Compressor Disassembly

Let's now move on to the compressor. My purpose in the rebuilt will be to replace every part that needs attention or is ready to fail plus retrofitting items intended for use of R134a instead of the banned R12. A note here: be careful during disassembly as the compressor features very many parts and it is very easy to mix them especially the internal parts.

The compressor used is a Sanden SD-508. The designation 508 actually means it is a 5 piston compressor with 8 Oz. fixed displacement; it is designed for use with R12 so I will convert it for use with R134a. Since R134a is operating at higher Suction and Discharge values, caution should be paid regarding internal parts; since these are designed for R12 it is very probable that these seals will swell excessively once in contact with R134a and ruin the compressor. For this reason, do replace those parts approved for use with R134a if you want the compressor last some years more. If this is not the case then sooner or latter the compressor will prematurely fail .

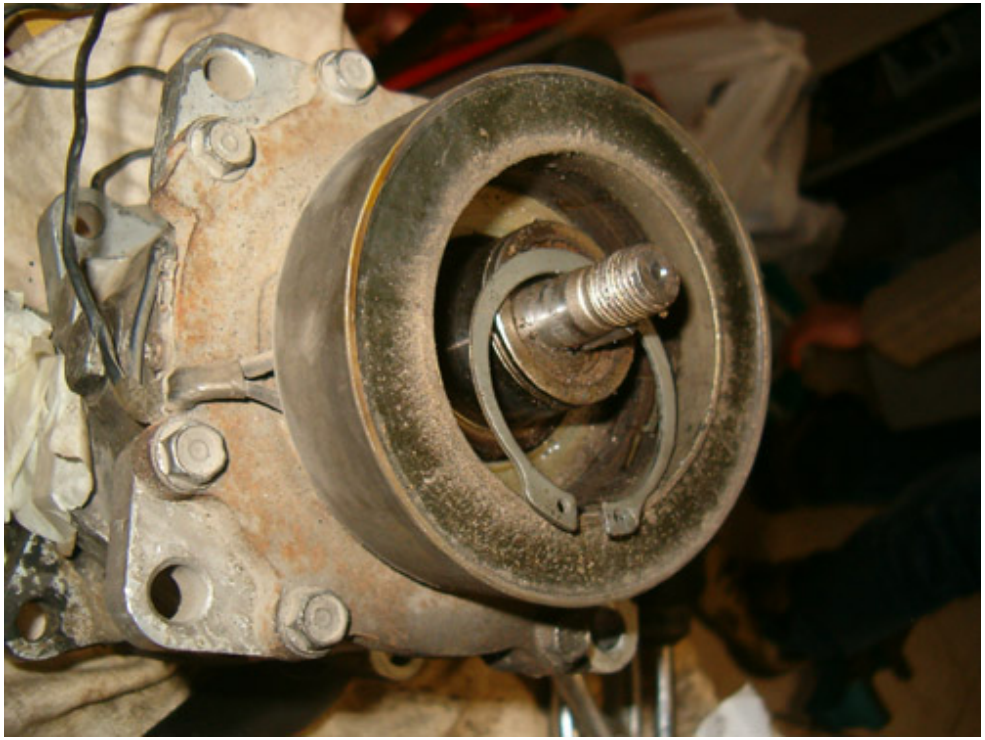
Let's begin disassembly.

Using the vice, lock the compressor pressure plate and using a 17mm nut undo the lock nut

Using a pair of flat screw drivers remove pressure plate.

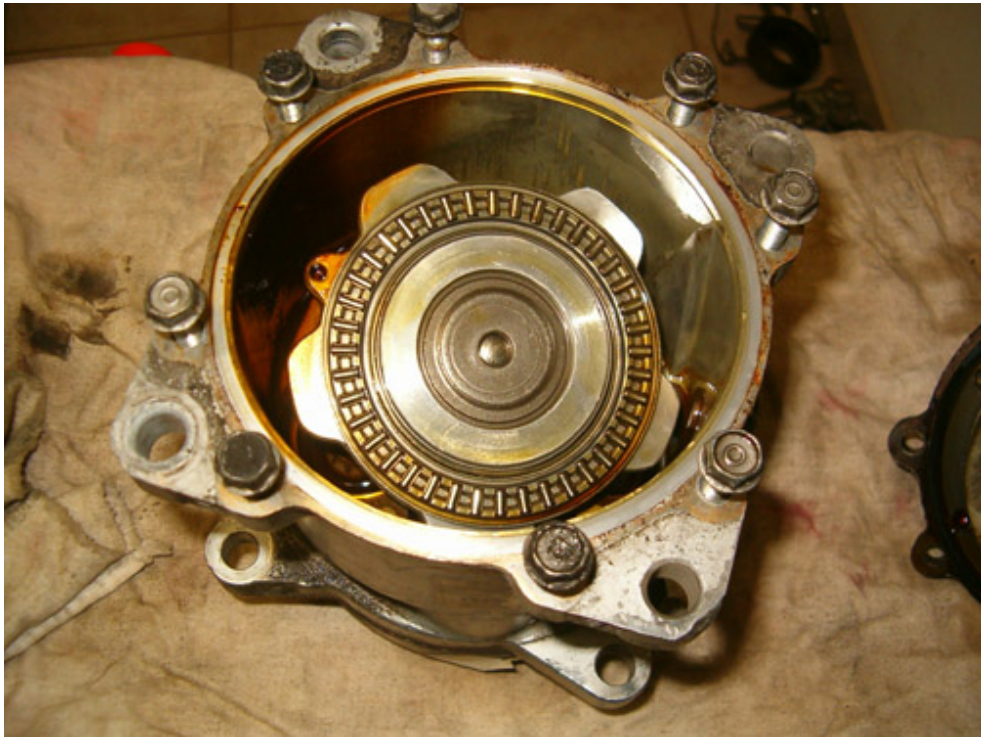
An expanding pliers will help you remove the lock ring securing belt pulley to body.

Using the puller lift out belt pulley.



Once the pulley is out, the electromagnetic clutch is exposed; remove the lock ring in order to free the coupling.

Using a 10 mm key remove the compressor front part



This is the first thing you see when you remove compressor front part. Notice that the piston assembly is slanted. This is so because the pistons are operating one at a time.

Compressor front part, also slanted. Notice the rod on the bottom; this is intended as an alignment guide to the compressor body.

Let's now remove compressor cylinder head (13 mm key is required)

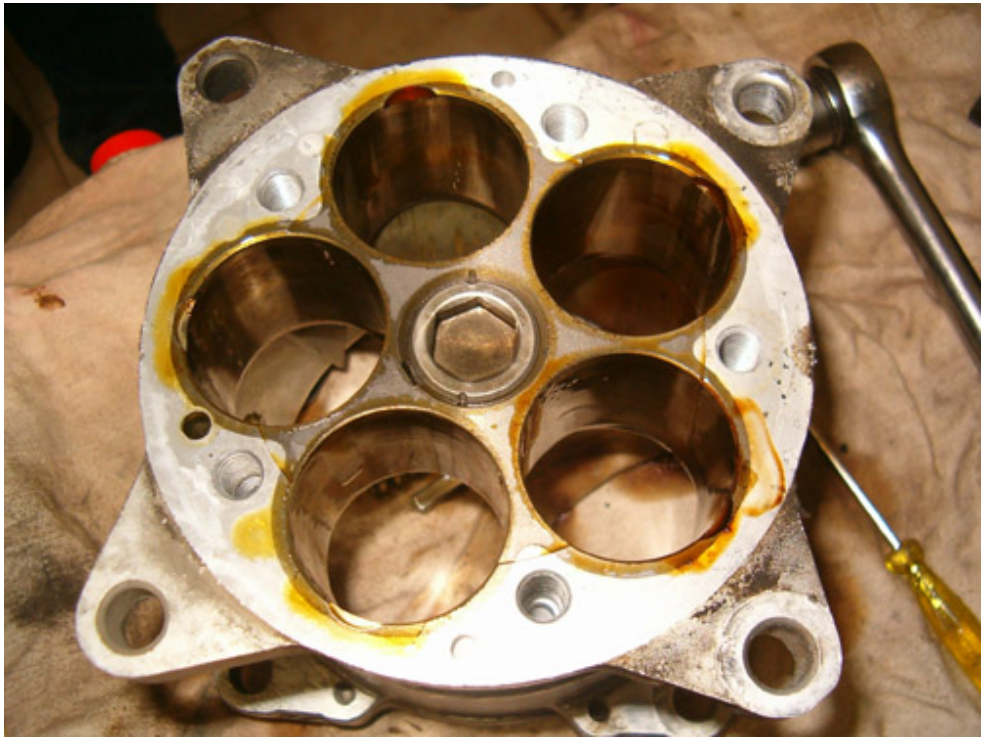
Cylinder head along with gasket.

Here is the valve plate assembly

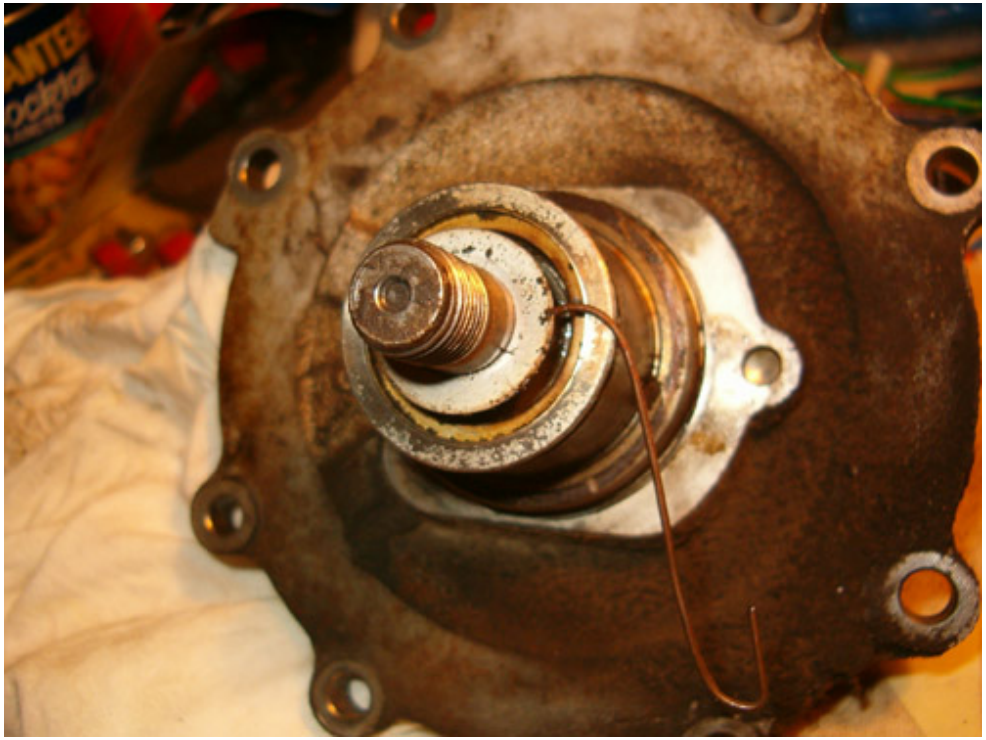
Valve plate gasket

Compressor body as seen with piston assembly removed

Piston assembly. Notice the yellowish color on each piston; these are traces of refrigerant oil which has come in contact with atmospheric air. This reaction leads to an awful thick residue.

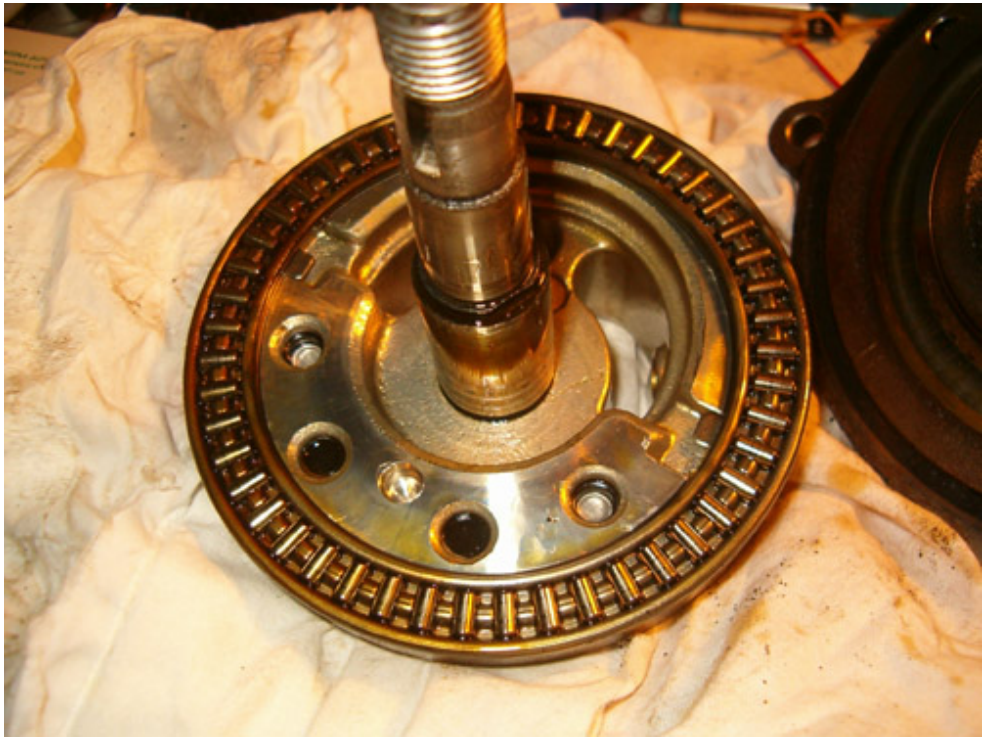


Back view of compressor body.

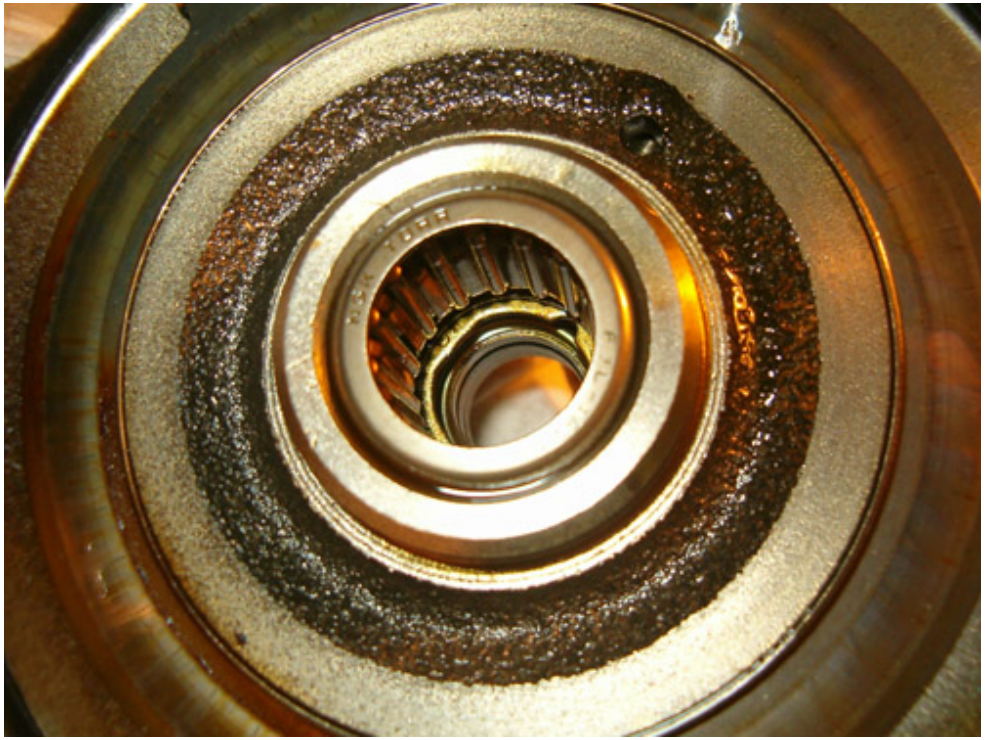


Let's now disassemble compressor shaft.

Shaft on the left complete with bearing, front part body on the right.



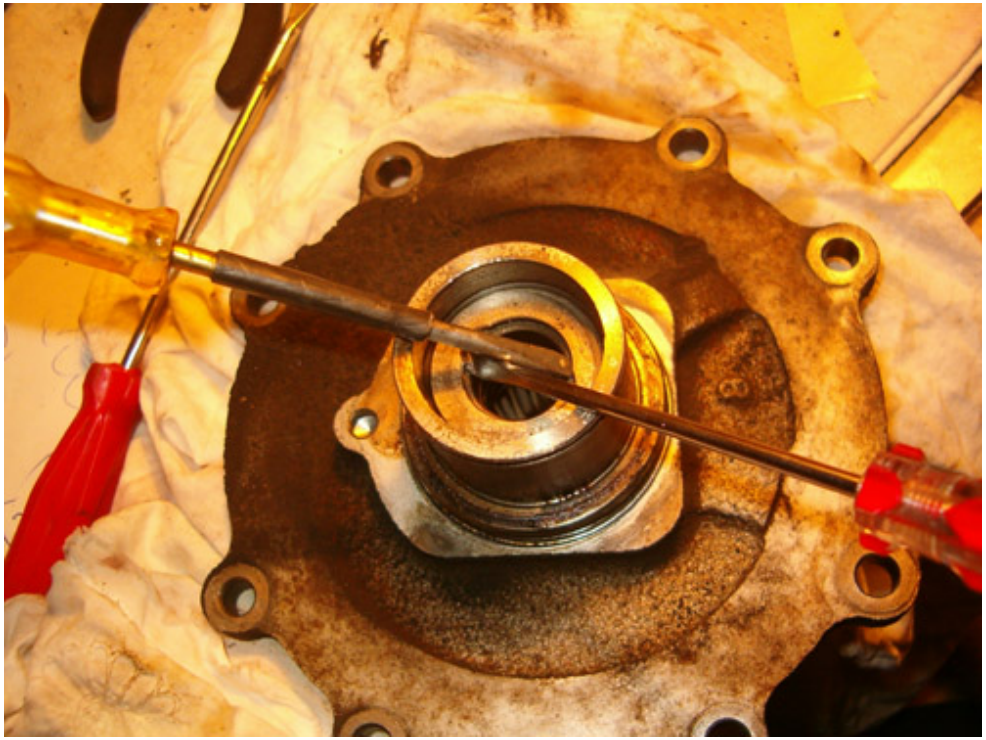
Shaft close - up



Bearing on the body.

Remove felt ring.

Using expanding pliers remove lock ring ...



... remove lip seal

Lip seal with O-ring is out ...

... and finally remove shaft protective seal.

Both parts should be renewed with new ones specific for R134a

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Here you can see the electromagnetic clutch which actually triggers compressor operation (front and back view)

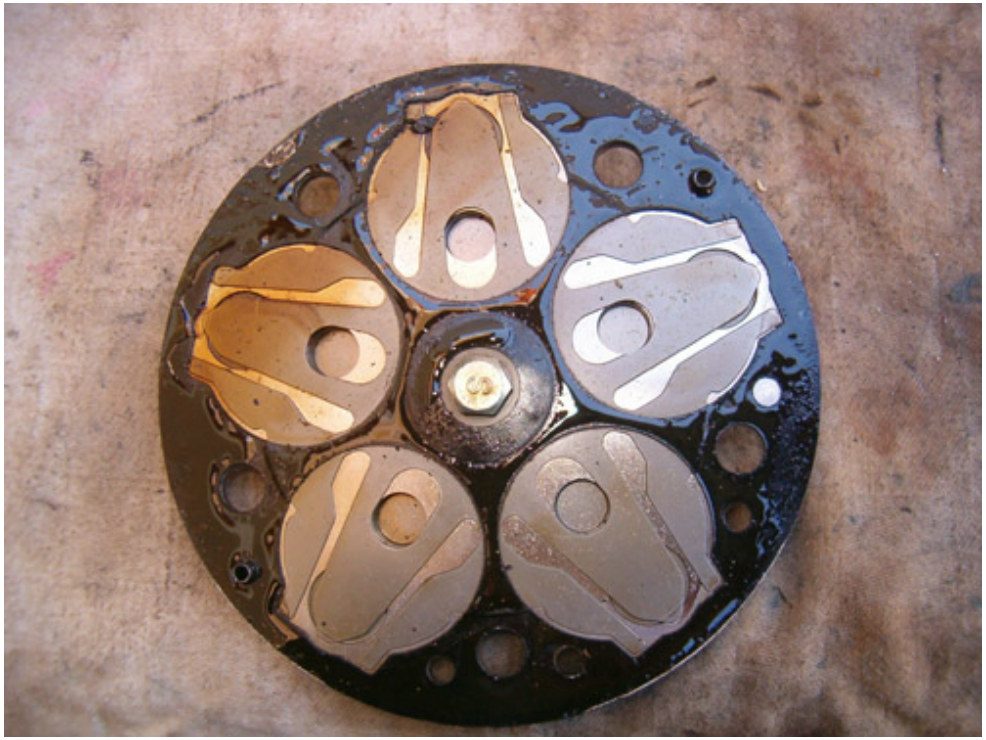
Compressor shaft plate cleaned out (front and back view)

Compressor pulley fitted with new bearing since the old one had excess play and wobble (front and back view)

Let's now clean out the cylinder head

Remove old gasket ...

... and clean out oil residue using alcohol (never use petroleum based solvent)



Do the same for the valve plate being careful not to damage the valves

Each component showed above should be cleaned using alcohol. Oil can be easily cleaned away with alcohol. Be sure to remove every mineral oil trace since it is incompatible with ester oil for use with R134a

Let's move on compressor front part assembly