

SETTING UP A TRAVERSE SCAN IN FLOWSIZER™ SOFTWARE

APPLICATION NOTE FLOWSIZER-002 (A4)

Traverse Scanning

Laser Doppler Velocimetry (LDV) and Phase Doppler Particle Analysis (PDPA) are point-wise measurement techniques. For this reason, it is often useful to move the measurement system in order to map out flow characteristics in larger regions. The following application note describes some techniques for performing a traverse scan using the TSI FlowSizer™ Data Acquisition and Analysis Software.

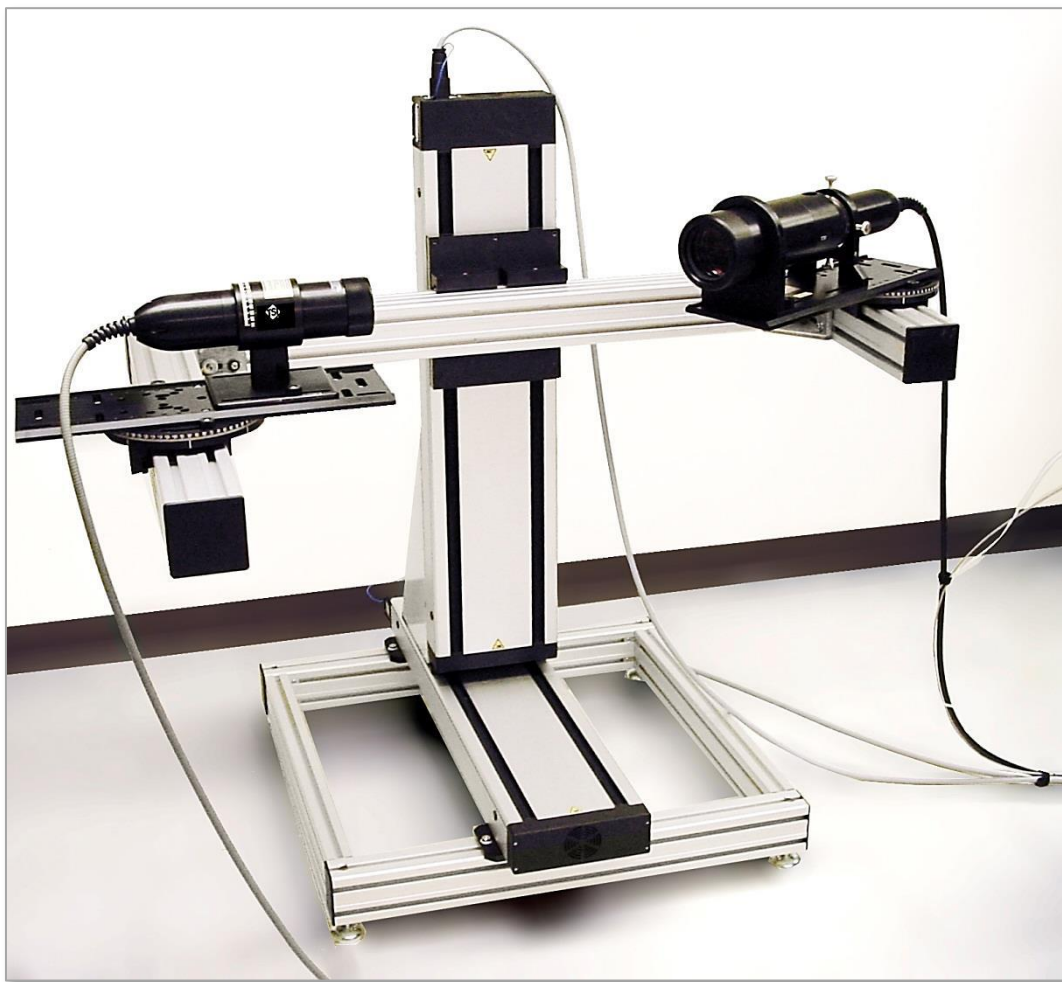


Fig. 1. 2D PDPA System mounted on a dual-axis traverse.

Procedure

Within the FlowSizer software, is the traverse manager, which is accessed by clicking on the Hardware tab and selecting “**Start Traverse Manager.**” After the traverse controls have been set, so that the traverse can be controlled from FlowSizer software, click the **Scan Matrix** tab in order to setup the locations at which data will be taken. A file can either be created within FlowSizer software, or created outside of FlowSizer software (in Excel® spreadsheet software, for example) and loaded in, using the “Open” button. The Run Setup column consists of an existing Run file, for which the desired settings have been saved. This allows the PDPA system to use different settings for different parts of the spray or flow being measured. The Capture Delay (ms) allows the user to set the amount of time that the traverse will pause at the new location before collecting data. This can be useful if there is a certain amount of sway or jitter in the traverse movement. The Preview tab allows for the scan matrix to be seen. Both the x-y and z-y views are seen.

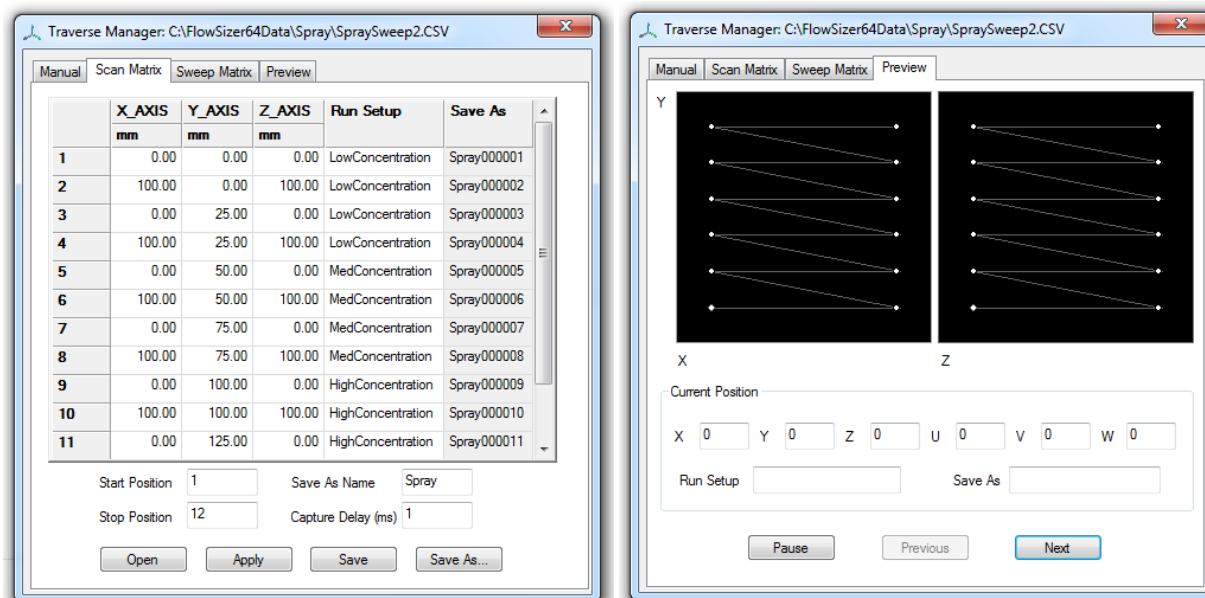


Fig. 2. The traverse manager window.

Another method of traverse scans includes the ability to setup a Sweep Matrix. The sweep matrix allows the user to set up a series of sweeps that the PDPA system will step through. The difference between a Scan and Sweep capture is that a Sweep captures data while the traverse is in motion. Therefore, the desired traverse speed is also set in the Sweep Matrix.

Conclusion

A traverse scan can be set up quite easily within the FlowSizer data. Once the scan has been entered, the user presses “**Start Scan Capture**” on the Hardware tab and the PDPA system will be traversed through the points and data collected.



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