3.4 Temperature Rise.

The rated temperature rise of all windings shall be 75°C rise by thermometer or 110°C rise by resistance. The temperature rise of other parts such as armature iron, commutator, brushholders, bushes, pole tips, etc., may attain such temperature as will not injure the machine in any respect. A temperature rise measured by either resistance or thermometer method demonstrates conformity with the Technical Report. The 1-hr and 30-minute ratings are based on a load test which shall commence only when the windings and other parts of the machine are within 5°C of ambient temperature.

3.5 Ambient and Altitude.

The standard ambient temperature is −30°C to +40°C at any altitude up to 3300 ft.

3.6 Field Heating at Standstill.

The shunt fields for both the shunt and compound wound motors shall have the capability of being operated continuously at standstill with rated voltage without exceeding rated temperature rise.

3.7 Speed Regulation.

3.7.1 Adjustable Speed Motor — The regulation of adjustable speed motors from no load to their basic 1-hr TENV or continuous ventilated ratings shall not exceed the following:

BASE SPEED	MAXIMUM % REGULATION
100%	15%
200%	20%
300%	25%

3.7.2 Compound Motor — The degree of compounding is defined as: At the 1-hr rating (TENV) or at the continuous rating (TEFV) the excitation shall be 50% shunt and 50% series to within the nearest whole number of series turns.

3.8 Variation in Speed Due to Heating.

The variation in speed from full load cold to full load hot during a run of rated duration shall not exceed 20% for TENV nor 15% for TEFV.

3.9 Variation from Rated Speed.

At normal operating temperature, rated load and voltage and at full field, the variation above or below the rated full field speed shall not exceed 7 1/2%.

3.10 Rotation.

The motor shall be capable of being operated in either direction of rotation.

3.11 WK^2 Factor.

The maximum values of armature WK^2 shall be as shown in Table 1.

3.12 Maximum Speeds.

Maximum safe operating speeds are shown in Table 1.

3.13 Nameplate.

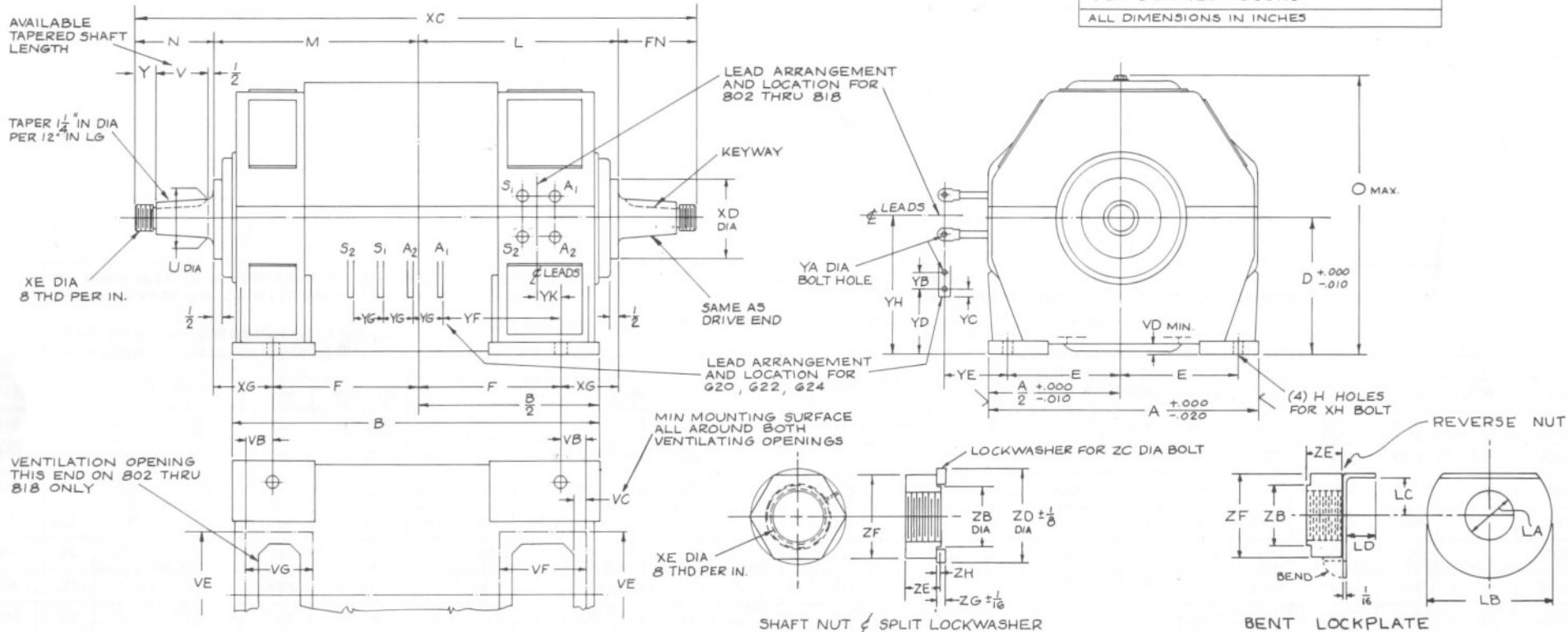The following minimum information shall be given on all nameplates:

(1) Manufacturer's type and frame designation.

(2) Horsepower output at base speed.

(3) Time rating at base speed.

(4) Temperature rise at base speed.

(5) Rpm at full load base speed.

(6) Voltage.

(7) Full load amperes.

(8) Winding — straight shunt, stabilized shunt, compound or series.

(9) Enclosure.

DRIVE END

COMMUTATOR END

SHAFT NUT & SPLIT LOCKWASHER

BENT LOCKPLATE

FRAME SIZE	A	B	XC	D	E	F	XG	H	XH	L / M	O	XD	SHAFT N FN	U	V	Y	XE	KEY WIDTH	THK	ZB	ZC	ZD	ZE	ZF	ZG	ZH	VB	VC	VD	VE	VF	VG	YA	YB	YC	YD	YE	YF	YG	YH	YK	AFBMA BEARING NO.	LA	LB	LC	LD
802	15	20½	32⅞	7⅝	6¼	8¼	3¾	25/32	¾	12 15¾	15¾	4½	4 7/16	1¼	2¾	3/16	1	½	½	1⅛	1½	2⅜	⅞	2	¼	3/16	⅞	⅜	⅝	7¼	4½	2 3/16	13/32	–	–	–	5	–	–	8⅝	3	50RJ03	1 1/16	2½	1	¼
803	17	23½	37	8½	7	9	4½	29/32	⅞	13½ 17½	17½	5½	5	2	3¼	1¼	1¼	½	½	1½	1½	2⅜	15/16	2¼	¼	3/16	1¼	½	⅝	8½	5	3¼	13/32	–	–	–	5	–	–	9½	3	55RJ03	1 5/16	2½	1⅛	5/16
804	18	25½	39	9	7½	9½	5	29/32	⅞	14½ 18½	18½	5½	5	2	3¼	1¼	1¼	½	½	1½	1½	2⅜	15/16	2¼	¼	⅜	2¼	½	⅝	9	5½	2¾	13/32	–	–	–	5	–	–	10	3	65RJ03	1 5/16	2½	1⅛	5/16
806	20	27½	42¼	10	8¼	10½	5	1 5/32	1	15½ 20½	20½	6¼	5⅝	2½	3¾	1⅜	1½	½	½	2	2	2⅞	1 1/16	2⅜	⅜	5/16	2⅝	½	⅝	10¼	6	3⅜	13/32	–	–	–	5	–	–	11	3	75RJ03	1⅜	3⅝	1¼	9/16
808	22¾	31¼	47½	11⅛	9⅜	12⅜	5⅛	1⅜	1⅛	17½ 23	23	7¼	6¼	3	4¼	1½	2	¾	½	2½	2½	3½	1⅜	3½	7/16	⅜	2	½	¾	11½	6½	3½	13/32	–	–	–	7	–	–	12½	3	85RJ03	2 1/16	4 5/16	1⅝	21/32
810	24½	32½	50¼	12¼	10¼	13	5¼	1⅜	1⅛	18¾ 25	25	8	6⅜	3¼	4¼	1⅜	2¼	¾	½	2¾	2¾	3¾	1⅜	4	½	7/16	2½	½	¾	12	7	3⅝	13/32	–	–	–	7	–	–	13½	3	95RJ03	2½	4⅜	1⅝	¾
812	27	36	55	13⅜	11¼	14¼	6¼	1 5/16	1¼	20½ 27¼	27¼	8⅜	7	3⅝	4¾	1⅜	2½	¾	½	3	3	4	1 7/16	4¼	½	7/16	2½	⅝	¾	13¾	8¼	4⅞	13/32	–	–	–	7	–	–	14⅝	3	105RJ03	2 9/16	5	1⅞	⅞
814	30	41½	60¾	14¾	12½	16	7¼	1 5/16	1½	23¼ 30	30	10	7⅞	4¼	4¾	1⅞	3	1	¾	3½	3½	5	1 5/16	4⅝	½	¾	3⅜	⅝	¾	15¼	9¼	5½	13/32	–	–	–	9	–	–	16¼	3	115RJ038	3 1/16	5⅞	2 3/32	23/32
816	32½	46¾	67½	16	13½	17½	8¼	1 9/16	1½	26 32⅝	32⅝	10	7¾	4⅝	5¼	2	3¾	1¼	¾	4	4	6	1 1/16	5⅜	⅜	5/16	4½	1	¾	16	11	6⅝	13/32	–	–	–	9	–	–	17½	4½	130RJ03	3⅝	6½	2⅝	⅝
818	36	49¾	70⅝	17¼	15	19½	8	1 13/16	1¼	27½ 36½	36½	10	7 7/16	5	5¾	1 9/16	3½	1¼	1	4	4	6	1¼	5¾	⅜	5/16	3⅞	1	¾	18	12	7⅞	13/32	–	–	–	9	–	–	19¼	4½	140RJ03	3 9/16	6¼	2⅝	¾
G20	41½	52	78	20⅞	18	22	8	2 1/16	2	30 42⅜	42⅜	10	9	5⅝	6½	2	4	½	1½	5	5	7⅛	1 9/16	6½	7/16	5/16	3¾	1	¾	22	7¾	–	17/32	2	1	11¾	4¼	18½	4½	–	–	150RJ02	–	–	–	–
G22	45½	62	86¼	23	20	25¾	7¼	2 1/16	2	33 46⅝	46⅝	11	10⅛	6¼	7	2⅝	4	½	1½	5	5	7⅛	2⅜	6½	7/16	5/16	3¾	1	¾	30½	8	–	17/32	2	1	11¾	4¾	22	4½	–	–	160RJ02	–	–	–	–
G24	47½	68	96¼	24	21	28	8	2 1/16	2	36 48⅝	48⅝	12	12⅜	7	9	2⅝	4	½	1½	5	5	7⅛	2⅜	6½	7/16	5/16	3¾	1	¾	32	9½	–	17/32	2	1	11¾	5¾	24	4½	–	–	180RJ02	–	–	–	–

Fig. 1 — AISE Standard Dimensions for D-C Mill Motors