

# 高壓全密型TEFC泵浦用馬達(空心軸)

**MODEL : AEHCNH**

HIGH THRUST HOLLOWSHAFT PUMP MOTORS

MEDIUM VOLTAGE SQUIRREL CAGE

FRAME SIZE (EGV) 5009~5810

TABLE OF CONTENTS



		<b>SPECIFICATION TABLE</b>	MODEL <b>AEHCNH</b>
		<b>HIGH THRUST HOLLOWSHAFT PUMP MOTORS MEDIUM VOLTAGE SQUIRREL CAGE</b>	
<b>ITEM</b>		<b>STANDARD SPECIFICATION</b>	
<b>RATING</b>	KIND OF MOTOR	SQUIRREL-CAGE INDUCTION MOTOR (SCIM), VSS, TEFC	
	DESIGN STANDARD	NEMA MG-1, PREMIUM EFFICIENCY	
	VOLTAGE	2300V/4000V, 4160V	
	FREQUENCY	60HZ	
	OUTPUT RANGE	150 ~ 700HP	
	R.P.M. (SYN.)	1800 ~ 900 R.P.M. (4 ~ 8 POLE)	
	TIME DUTY	CONTINUOUS , S.F. 1.15 ( S1, MCR ) VFD:CONTINUOUS S.F. 1.0 (S1, MCR)	
	FRAME SIZE (EGV)	5009 ~ 5810	
	PROTECTION ENCLOSURE	TOTALLY ENCLOSED (IP54)	
	COOLING METHOD	SELF EXTERNAL FAN, SURFACE COOLING (IC 411)	
MOUNTING	FLANGE MOUNTING ( IM3011 )		
<b>APPLICATION</b>	POWER CONDITION	VOLTAGE : $\pm 10\%$ , FREQUENCY : $\pm 5\%$ , AND $\pm 10\%$ MAX. OF COMBINED VOLTAGE AND FREQUENCY, BUT FREQUENCY VARIATION DOES NOT EXCEED $\pm 5\%$	
	DESIGNED PRIMARILY	FOR DEEP WELL TURBINE PUMP	
	ENVIRONMENT CONDITIONS	PLACE : OUTDOOR, NON-HAZARDOUS, CSA CLASS I , DIV. 2, GROUP, B, C, D T3 (OPTION) AMBIENT TEMPERATURE : $-15^{\circ}\text{C} \sim 40^{\circ}\text{C}$ , Per TECO, MG-1 and IEEE-522 and MG-1 part 31.4.4. & MG-1.14.32.2 FORM COIL ALTITUDE : LESS THAN 3,300 ft	
	DRIVE METHOD	DIRECT COUPLING	
	DIRECTION OF ROTATION	COUNTER-CLOCK-WISE FACING THE COUPLING END	
	METHOD OF STARTING	ACROSS THE LINE OR REDUCED VOLTAGE STARTING	
<b>PERFORMANCE</b>	TEST PROCEDURE	IEEE-112 METHOD B & F	
	TYPICAL PERFORMANCE	AS DWG NO. 3A057M086E	
	TEMPERATURE RISE	NOT TO EXCEED $105^{\circ}\text{C}$ FOR S.F. 1.15 OR $80^{\circ}\text{C}$ FOR S.F. 1.0 BY RESISTANCE METHOD	
	OVER SPEED	120% SYN. R.P.M. FOR TWO MIN WHILE HORSEPOWER > 200HP(4 POLE) 150% SYN. R.P.M. FOR TWO MIN WHILE HORSEPOWER $\leq 200\text{HP}$ (6 & 8 POLE) 125% SYN. R.P.M. FOR TWO MIN WHILE HORSEPOWER > 200HP(6 & 8 POLE)	
	SPEED RANGE	VARIABLE TORQUE : 10 : 1 · CONSTANT TORQUE : 3 : 1	
	OVER TORQUE	160% RATED TORQUE FOR 15 SEC	
OPTIONAL	STEADY BUSH AS DWG NO. 4B049R531E		

# PERFORMANCE DATA

MODEL

**AEHCNH**

## HIGH THRUST HOLLOWSHAFT PUMP MOTORS MEDIUM VOLTAGE SQUIRREL CAGE



TEFC, NEMA DESIGN B, CODE G, CLASS F, 40°C AMBIENT,  
CONTINUOUS DUTY, 1.15 S.F. 2300/4000V, 3300V, 4160V 60HZ

### TYPICAL PERFORMANCE

(2300V)

HP	FULL LOAD	FRAME SIZE	EFFICIENCY				POWER FACTOR			CURRENT		TORQUE			ROTOR WR <sup>2</sup>	DOWN THRUST	APPROX. ROTOR WEIGHT	APPROX. WEIGHT	REED FREQ.
			FULL LOAD %		3/4 LOAD	1/2 LOAD	FULL LOAD	3/4 LOAD	1/2 LOAD	FULL LOAD	LOCKED ROTOR	FULL LOAD	LOCKED ROTOR	BREAK-DOWN					
	RPM	(EGV)	NOM.	MIN.	NOM.	NOM.	%	%	%	A	A	lb-ft	%FLT	%FLT	lb-ft <sup>2</sup>	LBS	LBS	LBS	Hz
150	890	5009	93.9	92.8	93.8	93.2	80.3	74.5	62.3	37	315	885.4	80	210	146.8	13200	1080	3940	36
200	890	5009	94.1	93.0	94.0	93.5	80.8	75.1	63.5	49	316	1180.5	80	210	194.3	13200	1260	4320	34
250	1188	5009	95.0	94.1	94.9	94.4	81.9	76.7	66.0	60	395	1105.5	90	210	149.3	12100	1080	4250	34
	890	5009	95.0	94.1	94.9	94.4	79.8	73.5	61.1	61	395	1475.6	90	210	241.7	13200	1440	4690	33
300	1785	5009	95.4	94.5	95.2	94.5	85.8	81.7	72.3	68	474	882.9	80	210	130.4	10500	1010	4130	35
	1188	5009	95.0	94.1	94.9	94.5	82.4	77.5	66.9	71	474	1326.6	90	210	177.2	12100	1210	4530	33
	890	5808	95.0	94.1	94.9	94.1	77.3	71.0	58.5	76	474	1770.7	80	200	334.8	24300	1670	6300	43
350	1785	5009	95.4	94.5	95.3	94.6	86.1	82.2	73.1	79	554	1030.0	80	210	147.5	10500	1090	4330	34
	1190	5808	95.2	94.3	95.0	94.3	80.4	75.2	64.2	85	554	1545.1	90	200	283.2	22300	1510	6000	45
	890	5808	95.0	94.1	94.9	94.2	77.2	70.6	58.1	89	554	2065.9	80	200	392.8	24300	1830	6640	42
400	1785	5009	95.4	94.5	95.3	94.7	85.7	81.5	71.9	91	633	1177.2	80	210	158.2	10500	1130	4430	34
	1190	5808	95.4	94.5	95.2	94.6	80.8	75.9	65.3	97	633	1765.8	90	200	327.1	22300	1630	6290	43
	890	5808	95.0	94.1	94.9	94.3	77.3	70.6	58.1	101	633	2361.0	80	200	443.8	24300	1980	6980	41
450	1785	5808	95.4	94.5	95.2	94.4	83.8	80.5	72.1	105	712	1324.3	100	200	237.6	9700	1360	6020	44
	1190	5808	95.6	94.8	95.5	94.9	80.9	75.9	65.1	108	712	1986.5	90	200	363.2	22300	1730	6530	43
	890	5810	95.0	94.1	94.9	94.3	77.1	70.3	57.7	115	712	2656.1	90	200	487.6	24300	2160	7580	39
500	1785	5808	95.5	94.6	95.3	94.5	82.6	78.7	69.3	118	791	1471.5	100	210	270.8	9700	1360	6070	44
	1190	5810	95.8	95.0	95.7	95.1	81.6	77.0	66.9	119	791	2207.2	90	210	399.3	22300	1900	7090	40
	890	5810	95.4	94.5	95.3	94.7	76.8	70.0	57.3	127	791	2951.2	90	200	516.7	24300	2250	7790	38
600	1785	5810	95.7	94.9	95.6	94.9	84.3	81.0	72.8	139	949	1765.8	100	210	303.4	9700	1620	6930	41
	1190	5810	96.0	95.2	95.9	95.4	81.3	76.4	65.8	143	949	2648.7	100	210	472.2	22300	2100	7590	39
700	1785	5810	95.9	95.1	95.8	95.2	84.6	81.4	73.5	161	1107	2060.1	100	210	344.8	9700	1760	7250	40

NOTE : 1. THE ABOVE ARE TYPICAL VALUES BASED ON TEST ACCORDING TO ANSI/IEEE STANDARD 112 METHOD B.

2. BREAKDOWN & LOCKED ROTOR TORQUES ARE SHOWN AS AVERAGE EXPECTED VALUES.
3. EFFICIENCY, POWER FACTOR, SPEED AND TORQUE ARE THE SAME FOR OTHER VOLTAGES. CURRENT VALUES VARY INVERSELY WITH VOLTAGE.
4. DECLARED EFFICIENCY HAVN'T TAKEN INTO ACCOUNT OF THRUST LOAD LOSSES
5. TOLERANCE ACCORDING TO NEMA MG1-12& IEC 34-1
6. THRUST LOAD LOSSES ESTIMATED OF ANGULAR CONTACT BALL BEARING AS FOLLOWS : (ACCORDING TO NEMA STANDARD MG1-12.7)

FRAME SIZE	LOSS HP /100 RPM RPM/1000 LB THRUST
5009~5810	0.0208

7. REDUCING THE THRUST LOAD WILL INCREASE BEARING LIFE AS FOLLOWS :

ANGULAR CONTACT BALL BEARING	THRUST(%)	100	80	70	58	51
	BEARING LIFE(Hrs.)	8800	15000	20000	30000	40000
SPHERICAL ROLLER THRUST BEARING	THRUST(%)	100	82	73	62	55
	BEARING LIFE(Hrs.)	30000	50000	20000	110000	150000

8. DATA SUBJECT TO CHANGE WITHOUT NOTICE

# OUTLINE DIMENSIONS SHEET

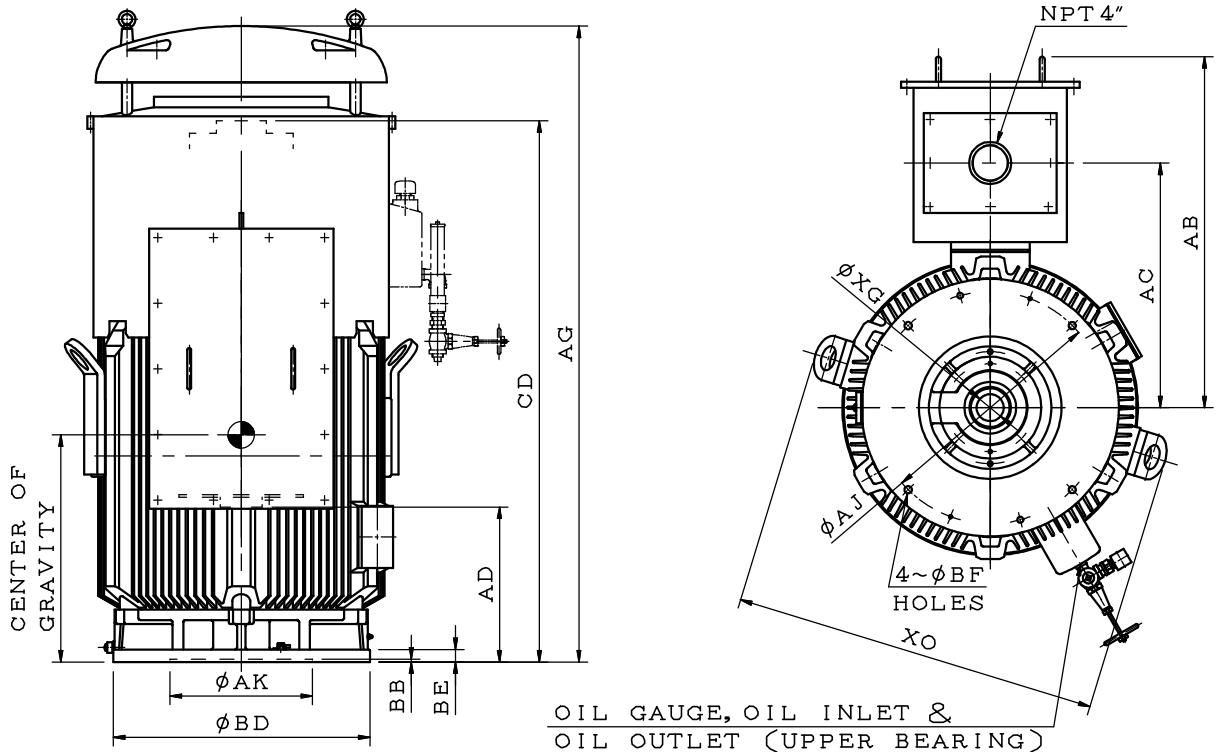
MODEL

## AEHCNH

HIGH THRUST HOLLOW SHAFT PUMP MOTORS

FRAME SIZE (EGV) 5009(315C)

TOTALLY ENCLOSED FAN COOLED SQUIRREL CAGE



OIL GAUGE, OIL INLET &  
OIL OUTLET (UPPER BEARING)

DIMENSIONS IN INCHES

FRAME SIZE (EGV)	MOUNTING						XG	XO
	BD	AK	AJ	BF	BB	BE		
5000	20.00	13.50	14.75	0.69	0.25	1.18	2.559	34.65
	*24.50	13.50	14.75	0.69				
	30.50	22.00	26.00	0.94				

FRAME SIZE (EGV)	CD	AG			TERMINAL HOUSING			CENTER OF GRAVITY	BEARING	
		4P	6P	8P	AB	AC	AD		UPPER END	LOWER END
5009	57.20	65.98	66.38	66.38	33.30	23.20	20.60	24.5	7328B	6220C3

- NOTE: 1. DIMENSION AK TOLERANCE: +0.005 INCH, -0.000 INCH  
 2. FOR COUPLING AS DWG NO. 4B049R529E  
 3. WITH BALL TYPE NON-REVERSE RATCHET MECHANISM  
 4. ROTATING DIRECTION: COUNTER CLOCK-WISE (VIEW FROM COUPLING END)  
 5. \* MARKED TABLE APPLIED TO STANDARD SIZE (BD=24.50, AK=13.50, AJ=14.75 & 22.00, BF=0.69 & 0.94), FOR REED FREQUENCY AS DWG NO. 3A057M086E

# OUTLINE DIMENSIONS SHEET

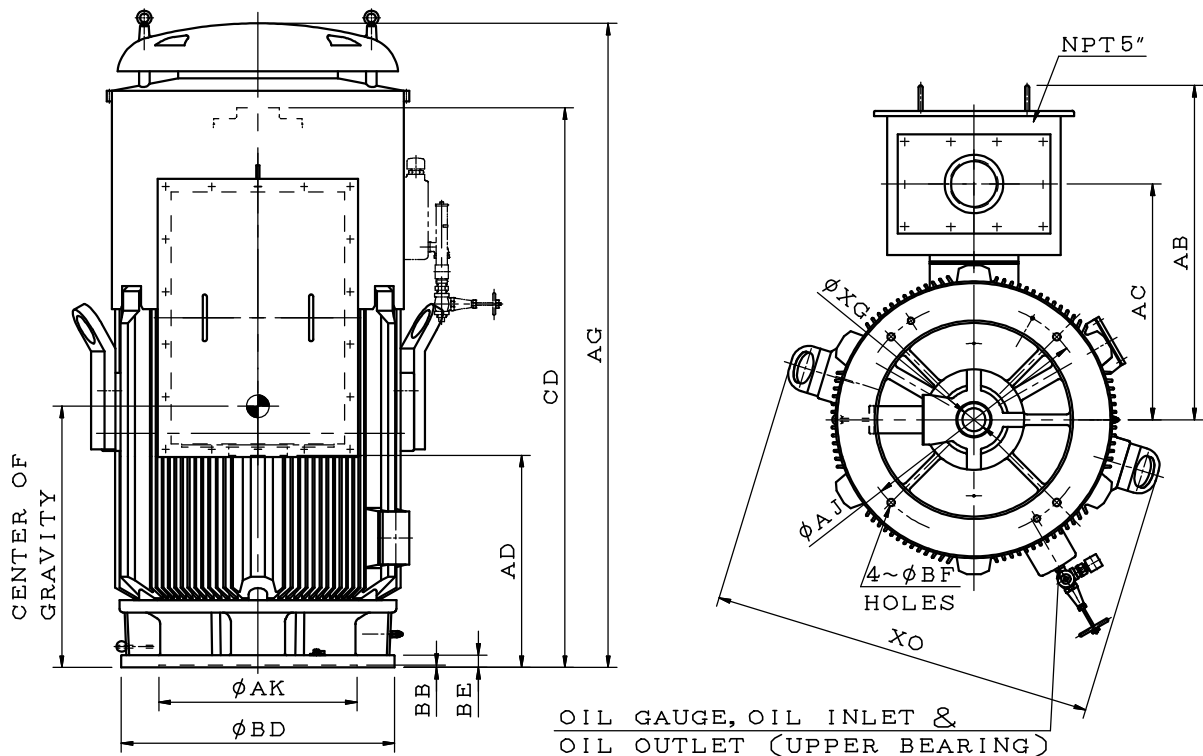
MODEL

## AEHCNH

HIGH THRUST HOLLOWSHAFT PUMP MOTORS

FRAME SIZE (EGV) 5808 ~ 5810

TOTALLY ENCLOSED FAN COOLED SQUIRREL CAGE



DIMENSIONS IN INCHES

FRAME SIZE (EGV)	MOUNTING							XG	XO
	BD	AK	AJ	BF	QTY. OF BF HOLES	BB	BE		
5800	24.50	13.50	14.75	0.69	4	0.25	1.38	2.559	42.52
			22.00	0.94	4				
	*30.50	22.00	26.00	0.81	4				
	36.00	26.00	32.00	1.00	8				

FRAME SIZE (EGV)	CD	AG			TERMINAL HOUSING			CENTER OF GRAVITY	UPPER BEARING		LOWER BEARING
		4P	6P	8P	AB	AC	AD		4P	6&8P	
5808	62.09	70.87	70.67	70.87	37.10	26.15	23.55	29.0	7328B	29330	6320C3
5810	67.20	75.98	75.78	75.98			28.65	31.5		+6028	

- NOTE: 1. TOLERANCE ON AK DIMENSION  
 13.50~22.00 INCHES: +0.005 INCH, -0.000 INCH  
 26.00 INCH: +0.007 INCH, -0.000 INCH
2. FOR COUPLING AS DWG NO. 4B049R529E
3. WITH BALL TYPE NON-REVERSE RATCHET MECHANISM
4. ROTATING DIRECTION: COUNTER CLOCK-WISE  
 (VIEW FROM COUPLING END)
5. \* MARKED TABLE APPLIED TO STANDARD SIZE  
 (BD=30.50, AK=22.00, AJ=26.00, BF=0.81),  
 FOR REED FREQUENCY AS DWG NO. 3A057M086E

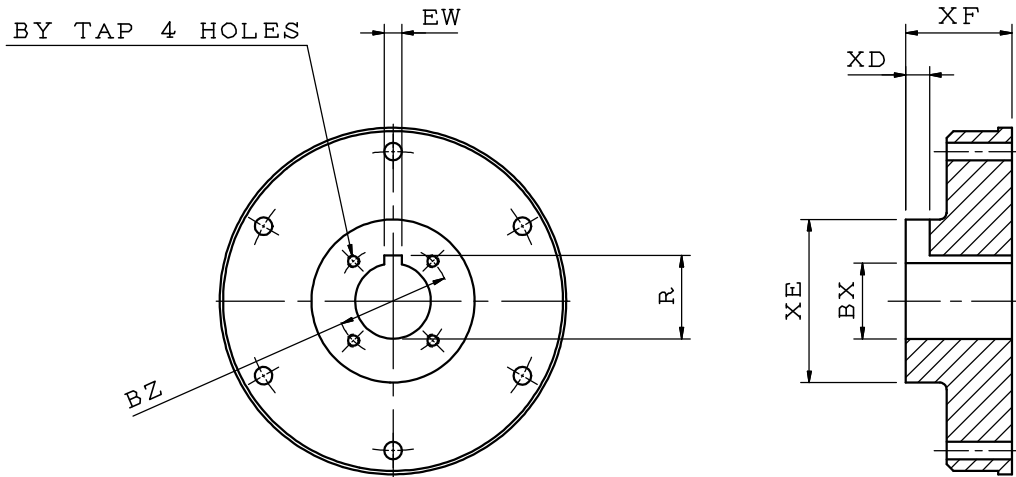
# OUTLINE DIMENSIONS SHEET

MODEL

## AEHCNH

DRIVE COUPLING FOR HOLLOWSHAFT PUMP MOTOR

FRAME SIZE (EGV) 5009 ~ 5810



DIMENSIONS IN INCHES

FRAME SIZE	BX	BY	BZ	EW	R	XD	XE	XF
5009	1.501	1/4-20	2.125	0.375	1.669	0.531	4.724	3.071
	1.688	1/4-20	2.500	0.375	1.859	0.531		
5808	1.938	1/4-20	2.500	0.500	2.160	0.688		
	2.126	3/8-16	3.250	0.500	2.350	0.688		
5810	*2.188	3/8-16	3.250	0.500	2.414	0.688		
	*2.376	3/8-16	3.250	0.625	2.651	0.813		
	2.438	3/8-16	3.250	0.625	2.714	0.813		

NOTE: 1. DIMENSION BX TOLERANCE: +0.0015 INCH, -0.000 INCH  
 2. DIMENSION EW TOLERANCE: +0.002 INCH, -0.000 INCH  
 3. DIMENSION R TOLERANCE: +0.010 INCH, -0.000 INCH  
 4. \* MARKED TABLE APPLIED TO STANDARD SIZE  
 5009: BX=2.188, 5808~5810: BX=2.376

# OUTLINE DIMENSIONS SHEET

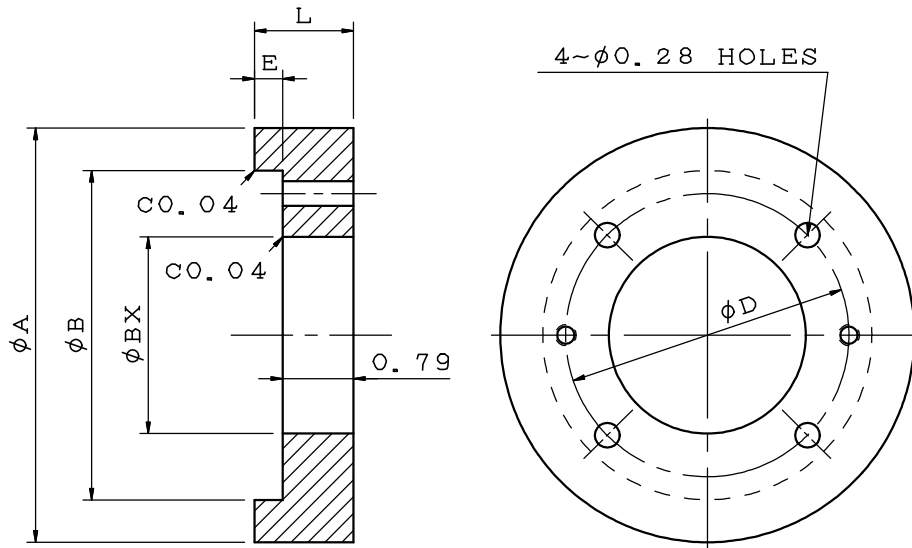
MODEL

**AEHCNH**

STEADY BUSH FOR HOLLOW SHAFT PUMP MOTOR

FRAME SIZE (EGV) 5009 ~ 5810

OPTIONAL



DIMENSIONS IN INCHES

FRAME SIZE	BX	A	B	D	E	L	
5009	1.501	4.61	3.66	3.15	0.31	1.10	
	1.688						
	1.938						
5808	2.126						
	5810						2.188
							2.376
	2.438						

NOTE: 1. DIMENSION BX TOLERANCE: +0.0015 INCH, -0.000 INCH