

Motor Adapter Coupling Units

Flexible Coupling/Modular Concept

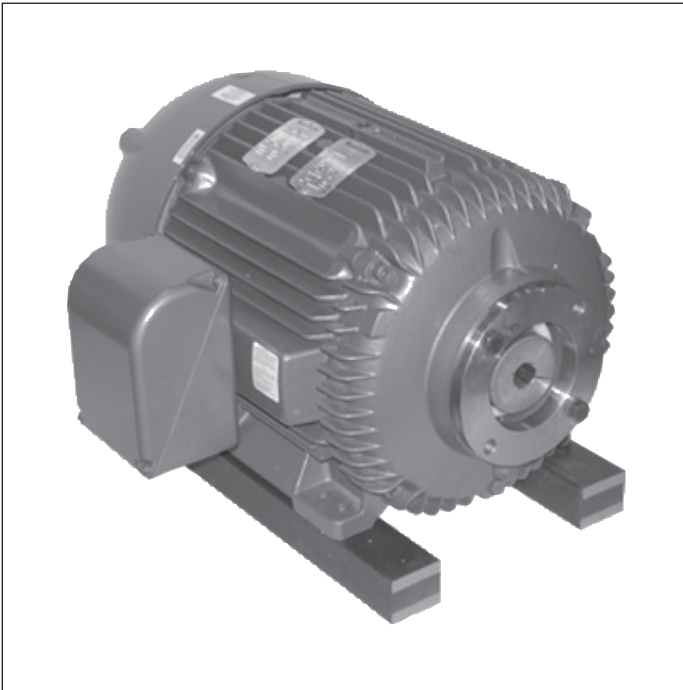
Motor Sizes: 25 to 100 HP

MACB...TYM

RA 12745

Edition: 2017-11

Replaces: 2012-07



- ▶ Mountings for SAE A 2 bolt, SAE B 2bolt, SAE C 2 bolt, and SAE D 4 bolt with key or splined shaft

Motor Adapter Coupling Units

Unique new design provides interchangeable adapter plates for numerous pump flange mountings and permits for a new vertical mounting option. The modular design concept expands the pump mounting options to accommodate virtually all pump product lines.

The flexible drive coupling

A nylon-coupling sleeve requires no lubrication and has a nondestructive failure mode to both the pump and motor shafts. The nylon-coupling sleeve is a durable item with a low replacement cost. The coupling permits up to 2 degrees of total misalignment between the two shafts and a multiple selection of pump shaft options.

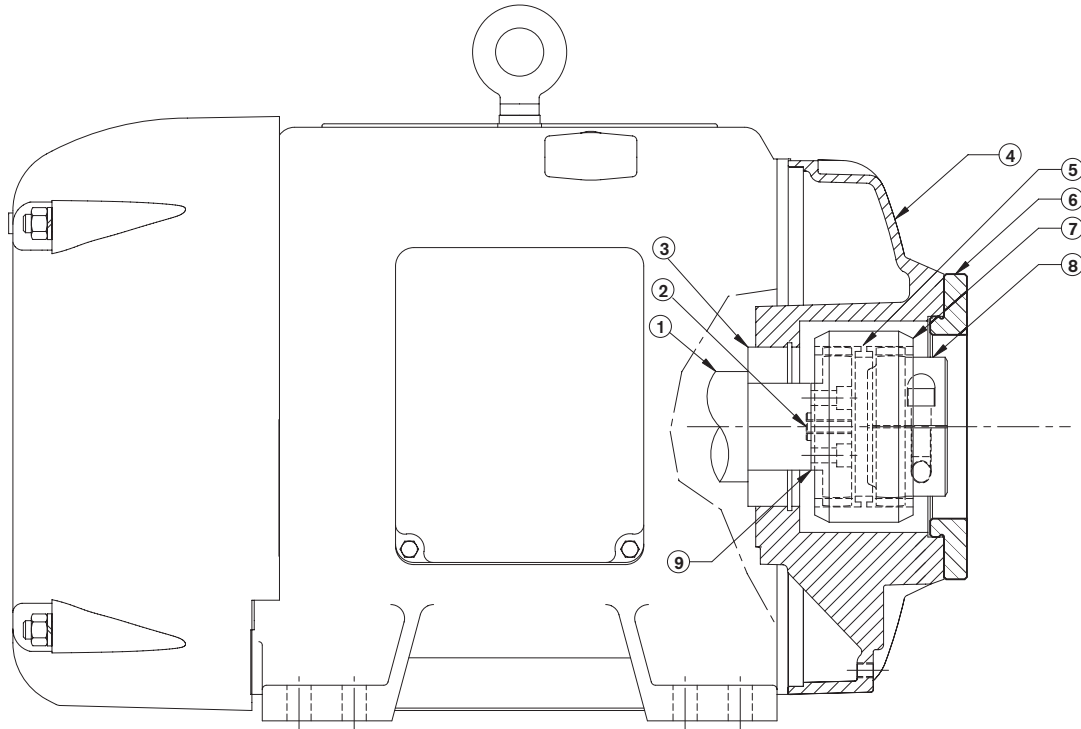
Size/Range

The horsepower range is 25 to 100 hp using 1800 rpm and a Wye-Delta winding as a standard. Additional motor speeds and windings and other options are available as non-standard.

Advantages:

- ▶ Standard units available from stock
- ▶ Modular design concept, interchangeable options for pump flange and shaft type
- ▶ Single supply source
- ▶ Space saving design
- ▶ Durable construction
- ▶ Proven drive-coupling technology
- ▶ Multiple frequency / voltage ranges
- ▶ WYE-Delta windings standard
- ▶ Increased fan-cooling capacity
- ▶ 1.15 motor safety factor
- ▶ Extensive international distribution and service

Standard Motors



The motor shaft (1) centers into the motor end-bell (4) by a pressed shaft bearing (3). A small press fitted pilot (2) centers the motor coupling hub (9) on the motor shaft (1). The coupling sleeve (7) has an internal spline, which slides over the external spline of the two coupling hubs (8, 9). An internal stop ring (5) retains the coupling sleeve (7) between the two coupling hubs (8, 9). The pump coupling hub (8) is the only axial adjusted component within the coupling assembly; the pump shaft may extend beyond the pump coupling hub (8).

An interchangeable pump adapter plate (6) allows for a multitude of pump mounting options with orientation

increments of 45 degrees. The coupling is well suited for blind assembly and can be used in either vertical or horizontal applications. The coupling hubs (8, 9) are steel or sintered metal depending on size. The double crown tooth design of the coupling hubs allows for both angular and/or parallel displacements. The double crown tooth design has reduced friction and wear on the coupling sleeve (7) due to reduced edge pressure contact. The nylon-coupling sleeve (7) is compatible with most fluids, has good electrical isolation characteristics, and is very dirt and moisture resistant. The nylon-coupling sleeve (7) has a non-destructive failure mode to both the pump and motor shafts.

Frame Size	HP	RPM @ 60 HZ	Motor Nominal Torque in-lbs.	Minimum Coupling Gap Between Stops inch (mm)	Maximum Coupling Gap Between Stops inch (mm)
284-286	25	1750	875	0.16 (4)	0.32 (8)
	30		1050		
324-326	40		1400		
	50		1750		
364-365	60		2100		
	75		2626		
404-405	100		3500	0.24 (6)	0.28 (7)

Ordering Code: Motor / Adapter / Coupling – Without Pump

Bold Selections are Preferred

	01		02	03	04	05	06	07	08	09
MACB	XXXH	TYM	4D	XX	W	S	X	X	XX	XX

Horsepower: (XXX)H

01	025	030	040	050	060	075	100		XXXH
	25HP	30HP	40HP	50HP	60HP	75HP	100HP		

No. of Poles/Hertz

02	No. Poles	5 50 Hertz	6 60 Hertz	D 50/50 Hertz		4D
	4	1425 rpm	1725 rpm	1450/1750 rpm		

Voltage Options:

03	Standard Voltage Options:								XX
	Std. Volt	OP	OP	PR	PR	PR	PR	RS	
	HP	25	30	40	50	60	75	100	
	O – 50HZ/190/380,200/400,208/416V P – 60HZ/200/400,208/416,230/460,240/480V R – 50HZ/190/380,200/400,208/416,230/460V S – 60HZ/230/460,240/480V								
	Additional Non-standard Voltage Options:								
	CZ – 60 Hz/230 V			HZ – 60 Hz/575 V					
	DZ – 60 Hz/208–230 V			IZ – 60 Hz/200 V					
	EZ – 60 Hz/208–230/460 Hz			KZ – 50 Hz/220/380/440 V					
	FZ – 60 Hz/230/460 V			MZ – 50 Hz/220 V					
	GZ – 60 Hz/460 V			NZ – 60 Hz/380/460 V					

Windings:

04	W – WYE Delta	W
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Efficiency:

05	S – Standard	S
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Junction Box Location:

06	1 – F1	2 – F2	3 – F3		X
	25–75 HP standard F1, 100 HP standard F3				
	<i>Note: F3 box location has limited voltage options. Box locations defined on page 6.</i>				

Mounting Position:

07	H – Horizontal, V – Vertical	X
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Pump Adapter: See Adapter & Coupling Selection Chart

08	01	50-2 SAE N/A	04	127-2 SAE C/2B	07	127-4 SAE C/4B	XX
	02	82-2 SAE A/2B	05	152-2 SAE D/2B	08	152-4 SAE D/4B	
	03	101-2 SAE B/2B	06	101-4 SAE B/4B			

Pump Shaft: See Adapter & Coupling Selection Chart

09	02	SAE A	0.625Dx5 / 32K²⁾	09	SAE A	9T, 16/32DP²⁾	XX
	03	SAE A-B	0.750Bx3 / 16K²⁾	10	SAE A-B	11T, 16 / 32DP²⁾	
	04	SAE B	0.875Dx1 / 4K	11	SAE B	13T, 16 32 DP¹⁾	
	05	SAE B-B	1.00Bx1 / 4K	12	SAE B-B	15T, 16 / 32DP	
	06	SAE C	1.250Dx5 / 16K	13	SAE C	14T, 12 / 24DP	
	07	SAE C-C	1.50Bx3/8K	14	SAE C-C	17T, 12 / 24DP	
	08	SAE D, C	1.750Dx7 / 16K	15	SAE D, C	13T, 8 / 16DP	

1) N/A for 100 HP applications
2) 25 and 30 HP applications only

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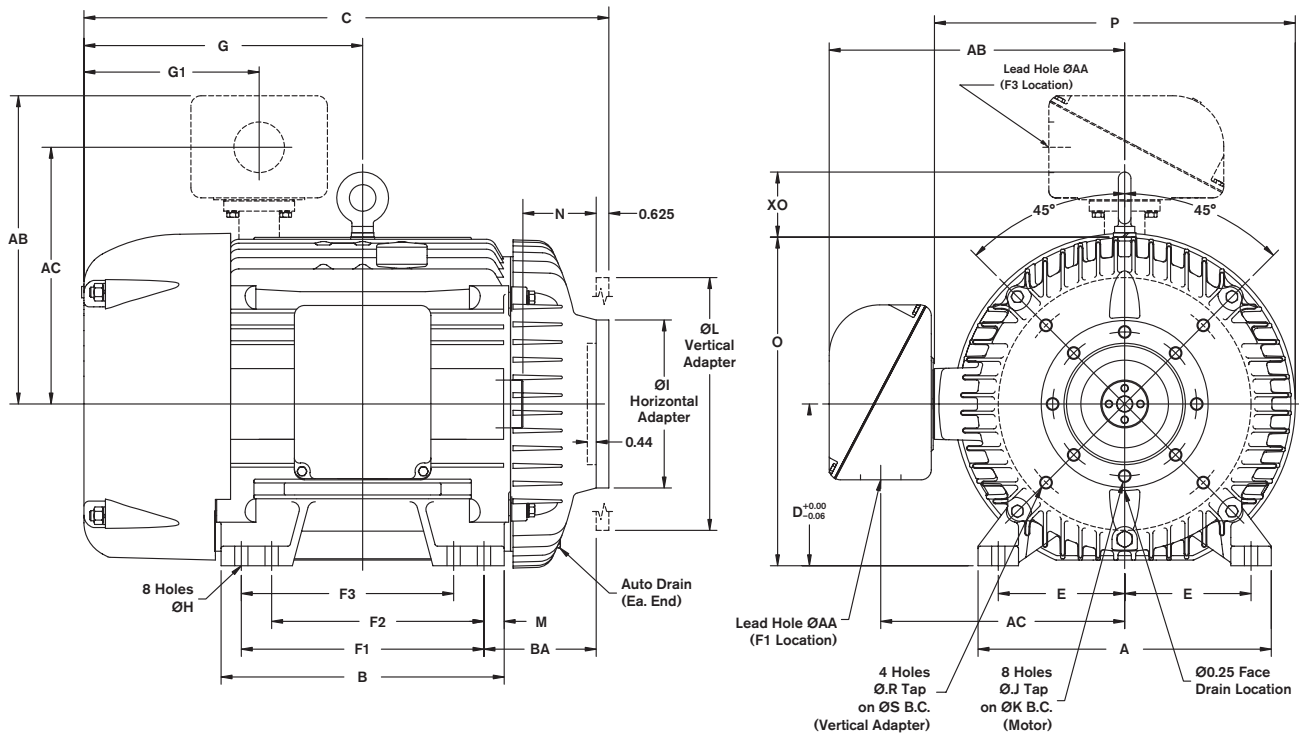
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MACB025HTYM4DOPWS1H0210	R978012035
MACB025HTYM4DOPWS1H0304	R978012040
MACB025HTYM4DOPWS1H0305	R978012044
MACB025HTYM4DOPWS1H0311	R978012039
MACB025HTYM4DOPWS1H0312	R978012043
MACB025HTYM4DOPWS1H0406	R978012048
MACB025HTYM4DOPWS1H0413	R978012047
MACB025HTYM4DOPWS1H0705	R978054248
MACB025HTYM4DOPWS1H0712	R978054249
MACB025HTYM4DOPWS1H0706	R978054250
MACB025HTYM4DOPWS1H0713	R978054251
MACB025HTYM4DOPWS1V0203	R978012038
MACB025HTYM4DOPWS1V0210	R978012037
MACB030HTYM4DOPWS1H0203	R978012052
MACB030HTYM4DOPWS1H0210	R978012051
MACB030HTYM4DOPWS1H0304	R978012056
MACB030HTYM4DOPWS1H0305	R978012060
MACB030HTYM4DOPWS1H0311	R978012055
MACB030HTYM4DOPWS1H0312	R978012059
MACB030HTYM4DOPWS1H0406	R978012064
MACB030HTYM4DOPWS1H0407	R978014379
MACB030HTYM4DOPWS1H0413	R978012063
MACB030HTYM4DOPWS1H0705	R978054252
MACB030HTYM4DOPWS1H0712	R978054253
MACB030HTYM4DOPWS1H0706	R978054254
MACB030HTYM4DOPWS1H0713	R978054255
MACB030HTYM4DOPWS1V0203	R978012054
MACB030HTYM4DOPWS1V0210	R978012053
MACB030HTYM4DOPWS1V0304	R978012058
MACB030HTYM4DOPWS1V0305	R978012062
MACB030HTYM4DOPWS1V0311	R978012057
MACB030HTYM4DOPWS1V0312	R978012061
MACB030HTYM4DOPWS1V0406	R978012066
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MACB030HTYM4DOPWS1V0705	R978054256
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MACB040HTYM4DPRWS1H0304	R978012068
MACB040HTYM4DPRWS1H0305	R978012072
MACB040HTYM4DPRWS1H0311	R978012067

Model Code	Part Number
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MACB040HTYM4DPRWS1H0406	R978012076
MACB040HTYM4DPRWS1H0407	R978012080
MACB040HTYM4DPRWS1H0413	R978012075
MACB040HTYM4DPRWS1H0414	R978012079
MACB040HTYM4DPRWS1H0705	R978054260
MACB040HTYM4DPRWS1H0712	R978054261
MACB040HTYM4DPRWS1H0706	R978054262
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MACB050HTYM4DPRWS1V0406	R978012094
MACB050HTYM4DPRWS1V0407	R978012098
MACB050HTYM4DPRWS1V0413	R978012093
MACB050HTYM4DPRWS1V0414	R978012097

Ordering Code: Motor / Adapter / Coupling – Without Pump (continued)

Model Code	Part Number	Model Code	Part Number
MACB050HTYM4DPRWS1V0705	R978054272	MACB075HTYM4DPRWS1V0406	R978012122
MACB050HTYM4DPRWS1V0712	R978054273	MACB075HTYM4DPRWS1V0407	R978012126
MACB050HTYM4DPRWS1V0706	R978054274	MACB075HTYM4DPRWS1V0413	R978012121
MACB050HTYM4DPRWS1V0713	R978054275	MACB075HTYM4DPRWS1V0414	R978012125
		MACB075HTYM4DPRWS1V0705	R978054288
MACB060HTYM4DPRWS1H0305	R978012100	MACB075HTYM4DPRWS1V0712	R978054289
MACB060HTYM4DPRWS1H0312	R978012099	MACB075HTYM4DPRWS1V0706	R978054290
MACB060HTYM4DPRWS1H0406	R978012104	MACB075HTYM4DPRWS1V0713	R978054291
MACB060HTYM4DPRWS1H0407	R978012108	MACB075HTYM4DPRWS1V0808	R978012130
MACB060HTYM4DPRWS1H0413	R978012103	MACB075HTYM4DPRWS1V0815	R978012129
MACB060HTYM4DPRWS1H0414	R978012107		
MACB060HTYM4DPRWS1H0705	R978054276	MACB100HTYM4DRSWS3H0305	R978012131
MACB060HTYM4DPRWS1H0712	R978054277	MACB100HTYM4DRSWS3H0406	R978012134
MACB060HTYM4DPRWS1H0706	R978054278	MACB100HTYM4DRSWS3H0407	R978012138
MACB060HTYM4DPRWS1H0713	R978054279	MACB100HTYM4DRSWS3H0413	R978012133
MACB060HTYM4DPRWS1H0808	R978012112	MACB100HTYM4DRSWS3H0414	R978012137
MACB060HTYM4DPRWS1H0815	R978012111	MACB100HTYM4DPRWS1H0705	R978054292
MACB060HTYM4DPRWS1V0305	R978012102	MACB100HTYM4DPRWS1H0706	R978054293
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Unit Dimensions: Motor and Adapter (dimensions in inches)



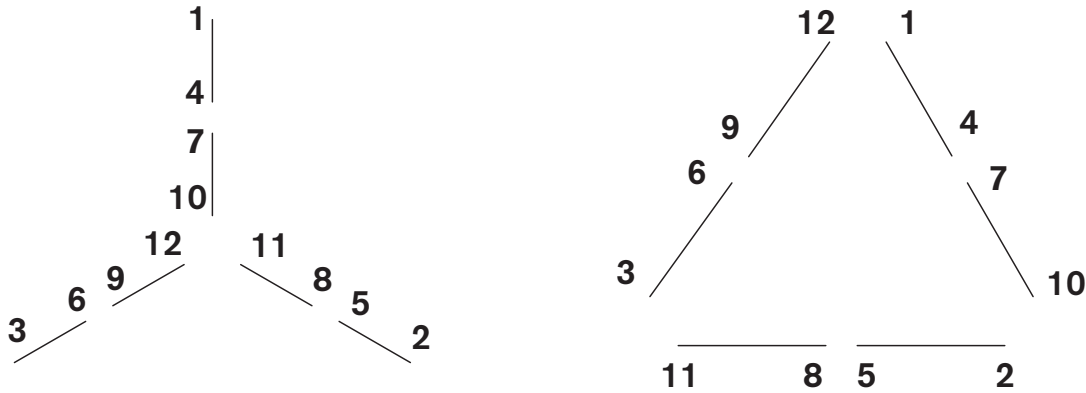
Motor, HP (kW)	Frame Size	A	B	C	D	E	F1	F2, F3	G	G1	H	Ø I	Ø J	K
25 (18.6)	284TYZ-M	12.75	12.84	23.50	7.00	5.50	11.00	9.50	12.69	N/A	0.53	8.33	5/8-11	7.13
30 (22.3)	286TYZ-M	12.75	12.84	23.50	7.00	5.50	11.00	9.50	12.69	N/A	0.53	8.33	5/8-11	7.13
40 (29.5)	324TYZ-M	14.50	14.00	25.96	8.00	6.25	12.00	10.50	13.78	N/A	0.66	8.33	5/8-11	7.13
50 (37.2)	326TYZ-M	14.50	14.00	25.96	8.00	6.25	12.00	10.50	13.78	N/A	0.66	8.33	5/8-11	7.13
60 (44.6)	364TYZ-M	16.50	14.50	28.48	9.00	7.00	12.25	11.25	14.97	N/A	0.66	10.50	3/4-10	9.00
75 (55.8)	365TYZ-M	16.50	14.50	28.48	9.00	7.00	12.25	11.25	14.97	N/A	0.66	10.50	3/4-10	9.00
100 (74.4)	405TYZ-M	18.88	16.63	32.35	10.00	8.00	13.75	12.25	17.28	10.31	0.81	10.50	3/4-10	9.00

Motor, HP (kW)	Frame Size	Ø L	M	N	O	P	Ø R	S	Ø AA	AC	AB	BA	XO
25 (18.6)	284TYZ-M	12.50	0.92	2.56	14.44	15.57	1/2-13	11.00	2.00	10.57	13.11	4.69	2.72
30 (22.3)	286TYZ-M	12.50	0.92	2.56	14.44	15.57	1/2-13	11.00	2.00	10.57	13.11	4.69	2.72
40 (29.5)	324TYZ-M	12.50	1.00	3.62	16.25	17.84	1/2-13	11.00	2.00	12.06	14.61	5.55	3.22
50 (37.2)	326TYZ-M	12.50	1.00	3.62	16.25	17.84	1/2-13	11.00	2.00	12.06	14.61	5.55	3.22
60 (44.6)	364TYZ-M	16.00	1.12	3.62	18.38	19.25	5/8-11	14.50	2.50	12.41	14.95	6.75	3.57
75 (55.8)	365TYZ-M	16.00	1.12	3.62	18.38	19.25	5/8-11	14.50	2.50	12.41	14.95	6.75	3.57
100 (74.4)	405TYZ-M	16.00	1.44	4.34	20.31	21.55	5/8-11	14.50	3.00	15.61	19.12	7.56	3.57

Adapter and Coupling Parts Selection:

[1] Select HP		[2] Select Adapter				Additional Hardware Required							[3] Select Pump Coupling		
@ 1800 RPM	Frame Size	Horizontal Adapter	Vertical Adapter	Mounting Bolts Adapter	Mounting Washer Adapter	Mounting Bolts Adapter	Motor Coupling Hub	Mounting SHCS Coupling	Coupling Drive Sleeve	Mounting Bolts	Mounting Washers	Pump Coupling Hub Splined	Pump Coupling Hub Keyed		
25 and 30	284 - 286	R978003107 SAE C 2B	R978003113 SAE C 2B	R978801172 5/8-11X2.25 (2 Req'd.)	R978804498 5/8 SAE (2 Req'd.)	R978801170 5/8-11X1.50 (2 Req'd.)	R978934912 42FLD Special	R978800739 3/8-16X1.25 (3 Req'd.)	R978935010 BLACK CARBON	N/A	N/A	R978003754 SAE C 1.4T 12/24	R978003135 SAE C 1.25BX5/16K		
		R978003106 SAE B 2B	R978003112 SAE B 2B	N/A	N/A	R978801170 5/8-11X1.50 (4 Req'd.)	R978934912 42FLD Special	R978800739 3/8-16X1.25 (3 Req'd.)	R978935010 BLACK CARBON	R978801163 1/2-13X1.25 (2 Req'd.)	R978804497 1/2 SAE (2 Req'd.)	R978003136 SAE B 13T 16/32	R978003133 SAE B .875BX1/4K		
		R978003105 SAE A 2B	R978003111 SAE A 2B	N/A	N/A	R978801170 5/8-11X1.50 (4 Req'd.)	R978934912 42FLD Special	R978800739 3/8-16X1.25 (3 Req'd.)	R978935010 BLACK CARBON	R978801152 3/8-16X1.00 (2 Req'd.)	R978804495 3/8 SAE (2 Req'd.)	R978003137 SAE A-B 11T 16/32	R978003132 SAE A-B .75BX3/16K		
40 and 50	324 - 326	R978003107 SAE C 2B	R978003113 SAE C 2B	R978801172 5/8-11X2.25 (2 Req'd.)	R978804498 5/8 SAE (2 Req'd.)	R978801170 5/8-11X1.50 (2 Req'd.)	R978934914 66FLD Special	R978800740 3/8-16X1.50 (4 Req'd.)	R978935009 Nylon	N/A	N/A	R978003140 SAE D 13T 8/16	R978003753 SAE D 1.75BX7/16K		
		R978003106 SAE B 2B	R978003112 SAE B 2B	N/A	N/A	R978801170 5/8-11X1.50 (4 Req'd.)	R978934914 66FLD Special	R978800740 3/8-16X1.50 (4 Req'd.)	R978935009 Nylon	R978801163 1/2-13X1.25 (2 Req'd.)	R978804497 1/2 SAE (2 Req'd.)	R978003283 SAE C-C1.7T 12/24	R978003153 SAE C-C 1.50BX3/8K		
		R978003105 SAE A 2B	R978003111 SAE A 2B	N/A	N/A	R978801170 5/8-11X1.50 (4 Req'd.)	R978934914 66FLD Special	R978800740 3/8-16X1.50 (4 Req'd.)	R978935009 Nylon	R978801152 3/8-16X1.00 (2 Req'd.)	R978804495 3/8 SAE (2 Req'd.)	R978003752 SAE B 13T 16/32	R978004438 SAE B .875BX1/4K		
60 and 75	364 - 365	R978003110 SAE D 4B	R978003116 SAE D 4B	R978801180 3/4-10X2.75 (4 Req'd.)	R978804499 3/4 SAE (4 Req'd.)	N/A	R978934914 66FLD Special	R978800740 3/8-16X1.50 (4 Req'd.)	R978003282 BLACK CAR- BON	N/A	N/A	R978003140 SAE D 13T 8/16	R978003753 SAE D 1.75BX7/16K		
		R978003109 SAE C 2B	R978003115 SAE C 2B	N/A	N/A	R978881834 3/4-10X1.75 (4 Req'd.)	R978934914 66FLD Special	R978800740 3/8-16X1.50 (4 Req'd.)	R978003282 BLACK CARBON	R978801169 5/8X11-1.00 (2 Req'd.)	R978804498 5/8 SAE (2 Req'd.)	R978003283 SAE C-C1.7T 12/24	R978003153 SAE C-C 1.50BX3/8K		
		R978003108 SAE B 2B	R978003114 SAE A 2B	N/A	N/A	R978881834 3/4-10X1.75 (4 Req'd.)	R978934914 66FLD Special	R978800740 3/8-16X1.50 (4 Req'd.)	R978935009 Nylon	R978003282 BLACK CARBON	R978801163 1/2-13X1.25 (2 Req'd.)	R978804497 1/2 SAE (2 Req'd.)	R978003141 SAE B-B 15T 16/32	R978003138 SAE B-B 1.00BX1/4K	
100	404 - 405	R978003110 SAE D 4B	R978003116 SAE D 4B	R978801180 3/4-10X2.75 (4 Req'd.)	R978804499 3/4 SAE (4 Req'd.)	N/A	R978934916 80FLD Special	R978800761 1/2-13X2.00 (4 Req'd.)	R978934917 Nylon	N/A	N/A	R978934915 SAE D 13T 8/16	R978003751 SAE D 1.75BX7/16K		
		R978003109 SAE C 2B	R978003115 SAE C 2B	N/A	N/A	R978881834 3/4-10X1.75 (4 Req'd.)	R978934916 80FLD Special	R978800761 1/2-13X2.00 (4 Req'd.)	R978934917 Nylon	R978801169 5/8X11-1.00 (2 Req'd.)	R978804498 5/8 SAE (2 Req'd.)	R978003143 SAE C-C 1.7T 12/24	R978003750 SAE C-C 1.50BX3/8K		
		R978003108 SAE B 2B	R978003114 SAE A 2B	N/A	N/A	R978881834 3/4-10X1.75 (4 Req'd.)	R978934916 80FLD Special	R978800761 1/2-13X2.00 (4 Req'd.)	R978934917 Nylon	R978801163 1/2-13X1.25 (2 Req'd.)	R978804497 1/2 SAE (2 Req'd.)	N/A	R978003749 SAE C 1.25BX5/16K		

Motor Terminal Markings and Connections for NEMA Nomenclature – 12 Leads WYE Delta Winding



Dual Voltage / Three Phase

WYE Connection (Start)

Delta Connection (Run)

Voltage	Connection	L1	L2	L3	JOIN
High	WYE	1	2	3	4&7, 5&8, 6&9, 10&11&12
	DELTA*	1,12	2,10	3,11	4&7, 5&8, 6&9
Low	WYE	1,7	2,8	3,9	4&5&6, 10&11&12
	DELTA*	1,6,7,12	2,4,8,10	3,5,9,11	—

WYE-Delta Motors used in conjunction with reduced voltage starters switch from WYE to Delta configuration during start-up. The delta configuration is maintained after the switching occurs. Reduced voltage starters cost substantially more than full voltage starters and should only be applied when applicable.

*** WYE-Delta motors are compatible with full voltage motor starters.**

WYE Mode:

Motors with WYE-Delta windings reduced the starting line voltage by approximately 1/3. The starting current is reduced approximately 30 percent that of the normal current. The starting torque is reduced approximately 20–30 percent of the rated full load torque.

*** Motors using WYE starting mode should not be started under full load.**

Delta Mode:

Applies full line voltage, current, and torque to the motor when required.

*** When using a full voltage motor starter, only wire per delta connections.**

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