

# Condenser Testing

Temperature change from condenser inlet (Top) to condenser Outlet (Bottom) in °F

10 15 20 25 30 35 40 45 50 55 60 65 70 75 80

**Poor Cooling &/or  
High Head Pressure**

## *Potential Symptom Causes*

- Poor Air Flow across condenser
  - o Bent/damaged fins
  - o Debris on surface or between condenser, radiator or other coolers
  - o Missing air dams
- Bad/slow cooling fan motors, weak thermal fan clutch, inoperative electronic fan clutch, Broke/missing fan clutch
- System overcharge of refrigerant may be due to improper service or replacement of original condenser with upgraded design.

**Normal Operational Range**

## **1970-1996**

- Lower Range - 25-35° difference - typical of Tube & Fin design

## **1996-2008**

- Upper Range - 35-50° difference - typical of Multi-Flow (Piccolo)

- 6mm round tubes grouped together unable to flush

- May fall into higher temperature range if some tubes are stopped up.

## **2001-Current**

- 35-50° difference - typical of Parallel Flow.

- Can have hundreds of tubes, smaller than the diameter of a paper clip, that cannot be flushed. May fall into higher temperature range if some passages are stopped up.

- Parallel Flow condensers vary by the tube count, number and size of passages which change the refrigerant required (typically less refrigerant with smaller, more narrow tubes.)

- Since late model systems and front end crash vehicles require condenser replacement when repaired it is possible a condenser with a different configuration than the original factory unit may have been installed requiring an adjusted refrigerant charge from the factory specifications (less charge).

**Poor Cooling &/or  
High Head Pressure**

## *Potential Symptom Causes*

- Internal restrictions (will distort all pressure/temperature readings and must be resolved in order to evaluate compressor function and test the balance of the system (especially variable compressors))
- Orifice tubes may appear very clean because of extremely small passages in parallel flow designs trap debris flowing through the condenser.
- Condensers in this temperature range will usually require replacement to produce an efficient A/C system. Especially when a failed compressor is replaced.