NEMA Frame Explosion Proof Motors

Features:

- AEX Series High Efficiency Three Phase explosion proof Motors (Frame 140-440) are developed in line with NEMA Standards, which ratings, mounting dimensions and electrical performances meet the requirements of latest NEMA Standards, among which efficiencies meet the requirements of NEMA MG1.12-1995, which is equal to CSA C390, 1993 Standard. Measurement of efficiency and losses is as per IEEE112B.
- One thermistor is equipped in the stator winding which will trip at 145 ℃ to protect the winding from burning.
- Explosion proof features: Class 1, Division 1, Group C and D Class ll, Division l, Group E, F and G. Temperature Code: T3C
- High efficiency and energy saving, low noise, little vibration, large margin of safety in temperature rise, popular shape, safe and reliable operation.
- NEMA Design B. Insulation Class F., Service factor 1.15. Rated voltage 230/460V or 575V. Frequency is 60Hz. Protection is IP55 and cooling is IC0141.
- Suitable for the applications without special requirements to drive various machinery and equipment. The maximum ambient temperature shall not exceed 40 ℃and altitude shall not exceed 3300 ft (1000 m).
- Vacuum-pressure-impregnated (VPI) treated to be a solid integral. This process enables the winding to have excellent electrical and mechanical properties, high moisture resistance and thermal stability.
- The cast aluminum rotor is fixed on the shaft by means of hot fit. The rotor is dynamically balanced to achieve little vibration.
- Shielded ball bearings are adopted for frame 143T ～ 215T motors. And bearings open with covers are adopted for frame 254T ～ 449T motors. Such motors are fitted with re-greasing nipples.
- The conduit box is on the central line of the enclosure. It can be F1/F2convertible. The conduit box is made of cast iron. And the opening is of NPT threads. There are grounding bolts and connection diagram inside the conduit box.
- The fan is made of cast iron. The fan cover is made of steel sheet or cast iron

Application:

- These motors are used in hazardous environments having certain explosive gases or materials present.
- Class I

  Group C: Acetaldehyde, cyclopropane, diethyl ether, ethylene

  Group D: Acetone, acrylonitrile, ammonia, benzene, butane, ethanol ethylene dichloride, gasoline, hexane, isoprene, methane (natural gas), methanol, naphtha, propane, propylene, styrene, toluene, vinyl acetate, vinyl chloride, xylene.
- Class II

  Group E: Aluminum, magnesium and other metal dusts with similar characteristics.

  Group F: Carbon black, coke or coal dust.

  Group G: Flour, starch or grain dust.

Table 1

HP	3600 RPM	1800 RPM	1200 RPM	900 RPM
0.5				143T
0.75			143T	145T
1		143T	145T	182T
1.5	143T	145T	182T	184T
2	145T	145T	184T	213T
3	182T	182T	213T	215T
5	184T	184T	215T	254T
7.5	213T	213T	254T	256T
10	215T	215T	256T	284T
15	254T	254T	284T	286T
20	256T	256T	286T	324T
25	284TS	284T	324T	326T
30	286TS	286T	326T	364T
40	324TS	324T	364T	365T
50	326TS	326T	365T	404T
60	364TS	364TS+	404T	405T
75	365TS	365TS+	405T	444T
100	405TS	405TS+	444T	445T
125	444TS	444TS+	445T	447T
150(200)	445TS	445TS+	447T	449T
200(250)	447TS	447/9TS+	449T	
250(300)	449TS	449TS+	449T	

***When motors are to be used with V-belt or chain device, the correct frame size is the frame size shown but the suffix letter S omitted**

TECHNICAL DATA

Model	HP	Speed (RPM)	Frame	Volt Code*	Efficiency (%)			Power Factor (%)			Torque (ft.lbs)			Ampere (460V)		Weight (lbs)
					100%	75%	50%	100%	75%	50%	FLT	BDT	LRT	FLA	LRA	
AEX143/1-4P	1	1725	143T	A,B	82.5	81.7	78.1	69	60	47	3.04	9.2	8.5	1.65	15	66
AEX145/1-6P	1	1150	145T	A,B	80.0	78.0	75.2	63	50	38	4.57	12.3	7.8	1.86	15	66
AEX143/1,5-2P	1.5	3445	143T	A,B	82.5	83.1	82.5	84	79	70	2.29	5.8	4.1	2.02	20	62
AEX145/1.5-4P	1.5	1720	145T	A,B	84.0	83.8	81.0	73	64	49	4.58	12.6	11.5	2.29	20	70
AEX182/1.5-6P	1.5	1160	182T	A,B	85.5	84.9	82.5	68	58	43	6.79	17.3	11.5	2.42	20	110
AEX145/2-2P	2	3505	145T	A,B	84.0	85.7	84.0	86	81	71	3.05	9.4	5.3	2.59	25	70
AEX145/2-4P	2	1745	145T	A,B	84.0	87.7	83.5	78	71	56	6.1	16.8	14.6	2.86	25	79
AEX184/2-6P	2	1165	184T	A,B	86.5	87.4	83.9	70	60	46	9.05	22.2	14.9	3.09	25	112
AEX182/3-2P	3	3505	182T	A,B	85.5	88.2	84.7	87	81	71	4.49	10.5	7.4	3.78	32	114
AEX182/3-4P	3	1745	182T	A,B	87.5	88.2	86.4	81	73	62	9.03	23.1	19.9	3.97	32	121
AEX213/3-6P	3	1165	213T	A,B	87.5	87.8	86.1	73	65	53	13.50	31.7	21.6	4.40	32	187
AEX184/5-2P	5	3505	184T	A,B	87.5	89.0	87.9	90	87	80	7.49	16.5	11.6	5.95	46	130
AEX184/5-4P	5	1745	184T	A,B	87.5	89.8	87.4	84	79	69	15.0	34.5	28.5	6.37	46	134
AEX215/5-6P	5	1165	215T	A,B	87.5	90.0	86.4	75	70	58	22.5	49.5	34.6	7.14	46	207
AEX213/7.5-2P	7.5	3505	213T	A,B	88.5	90.1	88.8	89	87	82	11.2	22.9	16.2	8.92	63	231
AEX213/7.5-4P	7.5	1745	213T	A,B	89.5	89.9	87.9	81	75	64	22.6	49.7	40.7	9.09	63	242
AEX254/7.5-6P	7.5	1170	254T	A,B	89.5	90.5	89.7	75	70	62	33.6	70.6	52.1	9.83	63	275
AEX215/10-2P	10	3505	215T	A,B	89.5	90.6	89.8	88	87	83	15.0	30.8	21.0	11.9	81	264
AEX215/10-4P	10	1745	215T	A,B	89.5	91.4	88.9	81	78	60	30.1	61.7	91.2	12.9	81	262
AEX256/10-6P	10	1170	256T	A,B	89.5	91.0	90.2	78	75	66	44.9	92.1	69.9	13.3	81	308
AEX254/15-2P	15	3520	254T	A,B	90.2	90.9	90.5	90	88	83	22.4	45.9	30.2	17.3	116	330
AEX254/15-4P	15	1760	254T	A,B	91.0	91.5	90.8	85	81	72	44.7	91.6	73.7	18.2	116	341
AEX284/15-6P	15	1170	284T	A,B	90.2	91.4	89.9	83	79	70	67.3	138.0	97.6	18.8	116	495
AEX256/20-2P	20	3515	256T	A,B	90.2	91.5	91.0	91	90	85	29.9	61.3	404	22.8	145	363
AEX256/20-4P	20	1755	256T	A,B	91.0	93.1	91.3	85	83	75	59.8	123	92.7	24.2	145	374
AEX256/20-6P	20	1170	286T	A,B	90.2	91.9	91.5	84	81	73	89.7	184	126	24.7	145	550
AEX284/25-2P	25	3525	284TS	A,B	91.0	91.6	91.4	90	89	85	37.2	76.3	50.2	28.6	182	462
AEX284/25-4P	25	1765	284T	A,B	92.4	93.1	93.0	90	87	81	74.4	153	115	28.2	182	572
AEX324/25-6P	25	1175	T324	A,B	91.7	91.9	91.4	83	79	70	111.7	229	156	30.8	182	616
AEX286/30-2P	30	3525	286TS	A,B	91.0	91.0	91.5	91	90	86	44.7	91.6	60.3	33.9	217	528
AEX286/30-4P	30	1765	286T	A,B	92.4	93.4	93.0	90	88	82	89.2	183	138	33.8	217	627
AEX326/30-6P	30	1175	326T	A,B	91.7	93.3	91.4	84	80	71	134.0	275	188	36.5	217	660
AEX324/40-2P	40	3540	324TS	A,B	91.7	92.6	91.7	90	84	84	59.3	122	77.1	45.4	290	649
AEX324/40-4P	40	1770	324T	A,B	93.0	93.5	93.1	89	86	80	118.6	243	172	45.3	290	669
AEX364/40-6P	40	1180	364T	A,B	93.0	93.4	93.0	85	81	74	178.0	365	249	47.4	290	869
AEX326/50-2P	50	3550	326TS	A,B	92.4	93.1	92.2	90	89	84	73.9	152	92.4	56.2	362	693
AEX326/50-4P	50	1770	326T	A,B	93.0	93.8	93.3	89	87	81	148.3	304	215	56.6	362	715
AEX365/50-6P	50	1180	365T	A,B	93.0	94.0	93.1	86	83	76	222.5	456	312	58.6	362	902
AEX346/60-2P	60	3560	346TS	A,B	93.0	93.2	92.7	90	88	84	88.5	181	111	67.2	435	875
AEX346/60-4P	60	1775	346T	A,B	93.6	94.3	93.6	89	87	82	177.5	364	257	67.5	435	880
AEX404/60-6P	60	1185	404T	A,B	93.6	94.0	93.9	87	85	80	265.8	545	372	69.0	435	1166
AEX365/75-2P	75	3565	365TS	A,B	93.0	93.9	92.8	91	89	85	110.4	226	121	83.0	542	902
AEX365/75-4P	75	1775	365T	A,B	94.1	94.8	94.1	89	87	82	221.8	455	322	83.9	542	946
AEX365/75-6P	75	1185	405T	A,B	93.6	94.4	93.9	88	87	82	332.3	681	465	85.3	542	1243
AEX405/100-2P	100	3565	405TS	A,B	93.6	93.9	93.7	91	90	87	147.3	302	162	110.0	725	1276
AEX405/100-4P	100	1775	405T	A,B	94.5	94.8	94.6	90	89	85	295.8	606	385	110.2	725	1298
AEX405/100-6P	100	1185	444T	C,B	94.1	94.4	94.2	89	88	84	443.0	908	576	111.9	725	1588
AEX444/125-2P	125	3570	T444	C,B	94.5	94.4	93.8	90	87	81	183.8	377	191	137.7	907	1551
AEX444/125-4P	125	1780	444ST	C,B	94.5	94.7	94.6	90	88	84	368.7	756	424	137.7	907	1540
AEX445/125-6P	125	1185	445T	C,B	94.1	94.5	94.3	89	88	84	553.8	1135	720	139.8	907	1698
AEX445/150-2P	150	3570	445TS	C,B	94.5	94.4	93.9	90	88	82	220.6	452	232	165.2	1085	1661
AEX445/150-4P	150	1780	445T	C,B	95.0	95.2	95.1	90	89	85	442.4	907	509	164.4	1085	1698
AEX445/150-6P	150	1185	445T	C,B	95.0	95.2	95.0	88	87	84	664.6	1362	831	168.1	1085	1830
AEX445/200-2P	200	3570	445TS	C,B	95.0	95.1	94.7	90	89	85	294.1	603	309	219.2	1450	1760
AEX445/200-4P	200	1785	445T	C,B	95.0	95.4	95.3	90	89	86	588.2	1206	618	219.2	1450	1830
AEX447/200-6P	200	1185	447T	C,B	95.0	95.2	95.1	88	87	84	886.1	1817	1107	224.2	1450	2112
AEX447/250-2P	250	3575	447TS	C,B	95.4	95.5	95.2	90	89	85	367.1	752	385	272.8	1825	1980
AEX447/250-4P	250	1785	447T	C,B	95.0	95.3	95.1	90	89	86	735.3	1507	772	274.0	1825	2090
AEX449/250-6P	250	1185	449T	C,B	95.0	95.3	95.1	88	87	84	1108	2271	1163	280.2	1825	2398
AEX449/300-2P	300	3575	449TS	C,B	95.4	95.5	95.1	90	89	85	440.6	903	463	327.4	2200	2310
AEX449/300-4P	300	1785	449T	C,B	95.4	95.7	95.6	90	89	87	882.4	1809	927	327.4	2200	2409

***Voltage code: A=208-230/460, B=575V, E=230/460V.**

Overall Dimensions inch

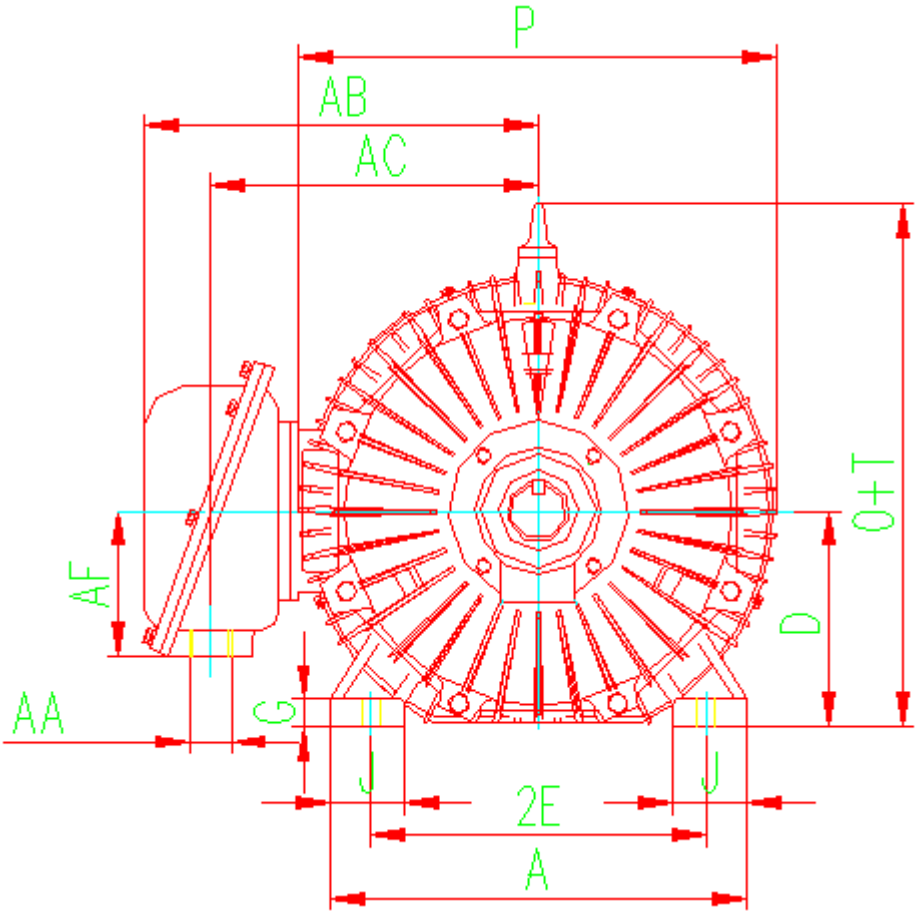
Frame	A (max.)	B (max.)	C	D	2E	2F	G	H	J	O	P	R	S	T	U	V (min.)	ES (min.)	AA (NPT)	AB	BA	N-W
143T	7.0	6.9	14.6	3.5	5.5	4.0	0.50	0.3	1.4	7.6	7.5	0.771	0.188	1.6	0.875	2.00	1.41	3/4	6.9	2.25	2.25
145T	7.0	6.9	14.6	3.5	5.5	5.0	0.50	0.3	1.4	7.6	7.5	0.771	0.188	1.6	0.875	2.00	1.41	3/4	6.9	2.25	2.25
182T	9.0	8.0	17.1	4.5	7.5	4.5	0.70	0.4	1.8	9.0	9.8	0.986	0.25	1.6	1.125	2.50	1.78	3/4	8.3	2.75	2.75
184T	9.0	8.0	17.1	4.5	7.5	5.5	0.70	0.4	1.8	9.0	9.8	0.986	0.25	1.6	1.125	2.50	1.78	3/4	8.3	2.75	2.75
213T	10.0	8.7	20.3	5.25	8.5	5.5	0.8	0.4	2.4	10.5	11.4	1.201	0.312	2	1.375	3.12	2.41	1	10.0	3.50	3.38
215T	10.0	8.7	20.3	.25	8.5	7.0	0.8	0.4	2.4	10.5	11.4	1.201	0.312	2	1.375	3.12	2.41	1	10.0	3.50	3.38
254T	12.5	12.5	26.2	6.25	10.0	8.25	0.9	0.5	2.8	13.4	14.1	1.416	0.375	2.4	1.625	3.75	2.91	1.25	13.6	4.25	4.00
256T	12.5	12.5	26.2	6.25	10.0	10.0	0.9	0.5	2.8	13.4	14.1	1.416	0.375	2.4	1.625	3.75	2.91	1.25	13.6	4.25	4.00
284T	14.0	14.0	29.6	7.0	11.0	9.5	0.9	0.5	2.8	15.2	15.8	1.501	0.5	2.4	1.875	4.38	3.28	1.5	14.3	4.75	4.62
284TS	14.0	14.0	28.2	7.0	11.0	9.5	0.9	0.5	2.8	15.2	15.8	1.416	0.375	2.4	1.625	3.00	1.91	1.5	14.3	4.75	3.25
286T	14.0	14.0	29.6	7.0	11.0	11.0	0.9	0.5	2.8	15.2	15.8	1.591	0.5	2.4	1.875	4.38	3.28	1.5	14.3	4.75	4.62
286TS	14.0	14.0	28.2	7.0	11.0	11.0	0.9	0.5	2.8	15.2	15.8	1.416	0.375	2.4	1.625	3.00	1.91	1.52	14.3	4.75	3.25
324T	16.0	15.0	33.3	8.0	12.5	10.5	1.1	0.7	2.8	17.5	18.0	1.854	0.5	2.5	2.125	5.0	3.91	2	15.6	5.25	5.25
324TS	16.0	15.5	33.7	8.0	12.5	10.5	1.1	0.7	2.8	17.5	18.0	1.591	0.5	2.5	1.875	3.5	2.03	2	15.6	5.25	3.75
326T	16.0	15.5	33.3	8.0	12.5	12.0	1.1	0.7	2.8	17.5	18.0	1.854	0.5	2.5	2.125	5.0	3.91	2	15.6	5.25	5.25
326TS	16.0	15.5	31.7	8.0	12.5	12.0	1.1	0.7	2.8	17.5	18.0	1.591	0.5	2.5	1.875	3.5	2.03	3	15.6	5.25	3.75
364T	18.0	16.2	35.5	9.0	14.0	11.25	1.1	0.7	3	19.0	19.5	2.021	0.625	2.5	2.375	5.62	4.28	3	16.5	5.88	5.88
364TS	18.0	16.2	33.3	9.0	14.0	11.25	1.1	0.7	3	19.0	19.5	1.591	0.5	2.5	1.875	3.50	2.03	3	16.5	5.88	3.75
365T	18.0	16.2	35.5	9.0	14.0	12.25	1.1	0.7	3	19.0	19.5	2.021	0.625	2.5	2.375	5.62	4.28	3	16.5	5.88	5.88
365TS	18.0	16.2	33.3	9.0	14.0	12.25	1.1	0.7	3	19.0	19.5	1.501	0.5	2.5	1.875	3.50	2.03	3	16.5	5.88	3.75
404T	20.0	17.8	38.6	10.0	16.0	12.25	1.2	0.8	3.2	21.3	21.6	2.45	0.75	2.9	2.875	7.00	5.65	3	18.7	6.62	7.25
404TS	20.0	17.8	35.6	10.0	16.0	12.25	1.2	0.8	3.2	21.3	21.6	1.045	0.5	2.9	2.125	4.00	2.78	3	18.7	6.62	4.25
405T	20.0	17.8	38.6	10.0	16.0	13.75	1.2	0.8	3.2	21.3	21.6	2.45	0.75	2.9	2.875	7.00	5.65	3	18.7	6.62	7.25
405TS	20.0	17.8	35.6	10.0	16.0	13.75	1.2	0.8	3.2	21.3	21.6	1.845	0.5	2.9	2.125	4.00	2.78	3	18.7	6.62	4.25
444T	22.0	20.5	45.8	11.0	18.0	14.5	1.4	0.8	3.4	23.5	24.0	2.88	0.875	3.5	2.375	8.25	6.91	3	19.7	7.50	8.50
444TS	22.0	20.5	41.8	11.0	18.0	14.5	1.4	0.8	3.4	23.5	24.0	2.021	0.625	3.5	2.375	4.50	3.03	3	19.7	7.50	4.75
445T	22.0	20.5	45.5	11.0	18.0	16.5	1.4	0.8	3.4	23.5	24.0	2.88	0.875	3.5	2.375	8.25	6.91	3	19.7	7.50	8.50
445TS	22.0	20.5	41.8	11.0	18.0	16.5	1.4	0.8	3.4	23.5	24.0	2.021	0.625	3.5	2.375	4.50	3.03	3	19.7	7.50	4.75
447T	22.0	29.0	57.3	11.0	18.0	20.0	1.4	0.8	3.4	23.5	24.0	2.88	0.875	4.3	2.375	8.25	6.91	3	19.7	7.50	8.50
447TS	22.0	29.0	53.5	11.0	18.0	20.0	1.4	0.8	3.4	23.5	24.0	2.021	0.625	4.3	2.375	4.50	3.03	3	19.7	7.50	4.75
449T	22.0	29.0	57.3	11.0	18.0	25.0	1.4	0.8	3.4	23.5	24.0	2.88	0.875	4.3	2.375	8.25	6.91	3	19.7	7.50	8.50
449TS	22.0	29.0	53.5	11.0	18.0	25.0	1.4	0.8	3.4	23.5	24.0	2.021	0.625	4.3	2.375	4.50	3.03	3	19.7	7.50	4.75

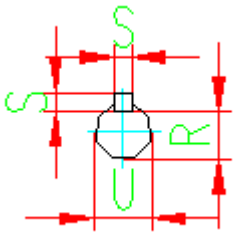
C Face Dimension inch

Frame Size	AJ	AK	BA	BB (Min)	BC	BD (Max)	BF Hole			U	AH	Key seat		
							Number	Tap Size	Bolt Penetration Allowance			R	'ES Min	S
143TC 45TC	5.9	4.5	2.75	0.16	+0.12	6.5	4	3/8-16	0.56	0.875	2.12	0.771	1.41	0.188
182TC 84TC	7.3	8.5	3.5	0.25	+0.12	9	4	1/2-13	0.75	1.125	2.62	0.986	1.78	0.25
213TC 215TC	7.3	8.5	4.25	0.25	+0.25	9	4	1/2-13	0.75	1.375	3.12	1.201	2.41	0.312
254TC 256TC	7.3	8.5	4.75	0.25	+0.25	10	4	1/2-13	0.75	1.625	3.75	1.416	2.91	0.375
284TC 286TC	9	10.5	4.75	0.25	+0.25	11.25	4	1/2-13	0.75	1.875	4.38	1.591	3.28	0.500
284TSC 286TSC	9	10.5	4.75	0.25	+0.25	11.25	4	1/2-13	0.75	1.625	3.00	1.416	1.91	0.375
324TC 326TC	11	12.5	5.25	0.25	+0.25	14	4	5/8-11	0.94	2.125	5.00	1.845	3.91	0.500
324TSC 326TSC	11	12.5	5.25	0.25	+0.25	14	4	5/8-11	0.94	1.875	3.50	1.591	2.03	0.500
364TC 365TC	11	12.5	5.88	0.25	+0.25	14	8	5/8-11	0.94	2.375	5.62	2.021	4.28	0.625
364TSC 365TSC	11	12.5	5.88	0.25	+0.25	14	8	5/8-11	0.94	1.875	3.50	1.591	2.03	0.500
404TC 405TC	11	12.5	6.62	0.25	+0.25	15.5	8	5/8-11	0.94	2.875	7.00	2.45	5.65	0.750
404TSC 405TSC	11	12.5	6.62	0.25	+0.25	15.5	8	5/8-11	0.94	2.125	4.00	1.845	2.78	0.500
444TC 445TC	14	16	7.5	0.25	+0.25	18	8	5/8-11	0.94	3.375	8.25	2.88	6.91	0.875
444TSC 445TSC	14	16	7.5	0.25	+0.25	18	8	5/8-11	0.94	2.375	4.50	2.021	3.03	0.625

D Face Dimension inch

Frame Size	AJ	Ak	BA	BB	B C	BD max	BE Nom.	BF Hole			U	AH	Key seat		
								Number	Size	Recommended Bolt Length			R	'ES Min	S
143TD 145TD	10	9	2.75	0.25	0	11	0.5	4	0.53	1.25	0.875	2.25	0.771	1.41	0.188
182TD 184TD			3.5								1.125	2.75	0.986	1.78	0.250
213TD 215TD			4.25								1.375	3.38	1.201	2.41	0.312
254TD 256TD	12.5	11	4.75			14	0.75		0.81	2	1.625	4.00	1.416	2.91	0375
284TD 286TD											1.875	4.62	1.591	3.28	0.500
284TSD 286TSD											1.625	3.25	1.416	1.91	0.375
324TD 326TD	16	14	5.25			18					2.125	5.25	1.845	3.91	0.500
324TSD 326TSD											1.875	3.75	1.591	2.03	0.500
364TD 365TD			5.88								2.375	5.88	2.021	4.28	0.625
364TSD 365TSD											1.875	3.75	1.591	2.03	0.500
404TD 405TD	20	18	6.62			22	1	8		2.25	2.875	7.25	2.45	5.65	0.750
404TSD 405TSD											2.125	4.25	1.845	2.78	0.500
444TD 445TD			7.5								3.375	8.50	2.88	6.91	0.875
444TSD 445TSD											2.375	4.75	2.021	3.03	0.625





The other 4 holes are on the central line when adopting 8 (BF) hole.

For the frames of AJ large than AK

The other 4 holes are on the central line when adopting 8 (BF) hole.