



# TRACTOR AIR CONDITIONING

Farm Machinery Fact Sheet FM-28

By *Dr. Von H. Jarrett*, Extension Agricultural Engineer

A basic knowledge of the principles of refrigeration and operation of the cab air conditioning system will help to better understand the maintenance and service procedures involved. The refrigerant that is in the air conditioning system is used to carry heat and is recirculated repeatedly in a closed circuit. All the air conditioners use the same cycle of operation as compression, condensation, expansion, and evaporation. It is necessary to know about pressures and temperatures so that a pressure gauges can be installed in various locations to indicate a malfunction.

Care should be observed when working with various refrigerants to avoid possible personal injury. The 15 oz. disposable can is the most convenient container for recharging and servicing a cab air conditioning system. However, eye protection, frostbite, heat, and inhaling can be dangerous to the serviceman. Also use care in handling refrigerant drums and cans in a passenger car or truck.

Refrigeration oil is needed to lubricate seals, gaskets, and other moving parts of the compressor. For this reason a small amount of oil is circulated through the system with the refrigerant. This is a special oil and must be used only for refrigeration.

## **Diagnosing and Trouble Shooting the System**

1. Clean and blow out all the loose dirt, dust, chaff, etc.
2. Start and adjust engine to normal fast idle speed.
3. Turn on air conditioner and set for maximum cooling with blower fan on high speed.
4. Operate air conditioner for 5 to 10 minutes to stabilize system.
5. Check for charge by noting sight glass if used. Note gauge readings for normal pressures.
6. Establish whether the electrical components (switches, thermostat, blower and clutch) are functioning.
7. Check that the air passages and ducts, refrigerant lines, hoses, compressor drive and belts are all free.

8. Service the unit in accordance with the operator's manual.
9. If troubles still persist, take it into your machinery dealership for additional checks.

**Utah State University is an Equal Opportunity/Affirmative Action Institution.**

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Robert L. Gilliland, Vice President and Director, Cooperative Extension Service, Utah State University, Logan, Utah. (EP/2-95/DF)