TYPES FH AND FT SINGLE PHASE MOTORS

INSTRUCTIONS

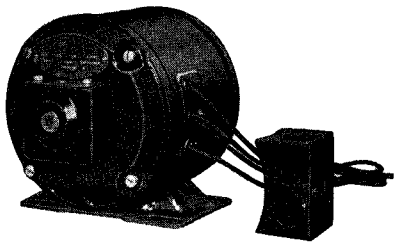

FIG. 1—TYPE FH MOTOR, AND TYPE FT MOTOR USING A SEPARATE CAPACITOR

Installation

Initial Inspection—After unpacking the motor, examine it carefully to see that no damage has occurred during shipment. Turn the shaft by hand to see that it turns freely. Check the nameplate data to make certain that the rating is correct for the power supply and load.

Mounting—The location should be clean, dry, well-ventilated, and accessible. If protecting shields or guards are used, they must permit a free flow of air over the motor.

Sleeve bearing motors are ordinarily designed for operation with the shaft horizontal. Unless ordered otherwise, motors are assembled for floor mounting. If it is desired to mount the motor on a side wall or ceiling, the end brackets of the motor should be loosened and rotated 90° or 180° so that the oil well cover will be above the shaft. There may be leads connected to a starting switch inside the front bracket, so care must be taken to see that these leads will not interfere with any moving part after the brackets are shifted. If necessary, the stationary part of a starting switch mounted inside the front bracket may be shifted 180° in the bracket to keep the leads from interfering with the switch or any rotating part. Care must also be taken to avoid getting foreign matter in the bracket fits, thereby causing the bearings to bind.

Ball bearing motors (grease lubricated) will operate in any position. For convenience in lubricating, it may be desirable to shift the motor brackets to obtain a more accessible location of the lubricating openings.

Pulleys, pinions, or coupling halves should have a close sliding fit on the shaft extension and must be securely locked to avoid hammering out in operation. If it is necessary to drive the part into position, it is important, that the end of the shaft opposite the extension be backed up so that the force of the blow is not taken in the bearing. For removing tight pulleys, a pinion puller should be used.

Belt or chain drives should be arranged when possible to have the tight side at the bottom. On sleeve bearing motors, it is bad practice to set up the drive so that the pressure from the shaft is against the window opening in the bearing. This window is ordinarily placed at the top of the bearing. If in doubt, a bracket should be removed to determine the location.

Wide, single ply belts are preferable to double ply belts on account of the lower bearing pressures that result. Where the pulleys are not of approximately the same diameter, the distance between shaft centers should be greater than twice the diameter of the larger pulley. For short center distances, an idler pulley or a "V" belt drive should be employed. Suitable guards or covers should be placed over all moving parts to avoid accidents and to comply with existing safety regulations.

Connection to Power Supply

Type FH motors are split phase motors, which are complete; ready for operation.

Type FT motors are capacitor motors which require a capacitor properly connected in the circuit for operation. Motors with the capacitor mounted on top are complete; ready for operation. If the capacitor is not mounted on the motor, the style number of the capacitor required is specified on the motor nameplate.

Motors with two leads are non-reversible. Connect one lead to each line wire.

Single Voltage Motors with Four Leads—marked T1, T2, T3, and T4 should be connected as follows:

FOR COUNTER CLOCKWISE ROTATION, connect T1 and T2 to one line wire; T3 and T4 to the other line wire.

FOR CLOCKWISE ROTATION, connect T1 and T4 to one line wire; T2 and T3 to the other line wire.

Single voltage motors with other than four leads, and all dual voltage motors have wiring instructions furnished, usually on a nameplate. Type FT motors usually have this nameplate on the capacitor.

Connect the power supply through a Westinghouse Sentinel Breaker, or other suitable switch and overload protection.

Lubrication

Wool Yarn Lubricated Sleeve Bearings—Motors with wool yarn lubricated sleeve bearings are shipped with the wool wick saturated with oil. They may be run continuously for several months, after which oil should be added. Use a good grade of dynamo or light machine oil.

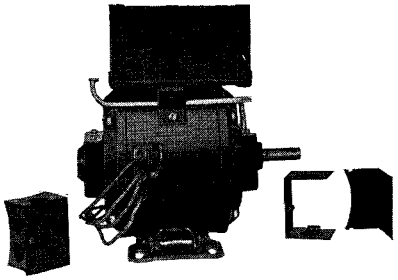

FIG. 2—TYPE FT MOTOR WITH CAPACITOR ON MOTOR

Wasting oil due to over oiling will be indicated by the excessive amount flowing out the overflow hole in the side of the bearing housing.

Ball Bearings—Standard ball bearing motors are properly lubricated when they leave the factory. In ordinary service, the motors will run for a year as received. It is recommended, however, that a small quantity of neutral, medium consistency grease be added every four or six months to maintain an even lubricating condition. The grease must be free from grit and must not separate into soap and oil when left standing or when subjected to temperatures which occur in the bearing. Soda base soap greases are preferred on account of their higher melting point.

Operation and Maintenance

The motor will operate satisfactorily with a 10% variation in voltage, a 5% variation in frequency, or a combined voltage and frequency variation of 10%, but not necessarily in accordance with the standards of performance established for operation at normal rating. Low voltage reduces the torques. Guard against this condition. High voltage lowers the power factor and generally increases the temperature rise.

Motors should be inspected at regular intervals, noting particularly that the mounting bolts, bracket bolts, and coupling or pulley are tight and that the bearings are properly lubricated. Increase in operating temperature, localized heating, or excessive noise indicate approaching failure and should be investigated at once.

It is desirable to thoroughly clean the motor at intervals of one to two years, but is not essential unless motors are operating in an atmosphere containing dust or lint. Revarnishing the windings when motors are overhauled will lengthen their life.

*To be filed as an Instruction Leaflet and as Renewal Parts Data; for Renewal Parts Data, see reverse side of this sheet.

INSTRUCTIONS AND RENEWAL PARTS DATA

INDUSTRIAL DEPARTMENT

TYPES FH AND FT SINGLE PHASE MOTORS
RENEWAL PARTS DATA

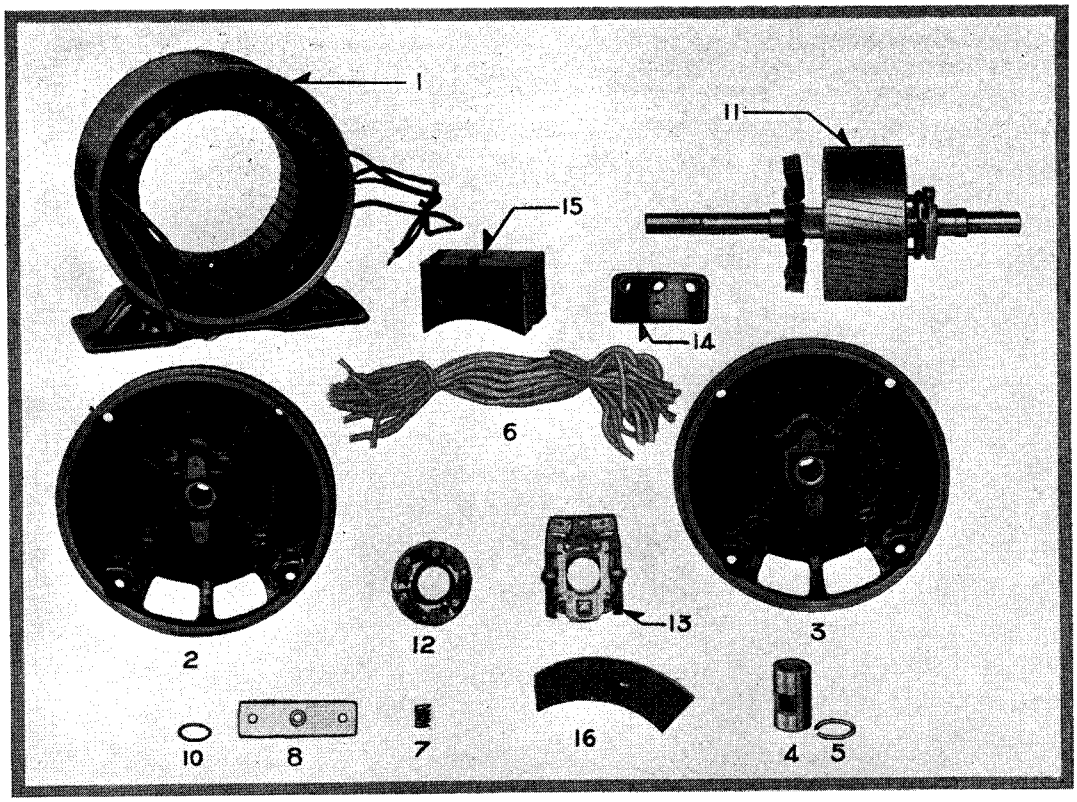

FIG. 3—RENEWAL PARTS FOR TYPES FH AND FT MOTORS

RECOMMENDED STOCK OF RENEWAL PARTS

Ref. No.	Name of Part	No. Per Motor	Recommended For Stock		
	For Motors in use up to and including		1	5	15
1	Frame and Wound Primary Complete	1	0	0	1
2	Front Bracket Complete	1	0	0	0
4	Bearing	1	0	1	2
5	Retaining Ring	1	0	1	2
3	Rear Bracket Complete	1	0	0	0
4	Bearing	1	0	1	2
5	Retaining Ring	1	0	1	2
6	Lubricating Wick	2	0	2	4
7	Wick Pressure Spring	2	0	0	2
8	Oil Well Cover, front on all motors, and rear on all motors except those using Ref. No. 9	2	0	0	2
† 9	Oil Pipe and Rear Oil Well Cover complete (For Type FT Motors with Capacitor on Motor)	1	0	0	1
10	End Play Washer	4	0	4	8
11	Rotor Complete	1	0	0	1
12	Rotating Starting Switch	1	0	0	1
13	Stationary Starting Switch	1	0	0	1
14	Conduit Box Clamp	1	0	0	1
15	Conduit Box and Cover	1	0	0	1
△16	Enclosing Cover	2	0	0	0
†17	Capacitor for Type FT Motor only	1	0	0	1

†Not listed on illustration.
△Enclosing cover applied to open motors reduces the rating.
Parts indented are included in the part under which they are indented.

This is a list of the Renewal Parts and the quantities of each that we recommend should be stocked by the user of this apparatus to minimize interrupted operation caused by breakdowns. The parts recommended are those most subject to wear in normal operation or those subject to damage or breakage due to possible abnormal conditions.

This list of Renewal Parts is given only as a guide. When continuous operation is a primary consideration, additional insurance against shutdowns is desirable. Under such conditions more renewal parts should be carried, the amount depending upon the severity of the service and the time required to secure renewals.

ORDERING INSTRUCTIONS

Name the part and give the complete nameplate reading. State whether shipment is desired by express, freight or by parcel post. Send all orders or correspondence to nearest sales office of the Company. Small orders should be combined so as to amount to a value of at least one dollar, as order-handling and shipping expenses prevent us from billing a smaller amount.

*To be filed as an Instruction Leaflet and as Renewal Parts Data; for instructions, see reverse side of this sheet.

Westinghouse Electric & Manufacturing Company

East Springfield Works Printed in U.S.A. **Springfield, Mass.**

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