

A collection of short
pointed topical papers.

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Cold W.A.R.

Whether it's **A**ir Conditioning or **R**efrigeration
SERVICING KNOW-HOW



Basic Troubleshooting Given Three Measurements

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ANSWER KEY

PHASE II
37

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Cold W.A.R. Phase II, Issue 37

Basic Troubleshooting Given Three Measurements

Scenario	Suction	Discharge	Superheat	Problem
1.	↓	↓	↓	low load, insufficient airflow
2.	↓	↓	↔	low load, insufficient airflow, TEV control ok
3.	↓	↓	↑	refrigerant undercharge, restriction
4.	↓	↔	↓	low load, insufficient airflow
5.	↓	↔	↔	low load, insufficient airflow, TEV control ok
6.	↓	↔	↑	restriction, TEV adjusted too far closed
7.	↓	↑	↓	low load with non-condensables/dirty condenser
8.	↓	↑	↔	low load w/ non-condensables/dirty condenser, TEV control ok
9.	↓	↑	↑	restriction with refrigerant overcharge or non-condensables/dirty condenser
10.	↔	↓	↓	cold ambient with TEV adjusted too far open
11.	↔	↓	↔	cold ambient, TEV control ok
12.	↔	↓	↑	cold ambient
13.	↔	↔	↓	TEV adjusted too far open
14.	↔	↔	↔	system operating properly
15.	↔	↔	↑	TEV adjusted too far closed
16.	↔	↑	↓	non-condensables/dirty condenser
17.	↔	↑	↔	non-condensables/dirty condenser, TEV control ok
18.	↔	↑	↑	non-condensables/dirty condenser
19.	↑	↓	↓	bad/inefficient compressor with low load
20.	↑	↓	↔	bad/inefficient compressor, TEV control ok
21.	↑	↓	↑	bad/inefficient compressor
22.	↑	↔	↓	TEV adjusted to far open
23.	↑	↔	↔	high load, excess airflow, TEV control ok
24.	↑	↔	↑	high load, excess airflow
25.	↑	↑	↓	refrigerant overcharge
26.	↑	↑	↔	refrigerant overcharge, high load, non-condensables/dirty condenser, TEV control ok
27.	↑	↑	↑	high load, non-condensables/dirty condenser

↑ = above normal

↔ = normal

↓ = below normal