AUTO AIR CONDITIONING



1. MATCH THE WORDS TO THEIR DEFINITIONS.

1. pressure	**a. a device that controls the flow of liquid or gas**
2. adjust	**b. putting too much power into something, like a battery**
3. orifice tube	**c. a small pipe that helps move fluid in a system**
4. valve	**d. the force that pushes on an area**
5. evaporator	**e. to change something slightly to make it better.**
6. charged	**f. a tool that shows how much or how many of something there is**
7. refrigerant	**g. a special liquid used to keep things cold**
8. gauge	**h. a part that changes liquid into gas to cool things down**
9. overcharging	**i. filled with energy or power**

2. WATCH THE VIDEO. RESTORE THE SCRIPT FILLING IN THE GAPS.

Hello, my name is Mike Quest, _____(1) and co-founder of Avalanche Products. I'd like to help you better understand how an auto air conditioning system works, as well bring to your _____(2) a possible issue with a TXV valve found on certain vehicles. I'd also like to help you avoid the possible damage due to overcharging. We have designed a basic auto air conditioning system diagram to show you the flow of refrigerant throughout the AC system. The compressor is the workhorse of the system and is where we'll start. It receives cool, low-pressure _____(3) which is compressed into a high-pressure, high-temperature gas and pumped out of the discharge side of the compressor and flows into the condenser. This high-pressure, high-temperature gas is shown as red with bubbles, indicating it's in a gas state.

The condenser does just that. Cool air flows across the condenser, cooling the high pressure, high temperature gas, turning it into a high pressure liquid. As you can see, the gas remains red, high pressure, but changes to arrows indicating it's changed to a liquid. The high pressure _____(4) flows through the receiver dryer, having a desiccant bag inside it to filter and absorb small amounts of moisture

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that may contaminate the refrigerant. On the AC system using an orifice tube, the receiver dryer is replaced with an accumulator which is located _____(5) the evaporator and the compressor. The high side service port is located here between the condenser and the expansion valve or orifice tube.

Next, this high pressure liquid passes through the expansion valve allowing it to expand and turn into a low pressure liquid as indicated in our color change from red to blue. This low pressure liquid flows from the expansion valve directly into the evaporator at which point it begins to boil and turn back into a low pressure gas absorbing heat as it does so. This chills the _____(6) of the evaporator and the blower motor pushes this cool air through the vehicle's dashboard vents. As you can see the liquid arrows turn back into a gas as indicated by bubbles. The low side service port is located here between the expansion valve and the compressor. The low pressure gas then returns to the compressor for another cycle. A number of car manufacturers started using a thermal expansion valve or a TXV to make the air conditioner _____(7) more efficiently and give better cooling. The TXV system, as shown in our diagram, has a small temperature bulb located at the outlet of the evaporator, which continually adjusts the refrigerant flow through the expansion valve and into the evaporator based on the evaporator's temperature and pressure. Because the evaporator's outlet temperature is used to regulate the TXV valve, it sets a maximum operating pressure at the evaporator outlet.

It then flows through the low side service port where in many cases is being measured by low side gauge only to charge the system. As refrigerant is added the pressure on the low side rises until it _____(8) its maximum operating pressure which is typically 35 psi or lower. If this pressure level is below the gauges established correct fill which is typically over 35 psi, even though the system is fully charged, adding _____(9) refrigerant will not show on the low side pressure gauge, but will build up on the high side and can only be measured using a high side gauge. In these cases, using only a low side gauge can potentially cause too much refrigerant to be added and result in _____(10) to the compressor, or other problems associated with overcharging.

Well, I trust this has been helpful. From all of us at Avalanche Products, we want to thank you for your business. For those of you who have not yet tried our Avalanche refrigerant, we invite you to take the pressure out of recharging your auto air conditioning system and use Smart Clips technology for the correct fill.

3. WHICH TITLE FITS BEST TO THE SCRIPT?

Mike Quest and His Refrigerant Adventure	**The Story of Avalanche Products' Service Ports**	**How Car Air Conditioning Works: A Simple Guide**

4. WATCH THE VIDEO AGAIN. PICK THE RIGHT ANSWER.

1. What is Mike Quest's role at Avalanche Products?

A. Sales manager
B. President and co-founder
C. Technical support specialist
D. Marketing director

2. What happens to the refrigerant in the compressor?

A. It becomes a cold liquid
B. It turns into water
C. It is compressed into a high-pressure, high-temperature gas
D. It completely disappears

3. What is the purpose of the receiver dryer in the AC system?

A. To cool the air
B. To filter and absorb moisture
C. To increase pressure
D. To stop the refrigerant flow

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4. Where does the cool air get pushed through in the vehicle?

A. The engine
B. The trunk
C. The dashboard vents
D. The windshield

5. What does the TXV valve do in the air conditioning system?

A. Stops the refrigerant completely
B. Increases the system's temperature
C. Adjusts refrigerant flow based on evaporator temperature
D. Removes moisture from the air

6. What can happen if too much refrigerant is added?

A. The car will run faster
B. The system will work more efficiently
C. Nothing will change
D. Damage to the compressor can occur

7. What technology does Avalanche Products invite customers to use?

A. High-pressure gauges
B. Smart Clips technology
C. Expansion valves
D. Refrigerant filters

5. *RECONSTRUCT THE DIALOGUE CHOOSING THE RIGHT WORD.*

Mark: Hey, Lisa. Did you check the _____ in your car?
Lisa: Yeah, I did. It was not cooling well.
Mark: That's a problem. The _____ might be faulty.
Lisa: Right. I noticed the _____ around it.
Mark: When it's hot, _____ needs to _____ properly.
Lisa: Exactly! It should _____ and _____.
Mark: You might have _____ if _____ can't _____.
Lisa: So, what do I do now? Can I fix it myself?
Mark: First, look at the _____.
Lisa: Okay, where's that located?
Mark: Near the _____. You need to open it gently.
Lisa: Got it! And then what happens?
Mark: If everything is good, refrigerant will _____ the air quickly.
Lisa: What about then _____? Does it help?
Mark: Yes, _____ the system _____ for optimal cooling.
Lisa: I better check my _____ too.
Mark: Good idea! Make sure the _____ is okay.
Lisa: This sounds complicated but important.
Mark: Don't worry, we'll figure it out together!



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