

Informal document No. **GRSP-48-38**
(48th GRSP, 7 - 10 December 2010,
agenda item 3)

**Dynamic test with HYBRID 3 as per
GTR 7 for neck rotation assessment**

(support for GRSP inf48/18)

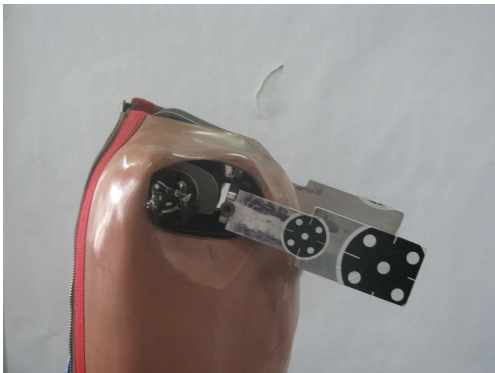
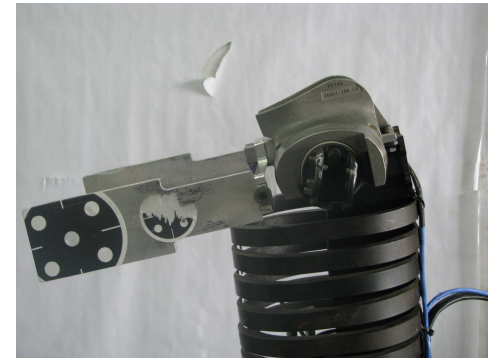
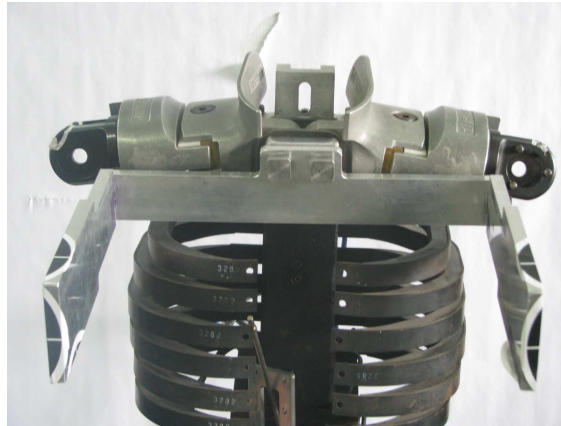
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Dynamic sled test



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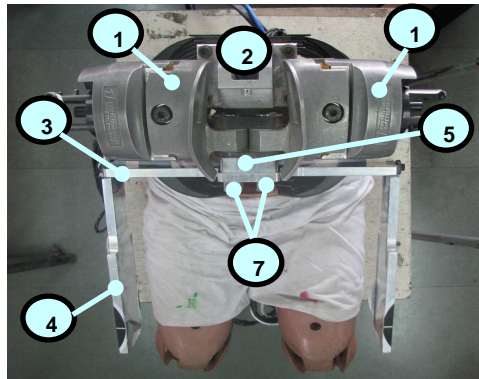
Dynamic sled test



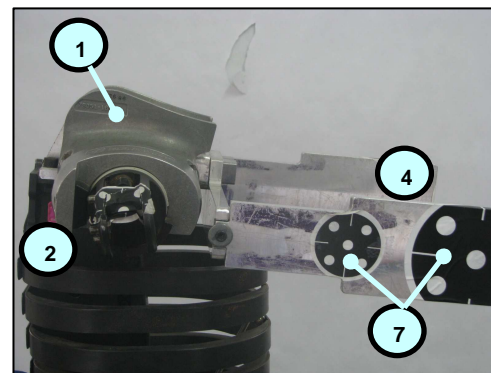
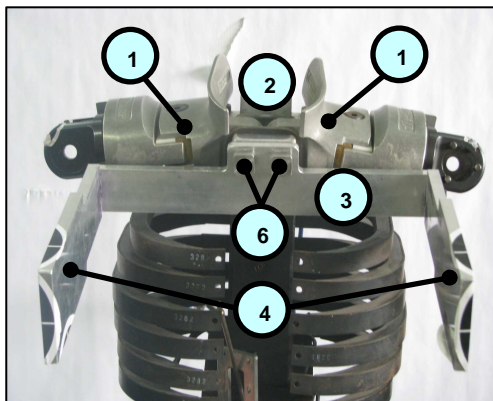
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Dynamic sled test

§ The kit includes -



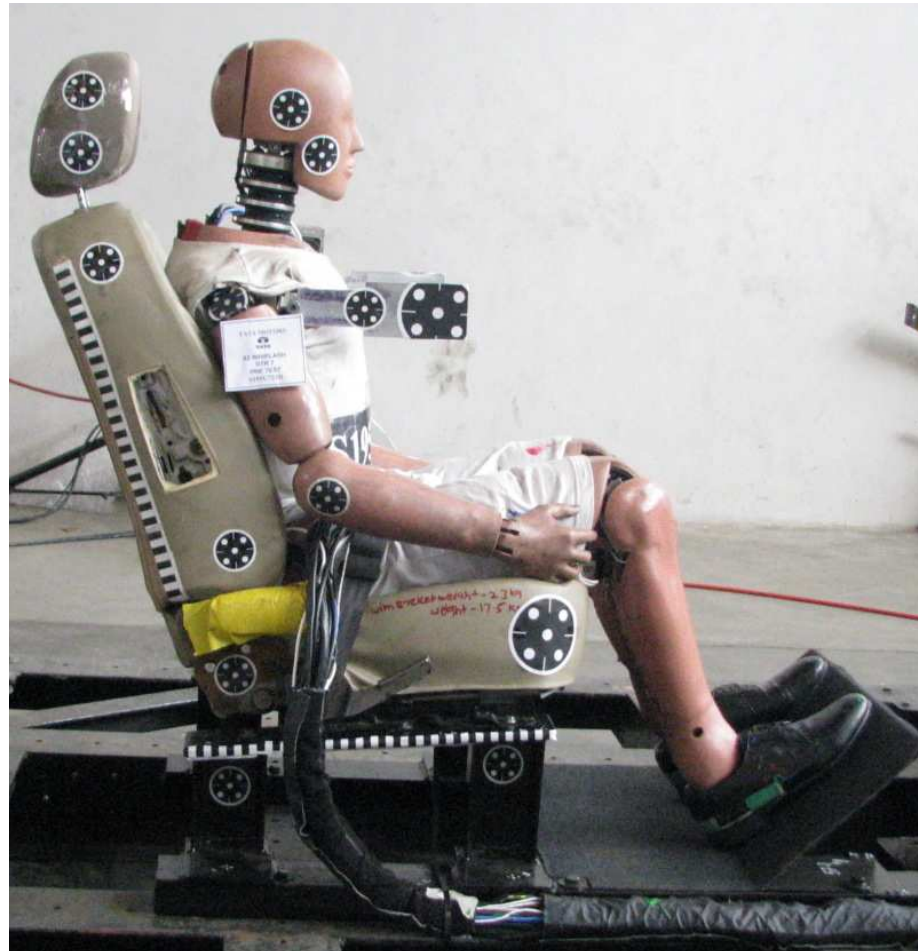
Sr no	Description
1	Shoulder
2	Spine
3	Extension plate
4	Longitudinal extensions
5	Spacer
6	Mounting screws SHSS 1/2 X 2 1/4
7	markers



The subject kit & the method has been applied for patent vide IPA 2453/MUM/2009

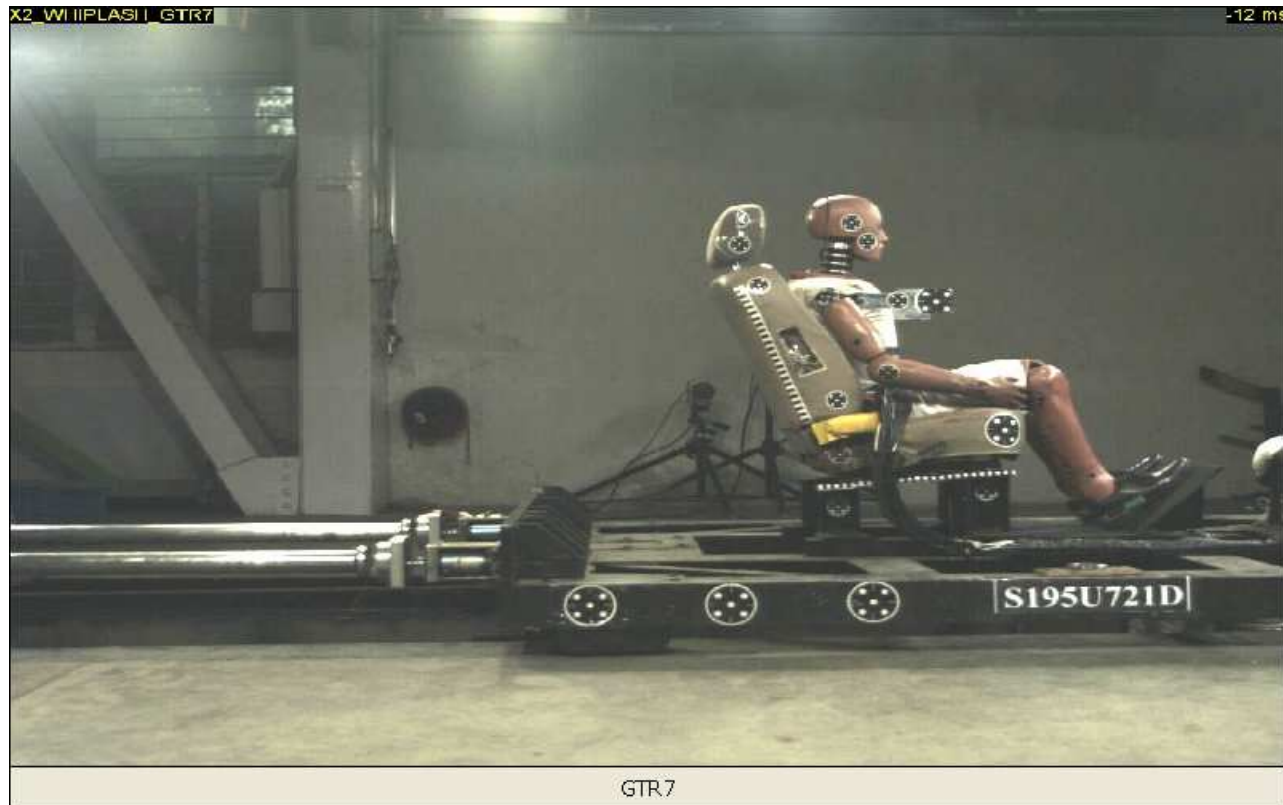
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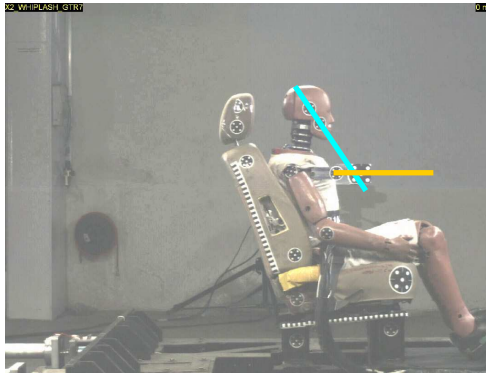
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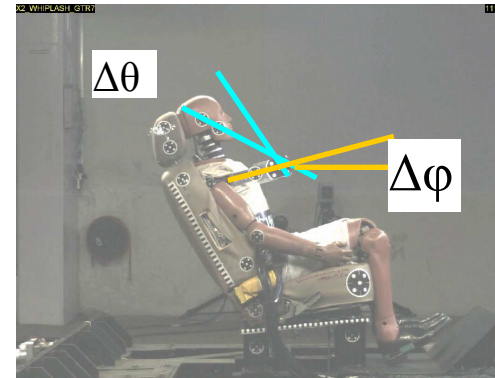


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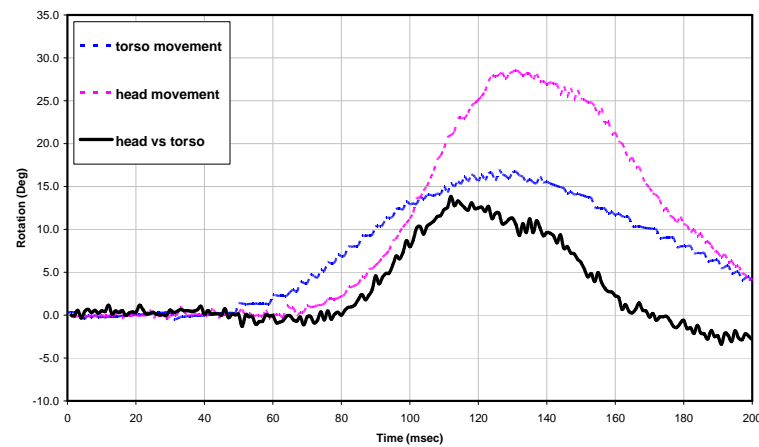


Time = 0



Time = 111 mSec

Head & Torso movement during whiplash assessment



Max head rotation

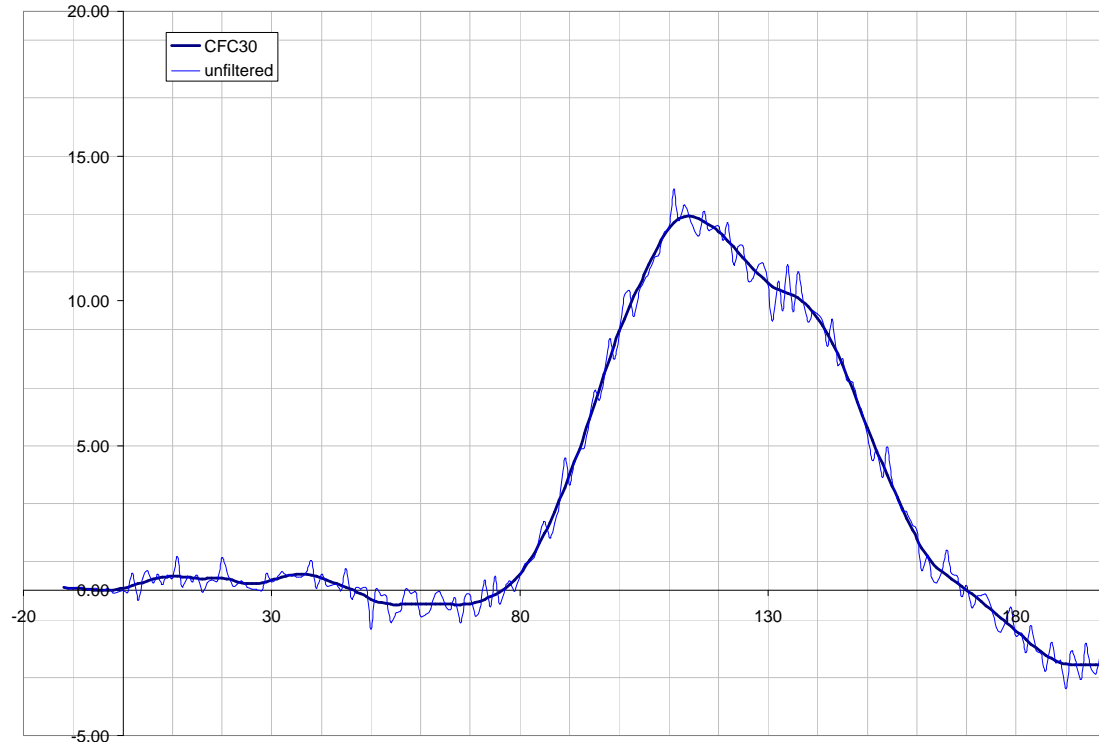
$$= \Delta\theta - \Delta\phi$$

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Dynamic sled test

§ filtering of photographic data

CFC 30 as suggested by EuroNCAP



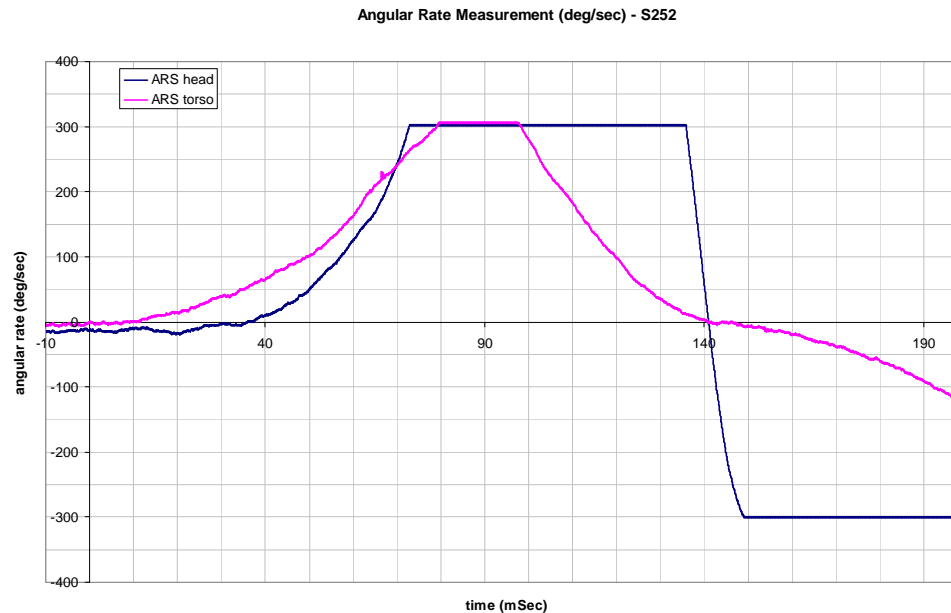
Filtering did not have a significant effect on the results.

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Dynamic sled test

§ Use of angular rate sensors -

300 deg/sec sensor bottomed out during the tests. The head / torso movements are faster than 300 deg/sec. such sensors may not be able to take up higher speed pulses.



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Thank You !!!

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