L11 Layout

TIPS & TRICKS

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The L11 Layout

Tips & Tricks

At first glance, the L11 layout can seem like an intimidating setup. This layout requires a high level of accuracy and attention to detail during installation. On top of that, the L11 layout is often used on high volume/high speed roadways, creating additional pressure on the field personnel. As a result, the L11 is often installed incorrectly. The good news is that remembering just a few pointers can take all the confusion and intimidation out of the L11 layout.

What is the L11 layout?

The L11 is used when Speed and/or Class data is needed for each lane (lane separation) on a two lane, same direction roadway. Sometimes referred to as a *'short tube-long tube'* setup, it consists of two short tubes (A & C) that are installed over the first lane and two long tubes (B & D) that are installed over both lanes. Vehicles in the lane nearest the counter (near lane) hit all four tubes, but their hits on the B and D tubes are not counted since they were immediately preceded by hits on the A and C tubes. Vehicles in the outer lane (far lane) hit only the B and D tubes.



The below image shows an example of where an L11 layout would be appropriate:

Below is a diagram of the L11 layout for reference:



The L11 is used when Speed and/or Class data is needed for each lane (lane separation) on a two lane, same direction roadway.

5 things to consider for a successful L11:

1. Tube Length

The short tubes **MUST** be physically cut to a shorter length than the long tubes. In the diagram above, the TRAX counter is installed 26 feet from the edge of the roadway. Each lane of the road is 12 ft. wide. Looking at the A (red) tube, you would need 26 ft. of tube to get from the counter to the roadway edge. You would then need



another 12 ft. of tube to cover the width of the near lane.

In the above diagram, the A tube should be 38 ft. long.

Looking at the B (green) tube, you would need 26 ft. of tube to get from the counter to the roadway edge. You would then need another 12 ft. of tube to cover the width of the near lane. You would then need another 12 ft. of tube to cover the width of the far lane.

In the above diagram, the B tube should be 50 ft. long.

The C (blue) tube will be the same length as the A tube. The D (yellow) tube will be the same length as the B tube.

*If your A and C tubes are not physically cut shorter than your B and D tubes, your data WILL be bad. Imagine if the A and B tubes were the same length, but the A tube was only pulled across the near lane and the B tube was pulled across both lanes. Even though the A tube would be hit first, the air pulse would have further to travel and it would arrive at the counter AFTER the B pulse. This would trick the counter into thinking all of your vehicles are driving backwards, creating bad data.

**Another way to look at the L11 would be if you started with four 50 ft. tubes and you installed all four tubes all the way across both lanes. The A and C tube would then be cut at the center line, giving you the same results as above.

The short tubes MUST be physically cut to a shorter length than the long tubes.

2. Tube Spacing

The tube spacing from A-B (short-long) should be 6 inches. The tube spacing from A-C (short-short) should be 24 inches. The tube spacing from C-D (short-long) should be 6 inches. The tube spacing from B-D (long-long) should be 24 inches.



*The trick here is to treat the four tubes as if they are two separate setups, each at 24 inches. For example, install the A and C tubes first, at 24 inches apart. Then measure 6 inches from the A tube and install the B tube. The D tube is then installed 24 inches from the B tube. When done properly, the result will be the correct spacings between all tubes.

3. Tube Order

With an L11 layout, the vehicles should always hit the tubes in alphabetical order. Vehicles in the near lane should always be hitting the A tube (short tube) first, then the B tube (long tube), then the C tube (short tube), then the D tube (long tube). Vehicles in the far lane will only hit the B and D tubes, and they should do so in that order.

*Note that vehicles in the near lane should always be hitting the short tube first.

4. Correct Inputs

Plugging the correct tubes on the correct nozzles is very important when doing an L11 layout. With some layouts, having the tubes switched to different ports would be easily fixable in the TRAXPro Software. However, due to the complex calculations that take place during an L11 layout, fixing mistakes often becomes difficult, if not impossible.

*When possible, put some kind of labeled marking or tape on the far end of each tube so you always know which tube is A, B, C and D.



5. Safety:

As with any form of traffic data collection, safety is a top priority. Always consider your own safety, as well as the safety of those driving on the roadway, both during your set up and after you leave the site. The L11 layout can be time consuming during setup. Don't get flustered or stressed out. Take your time, do it correctly and avoid an expensive/time consuming recount. For more information on this, and other related topics, feel free to contact JAMAR Technologies.

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