



ELECTRIC MOTORS, GEARMOTORS AND DRIVES

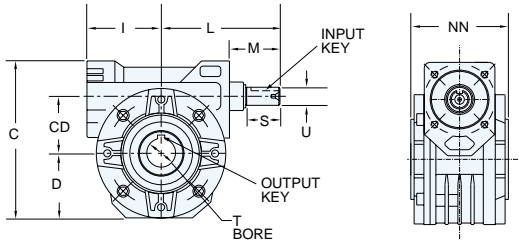
ALUMINUM GEAR REDUCER CATALOG

Catalog No. 5050
Effective: January, 1999
Supersedes: New

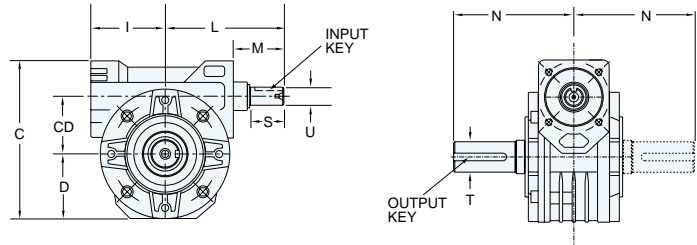


LEESON HYDRO-MEC
Bravo[™]
ALUMINUM GEAR REDUCERS

STYLE H



STYLE B

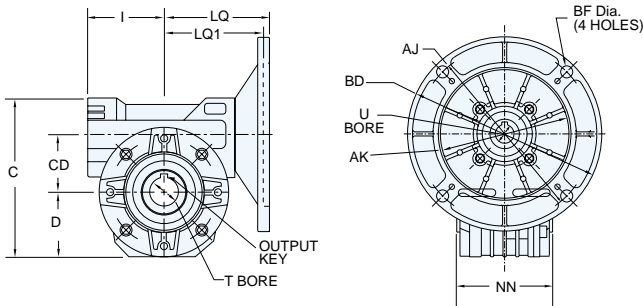


STYLE H and STYLE B DIMENSIONS (Inches)

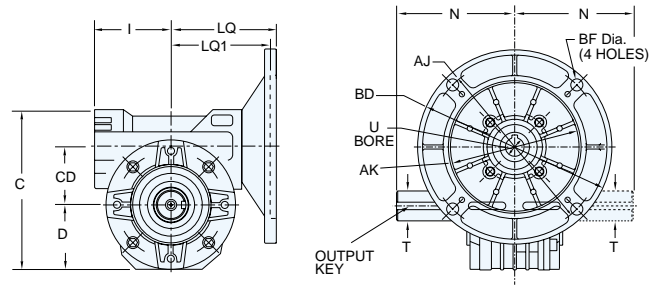
Series	C	CD	D	I	L	M	Style H NN	Style B N	S	T +0.0015 -0.0000	U +0.000 -0.001	Input Key	Output Keyway*
518	4.65	1.77	1.93	2.16	3.86	1.67	2.56	2.97	1.18	0.750	0.625	3/16 SQ. x 1.00	3/16 SQ. x 1.00
520	5.33	1.97	2.15	2.56	4.11	1.74	3.19	3.94	1.18	1.000	0.625	3/16 SQ. x 1.00	1/4 SQ. x 1.62
525	6.69	2.48	2.76	3.11	5.43	2.24	4.72	4.85	1.75	1.125	0.750	3/16 SQ. x 1.50	1/4 SQ. x 2.00
534	8.64	3.35	3.72	3.86	6.38	2.52	5.31	5.55	1.75	1.500	0.875	3/16 SQ. x 1.50	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

STYLE HMQ



STYLE BMQ



STYLE HMQ and STYLE BMQ DIMENSIONS (Inches)

Series	C	CD	D	I	LQ 56/140	LQ1 180	Style HMQ NN	Style BMQ N	T +0.0015 -0.0000	U +0.000 -0.001	Output Keyway*
518	4.65	1.77	1.93	2.16	3.33	—	2.56	2.97	0.750	0.625	3/16 SQ. x 1.00
520	5.33	1.97	2.15	2.56	3.51	—	3.19	3.94	1.000	0.625	1/4 SQ. x 1.62
525	6.69	2.48	2.76	3.11	4.08	—	4.72	4.85	1.125	0.750	1/4 SQ. x 2.00
534	8.64	3.35	3.72	3.86	4.83	5.35	5.31	5.55	1.500	0.875	3/8 SQ. x 2.00

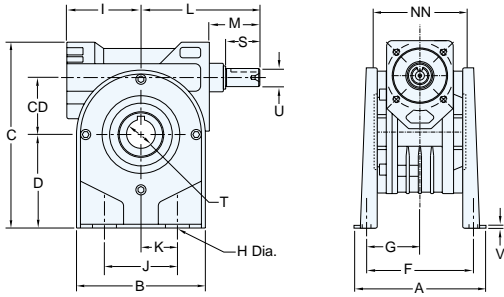
*Output keyway is through the bore on hollow shaft reducers.

MOTOR DATA (Inches)

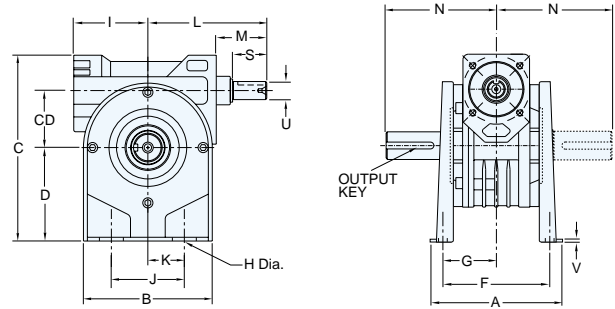
Motor Frame	AJ	AK	BD	BF	U BORE	Keyway
56C	5.875	4.500	6.50	0.405	0.625	3/16 x 3/32
140TC	5.875	4.500	6.50	0.405	0.875	3/16 x 3/32
180TC	7.250	8.500	9.00	0.531	1.125	1/4 x 1/8

In all charts, "T" dimension tolerance represents hollow output shaft. If solid shaft insert is used, tolerance is +0.000 and -0.001.

STYLE TH



STYLE T

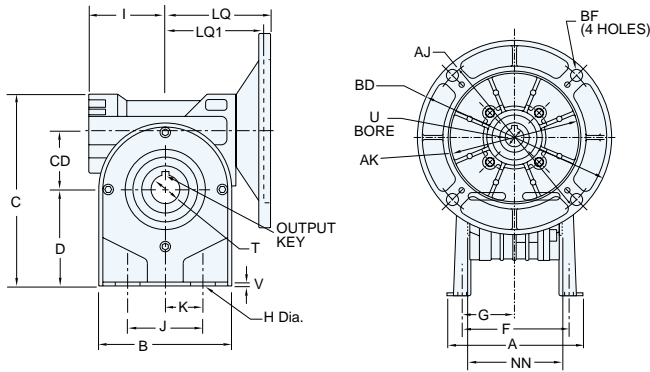


STYLE TH and STYLE T DIMENSIONS (Inches)

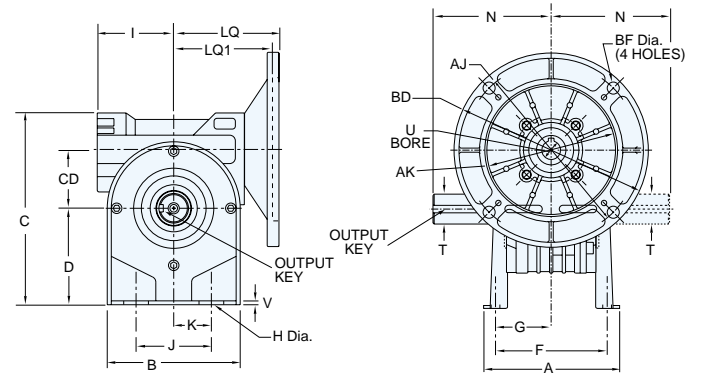
Series	A	B	C	CD	D	F	G	H	I	J	K	L	M	Style TH NN	Style T N	S	T +0.0015 -0.0000	U +0.000 -0.001	V	Input Key	Output Keyway*
518	3.94	3.86	5.55	1.77	2.83	3.17	1.59	0.413	2.16	1.97	0.98	3.86	1.67	2.56	2.97	1.18	0.750	0.625	0.12	3/16 SQ. x 1.00	3/16 SQ. x 1.00
520	4.84	4.49	6.41	1.97	3.23	3.94	1.97	0.413	2.56	2.48	1.24	4.11	1.74	3.19	3.94	1.18	1.000	0.625	0.14	3/16 SQ. x 1.00	1/4 SQ. x 1.62
525	5.67	5.24	7.87	2.48	3.94	4.35	2.18	0.413	3.11	3.74	1.87	5.43	2.24	4.72	4.85	1.75	1.125	0.750	0.16	3/16 SQ. x 1.50	1/4 SQ. x 2.00
534	7.17	7.09	11.02	3.35	5.59	5.75	2.89	0.413	3.86	5.51	2.76	6.38	2.52	5.31	5.55	1.75	1.500	0.875	0.20	3/16 SQ. x 1.50	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

STYLE THMQ



STYLE TMQ

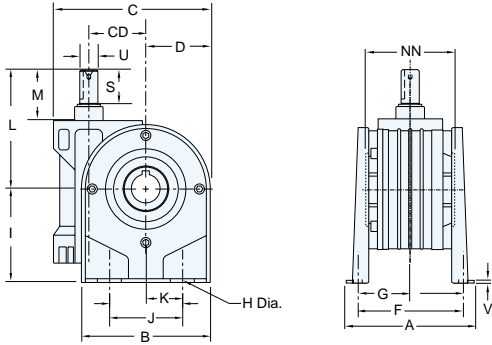


STYLE THMQ and STYLE TMQ DIMENSIONS (Inches)

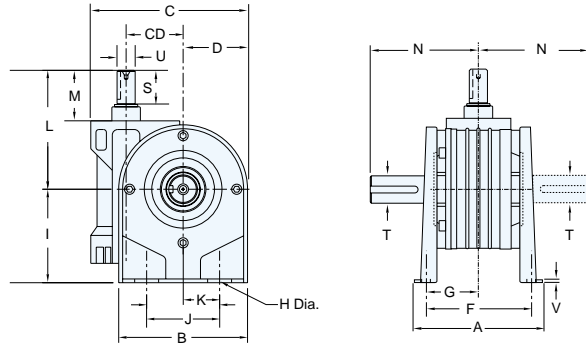
Series	A	B	C	CD	D	F	G	H	I	J	K	LQ 56/140	LQ1 180	Style THMQ NN	Style TMQ N	T +0.0015 -0.0000	V	Output Keyway*
518	3.94	3.86	5.55	1.77	2.83	3.17	1.59	0.413	2.16	1.97	0.98	3.33	—	2.56	2.97	0.750	0.12	3/16 SQ. x 1.00
520	4.84	4.49	6.41	1.97	3.23	3.94	1.97	0.413	2.56	2.48	1.24	3.51	—	3.19	3.94	1.000	0.14	1/4 SQ. x 1.62
525	5.67	5.24	7.87	2.48	3.94	4.35	2.18	0.413	3.11	3.74	1.87	4.08	—	4.72	4.85	1.125	0.16	1/4 SQ. x 2.00
534	7.17	7.09	11.02	3.35	5.59	5.75	2.89	0.413	3.86	5.51	2.76	4.83	5.35	5.31	5.55	1.500	0.20	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

STYLE JH



STYLE J

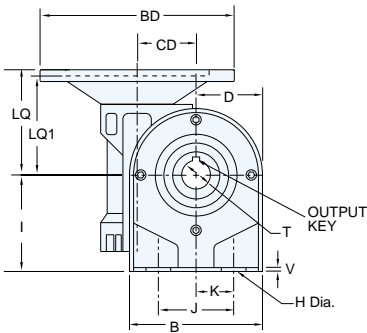


STYLE JH and STYLE J DIMENSIONS (Inches)

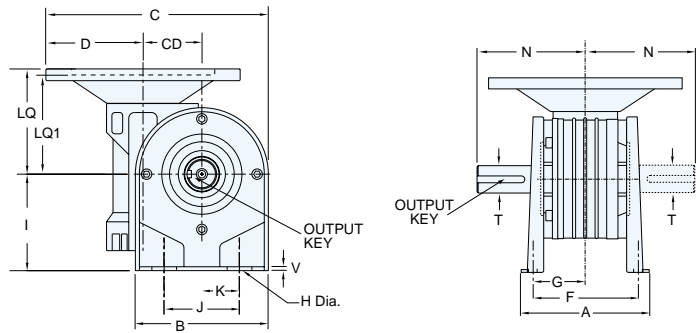
Series	A	B	C	CD	D	F	G	H	I	J	K	L	M	Style JH NN	Style J N	S	T +0.0015 -0.0000	U +0.000 -0.001	V	Input Key	Output Keyway*
518	3.94	3.86	4.35	1.77	1.63	3.17	1.59	0.413	2.83	1.97	0.98	3.86	1.67	2.56	2.97	1.18	0.750	0.625	0.12	3/16 SQ. x 1.00	3/16 SQ. x 1.00
520	4.84	4.49	5.40	1.97	2.22	3.94	1.97	0.413	3.23	2.48	1.24	4.11	1.74	3.19	3.94	1.18	1.000	0.625	0.14	3/16 SQ. x 1.00	1/4 SQ. x 1.62
525	5.67	5.24	6.19	2.48	2.26	4.35	2.18	0.413	3.93	3.74	1.87	5.43	2.24	4.76	4.85	1.75	1.125	0.750	0.16	3/16 SQ. x 1.50	1/4 SQ. x 2.00
534	7.17	7.09	8.58	3.35	3.15	5.75	2.89	0.413	5.59	5.51	2.76	6.38	2.52	5.31	5.55	1.75	1.500	0.875	0.20	3/16 SQ. x 1.50	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

STYLE JHMQ



STYLE JMQR



STYLE JHMQ and STYLE JMQR DIMENSIONS (Inches)

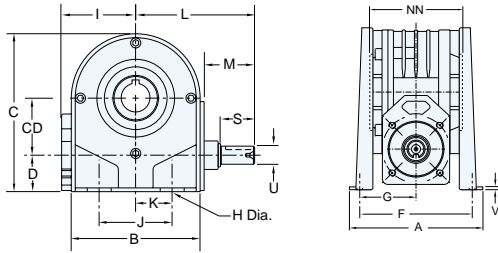
Series	A	B	CD	D	F	G	H	I	J	K	LQ 56/140	LQ1 180	Style JHMQ NN	Style JMQR N	T +0.0015 -0.0000	V	Output Keyway*
518	3.94	3.86	1.77	1.63	3.17	1.59	0.413	2.83	1.97	0.98	3.33	—	2.56	2.97	0.750	0.12	3/16 SQ. x 1.00
520	4.84	4.49	1.97	2.22	3.94	1.97	0.413	3.23	2.48	1.24	3.51	—	3.19	3.94	1.000	0.14	1/4 SQ. x 1.62
525	5.67	5.24	2.48	2.26	4.35	2.18	0.413	3.93	3.74	1.87	4.08	—	4.76	4.85	1.125	0.16	1/4 SQ. x 2.00
534	7.17	7.09	3.35	3.15	5.75	2.89	0.413	5.59	5.51	2.76	4.83	5.53	5.31	5.55	1.500	0.20	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

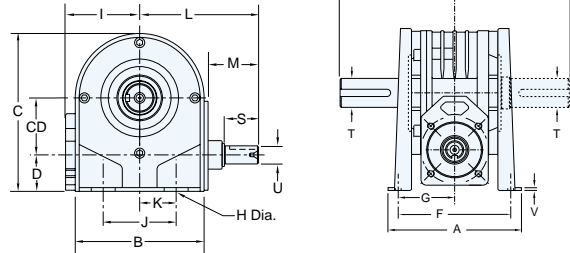
MOTOR DATA (Inches)

Motor Frame	AJ	AK	BD	BF	U BORE	Keyway
56C	5.875	4.500	6.50	0.405	0.625	3/16 x 3/32
140TC	5.875	4.500	6.50	0.405	0.875	3/16 x 3/32
180TC	7.250	8.500	9.00	0.531	1.125	1/4 x 1/8

STYLE UH



STYLE U

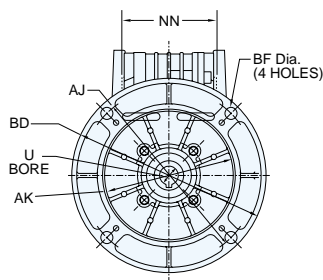
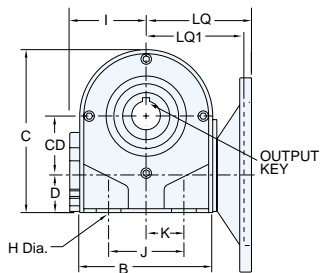


STYLE UH and STYLE U DIMENSIONS (Inches)

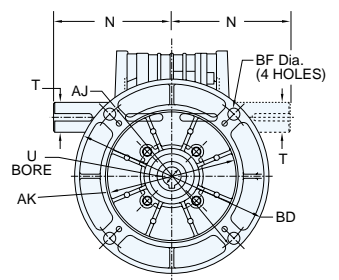
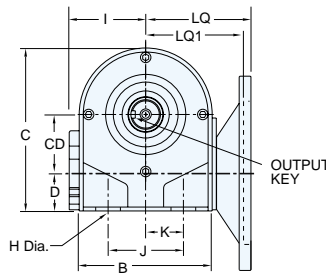
Series	A	B	C	CD	D	F	G	H	I	J	K	L	M	Style UH NN	Style U N	S	T +0.0015 -0.0000	U +0.000 -0.001	V	Input Key	Output Keyway*
518	3.94	3.86	4.46	1.77	1.06	3.17	1.59	0.413	2.16	1.98	0.98	3.86	1.67	2.56	2.97	1.18	0.750	0.625	0.12	3/16 SQ. x 1.00	3/16 SQ. x 1.00
520	4.84	4.49	5.45	1.97	1.26	3.94	1.97	0.413	2.56	2.48	1.24	4.11	1.74	3.19	3.94	1.18	1.000	0.625	0.14	3/16 SQ. x 1.00	1/4 SQ. x 1.62
525	5.67	5.24	6.20	2.48	1.45	4.35	2.18	0.413	3.11	3.74	1.87	5.43	2.24	4.76	4.85	1.75	1.125	0.750	0.16	3/16 SQ. x 1.50	1/4 SQ. x 2.00
534	7.17	7.09	8.74	3.35	2.24	5.75	2.89	0.413	3.86	5.51	2.76	6.38	2.52	5.31	5.55	1.75	1.500	0.875	0.20	3/16 SQ. x 1.50	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

STYLE UHMQ



STYLE UMQ

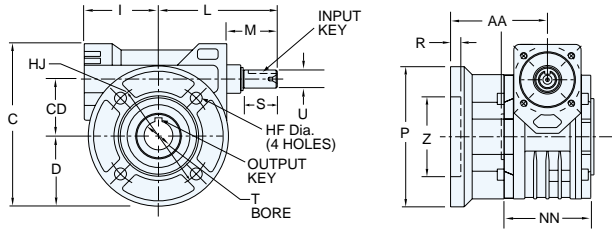


STYLE UHMQ and STYLE UMQ DIMENSIONS (Inches)

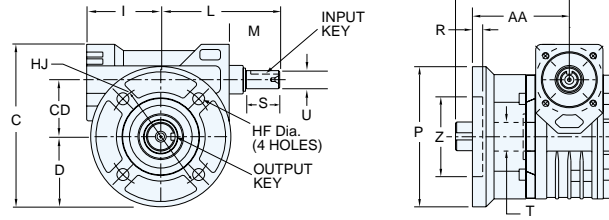
Series	A	B	C	CD	D	F	G	H	I	J	K	LQ 56/140	LQ1 180	Style UHMQ NN	Style UMQ N	T +0.0015 -0.0000	V	Output Keyway*
518	3.94	3.86	4.46	1.77	1.06	3.17	1.59	0.413	2.16	1.98	0.98	3.33	—	2.56	2.97	0.750	0.12	3/16 SQ. x 1.00
520	4.84	4.49	5.45	1.97	1.26	3.94	1.97	0.413	2.56	2.48	1.24	3.51	—	3.19	3.94	1.000	0.14	1/4 SQ. x 1.62
525	5.67	5.24	6.20	2.48	1.45	4.35	2.18	0.413	3.11	3.74	1.87	4.08	—	4.76	4.85	1.125	0.16	1/4 SQ. x 2.00
534	7.17	7.09	8.74	3.35	2.24	5.75	2.89	0.413	3.86	5.51	2.76	4.83	5.53	5.31	5.55	1.500	0.20	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

STYLE FH



STYLE F

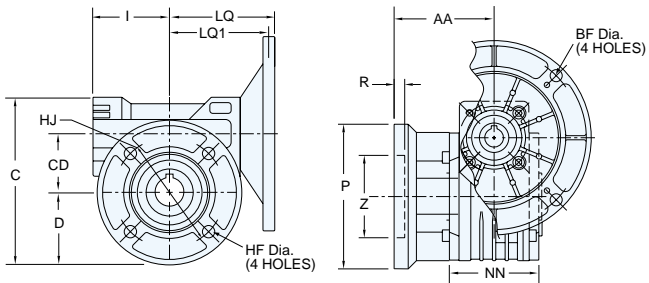


STYLE FH and STYLE F DIMENSIONS (Inches)

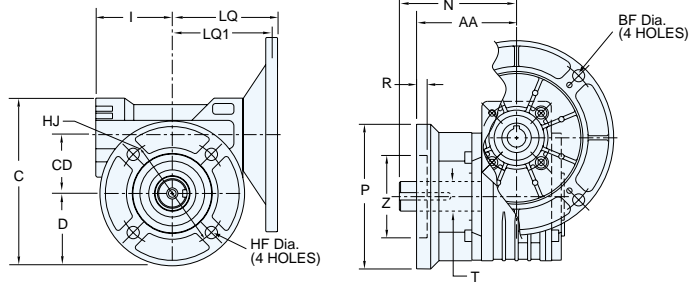
Series	AA	C	CD	D	HF	HJ	I	L	M	Style FH NN	Style F N	P	R	S	T +0.0015 -0.0000	U +0.000 -0.001	Z	Input Key	Output Keyway*
518	2.38	4.88	1.77	2.16	0.335	3.43	2.16	3.86	1.67	2.56	2.97	4.33	0.354	1.18	0.750	0.625	2.362	3/16 SQ. x 1.00	3/16 SQ. x 1.00
520	3.35	5.60	1.97	2.42	0.413	3.54	2.56	4.11	1.74	3.19	3.94	4.84	0.472	1.18	1.000	0.625	2.756	3/16 SQ. x 1.00	1/4 SQ. x 1.62
525	3.39	7.37	2.48	3.44	0.413	5.91	3.11	5.43	2.24	4.76	4.85	6.89	0.512	1.75	1.125	0.750	4.528	3/16 SQ. x 1.50	1/4 SQ. x 2.00
534	4.25	8.96	3.35	4.04	0.512	6.93	3.86	6.38	2.52	5.31	5.55	8.07	0.630	1.75	1.500	0.875	5.984	3/16 SQ. x 1.50	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

STYLE FHMQ



STYLE FMQ



STYLE FHMQ and STYLE FMQ DIMENSIONS (Inches)

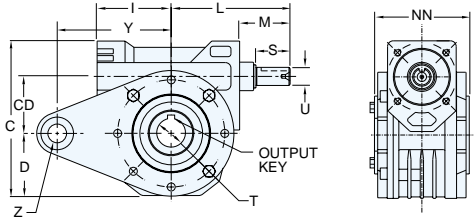
Series	AA	C	CD	D	HF	HJ	I	LQ 56/140	LQ1 180	Style FHMQ NN	Style FMQ N	P	R	T +0.0015 -0.0000	Z	Output Keyway*
518	2.38	4.88	1.77	2.16	0.335	3.43	2.16	3.33	—	2.56	2.97	4.33	0.354	0.750	2.362	3/16 SQ. x 1.00
520	3.35	5.60	1.97	2.42	0.413	3.54	2.56	3.51	—	3.19	3.94	4.84	0.472	1.000	2.756	1/4 SQ. x 1.62
525	3.39	7.37	2.48	3.44	0.413	5.91	3.11	4.08	—	4.76	4.85	6.89	0.512	1.125	4.528	1/4 SQ. x 2.00
534	4.25	8.96	3.35	4.04	0.512	6.93	3.86	4.83	5.53	5.31	5.55	8.07	0.630	1.500	5.984	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

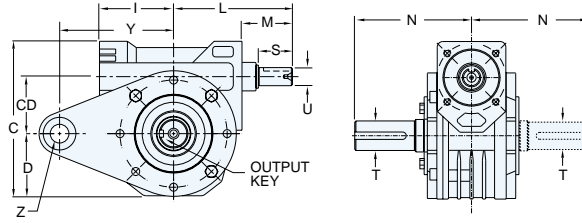
MOTOR DATA (Inches)

Motor Frame	AJ	AK	BD	BF	U BORE	Keyway
56C	5.875	4.500	6.50	0.405	0.625	3/16 x 3/32
140TC	5.875	4.500	6.50	0.405	0.875	3/16 x 3/32
180TC	7.250	8.500	9.00	0.531	1.125	1/4 x 1/8

STYLE RH



STYLE R

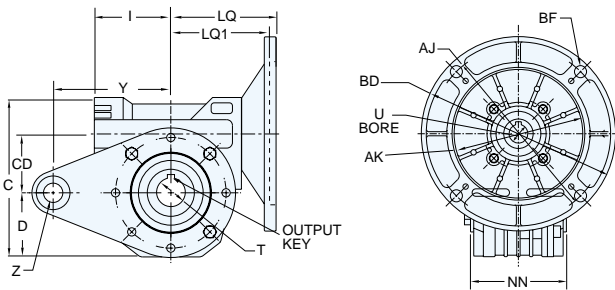


STYLE RH and STYLE R DIMENSIONS (Inches)

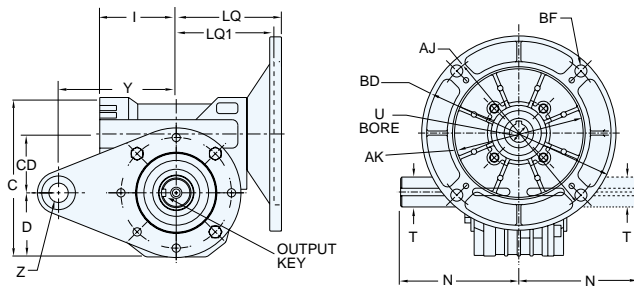
Series	C	CD	D	I	L	M	Style RH NN	Style R N	S	T +0.0015 -0.0000	U +0.000 -0.001	Y	Z	Input Key	Output Keyway*
518	4.65	1.77	1.93	2.16	3.86	1.67	2.56	2.97	1.18	0.750	0.625	3.94	0.315	3/16 SQ. x 1.00	3/16 SQ. x 1.00
520	5.33	1.97	2.15	2.56	4.11	1.74	3.19	3.94	1.18	1.000	0.625	3.94	0.315	3/16 SQ. x 1.00	1/4 SQ. x 1.62
525	6.69	2.48	2.76	3.11	5.43	2.24	4.72	4.85	1.75	1.125	0.750	5.91	0.394	3/16 SQ. x 1.50	1/4 SQ. x 2.00
534	8.64	3.35	3.72	3.86	6.38	2.52	5.31	5.55	1.75	1.500	0.875	7.87	0.787	3/16 SQ. x 1.50	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

STYLE RHMQ



STYLE RMQ



STYLE RHMQ and STYLE RMQ DIMENSIONS (Inches)

Series	C	CD	D	I	LQ 56/140	LQ1 180	Style RHMQ NN	Style RMQ N	T +0.0015 -0.0000	Y	Z	Output Keyway*
518	4.65	1.77	1.93	2.16	3.33	—	2.56	2.97	0.750	3.94	0.315	3/16 SQ. x 1.00
520	5.33	1.97	2.15	2.56	3.51	—	3.19	3.94	1.000	3.94	0.315	1/4 SQ. x 1.62
525	6.69	2.48	2.76	3.11	4.08	—	4.72	4.85	1.125	5.91	0.394	1/4 SQ. x 2.00
534	8.64	3.35	3.72	3.86	4.83	5.53	5.31	5.55	1.500	7.87	0.787	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

MOTOR DATA (Inches)

Motor Frame	AJ	AK	BD	BF	U BORE	Keyway
56C	5.875	4.500	6.50	0.405	0.625	3/16 x 3/32
140TC	5.875	4.500	6.50	0.405	0.875	3/16 x 3/32
180TC	7.250	8.500	9.00	0.531	1.125	1/4 x 1/8



ELECTRIC MOTORS, GEARMOTORS AND DRIVES

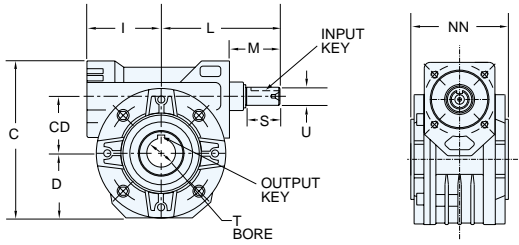
ALUMINUM GEAR REDUCER CATALOG

Catalog No. 5050
Effective: January, 1999
Supersedes: New

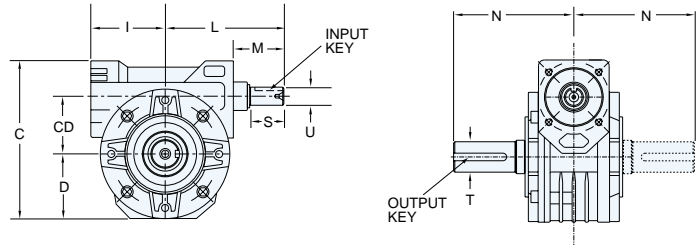


LEESON HYDRO-MEC
Bravo[™]
ALUMINUM GEAR REDUCERS

STYLE H



STYLE B

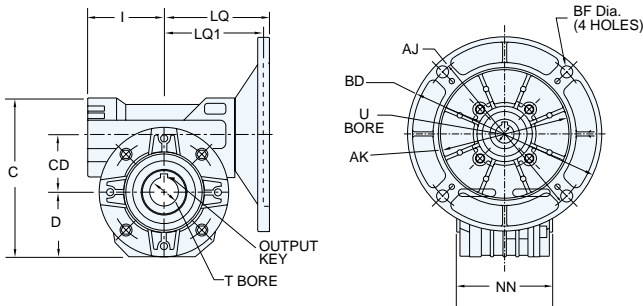


STYLE H and STYLE B DIMENSIONS (Inches)

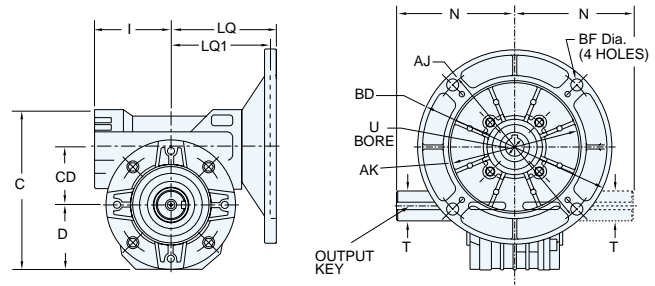
Series	C	CD	D	I	L	M	Style H NN	Style B N	S	T +0.0015 -0.0000	U +0.000 -0.001	Input Key	Output Keyway*
518	4.65	1.77	1.93	2.16	3.86	1.67	2.56	2.97	1.18	0.750	0.625	3/16 SQ. x 1.00	3/16 SQ. x 1.00
520	5.33	1.97	2.15	2.56	4.11	1.74	3.19	3.94	1.18	1.000	0.625	3/16 SQ. x 1.00	1/4 SQ. x 1.62
525	6.69	2.48	2.76	3.11	5.43	2.24	4.72	4.85	1.75	1.125	0.750	3/16 SQ. x 1.50	1/4 SQ. x 2.00
534	8.64	3.35	3.72	3.86	6.38	2.52	5.31	5.55	1.75	1.500	0.875	3/16 SQ. x 1.50	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

STYLE HMQ



STYLE BMQ



STYLE HMQ and STYLE BMQ DIMENSIONS (Inches)

Series	C	CD	D	I	LQ 56/140	LQ1 180	Style HMQ NN	Style BMQ N	T +0.0015 -0.0000	U +0.000 -0.001	Output Keyway*
518	4.65	1.77	1.93	2.16	3.33	—	2.56	2.97	0.750	0.625	3/16 SQ. x 1.00
520	5.33	1.97	2.15	2.56	3.51	—	3.19	3.94	1.000	0.625	1/4 SQ. x 1.62
525	6.69	2.48	2.76	3.11	4.08	—	4.72	4.85	1.125	0.750	1/4 SQ. x 2.00
534	8.64	3.35	3.72	3.86	4.83	5.35	5.31	5.55	1.500	0.875	3/8 SQ. x 2.00

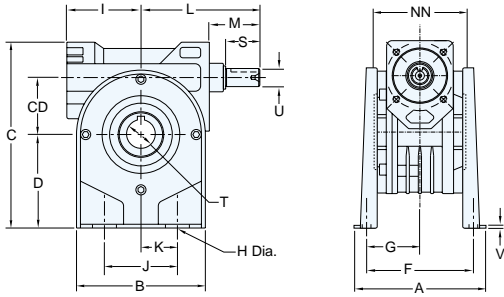
*Output keyway is through the bore on hollow shaft reducers.

MOTOR DATA (Inches)

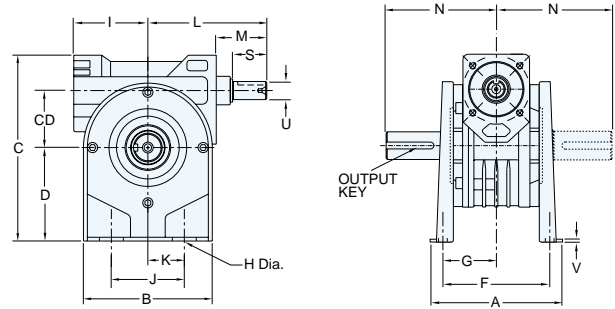
Motor Frame	AJ	AK	BD	BF	U BORE	Keyway
56C	5.875	4.500	6.50	0.405	0.625	3/16 x 3/32
140TC	5.875	4.500	6.50	0.405	0.875	3/16 x 3/32
180TC	7.250	8.500	9.00	0.531	1.125	1/4 x 1/8

In all charts, "T" dimension tolerance represents hollow output shaft. If solid shaft insert is used, tolerance is +0.000 and -0.001.

STYLE TH



STYLE T

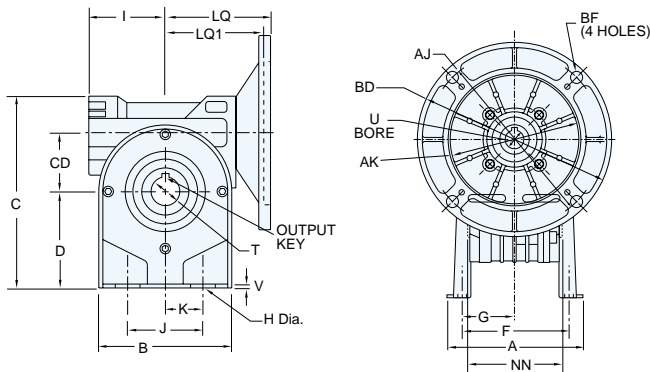


STYLE TH and STYLE T DIMENSIONS (Inches)

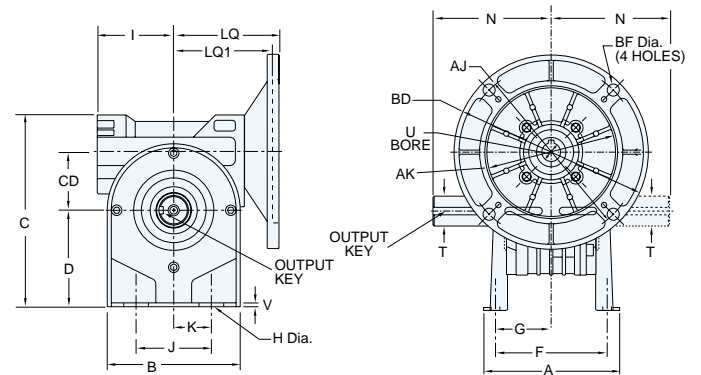
Series	A	B	C	CD	D	F	G	H	I	J	K	L	M	Style TH NN	Style T N	S	T +0.0015 -0.0000	U +0.000 -0.001	V	Input Key	Output Keyway*
518	3.94	3.86	5.55	1.77	2.83	3.17	1.59	0.413	2.16	1.97	0.98	3.86	1.67	2.56	2.97	1.18	0.750	0.625	0.12	3/16 SQ. x 1.00	3/16 SQ. x 1.00
520	4.84	4.49	6.41	1.97	3.23	3.94	1.97	0.413	2.56	2.48	1.24	4.11	1.74	3.19	3.94	1.18	1.000	0.625	0.14	3/16 SQ. x 1.00	1/4 SQ. x 1.62
525	5.67	5.24	7.87	2.48	3.94	4.35	2.18	0.413	3.11	3.74	1.87	5.43	2.24	4.72	4.85	1.75	1.125	0.750	0.16	3/16 SQ. x 1.50	1/4 SQ. x 2.00
534	7.17	7.09	11.02	3.35	5.59	5.75	2.89	0.413	3.86	5.51	2.76	6.38	2.52	5.31	5.55	1.75	1.500	0.875	0.20	3/16 SQ. x 1.50	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

STYLE THMQ



STYLE TMQ

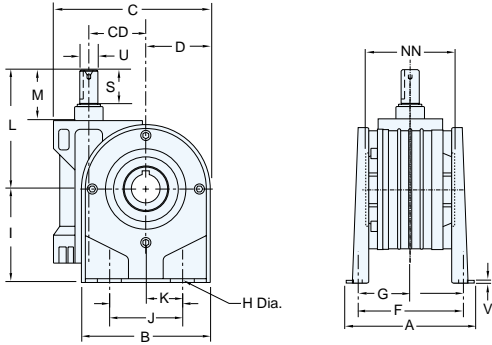


STYLE THMQ and STYLE TMQ DIMENSIONS (Inches)

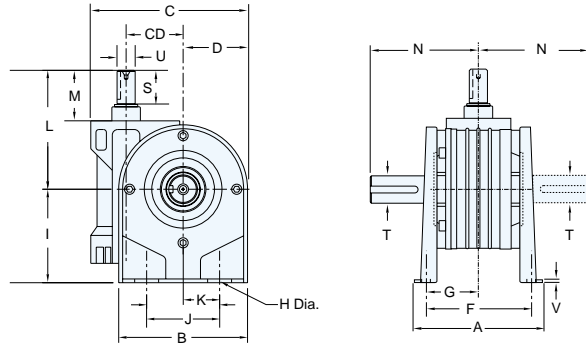
Series	A	B	C	CD	D	F	G	H	I	J	K	LQ 56/140	LQ1 180	Style THMQ NN	Style TMQ N	T +0.0015 -0.0000	V	Output Keyway*
518	3.94	3.86	5.55	1.77	2.83	3.17	1.59	0.413	2.16	1.97	0.98	3.33	—	2.56	2.97	0.750	0.12	3/16 SQ. x 1.00
520	4.84	4.49	6.41	1.97	3.23	3.94	1.97	0.413	2.56	2.48	1.24	3.51	—	3.19	3.94	1.000	0.14	1/4 SQ. x 1.62
525	5.67	5.24	7.87	2.48	3.94	4.35	2.18	0.413	3.11	3.74	1.87	4.08	—	4.72	4.85	1.125	0.16	1/4 SQ. x 2.00
534	7.17	7.09	11.02	3.35	5.59	5.75	2.89	0.413	3.86	5.51	2.76	4.83	5.35	5.31	5.55	1.500	0.20	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

STYLE JH



STYLE J

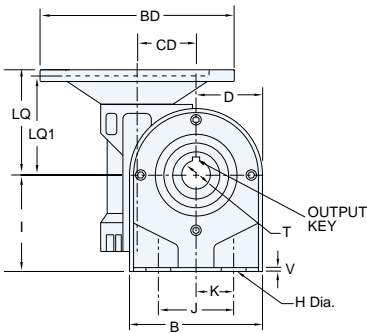


STYLE JH and STYLE J DIMENSIONS (Inches)

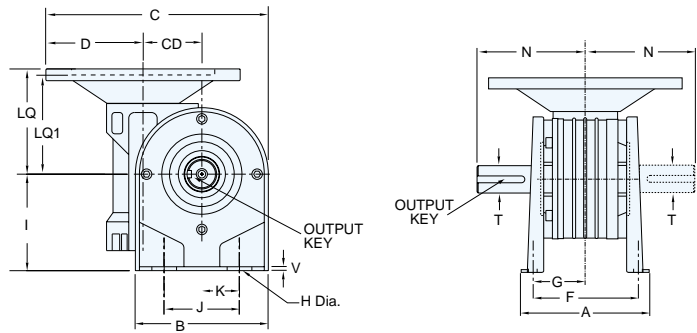
Series	A	B	C	CD	D	F	G	H	I	J	K	L	M	Style JH NN	Style J N	S	T +0.0015 -0.0000	U +0.000 -0.001	V	Input Key	Output Keyway*
518	3.94	3.86	4.35	1.77	1.63	3.17	1.59	0.413	2.83	1.97	0.98	3.86	1.67	2.56	2.97	1.18	0.750	0.625	0.12	3/16 SQ. x 1.00	3/16 SQ. x 1.00
520	4.84	4.49	5.40	1.97	2.22	3.94	1.97	0.413	3.23	2.48	1.24	4.11	1.74	3.19	3.94	1.18	1.000	0.625	0.14	3/16 SQ. x 1.00	1/4 SQ. x 1.62
525	5.67	5.24	6.19	2.48	2.26	4.35	2.18	0.413	3.93	3.74	1.87	5.43	2.24	4.76	4.85	1.75	1.125	0.750	0.16	3/16 SQ. x 1.50	1/4 SQ. x 2.00
534	7.17	7.09	8.58	3.35	3.15	5.75	2.89	0.413	5.59	5.51	2.76	6.38	2.52	5.31	5.55	1.75	1.500	0.875	0.20	3/16 SQ. x 1.50	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

STYLE JHMQ



STYLE JMQR



STYLE JHMQ and STYLE JMQR DIMENSIONS (Inches)

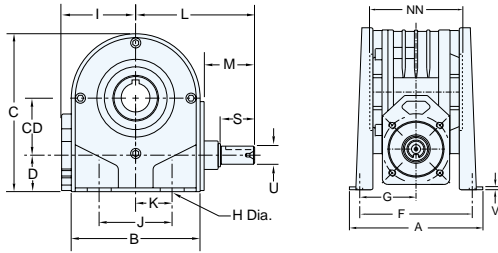
Series	A	B	CD	D	F	G	H	I	J	K	LQ 56/140	LQ1 180	Style JHMQ NN	Style JMQR N	T +0.0015 -0.0000	V	Output Keyway*
518	3.94	3.86	1.77	1.63	3.17	1.59	0.413	2.83	1.97	0.98	3.33	—	2.56	2.97	0.750	0.12	3/16 SQ. x 1.00
520	4.84	4.49	1.97	2.22	3.94	1.97	0.413	3.23	2.48	1.24	3.51	—	3.19	3.94	1.000	0.14	1/4 SQ. x 1.62
525	5.67	5.24	2.48	2.26	4.35	2.18	0.413	3.93	3.74	1.87	4.08	—	4.76	4.85	1.125	0.16	1/4 SQ. x 2.00
534	7.17	7.09	3.35	3.15	5.75	2.89	0.413	5.59	5.51	2.76	4.83	5.53	5.31	5.55	1.500	0.20	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

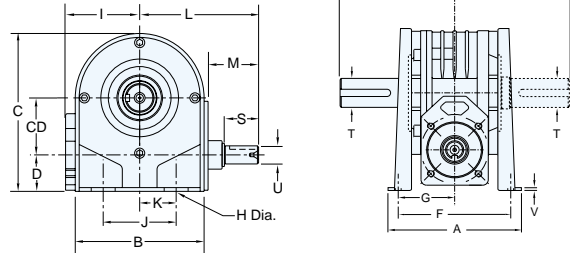
MOTOR DATA (Inches)

Motor Frame	AJ	AK	BD	BF	U BORE	Keyway
56C	5.875	4.500	6.50	0.405	0.625	3/16 x 3/32
140TC	5.875	4.500	6.50	0.405	0.875	3/16 x 3/32
180TC	7.250	8.500	9.00	0.531	1.125	1/4 x 1/8

STYLE UH



STYLE U

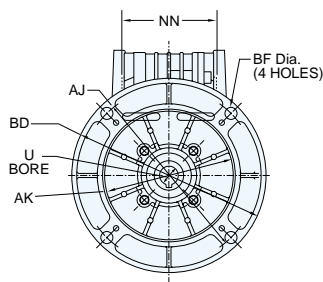
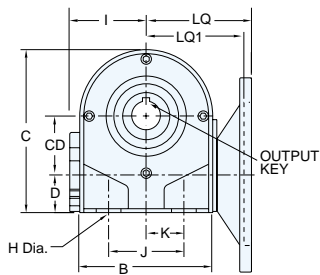


STYLE UH and STYLE U DIMENSIONS (Inches)

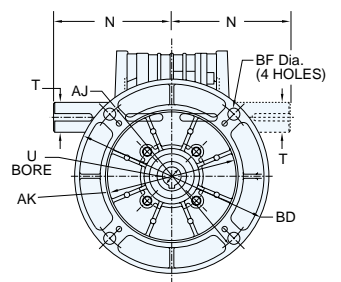
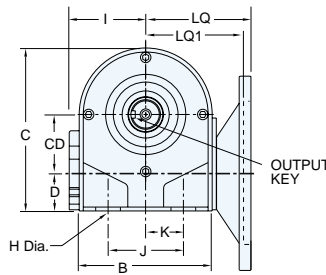
Series	A	B	C	CD	D	F	G	H	I	J	K	L	M	Style UH NN	Style U N	S	T +0.0015 -0.0000	U +0.000 -0.001	V	Input Key	Output Keyway*
518	3.94	3.86	4.46	1.77	1.06	3.17	1.59	0.413	2.16	1.98	0.98	3.86	1.67	2.56	2.97	1.18	0.750	0.625	0.12	3/16 SQ. x 1.00	3/16 SQ. x 1.00
520	4.84	4.49	5.45	1.97	1.26	3.94	1.97	0.413	2.56	2.48	1.24	4.11	1.74	3.19	3.94	1.18	1.000	0.625	0.14	3/16 SQ. x 1.00	1/4 SQ. x 1.62
525	5.67	5.24	6.20	2.48	1.45	4.35	2.18	0.413	3.11	3.74	1.87	5.43	2.24	4.76	4.85	1.75	1.125	0.750	0.16	3/16 SQ. x 1.50	1/4 SQ. x 2.00
534	7.17	7.09	8.74	3.35	2.24	5.75	2.89	0.413	3.86	5.51	2.76	6.38	2.52	5.31	5.55	1.75	1.500	0.875	0.20	3/16 SQ. x 1.50	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

STYLE UHMQ



STYLE UMQ

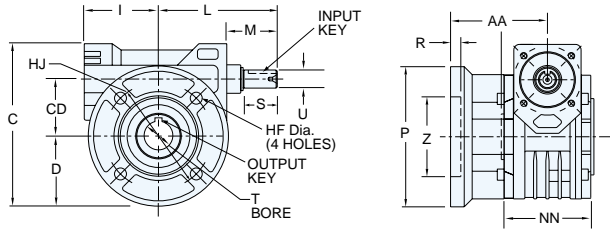


STYLE UHMQ and STYLE UMQ DIMENSIONS (Inches)

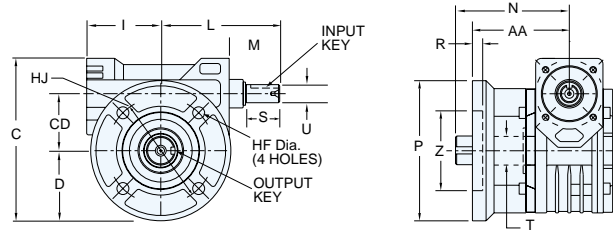
Series	A	B	C	CD	D	F	G	H	I	J	K	LQ 56/140	LQ1 180	Style UHMQ NN	Style UMQ N	T +0.0015 -0.0000	V	Output Keyway*
518	3.94	3.86	4.46	1.77	1.06	3.17	1.59	0.413	2.16	1.98	0.98	3.33	—	2.56	2.97	0.750	0.12	3/16 SQ. x 1.00
520	4.84	4.49	5.45	1.97	1.26	3.94	1.97	0.413	2.56	2.48	1.24	3.51	—	3.19	3.94	1.000	0.14	1/4 SQ. x 1.62
525	5.67	5.24	6.20	2.48	1.45	4.35	2.18	0.413	3.11	3.74	1.87	4.08	—	4.76	4.85	1.125	0.16	1/4 SQ. x 2.00
534	7.17	7.09	8.74	3.35	2.24	5.75	2.89	0.413	3.86	5.51	2.76	4.83	5.53	5.31	5.55	1.500	0.20	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

STYLE FH



STYLE F

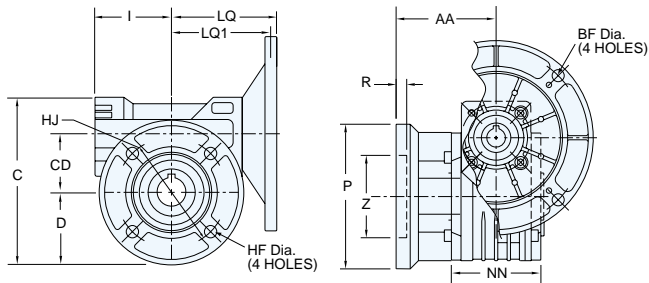


STYLE FH and STYLE F DIMENSIONS (Inches)

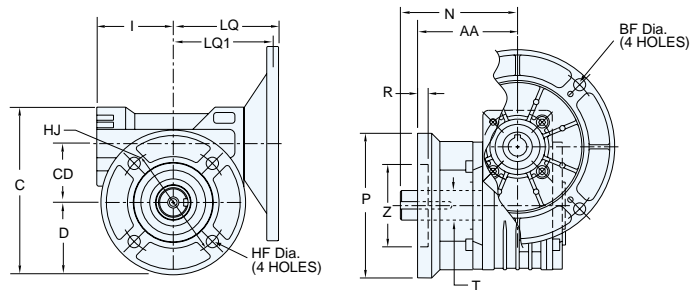
Series	AA	C	CD	D	HF	HJ	I	L	M	Style FH NN	Style F N	P	R	S	T +0.0015 -0.0000	U +0.000 -0.001	Z	Input Key	Output Keyway*
518	2.38	4.88	1.77	2.16	0.335	3.43	2.16	3.86	1.67	2.56	2.97	4.33	0.354	1.18	0.750	0.625	2.362	3/16 SQ. x 1.00	3/16 SQ. x 1.00
520	3.35	5.60	1.97	2.42	0.413	3.54	2.56	4.11	1.74	3.19	3.94	4.84	0.472	1.18	1.000	0.625	2.756	3/16 SQ. x 1.00	1/4 SQ. x 1.62
525	3.39	7.37	2.48	3.44	0.413	5.91	3.11	5.43	2.24	4.76	4.85	6.89	0.512	1.75	1.125	0.750	4.528	3/16 SQ. x 1.50	1/4 SQ. x 2.00
534	4.25	8.96	3.35	4.04	0.512	6.93	3.86	6.38	2.52	5.31	5.55	8.07	0.630	1.75	1.500	0.875	5.984	3/16 SQ. x 1.50	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

STYLE FHMQ



STYLE FMQ



STYLE FHMQ and STYLE FMQ DIMENSIONS (Inches)

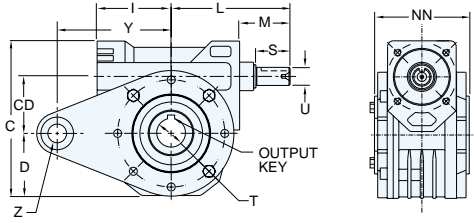
Series	AA	C	CD	D	HF	HJ	I	LQ 56/140	LQ1 180	Style FHMQ NN	Style FMQ N	P	R	T +0.0015 -0.0000	Z	Output Keyway*
518	2.38	4.88	1.77	2.16	0.335	3.43	2.16	3.33	—	2.56	2.97	4.33	0.354	0.750	2.362	3/16 SQ. x 1.00
520	3.35	5.60	1.97	2.42	0.413	3.54	2.56	3.51	—	3.19	3.94	4.84	0.472	1.000	2.756	1/4 SQ. x 1.62
525	3.39	7.37	2.48	3.44	0.413	5.91	3.11	4.08	—	4.76	4.85	6.89	0.512	1.125	4.528	1/4 SQ. x 2.00
534	4.25	8.96	3.35	4.04	0.512	6.93	3.86	4.83	5.53	5.31	5.55	8.07	0.630	1.500	5.984	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

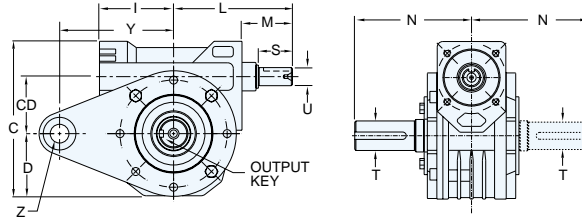
MOTOR DATA (Inches)

Motor Frame	AJ	AK	BD	BF	U BORE	Keyway
56C	5.875	4.500	6.50	0.405	0.625	3/16 x 3/32
140TC	5.875	4.500	6.50	0.405	0.875	3/16 x 3/32
180TC	7.250	8.500	9.00	0.531	1.125	1/4 x 1/8

STYLE RH



STYLE R

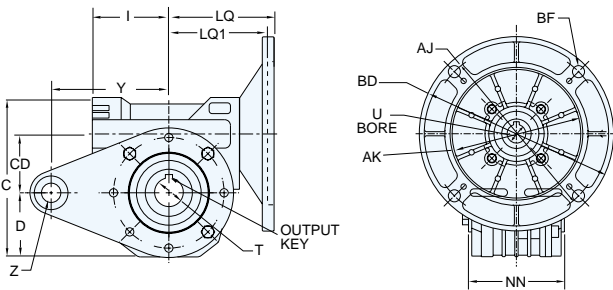


STYLE RH and STYLE R DIMENSIONS (Inches)

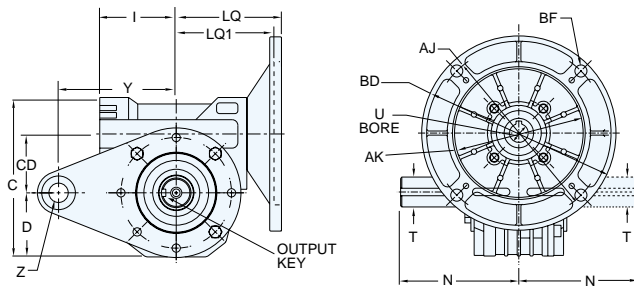
Series	C	CD	D	I	L	M	Style RH NN	Style R N	S	T +0.0015 -0.0000	U +0.000 -0.001	Y	Z	Input Key	Output Keyway*
518	4.65	1.77	1.93	2.16	3.86	1.67	2.56	2.97	1.18	0.750	0.625	3.94	0.315	3/16 SQ. x 1.00	3/16 SQ. x 1.00
520	5.33	1.97	2.15	2.56	4.11	1.74	3.19	3.94	1.18	1.000	0.625	3.94	0.315	3/16 SQ. x 1.00	1/4 SQ. x 1.62
525	6.69	2.48	2.76	3.11	5.43	2.24	4.72	4.85	1.75	1.125	0.750	5.91	0.394	3/16 SQ. x 1.50	1/4 SQ. x 2.00
534	8.64	3.35	3.72	3.86	6.38	2.52	5.31	5.55	1.75	1.500	0.875	7.87	0.787	3/16 SQ. x 1.50	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

STYLE RHMQ



STYLE RMQ



STYLE RHMQ and STYLE RMQ DIMENSIONS (Inches)

Series	C	CD	D	I	LQ 56/140	LQ1 180	Style RHMQ NN	Style RMQ N	T +0.0015 -0.0000	Y	Z	Output Keyway*
518	4.65	1.77	1.93	2.16	3.33	—	2.56	2.97	0.750	3.94	0.315	3/16 SQ. x 1.00
520	5.33	1.97	2.15	2.56	3.51	—	3.19	3.94	1.000	3.94	0.315	1/4 SQ. x 1.62
525	6.69	2.48	2.76	3.11	4.08	—	4.72	4.85	1.125	5.91	0.394	1/4 SQ. x 2.00
534	8.64	3.35	3.72	3.86	4.83	5.53	5.31	5.55	1.500	7.87	0.787	3/8 SQ. x 2.00

*Output keyway is through the bore on hollow shaft reducers.

MOTOR DATA (Inches)

Motor Frame	AJ	AK	BD	BF	U BORE	Keyway
56C	5.875	4.500	6.50	0.405	0.625	3/16 x 3/32
140TC	5.875	4.500	6.50	0.405	0.875	3/16 x 3/32
180TC	7.250	8.500	9.00	0.531	1.125	1/4 x 1/8



SINGLE PHASE MOTORS

GENERAL PURPOSE • C FACE LESS BASE



DRIP-PROOF • C FACE LESS BASE • SINGLE PHASE

HP	RPM 60 Hz	NEMA Frame	Catalog Number	App. Wgt. (lbs.)	Voltage	Over- load Prot.	F.L. Amps 230 V.	% FL Eff.	Dim.◇ (Inches) "C" "AG"
1/4	1725	...	...	...	...	...	...	...	...
	1725	S56C	100023	17	115/208-230	None	2.7	8.81	6.75
	1725	...	...	...	...	...	...	...	...
	1725	S56C	101521	17	115/208-230	Auto.	2.7	8.81	6.75
1/3	1725	S56C	100024	17	115/208-230	None	3.1	9.31	7.25
	1725	...	...	...	...	...	...	...	...
	1725	S56C	100018	18	115/208-230	Man.	3.1	9.31	7.25
	1725	S56C	101522	18	115/208-230	Auto.	3.1	9.31	7.25
1/2	1725	S56C	100025	20	115/208-230	None	4.4	9.81	7.75
	1725	S56C	100019	20	115/208-230	Man.	4.4	9.81	7.75
	1725	S56C	100020	20	115/208-230	Auto.	4.4	9.81	7.75
	1140	56C	110381	32	115/208-230	None	5.0	11.38	9.32
3/4	1725	S56C	100026	24	115/208-230	None	5.4	10.56	8.50
	1725	S56C	100021	26	115/208-230	Man.	5.4	10.56	8.50
	1725	S56C	101523	26	115/208-230	Auto.	5.4	10.56	8.50
	1140	56C	110382	43	115/208-230	None	6.4	12.88	10.82
1	1725	56C	110220	30	115/208-230	None	6.4	10.88	8.82
	1725	143TC	121002	31	115/208-230	None	6.4	11.69	9.56
	1725	56C	110036	33	115/208-230	Man.	6.4	10.88	8.82
1 1/2	1725	56C	110388☆	38	115/208-230	None	8.6	11.88	9.82
	1725	...	...	...	...	...	...	...	...
	1725	56C	110037☆	41	115/208-230	Man.	8.6	11.88	9.82
2	1725	...	...	...	...	...	...	...	...
	1725	145TC	120073☆	49	115/230	None	10.5	13.69	11.56
	1725	...	...	...	...	...	...	...	...
	1725	...	...	...	...	...	...	...	...
3	1740	184TC	131544	82	115/208-230	None	16.8	14.19	11.50
5	1740	184TC	131539☆	87	230	None	21.0	14.69	12.06

Motors in this column have NEMA Service Factors.

TEFC • C FACE LESS BASE • SINGLE PHASE

NEMA Frame	Catalog Number	App. Wgt. (lbs.)	Voltage	Over- load Prot.	F.L. Amps 230 V.	% FL Eff.	Dim.◇ (Inches) "C" "AG"
48C	101765	19	115/208-230	None	2.3	9.44	7.75
56C	110405●✦	24	115/208-230	None	2.4	9.94	7.88
56C	114639	21	115/208-230	None	2.6	10.81	8.75
...
56C	110076●✦	25	115/208-230	None	2.9	9.94	7.88
56C	101766	22	115/208-230	None	3.1	10.31	8.25
56C	110038●✦	25	115/208-230	Man.	2.9	9.94	7.88
...
56C	110056✦	25	115/208-230	None	4.4	10.81	8.75
56C	110039✦	24	115/208-230	Man.	4.4	10.81	8.75
56C	114476	24	115/208-230	Auto.	4.4	10.81	8.75
56C	110411	37	115/208-230	None	4.9	12.81	10.75
56C	110057✦	28	115/208-230	None	5.4	11.31	9.25
56C	110040✦	28	115/208-230	Man.	5.4	11.31	9.25
56C	110308✦	28	115/208-230	Auto.	5.4	11.31	9.25
56C	110414☆	41	115/208-230	None	5.3	13.31	11.25
56C	110058✦	32	115/208-230	None	6.4	11.88	9.82
143TC	121001	41	115/208-230	None	6.4	11.69	9.56
56C	110041✦	32	115/208-230	Man.	6.4	11.88	9.82
56C	110420☆	39	115/208-230	None	8.6	12.81	10.75
145TC	120017☆	49	115/208-230	None	8.6	13.75	11.62
56C	110042☆	42	115/208-230	Man.	8.6	12.81	10.75
56C	112136☆	46	115/230	None	10.0	13.81	11.75
...
182TC	131516	79	115/208-230	None	12.4	13.96	11.33
145TC	120060☆	47	115/230	Man.	10.0	14.25	12.12
184TC	131545	97	115/208-230	None	16.8	16.47	13.78
184TC	131540☆	112	230	None	23.0	17.41	14.78

Motors in this column have NEMA Service Factors except as noted by ☆, which have 1.15 Service Factors.



EXPLOSION-PROOF MOTORS

SINGLE AND THREE PHASE

EXPLOSION-PROOF • SINGLE PHASE C FACE LESS BASE

CLASS I, GROUPS C & D—CLASS II, GROUPS F & G
W/CONDUIT BOX

HP	RPM 60 Hz	NEMA Frame	Catalog Number	App. Wgt. (lbs.)	Voltage	Over- load Prot.	F.L. Amps 230 V.	% FL Eff.	Dim.◇ (Inches) "C" "AG"
1/3	1725	56C	111075●	41	115/208-230	Auto.	2.9	70.0	12.37 10.31
1/2	1725	56C	111085	45	115/208-230	Auto.	4.0	65.0	14.09 12.03
3/4	1725	56C	111086	50	115/208-230	Auto.	5.4	70.0	14.59 12.53
1	1725	56C	110852	53	115/208-230	Auto.	6.4	75.0	14.59 12.53
1 1/2	1725	...	...	...	...	...	...	...	...
2	1725	...	...	...	...	...	...	...	...

Explosion Proof Motors have 1.0 Service Factor.

EXPLOSION-PROOF • THREE PHASE C FACE LESS BASE

CLASS I, GROUPS C & D—CLASS II, GROUPS F & G
W/CONDUIT BOX

NEMA Frame	Catalog Number	App. Wgt. (lbs.)	Voltage	Over- load Prot.	F.L. Amps 230 V.	% FL Eff.	Dim.◇ (Inches) "C" "AG"
56C	111931▲●	31	208-230/460	Auto.	1.7	76.0	10.87 8.81
56C	111930▲●	36	208-230/460	Auto.	1.6	75.0	11.37 9.31
56C	111935▲	44	208-230/460	Auto.	2.8	75.0	13.59 11.53
56C	111926▲	46	208-230/460	Auto.	3.4	78.0	14.09 12.03
56C	111941	52	208-230/460	Auto.	4.4	80.0	14.59 12.53
145TC	121178	59	208-230/460	Auto.	5.6	84.0	15.53 13.40

SEE CATALOG 1050 FOR HAZARDOUS LOCATION APPLICATION NOTES.

- ☆ Capacitor start/capacitor run design for reduced amperage, others are capacitor start/induction run.
- These Totally Enclosed Single Phase have 1.15 Service Factors.
- ▲ These motors are totally enclosed, non-ventilated—Others are fan cooled.
- ◇ "C" Dimension is overall length of motor, including shaft. "AG" dimension is mounting surface of C Face to opposite end of motor.
- ▲ These motors are satisfactory for operation on 50 hertz power supply at full rated horsepower.

THREE PHASE MOTORS

GENERAL PURPOSE • C FACE LESS BASE



DRIP-PROOF • C FACE LESS BASE • THREE PHASE

HP	RPM 60 Hz	NEMA Frame	Catalog Number	App. Wgt. (lbs.)	Voltage	F.L. Amps 230 V.	% F.L. Eff.	Dim.◇ (Inches) "C" "AG"	
1/4	1725	...	...	...	...	...	...	...	...
	1725	...	...	...	...	...	...	...	...
	1725	...	...	...	...	...	...	...	...
	1725	...	...	...	...	...	...	...	...
1/3	1725	S56C	100048	17	208-230/460	1.6	68.0	9.31	7.25
	1725	...	...	...	...	...	...	...	...
	1140	...	...	...	...	...	...	...	...
	1140	...	...	...	...	...	...	...	...
1/2	1725	...	...	...	...	...	...	...	...
	1725	S56C	100049	17	208-230/460	2.0	75.0	9.81	7.75
	1725	...	...	...	...	...	...	...	...
	1140	56C	110434	28	208-230/460	2.2	69.0	9.88	7.82
3/4	1725	S56C	100050	22	208-230/460	2.8	75.0	10.81	8.75
	1140	...	...	...	...	...	...	...	...
	1140	143TC	120063	34	208-230/460	3.4	75.5	10.88	8.75
	1725	56C	110043	28	208-230/460	4.2	78.5	10.88	8.82
1	1725	143TC	120172	34	208-230/460	4.2	78.5	11.28	9.15
	1140	...	...	...	...	...	...	...	...
	1140	145TC	120082	37	208-230/460	4.2	77.0	11.78	9.65
	1725	56C	110044	30	208-230/460	5.6	78.5	11.38	9.32
1 1/2	1725	145TC	120081	37	208-230/460	5.6	78.5	11.78	9.65
	1140	...	...	...	...	...	...	...	...
	1140	...	...	...	...	...	...	...	...
	1725	56C	115553	34	208-230/460	6.2	81.0	12.88	11.00
2	1725	145TC	120035	39	208-230/460	6.2	81.0	12.28	10.15
	1140	...	...	...	...	...	...	...	...
	1140	...	...	...	...	...	...	...	...
	1725	56C	...	...	...	...	...	...	...
3	1725	145TC	121405	45	208-230/460	8.6	82.5	13.13	10.50
	1740	182TC	131489	65	230/460	8.8	84.0	12.19	9.56
	1725	184TC	131490	75	208-230/460	13.4	86.0	13.19	10.56
	7 1/2	1740	184TC	131739	108	230/460	19.6	87.0	15.70	12.95

TEFC • C FACE LESS BASE • THREE PHASE

NEMA Frame	Catalog Number	App. Wgt. (lbs.)	Voltage	F.L. Amps 230 V.	% F.L. Eff.	Dim.◇ (Inches) "C" "AG"	
48CZ➤	101966 ●	18	208-230/460	1.4	65.0	9.06	7.37
48CZ➤	101981	18	208-230/460	1.4	66.0	9.44	7.75
S56C	101648 ●	17	208-230/460	1.2	65.0	9.31	7.25
S56C	101767	19	208-230/460	1.4	66.0	9.81	7.75
S56C	101769	20	208-230/460	1.6	68.0	10.31	8.25
56C	110045 ●	20	208-230/460	1.3	72.0	9.94	7.88
48C	101291 ●	24	208-230/460	1.8	67.0	10.06	8.37
56C	113311	24	208-230/460	1.6	65.0	10.81	8.75
48C	100486 ●	24	208-230/460	1.9	75.0	11.06	9.37
56C	110046 ●	24	208-230/460	1.8	78.5	10.44	8.38
56C	110458	22	208-230/460	2.0	74.0	10.81	8.75
56C	110163	24	208-230/460	2.4	70.0	11.31	9.25
56C	110047	25	208-230/460	2.8	77.0	10.81	8.75
56C	112378	29	208-230/460	3.0	75.5	12.31	10.25
143TC	120097	34	208-230/460	3.0	78.0	12.25	10.12
56C	110048	28	208-230/460	3.6	77.0	11.31	9.25
143TC	120024	30	208-230/460	3.6	77.0	11.75	9.62
56C	112379	32	208-230/460	4.0	77.0	12.31	10.25
145TC	120098	33	208-230/460	4.0	77.0	12.75	10.62
56C	110125	33	208-230/460	5.0	78.5	11.81	9.75
145TC	120037	35	208-230/460	5.0	78.5	12.75	10.62
56C	113634	39	208-230/460	5.7	77.0	13.81	11.75
145TC	120161	39	230/460	5.7	77.0	13.75	11.62
56C	110451	36	208-230/460	6.2	81.5	12.81	10.75
145TC	120038	36	208-230/460	6.2	81.5	12.75	10.62
F184TC	130955 †	70	208-230/460	6.4	81.0	14.91	12.28
184TC	131525	70	208-230/460	7.6	80.0	13.90	11.27
56C	113890 †	45	208-230/460	8.6	82.5	13.81	11.75
145TC	121035 †	47	230/460	8.6	82.5	14.25	12.12
182TC	131491	60	230/460	8.8	84.0	13.96	11.33
184TC	131492	72	208-230/460	13.4	86.0	13.96	11.33
184TC	131606	110	208-230/460	19.6	87.0	16.46	13.83

- ◇ "C" Dimension is overall length of motor, including shaft. "AG" dimension is mounting surface of C Face to opposite end of motor.
- Shaft extension has keyway and flat 90° apart for ease of mounting. Useable shaft is 1 1/2" long by 1/2" diameter, 1/8" keyway.
- These motors are totally enclosed, non-ventilated—Others are fan cooled.
- † Class F insulated.
- ♣ These totally enclosed three phase motors have 1.0 service factors.



WATTSaver PREMIUM EFFICIENCY INVERTER DUTY MOTORS



THREE PHASE • DRIP-PROOF • C FACE LESS BASE

HP	RPM 60 Hz	NEMA Frame	Catalog Number	App. Wgt. (lbs.)	Voltage	F.L. Amps 230 V.	3/4 Load Eff.	% F.L. Eff.	Dim. ◇ (Inches) "C" "AG"
1/2	1725	S56C	102200	22	208-230/460	1.8	78.4	79.0	12.31 10.25
3/4	1725	56C	114934	24	208-230/460	2.6	80.4	81.0	10.88 8.82
1	1725	143TC	121064▲	36	208-230/460	3.0	84.2	84.0	11.28 9.15
1½	1725	145TC	121063▲	39	208-230/460	4.2	84.3	84.0	11.78 9.65
2	1725	145TC	121071	41	208-230/460	6.2	84.6	84.0	12.28 10.15
3	1760	182TC	131518	68	208-230/460	8.2	87.0	87.5	13.69 11.06
5	1760	184TC	131517	78	208-230/460	12.8	87.7	88.5	14.69 12.06

All Wattsaver motors have normally closed thermostats for over-temperature alert.



THREE PHASE • TEFC • C FACE LESS BASE

HP	RPM 60 Hz	NEMA Frame	Catalog Number	App. Wgt. (lbs.)	Voltage	F.L. Amps 230 V.	3/4 Load Eff.	% F.L. Eff.	Dim. ◇ (Inches) "C" "AG"
1/2	1725	S56C	101780▲	19	208-230/460	1.8	78.5	79.0	10.31 8.25
3/4	1725	56C	114213▲	24	208-230/460	2.6	80.2	81.0	10.44 8.38
1	1725	56C	114638▲	33	208-230/460	3.0	83.5	84.0	10.94 8.88
	1725	143TC	121067▲	33	208-230/460	3.0	83.5	84.0	12.25 10.12
1½	1725	145TC	121066▲	40	208-230/460	4.2	84.0	84.0	12.25 10.12
2	1725	145TC	121065	42	208-230/460	6.2	84.6	84.0	12.75 10.62
3	1760	182TC	131503	73	208-230/460	8.2	88.1	88.5	14.46 11.83
5	1760	184TC	131501	97	208-230/460	13.0	87.7	88.5	15.96 13.33

All Wattsaver motors have normally closed thermostats for over-temperature alert.



50 HERTZ MOTORS THREE PHASE

General Specifications:

Totally enclosed fan cooled, 12-lead motors designed specifically for 50 Hz service. These motors are intended for equipment built in North America and destined for use in 50 Hz service areas of the world.

Features:

These NEMA frame motors are designed to North American performance standards, but for 50 Hz service. Suitable for 220/380 volt, 50 Hz, or 440 volt, 50 Hz, three phase power. Torques exceed NEMA performance standards for Design B motors and produce the full rated horsepower at 50 Hz speeds.

Construction meets IEC, IP54 degree of protection standards and utilizes external fan cooling (IEC cooling method IC41). Gasketed conduit box is in the North American standardized F1 location, with leads.



THREE PHASE • TEFC • C FACE LESS BASE • IP54

KW/HP	RPM 50 Hz	NEMA Frame	Catalog Number	App. Wgt. (lbs.)	Voltage	F.L. Amps 380 V.	% F.L. Eff.	Dim. ◇ (Inches) "C" "AG"
0.18/¼	1425	S56C	102184	19	220/380/440	1.00	56.0	9.81 7.75
0.25/⅓	1425	56C	114889	20	220/380/440	1.00	68.0	10.31 8.25
0.37/½	1425	56C	114891●	22	220/380/440	1.15	73.0	10.81 8.75
	950	56C	114892	24	220/380/440	1.50	68.0	11.31 9.25
0.55/¾	1425	56C	114894	25	220/380/440	1.85	74.0	11.31 9.25
0.75/1	1425	56C	114896	28	220/380/440	2.00	77.0	11.31 9.25
	1425	143TC	121272	30	220/380/440	2.00	77.0	11.75 9.62
	950	145TC	121273	33	220/380/440	2.65	73.0	13.25 11.12
1.1/1½	1440	145TC	121275	35	220/380/440	3.30	75.5	12.75 10.62
1.5/2	1440	145TC	121277	36	220/380/440	3.65	81.5	13.75 11.62
2.2/3	1440	182TC	131506	64	220/380/440	4.70	84.0	13.96 11.33
3.7/5	1440	184TC	131508	83	220/380/440	8.10	85.0	15.46 12.83

● These motors are totally enclosed, non-ventilated, IEC cooling method IC40.

◇ "C" Dimension is overall length of motor, including shaft. "AG" dimension is mounting surface of C Face to opposite end of motor.

▲ These motors are satisfactory for operation on 50 hertz power supply at full rated horsepower.



LEESON BRAKEMOTORS



Fail-safe positive, stop and hold brakemotors. Brakes are spring set. Load is stopped automatically when power is turned off. LEESON brakemotors feature a power off manual release for convenience, and for use

in case of a power failure. The manual release resets automatically. The standard brake is manufactured by Stearns. The brake coil leads are brought into the conduit box of the motor for easy connection and may be connected to operate when power to the motor is shut off, or to be actuated independent of power to the motor. Three phase motors have brake coils rated 230/460 VAC, 60 Hz. Single phase brake coils are 115/230 VAC, 60 Hz.

- These motors are totally enclosed, non-ventilated, IEC cooling method IC40.
- ◇ "C" Dimension is overall length of motor, including shaft. "AG" dimension is mounting surface of C Face to opposite end of motor.

THREE PHASE • DRIP-PROOF • C FACE LESS BASE

HP	RPM 60 Hz	NEMA Frame	Brake Rating (ft-lbs)	Catalog Number	App. Wgt. (lbs.)	Voltage	FL Amps 230 V.	% FL Eff.	Dim.◇ (Inches) "C" "AG"
1/2	1725	56C	3	114156	28	208-230/460	2.0	74.0	13.56 11.50
3/4	1725	56C	6	114157	38	208-230/460	2.8	77.0	14.06 12.00
1	1725	56C	6	114166	40	208-230/460	3.4	78.0	14.56 12.50
1½	1725	145TC	10	120372	43	208-230/460	5.6	78.5	15.50 13.37
2	1725	145TC	10	120373	47	208-230/460	6.2	78.5	16.00 13.87
3	1740	182TC	15	131624	79	208-230/460	8.8	84.0	16.39 13.76
5	1740	184TC	25	131625	84	208-230/460	13.4	86.0	17.84 15.21

◇ "C" Dimension is overall length of motor, including shaft. "AG" dimension is mounting surface of C Face to opposite end of motor.

THREE PHASE • TEFC • C FACE LESS BASE

HP	RPM 60 Hz	NEMA Frame	Brake Rating (ft-lbs)	Catalog Number	App. Wgt. (lbs.)	Voltage	FL Amps 230 V.	% FL Eff.	Dim.◇ (Inches) "C" "AG"
1/3	1725	56CFC	3	114158●	26	208-230/460	1.3	72.0	13.56 11.50
1/2	1725	56CFC	3	114159	31	208-230/460	2.0	74.0	15.06 13.00
3/4	1725	56CFC	6	114160	43	208-230/460	2.8	77.0	15.06 13.00
1	1725	56CFC	6	114161	35	208-230/460	3.6	77.0	15.56 13.50
1½	1725	145TC	10	120331	45	230/460	5.0	78.5	17.00 14.87
2	1725	145TC	10	120332	49	208-230/460	6.0	84.0	18.00 15.87
3	1740	182TC	15	131610	73	230/460	8.8	84.0	18.73 16.10
5	1740	184TC	25	131611	112	230/460	13.4	86.0	19.18 16.55

BRAKEKITS™ AND COUPLER BRAKES



LEESON BRAKEKITS™

Kit of components to convert NEMA 56*, 143-5T and certain 182-4T frame stock TEFC to a fail-safe brakemotor.

Consists of totally enclosed Stearns AC brake, replacement cast fan cover, shaft extension, fan and hardware. Mounts on the fan end of the motor. May be used on single or three phase motors

except the 182-4T kit is for three phase motors only. Please see listing below of 182-4T frame motors the BRAKEKIT™ can be used to modify.

Two ½" NPT holes with 18" leads are provided for connections. The BRAKEKIT™ adds 5/8" to the overall length of 56 and 143-5T frame, and 5/8" to the overall length of 182-184T frame.

BRAKEKITS™

Brake Rating (ft-lbs)	Mounts to NEMA Frame	Max. HP @ 1725rpm	Cat. No. 115-208/230 V Single Phase	Cat. No. 208-230/460 V Three Phase	Cat. No. 575 V Three Phase	App. Wt. (lbs.)
3	56/143-5T	1	175659	175139	175177	10
6	56/143-5T	2	175660	175140	175178	10
10	56/143-5T	3	175662	175141	175179	10
15	182-4T	3	--	175696	175698	12
25	182-4T	5	--	175697	175699	12

*The BRAKEKIT™ cannot be used with 56 frame motors having an "S" in the frame number—for example, S56.

BRAKE SELECTION

Motor HP	Brakemotor RPM Torque Rating of Brake (Lb-Ft)	
	1725	1140
1/3	3	3
1/2	3	3
3/4	6	6
1	6	6
1½	10	10
2	10	15
3	15	25
5	25	—

In this table, brake torque ratings are no less than 140% of the motor full load torque. Match HP & frame size of motor with appropriately rated BRAKEKIT™.

DOUBLE NEMA C FACE



Mounts directly to the face and shaft of NEMA 56 face motors and provides a NEMA 56C face and shaft for the load.

The 6 foot-pound brake mounts to NEMA 56C face motors or to NEMA 143-5TC face motors using the optional hub (included). Output face and shaft of the brake is NEMA 56C.

A ½" NPT hole with 15" leads is provided for connection. Totally enclosed construction. Overall length less the output shaft is 5/8".

COUPLER BRAKES

For Both Single and Three Phase Motors

Cat. No. 115/208-230V Single Phase	Cat. No. 208-230/460V Three Phase	Cat. No. 575V Three Phase	Brake Rating (ft-lbs)	Max. HP @ 1725 rpm	Mounts to NEMA Frame	Coupler Brake Output Shaft and Face	App. Wt. (lbs.)
175131§	175131§	175153	3	1	56C	5/8", 56C	13
175132§	175132§	175154	6	2	56C/143-5TC	5/8", 56C	14

§ The same brake can be operated on both 115/208-230V and 208-230/460V by reconnecting the leads.



DC MOTORS NEMA FRAME • C FACE WITH REMOVABLE BASE

General Specifications:

High voltage permanent magnet DC motors are typically used with an SCR (thyristor) controller in applications requiring adjustable speed and constant torque throughout the speed range. They are also widely used in applications requiring dynamic braking or adjustable speed/ reversing capabilities.



Mechanical Features:

Low profile space-saving design. Unique brush holder design provides easy access to brushes and integral constant pressure brush/spring assembly for servicing. Large over-sized brushes assure longer brush life. Heavy-duty, stamped steel, bolt-on base (removable). NEMA C face mounting at no additional cost. Rugged die cast aluminum endshields with cast iron bearing inserts. Permanently lubricated sealed ball bearings. May be converted NEMA 48 base and/or C face using modification kits noted below.

Electrical Features:

Input power of 115 or 230 volts rectified AC when used with an appropriate SCR control. Linear speed/torque characteristics over entire speed range. High starting torque for heavy load applications. Capable of dynamic braking for faster stops. Reversible rotation with simple two-lead connection. For further information on Direct Current Motors, request Bulletin 1600.

SCR RATED • TEFC • 90 & 180 VOLTS NEMA 56C • C FACE WITH REMOVABLE BASE Σ

HP	Full Load RPM	NEMA Frame	Catalog Number	App. Wgt. (lbs.)	Arm. Volts DC	Control Volts AC Input	F.L. Amps DC	Dim. \diamond (Inches)	
								"C"	"AG"
1/4	1750	LSS56C	098002	19	90	115	2.5	10.81	8.75
	1750	MSS56C	098003	22	180	230	1.4	11.31	9.25
1/3	1750	MSS56C	098004	23	90	115	3.5	11.31	9.25
	1750	MSS56C	098005	22	180	230	1.7	11.31	9.25
1/2	2500	LSS56C	098006	21	90	115	5.0	10.81	8.75
	2500	LSS56C	098007	22	180	230	2.5	10.81	8.75
	1750	NSS56C	098000	24	90	115	5.0	11.81	9.75
	1750	VS56C	108014	31	90	115	5.0	12.81	10.75
	1750	NSS56C	098008	25	180	230	2.5	11.81	9.75
3/4	1750	VS56C	108015	30	180	230	2.5	12.81	10.75
	2500	NSS56C	098009	25	90	115	7.6	11.81	9.75
	2500	VS56C	108016	29	90	115	7.6	12.81	10.75
	2500	NSS56C	098010	25	180	230	3.8	11.81	9.75
	2500	VS56C	108017	29	180	230	3.8	12.81	10.75
1	1750	VSS56C	098032	27	90	115	7.3	14.31	12.25
	1750	XS56C	108018	35	90	115	7.6	13.81	11.75
	1750	USS56C	098069	27	180	230	3.8	13.81	11.75
	1750	XS56C	108019	35	180	230	3.8	13.81	11.75
	2500	XS56C	108020	34	90	115	10.0	13.81	11.75
1	2500	XS56C	108021	34	180	230	5.0	13.81	11.75
	1750	WLS56C	108022	40	90	115	10.0	15.31	13.25
1 1/2	1750	ZS56C	108023	40	180	230	5.0	15.81	13.25
	2500	ZS56C	108265	41	180	230	7.5	14.81	12.75
1 1/2	1750	ZLS56C	108092	51	180	230	7.6	16.81	14.75
	1750	WMS56/	108262	51	180	230	7.6	17.38	15.25
	145TC								
	1750	H145TC	128000	68	180	230	7.5	18.34	16.21
2	2500	ZLS56/	108266	51	180	230	8.6	16.81	14.68
	145TC								
2	1750	145TC	128010	78	180	230	9.5	20.15	18.02
	1750	182/145TC	128001	178	180	230	9.5	20.15	18.02
3	1750	182/145TC	108502	89	180	230	14.0	21.88	19.75

General Specifications:

Low voltage permanent magnet DC motors are suitable for installations having battery or solar powered operations, or generator supplied low voltage DC.



Mechanical Features:

Unique brush holder design provides easy access to brushes and integral, constant pressure brush/spring assembly for servicing. Larger over-sized brushes assure longer brush life. Heavy-duty, stamped steel, bolt-on base (removable). NEMA C face mounting flange at no additional cost. High strength rolled steel frame. Rugged die cast aluminum endshields with steel bearing inserts. Permanently lubricated sealed ball bearings.

Electrical Features:

High starting torques for heavy load applications. Linear speed/torque characteristics over entire speed range. Capable of dynamic braking for faster stops. Reversible rotation and simple two-lead connection. Convenient wiring access.

LOW VOLTAGE • TENV • 12 AND 24 VOLTS DC NEMA C FACE WITH REMOVABLE BASE Σ

HP	Full Load RPM	NEMA Frame	Catalog Number	App. Wgt. (lbs.)	Arm. Volts DC	F.L. Amps DC	Dim. \diamond (Inches)	
							"C"	"AG"
1/4	1800	NS56C	108045	21	12	21.0	10.44	8.38
1/3	1800	RS56C	108046	22	12	27.0	11.44	9.38
	1800	RS56C	108050	22	24	13.5	10.94	8.88
1/2	1800	VS56C	108047	28	12	39.0	12.44	10.38
	1800	VS56C	108051	28	24	20.0	11.94	9.88
3/4	1800	WS56C	108048	30	12	58.0	13.81	11.75
	1800	VS56C	108052	29	24	29.0	12.81	10.75
1	1800	WS56C	108322	35	12	80.0	13.31	11.25
	1800	XS56C	108053	33	24	39.0	13.81	11.25

\diamond "C" Dimension is overall length of motor, including shaft. "AG" dimension is mounting surface of C Face to opposite end of motor.
 \clubsuit Built-in conduit box located at 12:00.
 \spadesuit Studs at 12:00.
 \heartsuit NEMA 145TC face mounting with removable NEMA 182T rigid base.
 \blacktriangleleft NEMA 145TC frame shaft 7/8" x 2 1/4" and NEMA 56 removable base.
 Σ If base is removed, do not reinstall bolts without using washers to compensate for thickness of base.

MICRO SERIES INVERTER DRIVES



NEMA 1

Speedmaster® Micro Series compact inverters offer “big drive” features for adapting standard or premium efficiency three phase motors to adjustable speed operation. Utilizing the latest microprocessor and advanced IGBT power conversion devices, these high performance controls program and read-out in plain English, eliminating the

frustration and time involved in looking-up confusing coded symbols. Complete, rugged steel enclosures for NEMA 1 (IP31) or NEMA 4/12 (IP65) service do not require additional enclosure protection as with many plastic-housed compact drives. Built-in thermal overload protection reduces additional costs. Heavy duty wiring terminals accessible via three conduit openings on the bottom of the housing for power in/out and input/output signals speeds installation and reduces installation costs.

Single Phase Input with 230V three phase output. NEMA 1 enclosure. These Speedmaster® Micro Series inverters have the same features as units shown on the opposite page. All can be programmed in plain English, eliminating the difficulties of using coded symbols.

Full feature, ultra-friendly operation. Programs and reads-out in plain English.

- Intelligent Power Module-IGBT's with a 16 bit Intel microprocessor.
- User choice programming with:
 - ✓ Choice of “Quick Start” factory presets.
 - ✓ Built-In English programmable options via the key touch-pad.
- Input Line Voltages: 115/230 and 230 VAC single phase; 200-230, 460-480 and 550-575 VAC three phase. Both +10%, -15%.
- Output Frequency: 0-120 Hz.
- Overload Current Capacity: 150% for one minute, based on nominal output of the control.
- Speed reference signal. Choice of potentiometer, 0-10VDC or 4-20mA inputs.
- Analog output signal, 0-10VDC, speed or load.
- Two auxiliary contacts: One form C relay and one open collector output.
- Preset speeds: Four.
- Slip compensation.
- Adjustable carrier frequency.
- Adjustable acceleration and deceleration times.
- Forward/Reverse.
- DC braking-time and voltage adjustable.
- Password protected.
- Constant torque—with adjustable current limit.
- 150% overload capacity for one minute based on nominal output rating of the control.
- Rugged, heavy-gauge steel enclosures with barrier type terminal strips.
- Underwriters Laboratories Listed.



NEMA 1 (IP31) • THREE PHASE INPUT/OUTPUT

	HP	Output Amps	Input Voltage	Catalog Number	App. Wgt. (Lbs)	Dimensions (Inches)		
						H	W	D
200-230 Volts	1/2	2.2	200-230	174914	6	7.50	4.70	3.63
	1	4.0	200-230	174915	6	7.50	4.70	4.33
	1 1/2	5.2	200-230	174916	6	7.50	4.70	4.33
	2	6.8	200-230	174917	9	7.50	6.12	5.12
	3	9.6	200-230	174918	9	7.50	6.12	5.12
	5	15.2	200-230	174919	12	7.88	7.86	5.94
460-480 Volts	7 1/2	22.0	200-230	174545	15	9.38	7.86	6.84
	1	2.0	460-480	174920	6	7.50	4.70	3.63
	2	3.4	460-480	174921	8	7.50	6.12	4.22
	3	4.8	460-480	174922	9	7.50	6.12	5.12
	5	7.6	460-480	174923	9	7.50	6.12	5.12
	7 1/2	11.0	460-480	174924	15	9.38	7.86	6.25
550-575 Volts	1	1.6	550-575	174925	6	7.50	4.70	3.63
	2	2.7	550-575	174926	8	7.50	6.12	4.22
	3	3.9	550-575	174927	9	7.50	6.12	5.12
	5	6.1	550-575	174928	9	7.50	6.12	5.12
	7 1/2	9.0	550-575	174929	15	9.38	7.86	6.25

NEMA 1 (IP31) • SINGLE PHASE INPUT 230V THREE PHASE OUTPUT

(Use with three phase 230v motor)

HP	Output Amps 230 VAC	Input Voltage	Catalog Number	App. Wgt. (Lbs)	Dimensions (Inches)		
					H	W	D
1/4	1.4	115/230	174930	5	7.50	4.70	3.33
1	4.0	115/230	174931	7	7.50	6.12	4.22
1 1/2	5.2	115/230	174932	7	7.50	6.12	4.22
2	6.8	200-230	174933	9	7.50	6.12	5.12
3	9.6	200-230	174934	9	7.50	6.12	5.12

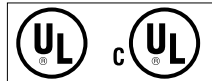


AC ADJUSTABLE SPEED DRIVES SM PLUS SUB-MICRO INVERTERS

SM PLUS SUB-MICRO INVERTER DRIVES

BIG performance from an ultra-compact design. Over 50 programmable functions:

- Input line voltage calibration—optimizes over and under voltage trip levels
- Current limit to 180% with frequency foldback
- Adjustable carrier frequency (4 to 10 kHz)
- Adjustable V/Hz
- Output frequency to 120 Hz
- Seven preset speeds
- Three programmable terminals for speed reference and control activation
- Two open collector auxiliary outputs to indicate: Run, Fault, Inverse Fault, Fault Lockout, At Set Speed, Above Preset Speed, Current Limit, Automatic Mode, and Reverse.
- Automatic restart after fault
- Control via terminal strip or optional remote keypad
- Coast or ramp to stop
- Independent Accel and Decel adjustment
- Forward only or forward and reverse direction
- Adjustable DC injection braking
- Speed reference: Keypad, 0-10 VDC, or 4-20 mA
- Speed reference calibration
- Speed and load indicating output signal selection: 0-10 VDC or 4-20mA
- Output signal calibration
- I²t motor thermal overload protection
- Fixed boost for high starting torque
- Accel boost for high torque accelerating at any speed
- Slip compensation
- Activation or disabling of serial communications
- Assignment of serial addresses
- Modbus® Serial Communication Protocol
- Password protection
- Fault history: Stores eight previous trips
- Terminal status indication
- Parameter reset: Reset to factory defaults (choice of 50 Hz or 60 Hz factory settings) or OEM defaults
- IP20 enclosure



SINGLE PHASE INPUT/THREE PHASE OUTPUT

HP	Output Amps	Input Voltage	Catalog Number	H	Dimensions (Inches)	
					W	D
1/4	1.4	115-230	174450	5.75	2.88	3.75
1/2	2.2	115-230	174451	5.75	2.88	3.75
1	4.0	115-230	174492	5.75	3.76	5.24
1 1/2	5.4	115-230	174445	5.75	3.76	5.24

SINGLE OR THREE PHASE INPUT/THREE PHASE OUTPUT

HP	Output Amps	Input Voltage	Catalog Number	H	Dimensions (Inches)	
					W	D
1/4	1.4	200-230	174452	5.75	2.88	3.75
1/2	2.2	200-230	174453	5.75	2.88	3.75
1	4.0	200-230	174454	5.75	2.88	4.56
1 1/2	5.4	200-230	174493	5.75	3.76	5.24
2	6.8	200-230	174494	5.75	3.76	6.74
3	9.6	200-230	174495	5.75	3.76	6.74
5	15.2	200-230	174444	7.75	5.02	7.18

THREE PHASE INPUT/OUTPUT

HP	Output Amps	Input Voltage	Catalog Number	H	Dimensions (Inches)	
					W	D
1	4.0	200-230	174455	5.75	2.88	4.56
1 1/2	5.4	200-230	174456	5.75	2.88	5.56
2	6.8	200-230	174457	5.75	2.88	5.56
3	9.6	200-230	174458	5.75	2.88	5.56
5	15.2	200-230	174446	5.75	3.76	6.74
7 1/2	22.0	200-230	174438	7.75	5.02	7.18
1/2	1.1	460-480	174459	5.75	2.88	3.75
1	2.0	460-480	174460	5.75	2.88	4.56
1 1/2	2.7	460-480	174461	5.75	2.88	5.56
2	3.4	460-480	174462	5.75	2.88	5.56
3	4.8	460-480	174463	5.75	2.88	5.56
5	7.6	460-480	174447	5.75	3.76	6.74
7 1/2	11.0	460-480	174440	7.75	5.02	7.18
1	1.6	550-575	174464	5.75	2.88	4.56
2	3.0	550-575	174491	5.75	2.88	5.56
3	4.2	550-575	174497	5.75	3.76	6.74
5	6.6	550-575	174448	5.75	3.76	6.74
7 1/2	9.6	550-575	174442	7.75	5.02	7.18

SPECIFICATIONS:

Storage Temperature	-20° to 70° C
Ambient Operating Temperature	0° to 50° C
Ambient Humidity	<95% (non-condensing)
Maximum Altitude	3300 ft (1000m) above sea level
Input Line Voltages	115-230 VAC, 200-230 VAC, 460-480 VAC, and 550-575 VAC
Input Voltage Tolerance	+10%, -15%
Input Frequency Tolerance	48 to 62 Hz
Output Wave Form	Sine Coded PWM
Output Frequency	0-120 Hz
Carrier Frequency	4 kHz to 10 kHz

Enclosure	IP20
Service Factor	1.0
Efficiency	up to 98%
Power Factor (displacement)	>0.96
Overload Current Capacity	150% for 60 seconds 180% for 20 seconds
Speed Reference Follower	0-10 VDC, 4-20 mA
Control Voltage	15 VDC
Analog Outputs	0-10 VDC or 2-10 VDC: Proportional to frequency or load
Digital Outputs	Open-collector: 40 mA at 30 VDC
Power Supply for Aux. Relays	40 mA at 12 VDC

AC ADJUSTABLE SPEED DRIVES

SM BASIC SUB-MICRO INVERTERS



SM BASIC SUB-MICRO INVERTER DRIVES

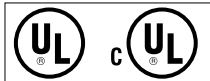
The advantages of digital adjustable speed control—at a price competitive with soft starts and DC SCR drive systems.

Ideal for cost-effective control of smaller AC motors, SM Basic drives provide essential out-of-the-box features for basic start/stop and adjustable speed applications.

These include:

- Removable electronic programming module allows off-line set-up and program replication.
- Smooth accel/decel ramping
- Forward/reverse
- Multiple speed presets
- Slip compensation for 1% speed regulation
- Current limit to 180% for 30 seconds with frequency foldback to avoid nuisance trips
- Two-digit LED display
- Adjustable carrier frequency to 10kHz for quiet operation
- Output frequency to 99 Hz
- Eight-event fault history
- DC injection braking
- Programmable with buttons on drive face; off-line programmable using EPM electronic programming module
- IP 20 “contactor-style” enclosure with finger-safe terminals
- UL-approved for single motor protection

The nine-terminal I/O strip is non-isolated and recommended for connection only to speed pots, push buttons, selectors or similar line-voltage motor control devices. Where drive control is to be from remote locations, where additional process control functions are to be integrated, or if serial communication is required, refer to SM Plus Inverters.



SINGLE PHASE INPUT/THREE PHASE OUTPUT

HP	Output Amps 230 VAC	Input Voltage	Catalog Number	App. Wgt.(lbs.)	Dimensions (Inches)		
					H	W	D
1/4	1.4	115/230 200-230	174374 174378	2	5.75	2.88	3.76
1/2	2.2	115/230 200-230	174375 174379	3	5.75	2.88	3.76
1	4.0	115/230 200-230	174376 174380	4 3	5.75	3.76	5.24 4.56
1 1/2	5.4	115/230 200-230	174377 174381	4	5.75	3.76	5.24
2	6.8	200-230	174382	4	5.75	3.76	5.24
3	9.6	200-230	174383	5	5.75	3.76	6.74

THREE PHASE INPUT/OUTPUT

HP	Output Amps 230 VAC	Input Voltage	Catalog Number	App. Wgt.(lbs.)	Dimensions (Inches)		
					H	W	D
1/2	2.2	200-230	174384	2	5.75	2.88	3.76
1	4.0	200-230	174385	3	5.75	2.88	4.56
1 1/2	5.4	200-230	174386	4	5.75	2.88	5.56
2	6.8	200-230	174387	4	5.75	2.88	5.56
3	9.6	200-230	174388	5	5.75	3.76	6.74

SPECIFICATIONS:

Storage Temperature	-20° to 70° C
Ambient Operating Temperature	0° to 50° C (up to 6 kHz carrier, derate above 6 kHz)
Ambient Humidity	<95% (non-condensing)
Maximum Altitude	3300 ft (1000m) above sea level (without derating)
Input Line Voltages	115/230 VAC, single phase 200-230 VAC, three phase
Input Voltage Tolerance	+10%, -15%
Input Frequency Tolerance	48 to 62 Hz
Output Wave Form	Sine Coded PWM
Output Frequency	0-99 Hz
Carrier Frequency	4 kHz to 10 kHz

Service Factor	1.0
Efficiency	up to 98%
Power Factor (displacement)	>0.96
Overload Current Capacity	150% for 60 seconds 180% for 30 seconds
Speed Reference Follower	Speed potentiometer, 0-10 VDC (must be isolated)*
Power Supply for Aux. Relays	50 mA at 12 VDC
Digital Outputs	50 mA and 30 VDC max. (to drive auxiliary relay)*

* **WARNING:** Control terminals on SM Basic inverters are not isolated from line voltage and therefore represent a danger of electrocution if touched while drive is energized.



NEMA 4/12 CHASSIS NEMA 1

NEMA 4/12 TOTALLY ENCLOSED



174902 Non-Reversing

174903 Reversing

LEESON Speedmaster® DC controls are general purpose drives designed for use with permanent magnet type direct current motors. NEMA 1 enclosed drives are suitable for most industrial applications, with the NEMA 4X enclosures best suited for washdown or outdoor installations or for extremely dusty applications. Chassis only units are available for building into equipment, machinery or existing enclosures. Most controls have a dual voltage switch allowing the control to be used on 115 or 230 volt, single phase, 50/60 Hertz service. However, the proper voltage motor should be selected for use with the power supply input, i.e., 90 volt DC motors for 115 volt input or 180 volt motors for 230 volt input service. Installation and adjustment instructions are included.

SCR/Thyristor drives are available in unidirectional and electro-mechanical type reversing styles for NEMA frame ratings and sub-fractional HP sizes.

Regenerative, four quadrant controls in NEMA 4X or chassis style available for applications requiring more precise motion control. These controls will produce both motoring and braking torque regulation for NEMA frame 1/4 HP through 2 HP motors.

FOR NEMA FRAME MOTORS & GEARMOTORS
SCR CONTROLS • ENCLOSED • SINGLE PHASE 50/60 Hz

Description	Catalog Number	Output Current Amps	HP Range		App. Wgt. (lbs.)
			115V	230V	
NEMA 1 General Purpose					
—Non-Reversing	174307	10	1/8 to 1 [Ⓜ]	1/4 to 2 [Ⓜ]	5
—Reversing	174308	10	1/8 to 1 [Ⓜ]	1/4 to 2 [Ⓜ]	5
—Heat Sink	174316	--	--	--	1
NEMA 4X Washdown--Dust-Tight					
—Non-Reversing, Steel Enclosure	174100	10	1/4 to 1	1/4 to 2	7
—Non-Reversing, Noryl N190 Plastic Enclosure	174902	12	1/4 to 1	1/4 to 2	2
—Reversing, Steel With Dynamic Braking	174105	10	1/4 to 1	1/4 to 2	8
—Reversing, Noryl N190 Plastic Enclosure *	174903	12	1/4 to 1	1/4 to 2	2
NEMA 4					
—Non-Reversing 3HP	174709	15	--	3	8

SCR CONTROLS • OPEN CHASSIS

Description	Catalog Number	Output Current Amps	HP Range		App. Wgt. (lbs.)
			115V	230V	
Chassis with Speed Pot	174311	10	1/8 to 1 [Ⓜ]	1/4 to 2 [Ⓜ]	1
Chassis Heat Sink [Ⓜ]	174314	--	--	--	1

REGENERATIVE SCR DRIVES • FOUR QUADRANT • FULL WAVE

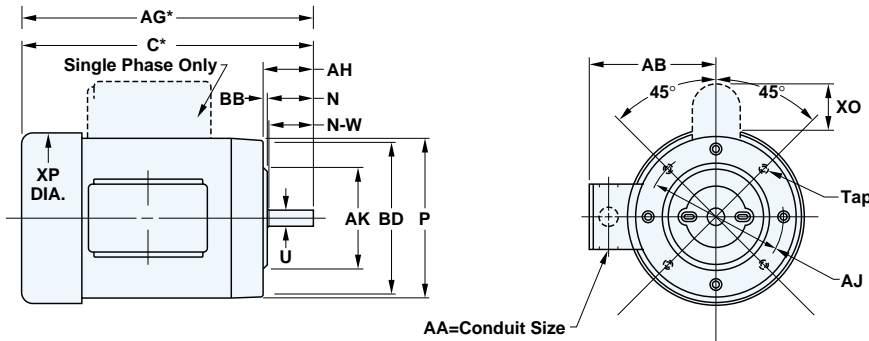
Description	Catalog Number	Output Current Amps	HP Range		App. Wgt. (lbs.)
			115V	230V	
NEMA 4X Washdown —Bi-Directional	175720	10	1/4 to 1	1/2 to 2	8
Open Chassis with Speed Pot	175721	10	1/4 to 1 [Ⓜ]	1/2 to 2 [Ⓜ]	2
Chassis Heat Sink [Ⓜ]	175722	--	--	--	2

* Motor shaft must be at zero speed before reversing.
[Ⓜ] Heat sink #174316 is required for NEMA 1 type 3/4 and 1HP 115v. and 1 1/2 and 2HP 230v.
[Ⓜ] Chassis Heat Sink #174314 required for 3/4 and 1HP 115v. and 1 1/2 and 2HP 230v.
[Ⓜ] Chassis Heat sink #175722 required for 1HP and above.

QUICK REFERENCE

SCR RATED DC MOTORS	Page 22
LOW VOLTAGE DC MOTORS	22

CRITICAL MOUNTING DIMENSIONS



The condensed dimensions shown on these pages are for general reference only and are not for construction. The "C" and "AG" dimensions for each catalog item are included in this catalog. [Certified drawings of all ratings are available for construction purposes.](#)

NEMA SHAFT AND KEYWAY DIMENSIONS (Inches)

NEMA SHAFT (U)	KEYWAY DIMENSIONS (R) (S)		NEMA SHAFT (U)	KEYWAY DIMENSIONS (R) (S)	
	(R)	(S)		(R)	(S)
5/8	33/64	3/16	2-3/8	2-1/64	5/8
7/8	49/64	3/16	2-1/2	2-3/16	5/8
1-1/8	63/64	1/4	2-7/8	2-29/64	3/4
1-3/8	1-13/64	5/16	3-3/8	2-7/8	7/8
1-5/8	1-13/32	3/8	3-7/8	3-5/16	1

■ S is keyway width.
U minus R is keyway depth.

NEMA DIMENSIONS (Inches)

Frame Size ▲	N	P	U	N-W	AA	AB	AH	AJ	AK	BB	BD	XO	XP	TAP **	KEY
S56	1 ¹⁵ / ₁₆	5 ¹⁹ / ₃₂	5/8	1 ¹ / ₈	1/2	4 ⁷ / ₈	2 ¹ / ₁₆	5 ⁷ / ₈	4 ¹ / ₂	1/8	6 ¹ / ₂	2 ¹ / ₄	5 ⁷ / ₈	3/8-16	3/16
56		6 ¹⁹ / ₃₂				5 ⁵ / ₁₆							7 ⁵ / ₃₂		
143T	2 ³ / ₈	6 ¹⁹ / ₃₂	7/8	2 ¹ / ₄	3/4	5 ⁵ / ₁₆	2 ¹ / ₈	5 ⁷ / ₈	4 ¹ / ₂	1/8	6 ¹ / ₂	2 ¹ / ₄	7 ⁵ / ₃₂	3/8-16	3/16
145T	2 ³ / ₈	6 ¹⁹ / ₃₂	7/8	2 ¹ / ₄	3/4	5 ⁵ / ₁₆	2 ¹ / ₈	5 ⁷ / ₈	4 ¹ / ₂	1/8	6 ¹ / ₂	2 ¹ / ₄	7 ⁵ / ₃₂	3/8-16	3/16
182T	2 ⁷ / ₈	8 ¹⁵ / ₃₂	1 ¹ / ₈	2 ³ / ₄	3/4	6 ³ / ₈	2 ⁵ / ₈	7 ¹ / ₄	8 ¹ / ₂	1/4	8 ⁷ / ₈	2 ¹ / ₄	9 ³ / ₃₂	1/2-13	1/4
184T	2 ⁷ / ₈	8 ¹⁵ / ₃₂	1 ¹ / ₈	2 ³ / ₄	3/4	6 ³ / ₈	2 ⁵ / ₈	7 ¹ / ₄	8 ¹ / ₂	1/4	8 ⁷ / ₈	2 ¹ / ₄	9 ³ / ₃₂	1/2-13	1/4
S213T	3 ¹ / ₂	8 ¹⁵ / ₃₂	1 ³ / ₈	3 ³ / ₈	3/4	6 ³ / ₈	3 ¹ / ₈	7 ¹ / ₄	8 ¹ / ₂	1/4	8 ⁷ / ₈	2 ¹ / ₄	9 ³ / ₃₂	1/2-13	5/16
213T	—	10 ¹³ / ₁₆			1	8 ⁵ / ₁₆					9		11 ³ / ₃₂		
215T	—	10 ¹³ / ₁₆			1	8 ⁵ / ₁₆					9		11 ³ / ₃₂		
254TC	—	13 ¹ / ₄	1 ⁵ / ₈	4	1 ¹ / ₄	11 ⁵ / ₈	3 ³ / ₄	7 ¹ / ₄	8 ¹ / ₂	1/4	9 ⁵ / ₈	—	12 ⁷ / ₈	1/2-13	3/8
256TC	—	13 ¹ / ₄	1 ⁵ / ₈	4	1 ¹ / ₄	11 ⁵ / ₈	3 ³ / ₄	7 ¹ / ₄	8 ¹ / ₂	1/4	9 ⁵ / ₈	—	12 ⁷ / ₈	1/2-13	3/8

▲ Blue shading denotes dimensions established by NEMA standard MG1, others are unique to LEESON, and will vary with each manufacturer.
* See Motors on pages 18-22 for "C" and "AG" dimensions.

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