Discharge Temperature

Measuring discharge temperature several inches from the compressor body is a good check of how well the compressor is running from a temperature standpoint.

Most compressor manufacturers will specify that they don't want a temperature higher than 230°F to 250°F on the discharge line a few inches from the compressor. In most cases you can expect the discharge valve (hottest point in the system) to be 50°F to 75°F higher than the measured discharge temperature. The discharge gas looses that much temperature in a few inches from the valve to the discharge line that you have access to.

As a technician you need to do the math. Measure the discharge temperature at the point indicated and add 75°F to 100°F to the measured temperature. You will then know the discharge valve temperature. If the valve is running around 300°F you have a problem with oil lubrication properties. The oil is too hot and will not lubricate properly. The system will also be generating "sludge" from "carbonizing" (burning) the oil by the very high temperatures. The high temperature will create acids and sludge, both products that you do not want in your system!

Monitoring discharge temperatures is a good plan for a problem system. The heat sensitive Hermettape sticker will record the highest temperature it is exposed to and turn the corresponding box black. "Data Loggers" are also good. (You don't have to be there)