



FILE INFORMATION:
DIVISION TAB-TRANE REFRIGERATION
PRODUCTS
PRODUCT TAB-MISCELLANEOUS
LITERATURE ITEM-GENERAL SERVICE
BULLETIN

LITERATURE FILE NO.

MISC-SB-18

**GENERAL
SERVICE BULLETIN**

Since the Trane Company has a policy of continuous product improvement, it reserves the right to change specifications and design without notice. The installation and servicing of the equipment referred to in this booklet should be done by qualified, experienced technicians.

3/23/72
Reviewed 7/1/81

SUBJECT: MOTOR STARTER CONTACT REPLACEMENT

INTRODUCTION

The purpose of this bulletin is to provide a guide to help determine the necessity for motor starter contact replacement.

DISCUSSION




A large number of motor contactors have been returned as being defective because the contacts appear worn, when in reality the contacts have considerable life remaining. Often, there is evidence that a file or other means has been used in an attempt to make the contacts smooth. This should never be done as it only accelerates the wear and shortens the life of the contactor.

When establishing and interrupting electric motor currents the contacts are subjected to electrical wear. Electrical wear is an erosion caused by arcing when contacts are making and breaking electrical currents. During this arcing, a small portion of each contact is melted, vaporized and then blown away from the contact.

As a pure silver contact erodes, its arcing surface changes contour and smoothness. As a contact wears, discolorations usually give it a mottled appearance involving the colors silver, blue, brown and black. The black comes from the silver oxide formed during arcing. Silver oxide is beneficial to the operation of the contact. This uneven wear of electrical erosion does not mean the contact should be replaced. Tests indicate that a pitted surface is better than a surface which has not been subjected to arcing because its circuit making reliability has been improved.

A silver cadmium oxide shows the same wear characteristics as a pure silver contact except that small black granules may be evident on the arcing surface. These granules are cadmium oxide, a black material which is scattered throughout the mixture. As with a pure silver contact, silver oxide is formed during arcing.

The illustration on page 2 has been prepared to assist you in deciding whether a set of motor starter contacts are eroded badly enough to need replacement or are still fit for further service.

CONDITION	SERVICE	APPEARANCE
	<p>New</p> <p>None or few operations</p>	<p>Smooth surfaces, may be bright, dull or discolored by oxidation or tarnishing.</p>
	<p>Used</p> <p>Normal service Reasonable long life</p>	<p>Surfaces mildly pitted discolored black, brown, or blue areas. 75% of mass still intact. Slight feathering of portions of edge with no lifting. OK for further service.</p>
	<p>Used</p> <p>Severe service Abnormal load conditions or life exceeded</p>	<p>Surfaces badly pitted erosion craters with badly feathered and lifted edges. Replace entire contact sets.</p>

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