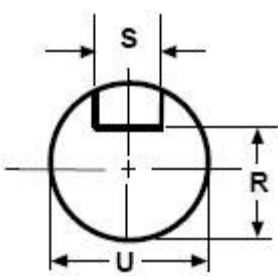
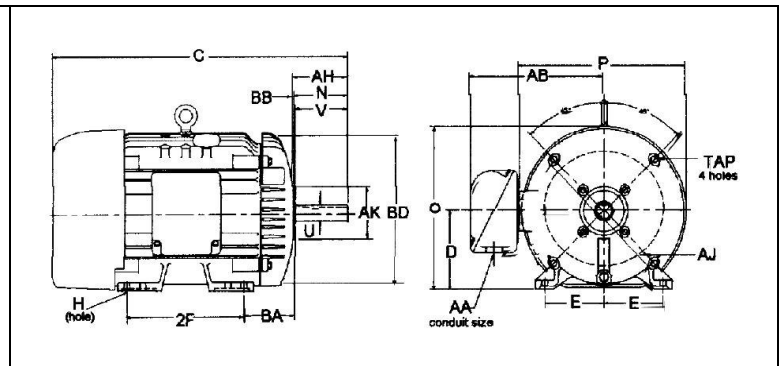


NEMA – QUICK REFERENCE CHART

Keyseat Dimensions	NEMA Shaft (U)	Key (R)	Dimen (S)
	3/8	21/64	Flat
	1/2	29/64	Flat
	5/8	33/64	3/16
	7/8	49/64	3/16
	1-1/8	63/64	1/4
	1-3/8	1-13/64	5/16
	1-5/8	1-13/32	3/8
	1-7/8	1-19/32	1/2
	2-1/8	1-27/32	1/2
	2-3/8	2-1/64	5/8
	2-1/2	2-3/16	5/8
	2-7/8	2-29/64	3/4
3-3/8	2-7/8	7/8	
3-7/8	3-5/16	1	



* Indicates the number is an approximate value. These dimensions are specific to each manufacturer.

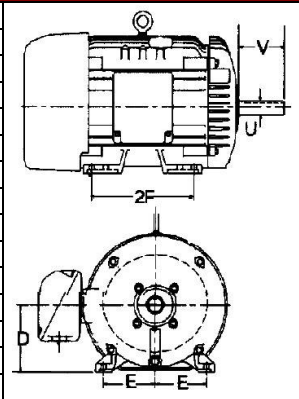
FRAME	D	E	2F	H	N*	O*	P*	U	V	AA	AB*	AH	AJ	AK	BA	BB	BD*	TAP
42	2-5/8	1-3/4	1-11/16	9/32 SLOT	1-1/2	5	4-11/16	3/8	1-1/8	3/8	4-1/32	1-5/16	3-3/4	3	2-1/16	1/8	4-5/8	1/4-20
48	3	2-1/8	2-3/4	11/32 SLOT	1-7/8	5-7/8	5-11/16	1/2	1-1/2	1/2	4-3/8	1-11/16	3-3/4	3	2-1/2	1/8	5-5/8	1/4-20
56 56H	3-1/2	2-7/16	3 5	11/32 SLOT	2-7/16 2-1/8	6-7/8	6-5/8	5/8	1-7/8	1/2	5	2-1/16	5-7/8	4-1/2	2-3/4	1/8	6-1/2	3/8-16
143T 145T	3-1/2	2-3/4	4 5	11/32	2-1/2	6-7/8	6-5/8	7/8	2-1/4	3/4	5-1/4	2-1/8	5-7/8	4-1/2	2-1/4	1/8	6-1/2	3/8-16
182 184 182T 184T	4-1/2	3-3/4	4-1/2 5-1/2	13/32	2-11/16 2-11/16 3-9/16 3-9/16	8-11/16	7-7/8	7/8 7/8 1-1/8 1-1/8	2-1/4 2-1/4 2-3/4 2-3/4	3-1/4	5-7/8	2-1/8 2-1/8 2-5/8 2-5/8	5-7/8 5-7/8 7-1/4 7-1/4	4-1/2 4-1/4 8-1/2 8-1/2	2-3/4	1/8 1/8 1-1/4 1-1/4	6-1/2 6-1/2 9 9	3/8-16 3/8-16 1/2-13 1/2-13
213 215 213T 215T	5-1/4	4-1/4	5-1/2 7 5-1/2 7	13/32	3-1/2 3-1/2 3-7/8 3-7/8	10-1/4	9-9/16	1-1/8 1-1/8 1-3/8 1-3/8	3 3 3-3/8 3-3/8	3/4	7-3/8	2-3/4 2-3/4 3-1/8 3-1/8	7-1/4	8-1/2	3-1/2	1/4	9	1/2-13
254U 256U 254T 256T	6-1/4	5	8-1/4 10 8-1/4 10	17/32	4-1/16 4-1/16 4-5/16 4-5/16	12-7/8	12-15/16	1-3/8 1-3/8 1-5/8 1-5/8	3-3/4 3-3/4 4 4	1	9-5/8	3-1/2 3-1/2 3-1/4 3-1/4	7-1/4	8-1/2	4-1/4	1/4	10	1/2-13
284U 286U 284T 286T 284TS 286TS	7	5-1/2	9-1/2 11 9-1/2 11 9-1/2 11	17/32	5-1/8 5-1/8 4-7/8 4-7/8 3-3/8 3-3/8	14-5/8	14-5/8	1-5/8 1-5/8 1-7/8 1-7/8 1-5/8 1-5/8	4-7/8 4-7/8 4-5/8 4-5/8 3-1/4 3-1/4	1-1/2	13-1/8	4-5/8 4-5/8 4-3/8 4-3/8 3 3	9	10-1/2	4-3/4	1/4	11-1/4	1/2-13
324U 326U 324T 326T 324TS 326TS	8	6-1/4	10-1/2 12 10-1/2 12 10-1/2 12	21/32	5-7/8 5-7/8 5-1/2 5-1/2 3-15/16 3-15/16	16-1/2	16-1/2	1-7/8 1-7/8 2-1/8 2-1/8 2-1/8 2-1/8	5-5/8 5-5/8 5-1/4 5-1/4 5-1/4 5-1/4	2	14-1/8	5-3/8 5-3/8 5 5 5	11	12-1/2	5-1/4	1/4	13-3/8	5/8-11
364U 365U 364T 365T 364TS 365TS	9	7	11-1/4 12-1/4 11-1/4 12-1/4 11-1/4 12-1/4	21/32	6-3/4 6-3/4 6-1/4 6-1/4 4 4	18-1/2	18-1/4	2-1/8 2-1/8 2-3/8 2-3/8 1-7/8 1-7/8	6-3/8 6-3/8 5-7/8 5-7/8 3-3/4 3-3/4	2-1/2	15-1/16	6-1/6 6-1/6 5-5/8 5-5/8 3-1/2 3-1/2	11	12-1/2	5-7/8	1/4	13-3/8	5/8-11
404U 405U 404T 405T 404TS 405TS	10	8	12-1/4 13-3/4 12-1/4 13-3/4 12-1/4 13-3/4	13/16	7-3/16 7-3/16 7-5/16 7-5/16 4-1/2 4-1/2	20-5/16	20-1/8	2-3/8 2-3/8 2-7/8 2-7/8 2-7/8 2-1/8	7-1/8 7-1/8 7-1/4 7-1/4 7-1/4 4-1/4	3	18	6-7/8 6-7/8 7 7 7 4	11	12-1/2	6-5/8	1/4	13-7/8	5/8-11
444U 445U 444T 445T 447T 449T 444TS 445TS 447TS 449TS	11	9	14-1/2 16-1/2 14-1/2 16-1/2 20 25 14-1/2 16-1/2 20 25	13/16	8-5/8 8-5/8 8-1/2 8-1/2 8-15/16 8-15/16 5-3/16 5-3/16 4-15/16 4-15/16	22-7/8 22-7/8 22-7/8 22-7/8 22-15/16 22-15/16 22-7/8 22-7/8 22-15/16 22-15/16	22-3/8 22-3/8 22-3/8 22-3/8 22-3/4 22-3/4 2-3/8 2-3/8 2-3/4 2-3/4	2-7/8 2-7/8 3-3/8 3-3/8 3-3/8 3-3/8 4-3/4 4-3/4 4-3/4 4-3/4	8-5/8 8-5/8 8-1/2 8-1/2 8-1/2 8-1/2 4-3/4 4-3/4 4-3/4 4-3/4	3	19-9/16 19-9/16 19-9/16 19-9/16 21-11/16 21-11/16 19-9/16 19-9/16 21-11/16 21-11/16	8-3/8 8-3/8 8-1/4 8-1/4 8-1/4 8-1/4 4-1/2 4-1/2 4-1/2 4-1/2	14	16	7-1/2	1/4	16-3/4	5/8-11

Standard NEMA Frames vs. Horsepower

HP	900 RPM			1200 RPM			1800 RPM			3600 RPM		
	T-Frames 1964-Present	U-Frame 1952-Present	Original NEMA	T-Frames 1964-Present	U-Frame 1952-Present	Original NEMA	T-Frames 1964-Present	U-Frame 1952-Present	Original NEMA	T-Frames 1964-Present	U-Frame 1952-Present	Original NEMA
1	182T	213	225	145T	184	204	143T	182	203	-	-	-
1.5	184T	213	254	182T	184	224	145T	184	204	143T	182	203
2	213T	215	254	184T	213	225	145T	184	224	145T	184	204
3	215T	254U	284	213T	215	254	182T	213	225	145T/182T	184	224
5	254T	256U	324	215T	254U	284	184T	215	254	182T/184T	213	225
7.5	256T	284U	326	254T	256U	324	213T	254U	284	184T/213T	215	254
10	284T	286U	364	256T	284U	326	215T	256U	324	213T/215T	254U	284
15	286T	326U	365	284T	324U	364	254T	284U	326	215T/254T	256U	324
20	324T	364U	404	286T	326U	365	256T	286U	364	254T/256T	284U/286U	326
25	326T	265U	405	324T	364U	404	284T	324U	364/365	256T/284TS	286U/324U	364S/365S
30	364T	404U	444	324T	365U	405	286T	326U	365/404	284TS/286TS	324S/326S	364S/404S
40	365T	405U	445	364T	404U	444	324T	364U	404/405	286TS/324TS	326S/364US	365S/404S
50	404T	444U	504	365T	405U	445	326T	365US	405S/444	324TS/326TS	364US	404S/444S
60	405T	445U	505	404T	444U	504	364T	404US/405US	444S/445S	326TS/364TS	365US/405US	405S/445S
75	444T	-	-	405T	445U	505	365TS	405US/444US	445S/504S	364TS/365TS	404US/444US	444S/504S
100	445T	-	-	444T	-	-	404TS/405TS	444US/445US	504S/505S	365TS/405TS	405US/445US	445S/505S
125	-	-	-	445T	-	-	405TS/444TS	445US	505S	404TS/444TS	444US	504S
150	-	-	-	-	-	-	444TS/445TS	-	-	405TS/445TS	445US	505S
200	-	-	-	-	-	-	445TS	-	-	444TS	-	-
250	-	-	-	-	-	-	-	-	-	445TS	-	-

Pre-NEMA Motor Dimension Chart

FRAME	U	V	D	2F	E	FRAME	U	V	D	2F	E
203	3/4	2	5	5-1/2	4	404	2-1/8	6-1/8	10	12-1/4	8
204	3/4	2	5	6-1/2	4	404S	1-7/8	3-1/2	10	12-1/4	8
224	1	2-3/4	5-1/2	6-3/4	4-1/2	405	2-1/8	6-1/8	10	13-3/4	8
225	1	2-3/4	5-1/2	7-1/2	4-1/2	405S	1-7/8	3-1/2	10	13-3/4	8
254	1-1/8	3-1/8	6-1/4	8-1/4	5	444	2-3/8	6-7/8	11	14-1/2	9
284	1-1/4	3-3/4	7	9-1/2	5-1/2	444S	2-1/8	4	11	14-1/2	9
324	1-5/8	4-5/8	8	10-1/2	6-1/4	445	2-3/8	6-7/8	11	16-1/2	9
324S	1-5/8	3	8	10-1/2	6-1/4	445S	2-1/8	4	11	16-1/2	9
326	1-5/8	4-5/8	8	12	6-1/4	504	2-5/8	7-5/8	12-1/2	16	8
326S	1-5/8	3	8	12	6-1/4	504S	2-1/8	4	12-1/2	16	8
364	1-7/8	5-3/8	9	11-1/4	7	505	2-7/8	8-3/8	12-1/2	18	9
364S	1-7/8	3-1/2	9	11-1/4	7	505S	2-1/8	4	12-1/2	18	9
365	1-7/8	5-3/8	9	12-1/4	7	584	2-7/8	11-5/8	14-1/2	18	9
365S	1-5/8	3-1/2	9	12-1/4	7	584S	2-3/8	4-3/4	14-1/2	18	9



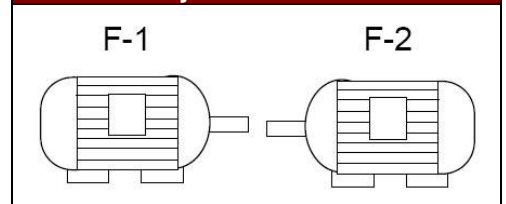
Frame Size Information

Suffix letters after the NEMA frame size indicates that the frame differs in some way from the standard frame. Below is a list of suffixes that may be found after the frame size:

- A DC Motor or Generator
- C "C" flange mounting on drive end **
- D "D" flange mounting on drive end **
- E Shaft dimensions for elevator motors in frames larger than the 326U frame
- H Frame with an "F" dimension larger than a frame without (small framed motors)
- J Jet pump motors
- JM "C"-face mounted close coupling pump with mechanical seal
- JP "C"-face mounted close coupling pump – packaged pump
- K Sump pump motor
- LP & LPH "P" flange mounting vertical solid shaft pump
- P & PH "P" flange mounting vertical hollow shaft pump
- S Standard short shaft
- T Included as part of a frame number-standard dimension
- U Included as part of a frame number-standard dimension
- V Vertical mounting
- Y Special mounting dimensions – manufactured specified
- Z Special shaft dimensions – manufactured specified

** If the face mounting is on the end opposite the drive, the suffix will be as follows: "FC" or "FD"

Assembly Position F-1 vs. F-2



C Flange Addition Dimensions

NEMA C-Face	BA Dimensions
143-5TC	2-3/4
182-4TC	3-1/2
213-5TC	4-1/4
254-6TC	4-3/4

Note: These charts are provided for reference use only. ESR Motor Systems is not responsible for any printing errors.

5000 FRAME	D	E	2F	H	O	P	U	V	AA	AB	BA
5007S	12-1/2	10	22	15/16	26-27/32	30	2-1/2	6-1/2	4-NPT	26-7/8	8-1/2
5007L	12-1/2	10	22	15/16	26-27/32	30	3-7/8	11-1/8	4-NPT	26-7/8	8-1/2
5009S	12-1/2	10	28	15/16	26-27/32	30	2-1/2	6-1/2	4-NPT	26-7/8	8-1/2
5009L	12-1/2	10	28	15/16	26-27/32	30	3-7/8	11-1/8	4-NPT	26-7/8	8-1/2
5011S	12-1/2	10	36	15/16	26-27/32	30	2-1/2	6-1/2	4-NPT	26-7/8	8-1/2
5011L	12-1/2	10	36	15/16	26-27/32	30	3-7/8	11-1/8	4-NPT	26-7/8	8-1/2