

## 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 <small>Note 1)</small>	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

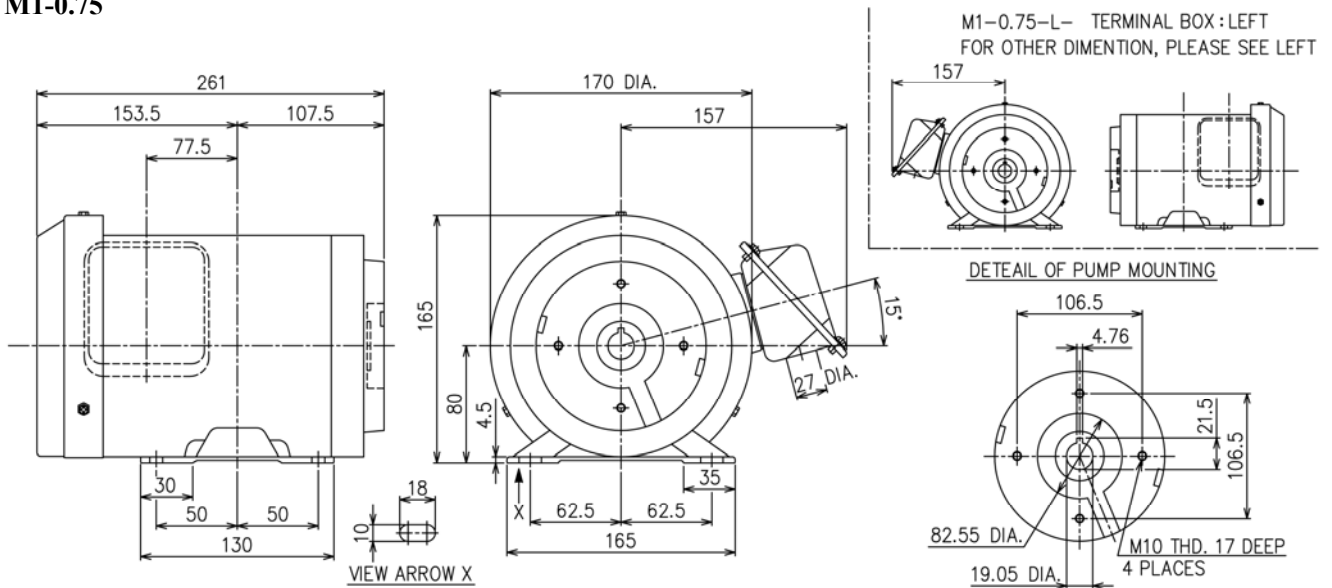
A value before parentheses: value of a **new** model with the design number 40, a value in parentheses: value of an **old** model with the design number 30.

- 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

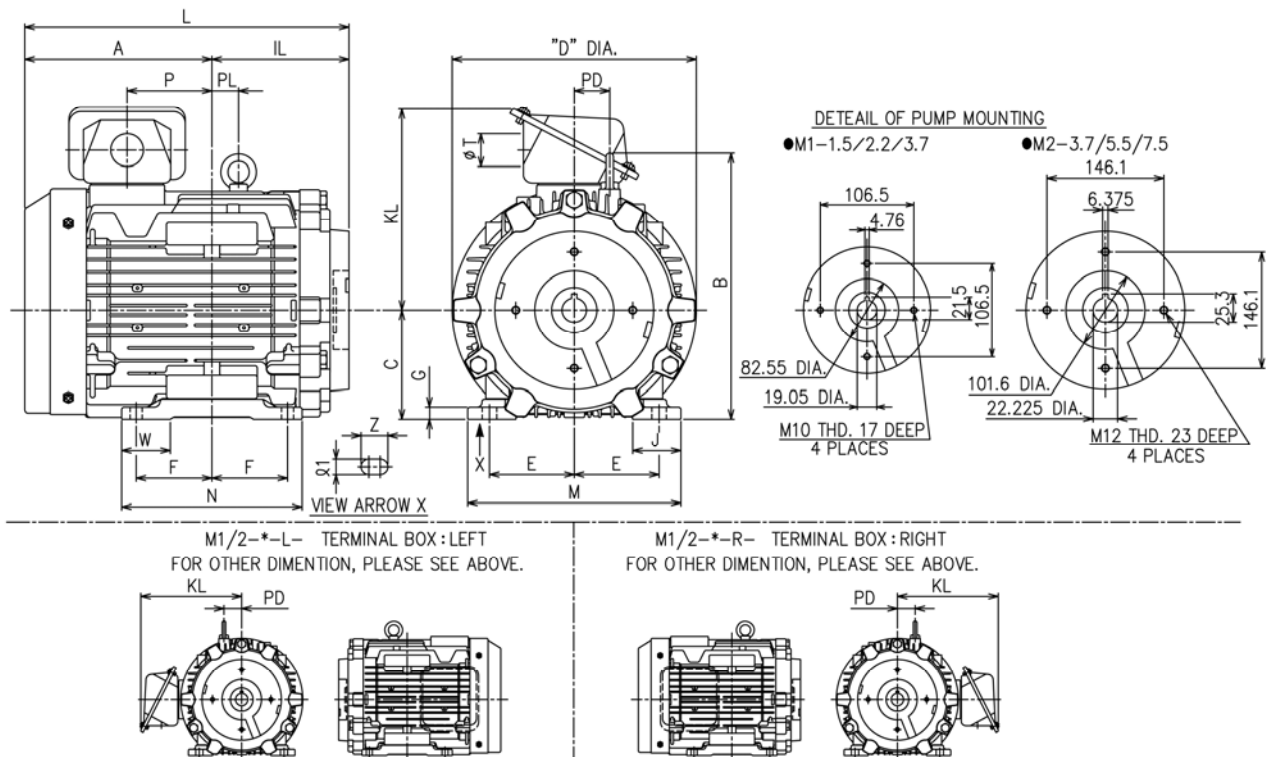
Interchangeability	Model	Description
Interchangeable	M1, M2, M3-5.5, M4-5.5/11/15/18.5 M5-5.5/11/15/18.5, M6, M7	_____
Not interchangeable	M3-7.5, M4-7.5, M5-7.5	Pump mounting portion is the same between the old and new models. The distance (dimension IL) between the pump mounting location and the motor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

## M1-0.75



## M1-1.5/2.2/3.7

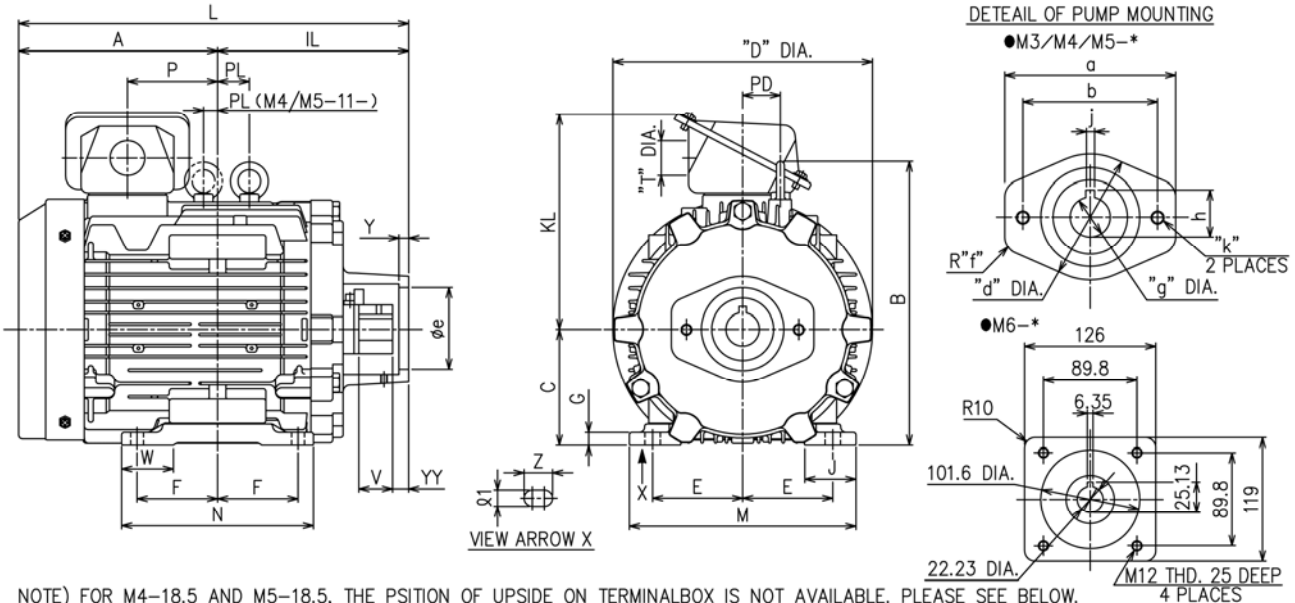
## M2-3.7/5.5/7.5



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

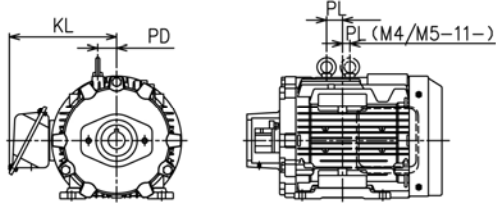
Note) For M1-1.5, no eyebolt is provided.

**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**

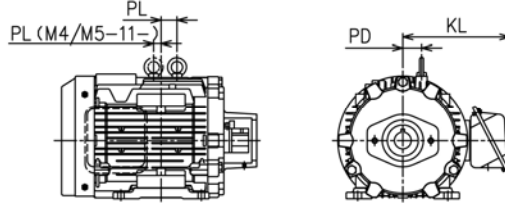


NOTE) FOR M4-18.5 AND M5-18.5, THE POSITION OF UPSIDE ON TERMINALBOX IS NOT AVAILABLE. PLEASE SEE BELOW.

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



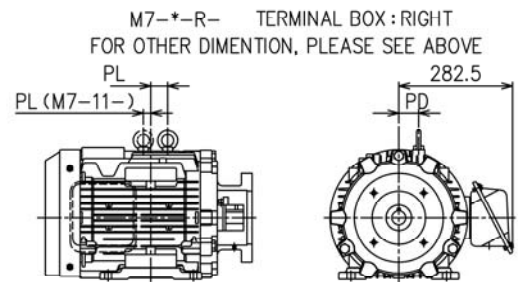
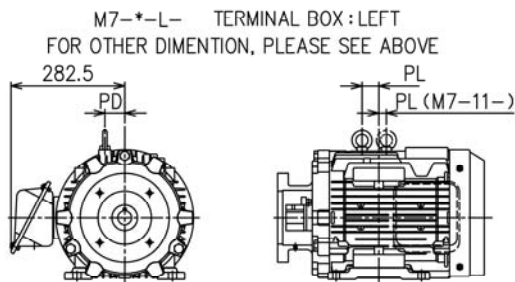
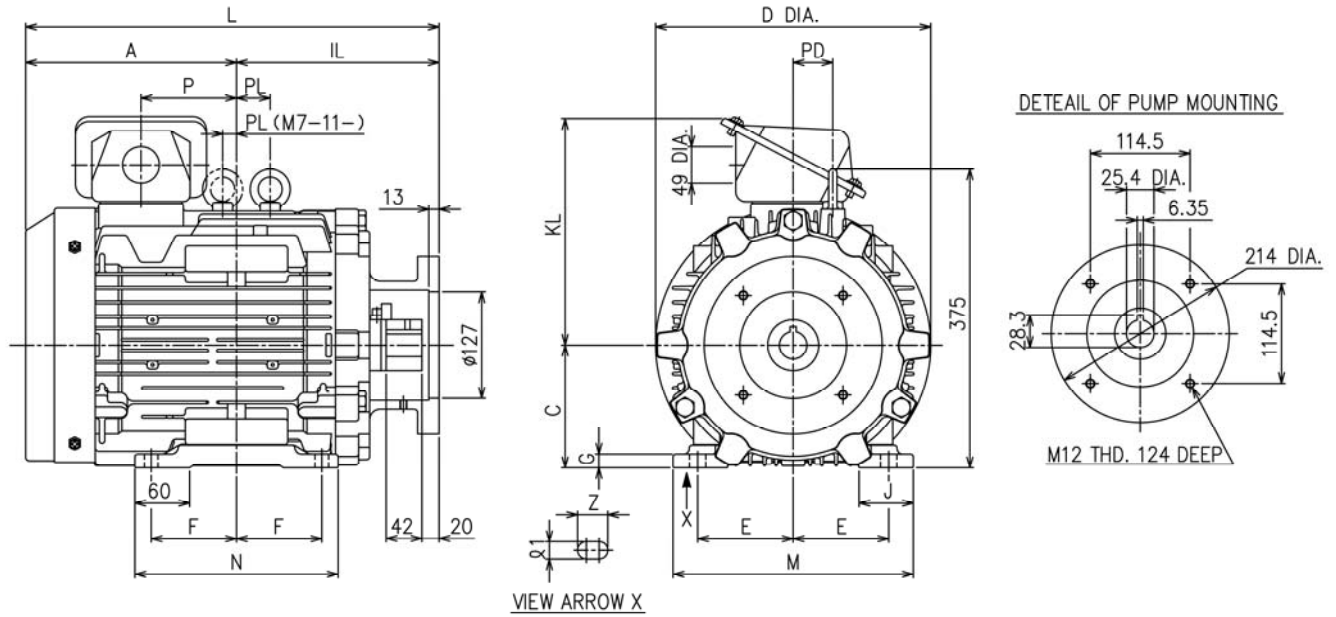
M3/M4/M5/M6-\*R-\* TERMINAL BOX: RIGHT  
 FOR OTHER DIMENTION, PLEASE SEE ABOVE



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								220			430.5							30		8	15			
M4-5.5	210.5	323	132	285	108	70	15	235	50	263	445.5	260	175	85	565	455	49	40	50	11	20	14	12	
M5-5.5								235																185
M6-5.5								235																185
M3-7.5	229.5	323	132	285	108	89	15	239	50	263	468.5	260	213	104	565	265	49	30	50	11	20	14	12	
M4-7.5								254																185
M5-7.5								254																185
M6-7.5								235																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

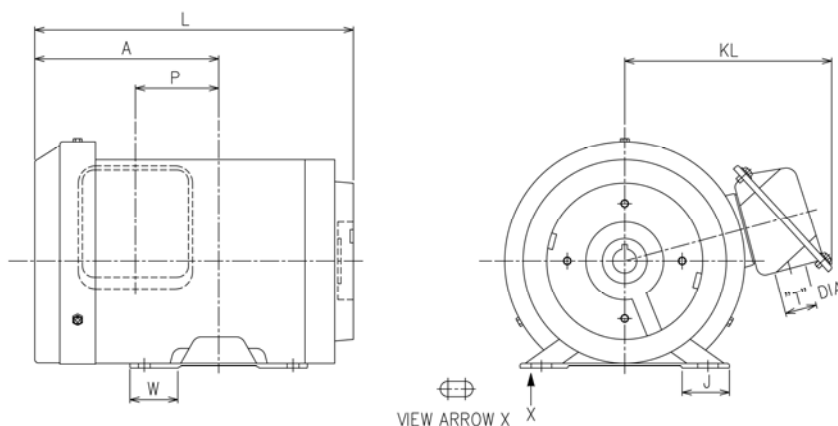


Model Number	Motor Dimensions (mm)																	
	A	C	D	E	F	G	IL	J	KL	L	M	N	P	PD	PL	W	Z	$\alpha$
M7-7.5	2295	132	285	108	89	15	235	50	263	4645	260	213	104	565	265	50	14	12
M7-11	290	160	324	127	105	18	257	60	2825	547	308	250	126	0	2	60	185	145
M7-11-R/L					127		54											
M7-15	302	160	324	127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

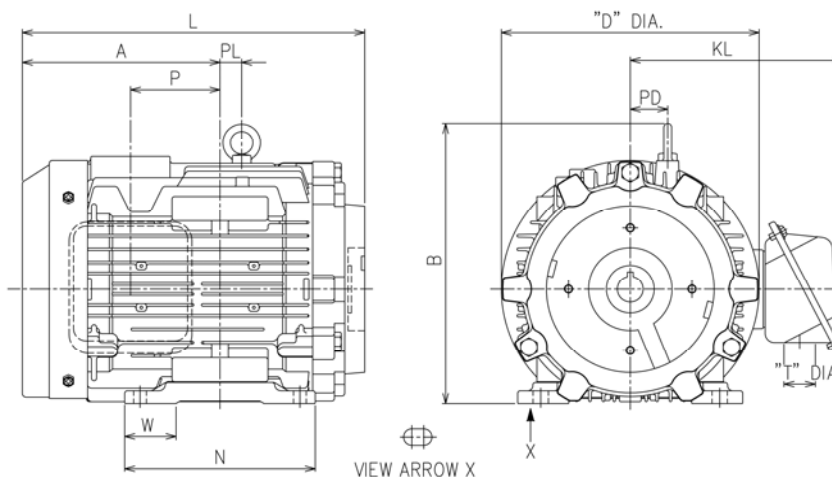
[Model M1-0.75]



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]

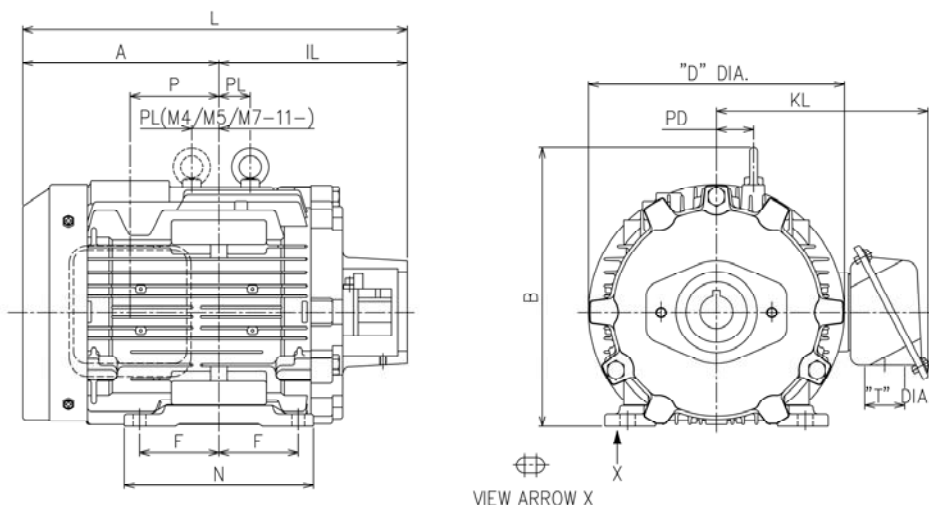


Model Number	Dimensions (mm)											Mass (kg)
	A	B	D	N	KL	W	L	P	PD	T	PL	
Old M1-1.5-30	143	231	198	150	147	×	261.5	0	0	×	×	20
New M1-1.5-R-40	154.5	—	202	149	167	×	273	70	—	×	×	22
Old M1-2.2-30	157.5	241 <sup>(note 2)</sup>	198	×	147	×	293.5	0	0 <sup>(note 2)</sup>	×	×	26
New M1-2.2-R-40	178	239.5	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													56
	M5-7.5-30													53
	M6-7.5-30													54.5
	M7-7.5-30													54.5
New	M3-7.5-R-40	229.5	323	285	89	239	263	X	X	104	56.5	26.5	49	74
	M4-7.5-R-40													76
	M5-7.5-R-40													76
	M6-7.5-R-40													76
	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													85
	M7-11-30													85
New	M4-11-R-40	290	375	324	X	X	282.5	547	X	126	56.5	2	49	114
	M5-11-R-40													114
	M7-11-R-40													114
Old	M4-15-30	280	351	304	X	X	257.5	559	X	0	0	0	52	100
	M5-15-30													100
	M7-15-30													100
New	M4-15-R-40	302	375	324	X	X	282.5	581	X	104	56.5	20	49	131
	M5-15-R-40													131
	M7-15-R-40													131
Old	M4-18.5-30	320	431	382	X	X	335	597	X	X	X	X	60	175
	M5-18.5-30													175
New	M4-18.5-R-40	287	434	391	X	X	390	564	X	X	X	X	91	193
	M5-18.5-R-40													193

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.

## ■Other

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

## YUKEN KOGYO CO.,LTD.

### Contact

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