

## M Series Motors M1/M2/M3/M4/M5/M6/M7-\*-\*-40

### Notice of Model Change

We are pleased to announce that the M series motors will be remodeled to comply with the Top Runner criteria that come into force in April 2015, and their design number will be changed from 30 to 40.

#### ■Description of the Change

In the context of worldwide efforts against global warming, many countries have set minimum requirements for energy consumption efficiency and introduced legislation to mandate the use of higher efficiency electric motors. In Japan, the Top Runner criteria will regulate the efficiency of induction motors from April 2015, and our M series motors will be remodeled to comply with the criteria.



#### ■Major Changes

- The efficiency class of these motors will be changed to IE3 (premium), and their overall specifications will be improved.
- The terminal box is located on the upper side (standard), but the left or right side is also selectable as before.
- The overall motor bodies will be bigger, and their masses will increase by a range of 2 to 31 kg (110 to 1142% rate of increase in mass).
- CE mark is available for these motors, including standard products.

#### ■Model Number Designation

M1	-1.5	-R	-40
Series Number	Motor Capacity	Terminal Box Location <sup>Note 1)</sup>	Design Number
M1 [For AR16/AR22/A10/A16/A22]	0.75: 0.75 kW×4P, 1.5: 1.5 kW×4P, 2.2: 2.2 kW×4P, 3.7: 3.7 kW×4P	[When viewed from the pump mounting surface]  None: Upper side (Standard)  R: Right side L: Left side	40
M2 [For A37 (excluding 04E)]	3.7: 3.7 kW×4P, 5.5: 5.5 kW×4P, 7.5: 7.5 kW×4P		
M3 [For AR16/AR22/A10/A16/A22]	5.5: 5.5 kW×4P, 7.5: 7.5 kW×4P		
M4 [For A37 (excluding 04E)]	5.5: 5.5 kW×4P, 7.5: 7.5 kW×4P, 11: 11 kW×4P, 15: 15 kW×4P,		
M5 [For A37(04E)/A56]	18.5: 18.5 kW×4P		
M6 [For A3H16]	5.5: 5.5 kW×4P, 7.5: 7.5 kW×4P		
M7 [For A3H37]	7.5: 7.5 kW×4P, 11: 11 kW×4P 15: 15 kW×4P		

Note 1) For the following models, either the left or right side terminal box location is selectable (the upper side (standard) terminal box is not available).

M1-0.75/M4-18.5/M5-18.5

2) 400 V specifications are also available. For details, contact us separately.

## ■Specification Comparison between Old and New Models

Output × Number of Poes	Voltage-Frequency		Rated Current A	Starting Current A	Rotational Speed r/min	Insulation Class
	V	Hz				
0.75 kW×4P	200-50		3.8 (3.9)	27.3 (20.6)	1440 (1410)	F (B)
	200-60		3.4	23.8 (19.7)	1730 (1690)	
	220-60		3.4 (3.3)	26.2 (21.7)	1745 (1710)	
1.5 kW×4P	200-50		6.8 (6.3)	46.6 (34.4)	1445 (1410)	F (B)
	200-60		6.4 (6.0)	41.0 (32.3)	1740 (1700)	
	220-60		6.0 (5.5)	45.1 (35.5)	1750 (1720)	
2.2 kW×4P	200-50		10.6 (9.7)	96.0 (64.0)	1460 (1410)	F (B)
	200-60		9.4 (8.9)	81.0 (58.2)	1755 (1700)	
	220-60		9.2 (8.4)	89.1 (64.0)	1765 (1720)	
3.7 kW×4P	200-50		15.6	134 (108)	1460 (1410)	F (B)
	200-60		14.6	118 (96)	1755 (1700)	
	220-60		13.8 (13.6)	130 (106)	1765 (1720)	
5.5 kW×4P	200-50		23.4 (23.0)	200 (150)	1465 (1430)	F (B)
	200-60		21.4 (21.0)	166 (130)	1760 (1730)	
	220-60		20.6 (20.0)	183 (143)	1765 (1740)	
7.5 kW×4P	200-50		30.8 (31.2)	264 (218)	1460 (1435)	F
	200-60		28.6 (28.4)	218 (192)	1755 (1730)	
	220-60		27.4 (26.8)	240 (211)	1765 (1740)	
11 kW×4P	200-50		46.0 (43.5)	365 (297)	1475 (1440)	F (B)
	200-60		42.0 (41.4)	302 (250)	1770 (1730)	
	220-60		40.0 (38.4)	332 (275)	1775 (1740)	
15 kW×4P	200-50		58.8 (59.0)	484 (460)	1470 (1430)	F (B)
	200-60		55.6 (55.4)	408 (368)	1760 (1730)	
	220-60		52.0 (51.0)	449 (405)	1770 (1740)	
	200-50		74.0 (71.0)	668 (468)	1475 (1455)	F

Note 1) Values in parentheses are added when there are differences in specifications between the old and new models

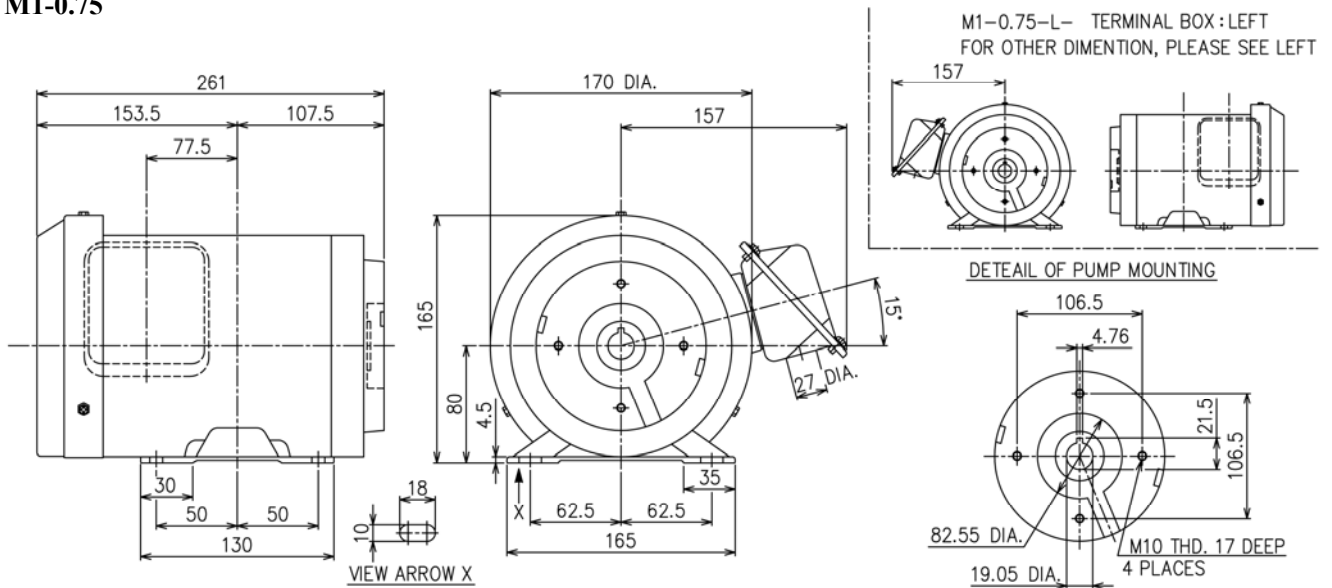
A value before parentheses: value of a **new** model with the design number 40, a value in parentheses: value of an **old** model with the design number 30.

- 2) New models with the design number 40 have larger starting current values than those of old models with the design number 30. This point should be taken into consideration when designing power distribution.
- 3) With improved slip control, new models with the design number 40 have faster rotational speed values than those of old models with the design number 30. This point should be taken into consideration because “the output may increase,” or “the flow rate may become too high,” depending on operating conditions.

## ■Mounting Interchangeability between Old and New Models

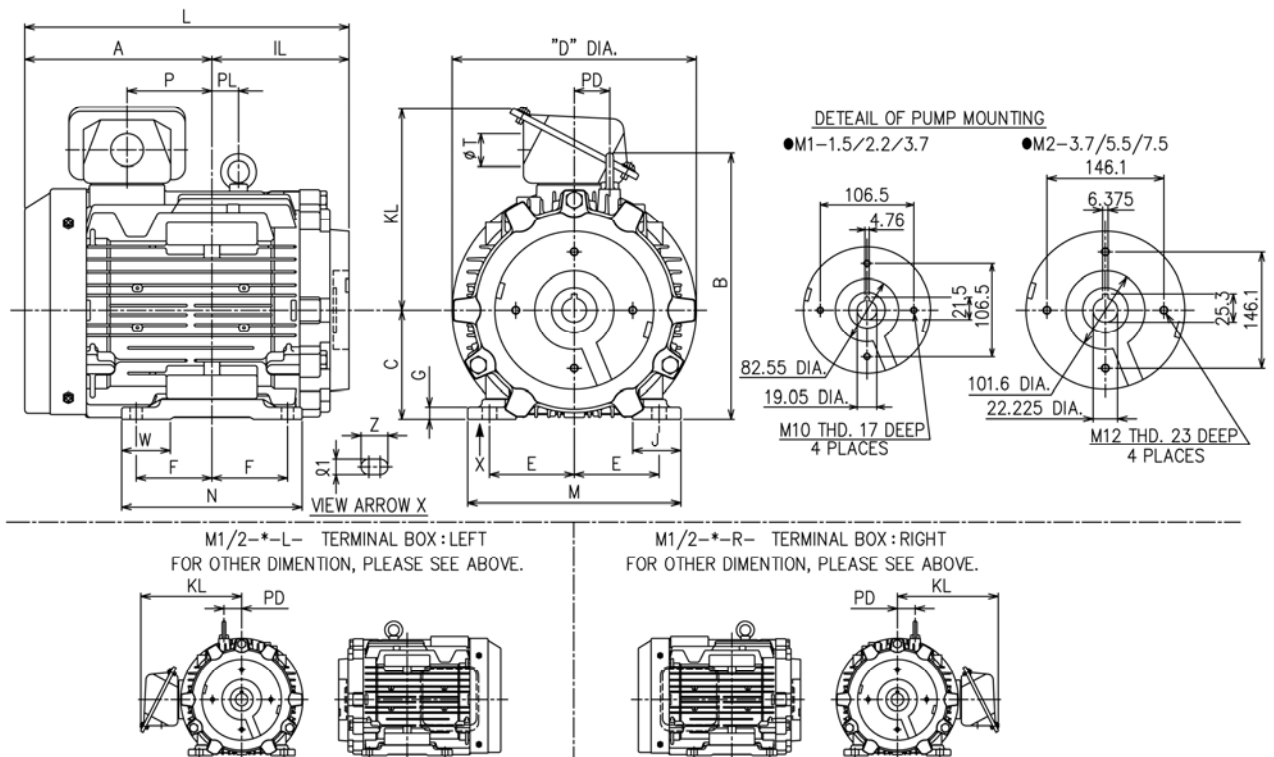
Interchangeability	Model	Description
Interchangeable	M1, M2, M3-5.5, M4-5.5/11/15/18.5 M5-5.5/11/15/18.5, M6, M7	_____
Not interchangeable	M3-7.5, M4-7.5, M5-7.5	Pump mounting portion is the same between the old and new models. The distance (dimension IL) between the pump mounting location and the motor mounting center is different.

## M1-0.75



## M1-1.5/2.2/3.7

## M2-3.7/5.5/7.5

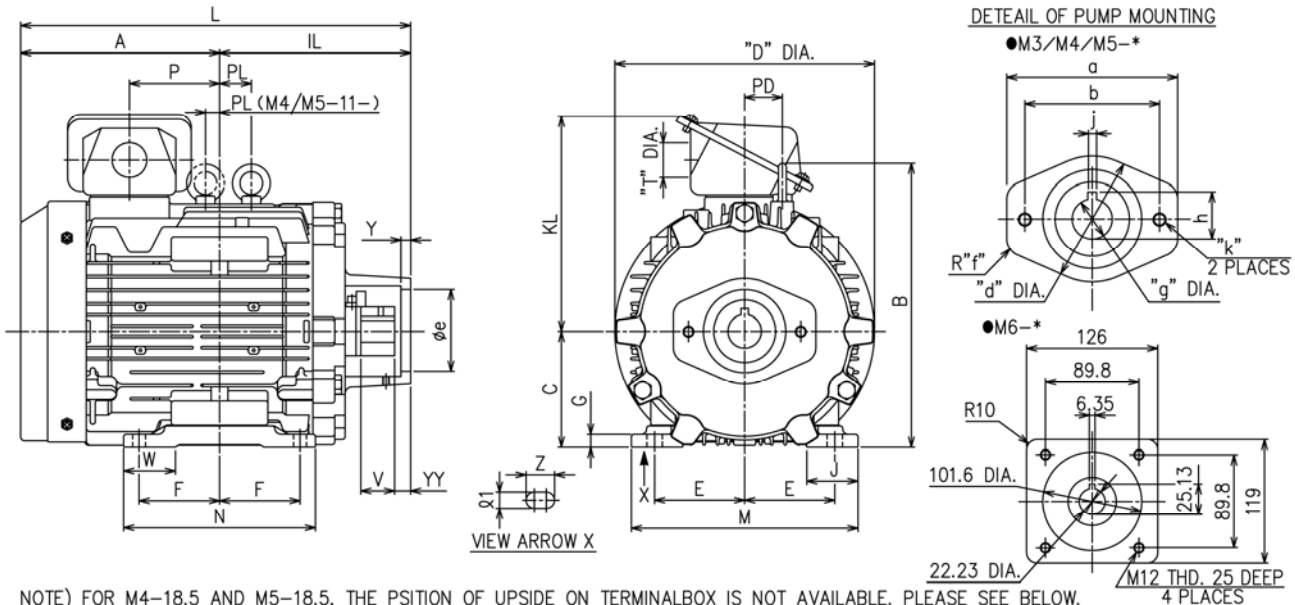


Model Number	Motor Dimensions (mm)																			
	A	B	C	D	E	F	G	IL	J	KL	L	M	N	P	PD	PL	T	W	Z	Ø1
M1-1.5	154.5	— Note	90	202	70	62.5	10	118.5	40	167	273	176	149	70	— Note	0	27	40	12	10
M1-2.2	178	239.5	100	202	80	70	12	136	40	167	314	200	168	93.5	37.5	0	27	46	14	12
M1-3.7 M2-3.7	186	271.5	112	243	95	70	12	143.5	40	186.5	329.5	220	168	95	47	0	27	44	14	12
M2-5.5	210.5	323	132	285	108	70	15	163.5	50	263	374	260	175	85	56.5	45.5	49	50	14	12
M2-7.5	261	323	132	285	108	70	15	163.5	50	263	424.5	260	175	85	56.5	45.5	49	50	14	12

Note) For M1-1.5, no eyebolt is provided.

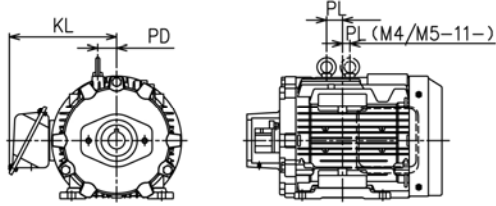
# PRODUCTS NEWS

M3-5.5/7.5  
M4-5.5/7.5/11/15/18.5  
M5-5.5/7.5/11/15/18.5  
M6-5.5/7.5

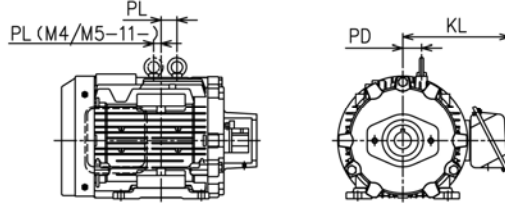


NOTE) FOR M4-18.5 AND M5-18.5, THE POSITION OF UPSIDE ON TERMINALBOX IS NOT AVAILABLE. PLEASE SEE BELOW.

M3/M4/M5/M6-\*L-\* TERMINAL BOX: LEFT  
FOR OTHER DIMENTION, PLEASE SEE ABOVE



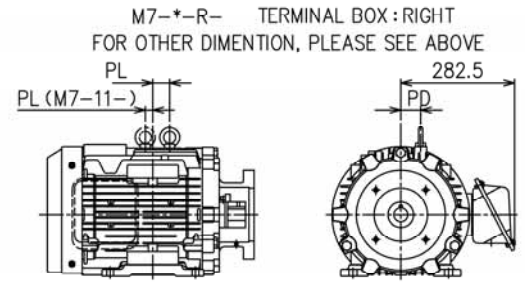
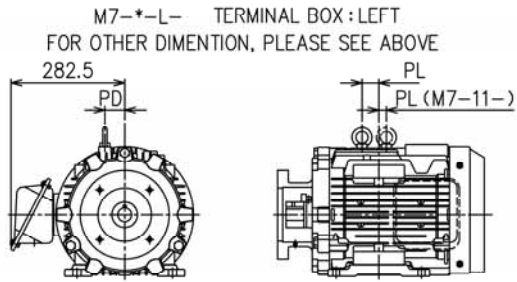
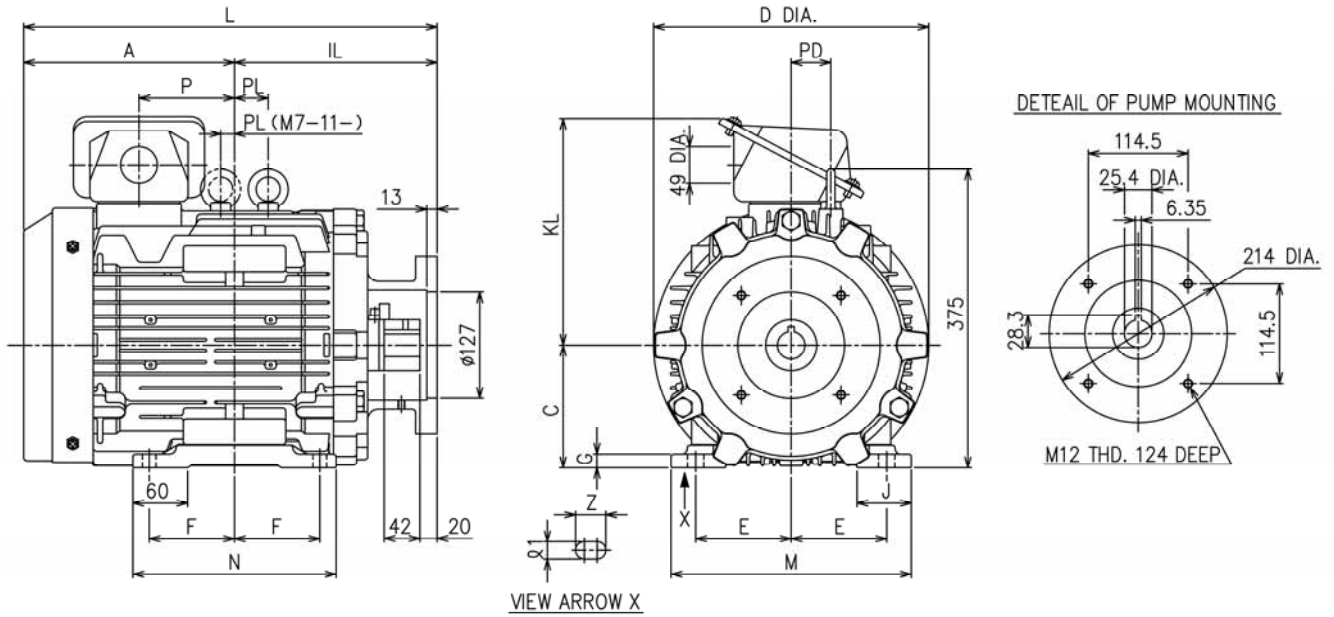
M3/M4/M5/M6-\*R-\* TERMINAL BOX: RIGHT  
FOR OTHER DIMENTION, PLEASE SEE ABOVE



Model Number	Motor Dimensions (mm)																																														
	A	B	C	D	E	F	G	IL	J	KL	L	M	N	P	PD	PL	T	V	W	Y	YY	Z	ϕ1																								
M3-5.5	210.5	323	132	285	108	70	15	220	50	263	430.5	260	175	85	565	455	49	30	50	8	15	14	12																								
M4-5.5								235			445.5										20																										
M5-5.5								235			445.5										20																										
M6-5.5								235			445.5										20																										
M3-7.5								229.5			323										132				285	108	89	15	239	50	263	468.5	260	213	104	565	265	49	30	50	8	15	14	12			
M4-7.5																													254			483.5										20					
M5-7.5	254	483.5	20																																												
M6-7.5	235	464.5	185																																												
M4-11	290	375	160	324	127	105	18		257	60		282.5	547	308	250	126	0	2	49	42		60	12	20					18.5			14.5															
M4-11-R/L																	54																														
M5-11								0																																							
M5-11-R/L								54																																							
M4-15								302			375						160				324				127	127	18	279		60	282.5		581	308	294	104	0	20	49	42	60		12	20	18.5	14.5	
M4-15-R/L																																					54										
M5-15	0																																														
M5-15-R/L	54																																														
M4-18.5	287	434	180	391	139.5	120.5	20		277	60		390	564	324	286	0		0	0	91		42	82.5	12					20			14.5					14.5										
M5-18.5																																															

Model Number	Pump Mounting Dimensions (mm)								
	a	b	d	e	f	g	h	j	k
M3-*	132	106	97	82.55	14	19.05	21.35	4.76	M10 THD. 25 DEEP
M4-*	176	146	122	101.6	16	22.23	25.13	6.35	M12 THD. 25 DEEP
M5-*						31.75	35.45	7.94	

## M7-7.5/11/15

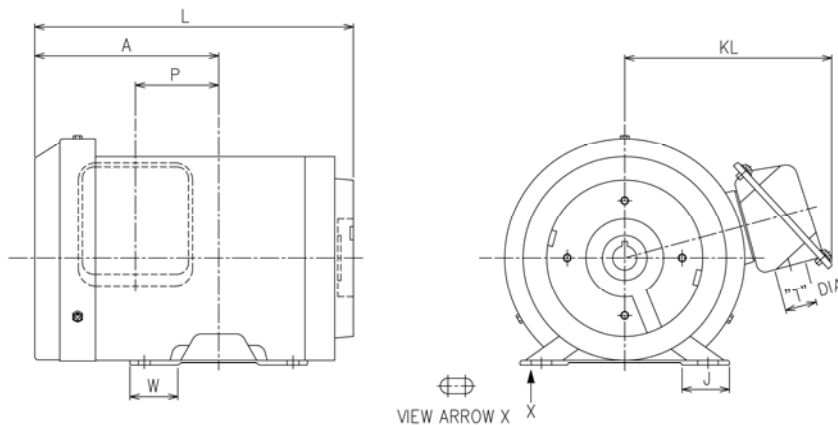


Model Number	Motor Dimensions (mm)																	
	A	C	D	E	F	G	IL	J	KL	L	M	N	P	PD	PL	W	Z	$\alpha$
M7-7.5	2295	132	285	108	89	15	235	50	263	4645	260	213	104	565	265	50	14	12
M7-11	290	160	324	127	105	18	257	60	2825	547	308	250	126	0	2	60	185	145
M7-11-R/L					127		54											
M7-15	302	160	324	127	127	18	279	60	2825	581	308	294	104	0	20	60	185	145
M7-15-R/L					127		54											

## ■Dimensional Comparison between Old and New Models

Since the terminal box position of 30 design was R equivalency, the new 40 design assumes terminal box position "R" was compared with the old 30 design.

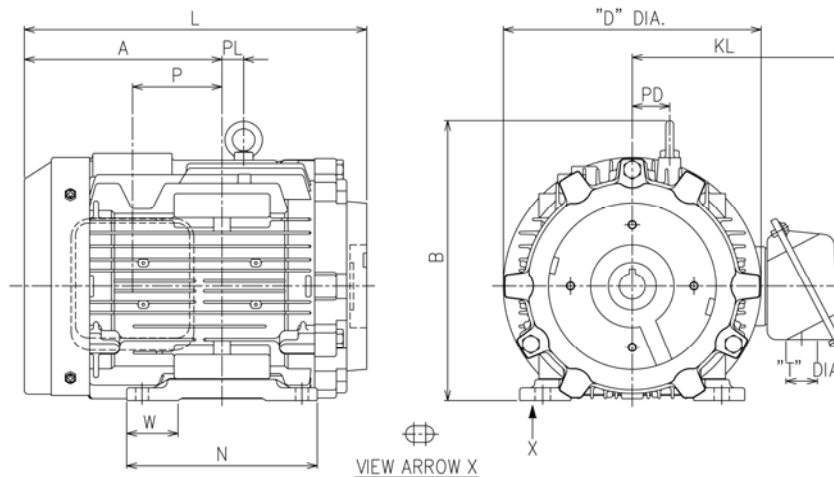
[Model M1-0.75]



Model Number	Dimensions (mm)							Mass (kg)
	A	J	KL	L	P	T	W	
Old M1-0.75-30	130	33	146	237.5	27.5	22	22	14.3
New M1-0.75-R-40	153.5	35	157	261	77.5	27	30	17.9

Note) Dimensions not listed in the above table are the same between old and new models. See the dimensional drawings.

[Models M1-1.5 to 3.7/M2]

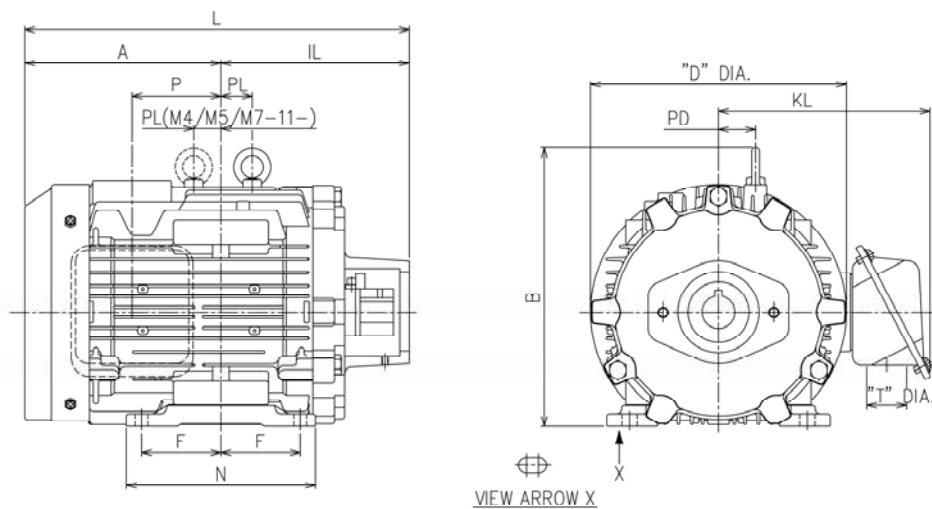


Model Number	Dimensions (mm)											Mass (kg)
	A	B	D	N	KL	W	L	P	PD	T	PL	
Old M1-1.5-30	143	231	198	150	147	×	261.5	0	0	×	×	20
New M1-1.5-R-40	154.5	—	202	149	167	×	273	70	—	×	×	22
Old M1-2.2-30	157.5	241 <sup>(note 2)</sup>	198	×	147	×	293.5	0	0 <sup>(note 2)</sup>	×	×	26
New M1-2.2-R-40	178	239.5	202	×	167	×	314	93.5	37.5	×	×	30
Old M1-3.7-30	×	261	214	×	154	46	×	0	0	×	×	29
New M1-3.7-R-40	×	271.5	243	×	186.5	44	×	95	47	×	×	41
Old M2-3.7-30	×	261	214	×	154	46	×	0	0	×	×	29
New M2-3.7-R-40	×	271.5	243	×	186.5	44	×	95	47	×	×	41
Old M2-5.5-30	×	303	252	×	189	×	×	0	0	35	0	45
New M2-5.5-R-40	×	323	285	×	263	×	×	85	56.5	49	45.5	62
Old M2-7.5-30	233.5	303	252	×	189	×	412	0	0	35	0	51
New M2-7.5-R-40	261	323	285	×	263	×	424.5	85	56.5	49	45.5	75

Note 1) Dimensions not listed in the above table are the same between old and new models. See the dimensional drawings.

2) For M1-1.5-\*-40, no eyebolt is provided.

**[Models M3/M4/M5/M6/M7]**



Model Number		Dimensions (mm)											Mass (kg)												
		A	B	D	F	IL	KL	L	N	P	PD	PL		T											
Old	M3-5.5-30	X	303	252	X	X	189	X	X	0	0	0	35	47											
	M4-5.5-30													50											
	M5-5.5-30													48											
	M6-5.5-30													48											
New	M3-5.5-R-40	X	323	285	X	X	263	X	X	85	56.5	45.5	49	63											
	M4-5.5-R-40													65											
	M5-5.5-R-40													68											
	M6-5.5-R-40													68											
Old	M3-7.5-30	248.5	303	252	70	220	189	X	X	0	0	0	35	53											
	M4-7.5-30					235								175	56										
	M5-7.5-30					X								X	X	X	X	X	X	X	X	X	X	53	
	M6-7.5-30																							54.5	
	M7-7.5-30																							74	
New	M3-7.5-R-40	229.5	323	285	89	239	263	X	X	104	56.5	26.5	49	76											
	M4-7.5-R-40					254								213	76										
	M5-7.5-R-40					X								X	X	X	X	X	X	X	X	X	X	X	
	M6-7.5-R-40																								77.5
	M7-7.5-R-40																								77.5
Old	M4-11-30	302	351	304	X	X	257.5	559	X	22	0	0	52	85											
	M5-11-30																								
	M7-11-30																								
New	M4-11-R-40	290	375	324	X	X	282.5	547	X	126	56.5	2	49	114											
	M5-11-R-40																								
	M7-11-R-40																								
Old	M4-15-30	280	351	304	X	X	257.5	559	X	0	0	0	52	100											
	M5-15-30																								
	M7-15-30																								
New	M4-15-R-40	302	375	324	X	X	282.5	581	X	104	56.5	20	49	131											
	M5-15-R-40																								
	M7-15-R-40																								
Old	M4-18.5-30	320	431	382	X	X	335	597	X	X	X	X	60	175											
	M5-18.5-30																								
New	M4-18.5-R-40	287	434	391	X	X	390	564	X	X	X	X	91	193											
	M5-18.5-R-40																								

Note) Dimensions not listed in the above table are the same between old and new models. See the dimensional drawings.

## ■Timing of Release

Scheduled to be released in April 2015.

## ■Reference

No.15-06E Low noise type hydraulic power units YA Packs.

## YUKEN KOGYO CO.,LTD.

### Contact

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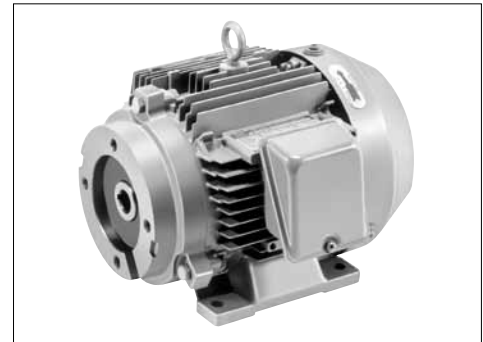
e-mail: [int.bd@yuken.co.jp](mailto:int.bd@yuken.co.jp) Internet: [www.yuken.co.jp](http://www.yuken.co.jp)



# M Series Motor

## “M” Series Electric Motors

The M Series electric motor mounts directly to PV2R series vane pump and AR / A / A3H variable piston pumps. It has outputs available from 0.75~18.5kW. It is available in two formats: the M3~M7, which is a bell housing types; and a direct coupling type, the M1, M2, which has a hollow shaft.



- Easily mounting of the pump.
- Low noise and vibration.
- It allows you to reduce the floor space, because it is compact.
- It is also safe, because the shaft is not exposed.

### Specifications

Model Number	Power Output	Voltage*2-Hertz V Hz	Rated Current A	Initial Current A	Revolution r/min	Insulation Grade	Weight kg	Type
M1-0.75-30	0.75 kW × 4P	200-50	3.9	20.6	1410	B	14.3	<ul style="list-style-type: none"> <li>● Each Motor has a fully enclosed instrumentation that makes them water and dust resistant. There is also a rear fan for self cooling. (IP44, JC4, IEC60034-1 Correspondence)</li> <li>● IMPORTANT NOTE! *Must be keep indoors. *Operates between -20 to 40°C. *There must be less than 100% relative humidity. *Altitude must be 1000m or less. *Keep away from flammable gases.</li> </ul>
		200-60	3.4	19.7	1690			
		220-60	3.3	21.7	1710			
M1-1.5 -30	1.5 kW × 4P	200-50	6.3	34.4	1410	B	20	
		200-60	6.0	32.3	1700			
		220-60	5.5	35.5	1720			
M1-2.2 -30	2.2 kW × 4P	200-50	9.7	64.0	1410	B	26	
		200-60	8.9	58.2	1700			
		220-60	8.4	64.0	1720			
M1-3.7 -30 M2-3.7 -30	3.7 kW × 4P	200-50	15.6	108	1410	B	29	
		200-60	14.6	96.0	1700			
		220-60	13.6	106	1720			
M2-5.5 -30	5.5 kW × 4P	200-50	23.0	150	1430	B	45	
M3-5.5 -30							47	
M4-5.5 -30							50	
M5-5.5 -30							48	
M6-5.5 -30							51	
M2-7.5 -30							53	
M3-7.5 -30	7.5 kW × 4P	200-50	31.2	218	1435	F	56	
M4-7.5 -30							53	
M5-7.5 -30							56	
M6-7.5 -30							53	
M7-7.5 -30	54.5							
M4-11 -30 M5-11 -30 M7-11 -30	11 kW × 4P	200-50	43.5	297	1440	B	85	
		200-60	41.4	250	1730			
		220-60	38.4	275	1740			
M4-15 -30 M5-15 -30 M7-15 -30	15 kW × 4P	200-50	59.0	460	1430	B	100	
		200-60	55.4	368	1730			
		220-60	51.0	405	1740			
M4-18.5-30 M5-18.5-30	18.5 kW × 4P	200-50	71.0	468	1455	B	175	
		200-60	68.0	393	1750			
		220-60	63.0	432	1760			

- ★1. If you need a wattage other than the ones listed, please contact your Yuken service representative.
- ★2. If you need a voltage other than the ones listed, please contact your Yuken service representative.

### Applicable Pump(s)

Model Number	Piston Pump			Vane Pump *1
	Single Piston Pump	Double Piston Pump	Piston and Vane Pump Combo	
M1-※-30 M3-※-30	AR16/AR22/A10/A16/A22	A1616/A1622/A2222	A16R1/A22R1	PV2R1
M2-※-30 M4-※-30	A37 (Except the 04E)	—	—	PV2R2*2
M5-※-30	A37 (04E)/A56	A1637/A2237/A1656/A2256	A37R1/A56R1	—
M6-※-30	A3H16	—	—	—
M7-※-30	A3H37	—	—	—

- ★1. Certain Vane pumps can be mounted, but the hardware needed is different, please contact for more information.
- ★2. This pump requires different hardware.

■ モデル番号の構成

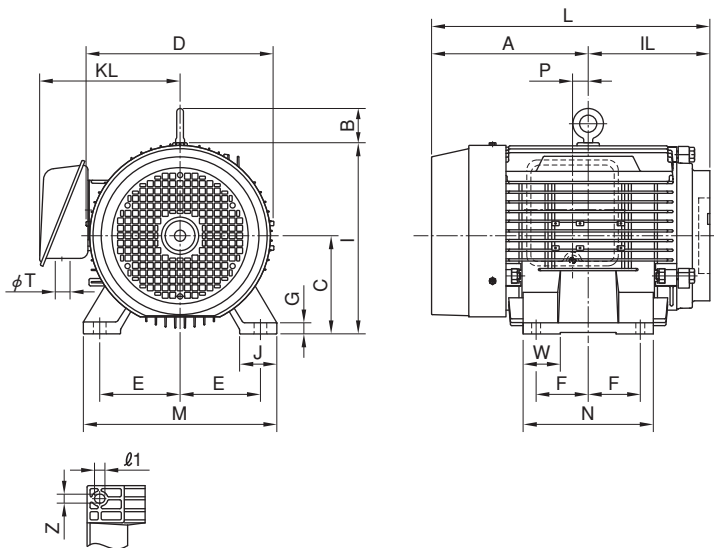
M1	-1.5	-30
シリーズ番号	電動機容量	デザイン番号
M1 (AR16/AR22 A10/A16/A22)	0.75 : 0.75 kW×4P 1.5 : 1.5 kW×4P 2.2 : 2.2 kW×4P 3.7 : 3.7 kW×4P	30
M2 [A37(04Eを除く)]	3.7 : 3.7 kW×4P 5.5 : 5.5 kW×4P 7.5 : 7.5 kW×4P	30
M3 (AR16/AR22 A10/A16/A22)	5.5 : 5.5 kW×4P 7.5 : 7.5 kW×4P	30
M4 [A37(04Eを除く)]	5.5 : 5.5 kW×4P 7.5 : 7.5 kW×4P 11 : 11 kW×4P 15 : 15 kW×4P 18.5 : 18.5 kW×4P	30
M5 [A37(04E)/A56]	5.5 : 5.5 kW×4P 7.5 : 7.5 kW×4P 11 : 11 kW×4P 15 : 15 kW×4P 18.5 : 18.5 kW×4P	30
M6 (A3H16)	5.5 : 5.5 kW×4P 7.5 : 7.5 kW×4P	30
M7 (A3H37)	7.5 : 7.5 kW×4P 11 : 11 kW×4P 15 : 15 kW×4P	30

■ 付属品

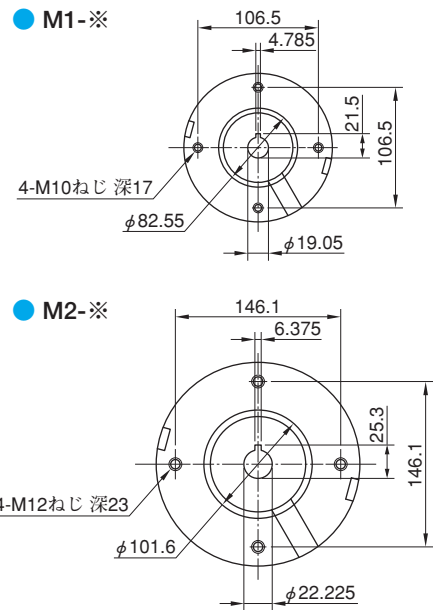
モデル 番 号	付 属 品				
	六角ボルト*1		平座金*2		カップリング (1個)
	サイズ	個数	サイズ	個数	
M1-※	M10×25L	2	10	2	—
M2-※	M12×30L	2	12	2	—
M3-※	M10×25L	2	10	2	1490-PK313763-5
M4-※	M12×30L	2	12	2	1490-PK313761-9(5.5, 7.5 kW)
					1490-PK313762-7(11~18.5 kW)
M5-※	M12×30L	2	12	2	1490-PK313759-3(5.5, 7.5 kW)
					1490-PK313760-1(11~18.5 kW)
M6-※	M12×30L	4	12	4	1490-PK313761-9(5.5, 7.5 kW)
M7-※	M12×30L	4	12	4	1490-PK313939-1

- ★1. ポンプ取付用六角ボルトの締付トルクは、下記によってください。  
ボルトサイズM10 : 28.3~31.3 Nm  
ボルトサイズM12 : 49.8~55 Nm
- ★2. 平座金の種類はみがき丸です。

M1-0.75/1.5/2.2/3.7  
M2-3.7/5.5/7.5



ポンプ取付部詳細



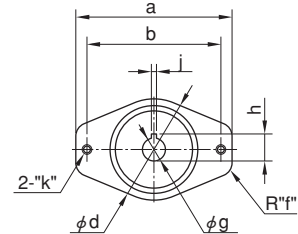
モデル番号	電動機 容量・極数	電動機寸法 mm																		
		A	IL	B	C	D	E	F	G	I	J	M	N	KL	W	Z	ℓ1	L	P	T
M1-0.75	0.75 kW×4P	130	107.5	—*1	80	170	62.5	50	4.5	165	33	165	130	146	22	10	18	237.5	27.5	22
M1-1.5	1.5 kW×4P	143	118.5	41	90	198	70	62.5	10	190	40	176	150	147	40	10	12	261.5	—	27
M1-2.2	2.2 kW×4P	157.5	136	41	100	198	80	70	12	200	40	200	168	147	46	12	14	293.5	—	27
M1-3.7 M2-3.7	3.7 kW×4P	186	143.5	41	112	214	95	70	12	220	40	220	168	154	46	12	14	329.5	—	27
M2-5.5	5.5 kW×4P	210.5	163.5	46	132	252	108	70	15	257	50	260	175	189	50	12	14	374	—	35
M2-7.5	7.5 kW×4P	233.5																397		

★1. M1-0.75には、アイボルトは設けていません。

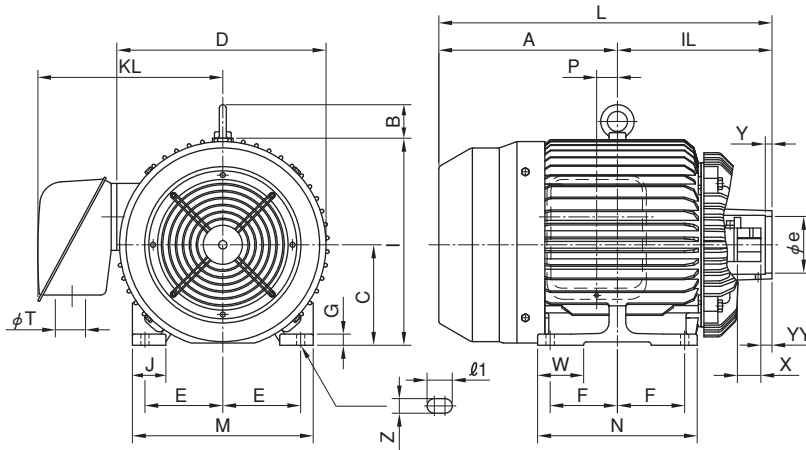
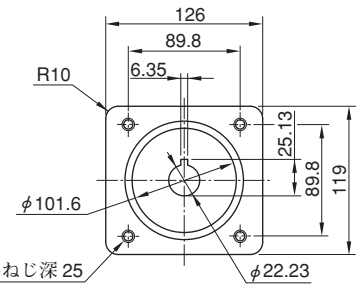
M3-5.5/7.5  
M4-5.5/7.5/11/15/18.5  
M5-5.5/7.5/11/15/18.5  
M6-5.5/7.5

ポンプ取付部詳細

● M3/M4/M5-※



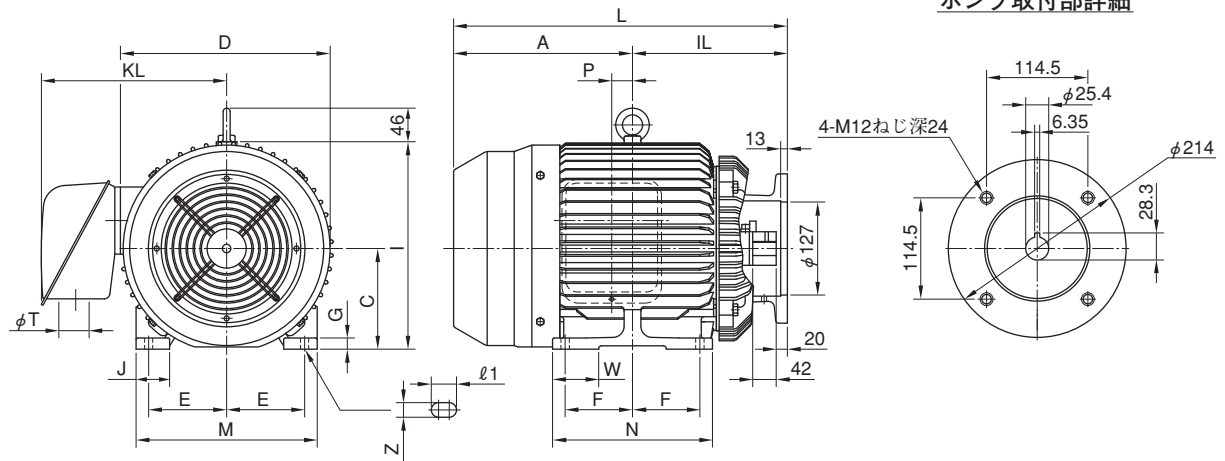
● M6-※



モデル 番号	電動機 容量・極数	電動機寸法 mm																								
		A	IL	B	C	D	E	F	G	I	J	M	N	KL	W	Z	φ1	L	P	T	X	Y	YY			
M3-5.5	5.5 kW×4P	210.5	220	46	132	252	108	70	15	257	50	260	175	189	50	12	14	430.5	—	35	30	8	15			
M4-5.5			235															40						11	20	
M5-5.5			235																							18.5
M6-5.5																										
M3-7.5	7.5 kW×4P	233.5	220	46	132	252	108	70	15	257	50	260	175	189	50	12	14	453.5	—	35	30	8	15			
M4-7.5			235															40						11	20	
M5-7.5			235																							18.5
M6-7.5																										
M4-11	11 kW×4P	302	257	46	160	304	127	105	18	305	60	308	250	257.5	60	14.5	18.5	559	22	52	42	12	20			
M5-11			277																							
M4-15	15 kW×4P	280	279	46	160	304	127	127	18	305	60	308	294	257.5	60	14.5	18.5	559	—	52	42	12	20			
M5-15			277																							
M4-18.5	18.5 kW×4P	320	277	60	180	382	139.5	120.5	20	371	60	324	286	335	82.5	φ14.5	—	597	—	60	42	12	20			
M5-18.5			277																							

モデル 番号	ポンプ取付部寸法 mm								
	a	b	d	e	f	g	h	j	k
M3-※	132	106	97	82.55	14	19.05	21.35	4.76	M10ねじ 深25
M4-※	176	146	122	101.6	16	22.23	25.13	6.35	M12ねじ 深25
M5-※						31.75	35.45	7.94	

M7-7.5/11/15



モデル 番号	電動機 容量・極数	電動機寸法 mm																	
		A	IL	C	D	E	F	G	I	J	M	N	KL	W	Z	ℓ1	L	P	T
M7-7.5	7.5 kW×4P	229.5	235	132	252	108	89	15	257	50	260	213	189	50	12	14	464.5	—	35
M7-11	11 kW×4P	302	257	160	304	127	105	18	305	60	308	250	257.5	60	14.5	18.5	559	22	52
M7-15	15 kW×4P	280	279				127					294						—	

● ポンプの取付け

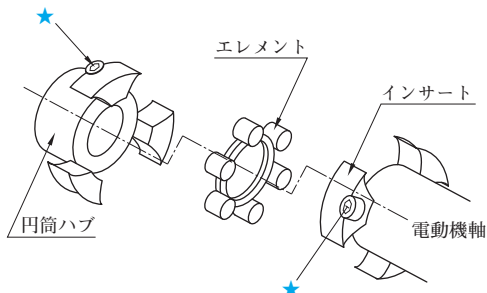
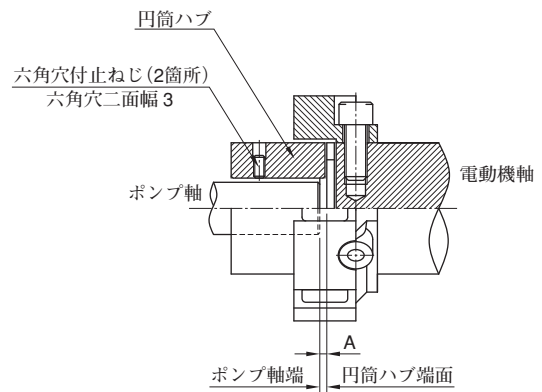
ポンプの取付けは、下記の手順にて行ってください。

● M1/M2形の場合

1. 電動機軸のキー溝とポンプ軸のキーの位置を合わせ、電動機軸の穴にポンプ軸を挿入し、ポンプを取付ける。
2. 平座金を取付けた2本の六角ボルトにより、ポンプを固定する。締付トルクは138ページの付属品の項を参照のこと。

● M3~M7形の場合

1. ポンプ軸に円筒ハブを取付け、右図に示す“A”寸法の位置に位置決め後、六角穴付止ねじ(2本)で固定する(締付トルク：4.8~7.0 Nm)。
2. ポンプ軸の円筒ハブにエレメントを取付ける。
3. 電動機軸のインサートとポンプ側のエレメントがかみ合うようにして、ポンプを電動機に組付ける。
4. 平座金を取付けた2本の六角ボルト(M6/M7形のみ4本)により、ポンプを固定する。締付トルクは138ページの付属品の項を参照のこと。



注) 円筒ハブとインサート、および、電動機軸とインサートは、あらかじめ位置調整を行った後、★印を付した六角穴付ボルトで固定してあります。六角穴付ボルトは緩めないでください。

モデル番号	A mm
M3-※	0±0.5
M4-5.5/7.5	1±0.5
M4-11/15/18.5	3±0.5
M5-5.5/7.5	-2±0.5 *1
M5-11/15/18.5	0±0.5
M6-5.5/7.5	8.5±0.5
M7-※	0.5±0.5

★1. M5-5.5/7.5のみ、円筒ハブ端面からポンプ軸が出っ張ります。

旧製品との互換性について

■ M1/M2/M3/M4/M5、20デザイン→30デザイン

● 主な変更内容

安定した供給体制確保のためモデルチェンジを実施。これに伴い、電流値、外形寸法、質量が異なりますが、互換性はあります。

● 仕様の比較

新旧で定格電流、始動電流および回転数に若干の増減はありますが、実用上の支障はありません。

【新旧電動機仕様の比較】

出力×極数	電圧一周波数 V Hz	定格電流 A	始動電流 A	回転速度 r/min	絶縁等級
0.75 kW × 4P	200-50	3.9	20.6 (19)	1410 (1400)	E
	200-60	3.4	19.7 (17)	1690 (1680)	
	220-60	3.3	21.7 (19)	1710 (1700)	
1.5 kW × 4P	200-50	6.3 (7.2)	34.4 (40)	1410 (1420)	B (E)
	200-60	6.0 (6.5)	32.3 (36)	1700	
	220-60	5.5 (6.3)	35.5 (40)	1720	
2.2 kW × 4P	200-50	9.7 (10.0)	64.0 (58)	1410 (1430)	E
	200-60	8.9	58.2 (52)	1700 (1720)	
	220-60	8.4 (8.6)	64.0 (57)	1720 (1730)	
3.7 kW × 4P	200-50	15.6 (16.0)	108 (110)	1410 (1430)	E
	200-60	14.6 (14.6)	96.0 (95)	1700 (1720)	
	220-60	13.6 (14.0)	106 (105)	1720 (1730)	
5.5 kW × 4P	200-50	23.0	150 (130)	1430 (1440)	B
	200-60	21.0	130 (113)	1730	
	220-60	20.0	143 (125)	1740	
7.5 kW × 4P	200-50	31.2 (31.0)	218 (190)	1435 (1440)	F (B)
	200-60	28.4 (29.0)	192 (168)	1730	
	220-60	26.8 (27.0)	211 (185)	1740	
11 kW × 4P	200-50	43.5 (42.0)	297 (280)	1440 (1450)	B
	200-60	41.4 (40.0)	250 (245)	1730	
	220-60	38.4 (38.0)	275 (270)	1740 (1750)	
15 kW × 4P	200-50	59.0 (54.0)	460 (420)	1430 (1450)	B
	200-60	55.4 (54.0)	368 (364)	1730	
	220-60	51.0 (50.0)	405 (400)	1740 (1750)	
18.5 kW × 4P	200-50	71.0 (68.0)	468 (500)	1455 (1450)	B
	200-60	68.0 (66.0)	393 (436)	1750 (1740)	
	220-60	63.0 (60.0)	432 (480)	1760 (1750)	

注) 新旧で仕様が異なる部分を( )で併記してあります。

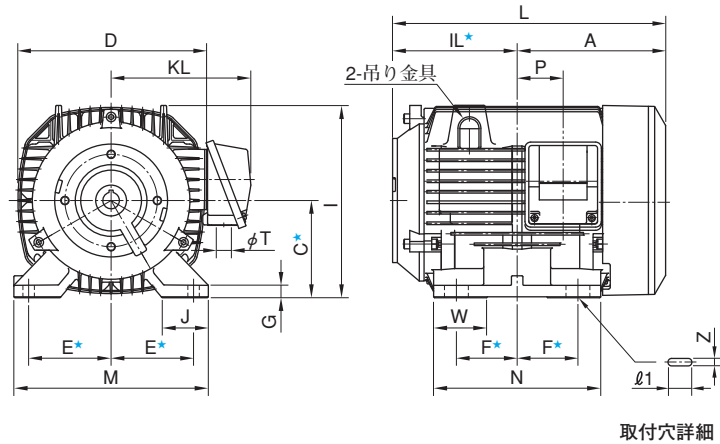
( )外：新30デザイン、( )内：旧20デザインの仕様を示します。

● 取付の互換性

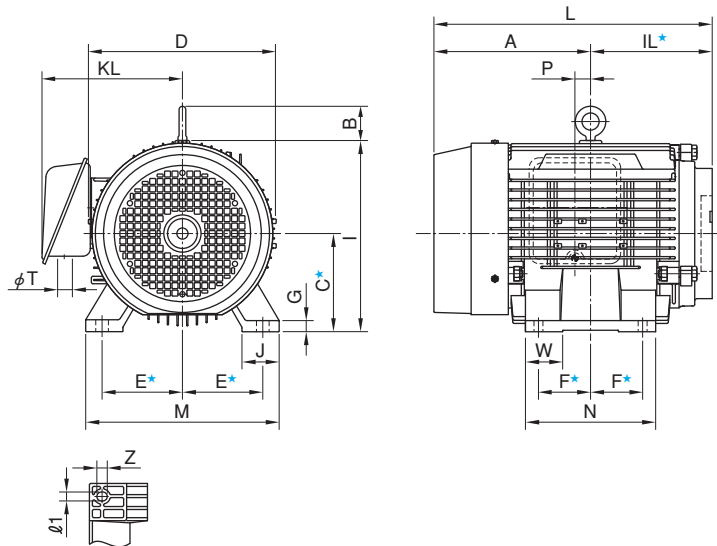
①、取付けに関する基本寸法(142、143ページで★印を付した寸法)に変更はありません。

【M1/M2形 新旧外形寸法の比較】

旧：20デザイン



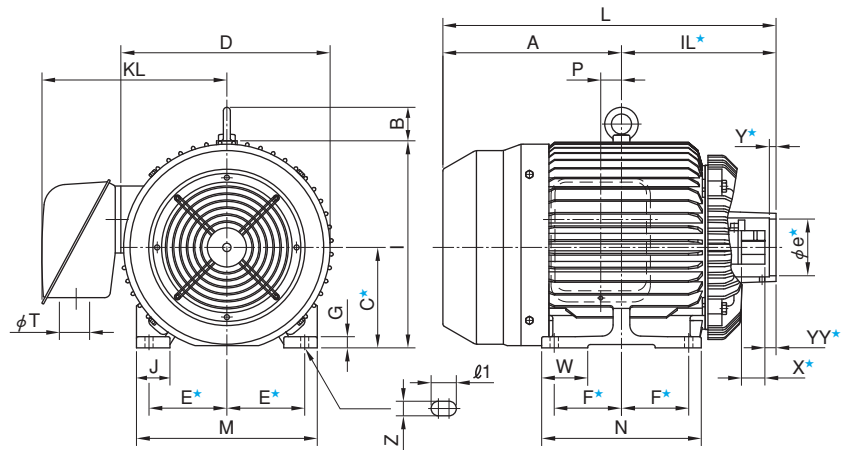
新：30デザイン



モデル番号	寸法 mm															質量 kg
	A	B	D	G	I	J	M	N	KL	W	Z	φ1	L	P	T	
旧 M1-0.75-20	124	—	160	10	160	34	155	135	126	50.5	10	25	231.5	21	22	12.0
新 M1-0.75-30	130	—	170	4.5	165	33	165	130	146	22	18	10	237.5	27.5	22	14.3
旧 M1-1.5 -20	142.5	—	178	10	179	35	170	155	136	51	10	16	261	36.5	22	16.0
新 M1-1.5 -30	143	41	198	10	190	40	176	150	147	40	12	10	261.5	—	27	20.0
旧 M1-2.2 -20	160.5	—	195	13	197.5	45	195	175	150	56.5	12	25	296.5	45.5	22	20.0
新 M1-2.2 -30	157.5	41	198	12	200	40	200	168	147	46	14	12	293.5	—	27	26.0
旧 M1-3.7 -20 M2-3.7 -20	171	—	219	14	221.5	45	224	175	161	52.5	12	25	314.5	53	22	29.0
新 M1-3.7 -30 M2-3.7 -30	186	41	214	12	220	40	220	168	154	46	14	12	329.5	—	27	29.0
旧 M2-5.5 -20	217	41.5	276	16	270	50	250	175	217	56	12	25	380.5	33.5	34	48
新 M2-5.5 -30	210.5	46	252	15	257	50	260	175	189	50	14	12	374	—	35	45
旧 M2-7.5 -20	217	41.5	276	16	270	50	250	175	217	56	12	25	380.5	33.5	34	54
新 M2-7.5 -30	233.5	46	252	15	257	50	260	175	189	50	14	12	397	—	35	51

注) 上図で★印を付した寸法は、新旧で同一ですので、138ページの外形寸法図をご参照ください。

【M3/M4/M5形 新旧外形寸法の比較】



モデル番号		寸法 mm														質量 kg	
		A	B	D	G	I	J	M	N	KL	W	Z	l1	L	P		T
旧	M3-5.5 -20	217	42	272	16	270	50	250	175	215	56	25	12	437	33.5	34	51
	M4-5.5 -20													452			
	M5-5.5 -20													452			
新	M3-5.5 -30	210.5	46	252	15	257	50	260	175	189	50	12	14	430.5	0	35	47
	M4-5.5 -30													445.5			
	M5-5.5 -30													445.5			
旧	M3-7.5 -20	217	42	272	16	270	50	250	175	215	56	25	12	437	33.5	34	57
	M4-7.5 -20													452			
	M5-7.5 -20													452			
新	M3-7.5 -30	233.5	46	252	15	257	50	260	175	189	50	12	14	453.5	0	35	53
	M4-7.5 -30													468.5			
	M5-7.5 -30													468.5			
旧	M4-11 -20	270	51	320	20	318	60	315	262	240	61	φ15	—	527	0	34	108
	M5-11 -20																
新	M4-11 -30	302	46	304	18	305	60	308	250	257.5	60	14.5	18.5	559	22	52	85
	M5-11 -30																
旧	M4-15 -20	292	51	320	20	318	60	315	306	240	63	φ15	—	571	0	34	123
	M5-15 -20																
新	M4-15 -30	280	46	304	18	305	60	308	294	257.5	60	14.5	18.5	559	0	52	100
	M5-15 -30																
旧	M4-18.5-20	311	60	366	22	367	70	350	294	320	65	φ15	—	588	0	49	173
	M5-18.5-20																
新	M4-18.5-30	320	60	382	20	371	60	324	286	335	82.5	φ14.5	—	597	0	60	175
	M5-18.5-30																

注) 上図で★印を付した寸法は、新旧で同一ですので、139ページの外形寸法図をご参照ください。