

Pressure Relief Devices for Refrigerant Compressors

Amended Rule

Rules for the Survey and Construction of Steel Ships Part D

Reason for Amendment

Chapter 17, Part D of the Rules for the Survey and Construction of Steel Ships stipulates that relief valves are to be provided downstream of refrigerating machinery used for refrigeration, air conditioning, etc. with discharge being led to the suction sides of compressors.

On the other hand, the Rules for Cargo Refrigerating Installations, which applies to refrigerating installations registered with Installations Character, stipulates that refrigerant compressors are to be provided with means for automatically stopping compressors when pressures on the high pressure sides of refrigerant piping systems become excessively high, and the discharge from relief valves may be led to the open air.

In light of this situation, refrigerating equipment manufacturers have requested that the number of design options specified in Chapter 17, Part D of the Rules be increased.

Accordingly, relevant requirements are amended to accommodate said request.

Outline of Amendment

Adds another acceptable design option applicable if devices which automatically stop compressors when pressures on the high pressure sides of refrigerant piping systems become excessively high are installed, related to the pressure relief devices for refrigerant compressors required by Chapter 17, Part D of the Rules.

“Rules for the survey and construction of steel ships” has been partly amended as follows:

Part D MACHINERY INSTALLATIONS

Chapter 17 REFRIGERATING MACHINERY AND CONTROLLED ATMOSPHERE SYSTEMS

17.2 Design of Refrigerating Machinery

Paragraph 17.2.4 has been amended as follows.

17.2.4 Pressure Relief Devices

1 Compressors are to be provided with pressure relief devices as required by **(1)** and **(2)**.

(1) Relief valves are to be provided between compressor cylinders and gas delivery stop valves with ~~any~~ discharge being led to suction side of the compressor. In cases where devices which automatically stop compressors when pressures on high pressure sides of refrigerant piping systems become excessively high are installed, and alarm systems that activate visible and audible alarms when such refrigerant piping systems are in operation are also installed in refrigerating machinery compartments and at monitoring positions to provide an equivalent level of safety, the following (a) or (b) may be applied.

(a) Discharge from the relief valves specified in (1) above is to be led to the open air and openings are to be located at safe places.

(b) The relief valves specified in (1) above may be omitted on the condition that caution plates are provided that state all stop valves between the cylinders and pressure vessels specified in -2 below be kept in the open position before compressors are started.

(2) ~~However~~ Notwithstanding the requirement in (1) above, compressors of 11 kW or less for refrigerating installations may be provided with pressure control switches in lieu of the above safety device instead of relief valves.

2 Relief valves are to be fitted to pressure vessels which may be isolated and store primary refrigerants in a liquid condition. ~~Any~~ Discharged gases from relief valves are to be released into the atmosphere at a safe place above the weather deck or to the low pressure parts of the equipment.

3 (Omitted)

4 (Omitted)