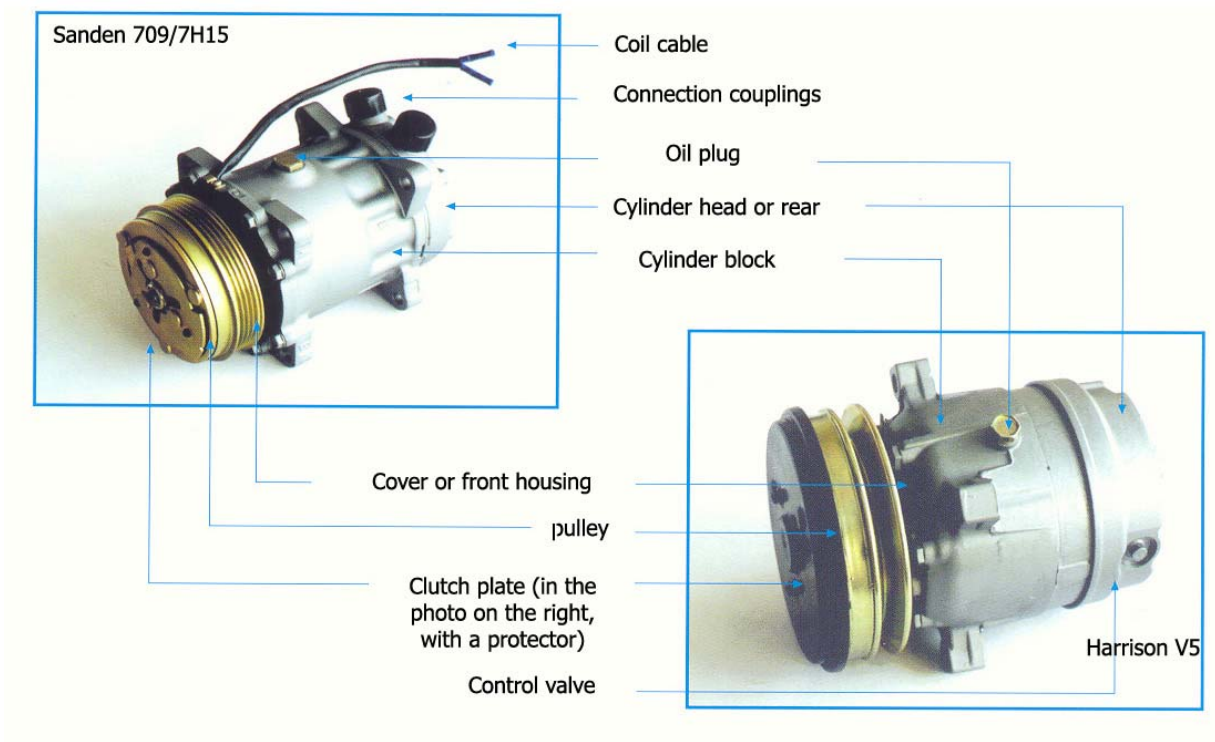
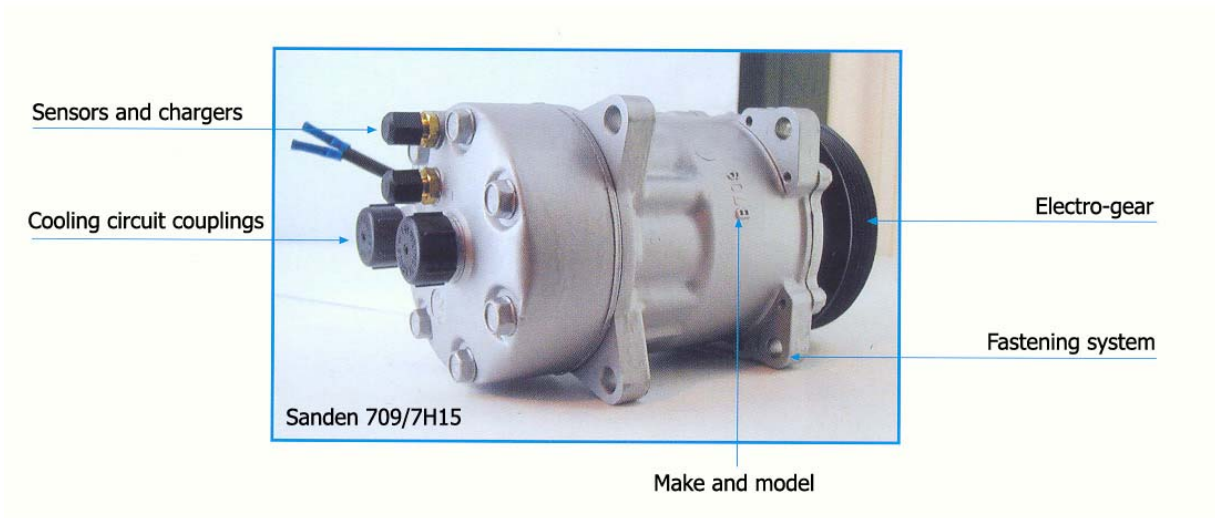


## How to identify an air conditioning compressor

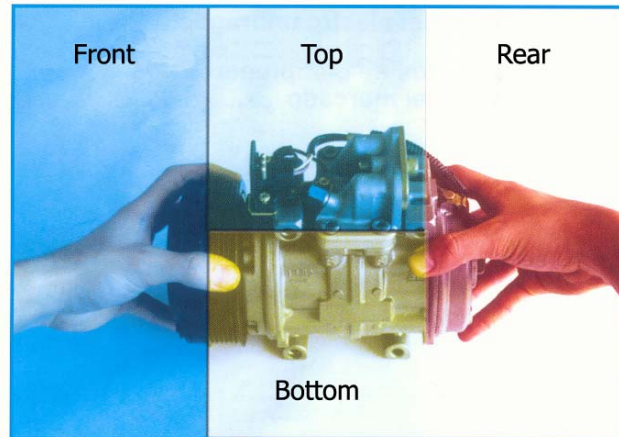
### 1.- COMPRESSOR COMPONENT PARTS

Automotive air conditioning compressors (ACC) are basically differentiated one from another by the following components: circuit couplings, sensors and chargers, electro-gear, support system, make and model.



## 2.- HOW TO CORRECTLY DIFFERENTIATE BETWEEN COMPRESSORS

You first need to know how to look at the compressor for identification purposes. It is essential to differentiate between the compressor front and rear. The compressor front is considered to be the part where the **drive pulley** is located. Normally the outlet ports are at the top of the compressor, and also the oil plug (if present).



## 3.- IDENTIFYING THE SUPPORT SYSTEM

Compressors are also classified according to the type and number of fastening anchors they have:

- **Number of anchors:** this can vary between 2 and 8 fasteners.

- **Anchor types:**

-Lugs (**ORE**).

- threaded (**CR**)
- threadless (**SR**) (figure 1)
- with ears (figure 2)

- Through hole or Direct Anchor (**AD**). Example (figure 3)



Figure 1. ORE fastener (SR)



Figure 2 . Ear fastener.



Figure 3. AD fastener

#### 4.- IDENTIFICATION OF THE CONNECTORS TO THE REFRIGERANT CIRCUIT.

The compressors have two access couplings: the admission or **suction** connector for the refrigerant gas, which is always identified with letters S or SUC (*suction*) and the discharge connector, which is always identified with letters D or DIS (*discharge*). The suction port connector always has a cross section which is equal to or greater than the discharge one.

Connectors can be distinguished in one of two ways: their configuration or the refrigerant circuit coupling type.

**Type A)** According to configuration:

- If the connectors are positioned next to each other, then they can either be mounted as a turret, **horizontally or vertically**.

- As a turret (Figure 1)

- Horizontally H-

- Longitudinally: (Figure 2)

- Crossed: Subtypes:

- Transversally: (Figure 3)

- Obliquely: (Figure 4)

- Vertically V- (Figure 5)



Figure 1. Couplings in turret configuration



Figure 2. Horizontal and vertical couplings



Figure 3. Horizontal and transversally crossed.

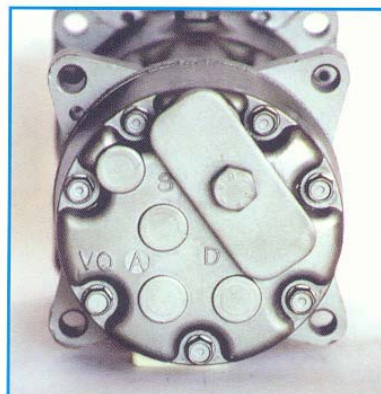


Figure 4. Horizontal and obliquely crossed



Figure 5. Vertical couplings

- They can also be separated (Figures 6 and 7)



Figure 6. Separated couplings



Figure 7. Separated couplings

Type B) According to the refrigerant circuit coupling type:

- Threaded coupling and O-ring:

- Suction and discharge couplings, with a 1" thread, also called *Rotalock connectors* –R (Figure 1)



Figure 1.

- Suction couplings with a 7/8" thread and discharge couplings with a 3/4" thread, also called O-ring connectors –OR (Figure 2)



Figure 2.

- Couplings with another thread size.

## Tapered coupling:

- Tapered suction and discharge couplings, also called a Cone connector –C (Figure 3)



Figure 3.

With couplings joined by a flange -B. There are various types of sealing gaskets:

- Couplings joined with a flange and flat gasket **TP** (Figure 4)
- Couplings joined with a flange and round gasket **TR** (Figure 5)



Figure 4



Figure 5

For compressor models such as SANDEN and ZEXEL, the cylinder heads are also stamped with a series of letters and/or numbers as a means of identification and, therefore, serve to indicate the type of circuit couplings (amongst other characteristics). These numbers and / or letters are essential for the correct identification of the compressor.

## 6.- IDENTIFICATION OF SENSORS AND CHARGERS

Air conditioning compressors can incorporate the following components:

- **Charge and discharge chargers C/C:** These chargers serve to access to the cooling equipment and make checks and recharges (Figure 1).

- Pressure sensor C/SP: (Figure 2)

- Pressure release valve C/VE (Figure 2)



Figure 1. Charge and discharge chargers (C/C)

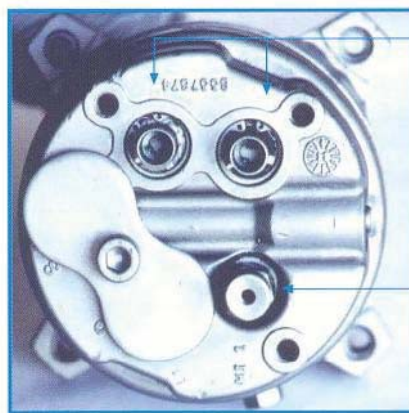


Figure 2. Pressure sensors C/SP and pressure release valve C/VE

Pressure sensors

Pressure release valve

- Temperature sensors C/ST: (Figure 3)

- Revolution sensors C/SR Characteristic of Mercedes and Audi (Figure 4)



Figure 3. Temperature sensors C/ST

Temperature sensors  
Revolutions sensors



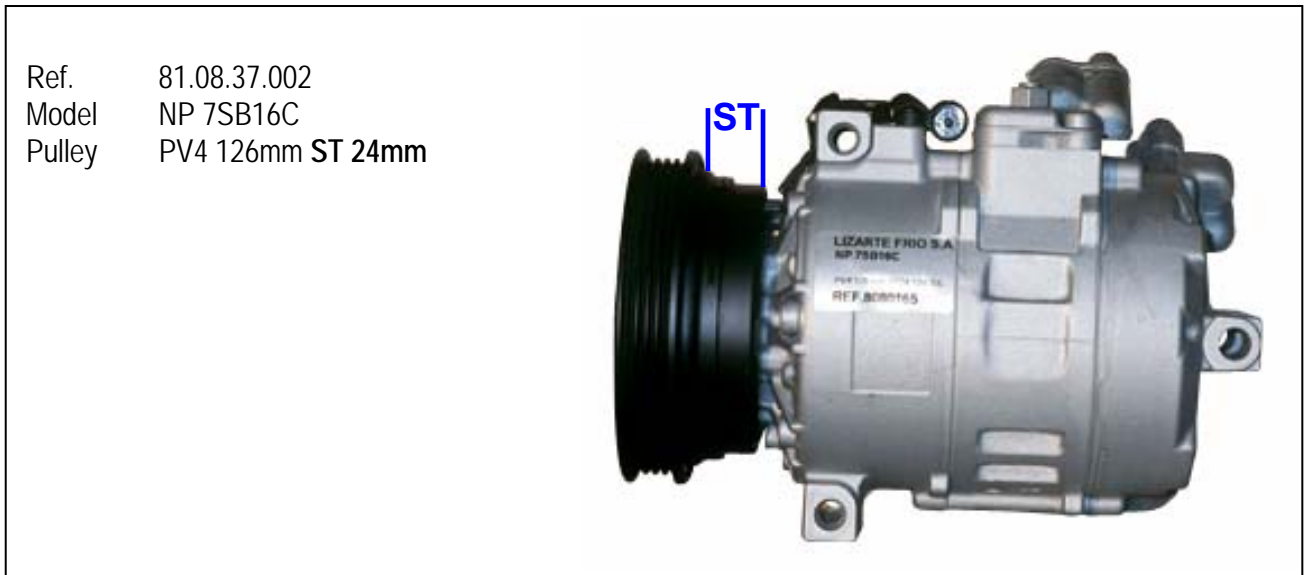
Figure 4. Revolution sensors

## 7.- MEASURING THE REAR CLEARANCE (ST) AND THE FRONT CLEARANCE (SD)

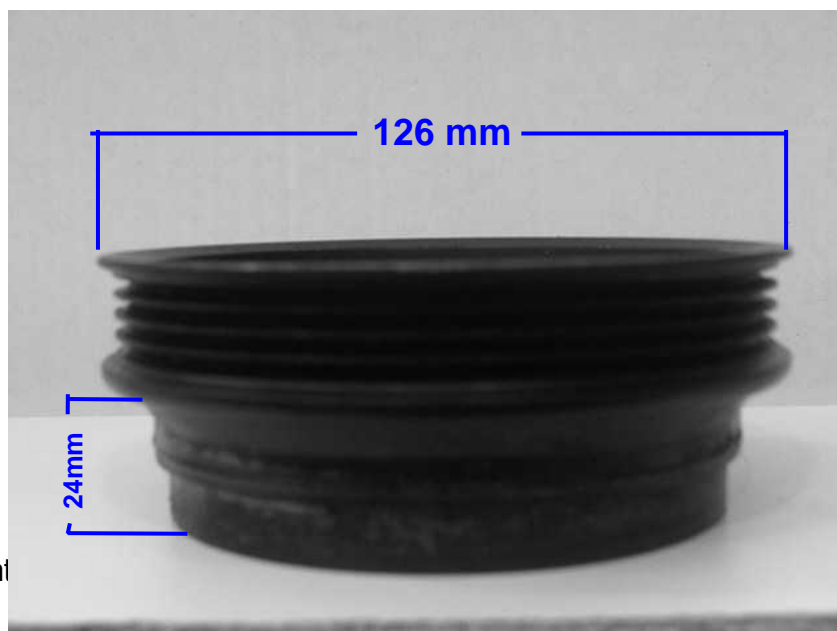
### -Pulley with rear clearance (ST):

There is said to be clearance when, in addition to the grooves, the pulley extends still further. With regard to the rear clearance, this is measured from the last groove up to the compressor body, measuring the width in mm with a gauge (only the actual pulley). This clearance is very important because it governs the belt alignment.

It can be clearly appreciated in the following compressor:



If the pulley were to be dismounted, the measurements would be taken as follows:



### - Pulley with front

With regard to the front clearance, this is measured from the first groove up to the gear plate, measuring the width in millimetres (only the actual pulley). The front clearance is less important than the rear one, given the fact that it can vary providing that it does not prevent the compressor from being installed on the vehicle..

Ref. 81.08.37.003  
Model NP 7SB16C  
Pulley PV6 125mm SD10



An enlargement of the photo to show the front clearance in greater detail:

