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Engineering Recommendation on:

**Factory Test Pressures**

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The test pressures for leak check chosen for use by the OEM are influenced largely by the requirements as stated in the U.L. standards which relate to the product being manufactured. The factory test pressure must be equal to, or greater than the design pressure marked on the unit. The minimum design pressures are listed below:

**MINIMUM DESIGN PRESSURE  
PSIG (KPA)**

<u>REFRIGERANT</u>	<u>LOW SIDE</u>	<u>HIGH SIDE</u>	
		<u>AIR COOLED</u>	<u>WATER COOLED</u>
R12	85 (586)	169 (1165)	127 (876)
R22	144 (993)	278 (1917)	211 (1455)
R134a	88 (606)	186 (1282)	135 (930)
R401A	85 (586)	182 (1255)	133 (917)
R402A	183 (1262)	347 (2394)	265 (1828)
R402B	170 (1172)	324 (2234)	247 (1703)
R404A	174 (1200)	331 (2281)	253 (1745)
R500	102 (703)	203 (1400)	153 (1054)
R502	162 (1117)	302 (2082)	232 (1600)
R507	180 (1242)	344 (2374)	262 (1808)

If the high side components of a system have been previously tested at the high side test pressure, then the completed system may be tested using the required low side pressure.

There may be occasions where the OEM chooses to pressurize the completed system at the required high side pressure because the individual high side components have not been tested prior to assembly. Obviously, to this case, the components in the low side of the system, such as the compressor shell, would be pressurized to those high side values.

It must be realized that:

- 1.) Tecumseh recommends a test pressure of 150 psig (1034 kPa) as an adequate means of shell leak determination.
- 2.) Tecumseh low side design compressors are tested at the manufacturing plant using 235 to 250 psig (1620 to 1724 kPa) test pressure. The RK, RG, SF, and SA compressor models (high side design) are tested using 450 psig (3103 kPa.)
- 3.) Compressor shells, when subjected to pressures greater than those used in the manufacturing plant, may become deformed slightly affecting suspension.
- 4.) If the OEM chooses to pressurize the high side only of his unit, he should understand that the low side (compressor shell) will eventually be subjected to that same pressure also since the compressor valves in their static and dry condition do not deny leakage.
- 5.) In that event, as described above in 4.), and with pressures in excess of 150 psig (1034 kPa), adequate precautions should be taken to protect the operator and adjacent workers. Failure to heed these directions may result in lethal explosions, ruptures, concussions, and/or gas poisoning.