

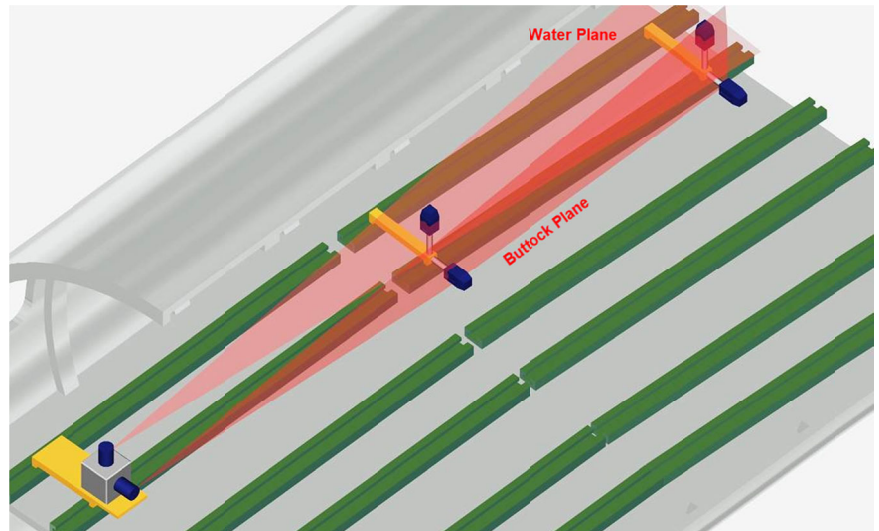
Seat Track Alignment

The L-733 provides the user with a portable reference system that incorporates a "[waterline](#)," "[buttock line](#)," and a "[station plane](#)" in a common instrument. Generally, 7 reference targets are required to set up and transfer the reference system inside the aircraft. The user places 3 targets into fixtures that represent the waterline of the aircraft, then places 2 targets onto fixtures that mount into the actual seat track. Next 2 targets are placed into fixtures that represent the "station plane," which is perpendicular to the seat tracks.



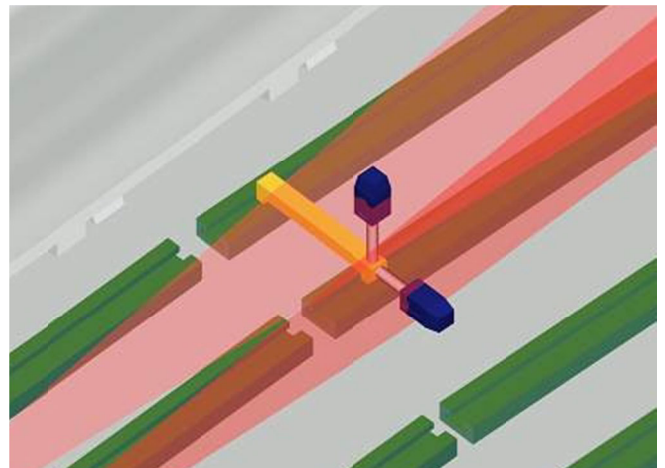
L-733 Aligning Commercial Aircraft Seat Tracks

1. To start the setup, the horizontal laser plane is "[bucked in](#)" so that it is parallel to the 3 waterline reference targets. To accomplish this, the targets are all zeroed on the same reference point and placed into the waterline fixtures. The laser plane is then adjusted until all of the readouts display the same number, which means it is parallel to the waterline. The targets can then be taken back to the original zero reference and re-zeroed.



2. Next we buck-in 1 of the vertical laser planes to 2 points along the "buttock line," using horizontally mounted targets. Using the azimuth adjustment on the L-125 PRY base, the laser is adjusted so that both reference targets display the same reading. Again, the targets can then be returned to the original zero point and re-zeroed.

3. Now, 2 measuring targets are mounted into a fixture, 1 horizontally and 1 vertically, that clamps into the seat track locations. At the point closest to the laser, both targets are zeroed out. One target measures from the vertical plane (Buttock Plane) and one from the horizontal plane (Water Plane). The targets measure vertical and horizontal [straightness](#) simultaneously as they are moved down a seat track. If errors are found, real-time adjustment of those points can also be accomplished from this set up.



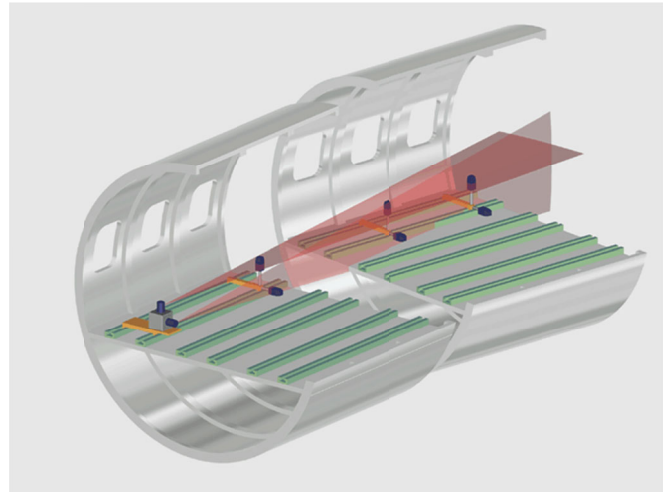
Transferring the Reference Between Seat Tracks

For large aircraft, the seat tracks all need to be parallel to each other. This an easy task for the L-733 Triple Scan®.

1. First the user needs to set up 2 targets horizontally to pick up the “station plane” (the laser plane perpendicular to the buttock line plane) in a floor fixture.
2. Each target is zeroed in the software or PDA.
3. The laser is then transferred to the other set of seat tracks and bucked in the 3 waterline reference targets. This means the Water Plane is now parallel to where it was in the first laser location (first set of seat tracks).
4. The yaw axis of the L-733 adjustment base is adjusted until both targets in the Station Plane read the same value. This means that the Buttock Line Plane is now parallel to where it was in the first laser location.
5. Using the same seat track fixture, put 2 targets, 1 vertical and 1 horizontal and zero them to the respective planes.
6. Move the fixture/targets along the seat tracks to measure the alignment.
7. Real-time data updating allows the seat tracks to be adjusted while watching the values update on the display box.

Body-Joining Application

The same process can be used to join body sections of the machine except the buck-in would be done to 1 aircraft section and then the measuring targets are mounted in the second section that is to be aligned to the first.



L-733 Aligning Commercial Aircraft Body Sections