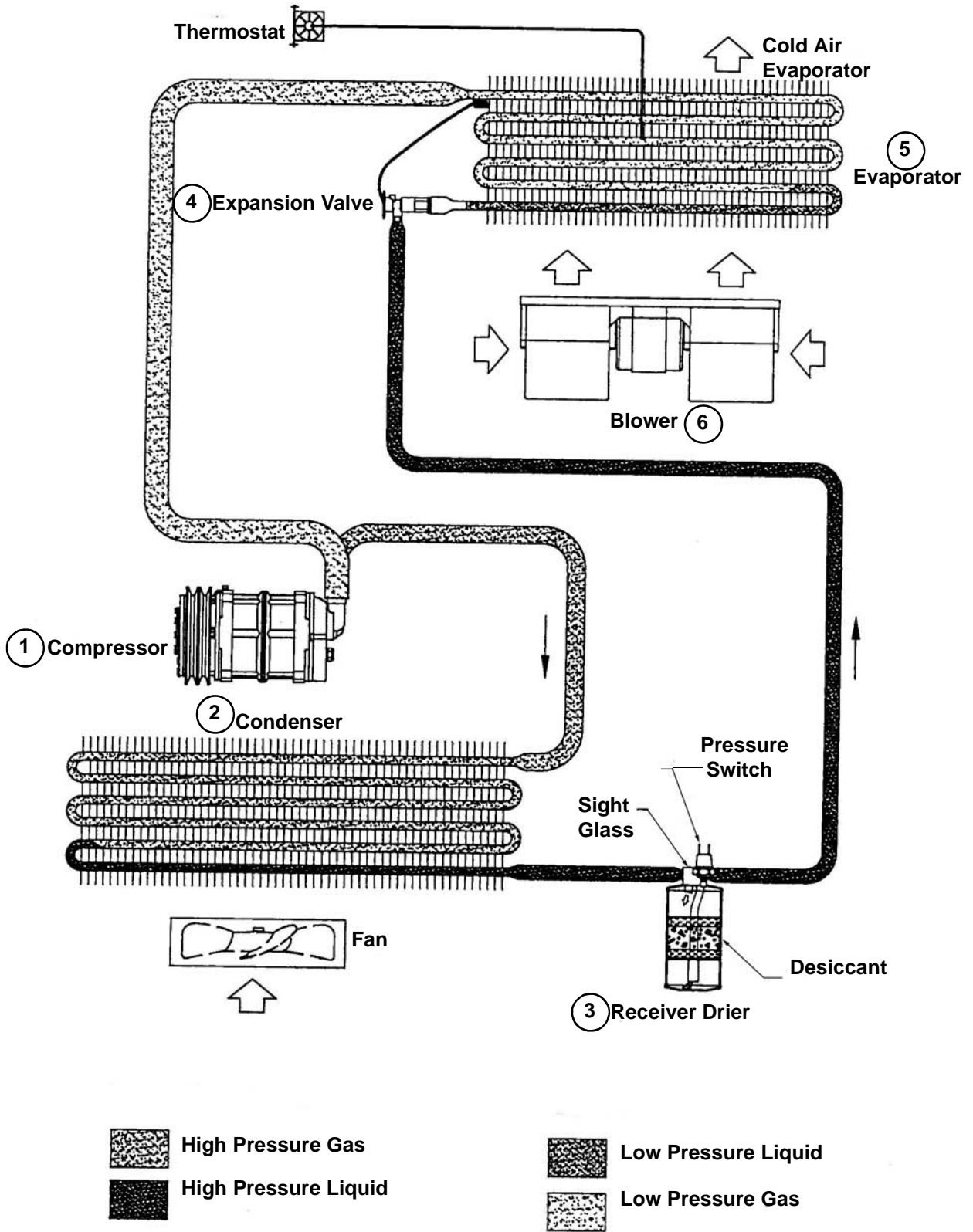


AIR CONDITIONING SYSTEM FLOW (CONT'D)

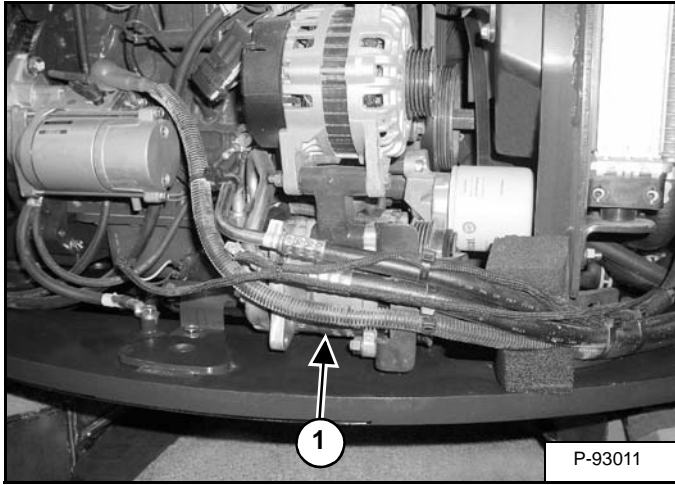
Chart



AIR CONDITIONING SYSTEM FLOW (CONT'D)

Components

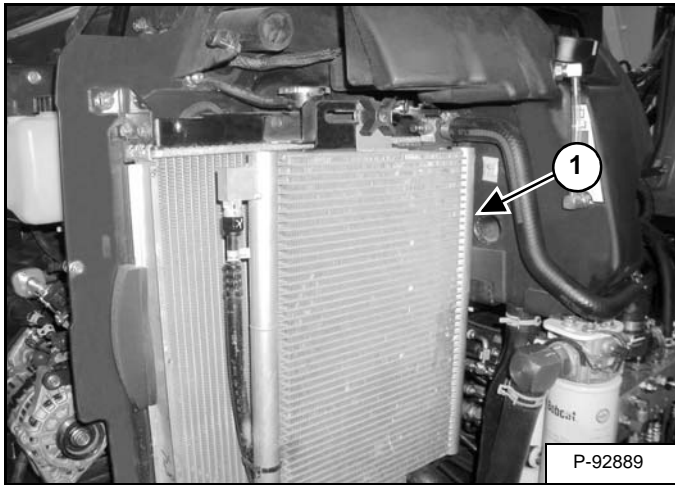
Figure 70-10-1



Compressor: The compressor (Item 1) [Figure 70-10-1] is the pump that circulates the refrigerant throughout the system. It raises the pressure of the refrigerant for heat transfer through the condenser and evaporator.

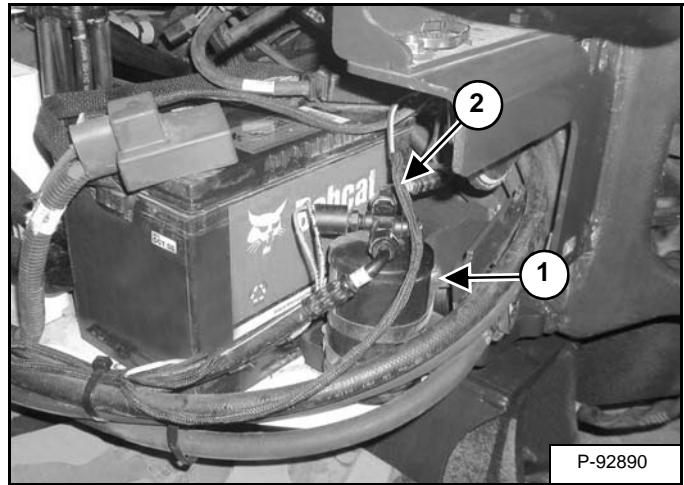
NOTE: The A/C system (Compressor) is recommended to be turned on for at least 5 minutes weekly throughout the year to lubricate the internal components.

Figure 70-10-2



Condenser: The condenser (Item 1) [Figure 70-10-2] is the unit that receives the high pressure, high temperature refrigerant vapor from the compressor and condenses it into a high temperature liquid.

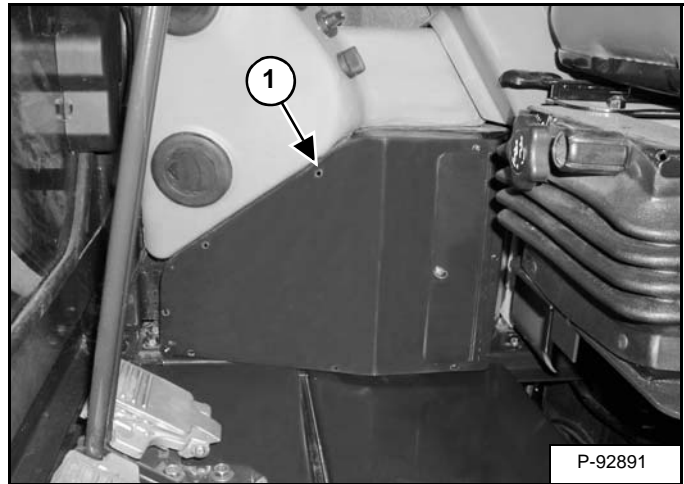
Figure 70-10-3



Receiver / Drier: The receiver / drier (Item 1) [Figure 70-10-3] is the unit that receives the liquid refrigerant from the condenser and removes moisture and foreign matter from the system. It also serves as a storage tank for the extra liquid refrigerant until it is needed by the evaporator.

Pressure Relief Valve: The pressure relief valve (Item 2) [Figure 70-10-3] is located on the receiver / drier assembly. This small brass valve is a safety feature that is designed to open and release the A/C charge if the pressure reaches 3344 - 3792 kPa (33,4 - 38 bar) (485 - 550 psi).

Figure 70-10-4

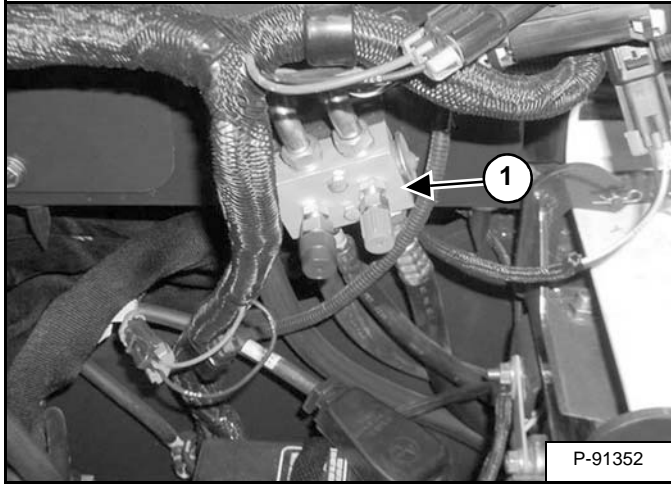


Evaporator / Heater Unit: The evaporator / heater unit (Item 1) [Figure 70-10-4] is located in the excavator cab. The unit delivers cold air for the A/C and warm air for heat into the cab. The unit contains the blower, heater coil, evaporator coil, and thermostat.

AIR CONDITIONING SYSTEM FLOW (CONT'D)

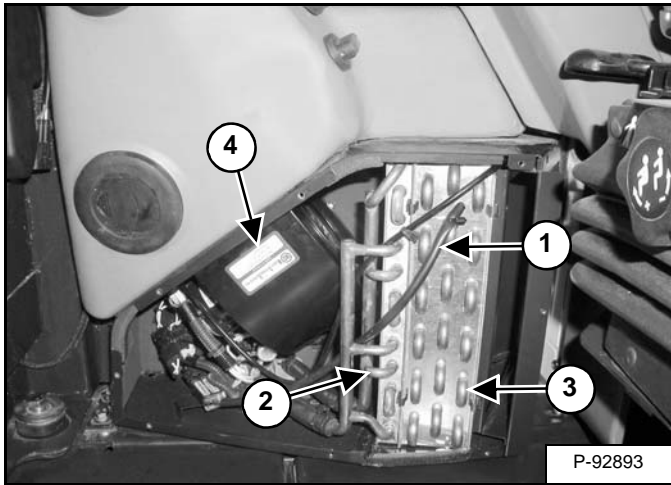
Components (Cont'd)

Figure 70-10-5



Expansion Valve: The expansion valve (Item 1) [Figure 70-10-5] controls the amount of refrigerant entering the evaporator coil.

Figure 70-10-6



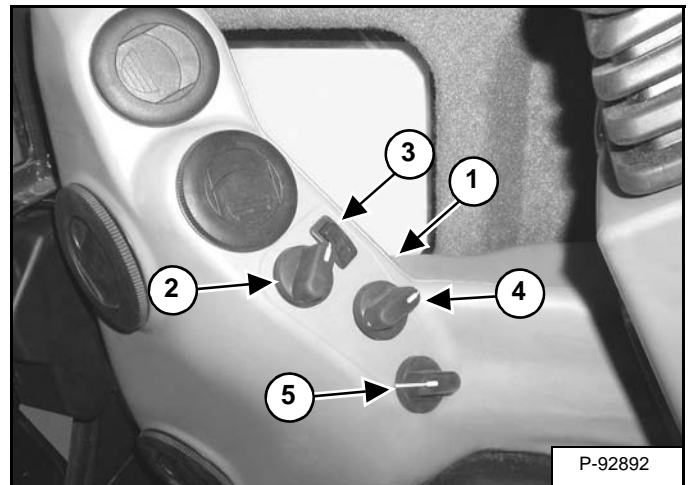
Thermostat: The thermostat (Item 1) [Figure 70-10-6] controls the temperature of the evaporator coil.

Heater Coil: The heater coil (Item 2) [Figure 70-10-6] supplies the warm air into the cab by passing air through the coil.

Evaporator Coil: The evaporator coil (Item 3) [Figure 70-10-6] cools and dehumidifies the air before it enters the cab.

Heater / Evaporator Blower: The blower (Item 4) [Figure 70-10-6] is used to push air through the heater and evaporator coils and into the cab.

Figure 70-10-7



Control Panel: The panel (Item 1) [Figure 70-10-7] has four separate components.

Fan Switch: This is a four position rotary switch (Item 2) [Figure 70-10-7]. When the fan switch is in the off position the A/C will not engage, but the heat valve will operate, as it is controlled by the ignition power.

A/C Switch: The rocker switch (Item 3) [Figure 70-10-7] will be illuminated when the A/C is engaged.

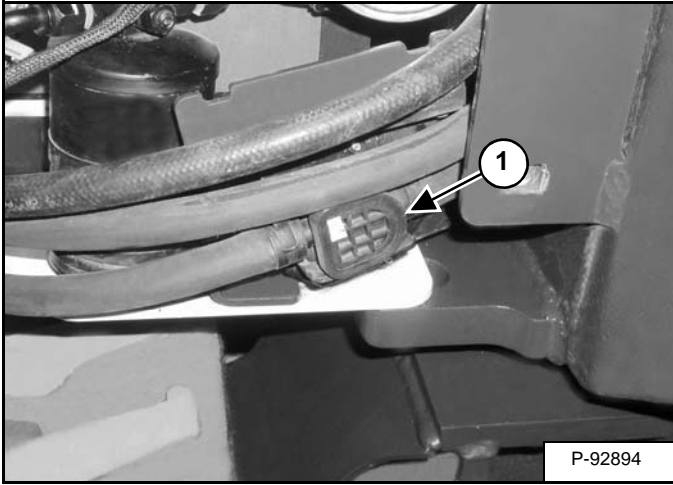
Potentiometer: The potentiometer (Item 4) [Figure 70-10-7] controls the Heat Valve from fully Off to fully On. This can be used in conjunction with the A/C for defrost of the windows and temperature control.

Fresh Air Control: The fresh air control (Item 5) [Figure 70-10-7] opens a ventilation door and allows fresh air to be drawn in to the cab.

AIR CONDITIONING SYSTEM FLOW (CONT'D)

Components (Cont'd)

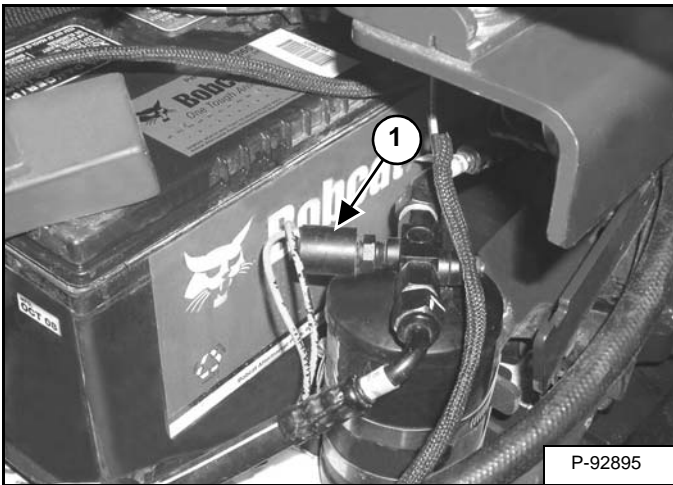
Figure 70-10-8



Heater Valve: The heater valve (Item 1) [Figure 70-10-8] is used to control the amount of engine coolant that flows to the heater coil.

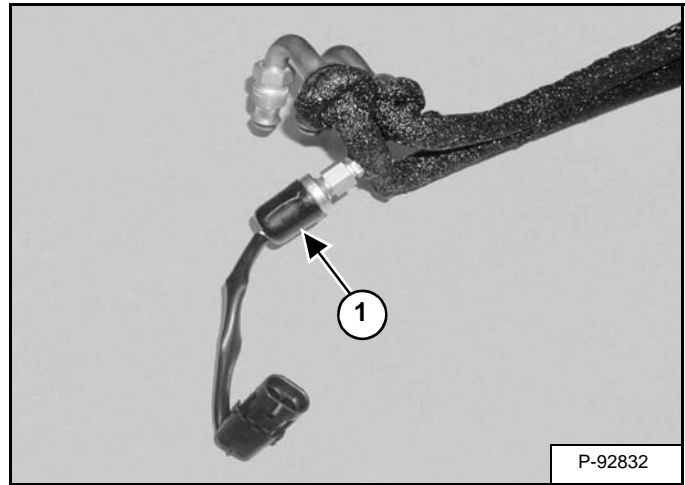
The heater valve is located in front of the battery.

Figure 70-10-9



High Pressure Switch: The high pressure switch (Item 1) [Figure 70-10-9] will disengage the compressor clutch at high pressure readings over 2689 - 2827 kPa (26,9 - 28,3 bar) (390 - 410 psi) on the high side. The clutch will engage when the pressure is at 2103 - 2379 kPa (21 - 23,8 bar) (305 - 345 psi).

Figure 70-10-10



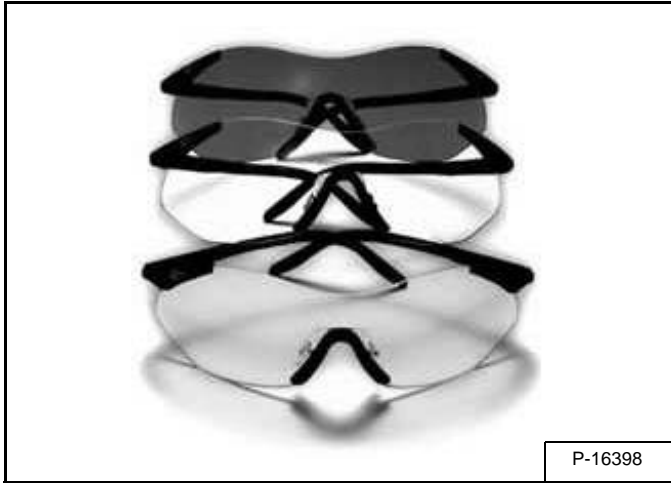
Low Pressure Switch: The low pressure switch (Item 1) [Figure 70-10-10] will disengage the compressor clutch at low pressure readings below 34 - 76 kPa (0,34 - 0,76 bar) (5 - 11 psi) on the low side. The clutch will engage when the pressure is at 117 - 186 kPa (1,2 - 1,9 bar) (17 - 27 psi).

AIR CONDITIONING SYSTEM FLOW (CONT'D)

Safety Equipment

In servicing A/C and heater systems you will be exposed to high pressures, temperatures and several chemical hazards. Moving belts and pulleys are normal shop hazards.

Figure 70-10-11



In addition to exercising caution in your work, **DO WEAR SAFETY GLASSES OR A FACE SHIELD [Figure 70-10-11]** when you are using R-134a or a leak detector, adjusting service valves or the manifold gage set connectors. Safety glasses or a transparent face shield are practical safety items and one or the other is absolutely required.

WARNING

In the event of a leak, wear safety goggles. Escaping refrigerant can cause severe injuries to eyes. In contact with a flame, R134a refrigerant gives a toxic gas.

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Figure 70-10-12



R-134a inside a canister or in an A/C system is a liquid under pressure. When it escapes or releases into the air, **ITS TEMPERATURE DROPS TO -5,7°C (21.6°F) “INSTANTLY”**.

If it spills on your skin or in your eyes you should flood the area with cool water and **SEEK MEDICAL ATTENTION FAST!** It is a good idea to wear gloves [Figure 70-10-12] to prevent frost bite if you should get refrigerant on your hands.

WARNING

HFC 134A refrigerant can be dangerous if not properly handled. Liquid 134A may cause blindness if it contacts the eyes and may cause serious frostbite if it contacts the skin.

- Gaseous 134A becomes lethal (phosgene) gas when it contacts open flame or very hot substances.
- **NEVER SMOKE** when there is the possibility of even small amounts of 134A in the air.

Any servicing work that involves release or addition of 134A to the system must be done by a competent refrigeration dealer who has the proper equipment, knowledge, and experience to service refrigeration equipment.

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