

T.I.P.S.

TECHNICAL INFORMATION AND PRODUCT SHEETS

MOTOR MANAGEMENT: REPAIR OR REPLACE

On average, annual motor operating costs are about three times more than the original purchase price. The investment in a motor is not just a one time cost, but an ongoing expense. Consequently, a motor management policy should be in place to safeguard the investment – given the costs involved, maintenance issues should be governed by economics.

One such issue is motor repair. It is often a better long term investment to replace a motor than to repair it (especially older, standard efficiency motors that have been repeatedly rewound in the past). An organized inventory system is a good way to identify such motors.

ESTABLISH AN INVENTORY SYSTEM

A motor inventory is an essential component of a motor management policy. The inventory will simplify the ordering process and speed deliveries when replacement motors are needed. Relying on the information on the motor nameplate is a risky proposition at best – nameplates are routinely painted over, covered with dirt and grime, or impossible to access.

The motor inventory should be the responsibility of one person at each facility. This will ensure the information is consistent and kept up to date. As a rule, all motors operating more than 2,000 hours per year should be tagged and kept on record – inventory information should include location of the motor and the storage location

of any spares.

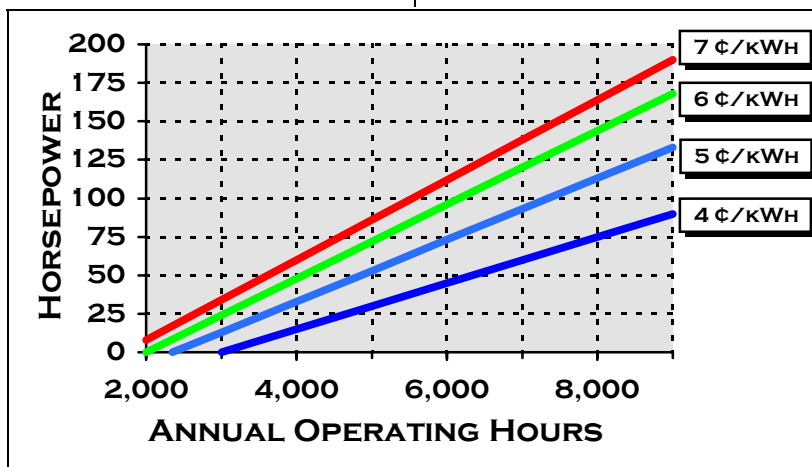
The records should be made available to maintenance staff and the purchasing department and updated to note failure and repair history. This will help to identify repeated premature failures, which are a sign of problems with the installation.

REPAIR/REPLACE BREAK-EVEN POINT

For every facility, it is more cost effective to replace rather than repair motors below a certain size. This break-even point varies from company to company depending on operating hours, motor prices, repair costs and cost of energy.

Tests have shown that on average, the efficiency of repaired standard motors is about 5.3 percentage points lower than a new energy efficient motor, compared to one point for a rewind high-efficiency motor. As a result, the following motor repair or replace policy is recommended:

1. Repair high-efficiency motors at a quality repair shop.
2. Replace standard motors smaller than the HP break-even point.
3. Repair standard motors larger than the HP break-even point at a quality repair shop.
4. If a repair (standard or HEM) will cost more than 60% of a new HEM, replace it instead.



Sample 1800/3600 RPM TEFC Motor Replacement Chart. Choose operating hours, move up to energy costs and across to determine HP break-even point.