TPC
A CERTUS COMPANY

5-Step Systematic Troubleshooting Approach

The Approach Framework

Prepare

Step 1:Observe
Step 2: Define Problem Area
Step 3: Identify Probable Cause
Step 4: Test
Step 5: Repair/Replace & Confirm

Follow Up

2: Define Problem Area

Starting with the whole circuit as the problem area, take each noted observation and ask, "What does this tell me about the circuit operation?"

If an observation indicates that a section of the circuit appears to be operating properly, then eliminated it from the problem area

3A: Identify Possible Causes

It is necessary to identify all of the possible causes of the malfunction and include every component in the problem area(s)

Create a list of every fault that could be the source of the problem - no matter how remote the possibility of occurring

Rely on your observations to assist with this

3B: Focus on Probability

Some components are more likely to fail.

Check in the following order

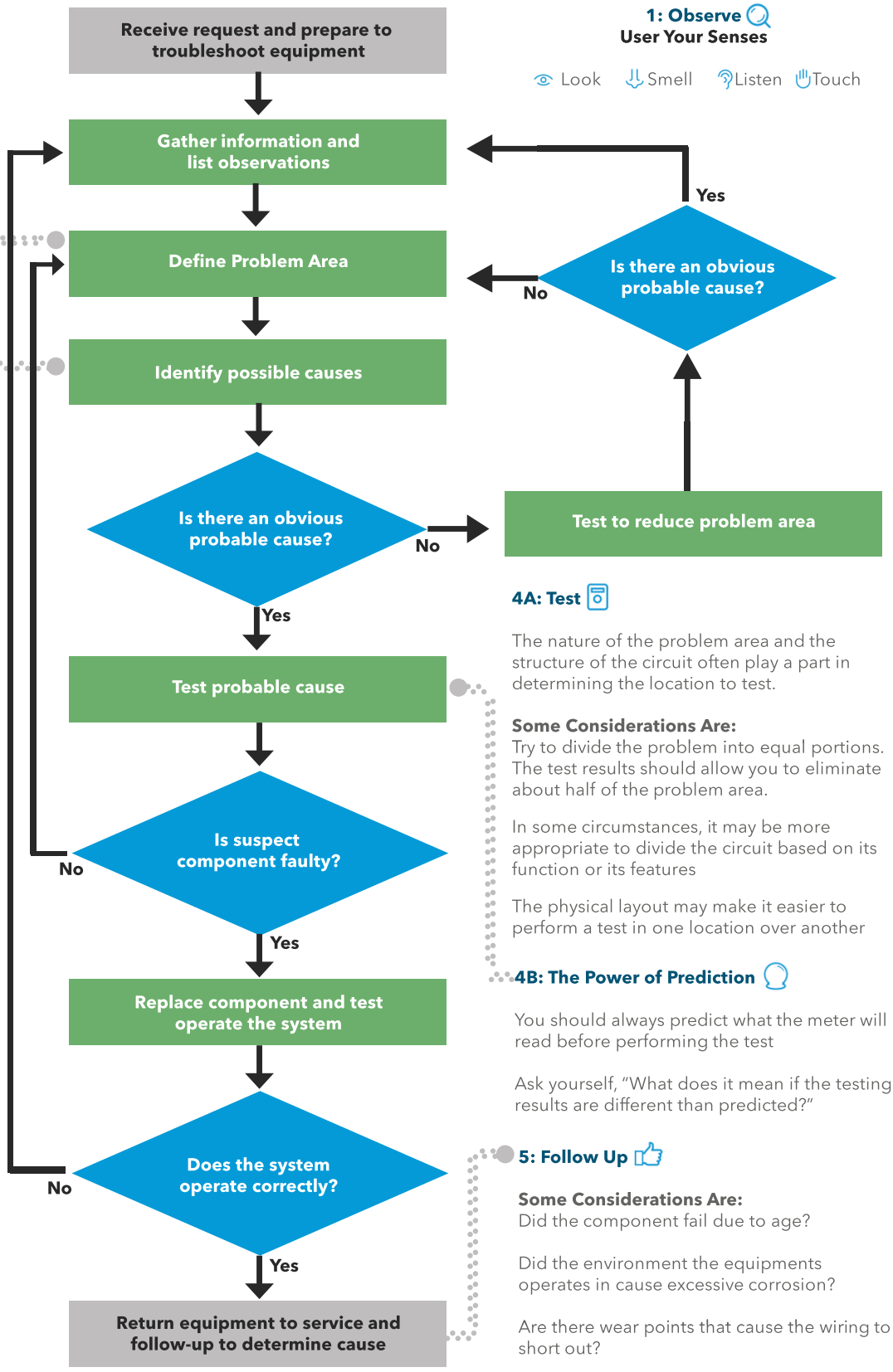
1. Fuses
2. Mechanical Components
3. Windings & Coils
   Connections
   Wiring

4C: Full Tool Kit

There are many types of test instruments used for troubleshooting. Some tools are specialized instruments designed to measure various equipments. Others, like the multimeter, are general and can be used on most electrical equipment.

4D: Double Check

After a component is replaced, be sure to test operate all features of the circuit to be sure you have replaced the proper component and that there are no other faults in the circuit.



1: Observe User Your Senses

Look Smell Listen Touch

4A: Test

The nature of the problem area and the structure of the circuit often play a part in determining the location to test.

Some Considerations Are:
Try to divide the problem into equal portions. The test results should allow you to eliminate about half of the problem area.

In some circumstances, it may be more appropriate to divide the circuit based on its function or its features

The physical layout may make it easier to perform a test in one location over another

4B: The Power of Prediction

You should always predict what the meter will read before performing the test

Ask yourself, "What does it mean if the testing results are different than predicted?"

5: Follow Up

Some Considerations Are:
Did the component fail due to age?

Did the environment the equipments operates in cause excessive corrosion?

Are there wear points that cause the wiring to short out?

Did it fail due to improper use?

Is there a design flaw that causes the same component to fail repeatedly?

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