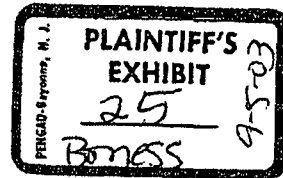


Cutler-Hammer
ProductsEaton Corporation
Specific Industry Control Division
4255 North 30th Street
Milwaukee, Wisconsin 53216-1894
Telephone (414) 449-6000

August 9, 1989

Morgan Engineering
947 East Broadway
Alliance, Ohio 44601-2699

Attention: Mr. Smith

Subject: Cutler-Hammer Contactor Design
Changes Since 1980**EATON**

Dear Mr. Smith:

The Cutler-Hammer 900 contactor has gone through a number of design changes since its original development, and a group of these changes were implemented in the early 1980's.

There were a substantial number of changes done at once, and we even called the contact the 1200 contactor line at times, though it is incremental product improvements that have been made as opposed to a new product line.

These changes were stimulated by inputs from customers as well as availability of materials.

All of these changes were achieved without obsoleting user customers inventory of parts or making parts unavailable for existing contactors. It was done with the thought in mind of achieving these benefits without the disadvantages to the many customers using these proven products. Briefly some of the very significant changes include:

1. Non-asbestos arc shields which are substantially stronger and enhance arc extinction. Although the asbestos arc chutes formerly used were non-injurious when the arc chute was completed, our vendors were no longer able to work with the asbestos material before the molding process, so this change was made.

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- The new arc chutes are interchangeable with old contactors and old arc chutes are interchangeable with today's contactors.
2. The use of oil impregnated bushings on the armature lever eliminates the need for lubrication and further extends the life of the contactor. The new armature levers are interchangeable with the older contactors, and the older contactors can have the new armature levers applied to them with no modification, so all spares and inventories are usable.
 3. Operating coils have gone to a new manufacturing process which is vacuum impregnation rather than a cast coil. This gives a longer life and a better insulation integrity. These new coils are interchangeable with old contactors, and old contactor coils are interchangeable with the new contactors, so all inventory is usable.
 4. The auxiliary interlock roller was redesigned for better lubrication characteristics with graphite materials. In some very dirty environments, such as aluminum pot lines these rollers tended to build up friction. This modification eliminates this problem.

Interlock rollers presently in stock are still usable on new contactors, and new interlock rollers are usable on old contactors, so that all inventory is still usable.
 5. The movable contact current carrying shunt has been increased in size.

This produces a longer life movable contact assembly. All present contactors can have the new movable contact assembly applied and new assemblies can be applied on old contactors with no modifications, so that all existing parts and contactors are completely usable and interchangeable.
 6. The gap between size 6 and 8 contactors has been filled with the development of the size 7 contactor.