東元低壓全密型TEFC泵浦用馬達

MODEL： AEEHNH

HIGH THRUST HOLLOWSHAFT PUMP MOTORS
LOW VOLTAGE SQUIRREL CAGE
FRAME SIZE：182TP ~ 405TP

DWG NO.
31049J16501
REV.03

SPECIFICATION TABLE

HIGH THRUST HOLLOWSHAFT PUMP MOTORS
LOW VOLTAGE SQUIRREL CAGE

MODEL
AEEHNH

ITEM		STANDARD SPECIFICATION
RATING	Kind of Motors	Squirrel Cage Induction Motors (SCIM),VHS,TEFC
	Design Standards	NEMA MG-1, EPAct Efficiency / Premium Efficiency
	Voltages	230V / 460V (208V De-Rating Operation) , 460V , 575V
	Frequency	60Hz
	Output Range	1HP ~ 100HP
	R.P.M. (Syn.)	3600 ~ 900 R.P.M. (2 , 4 , 6 And 8 Poles)
	Time Duty	Continuous , S.F. 1.15
	Frame Size	182TP ~ 405TP
	Protection Enclosure	Totally Enclosed Fan Cooled (IPW44)
	Cooling Method	Self External Fan, Surface Cooling (IC 411)
	Mounting	Flange Mounting (IM3011)
	High Thrust Load	As PERFORMANCE DATA
APPLICATION	Power Conditions	Voltage：±10%, Frequency：±5%, And ±10% Max. Of Combined Voltage And Frequency, But Frequency Variation Does Not Exceed ±5%.
	Designed Primarily	For Deep Well Turbine Pump
	Environment Conditions	Place：Outdoor , Non-Hazardous , Ambient Temperature：-15℃ ~ 40℃ Relative Humidity：Less Than 90%RH (Non-Condensation). Altitude：Less Than 3,300ft CSA Class I, Div 2, Group B, C & D, T3
	Operating Conditions	For Coupling
	Direction of Rotation	Counter-Clock-Wise (View From Top Side)
	Method of Starting	Full Voltage Direct-On-Line or VFD or □ - △ Starting
PERFORMANCE	Test Procedure	Space Heater Terminated in Main Terminal Box
	Temperature Rise	Not to exceed 90℃ (Fr# 400VP:105℃) for S.F. 1.15 or 80℃ 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 MOTOR
LOW VOLTAGE SQUIRREL CAGE

MODEL
AEEHNH

NEMA Premium

TEFC , NEMA T - FRAME , DESIGN - B ,
CLASS F , 40℃ AMBIENT , CONTINUOUS DUTY ,
S.F. 1.15 230/460V 60Hz

TYPICAL PERFORMANCE (230V)

HP	FULL LOAD RPM	FRAME SIZE	EFFICIENCY(%) FULL LOAD NOM.	EFFICIENCY(%) FULL LOAD MIN.	EFFICIENCY(%) 3/4 LOAD NOM.	EFFICIENCY(%) 1/2 LOAD NOM.	POWER FACTOR(%) FULL LOAD	POWER FACTOR(%) 3/4 LOAD	POWER FACTOR(%) 1/2 LOAD	CURRENT FULL LOAD (A)	CURRENT LOCKED ROTOR (A)	TORQUE FULL LOAD lb-ft	TORQUE LOCKED ROTOR %FLT	TORQUE PULL UP %FLT	TORQUE BREAK DOWN %FLT	ROTOR WK^2 $lb\text{-}ft^2$	DOWN THRUST lbs	NEMA CODE LETTER
1	860	182TP	77.0	74.0	75.5	70.0	58.5	49.5	38.0	4.16	30	6.105	200	150	270	0.239	2200	N
1.5	1170	182TP	87.5	85.5	85.5	82.5	63.5	55.0	42.5	5.06	40	6.731	210	190	350	0.313	2000	M
	860	184TP	78.5	75.5	76.0	71.0	60.5	51.5	39.5	5.91	40	9.158	200	150	270	0.275	2200	M
2	1170	184TP	88.5	86.5	88.5	86.5	70.5	63.0	50.5	6.00	50	8.975	180	150	270	0.423	2000	L
	865	213TP	85.5	82.5	84.0	81.0	68.0	58.0	45.0	6.44	50	12.14	200	190	290	0.586	3300	L
3	3490	182TP	88.5	86.5	90.2	89.5	90.0	87.0	79.5	7.05	64	4.513	280	250	380	0.190	1400	K
	1755	182TP	89.5	87.5	89.5	87.5	81.5	77.0	66.5	7.70	64	8.975	225	175	300	0.367	1750	K
	1175	213TP	89.5	87.5	89.5	87.5	78.0	70.5	58.5	7.17	64	13.41	210	180	340	0.918	2950	K
	865	215TP	85.5	82.5	85.5	83.0	66.0	56.0	45.0	9.96	64	18.21	240	210	300	0.821	3300	K
5	3480	184TP	88.5	86.5	89.5	89.5	92.5	91.0	85.5	11.4	92	7.544	290	230	320	0.272	1400	J
	1745	184TP	89.5	87.5	88.5	88.5	85.5	81.5	71.5	12.2	92	15.04	185	140	285	0.422	1750	J
	1170	215TP	91.0	89.5	91.0	89.5	82.5	77.0	65.5	11.5	92	22.44	190	160	300	1.224	2950	J
	870	254TP	87.5	85.5	87.5	86.5	72.0	64.0	51.0	14.9	92	30.18	190	180	250	1.660	4200	J
7.5	3510	213TP	91.0	89.5	91.0	90.2	89.0	87.0	80.0	17.3	127	11.22	200	175	275	0.448	2000	H
	1755	213TP	91.7	90.2	91.0	89.5	86.5	82.0	72.0	17.7	127	22.44	250	155	270	0.848	2600	H
	1170	254TP	91.0	89.5	91.0	89.5	80.5	75.0	64.0	17.2	127	33.66	240	215	270	2.158	3850	H
	875	256TP	87.5	85.5	87.5	85.5	74.0	66.0	53.0	21.7	127	45.00	220	190	280	2.872	4200	H
10	3510	215TP	91.0	89.5	91.7	91.0	89.5	88.5	82.5	23.0	162	14.96	220	180	260	0.573	2000	H
	1755	215TP	91.7	90.2	91.0	91.0	88.0	84.0	75.5	23.2	162	29.92	250	145	260	1.082	2600	H
	1170	256TP	91.0	89.5	91.7	90.2	80.5	75.0	64.0	22.8	162	44.88	225	185	250	2.872	3850	H
	885	284TP	90.2	88.5	90.2	89.5	73.5	66.0	53.5	28.2	162	59.33	235	210	280	5.421	4400	H
15	3525	254TP	92.4	91.0	92.4	91.7	91.5	90.5	86.0	33.2	232	22.34	210	180	270	1.088	2700	G
	1765	254TP	92.4	91.0	93.0	92.4	88.0	85.0	77.0	34.5	232	44.62	245	180	270	2.179	3350	G
	1175	284TP	92.4	91.0	93.0	93.0	83.5	79.5	70.5	32.7	232	67.03	215	180	230	6.823	3850	G
	875	286TP	90.2	88.5	90.2	90.2	78.0	73.0	62.0	39.9	232	90.01	200	170	230	7.961	4400	G
20	3520	256TP	92.4	91.0	93.0	93.6	92.5	91.5	88.0	43.8	290	29.83	210	180	260	1.407	2700	G
	1760	256TP	93.0	91.7	92.4	92.4	87.5	84.5	78.5	46.0	290	59.66	200	145	240	2.871	3350	G
	1170	286TP	91.7	90.2	92.4	92.4	84.0	81.0	73.0	44.2	290	89.75	210	160	225	8.340	3850	G
	875	324TP	91.0	89.5	91.7	91.7	81.0	77.0	68.0	50.8	290	120.0	200	150	210	10.390	6000	G
25	3545	284TP	92.4	91.0	93.0	92.4	91.0	90.5	86.5	55.7	365	37.03	175	135	250	2.507	2700	G
	1765	284TP	93.6	92.4	93.6	93.6	86.0	83.0	77.0	58.2	365	74.37	205	165	240	4.586	3350	G
	1170	324TP	93.0	91.7	93.6	93.6	83.0	80.0	71.5	53.8	365	112.2	200	155	205	11.877	5200	G
	875	326TP	91.0	89.5	91.7	91.7	80.0	76.0	66.0	64.3	365	150.0	200	170	220	12.370	6000	G
30	3545	286TP	93.0	91.7	93.6	93.0	91.0	90.5	87.5	66.4	435	44.43	175	140	240	2.831	2700	G
	1770	286TP	93.6	92.4	93.6	93.6	87.5	85.5	79.5	68.6	435	88.99	200	160	235	5.274	3350	G
	1175	326TP	93.0	91.7	93.6	93.6	80.5	78.5	71.0	64.5	435	134.1	210	180	230	12.372	5200	G
	885	364TP	93.0	91.7	93.0	92.4	78.0	73.0	61.0	77.4	435	178.0	210	170	240	17.940	7500	G
40	3550	324TP	94.1	93.0	94.5	94.1	90.0	89.0	84.5	88.4	580	59.16	150	130	240	3.590	3600	G
	1770	324TP	94.1	93.0	94.5	94.5	86.0	84.5	78.5	92.6	580	118.7	205	170	220	8.624	4500	G
	1180	364TP	94.1	93.0	94.5	94.1	86.5	84.5	78.0	84.6	580	178.0	200	150	220	17.937	6600	G
	885	365TP	93.0	91.7	93.0	92.4	78.0	73.0	62.0	103	580	237.3	210	160	230	19.320	7500	G
50	3550	326TP	94.1	93.0	94.5	94.5	91.0	90.0	86.5	109	725	73.95	150	130	240	4.488	3600	G
	1770	326TP	94.5	93.6	95.0	95.0	87.0	86.0	80.5	114	725	148.3	210	170	220	10.124	4500	G
	1180	365TP	94.1	93.0	94.5	93.6	86.0	83.0	75.5	106	725	222.5	225	170	240	21.386	6600	G
	885	404TP	93.0	91.7	93.6	93.6	81.0	77.0	68.0	124	725	296.6	210	175	230	31.470	10500	G
60	3550	364TP	94.1	93.0	94.5	94.1	93.0	92.0	88.5	128	870	88.74	145	130	240	7.379	3600	G
	1775	364TP	95.0	94.1	95.0	94.5	86.5	83.0	75.5	137	870	177.5	200	155	240	12.229	6000	G
	1180	404TP	94.5	93.6	94.5	94.1	87.0	86.5	80.5	126	870	267.0	200	185	245	33.535	9000	G
	885	405TP	93.0	91.7	93.6	93.6	81.0	78.0	68.0	149	870	356.0	200	180	230	32.550	10500	G
75	3555	365TP	94.5	93.6	95.0	95.0	93.0	92.5	89.0	160	1085	110.8	145	130	250	9.056	3600	G
	1775	365TP	95.4	94.5	95.4	95.0	86.5	83.5	75.5	170	1085	221.9	200	165	250	14.674	6000	G
	1180	405TP	94.5	93.6	94.5	94.5	86.5	84.5	79.0	157	1085	333.7	200	175	225	37.862	9000	G
100	3560	405TP	95.4	94.5	95.8	95.4	92.0	91.5	88.5	213	1450	147.5	140	125	270	10.773	3600	G
	1775	405TP	95.4	94.5	95.4	95.0	87.5	85.5	80.0	224	1450	295.8	215	140	215	26.637	7900	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. Declared efficiency havn't taken into account of thrust load losses.
5. Tolerance According to NEMA MG1-12 & IEC 60034-1.
6. Thrust load losses estimated as follows : (According to NEMA standard MG1-12.7).

FRAME SIZE	2 P	4, 6, 8 P	FRAME SIZE	2 P	4, 6, 8 P
182TP ~ 184TP	0.0076	0.0076	324TP ~ 326TP	0.0151	0.0151
213TP ~ 215TP	0.0104	0.0104	364TP ~ 365TP	0.0170	0.0180
254TP ~ 256TP	0.0113	0.0113	404TP ~ 405TP	0.0189	0.0227
284TP ~ 286TP	0.0123	0.0123			

UNIT : LOSS HP / 100 RPM / 1000 LB THRUST

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

% THRUST	100	83	75	65	59	54
Min. Life (Hrs)	8800	15000	20000	30000	40000	50000

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

OUTLINE DIMENSIONS SHEET

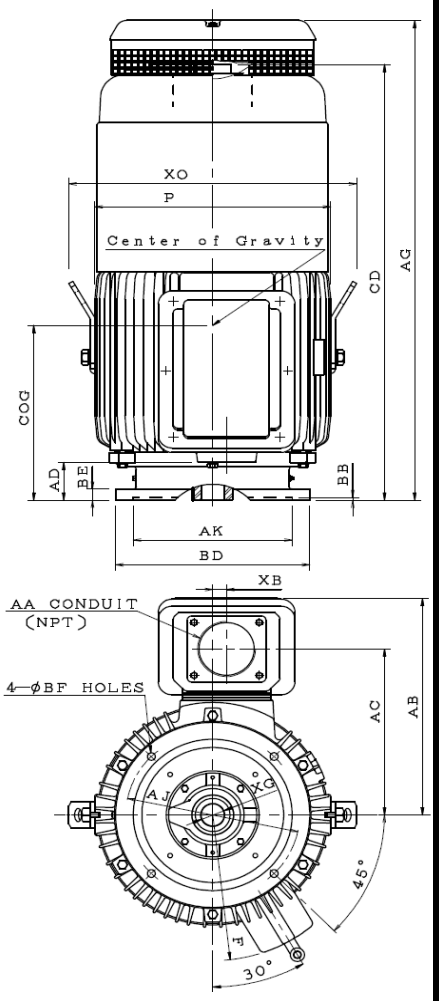
HIGH THRUST HOLLOWSHAFT PUMP MOTORS
FRAME SIZE 182TP~405TP

MODEL
AEEHNH

Totally Enclosed Fan Cooled Vertical Type . Squirrel Cage Rotor .

Dimension in inches

Output (HP)				FRAME	Mounting						AG	CD	P	XG
2P	4P	6P	8P	SIZE	AK	AJ	BD	BF	BB	BE				
3	3	1.5	1	182TP	8.25	9.125	9.85	0.44	0.20	0.79	18.287	15.886	9.37	0.866
5	5	2	1.5	184TP	8.25	9.125	9.85	0.44	0.20	0.79	19.311	16.907	9.37	0.866
7.5	7.5	3	2	213TP	8.25	9.125	10.00	0.44	0.20	0.79	22.047	19.742	10.75	0.866
10	10	5	3	215TP	8.25	9.125	10.00	0.44	0.20	0.79	23.543	21.238	10.75	0.866
15	15	7.5	5	254TP	8.25	9.125	10.00	0.44	0.20	0.59	24.589	22.360	13.15	1.378
20	20	10	7.5	256TP	8.25	9.125	10.00	0.44	0.20	0.59	26.321	24.093	13.15	1.378
25	25	15	10	284TP	8.25	9.125	10.00	0.44	0.20	0.58	26.986	24.010	15.04	1.378
30	30	20	15	286TP	8.25	9.125	10.00	0.44	0.20	0.58	28.482	25.506	15.04	1.378
40	40	25	20	324TP	13.50	14.750	16.50	0.69	0.25	0.80	30.427	27.593	16.54	1.653
50	50	30	25	326TP	13.50	14.750	16.50	0.69	0.25	0.80	31.923	29.089	16.54	1.653
60	—	—	—	364TP	13.50	14.750	16.50	0.69	0.25	0.88	36.989	32.658	18.03	1.653
—	60	40	30								34.588	30.257		
75	—	—	—	365TP	13.50	14.750	16.50	0.69	0.25	0.88	37.973	33.643	18.03	1.653
—	75	50	40								35.572	31.241		
—	—	60	50	404TP	13.50	14.750	16.50	0.69	0.25	1.01	42.798	38.869	20.07	2.000
100	—	—	—	405TP	13.50	14.750	16.50	0.69	0.25	1.01	44.294	40.385	20.07	2.000
—	100	75	60											



FRAME SIZE	XO	F	Terminal Housing					Bearings		APPROX. WEIGHT	COG	RCF
			AA (NPT)	AB	AC	AD	XB	LOWER END	UPPER END	LBS		
182TP	11.770	—	3/4"	8.27	6.380	3.35	0.59	6306ZZC3	7308B	93	6.2	180.9
184TP	11.770	—	3/4"	8.27	6.380	3.86	0.59	6306ZZC3	7308B	111	6.8	163.6
213TP	13.390	—	1"	9.80	7.360	4.41	0.51	6209ZZC3	7310B	184	7.8	123.9
215TP	13.390	—	1"	9.80	7.360	5.16	0.51	6209ZZC3	7310B	214	8.7	113.0
254TP	17.087	—	1 1/4"	11.30	8.858	4.96	0.39	6309ZZC3	7311B	322	10.3	133.0
256TP	17.087	—	1 1/4"	11.30	8.858	5.82	0.39	6309ZZC3	7311B	383	11.4	100.0
284TP	18.980	—	1 1/2"	12.28	9.840	6.08	0.39	6311ZZC3	7312B	481	11.7	87.0
286TP	18.980	—	1 1/2"	12.28	9.840	6.82	0.39	6311ZZC3	7312B	516	12.6	67.0
324TP	20.470	—	2"	14.72	11.300	5.31	0.79	6312C3	7315B	702	12.9	76.0
326TP	20.470	—	2"	14.72	11.300	6.05	0.79	6312C3	7315B	743	13.8	73.5
364TP	22.640	12.00	3"	16.81	12.990	3.72	1.18	6313C3	(* 7220B)	1147	14.1	65.7
		—						6313C3	7318B	915		
365TP	22.640	12.00	3"	16.81	12.990	4.21	1.18	6313C3	(* 7220B)	1255	14.7	62.5
		—						6313C3	7318B	1001		
404TP	24.570	12.99	3"	19.41	14.760	3.38	1.18	6315C3	* 7322B	1340	14.7	50.6
405TP	24.570	12.99	3"	19.41	14.760	4.13	1.18	6315C5	(* 7222B)	1373	16.5	49.0
								6315C5	* 7322B	1499		

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 Coupling End)

5.Upper Bearing（Thrust Bearing）Oil Lubrication Recommended
Oil : Turbine Oil Whose Viscosity 145 to 175 S.S.U. 100℉ .

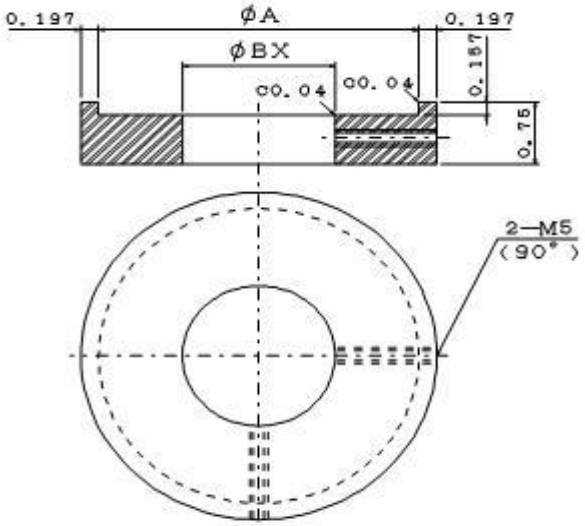
6.*Marked Bearings is Oil Lubricated , The Other is Grease Lubricated .

7.Parentheses Bearing Numbers Apply for 2 Pole Motors .

OUTLINE DIMENSIONS SHEET

HIGH THRUST HOLLOWSHAFT PUMP MOTORS
STEADY BUSHING

MODEL
AEEHNH



Dimension in inches

FRAME	A	BX
182T 184T	1.18	*0.751
213T 215T	1.77	0.751
		0.876
		0.938
		*1.001
254T 256T	1.77	0.751
		0.876
		*1.001
		1.188
		1.251
284T 286T	2.17	0.751
		0.876
		1.001
		*1.188
		1.251

FRAME	A	BX
324T 326T	2.83	1.001
		*1.188
		1.251
		1.438
		1.501
364T 365T	3.03	1.001
		*1.188
		1.251
		1.438
		1.501
404T 405T	3.54	1.188
		1.251
		1.438
		*1.501
		1.688
		1.751

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

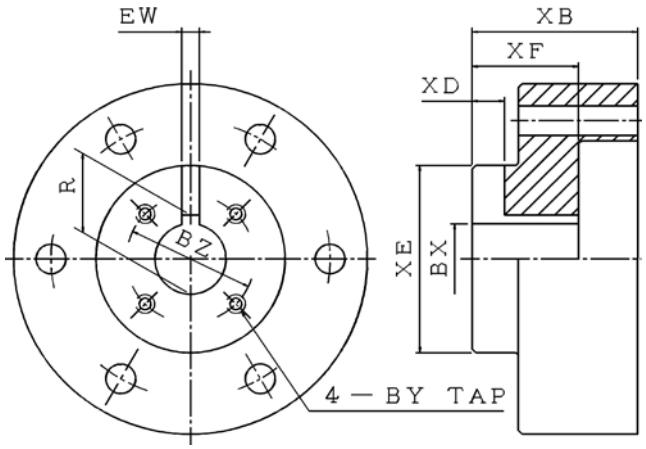
Larger Than 1.500 inches Diameter： 0 ~ +0.0015 inches.

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

OUTLINE DIMENSIONS SHEET

MODEL **AEEHNH**

HIGH THRUST HOLLOWSHAFT PUMP MOTORS
FRAME SIZE 182TP~405TP



Dimension in inches

FRAME SIZE	BX	BY	BZ	EW	R	XB	XD	XE	XF
182TP 184TP (112S) (112M)	0.751	No. 10-32 UNF	1.375	0.188	0.845	1.750	0.343	2.000	1.125
213TP 215TP (132S) (132M)	0.751	No. 10-32 UNF	1.375	0.188	0.845	1.750	0.343	2.000	1.125
	0.876	No. 10-32 UNF	1.375	0.188	0.970	1.750	0.343	2.000	1.125
	*1.001	No. 10-32 UNF	1.375	0.250	1.126	1.750	0.406	2.000	1.125
254TP 256TP (160M) (160L)	0.751	No. 10-32 UNF	1.375	0.188	0.845	2.560	0.343	2.250	1.625
	0.876	No. 10-32 UNF	1.375	0.188	0.970	2.560	0.343	2.250	1.625
	*1.001	No. 10-32 UNF	1.375	0.250	1.126	2.560	0.406	2.250	1.625
	1.188	1/4-20 UNC	1.750	0.250	1.313	2.560	0.406	2.250	1.625
284TP 286TP (180M) (180L)	0.876	No. 10-32 UNF	1.375	0.188	0.970	2.560	0.343	2.250	1.625
	1.001	No. 10-32 UNF	1.375	0.250	1.126	2.560	0.406	2.250	1.625
	*1.188	1/4-20 UNC	1.750	0.250	1.313	2.560	0.406	2.250	1.625
	1.251	1/4-20 UNC	1.750	0.250	1.376	2.560	0.406	2.250	1.625
324TP 326TP (200L)	1.001	No. 10-32 UNF	1.375	0.250	1.126	3.331	0.406	2.875	2.331
	*1.188	1/4-20 UNC	1.750	0.250	1.313	3.331	0.406	2.875	2.331
	1.251	1/4-20 UNC	1.750	0.250	1.376	3.331	0.406	2.875	2.331
	1.438	1/4-20 UNC	2.125	0.375	1.625	3.331	0.531	2.875	2.331
364TP 365TP (225S) (225M)	*1.188	1/4-20 UNC	1.750	0.250	1.313	3.331	0.406	2.875	2.331
	1.251	1/4-20 UNC	1.750	0.250	1.376	3.331	0.406	2.875	2.331
	1.438	1/4-20 UNC	2.125	0.375	1.625	3.331	0.531	2.875	2.331
	1.501	1/4-20 UNC	2.125	0.375	1.688	3.331	0.531	2.875	2.331
404TP 405TP (250S) (250M)	*1.501	1/4-20 UNC	2.125	0.375	1.688	3.543	0.531	3.150	2.441

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 Table Applied To Standard Size For Each Frame