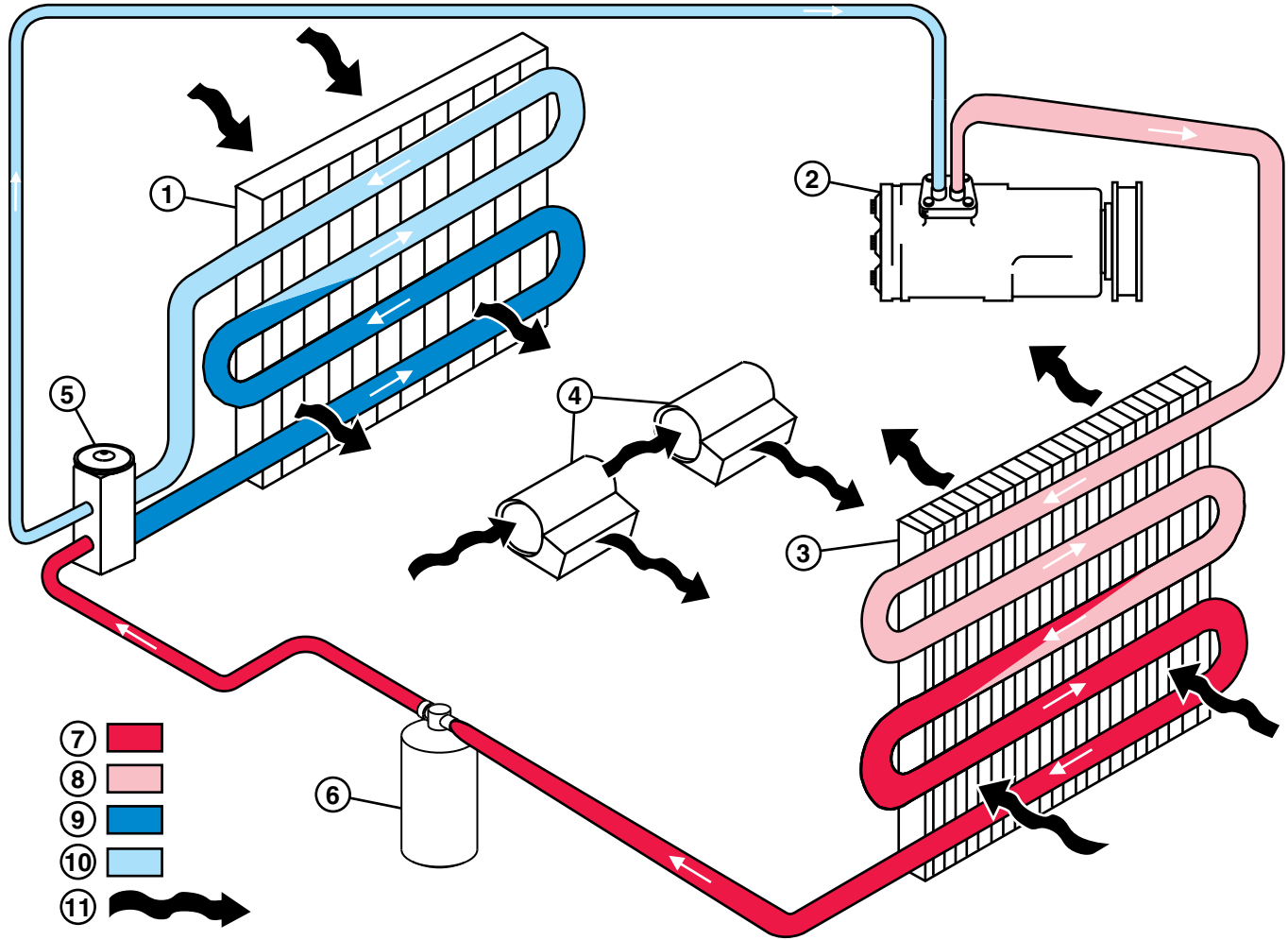


Air Conditioner System Cycle Of Operation



T142307

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

The compressor is belt driven and engaged by an electromagnetic clutch. The air conditioning circuit automatically controls compressor engagement or disengagement when system is in operation. See System Functional Schematic and Schematic Legend. (Group 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-dryer where moisture and contaminants (acid, solids, etc.) are removed. Receiver-dryer 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-dryer 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-dryer 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.

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Theory of Operation

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 switch, 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.

Accumulator is located between evaporator and compressor in low pressure gas hose to retain a quantity of oil to protect compressor from a dry start after long periods of not being used.

See A/C Harness (W8) Component Location (Group 9015-10) for location of machine heater and A/C components.

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