

PRODUCT INFORMATION PACKET

marathon[®]
Motors

Model No: 160LTFC6538
Catalog No: R337A
20,1800,TEFC,160L,3/60/230/460
TEFC



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REGAL[®]



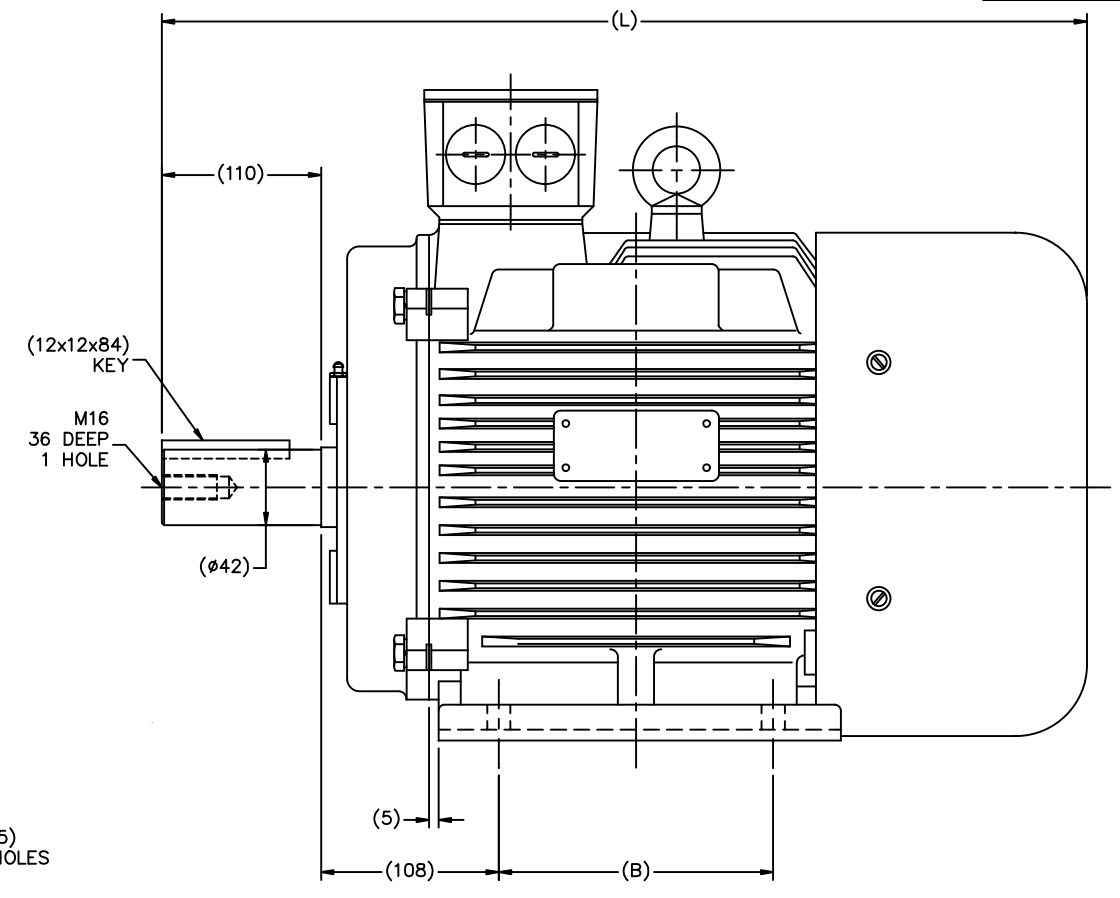
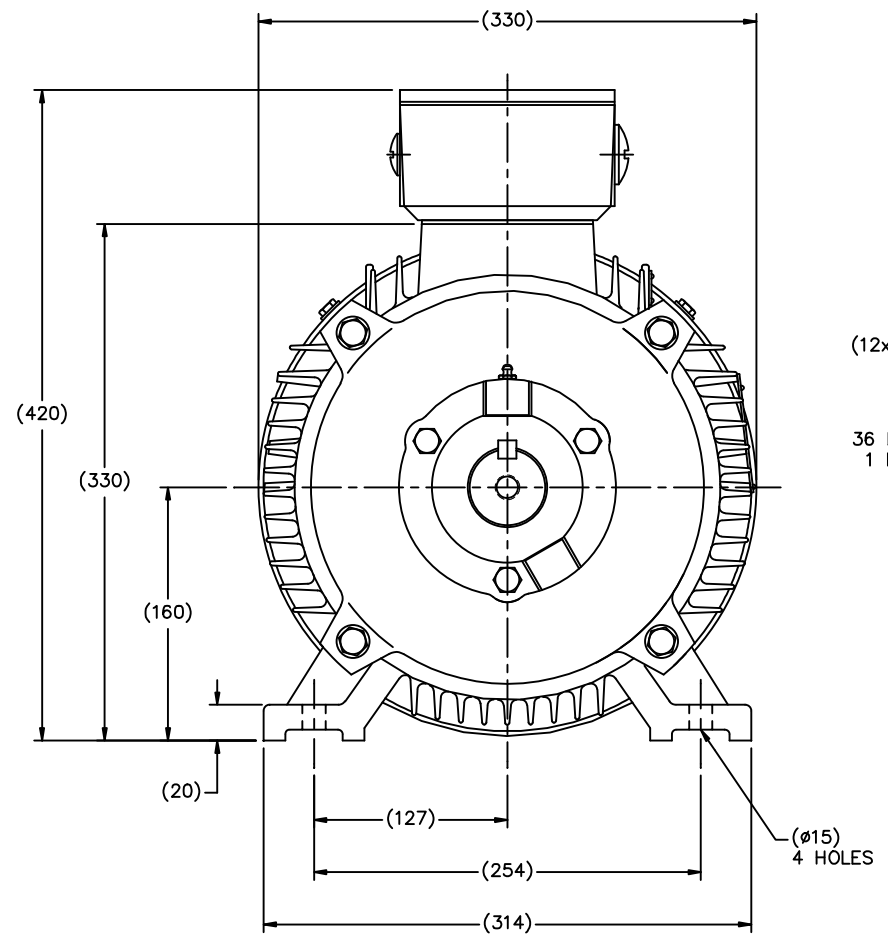
Nameplate Specifications

Output HP	20 Hp	Output KW	14.9 kW
Frequency	60 Hz	Voltage	230/460 V
Current	49.0/24.6 A	Speed	1775 rpm
Service Factor	1.15	Phase	3
Efficiency	93 %	Duty	Continuous
Insulation Class	F	Design Code	B
KVA Code	G	Frame	160L
Enclosure	Totally Enclosed Fan Cooled	Overload Protector	No
Ambient Temperature	40 °C	Drive End Bearing Size	6309
Opp Drive End Bearing Size	6209	UL	Recognized
CSA	Y	CE	Y
IP Code	55		

Technical Specifications

Electrical Type	Squirrel Cage Inverter Rated	Starting Method	Part Wdg Start & Wye Start Delta Run Or Inverter
Poles	4	Rotation	Reversible
Mounting	Rigid base	Motor Orientation	Horizontal
Drive End Bearing	Ball	Opp Drive End Bearing	Ball
Frame Material	Cast Iron	Shaft Type	IEC
Overall Length	25.39 in	Shaft Diameter	1.666 in
Shaft Extension	4.33 in	Assembly/Box Mounting	F3
Outline Drawing	B-SS622239	Connection Diagram	004172.03ME


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DF160M1-2R	193315.60	600	210
DF160M2-2R	193318.60	600	210
DF160M-4R	193316.60	600	210
DF160L-2R	193321.60	645	254
DF160L-4R	193319.60	645	254
DF160M-6R	193314.60	600	210
FRAME	PART #	L	B

(MAY NOT BE DRAWN TO SCALE)

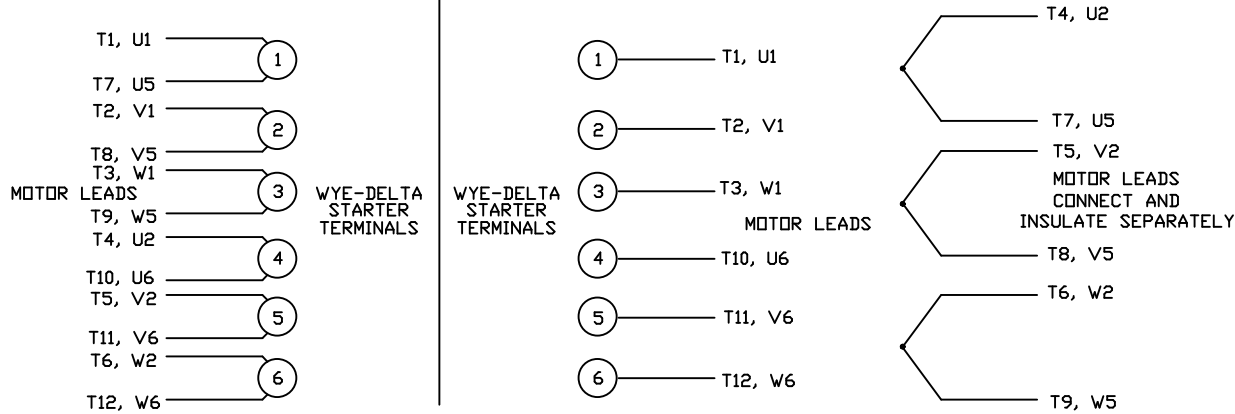
(DIMENSIONS ARE IN MILLIMETERS)

		TOLERANCES UNLESS SPECIFIED		 REGAL-BELOIT CORPORATION		DRAWN MSG 11-17-2010	
		DEC.	METRIC			CHK MJS 11-18-2010	
		.X	±2.5	TITLE OUTLINE - IEC PREMIUM		APPD SB 11-18-2010	
		.XX	±.76	DF160-R (II)		SCALE 5=16	
		.XXX	±.127	MAT'L		REF	
		.XXXX	±.0127	FINISH		FMF HEBEI	
NO.	REVISION	BY & DATE	CHK	ANG	±7'30"	PREV	
THIS DRAWING IN DESIGN AND DETAIL IS OUR PROPERTY AND MUST NOT BE USED EXCEPT IN CONNECTION WITH OUR WORK ALL RIGHTS OF DESIGN AND INVENTION ARE RESERVED THIS IS AN ELECTRONICALLY GENERATED DOCUMENT - DO NOT SCALE THIS PRINT				RFP	11-18-2010	CAD FILE	ss622239
						SIZE	DRAWING NO. PAGE OF REV.
						B	SS622239

WYE - DELTA STARTING USEABLE ON 2,4 AND 6 POLE MOTORS.

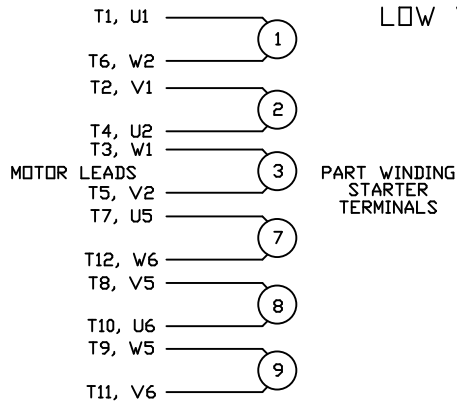
LOW VOLTAGE CONNECTION

HIGH VOLTAGE CONNECTION



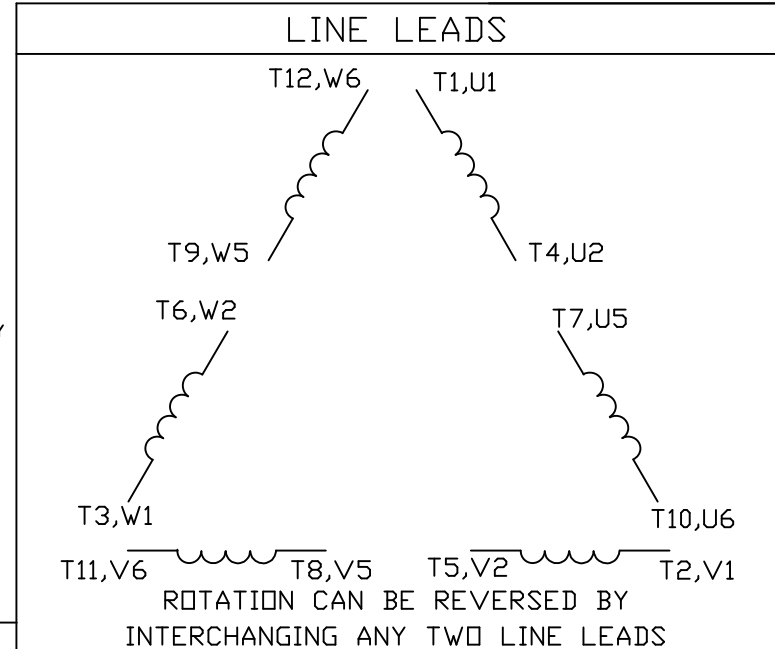
REFER TO THE WYE-DELTA STARTER CONNECTION INSTRUCTIONS FOR PROPER CONNECTION OF POWER LINES TO STARTER.

PART WINDING START USABLE ON 4 & 6 POLE MOTORS
LOW VOLTAGE CONNECTION ONLY



REFER TO THE PART WINDING STARTER INSTRUCTIONS FOR PROPER CONNECTION OF POWER LINES TO STARTER.

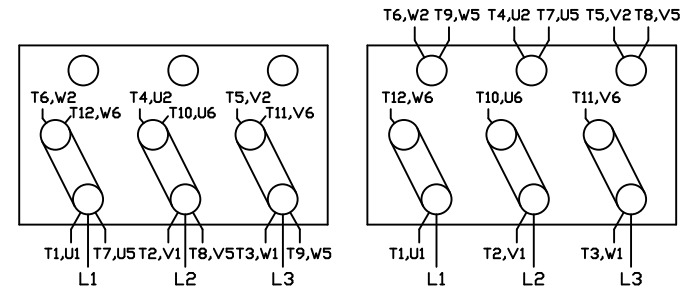
REFER TO THE CUTLER - HAMMER OR EQUIV. FOR PROPER SELECTION OF OVERLOAD HEATER COILS.



12 LEAD DELTA CONNECTION ACROSS THE LINE START
(FOR Y START DELTA RUN, REMOVE THE JUMPERS)

LOW VOLTAGE
(MUST BE REWIRED AS SHOWN)

HIGH VOLTAGE
(FACTORY WIRED FOR HIGH VOLTAGE AS SHOWN)



TOLERANCES UNLESS SPECIFIED

DEC. INCHES

.X ±.1

.XX ±.01

.XXX ±.005

.XXXX ±.0005

ANG ±1/2*



TITLE DELTA - WYE CONNECTION DIAGRAM
IEC CAST IRON MOTORS

MAT'L.

FINISH

DRAWN CJW 08/28/02

CHK

APPD

SCALE 1=1

REF

FMF

PREV

NO. REVISION BY & DATE

RFP

DIST

CAD FILE 00417203ME

SIZE DRAWING NO.

A 004172-03ME

REV.

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P.O. BOX 9003
WAUSAU, WI 54401-9003
PH. 715-675-3311

DATA VOLTS: 460

CERTIFICATION DATA SHEET

CUSTOMER: _____
ORDER #: _____
CONN. DIAGRAM: 004172.03ME
OUTLINE: B-SS622239
WINDING: T12904020 FR 3
SPEED: _____

CUSTOMER P.O. #: _____
REFERENCE MODEL #: 160L TFC6538
CAT #: R337A
CUSTOMER PART #: _____
MOUNTING: F3

TYPICAL MOTOR PERFORMANCE DATA

HP	KW	SYNC RPM	FL RPM	FRAME	ENCLOSURE	TYPE	KVA CODE	DESIGN	
20	14.9	1800	1775	160L	TEFC	TEFC	G	N	
PH	HZ	VOLTS	AMPS	START TYPE	DUTY	INSL	S.F.	AMB	ELEV.
3	60/50	230/460#200/400	49/24.6&43/21.5	PWS & YDRUN OR INV	CONT	F	1.15	40	3300

F.L. EFF	93.0	3/4 LD EFF	93.4	1/2 LD EFF	92.8	GTD EFF		ELECT. TYPE	
F.L. PF	83.0	3/4 LD PF	80.1	1/2 LD PF	71.6	91.7 <td></td> <th>SQ CAGE INV RATED</th> <td></td>		SQ CAGE INV RATED	

F.L. TORQUE		LR AMPS @ 460 V		L.R. TORQUE		B.D. TORQUE		F.L. RISE (°C)	
60.0 LB-FT		160		109 LB-FT	182%	156 LB-FT	260%	45	

@ 3 FT.	POWER	ROTOR WK ³	MAX. LOAD WK ²	SAFE STALL TIME	STARTS/HOUR	MOTOR WGT
75 DBA	84 DBA	2.97 LB-FT ²	0 LB-FT ²	20 SEC.	2	342 LB.

*** SUPPLEMENTAL INFORMATION ***

DE BRACKET TYPE	ODE BRACKET TYPE	MOUNT TYPE	MOTOR ORIENTATION	SEVERE DUTY	HAZARDOUS LOCATION	DRIP COVER	SCREENS	PAINT
STANDARD	STANDARD	RIGID	HORIZONTAL	UM SEVERE	NONE	NO	NONE	BLUE (ENAMEL)
BEARINGS	GREASE	SHAFT TYPE	SPECIAL DE	SPECIAL ODE	SHAFT	MATERIAL	FRAME MATERIAL	
DE BALL 6309	POLYREX EM	STANDARD IEC	NONE	NONE	1045 HOT ROLLED (C-204		CAST IRON	

THERMOSTATS	PROTECTORS	WDG RTD's	BRG RTD's	THERMISTORS	CONTROL	SPACE HEATERS
NONE	NOT	NONE	NONE	NONE	FALSE	NA
R1 (ohms/ph)	R2 (ohms/ph)	X1 (ohms/ph)	X2 (ohms/ph)	Xm (ohms/ph)	VIBRATION (in/sec)	FLOAT
0	0	0	0	0	0.080	ODE

* N O T E S *		INVERTER TORQUE: CONSTANT 2:1 INV. HP SPEED RANGE: 1.5 X BASE SPEED
		ENCODER: NONE
		BRAKE: NONE
		FT-LB: NA NONE
		VOLTAGE: NONE NA NONE
		UL: VINS, CONST UL REC

PREPARED BY: EARL BABBITTS
DATE: 5/5/2017

FORM: 3531 REV_4 2/27/06

Data Sheet



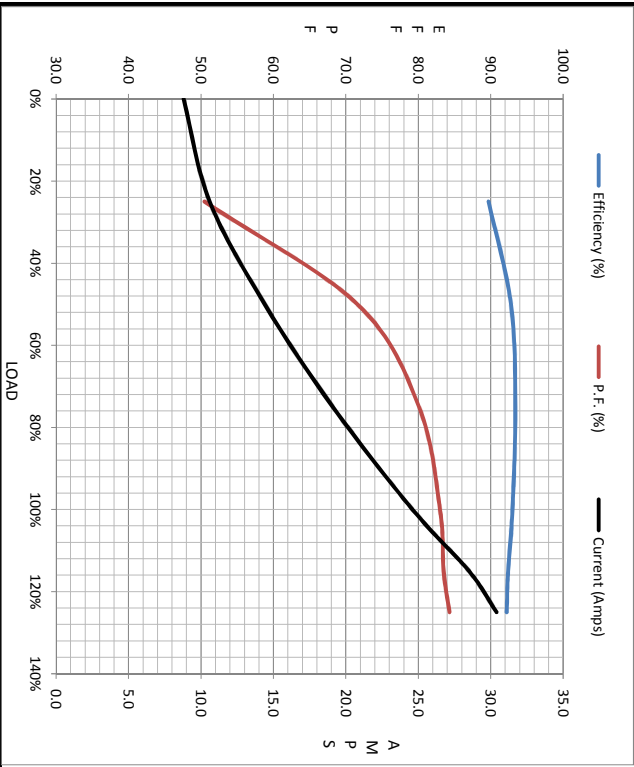
160L TFC6538

Date: 5/5/2017
 Customer: EARL BABBITTS
 Attention: EARL BABBITTS
 Submitted by:

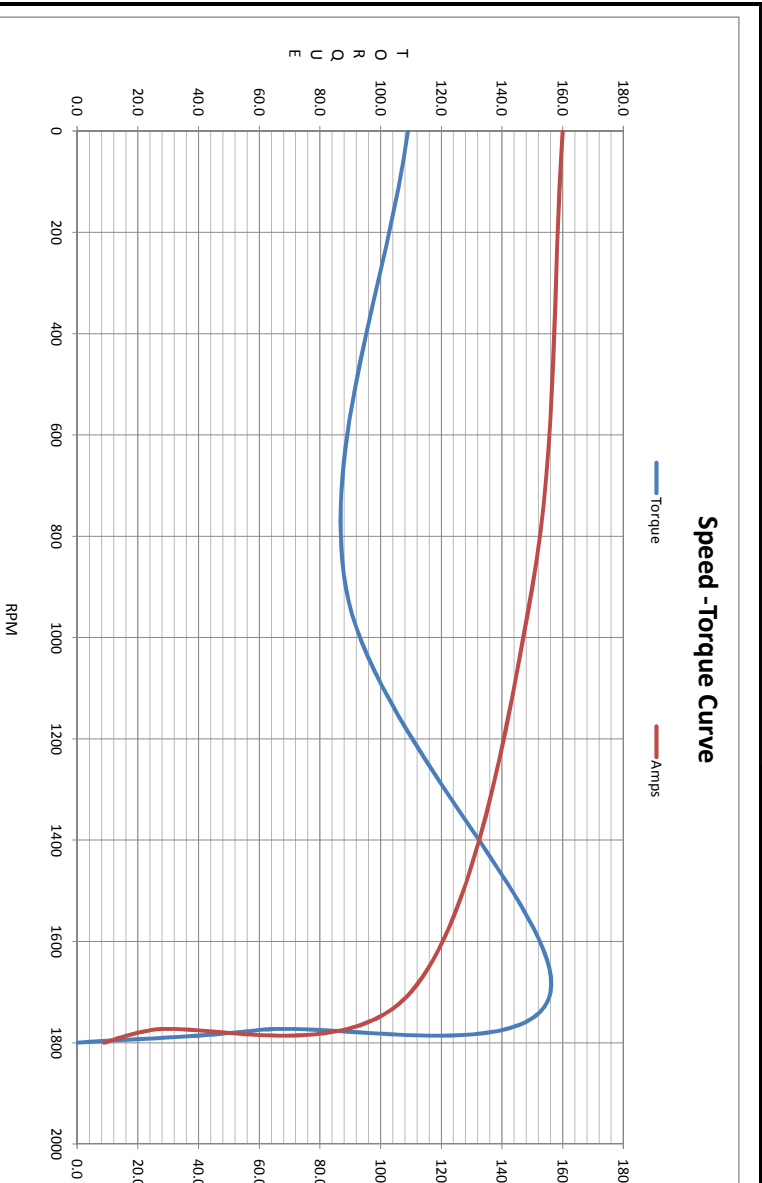
160L TFC6538
 Submit Data @ 460 V

		Motor Load Data							
Load	0%	25%	50%	75%	100%	115%	125%	LR	
Current (Amps)	8.8	10.6	14.4	19.1	24.6	28.5	30.4	160	
Torque (ft-lb)	0.00	15.0	30.0	45.0	60.0	69.0	75.0	109	
RPM	1800	1795	1785	1780	1775	1,770	1765	0	
Efficiency (%)		89.7	92.8	93.4	93.0	92.4	92.2		
P.F. (%)	5.2	50.5	71.6	80.1	83.0	83.5	84.3	0.0	

		Motor Speed Data					Information Block																			
LR	Pull-Up	BD	Rated	Idle		HP	Frame	Enclosure	Construction	Voltage	Frequency	Design	LR Code letter	Service Factor	Temp Rise @ FL	Duty	Ambient	Elevation	Motor/Shaft wk ²	Ret Wdg	Sound Pressure @ 1M	VFD Rating	Outline Dwg	Conn. Diag	Additional Specifications:	
0	900	1700	1775	1800		20.0	256	TEFC	TFC	30/460#200/40 V	60	A	G	1.15	45	CONT	40 °C	1,000 feet	2.97 Lb-Ft ²	T12904020 FR	75	dbA	CONSTANT 2:1	B-SS62239	004172.03ME	
Current (Amps)	160	150	110	24.6	8.8																					
Torque (ft-lb)	109	88.5	156	60.0	0.00																					



R1	R2	X1	X2	Xm
0.0000	0.0000	0.0000	0.0000	0.0000



Date: 5/5/2017
 Customer: EARL BABBITTS
 Attention: EARL BABBITTS
 Submitted by: EARL BABBITTS



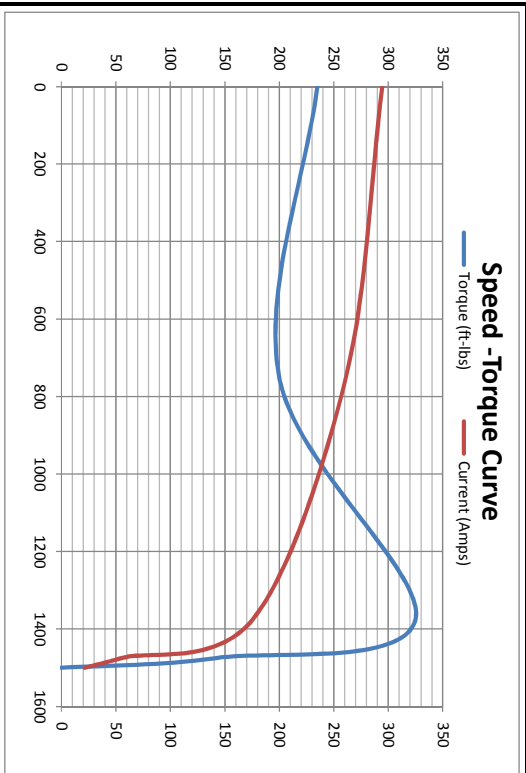
Torque Capability Curve

REF: 160LTFCS538
 Data @ 460 Volts

HP	Min CT RPM	Base RPM	CHP RPM	Max CHP RPM	Max	RPM	Peak
0.00	0.00	20	20	20	125		
0	0	460	460	460	460		
0	0	60	90	91	89		
RPM	0	1,775	2,700	2,700	2,582		
Current (Amps)	24.6	24.6	24.6	24.6	152		158
Rated Tq (ft-lb)	60.0	60.0	60.0	39.4	245		
Peak Tq (ft-lb)	144	144	144	59.5	59.5		60.3

Motor Speed Data

	Locked Rotor	Pull-Up	Breakdown	Rated Load	Idle	Information Block
Speed (RPM)	0	750	1375	1475	1500	HP 20.0
Current (Amps)	295	261	176	55.1	21.4	Sync. RPM 1,800
Torque (ft-lbs)	235	200	325	142	0.00	Frame 256
						Enclosure TEFC
						Construction TEFC
						Voltage 230/460#200/400
						Frequency 60 Hz
						Duty CONT
						Design A
						LR Code letter G
						Poles 4
						Temp Rise @ FL 45 °C
						Ambient 40 °C
						Elevation 1,000 feet
						Ref Wdg T12904020
						R # FR
						dBa @ 1M 75
						VFD rating CONSTANT 2:1
						OUTLINE: B-SS622239
						CONN DIAG: 004172.03ME
						0



HP	20.0
Sync. RPM	1,800
Frame	256
Enclosure	TEFC
Construction	TEFC
Voltage	230/460#200/400
Frequency	60 Hz
Duty	CONT
Design	A
LR Code letter	G
Poles	4
Temp Rise @ FL	45 °C
Ambient	40 °C
Elevation	1,000 feet
Ref Wdg	T12904020
R #	FR
dBa @ 1M	75
VFD rating	CONSTANT 2:1
OUTLINE:	B-SS622239
CONN DIAG:	004172.03ME
	0

