Introduction of Products

NEW TYPE THREE PHASE INDUCTION MOTORS TYPE OR-8 TOTALLY ENCLOSED FAN-COOLED WITH DOUBLE SEALED BALL BEARINGS

New type Fuji totally enclosed fan-cooled motors are the fruits of painstaking efforts and new design and technique based on many years' experience and study by the Fuji Electric Manufacturing Company which is proud of being the only electric machine maker to succeed the European engineering in Japan. The motors have been completed according to the international trend of reducing the size of motors.

Another tendency of motor design in terms of the operator's requirement is to use the protective system shifting from the open type to the drip-proof type and further to the totally enclosed one. This signifies that an intense requirement for care-free motors independent of surrounding conditions. In the world more than 80% of general purpose motors are built and used in the totally enclosed pattern, which attests the trend mentioned above. Hence, the Company is also trying to meet this demand by producing new totally enclosed motor with squirrel cage rotor on the occasion when new international dimensions are about to be prescribed in Japan.

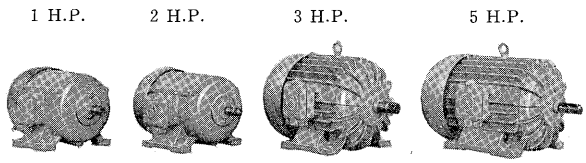


Fig. 1 (a). New type, totally-enclosed fan-cooled Fuji motor, 1, 2, 3 and 5 H.P., 4 P

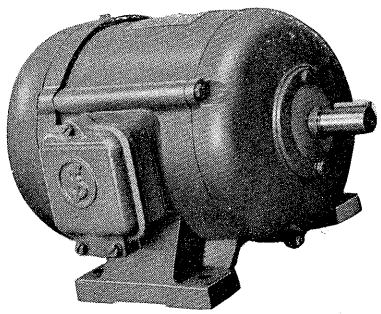


Fig. 1 (b). New type, totally-enclosed fan-cooled Fuji motor, 1 H.P., 4 P

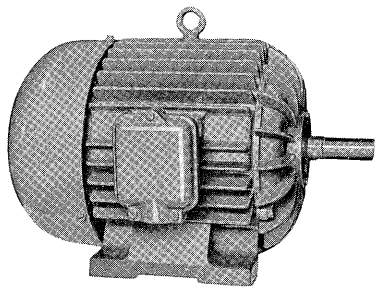


Fig. 1 (c). New type, totally-enclosed fan-cooled Fuji motor, 3 H.P., 4 P

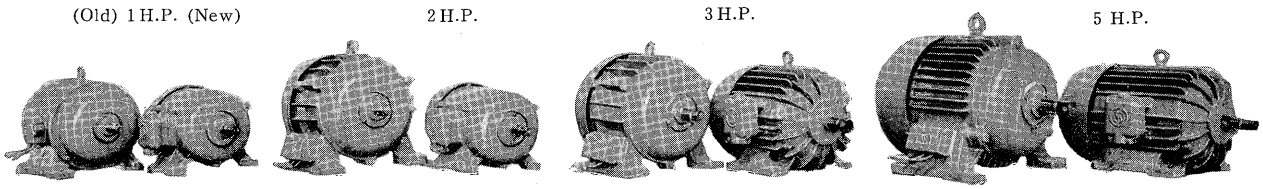


Fig. 2 (a). Comparison between old and new type, 1, 2, 3 and 5 H.P.,4 P

The new motors are produced with a mass-production system under a prefect quality control; the materials used are rigidly selected poly vinyl formal wires, silicon steel of small loss and aluminium of high purity, assuring uniform quality as well as excellent performance.

Their smart appearance, totally enclosed construction to withstand any severe surrounding conditions, easy handling, maintenance and a long life due to the employment of sealed-off bearings with silicon grease that needs no oiling are conditions to satisfy the users in all kinds of application.

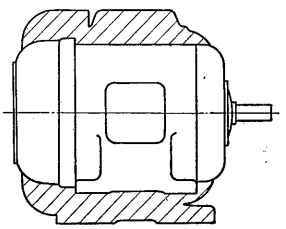


Fig. 2 (b). Comparison between old and new type

I. DISTINCTIVE FEATURES

1. Graceful appearance and sturdy construction

In addition to a graceful appearance conforming to a modern sense of beauty, the frame, bracket and terminal box are all built sturdy enough for a practical purpose with special attention to guard against broken legs or other damages even under rough handling.

2. Damp-proof and dust-proof construction

Since they are totally enclosed to protect the interior, the motors can be used safely at places where water drips, splashes, moisture or dust are present, i. e., they are applicable anywhere independent of surrounding conditions.

3. Excellent torque charateristics

They have a large starting and acceleration torque to suit for any purpose. The instantaneous maximum output is so large that any momentary increase of load or little voltage drop will have no harm for the operation.

4. Effective cooling system—low temperature rise and long life

A strong outside fan, an effective inside fan built in by casting together with the end ring of the rotor and improved ventilation ducts enable together to have powerful and effective cooling, assuring maintenance of low temperature rise of the motor and resulting in a long life. These merits and excellent characteristics are good for withstanding fully abnormal overloads.

5. Bearings need no oiling

Seald-off bearings are used for the motor. This is the same feature as the sealed-off ball bearings provided to the enclosed drip-proof new motor made public last year with sensation to the circles by the Company which took the lead in employing the ball bearing sometime ago. Based on the experience and confidence in its superiority, this new type motor has adopted this novel design. To this sealed-off bearing is used excellent silicon grease, which is added to the feature of perfectly seald-off construction to be free from dusts. It obviates the necessity of replenishing grease and makes maintenance very easy. There is no fear of any foreign substances entering it to cause failure, that means, the users can be assured of safe operation compared with the old design which required constant attention.

6. Vibration-free, noiseless

The rotor of the new type motor is built of high grade aluminium cast with high pressure by aluminium die-casting. The rotor bars, end rings and internal fan are all casted to an integral body so as to have very strong mechanical structure. The rotor bars are skewed and magnetic vibration and noises are greatly reduced, which is further enhanced by a dynamic balancing with a special balancing machine so that mechanical vibration is minimised. Furthermore silmin casting is used for the internal cooling fan which is the maximum factor of determining the noise level. The ventilation paths thus made are much smoother than those of iron plate construction and less noise and quiet operation is available considering a large cooling effect.

7. Terminal box convenient for making connection

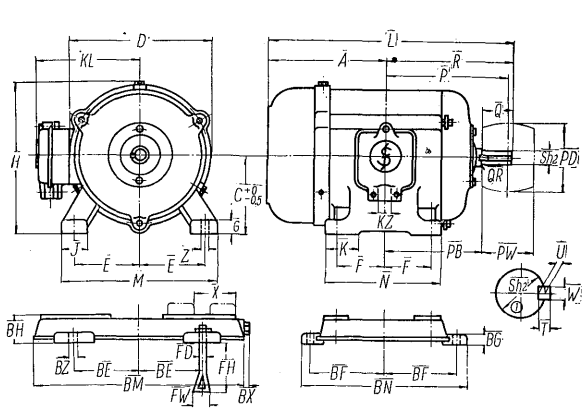
The terminal box is of a new design to facilitate connection. The terminal box is to be split vertically into two and upon removing the cover, the connecting part will come out of the box periphery so as to be of easy access for the work of connection. When a conduit tube is used, it will be fixed with the terminal box and the cover. The terminal box itself is of a totally enclosed type with a rubber gasket with which the cover and box is so tightly fixed together to make it fully dust and drip-proof.

8. Perfect insulation treatment

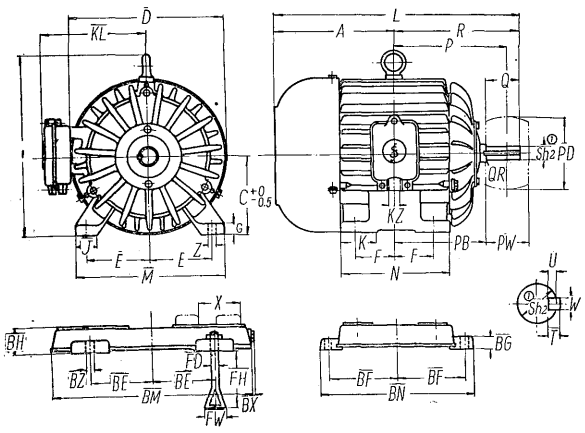
Since the life of the insulation determines the life of the motor, the Company pays special attention to the insulation by using carefully selected polyvinyl formal wires (P.V.F. wires). The application of this material was tried by the Company ahead of any other motor makers. The varnish, which is the basic material of insulation, is made by the Company under a quality control, and with this the varnish treatment is given to guarantee a long life of the motor in addition to the low temperature rise.

9. Uniform quality

All materials such as steel and casting are obtained under strict control, and are then machined and processed with full automatic unipurpose machine to insure high degree of accuracy. The varnish treatment is also conducted with a full automatic dipping equipment and drying apparatus. The coating is also made by an automatic electro static painting machine and an infrared-ray baking arrangement. These automatic operations turn out products of uniform quality ensuring accuracy and performance as well as appearance.



(a) 1 and 2 H.P., 4 P



(b) 3 and 5 H.P., 4 P

(a) Dimensions in mm

4 P	Type	Motor																Pulley			
	OR	A	C	D	E	F	G	H	J	K	KL	KZ	L	M	N	R	Z	P	PB	PD	PW
1 H.P.	381	155	115	210	95	55	20	225	40	45	150	20	320	230	140	165	11	157.5	125	75	65
2 H.P.	382	170	115	210	95	70	20	225	40	45	150	20	360	230	170	190	11	177.5	140	100	75

4 P	Type	Shaft end						Slide base										Foundation bolt		
	OR	Q	QR	S	T	U	W	Type	BE	BF	BG	BH	BM	BN	BX	BZ	X	FD	FH	FW
1 H.P.	381	40	1	22	7	4	7	S B 20	95	110	20	40	320	230	6	12	65	3/8"	90	15
2 H.P.	382	50	1	22	7	4	7	S B 21	95	115	20	40	320	260	6	12	65	3/8"	90	15

Remark: ① h_2 according to "JES" fit.

(b) Dimensions in mm

4 P	Type	Motor																Pulley			
	OR	A	C	D	E	F	G	I	J	K	KL	KZ	L	M	N	R	Z	P	PB	PD	PW
3 H.P.	481	210	135	265	110	70	22	314	40	60	180	26	430	260	190	220	11	197.5	160	125	75
5 H.P.	482	230	135	265	110	90	22	314	40	70	180	26	470	260	230	240	11	230	180	140	100

4 P	Type	Shaft end						Slide base										Foundation bolt		
	OR	Q	QR	S	T	U	W	Type	BE	BF	BG	BH	BM	BN	BX	BZ	X	FD	FH	FW
3 H.P.	481	60	1	28	7	4	7	S B 22	110	120	20	45	350	270	6	12	65	3/8"	90	15
5 H.P.	482	60	1	28	7	4	7	S B 23	110	140	20	45	350	310	6	12	65	3/8"	90	15

Remark: ① h_2 according to "JES" fit.

10. Dimensions

Dimensions of the new type Fuji OR motor are according to JEMA Standard and nearly equal to New NEMA Standard.

II. APPLICATION

The new type Fuji enclosed fan-cooled type having such features as mentioned above is suitable to any kind of application. It can be used for any purposes, such as weaving, chemical, cement, flour, rice-refining and bakery. Because of the totally enclosed condition it can be mounted in any position (horizontal, vertical, wall or ceiling mounting). Even if it is mounted up-side-down, there is no leaking of grease. Its sufficiently strong torque characteristic enables it to suit general working power in factories, pumps, blowers and thrashing machines. Such machines requiring high starting torque as compressors and spinning machines or machines needing frequent start and stop such as machine tools are all well taken care of by this motor. Thus the motor is now enjoying good reputation everywhere.