CKMS-0101

TOSHIBA

Leading Innovation

SQUIRREL CAGE THREE PHASE

INDUCTION MOTORS

INDUCTION MOTORS

Since Toshiba introduced the first motor into the Japanese market in 1895, we have continued to contribute to the development of social well-being of Japan through our motor manufacturing activities. Taking full advantage of our research & development system which is combined with extensive experiences in motor manufacturing and accumulated technologies, we have completed the development of the whole new ‘World Energy 21 Series’ which achieved both high performance and energy conservation.

Current Model“ World Energy 21 series ”

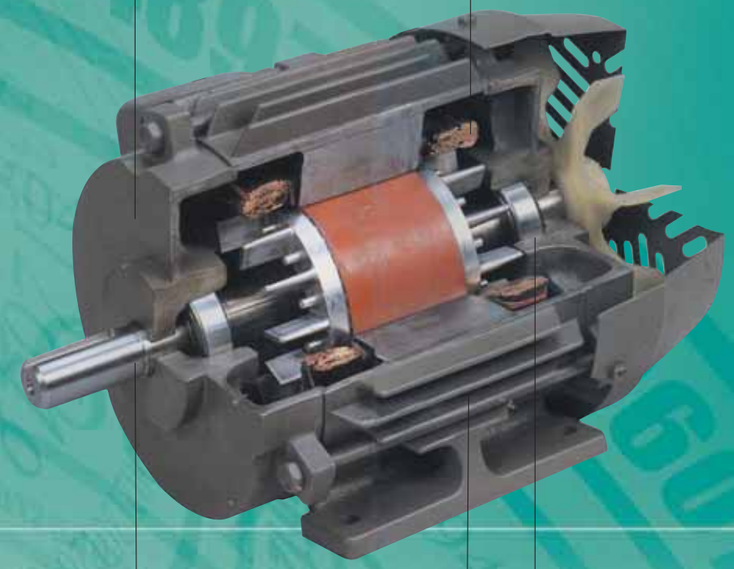
Original Model in 1895

CONTENT

WORLD ENERGY

1 POWERFUL DRIVING
A NEW DESIGN FOR THE HIGH ACCELERATION TORQUE

2 ECONOMY
ENERGY CONSERVATION THROUGH LOWER LOSS DESIGN



3 QUIET DRIVING
LOW NOISE DESIGN THROUGH THE USE OF THE NEWEST TECHNOLOGIES

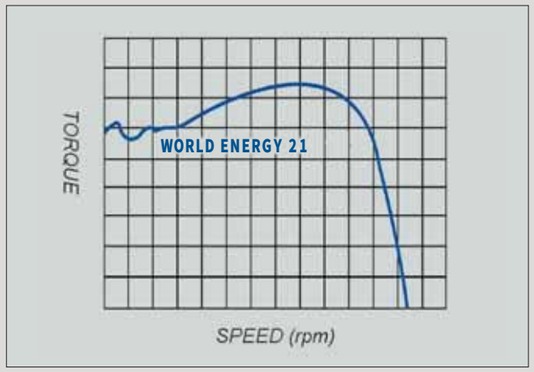
4 HIGH RELIABILITY & QUALITY
SPECIALLY DEVELOPED INSULATION SYSTEM

5 EASY OPERATION
COMPACT AND EFFECTIVE DESIGN

PRODUCT FEATURES

1 POWERFUL DRIVING

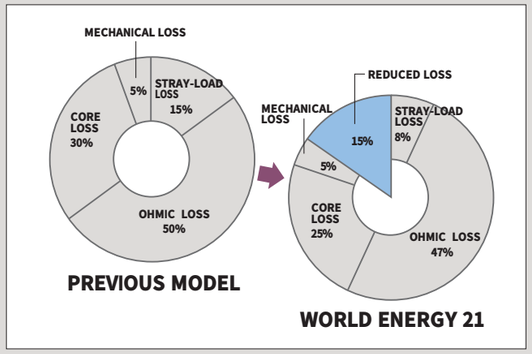
A NEW DESIGN FOR THE
HIGH ACCELERATION TORQUE



In addition to the slot combination, the original technologies of Toshiba such as the higher space factor winding design and the rotor slot insulation system are used. Higher starting and operating characteristics can be expected for all applications.

2 ECONOMY

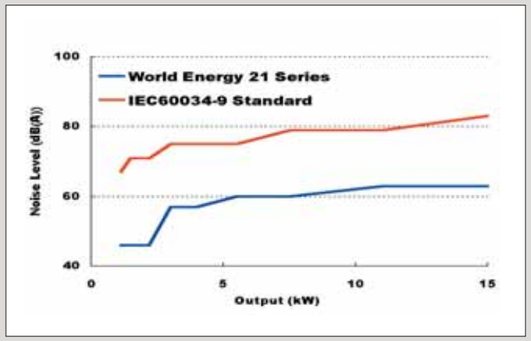
ENERGY SAVING THROUGH
LOWER LOSS DESIGN



Design philosophy and production technology pursue lower loss and have achieved energy conservation.

3 QUIET DRIVING

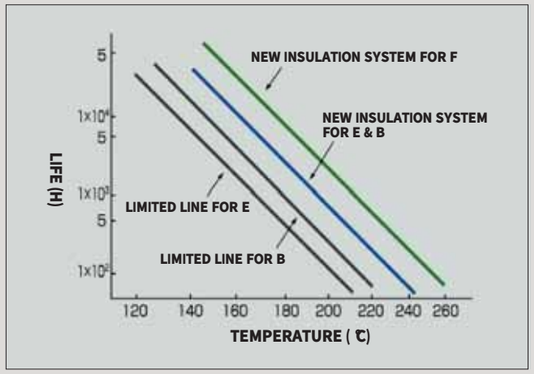
LOW NOISE DESIGN THROUGH THE
USE OF THE NEWEST TECHNOLOGIES



Quiet driving is achieved by employing the latest technologies and improving the anti-noise solutions. Toshiba 's original technologies are used in a broad range from the ventilation method to the selection of material and shape of both fan and fan-cover.

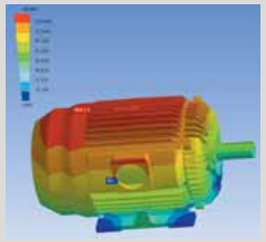
4 HIGH RELIABILITY & QUALITY

SPECIALLY DEVELOPED
INSULATION SYSTEM

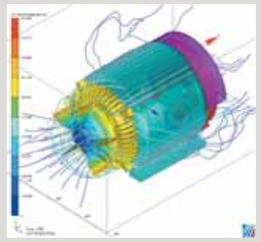


In addition to the newly developed insulation system, our strict Quality-Control system that covers from the beginning of designing step to the final shipment step can promise you the longer-life and higher reliability.

As a result of applying the latest 3D (Three Dimensional)-CAD through the design process, both size and weight reduction are achieved while the reliability is still maintained.



Mechanical strength and thermal distribution analysis



Optimum design of fan and cooling effect

5 EASY OPERATION

COMPACT AND EFFECTIVE DESIGN

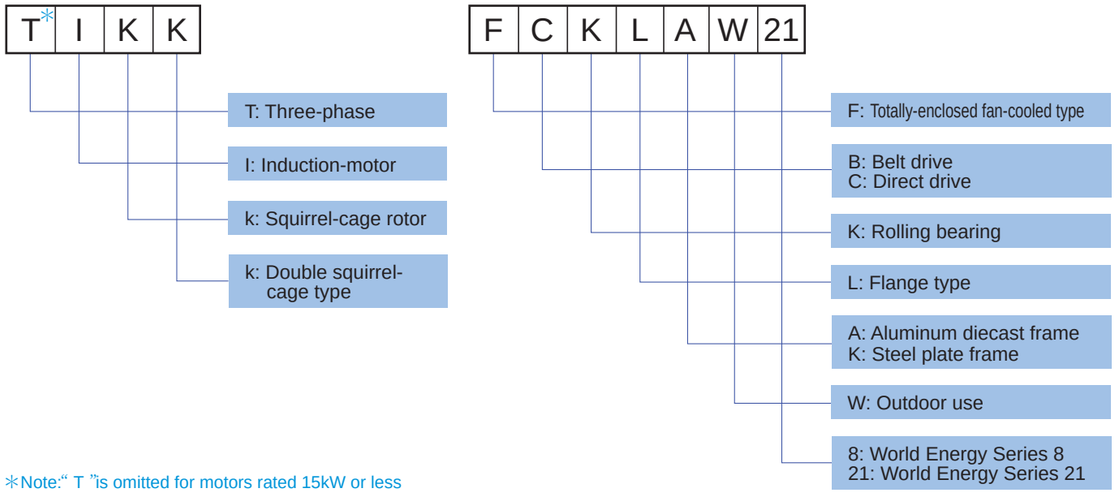
The user-friendly oriented design includes terminal box easier for connection, bigger letters and name-plate easier to read.

PRODUCT LINE-UP

ENCLOSURE CONSTRUCTION		TOTALLY ENCLOSED FAN COOLED TYPE					
MOUNT METHOD		FOOT MOUNTED			FLANGE MOUNTED		
APPEARANCE							
POLE(S)		2	4	6	2	4	6
OUT PUT (kW)	0.4	■	■	■	■	■	■
	0.75	■	■		■	■	●
	1.5	●	●	●	●	●	●
	2.2	●	●	●	●	●	●
	3.7	●	●	●	●	●	●
	5.5	●	●	●	●	●	●
	7.5	●	●	●	●	●	●
	11	●	●	●	●	●	●
	15	●	●	●	●	●	
	18.5	●			●		

Frame material : ■Steel Plate ●Aluminum Diecast

TYPE-FORM



*Note:" T "is omitted for motors rated 15kW or less

STANDARD SPECIFICATION

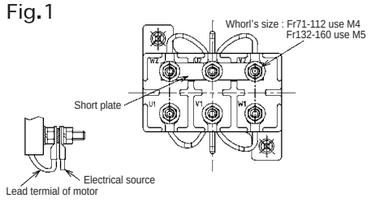
Item		Specifications
Voltage & Frequency		For Frame size 71M~112M: 220/380/415V For Frame size 132S~160L: 380/415V
Enclosure		Totally-Enclosed Fan-Cooled Foot Mounted IM1001 B3 Totally-Enclosed Fan-Cooled Flange Mounted IM3011 V1
Degree of Protection		IP55 per IEC60034-5
Thermal Class		Class F
Time Rating		S1
Direction of Rotation		Counter-Clockwise(CCW) viewed from shaft-end side
Frame Material		71M~80M Steel 90L~160L Aluminum
Ambient Conditions	Ambient Temperature	-20~40 ℃
	Ambient Humidity	100% or less
	Above Sea Level	1000m or less
	Environment	No bursting erosive gas or vapor
Coating Color		Munsell N7
Standard		IEC 60034-1 IEC60034-5
Lead Wire Connection		6 lead wires With terminal block type

Connection Diagram

Model No.	Combination
I	Fig1+Fig2 Standard Model
II	Fig1+Fig3
III	Fig1+Fig4

For 220/380/415V (Frame size:71M~112M)

Fig.1

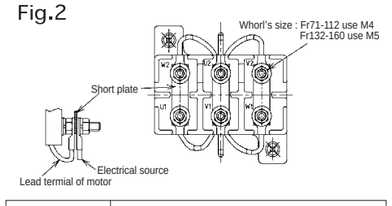


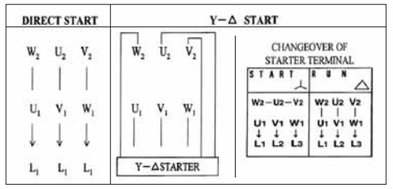
220V △			380–415V Y		
W2	U2	V2	W2–U2–V2		
U1	V1	W1	U1	V1	W1
L1	L2	L3	L1	L2	L3

*Direct Online Only

For 380/415V(Frame size:132S~160L)

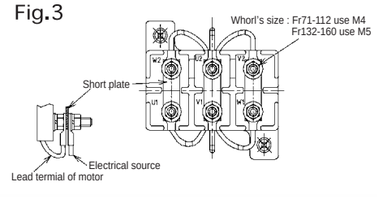
Fig.2

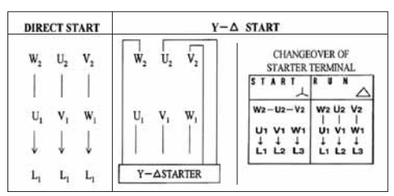




For 220V(Frame size:132S~160L)

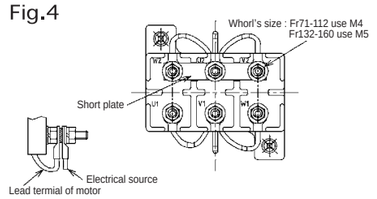
Fig.3





For 220/380/415V(Frame size:132S~160L)

Fig.4



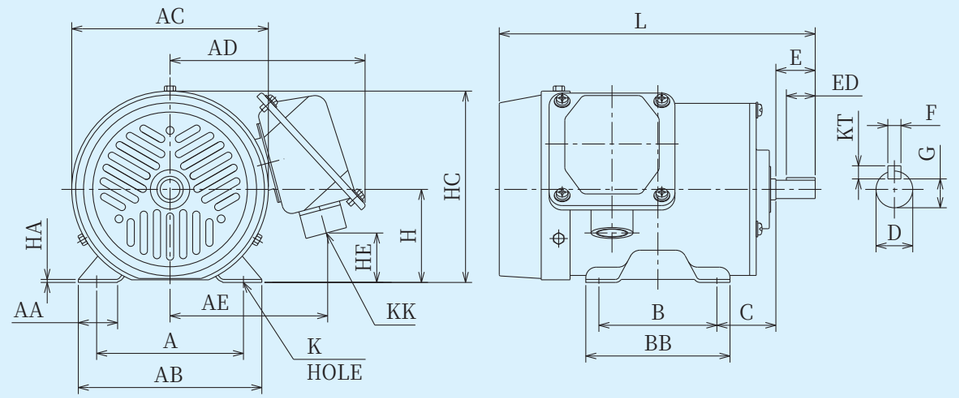
220V △			380–415V Y		
W2	U2	V2	W2–U2–V2		
U1	V1	W1	U1	V1	W1
L1	L2	L3	L1	L2	L3

*Direct Online

OUTLINE & DIMENSION

REV.LEVEL	0
SHEET	1 OF 6

TOSHIBA TOTALLY-ENCLOSED FAN -COOLED HORIZONTAL FOOT-MOUNTED Fr.71M-80M



FRAME	DIMENSIONS (mm)								
	A	AA	AB	AC	AD	AE	B	BB	C
71M	112	30	140	150	151	122	90	110	45
80M	125	35	165	170	157	129	100	130	50

FRAME	DIMENSIONS (mm)								
	D	E	ED	F	G	H	HA	HC	HE
71M	14	30	22	5	11	71	2.3	146	38
80M	19	40	32	6	15.5	80	4.5	165	49

FRAME	DIMENSIONS (mm)				BEARINGS		WEIGHT* (kg)
	K	KK	KT	L	D.E	N.D.E	
71M	7	PF3/4	5	241	6203DDW	6203DDW	12
80M	10	PF3/4	6	273	6204DDW	6204DDW	16

*Weight：4 poles motor.

ALL DATA SUBJECT TO CHANGE WITHOUT NOTICE.
FOR CONSTRUCTION USE ONLY CERTIFIED DATA.

NOTES :
TOLERANCE ON DIMENSIONS "H", "D" AND "F" TO IEC 60072.

CERTIFIED DATA

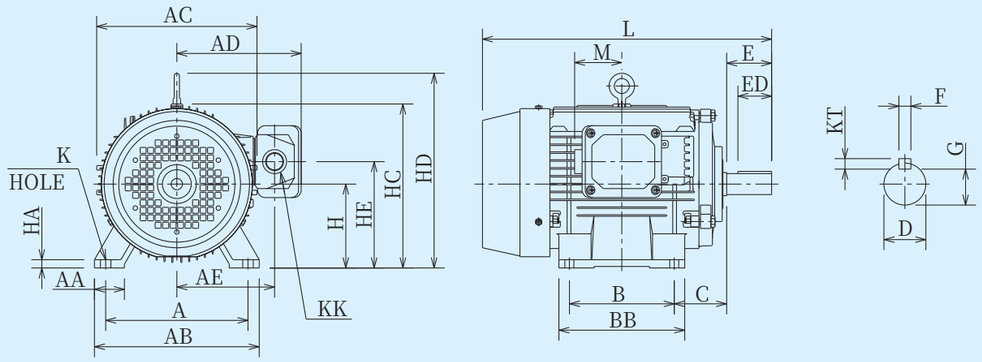
CUSTOMER : _____ P.O.NO. : _____ TAG NO. : _____
MOTOR MODEL NO. : _____ TOSHIBA FILE NO. : _____
kW : _____ RPM(SYN) : _____ VOLTAGE : _____ Hz : _____
FRAME SIZE : _____ LOG NO. : _____ LOG REV. LEVEL : _____
REMARKS : _____

PER : _____ ISSUE DATE : _____ SUPERSEDES : _____

OUTLINE & DIMENSION

REV.LEVEL	0
SHEET	2 OF 6

TOSHIBA TOTALLY-ENCLOSED FAN -COOLED HORIZONTAL FOOT-MOUNTED Fr.90L-132M



FRAME	DIMENSIONS (mm)								
	A	AA	AB	AC	AD	AE	B	BB	C
90L	140	40	176	198	159	123.5	125	150	56
100L	160	40	200	198	159	123.5	140	168	63
112M	190	40	220	214	166	130.5	140	168	70
132S	216	50	260	252	240	178.5	140	175	89
132M	216	50	260	252	240	178.5	178	213	89

FRAME	DIMENSIONS (mm)									
	D	E	ED	F	G	H	HA	HC	HD	HE
90L	24	50	40	8	20	90	10	190	—	120
100L	28	60	45	8	24	100	12	200	—	120
112M	28	60	45	8	24	112	12	—	261	142
132S	38	80	63	10	33	132	15	—	303	167
132M	38	80	63	10	33	132	15	—	303	167

FRAME	DIMENSIONS (mm)					BEARINGS		WEIGHT* (kg)
	K	KK	KT	L	M	D.E	N.D.E	
90L	10	PF3/4	7	311.5	63	6205DDW	6304DDW	16
100L	12	PF3/4	7	350.5	63	6206DDW	6304DDW	21
112M	12	PF3/4	7	386	63	6207DDW	6305DDW	27
132S	12	PF 1 1/2	8	449.5	111	6308DDW	6306DDW	42
132M	12	PF 1 1/2	8	487.5	111	6308DDW	6306DDW	48

*Weight : 4 poles motor.

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FOR CONSTRUCTION USE ONLY CERTIFIED DATA.

NOTES :
TOLERANCE ON DIMENSIONS "H", "D" AND "F" TO IEC 60072.

CERTIFIED DATA

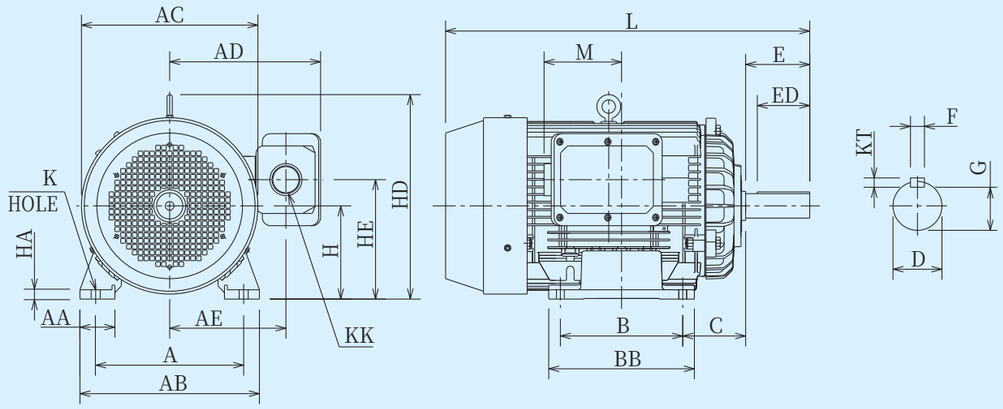
CUSTOMER: _____ P.O.NO.: _____ TAG NO.: _____
MOTOR MODEL NO.: _____ TOSHIBA FILE NO.: _____
kW: _____ RPM(SYN): _____ VOLTAGE: _____ Hz: _____
FRAME SIZE: _____ LOG NO.: _____ LOG REV. LEVEL: _____
REMARKS: _____

PER: _____ ISSUE DATE: _____ SUPERSEDES: _____

OUTLINE & DIMENSION

REV.LEVEL	0
SHEET	3 OF 6

TOSHIBA TOTALLY-ENCLOSED FAN -COOLED HORIZONTAL FOOT-MOUNTED Fr.160M-160L



FRAME	DIMENSIONS (mm)								
	A	AA	AB	AC	AD	AE	B	BB	C
160M	254	60	308	304	259	199.5	210	250	108
160L	254	60	308	304	259	199.5	254	294	108

FRAME	DIMENSIONS (mm)								
	D	E	ED	F	G	H	HA	HD	HE
160M	42	110	90	12	37	160	18	351	205
160L	42	110	90	12	37	160	18	351	205

FRAME	DIMENSIONS (mm)					BEARINGS		WEIGHT* (kg)
	K	KK	KT	L	M	D.E	N.D.E	
160M	14.5	PF 1 1/2	8	625	133	6310DDW	6208DDW	77
160L	14.5	PF 1 1/2	8	625	111	6310DDW	6208DDW	92

*Weight : 4 poles motor.

ALL DATA SUBJECT TO CHANGE WITHOUT NOTICE.
FOR CONSTRUCTION USE ONLY CERTIFIED DATA.

NOTES :
TOLERANCE ON DIMENSIONS "H", "D" AND "F" TO IEC 60072.

CERTIFIED DATA

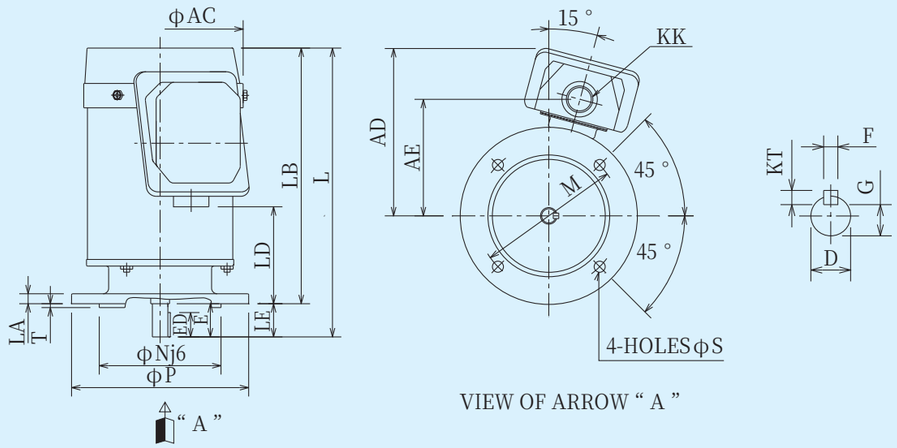
CUSTOMER : _____ P.O.NO. : _____ TAG NO. : _____
MOTOR MODEL NO. : _____ TOSHIBA FILE NO. : _____
kW : _____ RPM(SYN) : _____ VOLTAGE : _____ Hz : _____
FRAME SIZE : _____ LOG NO. : _____ LOG REV. LEVEL : _____
REMARKS : _____

PER : _____ ISSUE DATE : _____ SUPERSEDES : _____

OUTLINE & DIMENSION

REV.LEVEL	0
SHEET	4 OF 6

TOSHIBA TOTALLY-ENCLOSED FAN -COOLED VERTICAL FLANGE Fr.71M-80M



VIEW OF ARROW " A "

FLANGE No.	FRAME	DIMENSIONS (mm)									
		AC	AE	AD	D	E	ED	F	G	KK	KT
FF130	71M	150	105	147	14	30	22	5	11	PF3/4	5
FF165	80M	170	129	159	19	40	32	6	15.5	PF3/4	6

FLANGE No.	FRAME	DIMENSIONS (mm)									
		L	LA	LB	LD	LE	M	N	P	S	T
FF130	71M	261	9	231	82	30	130	110	160	10	3.5
FF165	80M	273	10	233	64.5	40	165	130	200	12	3.5

FLANGE No.	FRAME	BEARINGS		WEIGHT* (kg)
		D.E	N.D.E	
FF130	71M	6203DDW	6203DDW	12
FF165	80M	6204DDW	6204DDW	16

*Weight : 4 poles motor.

ALL DATA SUBJECT TO CHANGE WITHOUT NOTICE.
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NOTES :
TOLERANCE ON DIMENSIONS "D" AND "F" TO IEC 60072.

CERTIFIED DATA

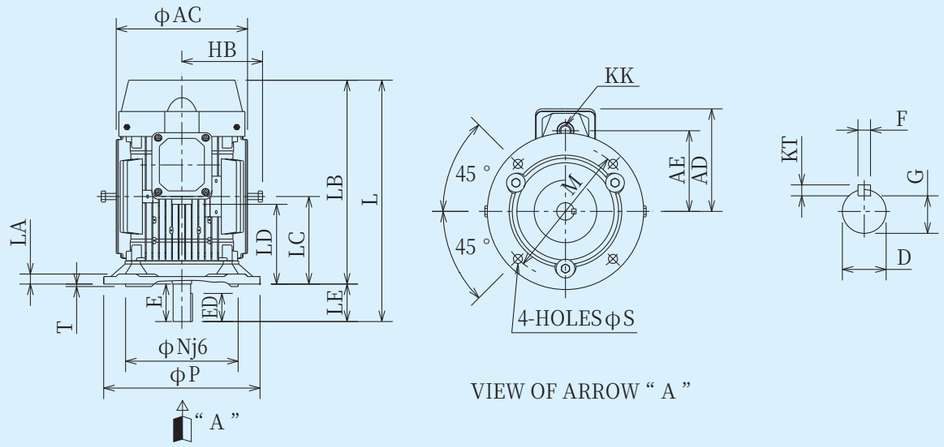
CUSTOMER: _____ P.O.NO.: _____ TAG NO.: _____
MOTOR MODEL NO.: _____ TOSHIBA FILE NO.: _____
kW: _____ RPM(SYN): _____ VOLTAGE: _____ Hz: _____
FRAME SIZE: _____ LOG NO.: _____ LOG REV. LEVEL: _____
REMARKS: _____

PER: _____ ISSUE DATE: _____ SUPERSEDES: _____

OUTLINE & DIMENSION

REV.LEVEL	0
SHEET	5 OF 6

TOSHIBA TOTALLY-ENCLOSED FAN -COOLED VERTICAL FLANGE Fr.90L-132M



VIEW OF ARROW " A "

FLANGE No.	FRAME	DIMENSIONS (mm)										
		AC	AE	AD	D	E	ED	F	G	HB	KK	KT
FF165	90L	198	117.5	153	24	50	40	8	20	-	PF3/4	7
FF215	100L	198	117.5	153	28	60	45	8	24	-	PF3/4	7
FF215	112M	214	129	164	28	60	45	8	24	129	PF3/4	7
FF265	132S	252	178.5	240	38	80	63	10	33	151	PF 1 1/2	8
FF265	132M	252	178.5	240	38	80	63	10	33	151	PF 1 1/2	8

FLANGE No.	FRAME	DIMENSIONS (mm)										
		L	LA	LB	LC	LD	LE	M	N	P	S	T
FF165	90L	325	10	275	-	95	50	165	130	200	12	3.5
FF215	100L	350.5	16	290.5	-	110.5	60	215	180	250	14.5	4
FF215	112M	386	16	326	140	127.5	60	215	180	250	14.5	4
FF265	132S	449.5	16	369.5	149	107	80	265	230	300	14.5	4
FF265	132M	487.5	16	407.5	178	145	80	265	230	300	14.5	4

FLANGE No.	FRAME	BEARINGS		WEIGHT* (kg)
		D.E	N.D.E	
FF165	90L	6205DDW	6304DDW	17.5
FF215	100L	6206DDW	6304DDW	23
FF215	112M	6207DDW	6305DDW	29
FF265	132S	6308DDW	6306DDW	45
FF265	132M	6308DDW	6306DDW	51

*Weight : 4 poles motor.

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NOTES :
"F" TO IEC 60072.
TOLERANCE ON DIMENSIONS "D" AND

CERTIFIED DATA

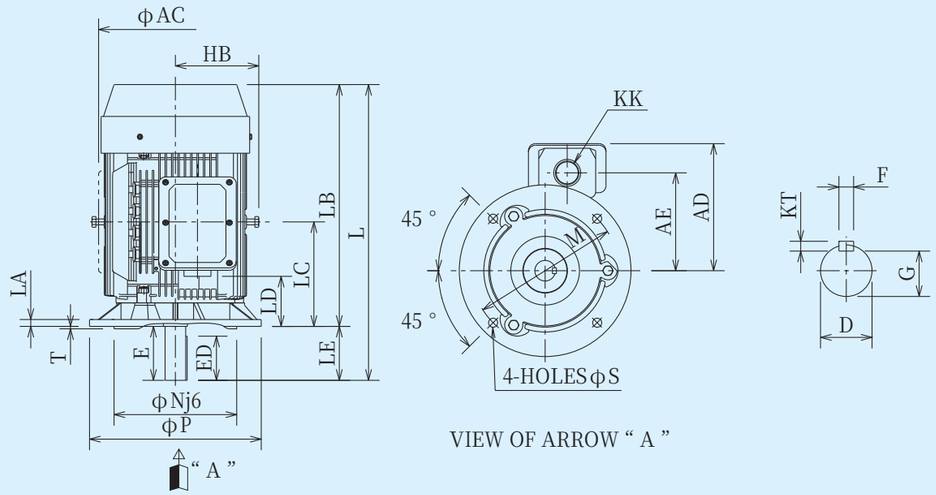
CUSTOMER : _____ P.O.NO. : _____ TAG NO. : _____
MOTOR MODEL NO. : _____ TOSHIBA FILE NO. : _____
kW : _____ RPM(SYN) : _____ VOLTAGE : _____ Hz : _____
FRAME SIZE : _____ LOG NO. : _____ LOG REV. LEVEL : _____
REMARKS : _____

PER : _____ ISSUE DATE : _____ SUPERSEDES : _____

OUTLINE & DIMENSION

REV.LEVEL	0
SHEET	6 OF 6

TOSHIBA TOTALLY-ENCLOSED FAN -COOLED VERTICAL FLANGE Fr.160M-160L



VIEW OF ARROW " A "

FLANGE No.	FRAME	DIMENSIONS (mm)										
		AC	AE	AD	D	E	ED	F	G	HB	KK	KT
FF300	160M	313	199.5	259	42	110	90	12	37	170	PF1 1/2	8
FF300	160L	313	199.5	259	42	110	90	12	37	170	PF1 1/2	8

FLANGE No.	FRAME	DIMENSIONS (mm)										
		L	LA	LB	LC	LD	LE	M	N	P	S	T
FF300	160M	603	14	493	213	102	110	300	250	350	18.5	5
FF300	160L	625	14	515	235	124	110	300	250	350	18.5	5

FLANGE No.	FRAME	BEARINGS		WEIGHT* (kg)
		D.E	N.D.E	
FF300	160M	6310DDW	6208DDW	84
FF300	160L	6310DDW	6208DDW	99

*Weight : 4 poles motor.

ALL DATA SUBJECT TO CHANGE WITHOUT NOTICE.
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NOTES :
TOLERANCE ON DIMENSIONS "D" AND "F" TO IEC 60072.

CERTIFIED DATA

CUSTOMER : _____ P.O.NO. : _____ TAG NO. : _____
MOTOR MODEL NO. : _____ TOSHIBA FILE NO. : _____
kW : _____ RPM(SYN) : _____ VOLTAGE : _____ Hz : _____
FRAME SIZE : _____ LOG NO. : _____ LOG REV. LEVEL : _____
REMARKS : _____
_____
PER : _____ ISSUE DATE : _____ SUPERSEDES : _____

CHARACTERISTICS & PERFORMANCE

CHARACTERISTICS AND PERFORMANCE OF 2POLES THREE PHASE MOTOR

2POLES

Rated Output kW	Frame Number	Hz	Volts	Full Load Current A	Full Load Speed min^{-1}	No Load Current A	Locked Rotor Current % F/L	Locked Rotor Torque % F/L	Pull Up Torque % F/L	Break down Torque % F/L	Effciency (%)			Power factor			Rotor Inertia J kg・m^2	Noise SPL dB(A)
											Full Load	75% Load	50% Load	Full Load	75% Load	50% Load		
0.37	71M	50	220	1.65	2800	0.83	550	220	210	220	71.0	72.0	68.0	87.0	79.0	66.0		
			380	0.95	2800	0.48	550	220	210	220	71.0	72.0	68.0	87.0	79.0	66.0	0.00057	61
			415	0.92	2830	0.57	600	260	250	260	72.0	71.0	66.0	82.5	71.0	58.0		
0.55	71M	50	220	2.20	2820	1.10	650	280	265	270	76.0	76.0	73.0	88.0	81.0	70.0		
			380	1.27	2820	0.64	650	280	265	270	76.0	76.0	73.0	88.0	81.0	70.0	0.0007	61
			415	1.27	2840	0.90	700	330	315	320	76.0	75.0	69.0	79.0	72.0	60.0		
0.75	80M	50	220	3.00	2840	1.30	600	200	190	240	75.0	76.0	75.0	88.0	82.0	72.0		
			380	1.73	2840	0.75	600	200	190	240	75.0	76.0	75.0	88.0	82.0	72.0	0.00105	69
			415	1.73	2860	094	650	238	226	286	75.0	74.5	71.0	82.0	75.0	62.0		
1.1	80M	50	220	4.40	2830	2.30	700	250	238	300	79.0	79.0	78.5	84.0	79.0	68.0		
			380	2.54	2830	1.33	700	250	238	300	79.0	79.0	78.5	84.0	79.0	68.0	0.00152	63
			415	2.54	2860	1.90	780	298	283	358	79.0	79.0	75.0	78.0	70.0	59.0		
1.5	90L	50	220	5.90	2800	2.34	600	185	180	215	78.0	79.0	78.0	89.0	84.0	75.0		
			380	3.40	2800	1.35	600	185	180	215	78.0	79.0	78.0	89.0	84.0	75.0	0.00152	64
			415	3.20	2830	1.80	700	220	215	255	79.0	79.0	77.0	84.5	76.0	63.0		
2.2	90L	50	220	8.20	2810	3.30	740	230	225	235	80.0	81.0	80.0	89.0	85.0	75.0		
			380	4.70	2810	1.90	740	230	225	235	80.0	81.0	80.0	89.0	85.0	75.0	0.00208	64
			415	4.60	2830	2.56	820	270	265	280	81.0	81.0	79.0	83.5	75.0	62.0		
3	112M	50	220	10.6	2830	3.50	820	295	265	280	82.0	81.0	80.0	91.0	87.0	79.0		
			380	6.10	2830	2.02	820	295	265	280	82.0	81.0	80.0	91.0	87.0	79.0	0.00375	70
			415	5.90	2860	2.70	940	350	315	330	83.0	80.5	78.0	86.0	79.0	68.0		
4	112M	50	220	14.2	2820	5.00	690	250	225	240	83.0	84.0	83.0	89.5	85.5	77.0		
			380	8.20	2820	2.90	690	250	225	240	83.0	84.0	83.0	89.5	85.5	77.0	0.00375	70
			415	8.00	2840	4.00	770	295	265	285	84.0	83.0	81.5	84.5	76.5	64.0		
5.5	132S	50	220	18.8	2890	6.34	830	235	225	295	85.0	84.0	81.5	90.5	86.0	78.5		
			380	10.9	2890	3.66	830	235	225	295	85.0	84.0	81.5	90.5	86.0	78.5	0.00803	72
			415	10.5	2920	4.50	940	280	265	350	85.5	84.5	81.5	85.5	83.0	75.0		
7.5	132S	50	220	24.8	2890	7.62	930	315	295	345	87.0	86.0	85.0	91.0	89.0	85.0		
			380	14.3	2890	4.40	930	315	295	345	87.0	86.0	85.0	91.0	89.0	85.0	0.01050	72
			415	13.8	2920	5.80	990	375	350	410	87.5	85.5	83.0	87.0	83.5	76.0		
11	160M	50	220	37.0	2880	9.86	680	225	195	255	87.0	86.0	84.0	90.5	89.5	84.5		
			380	21.4	2880	5.70	680	225	195	255	87.0	86.0	84.0	90.5	89.5	84.5	0.02280	71
			415	20.0	2900	7.62	800	265	230	300	87.5	86.0	83.5	87.0	83.0	75.0		
15	160M	50	220	49.0	2880	14.0	830	275	240	290	88.5	88.0	87.0	91.0	89.0	83.0		
			380	28.2	2880	8.10	830	275	240	290	88.5	88.0	87.0	91.0	89.0	83.0	0.03000	71
			415	27.0	2900	11.0	940	300	285	345	89.5	88.0	86.0	86.5	82.0	72.0		
18.5	160L	50	220	58.2	2900	15.5	920	320	270	310	91.0	90.0	88.0	91.5	88.0	76.0		
			380	33.6	2900	8.95	920	320	270	310	91.0	90.0	88.0	91.5	88.0	76.0	0.03730	71
			415	31.8	2920	11.5	1040	380	322	370	91.5	90.5	88.0	88.5	84.0	74.0		

Note1) Noise SPL measured at
Less than1kW : 0.5m
1kW and larger : 1m at no load

These characteristics are designed for Direct-on-line connection.
There will be different characteristics if the motor is to be used under Y／△ connection.

CHARACTERISTICS AND PERFORMANCE OF 4POLES THREE PHASE MOTOR

4POLES

Rated Output kW	Frame Number	Hz	Volts	Full Load Current A	Full Load Speed min^{-1}	No Load Current A	Locked Rotor Current % F/L	Locked Rotor Torque % F/L	Pull Up Torque % F/L	Break down Torque % F/L	Effciency (%)			Power factor			Rotor Inertia J kg・㎡	Noise SPL dB(A)
											Full Load	75% Load	50% Load	Full Load	75% Load	50% Load		
0.37	71M	50	220	1.94	1400	1.53	530	290	275	300	71.0	70.0	66.5	71.0	61.0	48.0	0.00120	50
			380	1.12	1400	0.88	530	290	275	300	71.0	70.0	66.5	71.0	61.0	48.0		
			415	1.22	1410	1.10	560	345	325	355	71.5	70.0	64.0	62.0	52.0	40.0		
0.55	80M	50	220	2.50	1410	1.64	560	235	220	250	75.0	74.0	72.0	78.5	70.0	56.5	0.00273	52
			380	1.45	1410	0.95	560	235	220	250	75.0	74.0	72.0	78.5	70.0	56.5		
			415	1.40	1420	1.05	640	280	250	295	75.5	74.5	70.0	73.0	63.0	49.0		
0.75	80M	50	220	3.50	1410	2.40	590	280	265	285	76.5	77.0	75.0	76.5	66.5	52.0	0.00273	52
			380	2.00	1410	1.39	590	280	265	285	76.5	77.0	75.0	76.5	66.5	52.0		
			415	2.05	1420	1.62	630	330	315	340	76.0	75.0	70.0	69.5	58.0	44.0		
1.1	90L	50	220	4.30	1410	2.06	680	185	170	225	78.0	77.0	75.0	85.5	78.5	65.0	0.00400	46
			380	2.48	1410	1.19	680	185	170	225	78.0	77.0	75.0	85.5	78.5	65.0		
			415	2.48	1420	1.54	740	220	200	265	78.0	77.0	74.0	79.0	70.0	56.0		
1.5	90L	50	220	6.20	1410	3.30	580	175	160	210	77.0	79.0	78.0	84.0	77.0	64.0	0.00400	46
			380	3.58	1410	1.90	580	175	160	210	77.0	79.0	78.0	84.0	77.0	64.0		
			415	3.60	1415	2.50	620	205	190	250	78.0	78.0	75.0	76.5	67.0	52.0		
2.2	100L	50	220	8.70	1410	4.60	650	205	185	230	80.0	81.5	81.0	83.5	75.0	62.0	0.00595	46
			380	5.00	1410	2.66	650	205	185	230	80.0	81.5	81.0	83.5	75.0	62.0		
			415	5.00	1420	3.45	720	245	220	270	80.5	80.0	78.0	76.5	65.0	50.0		
3	112M	50	220	11.5	1410	5.20	750	260	250	310	81.0	80.5	79.0	86.0	80.0	69.0	0.00783	57
			380	6.64	1410	3.00	750	260	250	310	81.0	80.5	79.0	86.0	80.0	69.0		
			415	6.60	1420	3.95	830	310	295	365	81.0	80.5	79.0	79.0	70.0	56.0		
4	112M	50	220	15.4	1400	7.60	700	245	235	295	81.0	82.5	82.0	85.0	78.0	66.0	0.00851	57
			380	8.90	1400	4.39	700	245	235	295	81.0	82.5	82.0	85.0	78.0	66.0		
			415	8.70	1415	5.82	760	290	280	350	81.5	82.0	80.5	78.5	69.0	55.0		
5.5	132S	50	220	20.4	1430	9.00	660	200	195	275	85.0	86.0	85.0	85.0	80.0	69.0	0.02018	60
			380	11.8	1430	5.20	660	200	195	275	85.0	86.0	85.0	85.0	80.0	69.0		
			415	11.6	1440	7.00	730	235	230	325	85.0	85.0	84.0	78.5	70.0	56.0		
7.5	132M	50	220	27.0	1430	12.0	700	210	200	290	87.0	87.0	86.0	85.0	81.0	71.0	0.02665	60
			380	15.6	1430	6.90	700	210	200	290	87.0	87.0	86.0	85.0	81.0	71.0		
			415	15.4	1440	9.40	780	250	235	345	86.0	85.0	84.0	79.5	72.0	59.0		
11	160M	50	220	39.2	1440	13.4	660	205	185	280	87.5	88.0	87.0	85.0	83.0	76.0	0.04525	63
			380	22.6	1440	7.75	660	205	185	280	87.5	88.0	87.0	85.0	83.0	76.0		
			415	21.2	1455	9.88	770	240	220	330	88.0	88.0	86.0	82.0	77.0	66.0		
15	160L	50	220	52.0	1440	17.3	790	245	205	265	88.0	89.0	88.0	86.0	83.5	76.0	0.06025	63
			380	30.0	1440	10.0	790	245	205	265	88.0	89.0	88.0	86.0	83.5	76.0		
			415	28.5	1455	13.1	930	290	240	315	88.5	89.0	87.0	83.0	78.0	67.0		

Note1) Noise SPL measured at
Less than1kW：0.5m
1kW and larger：1m at no load

These characteristics are designed for Direct-on-line connection.
There will be different characteristics if the motor is to be used under Y／△ connection.

CHARACTERISTICS & PERFORMANCE

CHARACTERISTICS AND PERFORMANCE OF 6POLES THREE PHASE MOTOR

6POLES

Rated Output kW	Frame Number	Hz	Volts	Full Load Current A	Full Load Speed min^{-1}	No Load Current A	Locked Rotor Current % F/L	Locked Rotor Torque % F/L	Pull Up Torque % F/L	Break down Torque % F/L	Effciency (%)			Power factor			Rotor Inertia J kg・㎡	Noise SPL dB(A)
											Full Load	75% Load	50% Load	Full Load	75% Load	50% Load		
0.37	80M	50	220	2.05	920	1.65	500	270	260	285	70.0	67.0	61.0	68.0	59.0	48.0	0.00305	51
			380	1.18	920	0.95	500	270	260	285	70.0	67.0	61.0	68.0	59.0	48.0		
			415	1.21	930	1.12	530	320	310	340	68.0	65.0	58.0	61.0	54.0	40.0		
0.55	80M	50	220	3.00	930	2.41	540	250	240	280	73.0	71.5	66.0	66.0	56.0	44.0	0.0427	51
			380	1.73	930	1.39	540	250	240	280	73.0	71.5	66.0	66.0	56.0	44.0		
			415	1.85	940	1.65	560	298	286	334	71.0	69.0	63.5	57.5	47.0	36.0		
0.75	90L	50	220	3.60	910	2.40	460	205	200	215	71.0	70.5	67.5	78.0	67.0	53.0	0.00428	46
			380	2.08	910	1.39	460	205	200	215	71.0	70.5	67.5	78.0	67.0	53.0		
			415	2.02	920	1.60	490	240	235	255	72.0	71.0	65.0	71.5	61.0	46.0		
1.1	100L	50	220	5.00	910	3.20	500	260	245	250	74.0	72.0	70.0	78.5	68.0	53.0	0.0067	44
			380	2.90	910	1.84	500	260	245	250	74.0	72.0	70.0	78.5	68.0	53.0		
			415	2.80	920	2.10	540	310	290	295	75.0	73.0	70.0	73.0	60.0	46.0		
1.5	100L	50	220	6.80	900	4.55	530	250	240	250	74.0	73.0	70.0	78.5	69.5	56.0	0.0067	44
			380	3.93	900	2.63	530	250	240	250	74.0	73.0	70.0	78.5	69.5	56.0		
			415	4.00	910	3.26	550	295	285	295	74.0	73.0	70.0	70.0	60.0	46.0		
2.2	112M	50	220	9.20	920	4.70	540	175	165	205	78.0	77.5	76.0	81.0	74.0	60.0	0.01048	48
			380	5.30	920	2.70	540	175	165	205	78.0	77.5	76.0	81.0	74.0	60.0		
			415	5.20	930	3.30	600	205	195	240	78.5	77.0	76.5	75.5	68.0	56.0		
3	132S	50	220	12.2	930	6.37	700	225	200	265	81.0	80.0	79.0	80.5	71.0	58.0	0.0265	52
			380	7.05	930	3.68	700	225	200	265	81.0	80.0	79.0	80.5	71.0	58.0		
			415	6.80	940	4.10	800	265	235	315	82.0	81.0	80.0	76.0	70.0	55.0		
4	132S	50	220	16.0	930	8.21	710	230	205	260	81.0	81.0	78.5	81.0	72.5	60.0	0.0265	52
			380	9.20	930	4.75	710	230	205	260	81.0	81.0	78.5	81.0	72.5	60.0		
			415	9.40	940	6.10	760	270	240	310	81.0	81.0	79.0	73.5	66.5	56.0		
5.5	132M	50	220	21.0	940	9.60	690	220	190	260	84.0	83.0	82.0	82.5	76.0	66.0	0.0330	55
			380	12.1	940	5.55	690	220	225	260	84.0	83.0	82.0	82.5	76.0	66.0		
			415	12.0	950	6.90	760	260	225	310	84.5	83.5	82.5	77.0	71.0	60.0		
7.5	160M	50	220	28.0	960	14.9	790	240	220	310	87.0	86.5	85.0	80.5	74.0	62.0	0.0585	56
			380	16.2	960	8.60	790	240	220	310	87.0	86.5	85.0	80.5	74.0	62.0		
			415	16.4	970	10.7	860	285	260	365	87.0	86.5	85.0	74.0	67.0	55.0		
11	160L	50	220	40.2	960	19.6	750	240	220	350	87.0	86.5	85.0	83.0	78.0	67.5	0.08225	56
			380	23.2	960	11.4	750	240	220	350	87.0	86.5	85.0	83.0	78.0	67.5		
			415	22.6	970	13.2	850	285	260	417	87.0	86.5	84.5	78.0	71.0	60.0		

Note1) Noise SPL measured at
Less than1kW：0.5m
1kW and larger：1m at no load

These characteristics are designed for Direct-on-line connection.
There will be different characteristics if the motor is to be used under Y／△ connection.

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