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LITERATURE ITEM- GENERAL SERVICE
BULLETIN

LITERATURE FILE NO.

HCOM-SB-17A

**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.

7/1/81
Supersedes HCOM-SB-17
Dated 9/24/76

SUBJECT: MODEL E COMPRESSOR SUCTION VALVE PLATE AND SPRING

INTRODUCTION

In 1976, the Model E compressor suction valve plate and springs were redesigned. Details of the design change and the methods for phasing in the change are outlined in this bulletin.

DISCUSSION

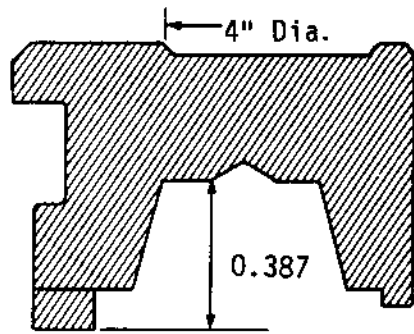
When the compressor cylinder is in the unloaded mode, the old style suction valve springs experienced a resonating condition produced by refrigerant vapor gas flow patterns. This caused the mid-section of the old style spring (SPG-52) to move as a rigid body. The internal stresses of the old style spring were concentrated near the end coils, causing the spring to break. This condition was verified with the aid of high speed photography and extensive field testing.

Since the problem was basically one of springs, a new longer spring with more turns was selected. This spring (SPG-116) has more active and inactive coils for improved stress distribution. The new spring is longer and requires a deeper pocket in the valve plate.

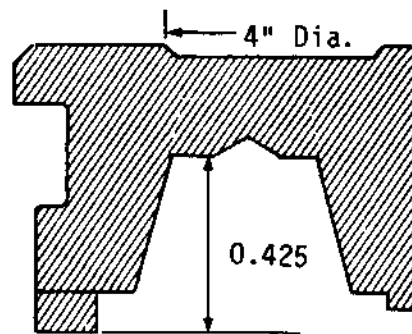
To utilize the new spring as promptly as possible, the changeover was accomplished in two steps. The first or interim step called for using the existing valve plate and deepening the spring holes from 0.387 inch to 0.425 inch. See Figure 1 for a comparison of the old style, interim and new suction valve plates. Even though the thickness of metal in the valve plate above the spring is less, results are satisfactory.

The second step involved a newly designed valve plate with the proper depth pocket for the springs and more thickness of metal in the valve plate above the spring.

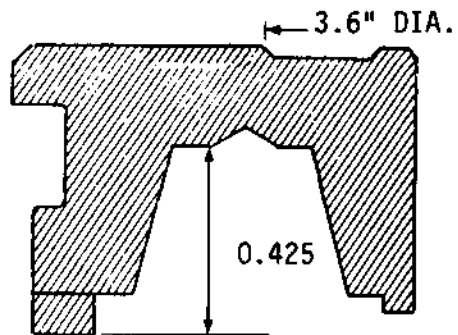
The old style valve plates may be field modified to the dimensions of the interim valve plate as shown in Figure 1. The new spring (SPG-116) must be used for this modification.



OLD STYLE



INTERIM STAGE



NEW STYLE SUCTION VALVE PLATE (STD. LIFT)

FIGURE 1 - OLD INTERIM AND NEW DESIGN VALVE PLATE