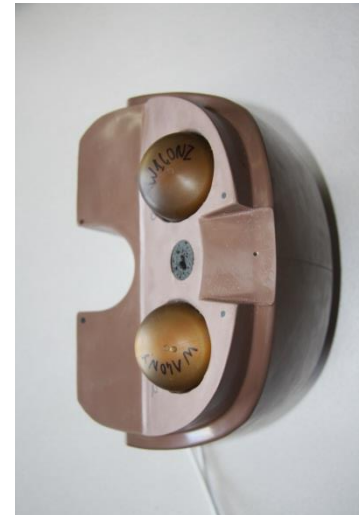




Abdominal Pressure Twin Sensors

For the Assessment of Abdominal Injury Risk in Q dummies

Prepared by Jean Bloch and Cédric Taurelle



Background and timeline

- Research phase: Development of APTS (V1, V2 and V3) by IFSTTAR (pre 2014...)
- 2014: Transfer from IFSTTAR to TRANSPOLIS for production, certification and sale (license)

2014-2015: Development of production and certification facilities at Transpolis

- June 2014: first 50 mm APTS (Q3, Q6, Q10) are distributed by Transpolis
- Sept 2014: first 30 mm APTS (Q1.5) are distributed by Transpolis
- Abdomen drilled by Transpolis (discussion on integration with Humanetics)
- Improvement / better control of production and certification steps
 - ⇒ Improved reliability and reproducibility (diameter, weight, sealing...)



In isolated certification test

(using previously proposed procedure):

APTS50: (n=19) CV=6.3% on pressure, 5.2% on displacement

APTS30: (n=9) CV=6.1% on pressure, 6.9% on displacement

All within 13% of target



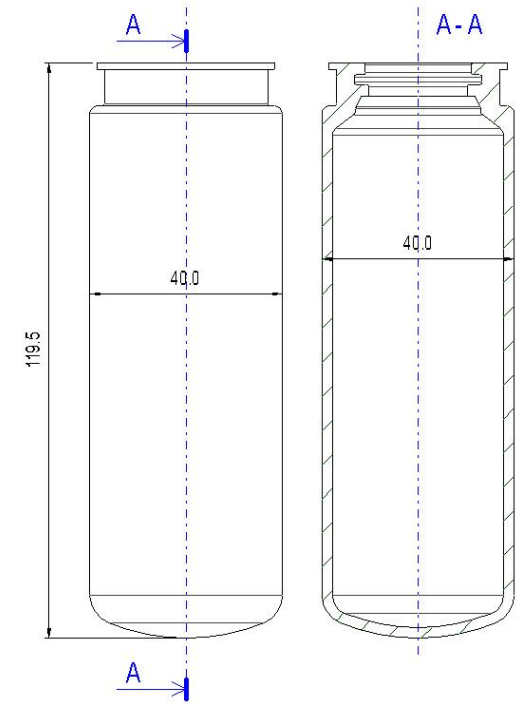
Feedback and current work

- + - More than 200 tests performed (Mostly Q3 and Q10).
- + - Q-Series dummies systematically equipped with APTS for one of the users.
- No failure occurred
- Q3: Humanetics integration issue (Heidelberg Meeting 2014): 50mm too big
- - One user: Issue in Q3 test: Interactions between APTS and chest deflection sensor because of the length of 50 mm diameter.
- ↳ Work on integration : discussions ongoing with Humanetics
 - Several tests were performed on several Q10 blocks (biofidelity like, certification)
 - ⇒ Results are quite encouraging
 - ⇒ Same tests to plan with other abdomens sizes
- ↳ Need for intermediate size for Q3 and Q6 -> 40 mm diameter APTS

Current Work (cont'd)

40mm APTS:

- Design finalized
- Mold manufacturing -> ongoing, available early July
- 2nd half of July: certification tests on first APTS 40 mm
- **APTS available for sled testing at users that would be interested (July-August...)**



Refinement of manual and certification procedures

- Isolated APTS, in abdomen...
- Finalization of process & documentation ongoing

Report on progress and results at next GRSP IG meeting



CONTACTS

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Transpolis presence at future events:

- GRSP IG, September 2015
 - IRCOBI 2015 – 9th-11th September 2015 (Lyon, FRANCE www.ircobi.org)
 - CRASH MEETING by Humanetics -- 24th-25th September 2015
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