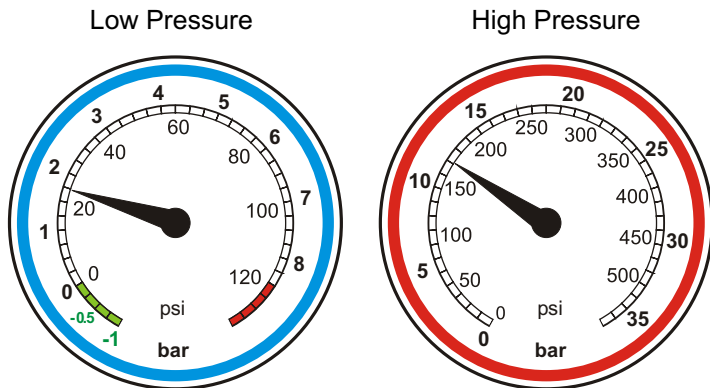


**A/C system performance check**

**Pressure gauges readings in normal condition**

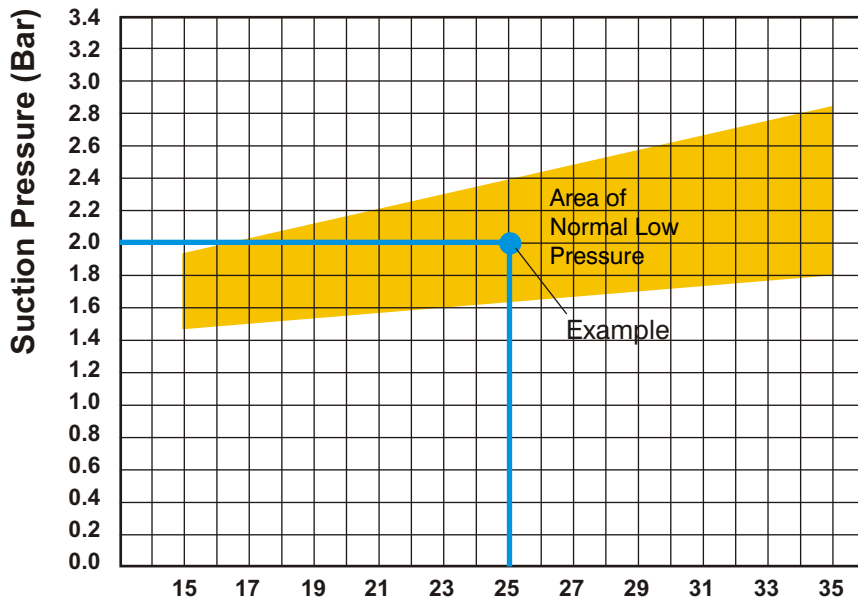


**Gauges shows normal operation of A/C system.**

If the pressure readings to the ambient temperatures are different to these, then the system is probably defective.

Note: Pressure gauge readings (low & high) depends on outside temperature.

**1. Suction Pressure Vs Ambient Temperature**

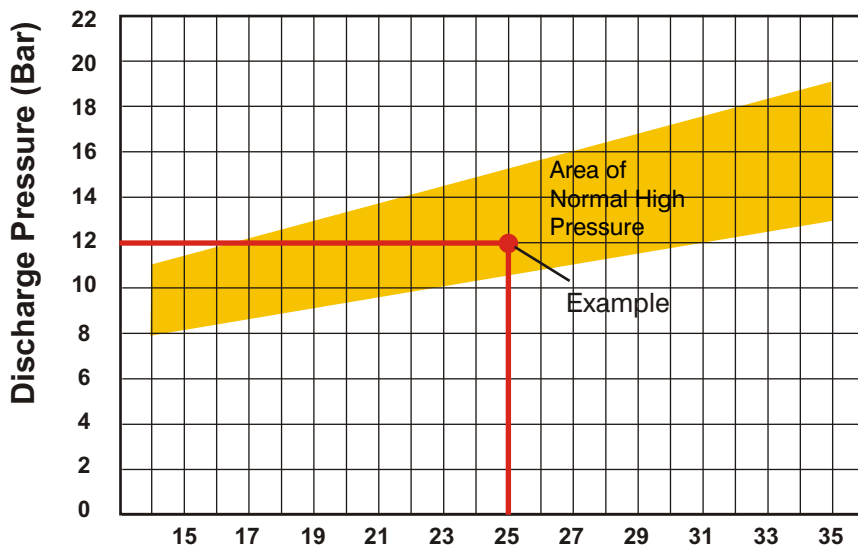


**Example:**

The outside temperature is 25 °C. The suction pressure we have measured is 2 bar.

The graph shows that the point is in the area of normal pressure.

**2. Discharge Pressure Vs Ambient Temperature**



**Example:**

The outside temperature is 25 °C. The discharge pressure we have measured is 12 bar.

The graph shows that the point is in the area of normal pressure.

## Faulty performance of A/C system

As we have mentioned before, correct pressure gauges reading may show particular problem or associate to a possible problems.

**Note: (F) fixed displacement compressor, (V) variable displacement compressor**

Pressure Gauges Reading		Probable Causes
<p><b>Low pressure</b></p> <p><b>Normal</b></p>	<p><b>High pressure</b></p> <p><b>Normal</b></p>	<p><b>Pressure readings are normal, A/C system is not cooling.</b></p> <ul style="list-style-type: none"> <li>- Warm air infiltrated into the evaporating unit or passenger compartment.</li> <li>- Warm water infiltrated in the heater.</li> <li>- Ice on evaporator core.</li> </ul>
<p><b>Low pressure</b></p> <p><b>Normal or Low</b></p>	<p><b>High pressure</b></p> <p><b>Low</b></p>	<ul style="list-style-type: none"> <li>- Normal situation if ambient temperature is very low.</li> <li>- Too little refrigerant quantity, 70-75% less. check for leaks.</li> <li>- (V) Expansion valve stuck partially closed or blocked</li> <li>- (V) Clogging in the H.P. or L.P. branch between filter and evaporator.</li> <li>- Blockage in the H.P. branch between compressor and condenser-filter hose, but before the H.P. reading point.</li> </ul>
<p><b>Low pressure</b></p> <p><b>High or Normal</b></p>	<p><b>High pressure</b></p> <p><b>High</b></p>	<ul style="list-style-type: none"> <li>- Normal situation if ambient temperature is very high.</li> <li>- Excess refrigerant charge, 30-5% more.</li> <li>- Condenser overheated.</li> <li>- Air present in the A/C system.</li> <li>- (V) Compressor displacement regulator valve defective.</li> <li>- Blockage in the H.P. branch between compressor and condenser filter hose, but after the H.P. reading point.</li> </ul>

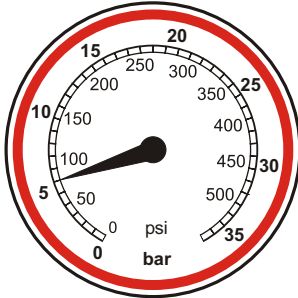
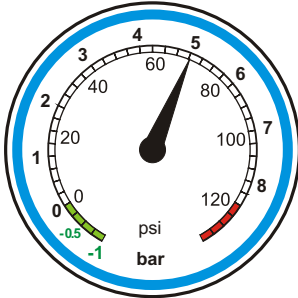
**Faulty performance of A/C system**

**Note: (F) fixed displacement compressor, (V) variable displacement compressor**

**Pressure Gauges Reading**

**Low pressure**

**High pressure**



**L.P. approximately equal to H.P.**

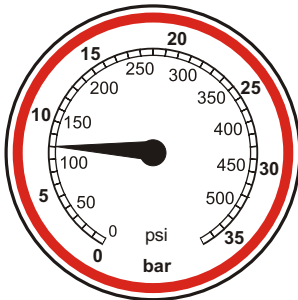
**Probable Causes**

- Compressor belt jumped. Probably caused by misalignment of the pulleys (see page 74).
- Electric clutch of the compressor not engaged.
- Compressor damaged.
- **(V)** Compressor displacement regulator valve defective.

**Pressure Gauges Reading**

**Low pressure**

**High pressure**



**High**

**Normal or Low**

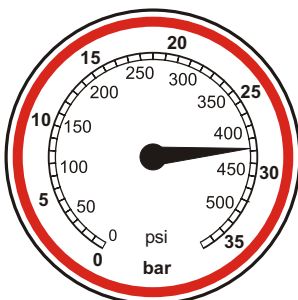
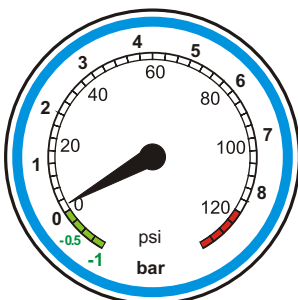
**Probable Causes**

- Suction and drainage hoses reversed on compressor.
- Electric clutch of the compressor not engaged.
- Expansion valve stuck open. If the compressor is “variable displacement type”, the low pressure has small but fast oscillations.
- **(V)** Compressor displacement regulator valve incorrectly set or defective
- Compressor damaged

**Pressure Gauges Reading**

**Low pressure**

**High pressure**



**Low**

**High or Normal**

**Probable Causes**

- Filter saturated with moisture
- **(V)** Compressor displacement regulator valve stuck at maximum displacement.
- **(F)** Blockage in H.P. or L.P. branch between filter and evaporator.