



A BRAND OF

BONOMI
INDUSTRIES

BONOMI INDUSTRIES SRL

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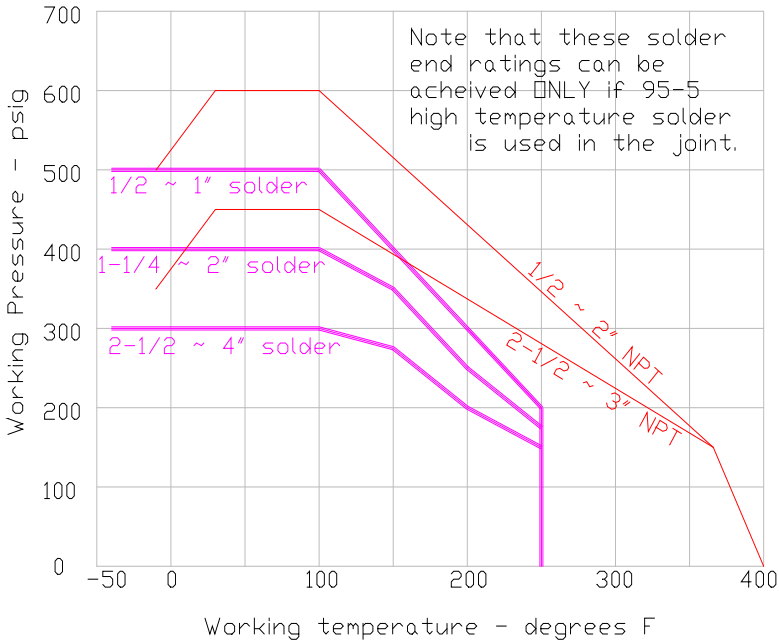
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TECHNICAL DATA SHEET			TDS 0018
PRESSURE RATINGS OF SOLDERED PIPE CONNECTIONS			
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In systems where fluids are carried in copper tubing (rather than in steel pipes) the normal manner of connecting the tube to valves or fittings is soldering. However the strength of these connections is severely limited because the solder is a comparatively soft and weak material, and the weakness is rapidly aggravated with increases in temperature. For example, the old 50-50 solder melts at temperatures between 361 and 421°F. BONOMI INDUSTRIES SRL forged brass valves are rated as high as 400F, but as you can see from the above, a valve soldered with 50-50 might disconnect from the tube well below that point. Even using the newer 95-5 solder, the melting point is between 450 and 464°F. And the solder loses strength long before it actually melts.

The limits of solder connections are set forth in ANSI B16.22. They are substantially lower than the limits of the valve if it were equipped with NPT screwed ends. That difference is shown in the P-T chart below.

Comparison of Pressure - Temperature Ratings for RuB s42 (solder end) and s92 (NPT end) forged brass ball valves. The solder end valves are limited by the strength of the solder joints as stated in ANSI B16.22.



Unfortunately the practice of rating soldered valves the same as their screwed end versions has become routine in the valve industry. The wide difference between the two is apparent in the chart, but valve companies have chosen nevertheless to overrate the soldered products. This practice is justified by footnotes or parenthetical comments, pointing out that the valve ratings are "for the valve alone, and not for the end connections."

BONOMI INDUSTRIES SRL has decided not to follow the industry practice in this matter. Instead we are limiting the valve ratings to the B16.22 limits. We feel that to rate the valve higher than its ends is – to be blunt – double talk. We don't want to issue misleading information, and risk having someone get hurt. If the valve and tube separate and dump live steam, we think it is immaterial that the valve body didn't fail – only its connection to the tube.



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