Type XA Lint-Flow Induction Motor

Mitsubishi Electric Manufacturing Co., Ltd., Member, TMSJ

The recent rapid increase in exports of Japanese textiles, which have been winning a reputation for quality and moderateness of price, has led to a rise in exports of electrical apparatus for the textile industry.

Generally, electrical apparatus for the textile industry are required to be of high efficiency, easy to handle, light in weight and low cost.

Textile motors, in particular, must meet two important requirements: (1) They must take only a minimum of floor space; (2) they must have perfect protection against flying lint.

1. Saving Floor Space

Plant equipment, to be used effectively and economically, have to be reduced to a minimum in dimension and weight. This is true of textile motors, no matter how they are installed. The open type motor is ideal in this respect.

2. Protection Against Lint

Once lint enters a motor, it causes trouble. This is why the totally enclosed, nonventilated type is the most suitable for protection against lint. The second best choice is the totally enclosed, fan cooled type, but this type gives the trouble of removing lint that sticks to the outside fan. The type XA Lint-Flow Textile Motor, introduced here, has been developed to meet the two requirements—floor space-saving and protection against lint. Briefly, this is an open type squirrel-cage induction motor and is protected against lint if it enters the motor.

Construction

This motor is ventilated by a double-end ventilating method, and is so designed that lint does not stick to the cooling air passing through it. The motor works with high efficiency and, moreover, keeps temperature low in continuous operations. Figure 1 shows the appearance of the motor, Figure 2, its sectional view.

Fig. 1 Type XA Lint-Flow Textile Motor

Fig. 2 The section of the motor.

Stator

The stator is held in the frame which has a semi-circular section, as shown in Figure 1. The exposed portion of winding is finished with a mixture of a special varnish, synthetic resin and inorganic insulation, to give a smooth surface. This precludes lint from sticking to any part of the coil surface.

Motor

The motor and its fan blades are made of die-cast of high-purity aluminum. The shape of the blades is so designed that lint cannot stick to their surface.

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The motor is equipped with pre-lubricated sealed ball-bearings. Bearings are pre-packed and sealed with a suitable amount of a special
grease. This keeps the motor lubricated for many years, prevents the lint trouble and leakage of grease, and gives a long, uneventful life to the bearing. The inner bearing cap, which is mounted on the motor shaft, is designed to protect the bearing against lint and dust.

**Frame**

The frame and feet are made of cast iron in one complete whole to insure the strength and rigidity of each part. The shape of the frame is so designed that lint and dust are easily sent out with the cooling air.

**Rating**

<table>
<thead>
<tr>
<th>Output</th>
<th>Poles</th>
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<tbody>
<tr>
<td>$7\frac{1}{2}$ HP</td>
<td>4 p</td>
</tr>
<tr>
<td>10 HP</td>
<td>4 p</td>
</tr>
<tr>
<td>12 HP</td>
<td>4 p</td>
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