

東元低壓半密型WPI泵浦用馬達

MODEL : AMRCNH

HIGH THRUST HOLLOWSHAFT PUMP MOTORS
LOW VOLTAGE SQUIRREL CAGE
FRAME SIZE : 213TP ~ 405TP



DWG NO.

31057D67617

REV.08

		SPECIFICATION TABLE	MODEL
		HIGH THRUST HOLLOWSHAFT PUMP MOTORS LOW VOLTAGE SQUIRREL CAGE	AMRCNH
ITEM		STANDARD SPECIFICATION	
R A T I N G	Kind of Motors	Squirrel Cage Induction Motors (SCIM),VHS,WPI	
	Design Standards	NEMA MG-1, EPAAct Efficiency / Premium Efficiency	
	Voltages	230V / 460V (208V De-Rating Operation) , 460V , 575V.	
	Frequency	60Hz.	
	Output Range	3HP ~ 150HP.	
	R.P.M. (Syn.)	3600 R.P.M. , 1800 R.P.M. And 1200 R.P.M. (2 , 4 And 6 Poles).	
	Time Duty	Continuous , S.F. 1.15 .	
	Frame Size	213TP ~ 405TP.	
	Protection Enclosure	Open, Drip Proof (IP22), NEMA Weather-Protected Type I (WPI).	
	Cooling Method	Self Ventilated, Interior Cooling (IC 01).	
	Mounting	Flange Mounting (IM3011).	
High Thrust Load	As PERFORMANCE DATA		
A P P L I C A T I O N	Power Conditions	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 : Non-Hazardous , Ambient Temperature : $-15^{\circ}\text{C} \sim 40^{\circ}\text{C}$, Relative Humidity : Less Than 80%RH (Non-Condensation), Altitude : Less Than 3,300ft.	
	Operating Conditions	For Direct Coupling.	
	Direction of Rotation	Counter-Clock-Wise (View From Top Side).	
	Method of Starting	Full Voltage Direct-On-Line or VFD or Δ - Δ Starting 12 Leads , With Solderless Lug Terminal for 7.5HP and Up , 9 Leads for and Others.	
P E R F O R M A N C E	Test Procedure	IEEE-112 Method-B and Full Voltage Measuring Starting Performance.	
	Temperature Rise	Not to Exceed 90°C for S.F. 1.15 or 80°C for S.F. 1.0 By Resistance Method.	
	Over Speed	125% Syn. R.P.M. for Two Min. (2,4 Poles) ; 150% Syn. R.P.M. for Two Min. (6 Pole) .	
	Over Torque	160% Rated Torque for 15 Sec.	

PERFORMANCE DATA

HIGH THRUST HOLLOWSHAFT PUMP MOTORS
LOW VOLTAGE SQUIRREL CAGE

MODEL

AMRCNH



WP I, NEMA T-FRAME, DESIGN - B,
CLASS F, 40°C AMBIENT, CONTINUOUS DUTY,
S.F. 1.15 3φ 230/460V 60HZ

TYPICAL PERFORMANCE

(230V)

HP	FULL LOAD RPM	FRAME SIZE	EFFICIENCY(%)				POWER FACTOR(%)			CURRENT		TORQUE				ROTOR WK ² lb-ft ²	DOWN THRUST lbs	NEMA CODE LETTER
			FULL LOAD		3/4 LOAD	1/2 LOAD	FULL LOAD	3/4 LOAD	1/2 LOAD	FULL LOAD (A)	LOCKED ROTOR (A)	FULL LOAD lb-ft	LOCKED ROTOR %FLT	PULL UP %FLT	BREAK DOWN %FLT			
			NOM.	MIN.														
3	1175	213TP	88.5	86.5	89.0	87.0	69.0	60.0	46.0	9.20	64	13.40	185	165	315	0.640	2950	K
5	1165	215TP	89.5	87.5	90.0	89.0	73.0	65.0	51.5	14.3	92	22.53	165	145	285	0.842	2950	J
7.5	1755	213TP	91.0	89.5	91.5	91.0	81.0	76.0	64.5	19.1	127	22.44	220	175	260	0.667	2600	H
	1170	254TP	90.2	88.5	88.5	87.0	77.0	70.0	56.5	20.2	127	33.65	250	200	260	2.148	3850	H
10	3505	213TP	89.5	87.5	91.0	90.5	85.5	82.0	74.0	24.5	162	14.98	200	170	250	0.408	2000	H
	1755	215TP	91.7	90.2	92.0	92.0	84.0	79.0	68.5	24.3	162	29.92	235	175	280	0.916	2600	H
	1165	256TP	91.7	90.2	90.0	89.5	79.5	73.5	61.0	25.7	162	45.07	230	180	240	2.859	3850	H
15	3500	215TP	90.2	88.5	92.0	91.5	87.0	84.0	75.5	35.8	232	22.50	245	210	295	0.507	2000	G
	1770	254TP	93.0	91.7	93.0	93.0	83.0	79.5	70.0	36.4	232	44.49	160	120	240	1.862	3350	G
	1175	284TP	91.7	90.2	92.5	92.0	80.0	76.0	65.5	38.3	232	67.02	210	160	220	5.778	3850	G
20	3525	254TP	91.0	89.5	92.5	92.0	90.0	88.0	82.0	45.7	290	29.79	175	135	225	0.933	2700	G
	1770	256TP	93.0	91.7	93.0	93.0	83.0	79.0	69.0	48.5	290	59.32	160	120	240	2.174	3350	G
	1175	286TP	92.4	91.0	94.0	93.5	81.5	77.5	67.0	49.7	290	89.36	225	175	225	8.309	3850	G
25	3530	256TP	91.7	90.2	92.0	92.0	91.0	90.0	85.0	56.1	365	37.18	210	155	250	1.213	2700	G
	1765	284TP	93.6	92.4	93.5	93.0	85.0	82.0	74.0	58.8	365	74.36	210	165	235	3.713	3350	G
	1180	324TP	93.0	91.7	93.6	94.1	83.0	80.5	73.0	60.6	365	111.23	210	170	215	9.898	6000	G
30	3540	284TP	91.7	90.2	93.0	93.0	90.0	88.0	83.0	68.1	435	44.49	180	135	220	1.588	2700	G
	1770	286TP	94.1	93.0	94.0	94.0	86.0	82.5	74.5	69.4	435	88.99	230	175	245	4.397	3350	G
	1180	326TP	93.6	92.4	94.5	94.5	83.5	81.5	74.5	71.9	435	133.48	205	170	215	12.372	6000	G
40	3535	286TP	92.4	91.0	93.0	92.5	90.5	89.0	85.0	89.6	580	59.41	190	145	225	1.921	2700	G
	1770	324TP	94.1	93.0	94.5	94.1	86.0	84.5	78.5	92.6	580	118.65	220	165	215	6.862	5700	G
	1180	364TP	94.1	93.0	94.5	94.1	87.0	84.0	77.0	91.5	580	177.97	215	175	235	16.557	6600	G
50	3555	324TP	93.0	91.7	93.6	93.6	90.0	89.0	86.0	112	725	73.84	190	160	250	2.908	4600	G
	1775	326TP	94.5	93.6	94.5	95.0	85.0	83.5	78.0	117	725	147.89	220	175	205	8.624	5700	G
	1180	365TP	94.1	93.0	94.5	94.1	86.0	83.0	75.0	116	725	222.46	225	180	235	18.626	6600	G
60	3555	326TP	93.6	92.4	94.1	93.6	90.0	90.0	87.0	133	870	88.61	190	160	260	3.590	4600	G
	1780	364TP	95.0	94.1	95.0	94.5	85.0	82.0	74.0	139	870	176.97	195	170	245	10.761	6000	G
	1180	404TP	94.5	93.6	95.0	95.4	85.5	83.5	76.5	139	870	266.96	200	180	225	24.881	9000	G
75	3555	364TP	93.6	92.4	94.5	93.6	90.5	89.0	83.0	166	1085	110.76	160	150	250	5.870	5000	G
	1780	365TP	95.0	94.1	95.0	95.0	86.0	84.0	77.0	172	1085	221.21	180	155	225	11.740	6000	G
	1180	405TP	94.5	93.6	95.0	94.5	86.5	85.5	79.0	172	1085	333.70	220	200	250	31.371	9000	G
100	3555	365TP	93.6	92.4	94.5	94.5	90.5	88.0	84.0	221	1450	147.68	160	150	280	7.044	5000	G
	1780	404TP	95.4	94.5	95.8	95.4	85.5	83.5	76.0	230	1450	294.95	220	165	210	20.623	7900	G
125	3560	404TP	94.1	93.0	94.1	94.1	90.5	87.5	83.0	275	1815	184.34	140	120	250	8.379	5000	G
	1780	405TP	95.4	94.5	95.8	95.4	84.5	82.0	74.5	290	1815	368.69	225	165	205	24.060	7900	G
150	3560	405TP	94.1	93.0	94.5	94.5	90.5	89.0	83.5	330	2170	221.21	140	120	250	9.976	5000	G

- 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. Thrust load losses are not considered in declared efficiency .
 5. Tolerance can be considered according to the NEMA MG1-12 & IEC 60034-1.
 6. Thrust load losses are estimated as follows : (According to NEMA standard MG1-12.7 2003).

FRAME SIZE	2 P	4, 6 P	FRAME SIZE	2 P	4, 6 P
213TP ~ 215TP	0.0076	0.0076	324TP ~ 326TP	0.0132	0.0132
254TP ~ 256TP	0.0083	0.0083	364TP ~ 365TP	0.0132	0.0132
284TP ~ 286TP	0.0090	0.0090	404TP ~ 405TP	0.0146	0.0166

UNIT : LOSS HP / 100 RPM / 1000 LB THRUST

7. Reducing the thrust load will increase bearing life as follows :

% THRUST	100	82	74	64	58	53
Min. Life (Hrs)	8800	15000	20000	30000	40000	50000

8. For frame size 324TP to 365TP 175% of standard thrust load are acceptable under made-to-order
9. Data are subject to change without notice.

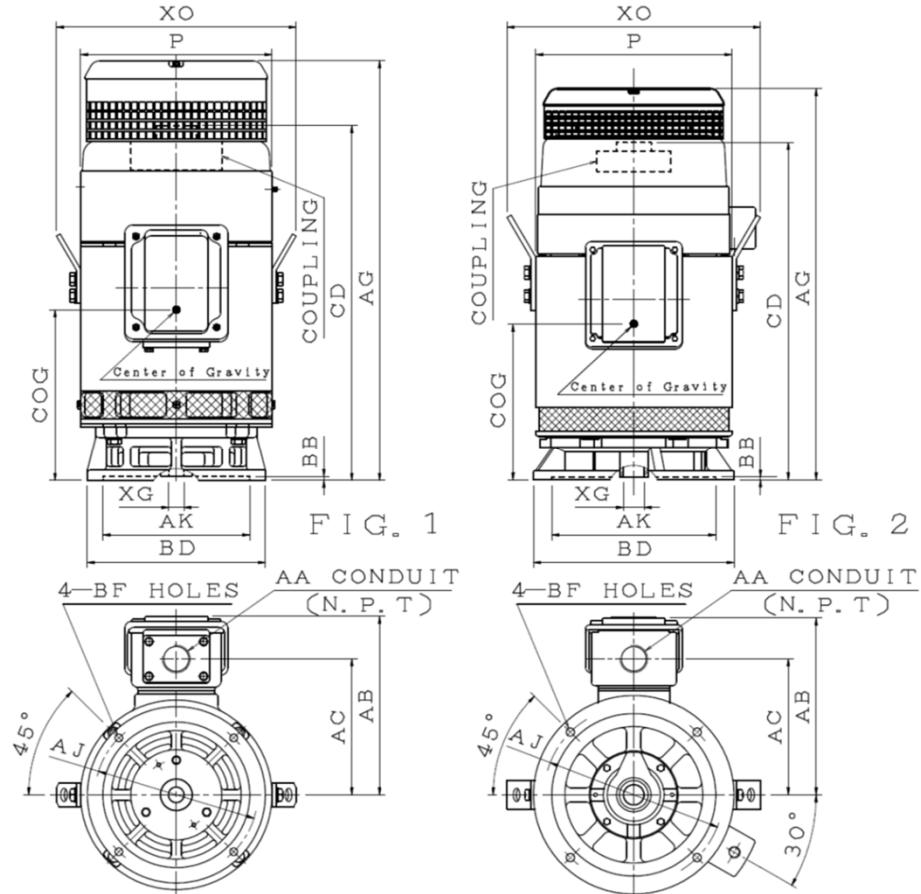
OUTLINE DIMENSIONS SHEET

MODEL

AMRCNH

HIGH THRUST HOLLOWSHAFT PUMP MOTORS
FRAME SIZE 213TP ~ 405TP

Vertical, Weather Protected Type I (WP I), Squirrel - Cage Rotor.



Dimension in inches

Output (HP)			FRAME SIZE	FIG. NO.	AG	CD	P	XG	XO	Mounting					Terminal Housing		
2P	4P	6P								AJ	AK	BB	BD	BF	AA	AB	AC
10	7.5	3	213TP	1	22.32	20.25	10.74	1.122	13.47	9.125	8.25	0.22	10.00	0.44	1"	10.12	7.68
15	10	5	215TP	1	26.91	23.38	12.95	1.378	17.68	9.125	8.25	0.25	10.00	0.44	1 1/4"	11.30	8.86
20	15	7.5	254TP	1	26.91	23.38	12.95	1.378	17.68	9.125	8.25	0.25	10.00	0.44	1 1/4"	11.30	8.86
25	20	10	256TP	1	26.91	23.38	12.95	1.378	17.68	9.125	8.25	0.25	10.00	0.44	1 1/4"	11.30	8.86
30	25	15	284TP	1	28.25	24.75	14.53	1.378	19.25	9.125	8.25	0.25	10.00	0.44	1 1/2"	14.58	11.18
40	30	20	286TP	1	28.25	24.75	14.53	1.378	19.25	9.125	8.25	0.25	10.00	0.44	1 1/2"	14.58	11.18
50	40	25	324TP	2	32.71	28.22	16.14	1.653	20.87	14.75	13.50	0.28	16.50	0.69	3"	14.72	11.30
60	50	30	326TP	2	32.71	28.22	16.14	1.653	20.87	14.75	13.50	0.28	16.50	0.69	3"	14.72	11.30
75	60	40	364TP	2	35.89	31.16	17.52	1.653	22.40	14.75	13.50	0.28	16.50	0.69	3"	16.81	12.80
100	75	50	365TP	2	35.89	31.16	17.52	1.653	22.40	14.75	13.50	0.28	16.50	0.69	3"	16.81	12.80
125	100	60	404TP	2	42.32	36.94	19.69	2.000	24.88	14.75	13.50	0.28	16.50	0.69	3"	19.41	14.76
150	125	75	405TP	2	42.32	36.94	19.69	2.000	24.88	14.75	13.50	0.28	16.50	0.69	3"	19.41	14.76

FRAME SIZE	BEARING		APPROX WEIGHT lbs	COG	RCF
	LOWER END	UPPER END			
213TP 215TP	6209ZZC3	7310B	197 209	9.84	119.0 115.5
254TP 256TP	6309ZZC3	7311B	303 324	11.81	92.3 89.2
284TP 286TP	6311ZZC3	7312B	417 456	12.61	77.1 73.8
324TP 326TP	6312C3	* 7220B	622 675	14.17	80.6 77.3
364TP 365TP	6313C3	* 7222B	775 860	14.8	71.2 67.6
404TP 405TP	6315C3	* 7222B	1073 1135	16.93	58.6 57.0
404TP 405TP	6315C3	* 7322B	1111 1215	16.93	57.6 55.1

Note :

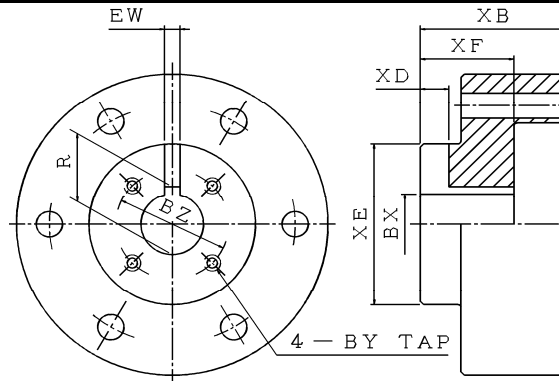
1. Dimension AK tolerance :
For 8.250 inches +0.003 inches , -0.000 inches,
For 13.500 inches +0.005 inches , -0.000 inches.
2. For Coupling As OUTLINE DIMENSIONS SHEET
3. With Non-Reverse Ratchet Mechanism .(Ball Type)
4. Rotating Direction : Counter-Clock-Wise (View From Top Side) .
5. *Marked Bearings Is Oil Lubricated , The Other is Grease Lubricated .

OUTLINE DIMENSIONS SHEET

MODEL

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HIGH THRUST HOLLOWSHAFT PUMP MOTORS COUPLING



Dimension in inches

FRAME SIZE	BX	BY	BZ	EW	R	XB	XD	XE	XF
213T 215T	0.751	No.10 - 32 UNF	1.375	0.188	0.845	1.750	0.406	2	1.125
	0.876	No.10 - 32 UNF	1.375	0.188	0.970	1.750	0.406	2	1.125
	0.938	No.10 - 32 UNF	1.375	0.250	1.078	1.750	0.406	2	1.125
	*1.001	No.10 - 32 UNF	1.375	0.250	1.126	1.750	0.406	2	1.125
254T 256T	0.751	No.10 - 32 UNF	1.375	0.188	0.845	2.17	0.41	2.25	1.23
	0.876	No.10 - 32 UNF	1.375	0.188	0.970	2.17	0.41	2.25	1.23
	*1.001	No.10 - 32 UNF	1.375	0.250	1.126	2.17	0.41	2.25	1.23
	1.188	1/4" - 20 UNC	1.750	0.250	1.313	2.17	0.41	2.25	1.23
	1.251	1/4" - 20 UNC	1.750	0.250	1.376	2.17	0.41	2.25	1.23
284T 286T	0.751	No.10 - 32 UNF	1.375	0.188	0.845	2.17	0.41	2.25	1.23
	0.876	No.10 - 32 UNF	1.375	0.188	0.970	2.17	0.41	2.25	1.23
	*1.001	No.10 - 32 UNF	1.375	0.250	1.126	2.17	0.41	2.25	1.23
	1.188	1/4" - 20 UNC	1.750	0.250	1.313	2.17	0.41	2.25	1.23
	1.251	1/4" - 20 UNC	1.750	0.250	1.376	2.17	0.41	2.25	1.23
324T 326T	1.001	No.10 - 32 UNF	1.375	0.250	1.126	2.54	0.41	2.875	1.54
	*1.188	1/4" - 20 UNC	1.750	0.250	1.313	2.54	0.41	2.875	1.54
	1.251	1/4" - 20 UNC	1.750	0.250	1.376	2.54	0.41	2.875	1.54
	1.438	1/4" - 20 UNC	2.125	0.375	1.625	2.54	0.47	2.875	1.54
	1.501	1/4" - 20 UNC	2.125	0.375	1.688	2.54	0.47	2.875	1.54
364T 365T	1.001	No.10 - 32 UNF	1.375	0.250	1.126	2.54	0.41	2.875	1.54
	*1.188	1/4" - 20 UNC	1.750	0.250	1.313	2.54	0.41	2.875	1.54
	1.251	1/4" - 20 UNC	1.750	0.250	1.376	2.54	0.41	2.875	1.54
	1.438	1/4" - 20 UNC	2.125	0.375	1.625	2.54	0.53	2.875	1.54
	1.501	1/4" - 20 UNC	2.125	0.375	1.688	2.54	0.53	2.875	1.54
404T 405T	1.188	1/4" - 20 UNC	1.750	0.250	1.313	2.76	0.53	3.15	1.5
	1.251	1/4" - 20 UNC	1.750	0.250	1.376	2.76	0.53	3.15	1.5
	1.438	1/4" - 20 UNC	2.125	0.375	1.625	2.76	0.53	3.15	1.5
	*1.501	1/4" - 20 UNC	2.125	0.375	1.688	2.76	0.53	3.15	1.5
	1.688	1/4" - 20 UNC	2.500	0.375	1.891	2.76	0.53	3.15	1.5
	1.751	1/4" - 20 UNC	2.500	0.375	1.954	2.76	0.53	3.15	1.5

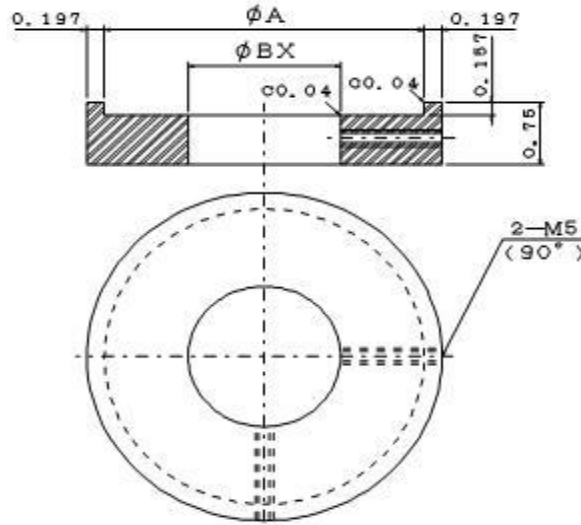
- Note :**
1. Tolerance On BX Dimension Up To And Including 1.500 Inches Diameter : +0.001 inches -0.000 inches,
Larger Than 1.500 Inches Diameter : +0.0015 inches -0.0000 inches.
 2. Dimension EW Tolerance : +0.002 inches -0.000 inches.
 3. Dimension R Tolerance : +0.010 inches -0.000 inches.
 4. * Marked, Applied To Standard Size For Each Frame.

OUTLINE DIMENSIONS SHEET

MODEL

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HIGH THRUST HOLLOWSHAFT PUMP MOTORS
STEADY BUSHING



Dimension in inches

FRAME	A	BX	FRAME	A	BX
182T 184T	1.18	*0.751	324T 326T	2.83	1.001
213T 215T	1.77	0.751			1.251
		0.876			1.438
		0.938			1.501
		*1.001	1.001		
254T 256T	1.77	0.751	364T 365T	3.03	*1.188
		0.876			1.251
		*1.001			1.438
		1.188			1.501
		1.251			1.188
284T 286T	2.17	0.751	404T 405T	3.54	1.251
		0.876			1.438
		*1.001			*1.501
		1.188			1.688
		1.251			1.751

Note : 1. Tolerance On BX Dimension Up To And Including 1.500 inches Diameter : 0 ~ +0.001 inches;

Larger Than 1.500 inches Diameter : 0 ~ +0.0015 inches.

2. * Marked, Applied To Standard Size For Each Frame.