INGRAM

Air Conditioning Service & Repair Tips. Edition 1

Have you ever had a compressor failure? What about a second compressor failure? Or a third failure… all on the same vehicle?

Has this common problem cost you or the consumer money and time as well as damaging your reputation?
Have warranty disputes cost valuable time and caused tension between you and your supplier?
If you answer 'yes' to any of these questions, read on and we will try to explain the reasons why this can occur.
Some people harshly criticise new compressors whether they be Delphi, Denso, Delco, Halla, Sanden or York, just to name a few. Then others rubbish remanufactured compressors, and though some can be of poor quality, many are not.
Manufacturers use the most stringent procedures for manufacturing their products and spend tens of thousands of dollars on testing equipment to meet the high standards of car manufacturers who want to ensure that their product is of the best quality available. Over the next few editions of this magazine we will try to solve some of these problems for you.

When a vehicle comes into your workshop and you diagnose a failed compressor, do you..

- **Try to find out what caused the failure?**
- **Attribute it to old age or normal wear and tear?**
- **Just replace it and hope it's right?**

The answer is that most compressors do not fail because they are too old, they fail for a number of other reasons.

We will now try to explain causes and remedies to compressor failure - a problem that has plagued the industry from the old days of R12, becoming a bigger problem with the introduction of R134a and all blend gases. Before anyone starts jumping up and down about the mention of blend gases, I am not suggesting these types of gases is the cause, I am just including them as types of refrigerant used.
The issue of mixing gases, whether they be R12, R134a or any blends, has serious implications for the system and compressor. I will now list some of the reasons that cause compressor failure and over the next few issues will try and explain the correct procedures to address each problem. As mentioned earlier, there are many reasons for compressor failures and identifying which are and which are not valid warranty claims can be daunting.

Most problems can be easily detected and addressed before they become a warranty issues that causes grief and loss of income ($$$$).

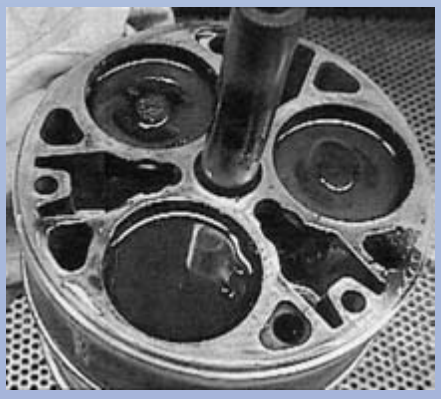
Grant Hand on the left.

Some of the reasons include,

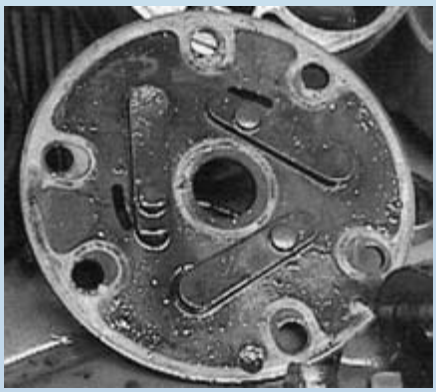
- Poor servicing and lack of attention.
- Use of contaminated refrigerants.
- Insufficient oil return to the compressor.
- Incorrect oil used in compressors.
- High or excessive internal pressures.
- Seals and gaskets affected by contaminates.
- Systems not flushed properly before replacing compressor.
- Clutch slipping and burning out.
- Restriction in the system.
- Faulty or incorrect TX Valves.
- Liquid feedback to the compressor.
- Incorrect amounts of gas (too low or high).
- Moisture left in the system.
- Flushing agents left in the system.
- Poor or incorrect fitment.

Debris can also damage cylinders, as is visible.

This seal swelled from a blend refrigerant. So it partly unseated and leaked.



An unapproved flushing agent left residues that coated the cylinders, affecting performance.



A flushing residue on reed valve plate affected valves, operation.

A flushing residue on the reed valve caused corrosion in this case.

These clutch parts took a real beating, yet the cause was low refrigerant and frequent cycling, not the more commonly-thought-of high pressures and low voltage.

In the next issue, we will cover some of these problems and hopefully make your job easier and more profitable.
Addressing each point is not difficult and by following the correct procedures, you will be able to better your profit and operate with less warranty claims, meaning better service for your customer.

Ingram has been conducting training sessions for more than ten years with the help of Grantly Hand and technical support from Air International Denso, Delphi and Sanden. We have now covered most areas of air conditioning including servicing, diagnostics, fault finding, system design, TX Valve components, sizing and variable pumps and we are now designing a course that will enable you to obtain your Certificate II of assessment that qualifies you to obtain your new license.

If you need further training or information, please contact your nearest Ingram branch for dates and addresses of coming training sessions or read our Training Course page at www.ingram.com.au.

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CXG003

DELPHI

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