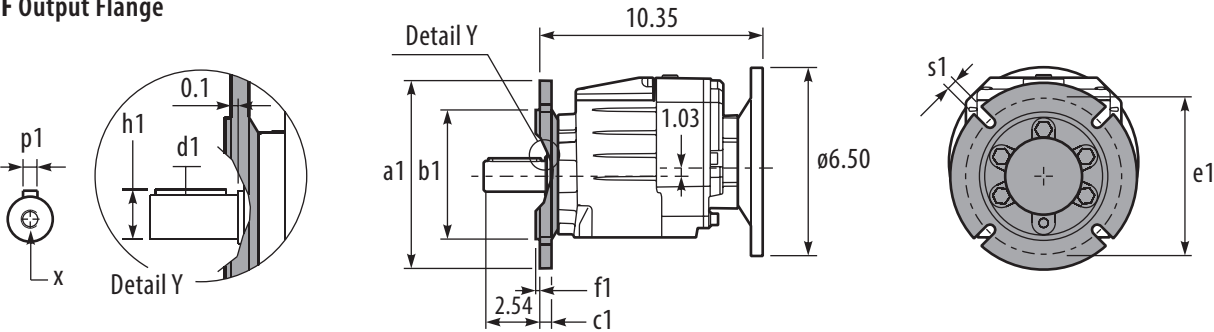
STANDARD SUPPLIED	FOR THESE MOUNTING POSITIONS SPECIFY IN THE ORDER OR ADD OIL (oz)					
B3	B6	B7	B8	V5	V6	V8
28	35	42	42	46	48	Contact Winsmith
						

Basic Gearbox with Feet (S4)



FEET CODE	G	H	R	L	S	H1	0	$\varnothing l$	KIT CODE
S4	1.18	4.53	5.31	6.5	6.69	8.94	0.98	0.55	KC509022

F Output Flange



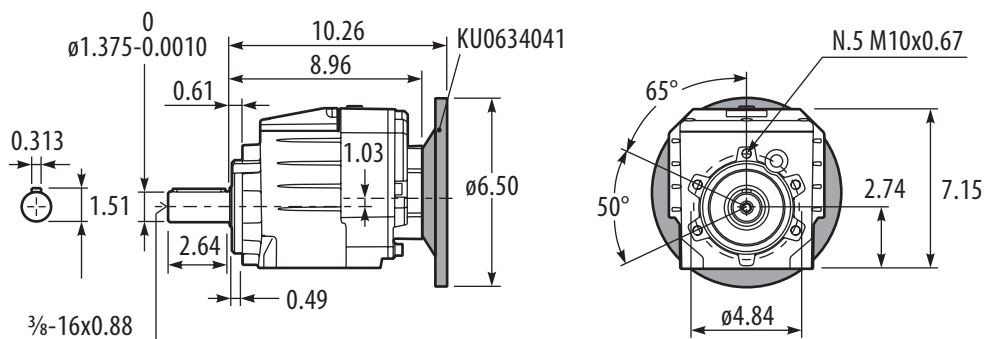
AVAILABLE OUTPUT SHAFT

	SHAFT d1	p1	h1	x
STANDARD	$\varnothing 1.375 \times 2.64$	0.313	1.51	$\frac{3}{8}-16 \times 0.88$

AVAILABLE OUTPUT FLANGES

øa1	øb1		c1	øe1	f1	s1	KIT CODE	TYPE
7.87	5.118	-0.0017	0.51	6.5	0.14	0.43	KC509012	Metric
		-0.0033						
9.84	7.087	-0.0017	0.61	8.46	0.16	0.55	KC509013	
		-0.0033						

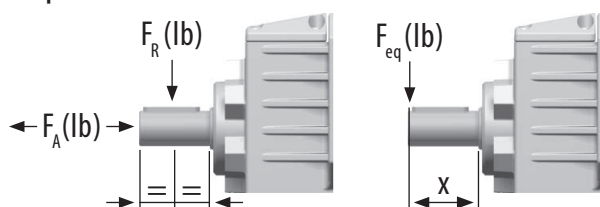
N Basic Gearbox (No Feet)



NEMA FLANGES	FLANGE KIT CODE	SHAFT KIT CODE
56C	KU0634041	KC405035U
143/145TC	KU0634041	KC405036U

RADIAL AND AXIAL LOADS

Output Shaft



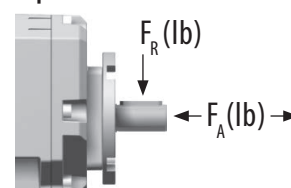
$$F_{eq} = F_R \left(\frac{2.38}{X+1.01} \right)$$

RPM	F _A (lb)	F _R (lb)
300	126	629
250	135	674
200	144	719

RPM	F _A (lb)	F _R (lb)
140	166	831
120	171	854
85	189	899

RPM	F _A (lb)	F _R (lb)
70	200	944
40	261	1303
15	292	1460

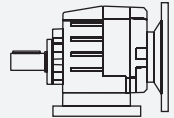
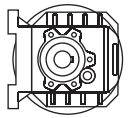
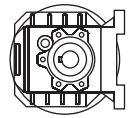
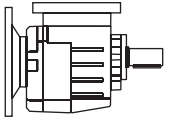
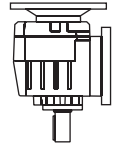
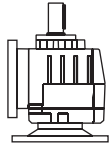
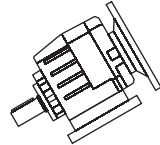
Input Shaft



RPM	F _A (lb)	F _R (lb)
1750	90	449
1140	99	495

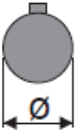
LUBRICATION

Mobil SHC Cibus 320

STANDARD SUPPLIED	FOR THESE MOUNTING POSITIONS SPECIFY IN THE ORDER OR ADD OIL (oz)					
B3	B6	B7	B8	V5	V6	V8
37	39	44	44	48	53	Contact Winsmith
						

RATINGS

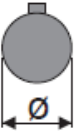
412A RATINGS INPUT SPEED = 1750 RPM

OUTPUT SPEED	RATIO CODE	RATIO	MOTOR POWER	TRANSMITTED OR OUTPUT TORQUE	SERVICE FACTOR	NOMINAL POWER	NOMINAL TORQUE	AVAILABLE NEMA MOTOR FLANGES		OUTPUT SHAFT
RPM		i	HP	(lbf-in)	S.F.	HP	(lbf-in)	-W 56C	-X 143/5 TC	Inches
498	01	3.52	2.00	243	2.9	5.82	708			 Standard ø1.00 On Request ø0.750
401	02	4.37	2.00	302	2.6	5.28	797			
315	03	5.56	2.00	385	2.3	4.60	885			
275	04	6.36	2.00	440	2.1	4.23	929			
239	05	7.33	2.00	507	2.1	4.19	1062			
222	06	7.89	2.00	546	2.1	4.22	1151			
174	08	10.06	2.00	695	2.1	4.20	1460			
150	09	11.66	2.00	806	1.8	3.62	1460			
132	10	13.26	2.00	917	1.6	3.18	1460			
128	25	13.68	2.00	946	1.5	3.09	1460			
114	11	15.37	2.00	1063	1.4	2.75	1460			
107	26	16.33	2.00	1129	1.3	2.59	1460			
97	23	18.04	2.00	1248	1.2	2.34	1460			
81	14	21.54	1.50	1117	1.3	1.96	1460			
79	15	22.29	1.50	1156	1.3	1.89	1460			
67	16	26.31	1.00	910	1.5	1.51	1372			
60	17	29.4	1.00	1017	1.4	1.44	1460			
48.7	18	35.91	0.75	931	1.5	1.10	1372			
45.6	19	38.37	0.75	995	1.5	1.10	1460			
37.3	20	46.87	0.75	1215	1.1	0.85	1372			
34.5	21	50.67	0.50	876	1.4	0.69	1213			
28.3	22	61.89	0.50	1070	1.3	0.64	1372			

The dynamic efficiency is 0.96 for all ratios

RATINGS

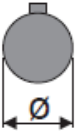
413A RATINGS INPUT SPEED = 1750 RPM

OUTPUT SPEED	RATIO CODE	RATIO	MOTOR POWER	TRANSMITTED OR OUTPUT TORQUE	SERVICE FACTOR	NOMINAL POWER	NOMINAL TORQUE	AVAILABLE NEMA MOTOR FLANGES		OUTPUT SHAFT
RPM		i	HP	(lbf-in)	S.F.	HP	(lbf-in)	-W 56C	-	Inches
45.6	02	38.4	0.75	975	1.5	1.12	1460			 Standard ø1.00 On Request ø0.750
40.1	03	43.69	0.75	1109	1.3	0.99	1460			
34.6	04	50.64	0.75	1286	1.1	0.85	1460			
32.8	05	53.36	0.50	903	1.6	0.78	1416			
28.6	06	61.21	0.50	1036	1.5	0.73	1505			
28.3	07	61.85	0.50	1047	1.4	0.68	1416			
24.7	08	70.95	0.50	1201	1.3	0.63	1505			
23.8	09	73.43	0.50	1243	1.2	0.62	1549			
23.4	10	74.77	0.50	1266	1.1	0.56	1416			
20.2	11	86.66	0.33	968	1.5	0.48	1416			
18.1	12	96.85	0.33	1082	1.4	0.46	1505			
17.0	13	102.89	0.33	1150	1.3	0.44	1549			
13.8	17	126.4	0.33	1412	1.1	0.35	1505			
12.9	15	135.69	0.25	1149	1.3	0.33	1505			
10.6	16	165.74	0.25	1403	1	0.25	1416			
9.9	18	177.09	0.25	1499	1	0.25	1505			
8.1	19	216.31	0.25	1831	0.8	0.19	1416			

The dynamic efficiency is 0.94 for all ratios

RATINGS

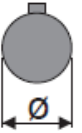
512A RATINGS INPUT SPEED = 1750 RPM

OUTPUT SPEED	RATIO CODE	RATIO	MOTOR POWER	TRANSMITTED OR OUTPUT TORQUE	SERVICE FACTOR	NOMINAL POWER	NOMINAL TORQUE	AVAILABLE NEMA MOTOR FLANGES		OUTPUT SHAFT
RPM		i	HP	(lbf-in)	S.F.	HP	(lbf-in)	-X 143/5TC	-Y 182/4TC	Inches
485.0	01	3.61	5.00	624	2.1	10.66	1331			 Standard ø1.250
414.0	02	4.23	5.00	730	2.1	10.58	1545			
349.0	03	5.01	5.00	867	2.1	10.40	1803			
288.0	04	6.07	5.00	1049	2.1	10.44	2189			
257.0	05	6.81	5.00	1177	2.2	10.95	2576			
220.0	07	7.96	5.00	1377	2.1	10.45	2876			
185.0	08	9.45	5.00	1634	1.9	9.46	3091			
153.0	09	11.43	5.00	1977	1.4	7.17	2833			
125.0	21	14	5.00	2420	1.3	6.38	3091			
105.0	11	16.62	5.00	2873	1.1	5.38	3091			
87.0	12	20.1	3.00	2085	1.4	4.08	2833			
71.0	20	24.61	3.00	2552	1.1	3.33	2833			
60.0	14	29.41	3.00	3051	1.0	3.04	3091			
49.2	15	35.58	2.00	2461	1.2	2.30	2833			
43.2	16	40.5	1.50	2101	1.3	1.96	2747			
39.6	17	44.23	1.50	2294	1.0	1.43	2189			
35.7	18	49	1.50	2541	1.1	1.67	2833			
28.7	19	60.9	1.00	2106	1.0	1.04	2189			

The dynamic efficiency is 0.96 for all ratios

RATINGS

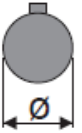
513A RATINGS INPUT SPEED = 1750 RPM

OUTPUT SPEED	RATIO CODE	RATIO	MOTOR POWER	TRANSMITTED OR OUTPUT TORQUE	SERVICE FACTOR	NOMINAL POWER	NOMINAL TORQUE	AVAILABLE NEMA MOTOR FLANGES		OUTPUT SHAFT
RPM		i	HP	(lbf-in)	S.F.	HP	(lbf-in)	-W 56C	-X 143/5TC	Inches
44.0	01	39.79	1.50	2021	1.5	2.29	3091			 Standard ø1.250
37.1	02	47.22	1.50	2398	1.3	1.93	3091			
32.0	03	54.73	1.50	2780	1.1	1.67	3091			
26.4	04	66.22	1.00	2242	1.3	1.26	2833			
22.8	05	76.69	1.00	2596	1.2	1.19	3091			
20.9	06	83.59	1.00	2830	1.1	1.09	3091			
18.9	07	92.78	0.75	2356	1.2	0.90	2833			
16.7	08	104.68	0.75	2658	1.2	0.87	3091			
14.9	09	117.22	0.75	2976	1.0	0.71	2833			
13.8	10	126.65	0.50	2144	1.3	0.66	2833			
12.8	11	136.62	0.50	2313	1.3	0.67	3091			
10.6	12	165.29	0.50	2798	1.0	0.51	2833			
9.7	13	180.4	0.50	3054	1.0	0.51	3091			
8.0	14	218.26	0.33	2438	1.2	0.38	2833			
7.2	15	241.82	0.33	2702	1.1	0.38	3091			
6.0	16	292.57	0.25	2476	1.1	0.29	2833			
5.5	17	319.32	0.25	2703	1.1	0.29	3091			
4.5	18	386.33	0.25	3270	0.9	0.22	2833			
3.6	19	480.16	0.25	4064	0.5	0.13	2189			

The dynamic efficiency is 0.94 for all ratios

RATINGS

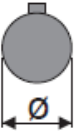
612A RATINGS INPUT SPEED = 1750 RPM

OUTPUT SPEED	RATIO CODE	RATIO	MOTOR POWER	TRANSMITTED OR OUTPUT TORQUE	SERVICE FACTOR	NOMINAL POWER	NOMINAL TORQUE	AVAILABLE NEMA MOTOR FLANGES			OUTPUT SHAFT
RPM		i	HP	(lbf-in)	S.F.	HP	(lbf-in)	-W 56C	-X 143/5TC	-Y 182/4TC	Inches
485.0	01	3.61	5.00	624	2.6	13.06	1631				 Standard ø1.375 On Request ø1.250
414.0	02	4.23	5.00	730	2.7	13.52	1975				
349.0	03	5.01	5.00	867	2.6	12.87	2232				
288.0	04	6.07	5.00	1049	2.5	12.69	2661				
257.0	05	6.81	5.00	1177	2.6	12.77	3005				
220.0	07	7.96	5.00	1377	2.3	11.54	3177				
185.0	08	9.45	5.00	1634	2.2	10.77	3520				
153.0	09	11.43	5.00	1977	1.8	9.23	3649				
125.0	10	14.00	5.00	2420	1.5	7.71	3735				
105.0	11	16.62	5.00	2873	1.5	7.70	4421				
87.0	12	20.10	5.00	3475	1.3	6.55	4550				
71.0	20	24.61	5.00	4254	1.1	5.35	4550				
60.0	14	29.41	3.00	3051	1.3	3.80	3863				
49.2	15	35.58	3.00	3691	1.2	3.70	4550				
43.2	16	40.50	2.00	2801	1.0	1.96	2747				
39.6	17	44.23	2.00	3058	1.2	2.30	3520				
35.7	18	49.00	2.00	3388	1.0	2.03	3434				
28.7	19	60.90	1.50	3159	1.1	1.64	3520				

The dynamic efficiency is 0.96 for all ratios

RATINGS

613A RATINGS INPUT SPEED = 1750 RPM

OUTPUT SPEED	RATIO CODE	RATIO	MOTOR POWER	TRANSMITTED OR OUTPUT TORQUE	SERVICE FACTOR	NOMINAL POWER	NOMINAL TORQUE	AVAILABLE NEMA MOTOR FLANGES		OUTPUT SHAFT
RPM		i	HP	(lbf-in)	S.F.	HP	(lbf-in)	-W 56C	-X 143/5TC	Inches
44.0	05	39.79	2.00	2694	1.4	2.77	3726			 Standard ø1.375 On Request ø1.250
37.1	06	47.22	2.00	3198	1.4	2.77	4421			
32.0	07	54.73	2.00	3706	1.2	2.39	4421			
30.6	08	57.13	2.00	3869	1.2	2.35	4550			
26.4	09	66.22	2.00	4484	1.0	2.03	4550			
24.6	10	71.01	1.50	3606	1.0	1.55	3735			
22.8	11	76.69	1.50	3894	1.1	1.70	4421			
21.3	12	82.30	1.00	2786	1.3	1.34	3735			
20.9	13	83.59	1.00	2830	1.3	1.33	3777			
18.9	14	92.78	1.00	3141	1.4	1.45	4550			
16.7	15	104.68	1.00	3544	1.2	1.25	4421			
14.9	16	117.22	1.00	3968	1.1	1.15	4550			
13.8	17	126.65	1.00	4288	1.1	1.06	4550			
12.9	18	135.74	0.75	3447	1.1	0.82	3777			
12.0	19	145.68	0.75	3699	1.0	0.76	3735			
11.1	20	157.40	0.50	2665	1.4	0.70	3735			
10.6	21	165.29	0.50	2798	1.6	0.81	4507			
9.4	22	185.29	0.50	3137	1.2	0.60	3777			
8.5	23	205.43	0.50	3478	1.1	0.54	3735			
7.8	24	224.18	0.50	3795	1.2	0.60	4550			
7.2	25	241.82	0.33	2702	1.4	0.46	3777			
6.3	26	278.62	0.33	3113	1.2	0.40	3735			
6	27	292.57	0.33	3269	1.4	0.46	4550			
4.8	28	363.63	0.25	3078	1.2	0.30	3735			

The dynamic efficiency is 0.94 for all ratios

WARNINGS AND CAUTIONS

WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

For safety, Buyer or User should provide protective guards over all shaft extensions and any moving apparatus mounted thereon. The User is responsible for checking all applicable safety codes in their area and providing suitable guards. Failure to do so may result in bodily injury and/or damage to equipment.

Gearboxes operating in high position should have a protective shield for any possible parts falling down for casual accidents where people are moving under them.

Hot oil and reducers can cause severe burns. Use extreme care when removing lubrication plugs and vents.

Use of an oil with an EP additive on units with backstops may prevent proper operation of the backstop. Injury to personnel, damage to the reducer or other equipment may result.

CAUTION:

Failure to observe the following warnings could create a risk of serious injury.

This product is not recommended for use in reducers in man lift or people moving devices.

Make sure that certain applications do not exceed the allowable load capacities published in the current catalog.

Make certain that the power supply is disconnected before attempting to service or remove any components. Lock out the power supply and tag it to prevent unexpected application of power.

Mounting bolts should be routinely checked to ensure that the unit is firmly anchored for proper operation.

NOTES

- Buyer shall be solely responsible for determining the adequacy of the product for all uses to which Buyer shall apply the product. The application by Buyer shall not be subject to any implied warranty of fitness for a particular purpose.
- Reducers are not to be considered fail safe or self-locking devices. If these features are required, a properly sized, independent holding device should be utilized.
- Reducers should not be used as a brake.
- Any brakes that are used in conjunction with a reducer must be sized or positioned in such a way to not subject the reducer to loads beyond the catalog rating.
- Lifting supports including eyebolts are to be used for vertically lifting the gearbox only and no other associated attachments or motors.
- Overhung loads subject shaft bearings and shafts to stress which may cause premature bearing failure and or shaft breakage from bending fatigue, if not sized properly.



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