

GENERAL SPECIFICATIONS

Pressure Rating Designations

The pressure rating designation of Lunkenheimer valves follows the accepted practice of the valve and fittings industry. Steel valves are designated by a pressure rating class number (usually referred to as "Class"). The class number is cast or forged on the valve body. The class number, the non-shock pressure rating at 100°F (designated as "CWP" or "Cold Working Pressure"), and the pressure rating at the maximum allowable temperature for the valve (taking into consideration not only shell material but also trim, gasket, and packing materials) is given on the specification plate for cast steel valves. Intermediate pressure-temperature ratings are given by the latest edition of ANSI B16.34 as limited by any governing codes.

The particular rating for a valve, whether given by a published standard such as ANSI B16.34 for steel valves or by a manufacturer's rating table or graph such as bronze and iron valves, is based on its design and the allowable stresses of its materials at specific temperatures.

When installing valves where shock may be present, allowance should be made for possible over-pressure. Shock may be produced by the sudden arresting of flow in a liquid line, such as would take place when a valve is closed too rapidly (classical water hammer). Shock may also be caused by a slug of liquid in a vapor line being accelerated by the vapor and striking an obstruction in the line, such as a partially closed valve (also sometimes referred to as "water hammer"). When superimposed upon the static pressure already present, this over-pressure may produce a total load great enough to cause damage to pipe, valves, or fittings. If necessary, select valves having a higher rating.

Selection of Pressure Class

The allowable stress for steel decreases as temperature increases.

Therefore, the maximum pressure at which a valve can be used is dependent upon the service temperature. The Pressure-Temperature Rating Table on page 22 lists the maximum allowable non-shock pressure at each temperature for each shell material or each pressure class. Enter the table for the service temperature on the line for shell material and read across to the permissible service pressure for each valve pressure class.

Material Designation

Carbon steel valves have the word "steel" and/or the ASTM material designation cast on the valve body. Alloy steel valves have the ASTM material designation cast on the valve body. Pressure containing parts are stamped with the number of the heat from which they are cast. The specification plate shows the shell material (body, bonnet, and disc), and the trim material (stem, disc facing, and seat facing). This material marking for steel valves conforms with the applicable requirements of MSS-SP-25 and ANSI B16.34.

ASTM A216 Grade WCB

Lunkenheimer ASTM 216 Grade WCB cast carbon steel is suitable for use on many relatively non-corrosive fluids, at temperatures below approximately 800°F, including saturated and super-heated steam; cold or hot water; cold or hot air; and cold or hot non-corrosive oil, gas and other fluids. The 0.30 percent maximum carbon content assures good welding properties. Consideration should be given to the possibility of graphitization above approximately 800°F. It is permissible, but not recommended, by ANSI B16.34 for prolonged usage above approximately 800°F. Lunkenheimer recommends WCB steel for usage to 775°F, and limits usage to 800°F because of graphitization.

Manufacturer and Product Identification

The name "LUNKENHEIMER" or the Trade Mark "L" (Symbol of "Lunkenheimer Quality") is cast on valves which are large enough. The Lunkenheimer name or trademark also appear on a specification plate attached to most products. The size is cast or stamped directly on the valve, and/or stamped on the specification plate. The figure number is stamped on the specification plate.

Inspection and Test

Lunkenheimer products have been synonymous with quality for more than a century. To produce the finest valves in the world, the most modern methods of quality control are used throughout all manufacturing processes – from the acceptance of raw materials to final assembly and testing.

Raw materials are analyzed, tested, and inspected before acceptance for conformity to specifications. Furnace atmospheres, pouring temperatures, sand analysis and all other factors are accurately controlled and continuously checked under the supervision of trained metallurgists. Every casting is inspected for defects.

Uniformity and close tolerances are maintained at the machining level by continuous inspection and gauging of component parts.

Lunkenheimer valves are tested hydrostatically or pneumatically in conformance with the code requirements. Lunkenheimer valves are given a seat test and a shell test well above the rated operating pressures. In the case of Gate Valves, both sides of the valve receive the seat test.

Standard cast steel valves are hydrostatically tested in accordance with ANSI B16.34, MSS-SP-61 and the shell, backseat, and optional hydrostatic high pressure closure test portions of API-598, using the test pressures specified in ANSI B16.34.