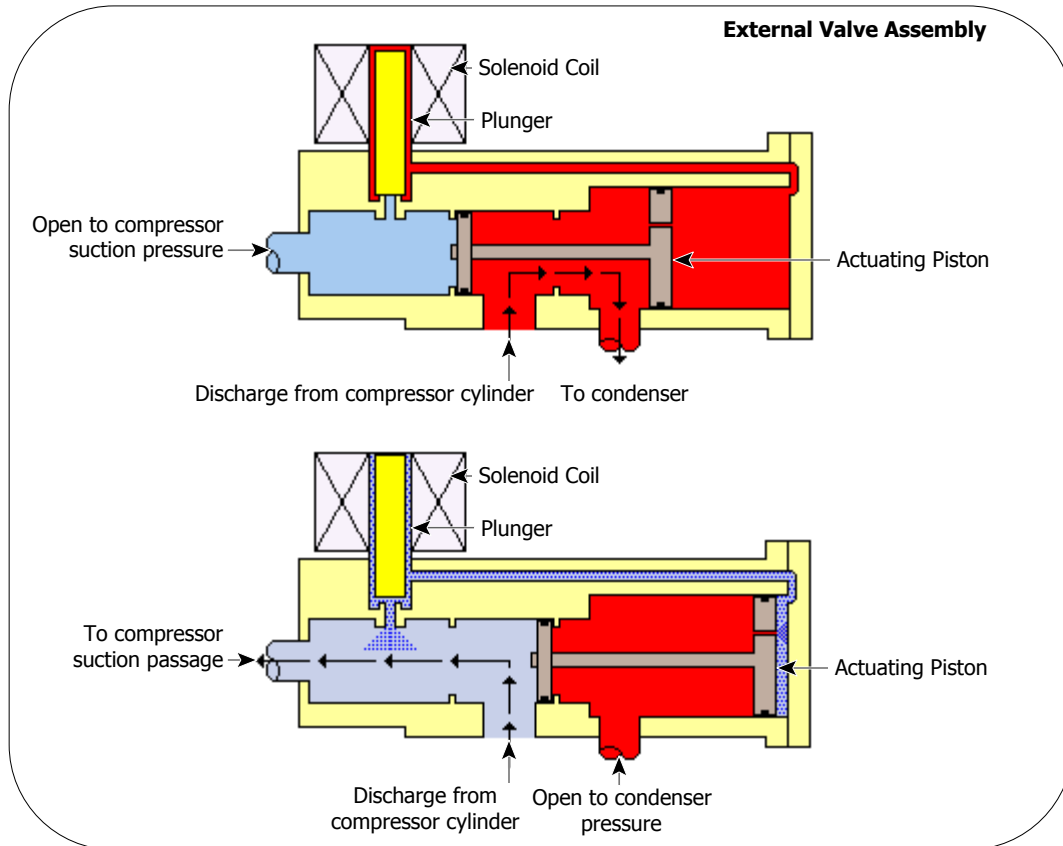


Copeland
Hot Gas Bypass Unloading for 9R and 9D compressors



The capacity control mechanism operates to unload one cylinder of the three, giving a capacity reduction of approximately 35% with a power reduction of approximately 20% from a fully loaded operating condition.

The bypass valve is so arranged that the unloaded cylinder is isolated from the discharge pressure created by the loaded cylinders. The bypass valve connects the discharge ports of the unloaded cylinder to the compressor suction chamber. Since the piston and cylinder do no work other than pumping vapor through the bypass circuit, and handle only suction vapor, the problem of cylinder overheating while unloaded is practically eliminated.

The capacity control valve is pilot operated, and so long as the pilot solenoid valve is energized, a continuous bleed through the pilot passage from the high pressure side to the low pressure side continues. THEREFORE FOR A PUMPDOWN CONTROL SYSTEM, THE PILOT SOLENOID VALVE MUST BE DEENERGIZED to prevent the suction pressure from immediately building up. On systems without pumpdown control, the continued flow of refrigerant gas from the condenser back to the compressor could result in condensation of refrigerant in the compressor, and possible damage could result during startup. It is therefore recommended that the capacity control valve be deenergized when the compressor is not operating.