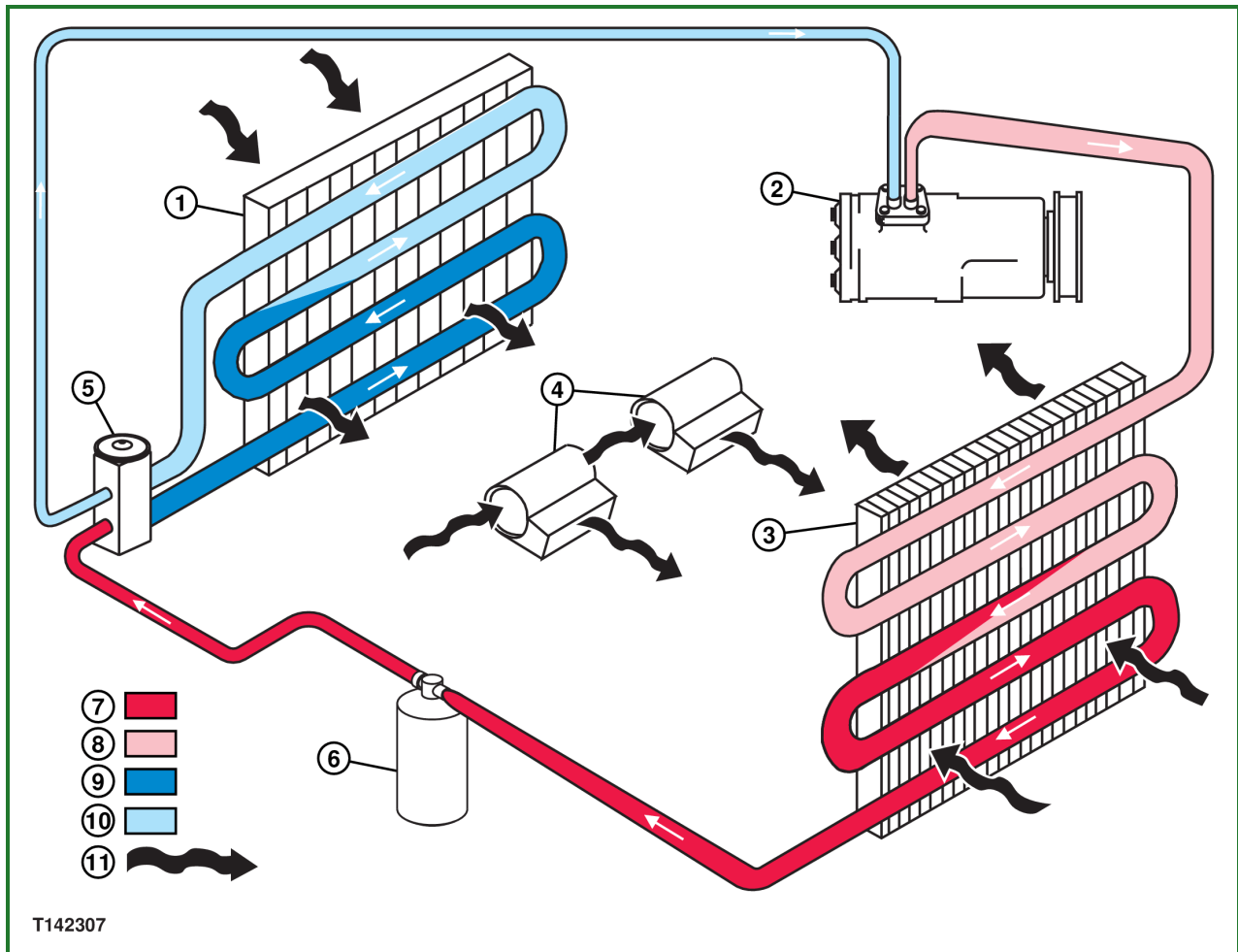


Air Conditioning System Cycle of Operation



T142307-UN: Refrigerant System Cycle Of Operation

LEGEND:

- 1 - Evaporator Core
- 2 - Compressor
- 3 - Condenser Core
- 4 - Circulation Blower Motor
- 5 - Expansion Valve
- 6 - Receiver-drier
- 7 - High Pressure Liquid
- 8 - High Pressure Gas
- 9 - Low Pressure Liquid
- 10 - Low Pressure Gas
- 11 - Air Flow

The compressor is belt driven and engaged by an electro-magnetic clutch. The air conditioning circuit automatically controls compressor engagement or disengagement when system is in operation. See [See System Functional Schematic and Section Legend](#) . (9015-10.)

Compressor draws low pressure gas from evaporator and compresses it into high pressure gas. This causes temperature of refrigerant to rise higher than that of outside air.

High pressure gas leaves compressor and flows through condenser where heat is removed and transferred to outside air being drawn through condenser core by fan. Cooling refrigerant causes it to condense and refrigerant leaves condenser as high pressure liquid.

High pressure liquid flows into receiver-drier where moisture and contaminants (acid, solids, etc.) are removed. Receiver-drier may contain a color moisture indicator. (Blue) indicates no moisture is present. (Pink) indicates moisture is present. Should moisture be combined with refrigerant, hydrofluoric and hydrochloric acids are formed. These acids are very corrosive to metal surfaces and leakage will eventually develop. Receiver-drier also stores refrigerant allowing a longer period of time before additional refrigerant is needed. Refrigerant hoses allow a small amount of refrigerant to migrate through their walls.

Refrigerant flows from receiver-drier through expansion valve to evaporator. Expansion valve senses refrigerant temperature and pressure to modulate refrigerant flow. Expansion valve changes refrigerant to low pressure liquid entering evaporator. Actual cooling and drying of cab air takes place at evaporator. Heat absorbed by evaporator and transferred to refrigerant causes refrigerant to vaporize into low pressure gas. Low pressure gas is drawn from evaporator by compressor and cycle is repeated.

A freeze control switch senses temperature of evaporator coil through a capillary tube. This prevents the evaporator from becoming cold enough to freeze moisture that condenses on evaporator coil. Condensed moisture is drained away through drain tubes connected to drain pan under evaporator.

System pressure is monitored by high and low pressure switches, located on high pressure side of expansion valve. If pressure becomes too high or too low the switch opens and stops compressor, interrupting the cycle.

For location of heater and A/C components, [see Heating and Air Conditioning System Component Location](#) . (9031-15.)

Go to [Section_9031:Group_05](#)

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