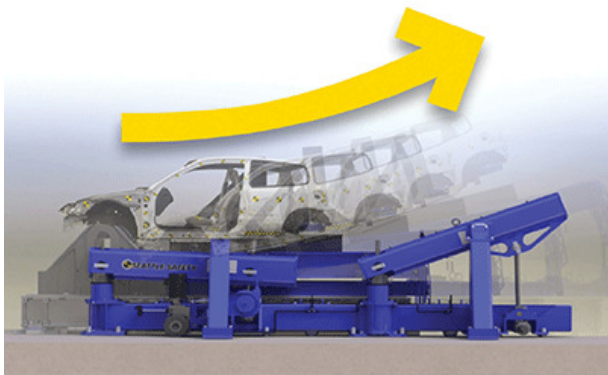


The Seattle Safety Dynamic Pitch Simulator is an economical add-on accessory to sled test systems. Current lab managers can add pitch simulation without replacing their systems, and new customers can buy with confidence knowing they can add the simulator any time in the future.



Adding pitch simulation to sled test systems for full frontal impact testing can improve the correlation of occupant injury performance between sled tests and barrier tests, providing engineers with better design data resulting in better engineering and safer vehicles.

Add proven pitching simulation any time with breakthrough simplicity and minimal investment  
Only minor test lab modifications required – pitch simulator installs directly to existing sled and reaction block  
Does not compromise non-pitch testing – pitch fixtures can be easily removed in an hour or less to maximize payloads, camera views, and access  
Proven repeatable trajectory using fixed-path guidance eliminates the need for expensive control systems

## Only minor modifications required



The Dynamic Pitch Simulator can be installed on existing sled test systems within one hour and requires only minor test lab modifications. Just secure the four floor fixtures with bolts mounted into the concrete. It's that simple.

## Easily removable

The simulator can be easily removed in an hour or less:

**Step 1:** Pitch system fully installed

**Step 2-4:** Remove offboard guides

**Step 5:** Remove onboard pitch platform, leaving base sled configuration



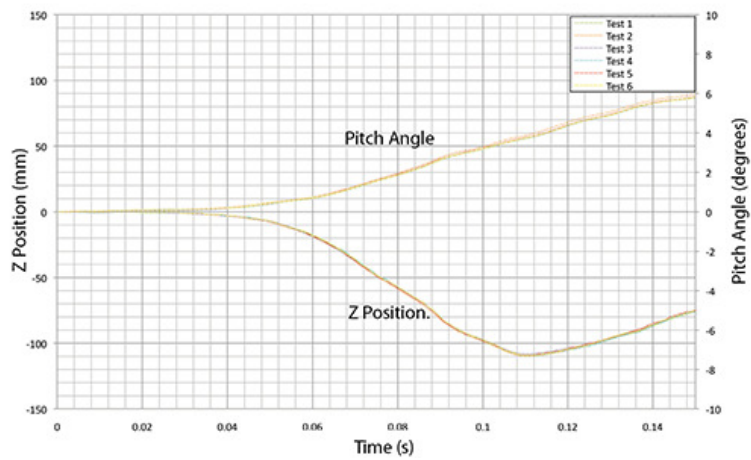
Removing the onboard equipment leaves a flat floor with full access to the sled system for uncompromised non-pitch testing and unobstructed camera views. There is no fixed equipment blocking access to the sled, and no complicated, expensive changes are required to the system.

## Proven repeatable trajectory

The pitch motion is highly accurate and repeatable due to the fixed-path guidance, eliminating the need for expensive control systems.

Most pitching profiles can be simulated accurately using the seven standard guides provided with the pitch simulator system. The system selects the correct guides for the test and electronically positions them prior to the test.

With fixed-path guides, the horizontal pulse is the only tuning variable; sled pulse and pitch performance are quickly achieved using existing sled pulse tuning algorithms.



Six independent tests overlaid to illustrate excellent repeatability.

## Performance Specifications

	1.4MN ServoSled	2.0MN ServoSled	3.1MN ServoSled
Payload (max)	1200 kg	1600 kg	2000 kg
Horizontal Acceleration (max) <sup>a</sup>	43 g	60 g	66 g
Horizontal Velocity (max) <sup>a</sup>	64 kph	73 kph	90 kph
Horizontal Stroke (max)	2.0 m	2.0 m	2.0 m
Horizontal Jerk Rate (max)	20 g/msec	20 g/msec	20 g/msec
Pitch Angle	-3 to +17 deg	-3 to +17 deg	-3 to +17 deg
Angular Rate (max) <sup>a,b</sup>	>250 deg/sec	>250 deg/sec	>250 deg/sec
Angular Acceleration (max) <sup>a,b</sup>	16,000 deg/sec <sup>2</sup>	21,000 deg/sec <sup>2</sup>	26,000 deg/sec <sup>2</sup>
Vertical Stroke (front, rear)	390 mm, 650 mm	390 mm, 650 mm	390 mm, 650 mm
Vertical Velocity (max) <sup>a,b,c</sup>	>5 m/sec	>5 m/sec	>5 m/sec
Vertical Acceleration (max) <sup>a,b,c</sup>	30 g	40 g	50 g
Payload Size W x L (max)	2.0 m x 2.5 m	2.1 m x 2.7 m	2.2 m x 2.9 m

<sup>a</sup> At 1,000 kg payload.

<sup>b</sup> Fixed guidance pitching motion is a function of geometry; maximum values are dependent only on the rating of the structure.

<sup>c</sup> Measured at center of gravity.

Note: any performance data contained herein is operating-condition dependent.