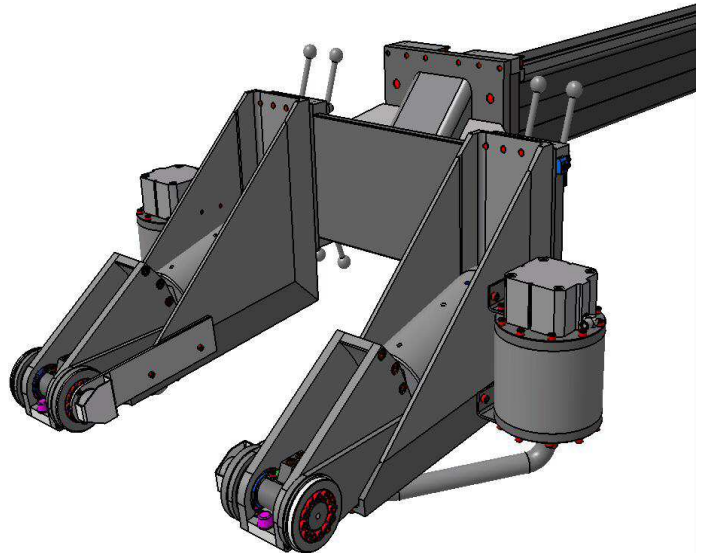


Concept[®] - KNEE IMPACTOR



Functional Description

This Concept developed test system is used to aid the development and optimizing of knee-pads or similar energy absorbing elements in the leg contact area. With this system the knee impact situation from previous sled or crash test can cost-effectively be re-enacted. The measured acceleration on the impactors allows conclusions to be drawn regarding the components and knee force. Hereby the effectiveness of further developments for the relevant areas becomes cost-effective.

Due to this unique solution with the special Concept developed rotary piston gear, reproducible realistic tests are possible!

FROM USER TO USER

As a user and system developer, we offer our customers our know-how.

Benefits at a Glance:

- ✓ Large cost saving due to avoiding further sled tests
- ✓ Multiple variable tests are possible (continuous variable impact energies) via pressure and weight adjustability.
- ✓ Simple testing of different leg positions via the adjustability of the impactor distances
- ✓ Highly flexible due to being able to use the system individually or as a system add-on module.
- ✓ Large cost savings due to the „comparison matrix“ and thereby avoiding comparison tests
- ✓ Simple adjustment to the test points due to the compact construction and 4 axes movement
- ✓ Realistic tests are possible due to an adjustable impact time difference between both impactors and a force free conducted test
- ✓ No secondary impact is possible due to the automatic impactor reset device

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Technical Data:

- Work and Control Medium: Nitrogen
- Supply Pressure: 16 bar
- Test Speed: 8 to 30 km/h adjustable
- Repeat Precision: ± 0,1 km/h
- Test Specimen Weight: 10 to 20kg, (0,5 kg sections)
- Energies: 0,7 kJ p. Pendel arm
- Impact Angle: 45-90° Conducted without force
- Total Weight: ca. 250 kg (Module)
- Control System: SPS Siemens S7
- E- Connection Power: ca. 0,3 kW
- Impact Displacement: 2- 200 ms

System Description

- 1 Retainer mechanism for simple assembly on Concept's FMH system
- 2 Piezo- Accelometer
- 2 Independent rotary encoders to angle measurement
- 1 Proportional valve for speed adjustability (continuous) via pressure adjustment
- 2 Rotary pistons ensure a force free conducted impact

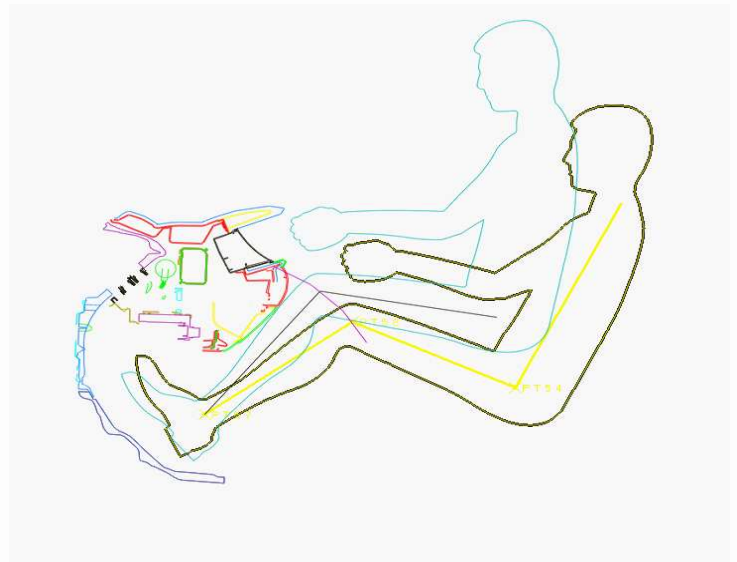
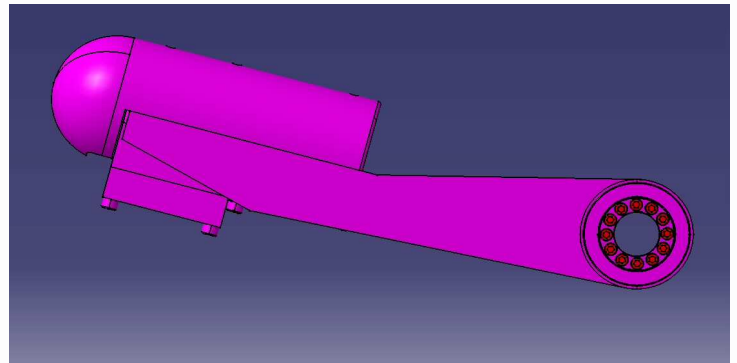
System Measurements (Module):

Total Length: ca. 890 mm
 Total Width: ca. 1.130 mm
 Total Height: ca. 610 mm

Adjustable area-> Distance between test specimens:
 ca. 250 - 700 mm

Height of the pendulum pivotal point above the ground:
 ca. 110 mm

Diameter of Test Specimen: 130 mm
 Length of Test Specimen (without calotte): 400 mm
 Pendulum Length (Rotary- Calotte centre): 532 mm



Test Data Bank:

The test data bank is used for the consolidation and management of the following data:

- Measuring data (launch force, speed, position of the system)
- Crash data (high-speed video, acceleration curves, DAT-files, sensors used, impact location, pictures)
- Test setup with component management
- Possibility of combining project related analysis data and tests

✓ The Concept test data bank can be individually customized.

