

Caterpillar Comfort Seat



Caterpillar Comfort Seat

Two types

- Two point restraint - Introduced 1999
- Three point restraint – Introduced 2004
For rigid frame OHT only

Caterpillar Comfort Seats



Caterpillar Comfort Seat

2 Point Restraint Fitted to:

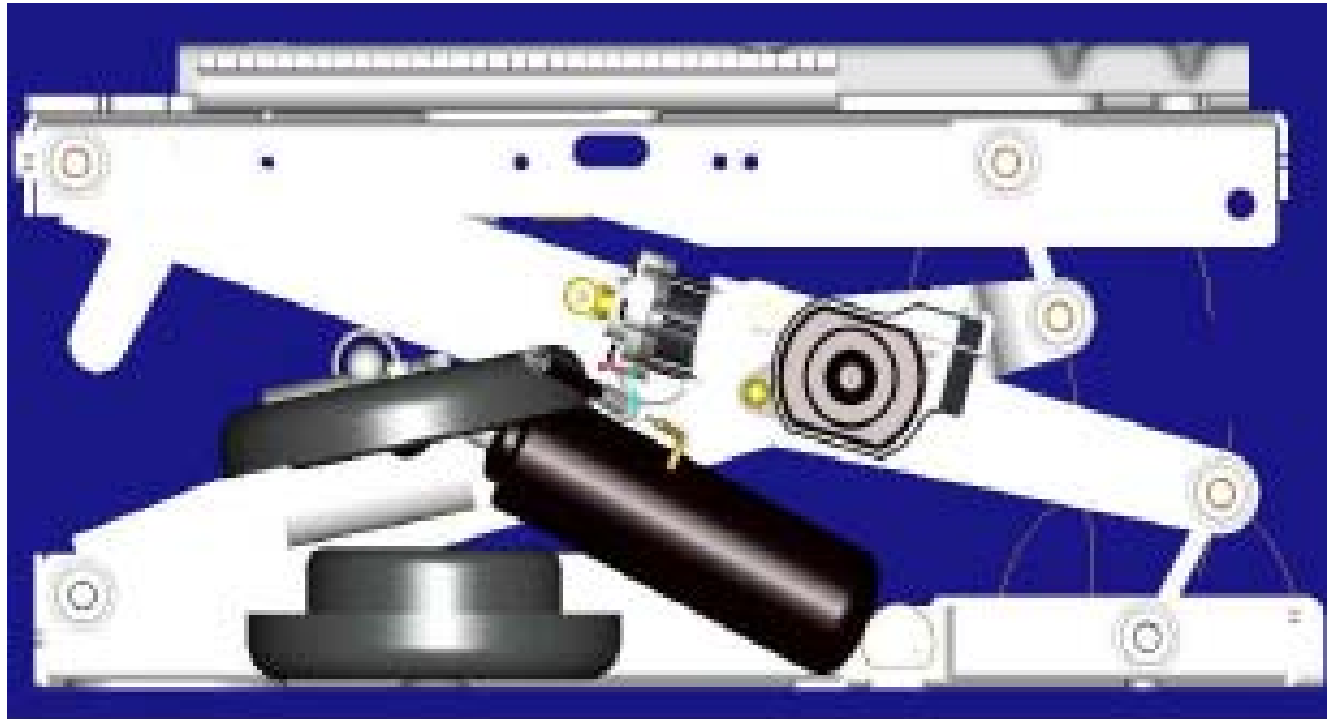
- OHT prior to August 2004
- Wheel Loaders
- TTT
- Wheel Dozers
- Tractor Scrapers
- Can be retrofitted to all machines in above product range

Caterpillar Comfort Seat

Common features (2 & 3 point)

- New design -
Fewer moving parts – reduced wear
- 10,000 hour design life on major parts with operator weight to 140 kg (5000 hours on wear parts)
- Operator weights above 140 kg with reduced life
Ergonomic design
- Passes 5000 lb “in cab” pull test – no tethers

Caterpillar Comfort Seat



New Air Suspension Design
All pivot points fixed – No rollers or slides

Caterpillar Comfort Seat

Options

- Ride Zone Indicator* Part #: 213-5170
- Adjustable damper kit* Part #: 212-7779
- Dual shock absorber kit Part #: 192-7848
- Heavy duty compressor Part #: 214-0783
- Dual shock absorber kit** Part #: 230-1394

* Standard on 3 point seat for OHT

** Extreme Duty for WTS only Refer to Special Instruction REHS1496

Caterpillar Comfort Seat

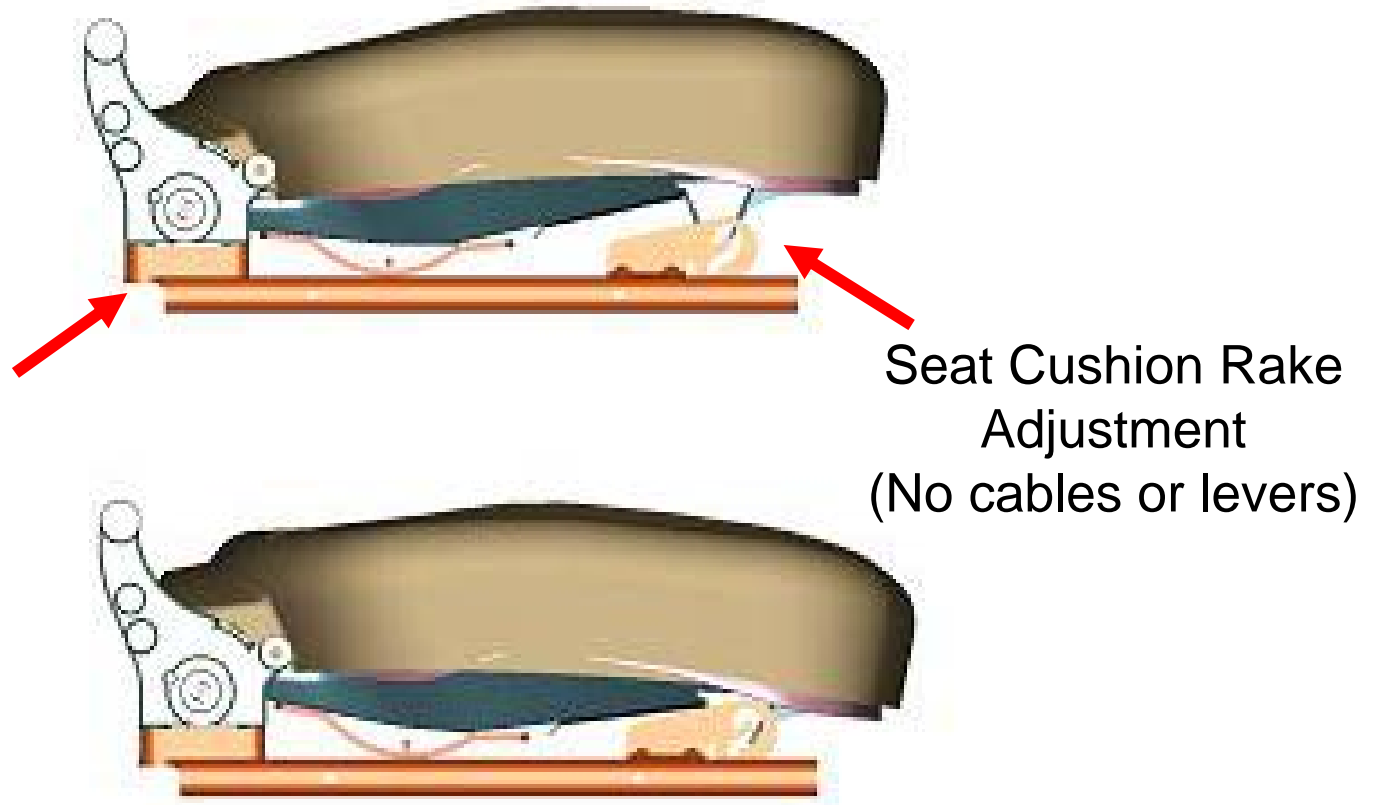


Ride Zone Indicator



Dual Shock Kit (Part no. 192-7848)

Caterpillar Comfort Seat





Seat Cushion Rake Adjustment

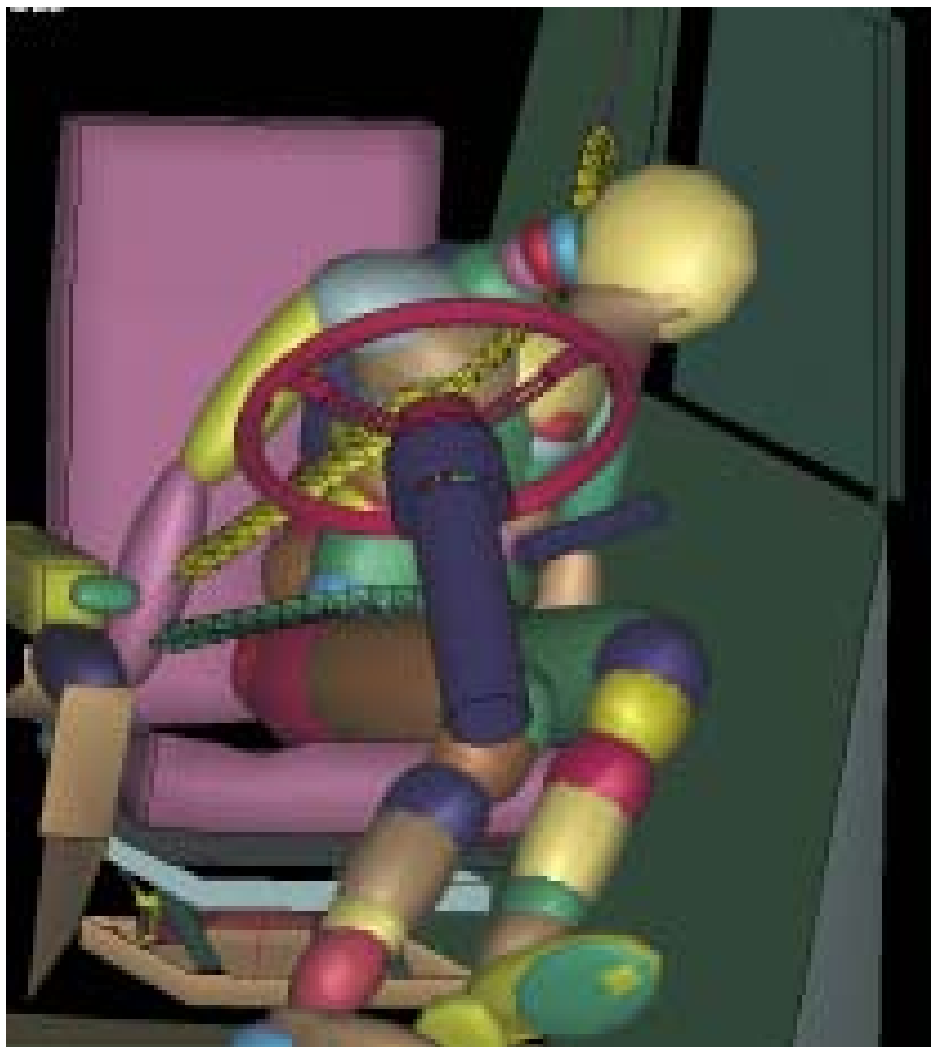


Development of Caterpillar Comfort Seat with Three Point Restraint

Background

- Several mining companies requested 3 point belts in OHT
- Experience indicates lap belts provide adequate safety in most common incident – rollover
- Automotive research shows shoulder belts beneficial in forward impact
- Neck contact with 3 point belt can be a concern in rollover situation without proper upper body restraint.

Research conducted to Identify neck injury criteria



Rollover simulations Indicated proximity of cab side walls to operators shoulder important to minimize neck contact loads

Automotive lock up restraints not suitable for low frequency movements as experienced in earth moving equipment

Recommendations

- Three point belts should only be fitted in Caterpillar OHT where pillar is close to and supports operators shoulder in a rollover
- Upper sash mount must be anchored on pillar side.
- Non pillar side sash belt anchor and 4 point restraints a risk to operators neck in rollover
- Caterpillar does not support the use of automotive type seat belts in earthmoving equipment



Competition

Automotive style narrow
Single seatbelts – one retractor

Fixed upper sash mounting
point

Operator weight:
“up to 150 kg”

Seat weight: 46 kg



Competition - Cable Tethers



Competition

Tethers must have sufficient slack to allow full suspension height and forward movement of seat

Seat Weight: 48.5 kg



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No external tethers
required

3" Wide Lap Belt

Dual Retractor

Design life: 10,000 hr
@ 140 kg op. weight

Seat weight: 68 kg



CAT - Upper sash belt adjustment

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Service Magazine SEPD0777 States (Extract) :

“When unauthorized changes are made that modify operator retention, certified structure may be voided”

And goes on to say:

“Use of a seat or seat belt other than listed as Standard or optional for the machine....may adversely affect cab certification (seat and seat belt must be pull tested in cab)”

Summary: Cat Comfort Seat

- Only 3 point seat certified to SAEJ2292 for OHT
- Certified to SAEJ386, ISO6683
- Passes 5000 lb pull test – SAE J386 - 1985
- Heavy Duty Construction - Minimum wear points
- 10,000 hour design life with operator weight to 140kg (Up to 186 kg – with reduced life)
- Automatic locking restraint/s designed for low frequency, high amplitude movements
- 3 Point seat has dual locking retractors
- Ergonomic design – long term support and comfort
- 3” Wide Lap belt
 - NB: Australian Standard AS2664 – 1983 states: 3” wide belt for earthmoving equipment fitted with ROPS

Reference Materials

- IRM: MP03-02 PELJ0178
 - Retrofit of new Cat Comfort Seat to older model machines
- IRM: MP04-03 PELJ0398
 - Retrofit of new 3 Point Restraint Cat Comfort Seat to older model machines
- Salesgram: TELQ3755
 - Introducing Cat Comfort Seat 2 Point Restraint
- Salesgram: TEKQ0239 – Mining Trucks
 - Introducing Cat Comfort Seat 3 Point Restraint
- Salesgram: TEKQ0307 – Quarry & Construction Trucks
 - Introducing Cat Comfort Seat 3 Point Restraint
- Data Sheet: PEDJ0010
 - 2 Point Restraint
- Data Sheet: PEHJ0061
 - 3 Point Comfort Seat
- Service Manual: RENR2165 and RENR8391
- Special Instruction: REHS1496 Installation of extreme duty shock absorber for WTS
- Instruction DVD: PEVD5717
- Instruction Tag: PEPJ0065
- Instruction Guide: Group Product Support IRM Drive

End of Presentation

Questions?