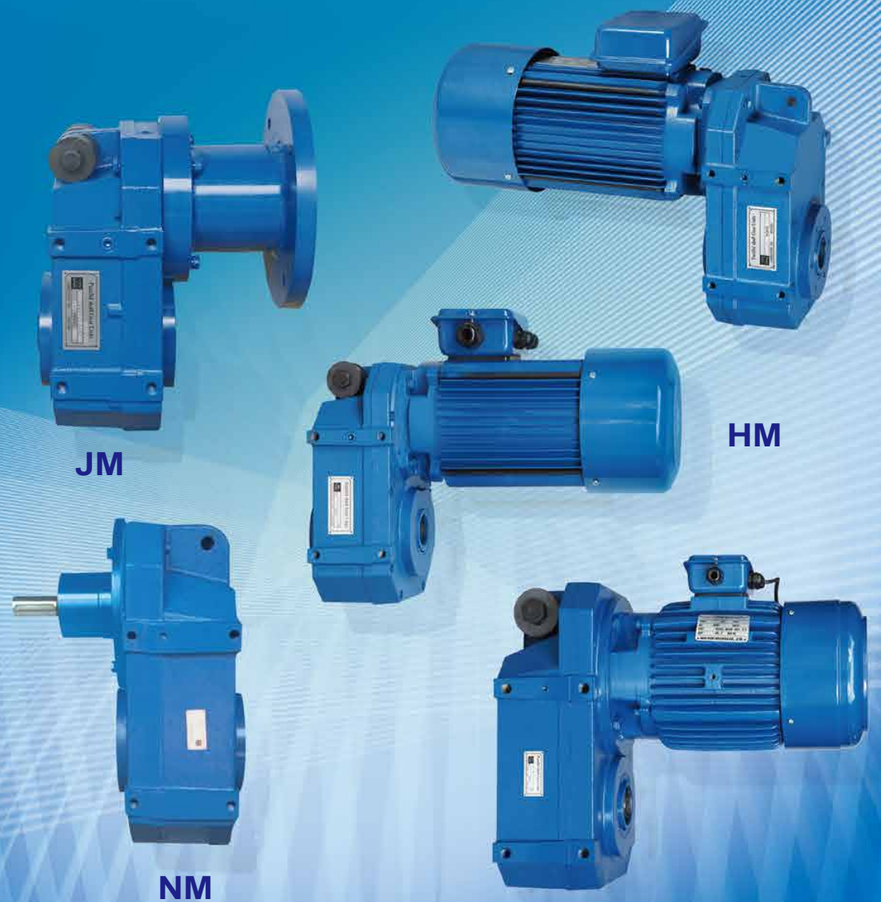
Paralled Shaft Helical Gear Motor

AND GEAR UNITS



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OUTLINE

Through a particular design to make the output shaft and the motor shaft working in the same direction but not in-line, enable space saving, especially with precise gears, high drive efficiency and low noise.

FEATURES

- At least gear efficiency up to 0.94
- Flexible installation options
- Not only for high speed operation but also for slow speed operation

BRIEF

The hollow shaft geared motors with precise machining and accurate assembly to reach high performance and efficiency.
According to modularized design to work with various gear box and broad range of ratios to provide the best solutions for applications.

DESCRIPTIONS

a. Comply with the standard DIN VDE 0530 for electrical machinery and VDE 0171 for motors safety.
b. Protection degree is IP54 in accordance with IEC60034-5 standard.
c. Options of Power input below:
   50HZ-220V,380V,400V,415V,525V
   60HZ-220V,380V,440V,460V,480V
d. The insulation of motor is F grade.

REMARKS

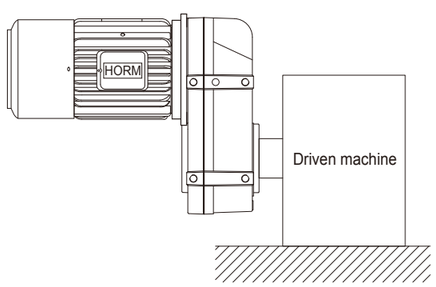
- The specification of motors could be changed without prior notices.
- Please follow the instructions when do the installation.

Service factor selection

F_1 Operating time service factor

Daily operation	4 hours			8 hours			16 hours			24 hours		
Start/hour	<10	10-200	>200	<10	10-200	>200	<10	10-200	>200	<10	10-200	>200
Light shocks	0.8	1.0	1.1	1.0	1.1	1.2	1.2	1.3	1.4	1.4	1.5	1.7
Morderate shocks	1.1	1.2	1.4	1.3	1.4	1.5	1.4	1.6	1.7	1.6	1.7	1.8
Heavy shocks	1.4	1.5	1.6	1.5	1.6	1.7	1.6	1.7	1.8	1.7	1.8	1.9

For up to 4 hours of operation per day, the Fs factor can be selected if a flexible coupling or belt drive is used.
If the load is heavy shocks, such as reverse operation, please consult with our office staff



F_2 Operating temperature service factor

Ambient temperature	20°C	30°C	40°C	50°C	60°C
F_2	1.0	1.15	1.35	1.6	2.0

If ambient temperature is below 20°C, please consult our office

$F = F_1 * F_2 \leq F_s$

F= Driven machine service factor

Fs=Service factor for reducer, see performance data

Loading Capacity	Driven Machine
Light shocks	Mass acceleration factor ≤ 0.3 Generator, belt conveyors, platform conveyors, turbo compressors, light hoists, auxiliary machine tool drives, screw conveyors, agitators and mixers for light uniform density materials.
Morderate shocks	Mass acceleration factor ≤ 3 piston pumps, metering pumps, hoists, slewing gears, cranes,induced draught fans, mixer and agitator for materials with variable density, multicylinder, Main machine tool drives
Heavy shocks	Mass acceleration factor ≤ 10 shears, banbury mixers, rotary drilling equipment, briquette presses, bucket dredger, heavy centrifugal drive, heavy metering pumps, Punch presses, pug mills, rolling mill and foundry drives

$$\text{Mass acceleration factor} = \frac{\text{all exterior moments of inertia(recalculated to motor speed)}}{\text{moments of inertia drive motor}}$$

Parallel Shaft Gear Motors

Ordering example : HM4-22 F O -1k5/4P 5-38 45 B

HM4	–	22	/F	O	–	1k5	/4P	5-38	45	B
Mode		Ratio	Fixing	Connection		Motor Power	Motor Pole	Power Supply	Diameter size	Option
HM2 : 250Nm HM3 : 600Nm HM4 : 1100Nm HM5 : 2400Nm HM6 : 4500Nm HM7 : 7200Nm		Nominal ratio 4,5,6,7,9,11, 14,18,22,28, 36,45,56,71, 90,112,140, 180,224,	T:Torque arm F:Flange mounted M:Foot mounted	S: Splined hollow shaft K: Hollow shaft O: Solid shaft		0k2 : 0.18kw 0k4 : 0.37kw 0k6 : 0.55kw 0k8 : 0.75kw 1k1 : 1.1kw 1k5 : 1.5kw 2k2 : 2.2kw 3k0 : 3.0kw 3k7 : 3.7kw 5k5 : 5.5kw 7k5 : 7.5kw 11k : 11kw 15k : 15kw 18k : 18kw 22k : 22kw 30k : 30kw	4P:4pole 6P:6pole 8P:8pole 12P:12pole 408P:4/8pole 412P:4/12pole 208P:2/8pole	5-22: 3Ø50Hz-220v 5-38: 3Ø50Hz-380v 5-42: 3Ø50Hz-415v 5-53: 3Ø50Hz-525v 6-22: 3Ø60Hz-220v 6-38: 3Ø60Hz-380v 6-46: 3Ø60Hz-460v 6-48: 3Ø60Hz-480v 6-53: 3Ø60Hz-530v 6-60: 3Ø60Hz-600v		B:DC-voltage.brake L:Enforced cooling fan R:Release of brake C:Space heater E:Thermal protector

Parallel Shaft Gear Units

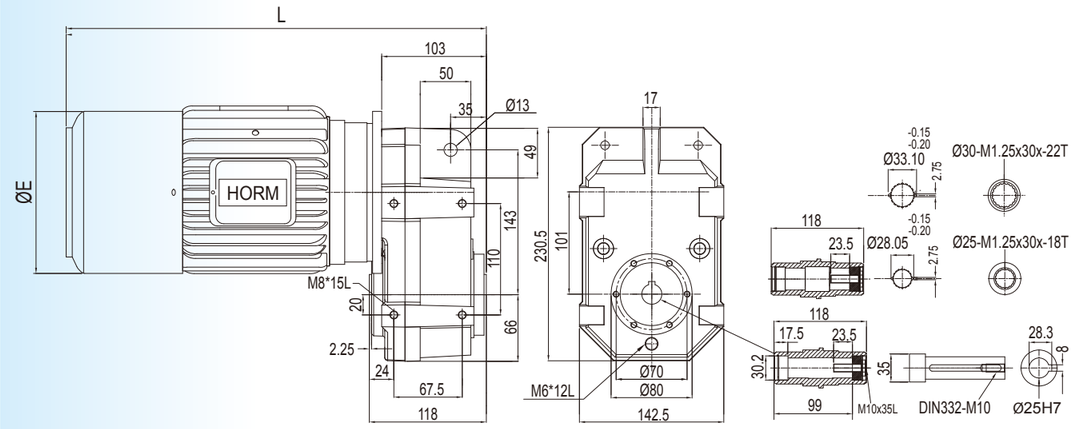
JM2-JM7:With adapter for mounting IEC motors

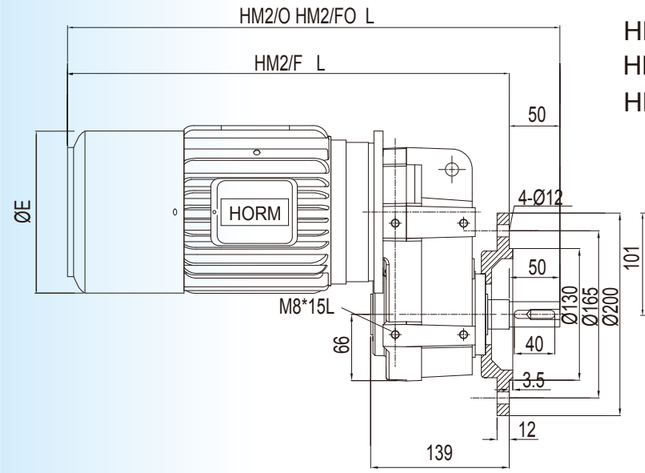
Ordering example : JM4-22 F O 45 200-90

JM4	–	22	F	O	–	45	200-90
Mode		Ratio	Fixing	Connection		Diameter size	Adapter size
JM2 : 250Nm JM3 : 600Nm JM4 : 1100Nm JM5 : 2400Nm JM6 : 4500Nm JM7 : 7200Nm			T:Torque arm F:Flange mounted M:Foot mounted	S: Splined hollow shaft K: Hollow shaft O: Solid shaft			140-63 160-71 200-80 200-90 250-100 250-112 300-132

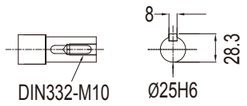
TYPE :

HM2





HM2/F:HM2 with Flange
HM2/O:HM2 with Solid shaft
HM2/FO:HM2 with Flange and Solid shaft



Solid shaft size

Single Speed 50/60Hz(rpm)

Gear box Type	Gear Ratio	Output Speed Power Kw		Service Factor									
				0.18		0.25		0.37		0.55		0.75	
		4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60
HM2-14	14.9	93.9/112.7	62.6/75.1							4.5/5.4	3.0/3.6	3.3/4.0	2.2/2.6
HM2-18	18.9	74.0/88.8	49.8/59.8	10.9/13		7.9/9.4		5.3/6.4		3.6/4.3	2.4/2.9	2.6/3.2	1.8/2.1
HM2-22	22.7	62.0/74.4	41.3/49.6	9.1/11	6.1/7.3	6.5/7.8	4.3/5.2	4.4/5.3	3.0/3.6	3.0/3.6	2.0/2.4	2.2/2.6	1.5/1.8
HM2-28	29.4	48.0/57.6	32.0/38.4	7.0/8.4	4.7/5.6	5.0/6.0	3.3/4.0	3.4/4.1	2.3/2.8	2.4/2.7	1.5/1.8	1.7/2.0	1.1/1.4
HM2-36	34.8	40.5/48.6	27.0/32.4	5.9/7.1	3.9/4.7	4.2/5.1	2.8/3.4	2.9/3.4	1.9/2.3	1.8/2.3	1.3/1.6	1.4/1.7	
HM2-45	44.7	31.3/37.6	20.7/24.8	4.6/5.5	3.1/3.7	3.3/4.0	2.2/2.6	2.2/2.7	1.5/1.8	1.5/1.8			
HM2-56	56.5	24.8/29.8	16.3/19.6	3.6/4.4	2.4/2.9	2.6/3.1	1.7/2.1	1.8/2.1	1..2/1.4				
HM2-71	70.2	19.9/23.9	13.2/15.8	2.9/3.5	1.9/2.3	2.1/2.5	1.4/1.7	1.4/1.7					
HM2-90	90.3	15.5/18.6	10.2/12.2	2.3/2.7	1.5/1.8	1.6/2.0							
HM2-112	113.0	12.4/14.9	8.30/9.96	1.8/2.2	1.2/1.5	1.3/1.6							
HM2-140	140.5	10.0/12.0		1.5/1.8									
HM2-180	180.6	7.8/9.36		1.1/1.4									
HM2 Motor Length.L (mm)				393	393	393	393	393	423	423	423	423	415
HM2/F Motor Length.L (mm)				414	414	414	414	414	444	444	444	444	436
HM2/FO Motor Length.L (mm)				464	464	464	464	464	494	494	494	494	486
Motor DiameterØE (mm)				140	140	140	140	159	159	159	159	159	173
Motor frame size				VF63-4A	VF63-4B	VF63-4B	VF71-6A	VF71-4A	VF71-6B	VF71-4B	VF71-6C	VF71-4C	VF80-6B

Two Speed 50Hz(rpm)

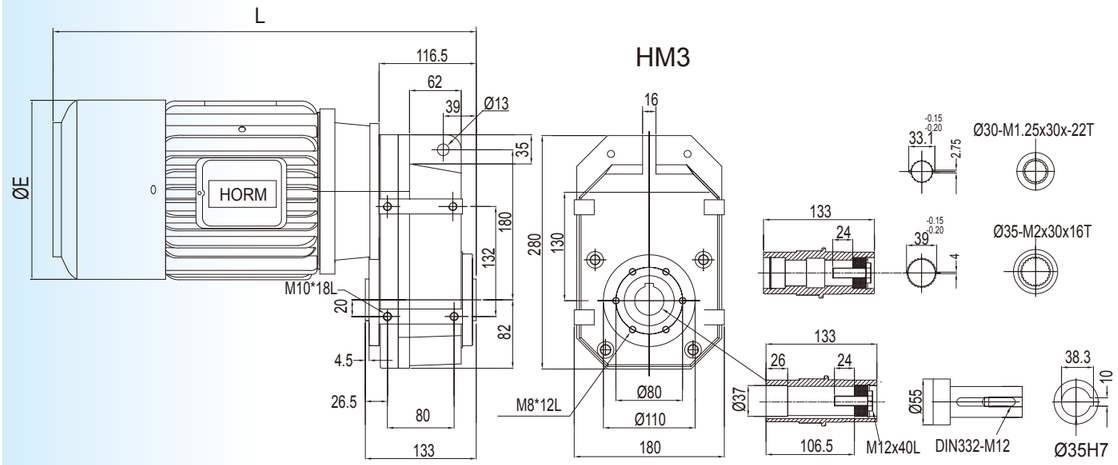
Gear box Type	Gear Ratio	Output Speed Power Kw		Service Factor									
				0.18/0.06	0.25/0.08	0.37/0.12	0.55/0.18	0.75/0.25	0.18/0.04	0.25/0.06	0.37/0.09	0.55/0.14	0.75/0.18
		4/12P	2/8P	50 HZ 4/12P					50HZ 2/8P				
HM2-14	14.9	93.9/31.3	187.8/47.0				4.5	3.0				9.1	6.0
HM2-18	18.9	74.1/24.8	149.6/37.4	10.9	7.9	5.3	3.6	2.6	21.8	15.7	10.6	7.2	5.2
HM2-22	22.7	62.0/20.7	124.8/31.2	9.1	6.5	4.4	3.0	2.2	18.1	13.1	8.8	5.9	4.4
HM2-28	29.4	47.9/16	96.2/24.1	7.0	5.0	3.4	2.3	1.7	13.9	10.0	6.8	4.6	3.4
HM2-36	34.8	40.5/13.5	80.9/20.3	5.9	4.2	2.9	1.9	1.4	11.8	8.5	5.7	3.9	2.9
HM2-45	44.7	31.2/10.4	63/15.8	4.6	3.3	2.2	1.5		9.2	6.6	4.5	3	2.2
HM2-56	56.5	24.8/8.3	49.9/12.5	3.6	2.6	1.8			7.3	5.2	3.5	2.4	1.7
HM2-71	70.2	19.9/6.6	39.9/10.0	2.9	2.1	1.4			5.8	4.2	2.8	2	
HM2-90	90.3	15.5/5.2	31.0/7.8	2.3	1.6				4.5	3.3	2.2		
HM2-112	113.0	12.4/4.1	24.8/6.2	1.8	1.3				3.6	2.6	1.8		
HM2-140	140.5	10.0/3.3	19.9/5.0	1.5					2.9	2.1			
HM2-180	180.6	7.8/2.6	15.5/3.9	1.1					2.3	1.6			
HM2 Motor Length.L (mm)				393	393	423	415	456	393	393	423	415	456
HM2/F Motor Length.L (mm)				414	414	444	436	477	414	414	444	436	477
HM2/FO Motor Length.L (mm)				464	464	494	486	527	464	464	494	486	527
Motor DiameterØE (mm)				140	159	159	173	173	140	159	159	173	173
Motor frame size				VF71-412A	VF71-412B	VF71-412C	VF80-412A	VF80-412B	VF71-208A	VF71-208B	VF71-208C	VF80-208A	VF80-208B

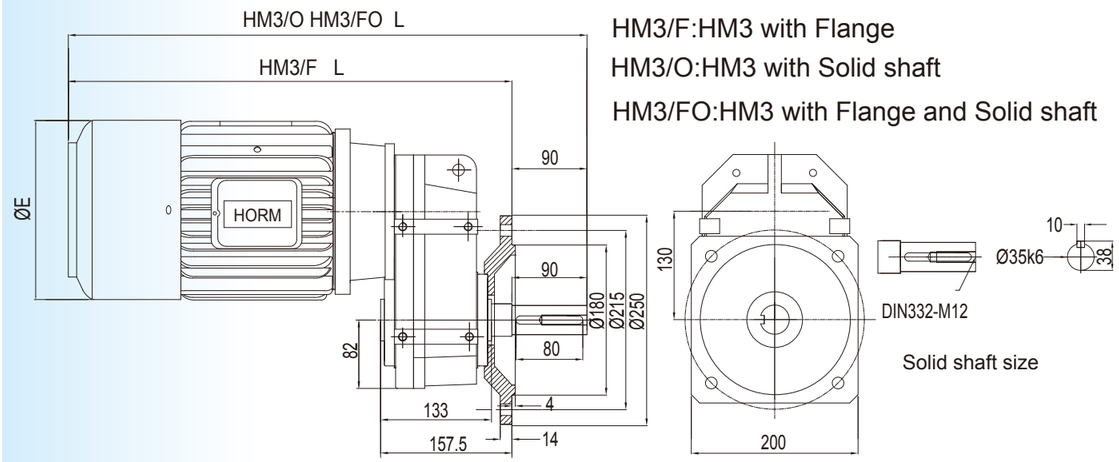
Two Speed 60Hz(rpm)

Gear box Type	Gear Ratio	Output Speed Power Kw		Service Factor									
				0.18/0.06	0.25/0.08	0.37/0.12	0.55/0.18	0.75/0.25	0.18/0.04	0.25/0.06	0.37/0.09	0.55/0.14	0.75/0.18
		4/12P	2/8P	60 HZ 4/12P					60HZ 2/8P				
HM2-14	14.9	112.7/37.6	225.4/56.4				5.4	4.0				10.8	8.0
HM2-18	18.9	88.7/29.6	177.4/44.4	13.1	9.43	6.37	4.29	3.15	26.2	18.9	12.7	8.6	6.3
HM2-22	22.7	74.0/24.7	148.0/37.0	10.9	7.84	5.3	3.57	2.62	21.8	15.7	10.6	7.1	5.2
HM2-28	29.4	57.2/19.1	114.4/28.6	8.37	6.03	4.07	2.74	2	16.7	12.1	8.7	5.5	4.3
HM2-36	34.8	48.3/16.1	96.6/24.2	7.07	5.1	3.44	2.31	1.7	14.1	10.2	6.5	4.6	3.2
HM2-45	44.7	37.6/12.5	75.1/18.8	5.5	3.96	2.68	1.8	1.32	11.0	7.9	5.4	3.6	2.6
HM2-56	56.5	29.7/9.9	59.5/14.9	4.35	3.13	2.11	1.42		8.7	6.3	4.2	2.9	2.1
HM2-71	70.2	23.9/8.0	47.8/12.0	3.5	2.52	1.7			7.0	5.0	3.4	2.4	1.7
HM2-90	90.3	18.6/6.2	37.2/9.3	2.72	1.96				5.4	3.9	2.6	1.9	
HM2-112	113.0	14.9/5.0	29.7/7.4	2.18	1.57				4.4	3.1	2.1		
HM2-140	140.5	12.0/4.0	23.9/6.0	1.75	1.26				3.5	2.5	1.7		
HM2-180	180.6	9.3/3.1	18.6/4.7	1.37					2.7	2.0			
HM2 Motor Length.L (mm)				393	393	423	415	456	393	393	423	415	456
HM2/F Motor Length.L (mm)				414	414	444	436	477	414	414	444	436	477
HM2/FO Motor Length.L (mm)				464	464	494	486	527	464	464	494	486	527
Motor DiameterØE (mm)				140	159	159	173	173	140	159	159	173	173
Motor frame size				VF71-412A	VF71-412B	VF71-412C	VF80-412A	VF80-412B	VF71-208A	VF71-208B	VF71-208C	VF80-208A	VF80-208B

TYPE :

HM3





Single Speed 50/60Hz(rpm)

Gear box Type	Gear Ratio	Output Speed Power Kw		Service Factor															
				0.18kw		0.25kw		0.37kw		0.55kw		0.75kw		1.1kw		1.5kw		2.2kw	
		4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	
HM3-14	13.0	110/132	73.3/87.9											9.0/10.8	5.8/7.0	6.8/8.1	4.4/5.3	4.8/5.8	
HM3-18	18.0	79.8/95.8	53.1/63.7											6.5/7.8	4.3/5.2	4.9/5.9	3.2/3.9	3.4/4.1	
HM3-22	22.4	64.1/76.9	42.5/51.0										5.1/6.1	5.3/6.3	3.5/4.2	3.9/4.7	2.6/3.1	2.7/3.2	
HM3-28	27.2	52.7/63.2	34.7/41.6									6.3/7.6	4.2/5.0	4.4/5.3	2.9/3.5	3.3/4.0	2.2/2.6	2.2/2.6	
HM3-36	34.4	41.3/49.6	27.2/32.6	20.8/25.0	13.9/16.7	15.0/18.0	10.0/12.0	10.0/12.0	6.8/8.2	6.9/8.3	4.6/5.5	5.0/6.0	3.4/4.1	3.4/4.1	2.3/2.8	2.6/3.1	1.7/2.0	1.7/2.0	
HM3-45	45.0	31.6/37.9	21.2/25.4	16.3/19.6	10.8/13.0	11.7/14.0	7.8/9.4	7.8/9.4	5.3/6.4	5.3/6.4	3.6/4.3	3.9/4.7	2.6/3.1	2.7/3.2	1.8/2.2	2.0/2.4	1.3/1.6	1.3/1.6	
HM3-56	54.9	25.5/30.6	17.2/20.6	13.3/15.9	8.9/10.7	9.6/11.5	6.4/7.7	6.4/7.7	4.3/5.2	4.4/5.3	2.9/3.5	3.2/3.8	2.1/2.5	2.2/2.6	1.5/1.8	1.6/1.9			
HM3-71	71.0	19.8/23.8	13.1/15.7	10.3/12.4	6.8/8.2	7.4/8.9	4.9/6.0	5.0/6.0	3.3/4.0	3.4/4.1	2.2/2.6	2.5/3.0	1.7/2.0	1.7/2.0					
HM3-90	90.1	15.5/18.6	10.5/12.6	8.1/9.7	5.4/6.5	5.8/7.0	3.9/4.7	3.9/4.7	2.6/3.1	2.7/3.2	1.8/2.2	2.0/2.4	1.3/1.6	1.3/1.6					
HM3-112	109.5	12.3/14.8	8.3/9.96	6.7/8.0	4.4/5.3	4.8/5.8	3.2/3.8	3.2/3.8	2.2/2.6	2.2/2.6	1.5/1.8	1.6/1.9							
HM3-140	141.7	9.9/11.9	6.5/7.80	5.14/6.1	3.3/4.0	3.7/4.4	2.4/2.9	2.4/2.9	1.6/1.9	1.7/2.0		1.2/1.5							
HM3-180	179.9	7.8/9.36	5.2/6.24	4.0/4.8	2.6/3.1	2.9/3.5	1.9/2.3	1.9/2.3	1.3/1.6	1.3/1.6									
HM3 Motor Length.L (mm)				406	406	406	406	406	436	436	436	428	428	428	468	468	508	508	
HM3/F Motor Length.L (mm)				430	430	430	430	430	460	460	460	452	452	452	492	492	532	532	
HM3/FO Motor Length.L (mm)				520	520	520	520	520	550	550	550	542	542	542	582	582	622	622	
Motor DiameterØE (mm)				140	140	140	140	159	159	159	159	173	173	173	173	173	199	199	
Motor frame size				VF63-4A	VF63-6A	VF63-4B	VF71-6A	VF71-4A	VF71-6B	VF71-4B	VF71-6C	VF80-4A	VF80-6B	VF80-4B	VF80-6C	VF80-4C	VF90-6B	VF90-4B	

Two Speed 50Hz(rpm)

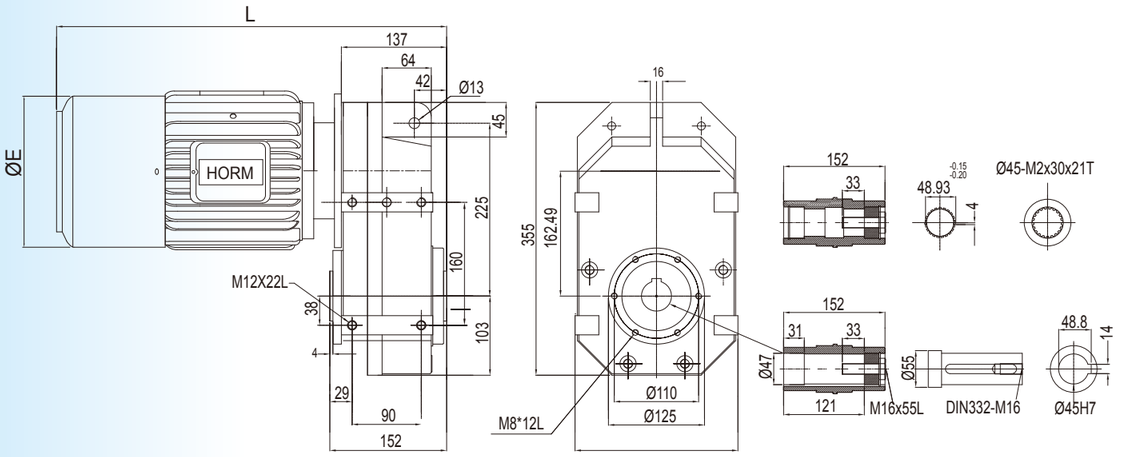
Gear box Type	Gear Ratio	Output Speed Power Kw		Service Factor															
				0.18/0.06	0.25/0.08	0.37/0.12	0.55/0.18	0.75/0.25	1.1/0.37	1.5/0.5	0.18/0.04	0.25/0.06	0.37/0.09	0.55/0.14	0.75/0.18	1.1/0.28	1.5/0.37		
		4/12P	2/8P	50 HZ 4/12P							50HZ 2/8P								
HM3-14	13.0	109.9/36.6	219.8/55.0						9.0	6.8						18.0	13.6		
HM3-18	18.0	79.7/26.6	159.3/39.8				13.1		6.5	4.9				26.2		13.0	9.8		
HM3-22	22.4	64.0/21.3	128.0/32.0				10.5		5.3	3.9				21.0		10.6	7.8		
HM3-28	27.2	52.7/17.6	105.3/26.3				8.6	7.6	4.4	3.3				17.3	15.2	8.8	6.6		
HM3-36	34.4	41.4/13.8	83.4/20.9	20.8	15.0	10.1	6.9	5.0	3.4	2.6	41.7	30.0	20.3	13.7	10.0	6.8	5.2		
HM3-45	45.0	31.7/10.6	63.8/15.9	16.3	11.7	7.9	5.3	3.9	2.7	2.0	32.5	23.4	15.8	10.7	7.8	5.4	4.0		
HM3-56	54.9	26.0/8.7	52.3/13.1	13.3	9.6	6.5	4.4	3.2	2.2	1.6	26.7	19.2	13.0	8.8	6.4	4.4	3.2		
HM3-71	71.0	19.9/6.6	40.2/10.0	10.3	7.4	5.0	3.4	2.5	1.7		20.6	14.8	10.0	6.8	5.0	3.4			
HM3-90	90.1	15.6/5.2	31.6/8.0	8.1	5.8	3.9	2.7	2.0	1.3		16.1	11.6	7.9	5.3	4.0	2.6			
HM3-112	109.5	12.9/4.3	26.1/6.5	6.7	4.8	3.2	2.2	1.6			13.4	9.6	6.5	4.4	3.2				
HM3-140	141.7	10.0/3.3	20.0/5.0	5.1	3.7	2.5	1.7	1.2			10.3	7.4	5.0	3.4	2.4				
HM3-180	179.9	7.8/2.6	15.6/3.9	4.0	2.9	2.0	1.3				8.1	5.8	3.9	2.6					
HM3 Motor Length.L (mm)				406	406	436	428	468	508	508	406	406	436	436	468	508	508		
HM3/F Motor Length.L (mm)				430	430	460	452	492	532	532	430	430	460	460	492	532	532		
HM3/FO Motor Length.L (mm)				520	520	550	542	582	622	622	520	520	550	550	582	622	622		
Motor DiameterØE (mm)				140	159	159	173	173	173	173	140	159	159	159	173	173	173		
Motor frame size				VF71-412A	VF71-412B	VF71-412C	VF80-412A	VF80-412B	VF80-412C	VF80-412D	VF71-208A	VF71-208B	VF71-208C	VF71-208C	VF80-208B	VF80-208C	VF80-208D		

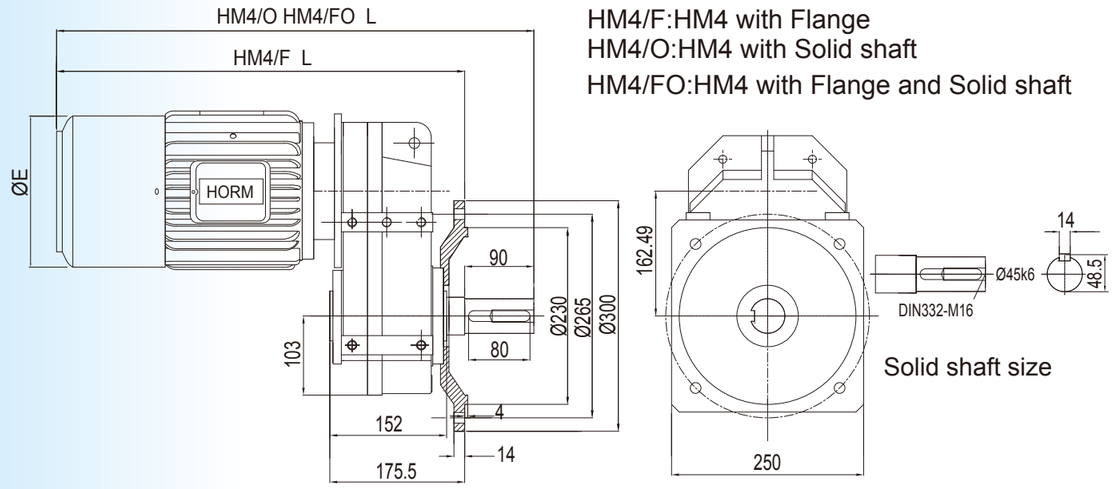
Two Speed 60Hz(rpm)

Gear box Type	Gear Ratio	Output Speed Power Kw		Service Factor															
				0.18/0.06	0.25/0.08	0.37/0.12	0.55/0.18	0.75/0.25	1.1/0.37	1.5/0.5	0.18/0.04	0.25/0.06	0.37/0.09	0.55/0.14	0.75/0.18	1.1/0.28	1.5/0.37		
		4/12P	2/8P	60 HZ 4/12P							60HZ 2/8P								
HM3-14	13.0	131.9/44	263.8/66.0						10.7	8.1						21.4	16.2		
HM3-18	18.0	95.6/31.9	190.0/47.5						7.7	5.8						15.4	11.7		
HM3-22	22.4	76.8/25.6	152.7/38.2						6.3	4.7						12.6	9.3		
HM3-28	27.2	63.2/21.1	125.6/31.4						5.3	3.9						10.5	7.8		
HM3-36	34.4	48.9/16.3	97.8/24.4	25.0	18.0	12.2	8.2	6.0	4.1	3.0	50.0	36.0	24.3	16.4	12.1	8.2	6.1		
HM3-45	45.0	37.4/12.5	74.7/18.7	19.5	14.1	9.5	6.4	4.7	3.2	2.3	39.0	28.1	19.0	12.8	9.4	6.4	4.7		
HM3-56	54.9	30.6/10.2	61.3/15.3	16.0	11.5	7.8	5.3	3.9	2.6	1.9	32.0	23.1	15.6	10.5	7.7	5.3	3.9		
HM3-71	71.0	23.7/7.9	47.3/11.8	12.3	8.9	6.0	4.1	3.0	2.0		24.7	17.8	12.0	8.1	6.0	4.1			
HM3-90	90.1	18.6/6.2	37.3/9.3	9.7	7.0	4.7	3.2	2.3	1.6		19.3	13.9	9.4	6.4	4.7	3.2			
HM3-112	109.5	15.3/5.1	30.7/7.7	8.0	5.8	3.9	2.6	1.9	1.3		16.0	11.5	7.8	5.3	3.9	2.6			
HM3-140	141.7	11.9/4.0	23.7/5.9	6.2	4.5	3.0	2.0	1.5			12.3	8.9	6.0	4.0	3.0				
HM3-180	179.9	9.3/3.1	18.7/4.7	4.8	3.5	2.4	1.6				9.7	7.0	4.7	3.2					
HM3 Motor Length.L (mm)				406	406	436	428	468	508	508	406	406	436	468	468	508	508		
HM3/F Motor Length.L (mm)				430	430	460	452	492	532	532	430	430	460	492	492	532	532		
HM3/FO Motor Length.L (mm)				520	520	550	542	582	622	622	520	520	550	582	582	622	622		
Motor DiameterØE (mm)				140	159	159	173	173	173	173	140	159	159	173	173	173	173		
Motor frame size				VF71-412A	VF71-412B	VF71-412C	VF80-412A	VF80-412B	VF80-412C	VF80-412D	VF71-208A	VF71-208B	VF71-208C	VF80-208A	VF80-208B	VF80-208C	VF80-208D		

TYPE :

HM4





HM4/F:HM4 with Flange
HM4/O:HM4 with Solid shaft
HM4/FO:HM4 with Flange and Solid shaft

Solid shaft size

Single Speed 50/60Hz(rpm)

Gear box Type	Gear Ratio	Output Speed Power Kw		Service Factor											
				0.37kw	0.55kw	0.75kw		1.1kw		1.5kw		2.2kw		3.75kw	
		4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60
HM4-18	18.6	78.3/94.0	51.7/62.0										2.8/3.4	2.5/3.0	
HM4-22	22.6	64.2/77.0	42.4/50.9									3.4/4.1	2.3/2.8	2.0/2.4	
HM4-28	26.5	54.6/65.5	36.2/43.4						3.9/4.7		2.8/3.4	2.9/3.5	1.9/2.3	1.7/2.0	
HM4-36	36.8	39.2/47.0	26.0/31.2						2.8/3.4	3.0/3.6	2.0/2.4	2.1/2.5	1.4/1.7	1.3/1.6	
HM4-45	45.5	31.6/37.9	20.9/25.1				3.3/4.0	3.2/3.8	2.3/2.8	2.5/3.0	1.7/2.0	1.7/2.0			
HM4-56	56.5	25.3/30.4	16.8/20.2				2.7/3.2	2.8/3.4	1.8/2.2	2.0/2.4	1.3/1.6	1.4/1.7			
HM4-71	72.7	19.7/23.6	13.0/15.6			3.1/3.7	2.0/2.4	2.1/2.5	1.4/1.7	1.6/1.9					
HM4-90	89.5	15.9/19.1	10.6/12.7		2.3/2.8	2.5/3.0	1.7/2.0	1.7/2.0		1.3/1.6					
HM4-112	113.6	12.5/15.0	8.3/9.96		1.8/2.2	2.0/2.4	1.3/1.6	1.3/1.6							
HM4-140	141.2	10.0/12.0	6.6/7.9	3.2/3.8	1.4/1.7	1.6/1.9		1.1/1.3							
HM4-180	181.4	7.8/9.36		2.5/3.0		1.2/1.4									
HM4-224	223.5	6.3/7.56		2.0/2.4											
HM4 Motor Length.L (mm)				448	448	448	448	448	488	488	528	528	550	550	
HM4/F Motor Length.L (mm)				472	472	472	472	472	512	512	552	552	574	574	
HM4/FO Motor Length.L (mm)				562	562	562	562	562	602	602	642	642	664	664	
Motor DiameterØE (mm)				173	173	173	173	173	198	198	198	198	232	232	
Motor frame size				VF80-4A	VF80-6A	VF80-4A	VF80-6B	VF80-4B	VF90-6A	VF90-4A	VF90-6B	VF90-4B	VF90-4B	VF112-4A	

Two Speed 50Hz(rpm)

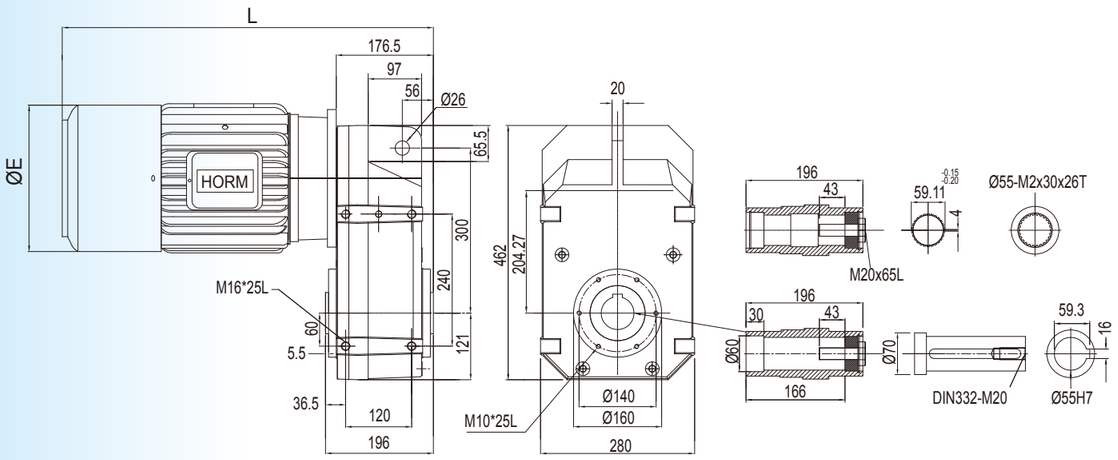
Gear box Type	Gear Ratio	Output Speed Power Kw		Service Factor											
				0.37/0.12	0.55/0.18	0.75/0.25	1.1/0.37	1.5/0.5	2.2/0.75	0.37/0.09	0.55/0.14	0.75/0.18	1.1/0.28	1.5/0.375	2.2/0.55
		4/12P	2/8P	50 HZ 4/12P						50HZ 2/8P					
HM4-18	18.6	77.5/25.8	155.1/38.8						4.2					4.0	8.4
HM4-22	22.6	63.7/21.2	127.3/31.8						3.4					3.2	6.8
HM4-28	26.5	54.1/18.0	108.5/27.1					4.2	2.9					8.4	5.8
HM4-36	36.8	39.0/13.0	78.2/19.6					3.0	2.1					6.0	4.2
HM4-45	45.5	31.5/10.5	63.2/15.8				3.2	2.5	1.7				6.4	5.0	3.4
HM4-56	56.5	25.3/8.4	50.8/12.7				2.8	2.0	1.4				5.6	4.0	2.8
HM4-71	72.7	19.6/6.6	39.6/9.9			3.1	2.1	1.6				6.2	4.2	3.2	2.1
HM4-90	89.5	15.9/5.3	32.0/8.0			2.5	1.7	1.3				5.0	3.4	2.6	
HM4-112	113.6	12.4/4.1	25.1/6.3	3.9	2.7	2.0	1.3			7.9	5.4	4.0	2.6		
HM4-140	141.2	10.0/3.3	20.1/5.0	3.2	2.2	1.6				6.3	4.3	3.2	2.2		
HM4-180	181.4	7.8/2.6	15.6/3.9	2.5	1.7	1.2				4.9	3.4	2.4	1.7		
HM4-224	223.5	6.3/2.1	12.7/3.2	2.0						4.1		2.0	1.4		
HM4 Motor Length.L (mm)				448	448	448	488	488	550	448	448	448	488	488	550
HM4/F Motor Length.L (mm)				472	472	472	602	602	574	496	472	472	512	512	574
HM4/FO Motor Length.L (mm)				562	562	562	692	692	664	652	562	562	602	602	664
Motor DiameterØE (mm)				173	173	173	198	198	232	173	173	173	198	198	232
Motor frame size				VF80-412A	VF80-412A	VF80-412B	VF80-412C	VF80-412D	VF112-412A	VF80-208A	VF80-208A	VF80-208B	VF80-208C	VF80-208D	VF112-208A

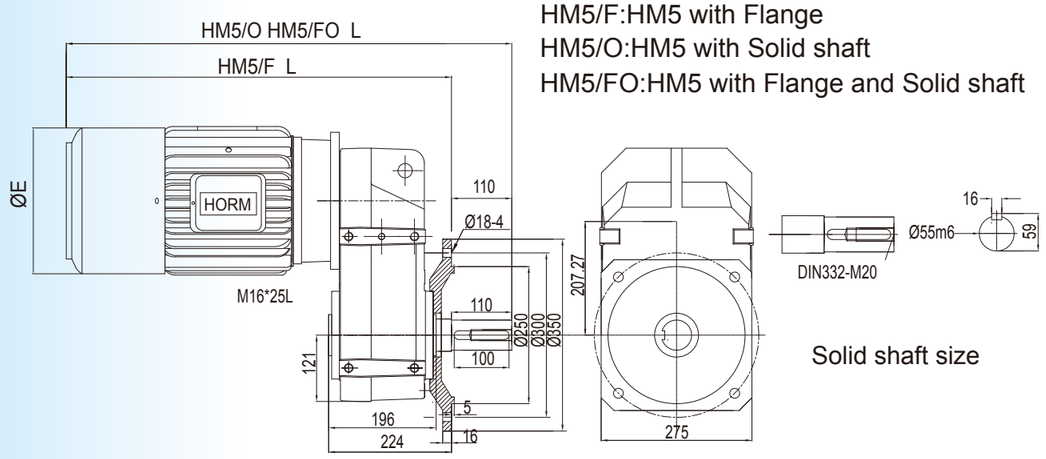
Two Speed 60Hz(rpm)

Gear box Type	Gear Ratio	Output Speed Power Kw		Service Factor											
				0.37/0.12	0.55/0.18	0.75/0.25	1.1/0.37	1.5/0.5	2.2/0.75	0.37/0.09	0.55/0.14	0.75/0.18	1.1/0.28	1.5/0.375	2.2/0.55
		4/12P	2/8P	60 HZ 4/12P						60HZ 2/8P					
HM4-18	18.6	93.9/31.3	186.1/46.5						5.0						10.1
HM4-22	22.6	77.0/25.7	152.7/38.2						4.1						8.2
HM4-28	26.5	65.1/21.7	130.2/32.6						3.5						6.9
HM4-36	36.8	46.9/15.6	93.9/23.5					3.6	2.5					7.2	5.0
HM4-45	45.5	37.9/12.6	75.8/19.0					3.0	2.1					6.0	4.1
HM4-56	56.5	30.5/10.2	61.0/15.3				3.3	2.4	1.6				6.6	4.8	3.3
HM4-71	72.7	23.7/7.90	47.5/11.9				2.5	1.9	1.3				5.1	3.7	2.5
HM4-90	89.5	19.1/6.4	38.6/9.6			3.0	2.1	1.5				6.0	4.1	3.0	2.1
HM4-112	113.6	15.0/5.0	30.4/7.6		3.2	2.4	1.6				6.4	4.7	3.2	2.4	1.6
HM4-140	141.2	12.1/4.0	24.2/6.1	3.8	2.6	1.9	1.3			7.6	5.2	3.8	2.6	1.9	
HM4-180	181.4	9.3/3.1	18.9/4.7	3.0	2.0	1.5				5.9	4.1	3.0	2.0		
HM4-224	223.5	7.5/2.5	15.3/3.8	2.5	1.7					4.9	3.3	2.4	1.7		
HM4 Motor Length.L (mm)				448	448	448	488	488	550	448	448	448	488	488	550
HM4/F Motor Length.L (mm)				472	472	472	512	512	574	496	472	472	512	512	574
HM4/FO Motor Length.L (mm)				562	562	562	602	602	664	652	562	562	602	602	664
Motor DiameterØE (mm)				173	173	173	198	198	232	173	173	173	198	198	232
Motor frame size				VF80-412A	VF80-412A	VF80-412B	VF90-412A	VF90-412B	VF112-412A	VF80-208A	VF80-208A	VF80-208B	VF90-208A	VF90-208B	VF112-208A

TYPE :

HM5





HM5/F:HM5 with Flange
HM5/O:HM5 with Solid shaft
HM5/FO:HM5 with Flange and Solid shaft

Solid shaft size

Single Speed 50/60Hz(rpm)

Gear box Type	Gear Ratio	Output Speed Power Kw		Service Factor													
				0.75kw		1.1kw		1.5kw		2.2kw		3.75kw		5.5kw		7.5kw	
		4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60
HM5-18	17.5	83.5/100	55.7/66.8										4.0/4.8	3.4/4.1	2.3/2.8	2.5/3.0	
HM5-22	21.8	67.0/80.4	44.6/53.5									4.9/5.9	3.2/3.8	3.2/3.8	2.1/2.6	2.3/2.8	
HM5-28	27.3	53.2/63.8	35.5/42.6							4.3/5.2		3.9/4.7	2.6/3.1	2.6/3.1	1.8/2.1	1.9/2.3	
HM5-36	34.6	42.2/50.6	28.1/33.7						5.0/6.0	5.3/6.4	3.4/4.1	3.0/3.6	2.0/2.4	2.0/2.4	1.4/1.7	1.5/1.8	
HM5-45	45.2	32.1/38.5	21.3/25.6						3.8/4.6	3.9/4.7	2.6/3.1	2.3/2.8	1.5/1.8	1.5/1.9			
HM5-56	57.3	25.2/30.2	16.7/20.0				4.0/4.8	4.4/5.3	3.0/3.6	3.1/3.7	2.0/2.4	1.8/2.2		1.2/1.5			
HM5-71	73.9	19.5/23.4	13.0/15.6			4.7/5.6	3.2/3.8	3.4/4.1	2.3/2.8	2.4/2.9	1.6/1.9	1.4/1.7					
HM5-90	90.0	15.9/19.1	10.6/12.7	5.6/6.7	3.7/4.4	3.8/4.6	2.5/3.0	2.8/3.4	1.9/2.3	2.0/2.4	1.3/1.6						
HM5-112	110.1	13.0/15.6	8.7/10.4	4.6/5.5	3.0/3.6	3.1/3.7	2.1/2.5	2.3/2.8	1.6/1.9	1.6/1.9							
HM5-140	139.6	10.3/12.4	6.8/8.2	3.6/4.3	2.4/2.9	2.5/3.0	1.6/1.9	1.8/2.2		1.3/1.6							
HM5-180	180.0	7.9/9.5	5.3/6.4	2.7/3.2	1.8/2.2	1.9/2.3		1.4/1.7									
HM5-224	219.2	6.5/7.8	4.3/5.2	2.3/2.8	1.5/1.8	1.6/1.9											
HM5 Motor Length.L (mm)				488	488	488	528	568	568	568	590	590	675	675	675	675	
HM5/F Motor Length.L (mm)				516	516	516	556	596	596	648	618	618	703	703	703	703	
HM5/FO Motor Length.L (mm)				626	626	626	666	706	706	758	728	728	813	813	813	813	
Motor DiameterØE (mm)				173	173	173	173	198	198	198	232	232	266	266	266	266	
Motor frame size				VF80-4A	VF80-6B	VF80-4B	VF90-6A	VF90-4A	VF90-6B	VF90-4B	VF112-6A	VF112-4A	VF132-6A	VE132-4A	VF132-6B	VF132-4B	

Two Speed 50Hz(rpm)

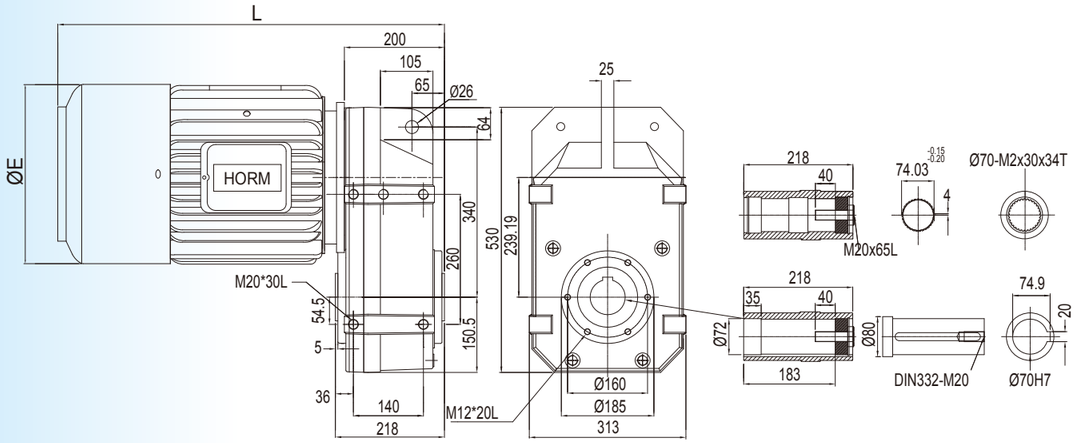
Gear box Type	Gear Ratio	Output Speed Power Kw		Service Factor									
				0.75/0.25	1.1/0.37	1.5/0.5	2.2/0.75	3.0/1.0	3.75/1.25	0.75/0.18	1.1/0.28	1.5/0.37	2.2/0.55	3.0/1.0	3.75/0.9
		4/12P	2/8P	50 HZ 4/12P						50HZ 2/8P					
HM5-18	17.5	84.0/28.0	166.0/41.5					6.3	5.0					12.3	10.0
HM5-22	21.8	67.4/22.5	133.2/33.3					6.0	4.8					12.0	9.6
HM5-28	27.3	53.7/17.9	106.1/26.5					4.8	3.9					9.6	7.8
HM5-36	34.6	42.3/14.1	83.9/21.0				5.1	3.7	3.0				10.2	7.4	6.0
HM5-45	45.2	32.1/10.7	64.1/16.0				3.9	2.8	2.3				7.8	5.6	4.6
HM5-56	57.3	25.4/8.5	50.6/12.6			4.4	3.1	2.2	1.8			8.8	6.2	4.4	3.6
HM5-71	73.9	19.6/6.5	39.1/9.8		4.7	3.4	2.4	1.9	1.4		9.4	6.8	4.8	3.5	3.0
HM5-90	90.0	16.0/5.3	32.1/8.0	5.6	3.8	2.8	2.0	1.4		11.2	7.6	5.6	4.0	2.9	2.5
HM5-112	110.1	13.0/4.3	26.2/6.6	4.6	3.1	2.3	1.6			9.2	6.2	4.6	3.2	2.4	2.1
HM5-140	139.6	10.2/3.4	20.7/5.2	3.6	2.5	1.8	1.3			7.2	5.0	3.6	2.5	1.9	1.6
HM5-180	180.0	8.0/2.7	16.0/4.0	2.7	1.9	1.4				5.4	3.8	2.8	2.0		
HM5-224	219.2	6.5/2.2	13.1/3.3	2.3	1.6					4.6	3.2				
HM5 Motor Length.L (mm)				568	568	568	590	675	705	568	568	568	590	675	705
HM5/F Motor Length.L (mm)				596	596	596	618	703	733	648	596	596	618	703	733
HM5/FO Motor Length.L (mm)				706	706	706	728	813	843	758	706	706	728	813	843
Motor DiameterØE (mm)				198	198	198	232	266	266	198	198	198	232	266	266
Motor frame size				VF90-412A	VF90-412A	VF90-412B	VF112-412A	VF132-412A	VF132-412B	VF90-208A	VF90-208A	VF90-208B	VF112-208A	VF132-208A	VF132-208B

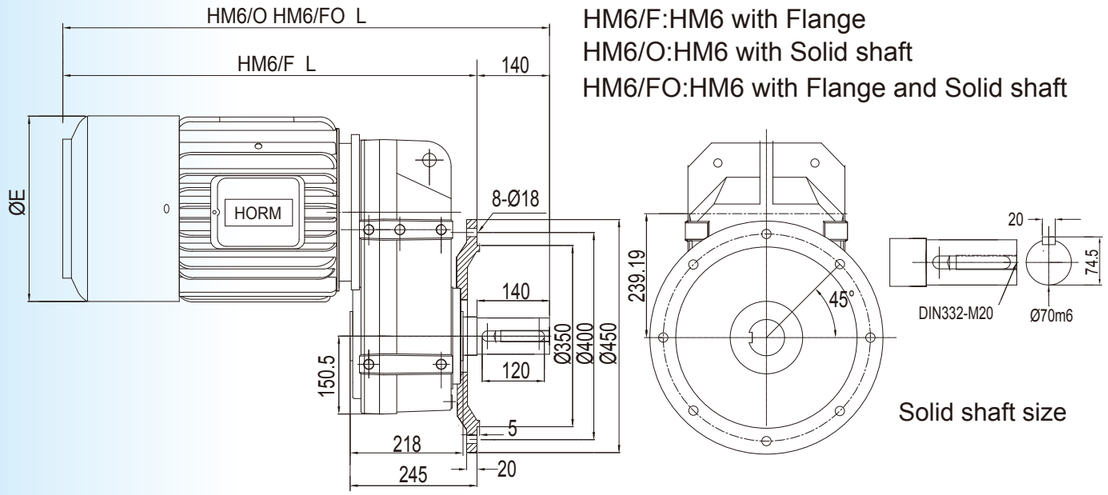
Two Speed 60Hz(rpm)

Gear box Type	Gear Ratio	Output Speed Power Kw		Service Factor											
				0.75/0.25	1.1/0.37	1.5/0.5	2.2/0.75	3.0/1.0	3.75/1.25	0.75/0.18	1.1/0.28	1.5/0.37	2.2/0.55	3.0/1.0	3.75/1.25
		4/12P	2/8P	60 HZ 4/12P						60HZ 2/8P					
HM5-18	17.5	100.2/33.4	199.2/49.8					7.5	6.0					15.0	12.0
HM5-22	21.8	80.4/26.8	159.9/40.0					7.2	5.8					14.4	11.5
HM5-28	27.3	64.0/32.0	127.3/31.8					5.8	4.6					11.5	9.2
HM5-36	34.6	50.7/16.9	100.7/25.2				6.1	4.5	3.6				12.2	9.0	7.2
HM5-45	45.2	38.7/12.9	77.0/19.2				4.7	3.4	2.7				9.4	6.8	5.4
HM5-56	57.3	30.5/10.2	60.7/15.2				3.7	2.7	2.1				7.4	5.4	4.3
HM5-71	73.9	23.5/7.8	46.7/11.7			4.1	2.9	2.2	1.8			8.2	5.7	4.4	3.6
HM5-90	90.0	19.3/6.4	38.3/9.6		4.6	3.4	2.4	1.8	1.5		9.2	6.7	4.7	3.4	3.0
HM5-112	110.1	15.6/5.2	31.3/7.8		3.8	2.8	1.9				7.5	5.5	3.8	2.8	
HM5-140	139.6	12.3/4.1	24.7/6.2	4.4	3.0	2.2	1.5			8.7	5.9	4.3	3.0	2.2	
HM5-180	180.0	9.6/3.2	19.2/4.8	3.3	2.2	1.7				6.6	4.5	3.4	2.4	1.7	
HM5-224	219.2	7.8/2.6	15.7/3.9	2.7	1.9	1.4				5.5	3.7	2.7	1.9		
HM5 Motor Length.L (mm)				568	568	568	590	675	705	568	568	568	590	675	705
HM5/F Motor Length.L (mm)				596	596	596	618	703	733	648	596	596	618	742	733
HM5/FO Motor Length.L (mm)				706	706	706	728	813	843	758	758	758	780	813	843
Motor DiameterØE (mm)				198	198	198	232	266	266	198	198	198	232	266	266
Motor frame size				VF90-412A	VF90-412A	VF90-412B	VF112-412A	VF132-412A	VF132-412A	VF90-208A	VF90-208A	VF90-208B	VF112-208A	VF132-412A	VF132-208A

TYPE :

HM6





HM6/F:HM6 with Flange
HM6/O:HM6 with Solid shaft
HM6/FO:HM6 with Flange and Solid shaft

Solid shaft size

Single Speed 50/60Hz(rpm)

Gear box Type	Gear Ratio	Output Speed Power Kw		Service Factor															
				1.5kw		2.2kw		3.75kw		5.5kw		7.5kw		11kw		15kw		18.5kw	
		4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	
HM6-18	18.1	80.9/97.1	53.9/64.7											3.2/3.8	2.1/2.5	2.3/2.8	1.5/1.8	1.8/2.2	
HM6-22	22.2	66.0/79.2	43.9/52.7									4.4/5.3	2.6/3.1	2.6/3.1	1.7/2.0	1.9/2.3		1.5/1.8	
HM6-28	28.0	52.3/62.8	34.9/41.9								3.9/4.7	3.5/4.2	2.3/2.8	2.4/2.9	1.6/1.9	1.7/2.0			
HM6-36	36.6	40.0/48.0	26.6/31.9					3.5/4.2	3.5/4.2	3.0/3.6		2.7/3.2	1.8/2.2	1.8/2.2					
HM6-45	45.2	32.4/38.9	21.5/25.8			7.3/8.8		2.9/3.5	2.9/3.5	2.4/2.9		2.1/2.5	1.4/1.7	1.5/1.8					
HM6-56	57.1	25.5/30.6	17.0/20.4			5.8/7.0	3.8/4.6	3.4/4.1	2.3/2.8	2.3/2.8	2.0/2.4	1.7/2.0							
HM6-71	71.3	20.4/24.5	13.6/16.3			4.6/5.5	3.1/3.7	2.7/3.2	1.9/2.3	1.8/2.2	1.6/1.9	1.4/1.7							
HM6-90	92.0	15.8/19.0	10.5/12.6		3.5/4.2	3.6/4.4	2.4/2.9	2.1/2.5	1.4/1.7	1.4/1.7									
HM6-112	110.2	13.1/15.7	8.7/10.4	4.4/5.2	2.9/3.5	3.0/3.6	2.0/2.4	1.8/2.2											
HM6-140	137.6	10.4/12.5	7.0/8.4	3.5/4.2	2.3/2.8	2.4/2.9	1.6/1.9	1.4/1.7											
HM6-180	177.5	8.1/9.7	5.4/6.5	2.7/3.2	1.8/2.2	1.8/2.2	1.2/1.5												
HM6-224	219.5	6.6/7.9	4.3/5.2	2.2/2.6	1.5/1.8	1.5/1.8													
HM6 Motor Length.L (mm)				591	591	591	613	613	685	685	685	685	775	775	815	815	815	815	
HM6/F Motor Length.L (mm)				618	618	618	640	640	712	712	712	712	802	802	842	842	842	842	
HM6/FO Motor Length.L (mm)				758	758	758	780	780	852	852	852	852	942	942	982	982	982	982	
Motor DiameterØE (mm)				198	198	198	232	232	266	266	266	266	315	315	315	315	315	315	
Motor frame size				VF90-4A	VF90-6B	VF90-4B	VF112-6A	VF112-4A	VF132-6A	VE132-4C	VF132-6B	VF132-4D	VF160-6A	VF160-4A	VF160-6B	VF160-4B	VF160-6C	VF160-4C	

Two Speed 50Hz(rpm)

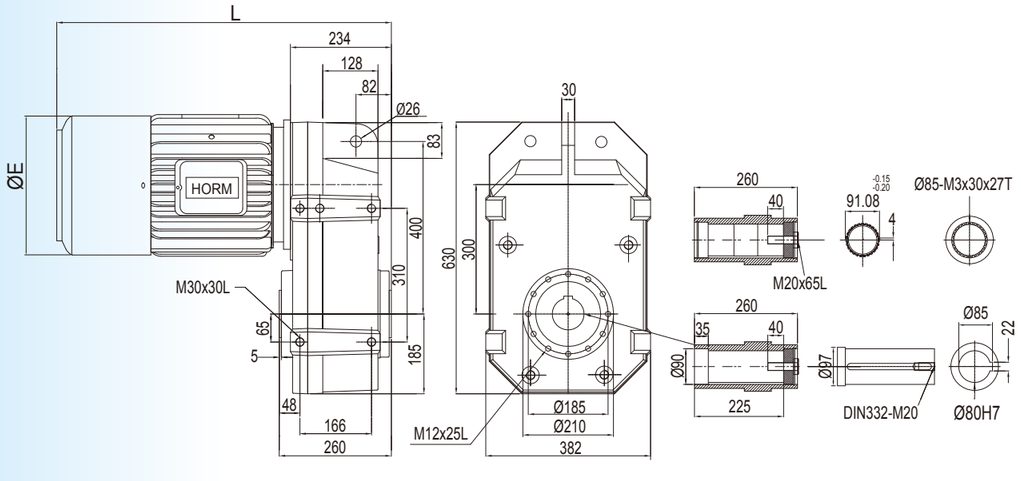
Gear box Type	Gear Ratio	Output Speed Power Kw		Service Factor											
				1.5/0.5	2.2/0.75	3.0/1.0	3.75/1.25	5.5/1.8	7.5/2.5	1.5/0.37	2.2/0.55	3.0/0.75	3.75/0.9	5.5/1.4	7.5/1.9
		4/12P	2/8P	50 HZ 4/12P						50HZ 2/8P					
HM6-18	18.1	80.9/27.0	160.9/40.2					6.4	4.6					12.8	9.2
HM6-22	22.2	66.0/22.0	131.2/32.8					5.2	3.7					10.4	7.4
HM6-28	28.0	52.5/17.5	104.3/26.1					4.8	3.5					9.6	7.0
HM6-36	36.6	40.1/13.4	79.8/19.9					3.5	2.7					7.0	5.4
HM6-45	45.2	32.5/10.8	64.6/16.1		7.3			2.9	2.1		14.6			5.8	4.3
HM6-56	57.1	25.7/8.6	51.1/12.8		5.8	4.2	3.4	2.3	1.7		11.6	8.4	6.8	4.6	3.4
HM6-71	71.3	20.6/6.9	40.9/10.2		4.6	3.4	2.7	1.8			9.2	6.8	5.4	3.6	2.7
HM6-90	92.0	15.8/5.3	31.6/7.9		3.7	2.6	2.1				7.4	5.2	4.2	2.8	2.1
HM6-112	110.2	13.2/4.4	26.3/6.6	4.4	3.0	2.2	1.8			8.8	6.0	4.3	3.6	2.2	
HM6-140	137.6	10.6/3.5	21.0/5.3	3.5	2.4	1.7	1.4			7.0	4.8	3.4	2.8		
HM6-180	177.5	8.1/2.7	16.3/4.1	2.7	1.8	1.4				5.4	3.6	2.7	2.1		
HM6-224	219.5	6.6/2.2	13.1/3.3	2.2	1.5					4.4	3.0	2.2	1.7		
HM6 Motor Length.L (mm)				591	613	685	685	775	815	591	613	685	685	775	815
HM6/F Motor Length.L (mm)				618	640	712	712	802	842	578	640	712	712	802	842
HM6/FO Motor Length.L (mm)				758	780	852	852	942	982	718	780	852	852	942	982
Motor DiameterØE (mm)				198	232	266	266	315	315	198	232	266	266	315	315
Motor frame size				VF90-412B	VF112-412A	VF132-412A	VF132-412B	VF160-412A	VF160-412B	VF90-208B	VF112-208A	VF132-208A	VF132-208B	VF160-412A	VF160-208B

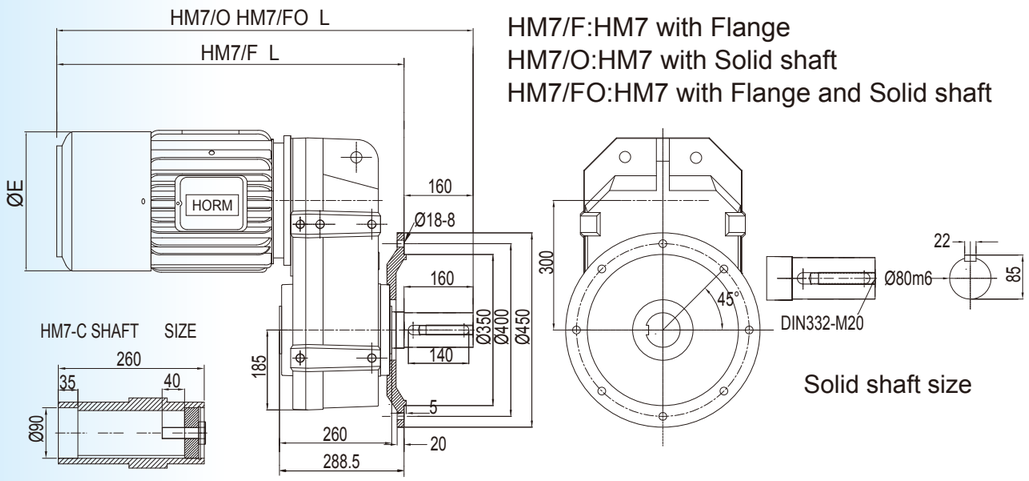
Two Speed 60Hz(rpm)

Gear box Type	Gear Ratio	Output Speed Power Kw		Service Factor											
				1.5/0.5	2.2/0.75	3.0/1.0	3.75/1.25	5.5/1.8	7.5/2.5	1.5/0.37	2.2/0.55	3.0/0.75	3.75/0.9	5.5/1.4	7.5/1.9
		4/12P	2/8P	60 HZ 4/12P						60HZ 2/8P					
HM6-18	18.1	97.1/32.4	194.2/48.5					7.6	5.5					15.2	11.0
HM6-22	22.2	79.2/26.4	158.3/39.6					6.2	4.6					12.4	9.2
HM6-28	28.0	62.9/21.0	125.9/31.5					5.8	4.2					11.5	8.4
HM6-36	36.6	48.1/16.0	96.3/24.1					4.4	3.2					8.8	6.4
HM6-45	45.2	39.0/13.0	78.0/19.5		8.8			3.5	2.5		17.6			7.0	5.2
HM6-56	57.1	30.8/10.3	61.6/15.4		7.0	5.0	4.1	2.8	2.0		14.0	10.0	8.2	5.6	4.0
HM6-71	71.3	23.6/7.9	49.4/12.3		5.5	4.1	3.2	2.2			11.0	8.2	6.4	4.4	3.2
HM6-90	92.0	18.3/6.1	38/.3/9.6		4.4	3.1	2.5				8.8	6.2	5.0	3.4	2.5
HM6-112	110.2	15.6/5.2	31.9/8.0	5.2	3.6	2.6	2.2			10.4	7.2	5.1	4.4	2.8	1.9
HM6-140	137.6	12.5/4.2	25.6/6.4	4.2	2.9	2.0	1.7			8.4	5.8	4.0	3.4	2.3	
HM6-180	177.5	9.7/3.2	19.7/4.9	3.2	2.2	1.7				6.4	4.4	3.2	2.5		
HM6-224	219.5	7.9/2.6	15.9/4.0	2.6	1.8					5.2	3.6	2.6	2.0		
HM6 Motor Length.L (mm)				591	613	685	685	775	815	591	613	685	685	775	815
HM6/F Motor Length.L (mm)				618	640	712	712	802	842	578	640	712	712	802	842
HM6/FO Motor Length.L (mm)				758	780	852	852	942	982	718	780	852	852	942	982
Motor DiameterØE (mm)				198	232	266	266	315	315	198	232	266	266	315	315
Motor frame size				VF90-412B	VF112-412A	VF132-412A	VF132-412B	VF160-412A	VF160-412B	VF90-208B	VF112-208A	VF132-208A	VF132-208B	VF160-208A	VF160-208B

TYPE :

HM7





Single Speed 50/60Hz(rpm)

Gear box Type	Gear Ratio	Output Speed Power Kw		Service Factor																	
				1.5kw	2.2kw		3.75kw		5.5kw		7.5kw		11kw		15kw		18.5kw		22kw		30kw
		4P 50/60	6P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60	6P 50/60	4P 50/60
HM7-18	18.6	78.8/94.6	52.7/63.2												3.7/4.4	2.4/2.9	3.0/3.6	2.0/2.4	2.5/3.0	1.7/2.0	1.8/2.2
HM7-22	21.4	68.6/82.3	45.8/54.9										2.9/3.5	2.3/2.7	3.2/3.8	2.1/2.5	2.6/3.1	1.7/2.0	2.2/2.6	1.4/1.7	1.6/1.9
HM7-28	27.6	53.1/63.7	35.4/42.5										2.3/2.7	2.5/3.0	1.6/1.9	2.0/2.4		1.7/2.0			
HM7-36	35.0	41.8/50.2	27.9/33.5								2.9/3.5	3.0/3.6	2.0/2.4	2.2/2.6		1.8/2.2		1.5/1.8			
HM7-45	44.2	33.2/39.8	22.1/26.5						3.2/3.8	3.5/4.2	2.3/2.8	2.4/2.9	1.6/1.9	1.8/2.2							
HM7-56	55.9	26.2/31.4	17.4/20.9					3.8/4.6	3.8/4.6	2.5/3.0	2.8/3.4	1.8/2.2	1.9/2.3		1.4/1.7						
HM7-71	71.6	20.4/24.5	13.6/16.3					3.0/3.6	3.0/3.6	2.0/2.4	2.2/2.6	1.5/1.8	1.5/1.8								
HM7-90	90.5	16.1/19.3	10.8/12.9				3.5/4.2	2.3/2.8	2.4/2.9	1.6/1.9	1.7/2.0										
HM7-112	111.4	13.1/15.7	8.7/10.4			3.2/3.8	2.8/3.4	1.9/2.3	1.9/2.3	1.3/1.6	1.4/1.7										
HM7-140	139.5	10.4/12.5	6.9/8.3	3.8/4.6	3.9/4.7	2.6/3.1	2.3/2.8	1.5/1.8	1.5/1.8												
HM7-180	180.3	8.0/9.6	5.3/6.4	2.9/3.5	3.0/3.6	2.0/2.4	1.8/2.2														
HM7-224	226.0	6.4/7.7	4.3/5.2	2.3/2.8	2.4/2.9	1.6/1.9	1.4/1.7														
HM7 Motor Length.L (mm)				603	603	625	625	697	697	697	697	797	797	837	837	837	837	929	929	969	969
HM7/F Motor Length.L (mm)				632	632	654	654	726	726	726	726	826	826	866	866	866	866	958	958	998	998
HM7/FO Motor Length.L (mm)				792	792	814	814	886	886	886	886	986	986	1026	1026	1186	1186	1278	1278	1318	1318
Motor DiameterØE (mm)				198	198	232	232	266	266	266	266	315	315	315	315	315	315	382	382	382	382
Motor frame size				VF90-6B	VF90-4B	VF112-6A	VF112-4A	VF132-6A	VE132-4C	VF132-6B	VF132-4D	VF160-6A	VF160-4A	VF160-6B	VF160-4B	VF160-6C	VF160-4C	VF180-6A	VF180-4A	VF180-6B	VF180-4C

Two Speed 50Hz(rpm)

Gear box Type	Gear Ratio	Output Speed Power Kw		Service Factor								
				2.2/0.75	3.0/1.0	3.75/1.25	5.5/1.85	7.5/2.5	2.2/0.55	3.0/0.75	3.75/0.9	5.5/1.4	7.5/1.9
		4/12P	2/8P	50 HZ 4/12P					50HZ 2/8P				
HM7-45	44.2	33.2/11.1	66.4/16.6					3.5					7.0
HM7-56	55.9	26.2/8.7	52.4/13.1				3.8	2.8				7.6	5.6
HM7-71	71.6	20.6/6.9	41.2/10.3			4.3	3.0	2.2			8.6	6.0	4.4
HM7-90	90.5	16.2/5.4	32.2/8.1			3.4	2.4	1.7			6.8	4.8	3.4
HM7-112	111.4	13.2/4.4	26.2/6.6		3.5	2.7	1.9	1.4		7.0	5.4	3.8	2.8
HM7-140	139.5	10.5/3.5	20.9/5.2	3.9	2.8	2.2	1.5		7.8	5.6	4.4	3.0	2.3
HM7-180	180.3	8.1/2.7	16.2/4.0	3.0	2.2	1.7			6.0	4.4	3.4	2.4	1.8
HM7-224	226.0	6.4/2.1	12.9/3.2	2.4	1.7	1.4			4.8	3.4	2.8		
HM7 Motor Length.L (mm)				625	697	697	797	837	697	697	697	797	837
HM7/F Motor Length.L (mm)				654	726	726	826	866	726	986	726	826	866
HM7/FO Motor Length.L (mm)				814	886	886	986	1026	886	1146	886	986	1026
Motor DiameterØE (mm)				232	266	266	315	315	232	266	266	315	315
Motor frame size				VF112-412A	VF132-412A	VF132-412B	VF160-412A	VF160-412B	VF112-208A	VF132-208A	VF132-208B	VF160-208A	VF160-208B

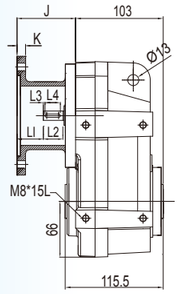
Two Speed 60Hz(rpm)

Gear box Type	Gear Ratio	Output Speed Power Kw		Service Factor								
				2.2/0.75	3.0/1.0	3.75/1.25	5.5/1.85	7.5/2.5	2.2/0.55	3.0/0.75	3.75/0.9	5.5/1.4	7.5/1.8
		4/12P	2/8P	60 HZ 4/12P					60HZ 2/8P				
HM7-45	44.2	39.8/13.2	79.8/20.0					4.2					8.4
HM7-56	55.9	31.3/10.4	62.6/15.6				4.6	3.3				9.2	6.6
HM7-71	71.6	24.6/8.2	49.2/12.3				3.6	2.6				7.2	5.2
HM7-90	90.5	19.4/6.5	38.9/9.7			4.2	2.9	2.1			8.4	5.8	4.2
HM7-112	111.4	15.8/5.3	31.6/7.9			3.2	2.3	1.7			6.6	4.6	3.4
HM7-140	139.5	12.5/4.2	25.1/6.3	4.7	3.4	2.7	1.8		9.4	6.8	5.4	3.6	2.7
HM7-180	180.3	9.7/3.2	19.4/4.9	3.6	2.6	2.1			7.2	5.2	4.2	2.8	2.1
HM7-224	226.0	7.7/2.6	15.7/3.9	2.9	2.1	1.6			5.8	4.2	3.2	2.3	
HM7 Motor Length.L (mm)				625	697	697	797	837	697	697	697	797	837
HM7/F Motor Length.L (mm)				654	726	726	826	866	726	986	726	826	866
HM7/FO Motor Length.L (mm)				814	886	886	986	1026	886	1146	886	986	1026
Motor DiameterØE (mm)				232	266	266	315	315	232	266	266	315	315
Motor frame size				VF112-412A	VF132-412A	VF132-412B	VF160-412A	VF160-412B	VF112-208A	VF132-208A	VF132-208B	VF160-208A	VF160-208B

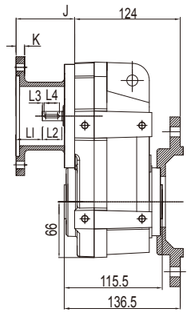
TYPE :

JM2

JM2



JM2/F



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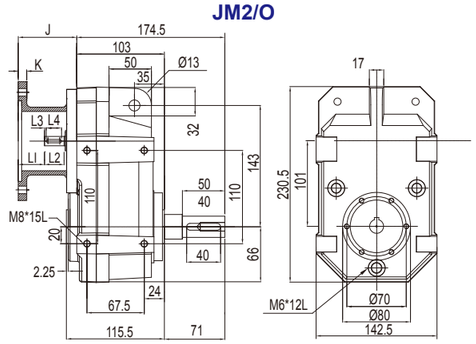

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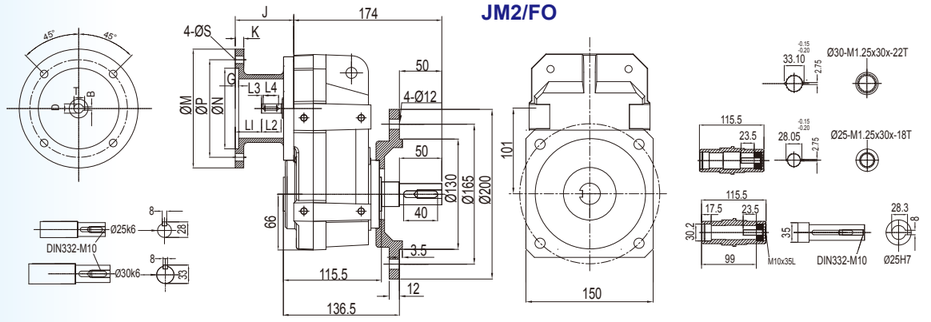
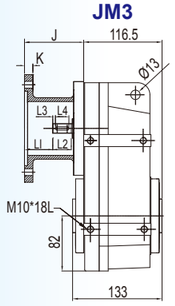


CODE	M	P	N	G	K	J	S	B	T	D	L1	L2	L3	L4
VF63	140	115	95	4	10	69	9	4	12.5	11	31	23	2	18
VF71	160	130	110	4	11	88	9	5	16	14	42	30	4	20

TYPE :

JM3

JM3



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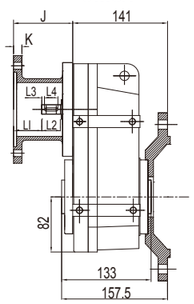

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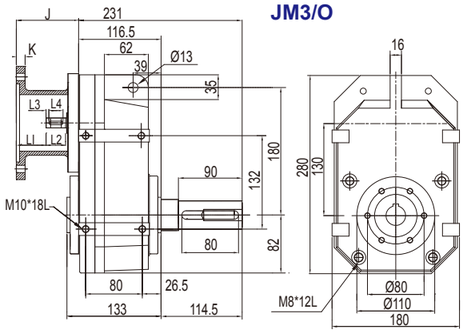

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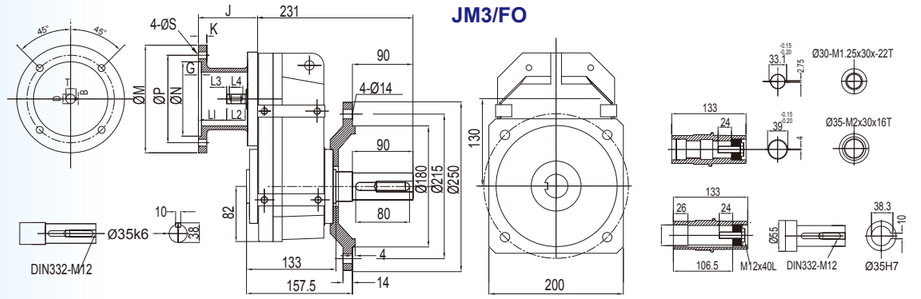
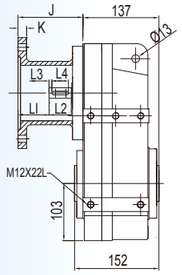


CODE	M	P	N	G	K	J	S	B	T	D	L1	L2	L3	L4
VF71	160	130	110	4	11	88	9	5	16	14	42	30	4	20
VF80	200	165	130	4.5	13	117	12	6	21.5	19	56	40	5	30
VF90	200	165	130	4.5	13	117	12	8	27	24	56	40	5	30
VF100	250	215	180	5	13	144	14	8	31	28	70	50	5	40

TYPE :

JM4

JM4



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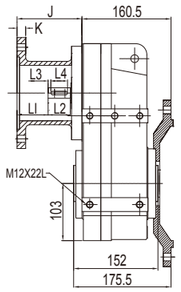
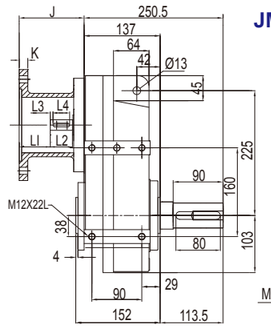


JM4/O



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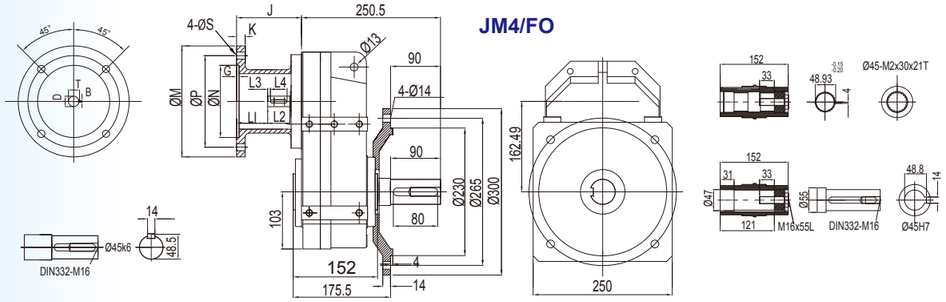
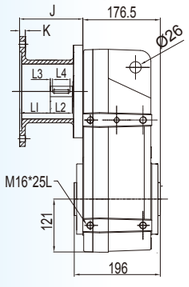


CODE	M	P	N	G	K	J	S	B	T	D	L1	L2	L3	L4
VF80	200	165	130	4.5	13	117	12	6	21.5	19	56	40	5	30
VF90	200	165	130	4.5	13	117	12	8	27	24	56	40	5	30
VF100	250	215	180	5	13	144	14	8	31	28	70	50	5	40
VF112	250	215	180	5	13	144	14	8	31	28	70	50	5	40

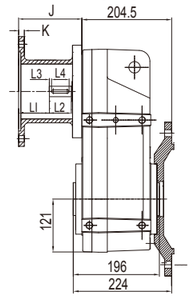
TYPE :

JM5

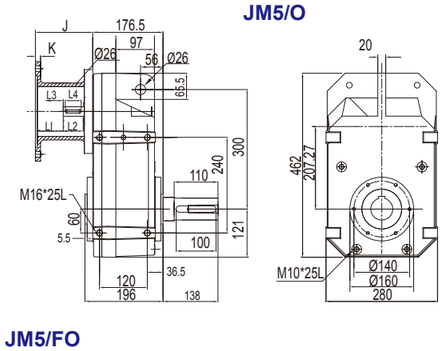
JM5



JM5/F



JM5/O



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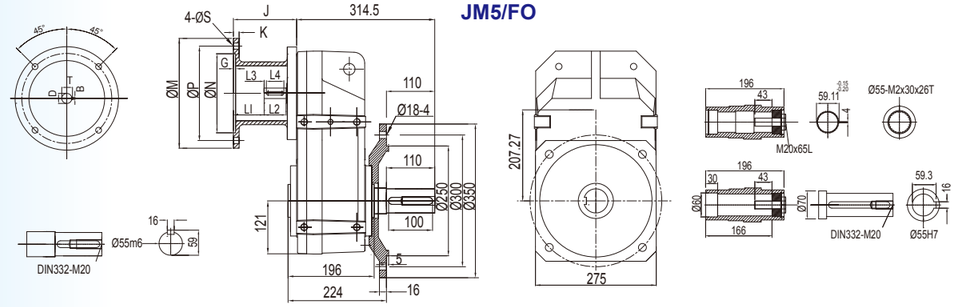
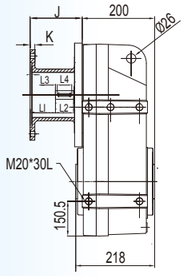


CODE	M	P	N	G	K	J	S	B	T	D	L1	L2	L3	L4
VF80	200	165	130	4.5	13	117	12	6	21.5	19	56	40	5	30
VF90	200	165	130	4.5	13	117	12	8	27	24	56	40	5	30
VF100	250	215	180	5	13	144	14	8	31	28	70	50	5	40
VF112	250	215	180	5	13	144	14	8	31	28	70	50	5	40

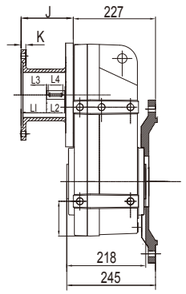
TYPE :

JM6

JM6



JM6/F



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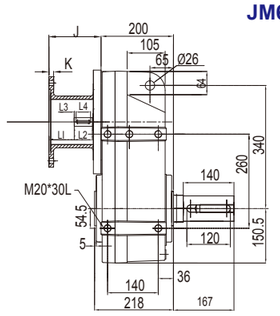

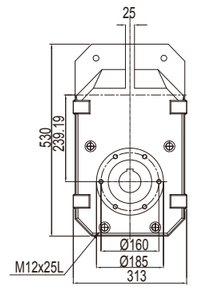

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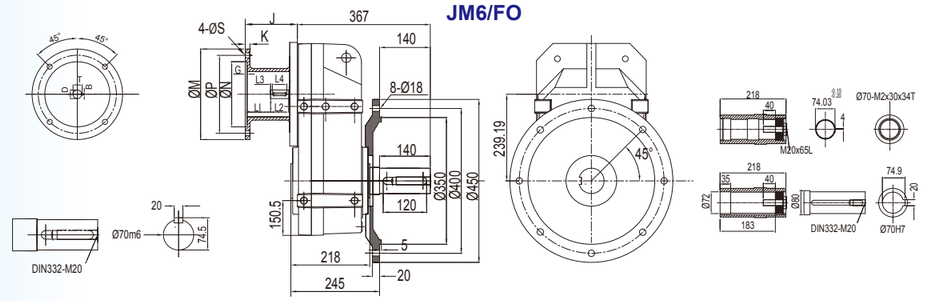
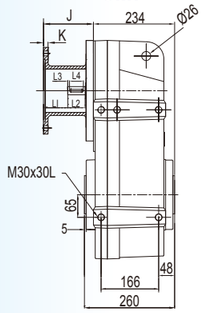


CODE	M	P	N	G	K	J	S	B	T	D	L1	L2	L3	L4
VF100	250	215	180	5	14	159	14	8	31	28	70	50	5	40
VF112	250	215	180	5	14	159	14	8	31	28	70	50	5	40
VF132	300	265	230	5	16	174	14	10	41	38	85	60	5	50

TYPE :

JM7

JM7



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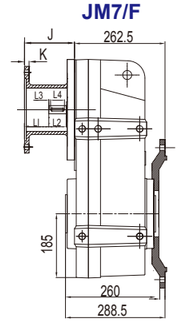

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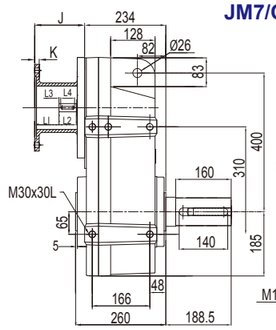

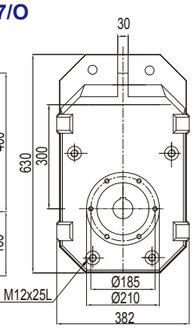

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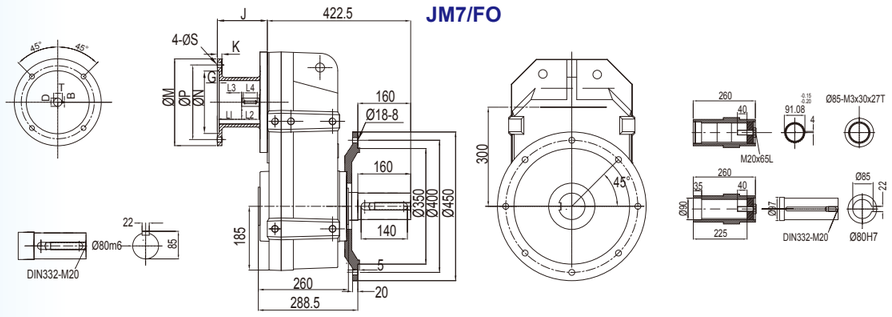


CODE	M	P	N	G	K	J	S	B	T	D	L1	L2	L3	L4
VF100	250	215	180	5	14	159	14	8	31	28	70	50	5	40
VF112	250	215	180	5	14	159	14	8	31	28	70	50	5	40
VF132	300	265	230	5	16	174	14	10	41	38	85	60	5	50

Lubricant Selection Table

Lubrication: Horm supplies ISO VG320 oil in the condition of ambient temperature -10°C~+40°C if there is no special arrangement made by customers

Lubricant Selection Table

	Oil			
Ambient temperature	-10°C~+40°C	-20°C~+25°C	-40°C~+10°C	-40°C~+80°C
ISO viscosity grade	ISO VG 320	ISO VG 100~150	ISO VG 32	ISO VG 220
Mobil	Mobil Gear 632	Mobil Gear 629	Mobil SHC 624	Mobil SHC 630
Shell	Shell Omala 320	Shell Omala 150	Shell Tellus T32(1)	Shell Omala HD 220
Kluber	Kluber Oil GEM 1-320	Kluber Oil GEM 1-150	Kluber-Summit HySyn FG-32	Kluber Synth EG 4-220
Texaco	Texaco Meropa 320	Texaco Meropa 150	Texaco Cetus PAO 46	Texaco Pinnacle EP 220
BP	BP Energol GR-XP 320	BP Energol GR-XP 100	----------	BP Energol SG-XP 220(2)
Aral	Aral Degol BG 320	Aral Degol BG 100	Aral Degol BG 46(1)	Aral Degol PAS 220
CPC	CPC HD- 320	----------	----------	----------

Remark:(1) It is used in the condition of ambient temperature -30°C~+10°C
(2) It is used in the condition of ambient temperature -25°C~+80°C

Type	HM2	HM3	HM4	HM5	HM6	HM7
Capacity	0.7L	1.2L	1.5L	4.8L	8.0L	13.5L

Lubricant change:

1. Do not mix different kinds of oil together
2. For the first time of maintenance,replace gearbox oil after 4000 operating hours or 6 months, whichever comes first
   After that,evety time while the operating hour reaches 10000 hour,the gear box oil must be replaced again. Please refer to the oil quantity table given above.
3. If using in special conditions,such as heavy-duty,high temperature,etc.,please refer to the lubricant selection table as above

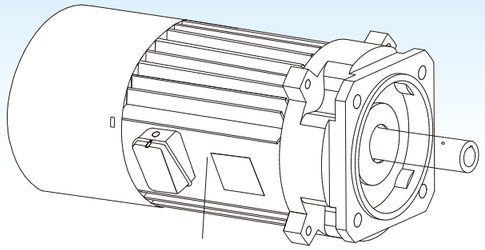
Notice: After finishing mounting,please remove threaded plug on the top of gearbox and put into the breather plug before operation

Brake

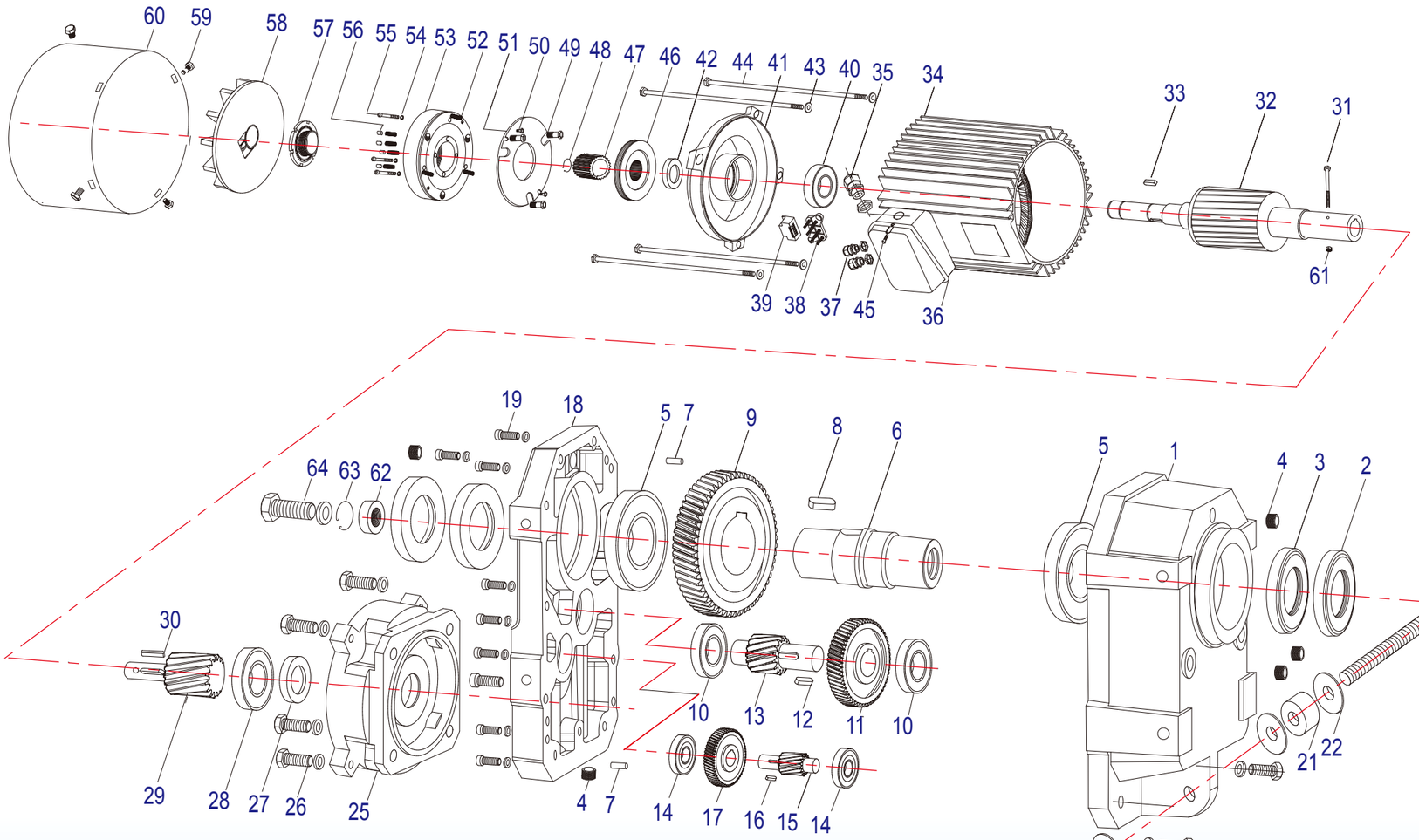
Motors can be optionally supplied with a built -in spring loaded disc brake at the end of the motor.
The braking force of the spring loaded brake is developed mechanically by spring action, so it can used (with additional parts) as safety brake for the purpose of complying with accident prevention regulations.
The brakes are operated electrically via D.C. excitation. For connection with single phase A.C., the brake motors need to be equipped with a rectifier. In this case, the supply voltage must be provided while ordering.
All spring loaded disk brakes can be supplied with manual release on request. The manual release is used while the power is unavailable
In order to keep the brake in good condition, the air gap variation of the brake needs to be paid attention. Braking torques refer to a speed n= 100rpm.
The materials of all brake linings are asbestos free.

Type (EBM)	02	05	10	20	40	60	100	160	250
Braking torque, dynamical(n=100 rpm) M_K(Nm)	2	5	10	20	40	60	100	160	250
Max. friction work per brake operation Q_E(KJ)	1	3	7.5	12	24	30	36	60	80
Input power at 20°C P_{20}(W)	16	20	25	30	40	50	65	85	110
Exciting voltage(V)	96	190	190	190	190	190	190	190	190
Nominal current at 220°C	0.9	0.11	0.13	0.16	0.21	0.26	0.29	0.34	0.39
Transition operating frequency $S_h(h^{-1})$	95	80	50	40	30	28	26	20	18
Reduction per notches in twist position (Nm)	0.2	0.2	0.4	0.8	1.3	1.7	1.6	3.6	5.6
Excess end of torque adjuster ring (mm)	4	5	5	7.5	9.5	11	10	15	17
Nominal air gap (mm)	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4
Max.air gap (mm)	0.5	0.5	0.5	0.6	0.8	0.8	0.8	1.0	1.0
Moment of inertia ($kgcm^2$)	0.15	0.21	0.6	1.8	4.4	6.3	14.1	26	60
Weight of brake (kg)	1.0	1.2	1.8	3.0	4.8	7.3	12.2	18.5	27.6
Delay time (ms)	5	7	10	10	15	15	20	30	50
Torque rise time (ms)	10	10	10	20	25	50	70	80	150
Engagement time of brake t1(ms)	15	17	20	30	40	60	90	110	200
Release response time t2(ms)	30	35	50	90	120	150	180	300	400
Standard for motor type	63	71	80	90,112	132	160M	160L	180M	180L

Exploded View

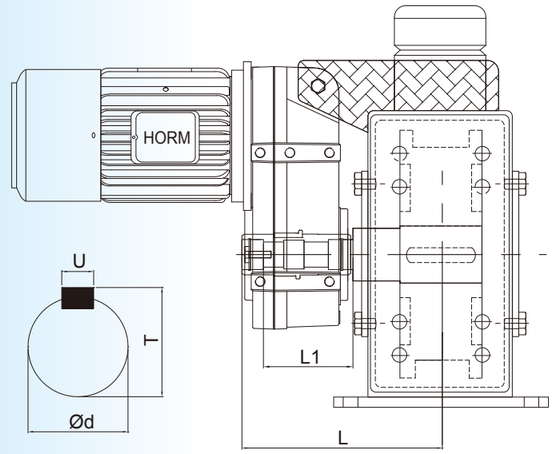


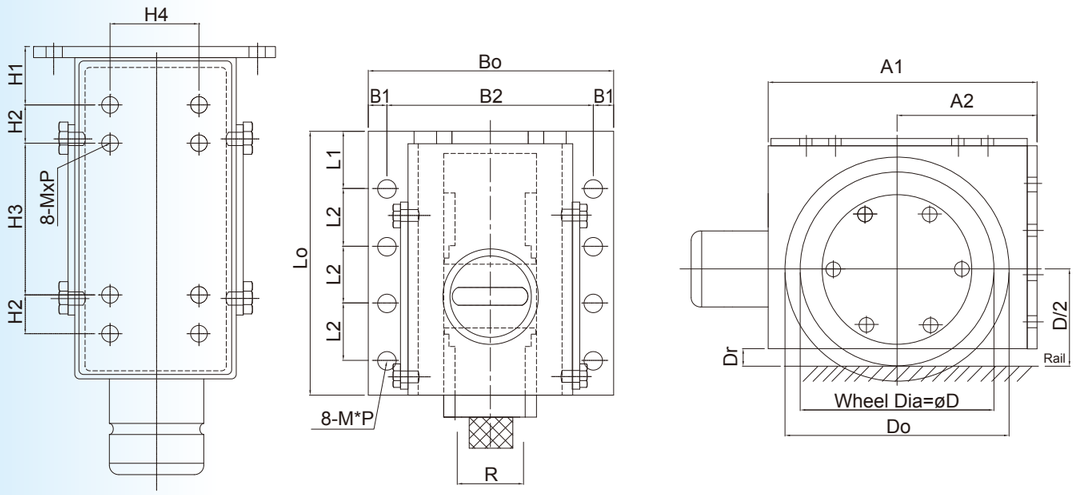
Motor and DC Brake



	DESCRIPTION	Q'TY		DESCRIPTION	Q'TY
1	Gear Housing-A	1	33	Double Round Key	1
2	Oil Seal	2	34	Motor Housing & Stator	1
3	Oil Seal A	2	35	Cable Gland A	1
4	Oil Level Nipple	5	36	Junction Box	1
5	Anti-friction Ball Bearing	2	37	Cable Gland B	2
6	Hollow Shaft	1	38	Terminal Plate	1
7	Dowel	2	39	Rectifier	1
8	Parallel Key	1	40	Ball Bearing	1
9	Output Gear	1	41	Motor End Cap For Brake	1
10	Anti-friction Ball Bearing	2	42	Oil Seal	1
11	2ND Gear	1	43	Spring Lock Washer	4
12	Parallel Key	1	44	Hex-Socket Cap Bolt	4
13	2ND Pinion	1	45	Round head screw	1
14	Anti-friction Ball Bearing	2	46	Brake lining	1
15	1ST Pinion	1	47	Brake Rotor Hub	1
16	Parallel Key	1	48	Shaft Retaining Ring	1
17	1ST Gear	1	49	Adjuster air gap tube screw	3
18	Gear Housing-B	1	50	Adjuster the fixing screws	3
19	Connecting fixed bolt & washer	9	51	Armature Plate	1
20	Nylon Lock Nut	1	52	Compression Spring	7
21	Rubber Bumper	2	53	Stator With Coil	1
22	Flat Washer	4	54	Spring Wash	3
23	Torque Arm Hex Blot	1	55	Connecting Fixed Bolt	3
24	Connecting fixed bolt & washer	2	56	Round Bar	4
25	Flange	1	57	Torque Adjusting Nut	1
26	Connecting fixed bolt & washer	4	58	Cooling Fan	1
27	Oil Seal	1	59	Hex-Head Bolt & Washer	4
28	Anti-friction Ball Bearing	1	60	Motor Endcover	1
29	Motor Pinion	1	61	Nylon Lock Nut	1
30	Parallel Key	1	62	Connecting Ring	1
31	Connecting Fixed Bolt	1	63	Hole use C-Ring	1
32	Motor Shaft And Rotor	1	64	Hex-Fit Connecting Bolt	1

Wheel Block Travel Units





Wheel	Wheel Load	Travel Wheel	Dimensions in (mm)																
Block	(KN)	D	A1	A2	H1	H2	H3	H4	Do	Dr	Lo	L1	L2	S	R	Bo	B1	B2	M*P
HW-12	35	125	200	100	40	30	60	80	155	10	150	40	30	14	60	190	15	160	M12*P1.75
HW-16	50	160	235	120	40	30	100	100	188	20	180	50	35	14	65	220	15	190	M12*P1.75
HW-20	80	200	280	145	50	35	120	120	236	30	220	50	45	18	75	260	25	210	M16*P2.0
HW-25	100	250	350	180	65	40	150	120	286	30	260	35	50	18	80	280	25	230	M16*P2.0
HW-32	120	320	440	220	75	50	200	120	366	35	350	75	75	22	80	320	30	260	M20*P2.5
HW-40	180	400	580	290	90	50	300	120	444	40	440	100	100	22	85	360	30	300	M20*P2.5
HW-50	200	500	655	340	110	60	350	120	546	45	540	120	120	26	85	400	35	330	M24*P3.0

Wheel block	Combined	Shaft for Key				Shaft for	
	Gear Type	d	T	U	L1	Spline	
						d	L
HW-12	HM2	25	28	8	100	30-1.25*30*22	220
HW-16	HM2	25	28	8	100	30-1.25*30*22	228
	HM3	30	33	8	100	30-1.25*30*22	234
						35-2.0*30*16	237
HW-20	HM2	25	28	8	100	30-1.25*30*22	237
	HM3	30	33	8	109	30-1.25*30*22	244
						35-2.0*30*16	250
HW-25	HM3	30	33	8	109	35-2.0*30*16	267
	HM4	45	48.5	14	125	45-2*30*26	287
	HM5	55	59	16	172	55-2*30*28	330
HW-32	HM4	45	48.5	14	125	45-2*30*21	260
	HM5	55	59	16	172	55-2*30*26	335
	HM6	70	74.5	20	185	70-2*30*34	352
HW-40	HM5	55	59	16	172	55-2*30*26	351
	HM6	70	74.5	20	185	70-2*30*34	368
HW-50	HM6	70	74.5	20	185	70-2*30*34	377
	HM7	80	86.5	25	230	80-2*30*39	422