

**INTRODUCTION/PURPOSE**

The purpose of this EDOC is to provide clarification on Harrington's response to operational testing of friction clutch devices in manual and powered chain hoists.

**SCOPE**

All Harrington manual and powered hoists that are equipped with a friction clutch device for protection against over-winding or gross overloading are included in the scope of this document.

**INFORMATION**

Harrington often receives calls regarding the function and testing of friction clutches. The friction clutches used in Harrington Hoists are not designed to be used as an overload limiter in the sense that they prevent lifting above the rated capacity of the hoist. Rather, they are designed to protect the hoist and hoist operator by slipping in the event of over-winding (bottom blocking) or grossly overloading the hoist. Hoists are rated at their maximum capacity, or working load limit, and the hoist operator must not exceed that rating. True overload limiters would disable lifting at or slightly above the rated capacity. The friction clutches in Harrington Hoists are set well above the rated capacity of the hoist, but low enough to prevent damage should over-winding or gross overloading occur.

**DISCUSSION**

Harrington does not recommend testing friction clutch operation based on the following:

1. ASME B30.21 (Lever Pullers) and B30.16 (Overhead, Underhung Hoists) state that "New hoists shall be tested by the manufacturer with a test load of at least 125% of rated load". Subsequent to that, if a load test is performed, "The test load shall not be less than 100% of the rated load of the hoist or more than 125% of rated load of the hoist unless otherwise recommended by the hoist manufacturer or a qualified person". Loading the hoist to the point of slipping the friction clutch will exceed 125% of the rated load of the hoist.
2. The friction clutch mechanism consists of friction material that is sandwiched between 2 Bellville style washers. The adjusting nut is tightened until the friction material slips on the Bellville style washers at the desired set point. Each time the friction clutch is slipped, some of the friction material is worn away causing a reduction in clamping force between the Bellville style washers and the friction material. This will cause the set point of the friction clutch to become lower and lower until the hoist will not even lift the rated load.
3. Repeatedly operating the hoist above the rated load causes additional stress on the load bearing components that could potentially lead to failure.

**CONCLUSION**

Friction clutch devices in Harrington Hoists are there to protect the hoist and the hoist operator, and should not be tested as part of a load test during an inspection or after the replacement of load bearing components.

**END**