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7.2.7 **Service Provisions.** Service provisions shall comply with Section ~~5.15~~ 5.12.

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10.2.1.1 Protection from exposed rotating parts shall be in accordance with Section ~~5.16.11~~ 5.16.1.

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iii. **Shell and Tube Heat Exchangers**
The capacity of the pressure relief device for shell and tube heat exchangers shall be based on the sum of the capacities required for the heat exchanger and the surge drum, if provided, as follows:

~~$C = f(D_{v\,Lv} + D_{s\,Ls})$ (lb/min)~~

$C = f(D_v\ L_v + D_s\ L_s)$ (lb/min)

~~[$C = f(D_{v\,Lv} + D_{s\,Ls})$ (kg/s)]~~

[$C = f(D_v\ L_v + D_s\ L_s)$ (kg/s)]

In virtually all cases, the oil-side of these stamped heat exchangers is expected to be completely filled with liquid and, as such, is subject to the provisions of *liquid pressure* relief. The same is true for the secondary fluid side of water-cooled or glycol-cooled oil coolers. In contrast, the refrigerant-side of thermosiphon oil coolers is not expected to operate completely filled with liquid. The designer needs to consider and design for the situations where overpressure conditions may occur on the refrigerant- side of these heat exchangers. Commonly, the design scenario for the refrigerant-side of these heat exchangers is a case where the heat exchanger is isolated and pumped-out with some remaining residual liquid refrigerant ~~remining~~ remaining in the heat exchanger. Subsequently, the compressor package is started without provision for oil cooling and heat from the oil becomes an internal load on the refrigerant-side of the heat exchanger creating the overpressure condition. In this case, the provision set forth in Section ~~15.3.7.2.3~~ 15.3.8.2.3 of this standard applies and is usually the controlling (maximum) factor for relief capacity requirement. The designer needs to verify by comparing the relief capacity from an external heat load as prescribed by Section ~~15.3.7.2.1~~ 15.3.8.2.1 in this standard.