SEATTLE SAFETY

Dynamic Payload Pitching System

OE116

Dynamic Payload Pitching System

Modular Design

- System stores easily around the Pneumatic Actuator, opening the sled for other regulation testing and videography
- No adjustment to the Reaction Block needed
- Machined inserts allow for infinite number of capable pulses with consistent and repeatable results
- High payload capabilities (2000kg for 3.1MN system).
- Automated adjustment for pitch angles

System automatically returns to “Home” position after each test

Available for:

- 3.1MN ServoSled
- 2.0MN ServoSled

The Seattle Safety Pitch System is a highly accurate and repeatable add-on to the already exceptional performing ServoSled.
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.
The system is based on a combination of extensive analysis of actual crash data and input from OEM and Tier 1 development partners, supplemented with public NHTSA data. The goal of this analysis was to determine the true requirements of a pitching system that has the capability to accommodate a wide variety of vehicle types.

The primary features of the Dynamic Payload Pitching System include:

Storable – The pitch fixtures can be easily moved and stored around the Pneumatic Actuator for other regulation testing, camera views, and sled access. The system does not compromise non-pitch testing!

Payload – Payloads as heavy as 2000kg and accelerations up to 64g’s can be tested when used with the 3.1MN system.

Repeatability – Excellent pitch repeatable trajectory using fixed-path guidance

Accurate – Achieves high quality crash pulse simulation by independently controlling X axis acceleration from the pitching motion and adds proven pitching simulation to already exceptional performing ServoSled

4502 B Street Northwest
Building 1
Auburn WA, 98001
Phone: +1-253-395-4321
Email: info@seattlesafety.com

Visit our Website at
www.seattlesafety.com

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System Specifications:

	2.0MN ServoSled	3.1MN ServoSled
Payload (Max)	1600 kg	2000 kg
Payload Size (Max) (W x L)	2.1 x 2.7 m	2.2 x 2.9 m
Horizontal Acceleration (Max)*	50 g	64 g
Horizontal Velocity (Max)*	73 kph	80 kph
Horizontal Stroke (Max)	2.0 m	2.0 m
Horizontal Jerk Rate (Max)	20 g/msec	20 g/msec
Pitch Angle	-3 to +17 deg	-3 to +17 deg
Angular Rate (Max)*+	>250 deg/sec	>250 deg/sec
Angular Acceleration (Max)*+	21,000 $°/sec^2$	26,000 $°/sec^2$
Vertical Velocity (Max)*+^	>5 m/sec	>5 m/sec
Vertical Acceleration (Max)*+^	40 g	50 g

*at 1000 kg payload
+Values are a function of guide geometry and are limited only by the structural strength of the system
^ as measured at the C.G.

Provided by Seattle Safety

- Off board guide system
- Onboard pitching platform
- Pitch simulation software
- Standard insert library containing 8 complete sets
- Off board storage system
- Insert installation tooling
- 4 days of training
- Operations manual
- Maintenance manual

Provided by Customer

- Main ServoSled system
- Body in White
- Data Acquisition System
- ATD

4502 B Street Northwest
Building 1
Auburn WA, 98001
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Visit our Website at
www.seattlesafety.com

Contact Us in Europe:

Seattle Safety
August-Exter-Straße 37
81245 München
Germany
+49 (0) 172-1492610
Info@seattlesafety.com

Contact Us in the Americas:

Seattle Safety
4502 B Street Northwest
Building 1
Auburn WA, 98001
+1-253-395-4321
info@seattlesafety.com

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