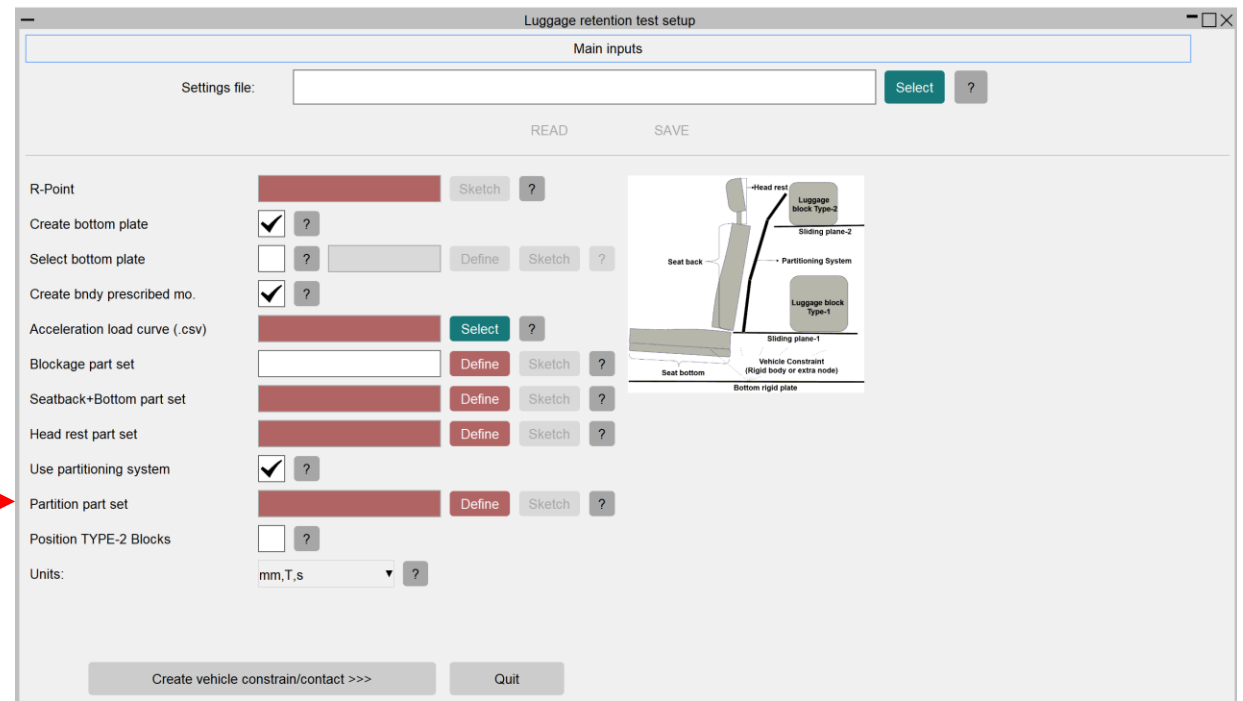
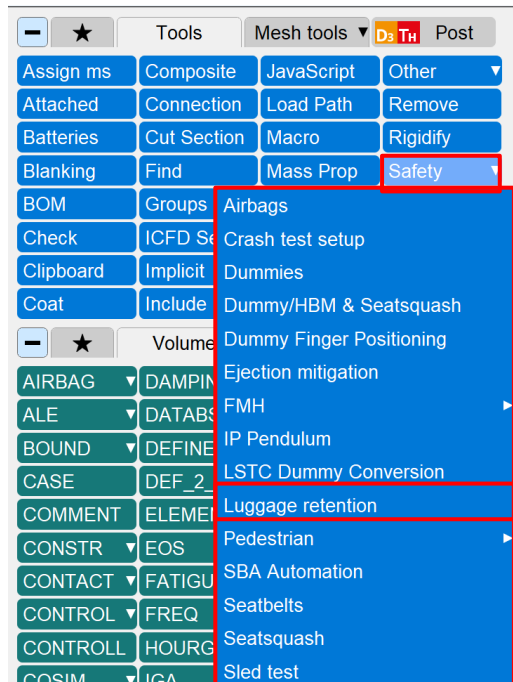


Luggage Retention

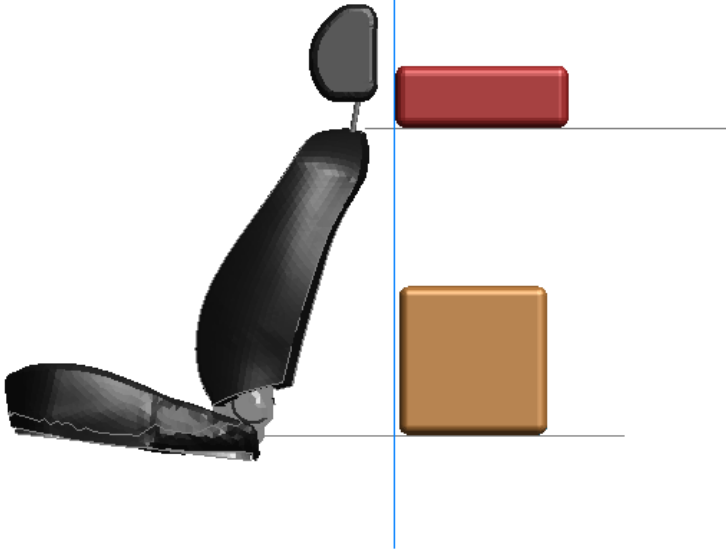
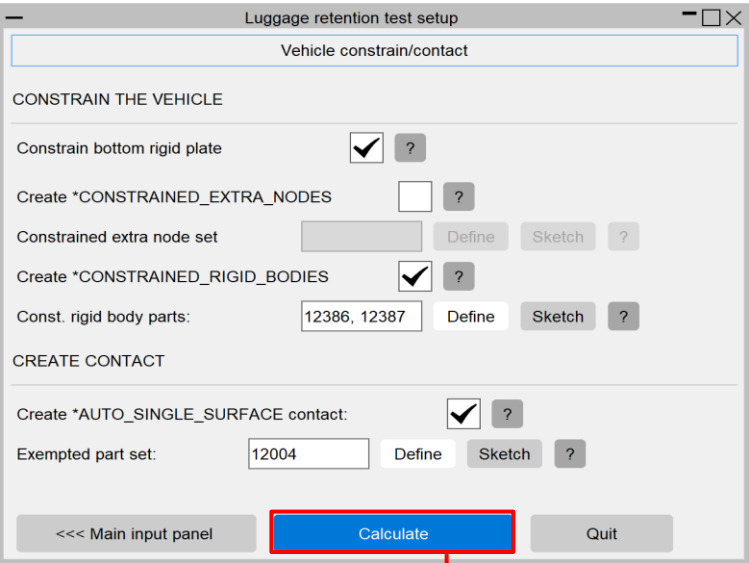
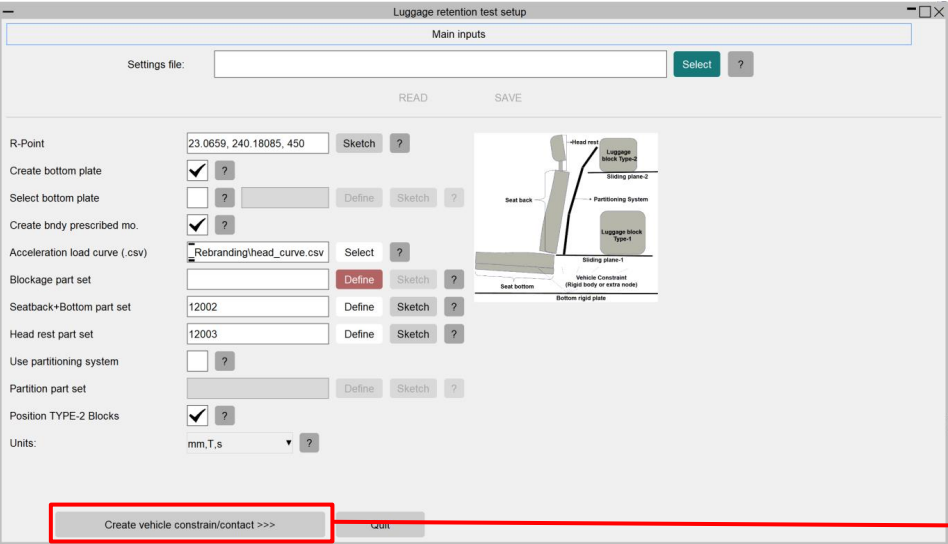


Luggage Retention Tool

- The tool lets you position luggage blocks and set up analysis according to ECE R17.
- This function is available in the Safety menu.
- The block models are included with PRIMER.



Luggage Retention Tool

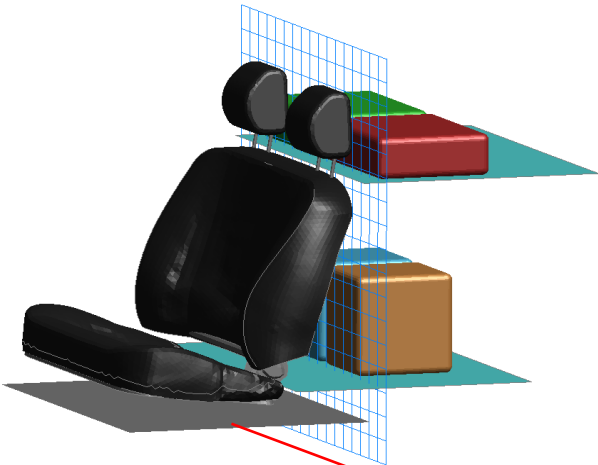


Inputs



Bottom Rigid Plate

- Select this tick box if you wish to create a bottom rigid plate on which vehicle will be mounted.
- By default this is ON, if you do not wish to create the plate, deselect the tick box.



Output

A screenshot of the 'Luggage retention test setup' software interface. The window has a title bar and a menu bar. Below the menu bar is a 'Main inputs' section with a 'Settings file:' field and a 'Select' button. Below this are 'READ' and 'SAVE' buttons. The main area contains various configuration options with checkboxes and input fields. A red box highlights the 'Create bottom plate' checkbox, which is checked. Another red box highlights the 'Select bottom plate' checkbox, which is unchecked. A red arrow points from the 'Create bottom plate' checkbox to the 'Output' label. Another red arrow points from the 'Select bottom plate' checkbox to the 'Alternatively, turn ON "select bottom plate" tick box...' text box. The interface also includes fields for 'R-Point', 'Acceleration load curve (.csv)', 'Blockage part set', 'Seatback+Bottom part set', 'Head rest part set', 'Use partitioning system', 'Partition part set', 'Position TYPE-2 Blocks', and 'Units'. There are also 'Define', 'Sketch', and '?' buttons for many of these fields. A diagram on the right shows a side view of a seat with labels for 'Head rest', 'Luggage block Type-2', 'Sliding plane-2', 'Partitioning System', 'Luggage block Type-1', 'Sliding plane-1', 'Seat bottom', 'Vehicle Constraint (Rigid body or extra node)', and 'Bottom rigid plate'. At the bottom of the window are 'Create vehicle constrain/contact >>>' and 'Quit' buttons.

Alternatively, turn ON "select bottom plate" tick box to select an already existing bottom rigid plate on which vehicle is mounted.

Bottom Rigid Plate

Boundary Prescribed Motion

- Select the tick box if you wish to create a *BOUNDARY_PRESCRIBED_MOTION on the bottom rigid plate.
- Use “select” button to select an acceleration load curve CSV file which will be used to create a *BOUNDARY_PRESCRIBED_MOTION card.
- By default this is ON, if you do not wish to create, deselect the tick box.

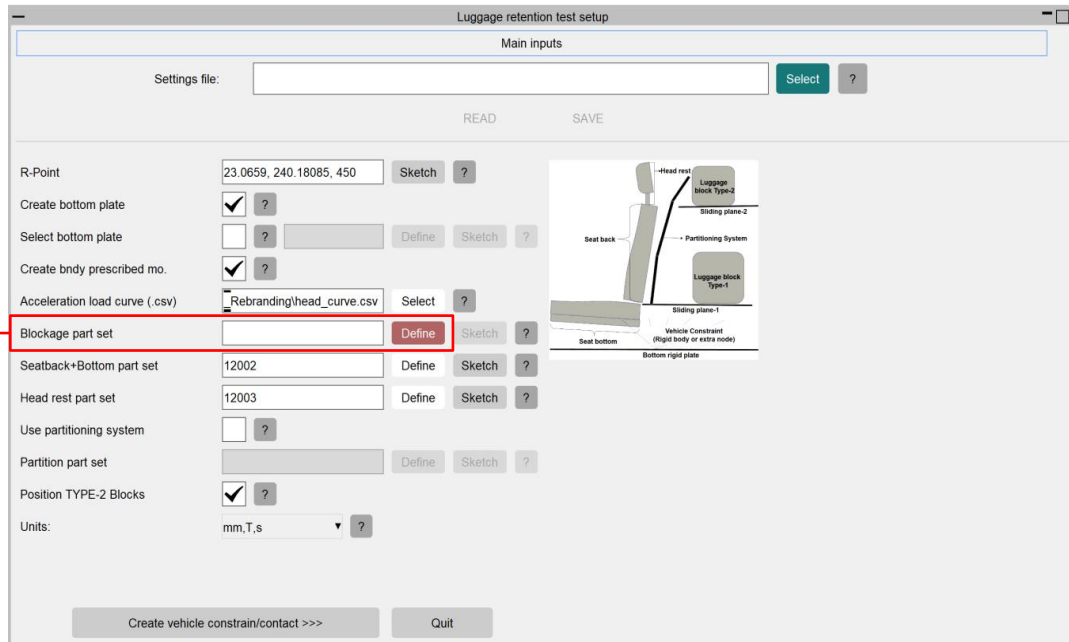
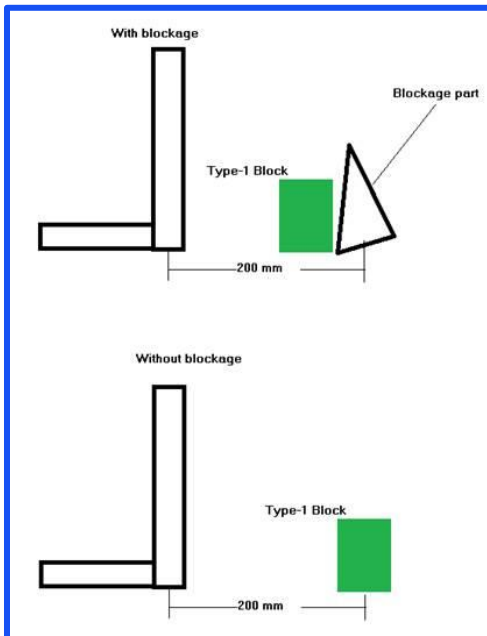
Acceleration curve file (.csv format)

Time Acceleration

	A	B
1	0	0
2	0.025	0
3	0.05	550
4	0.075	550
5	0.1	890
6	0.125	890
7	0.25	890

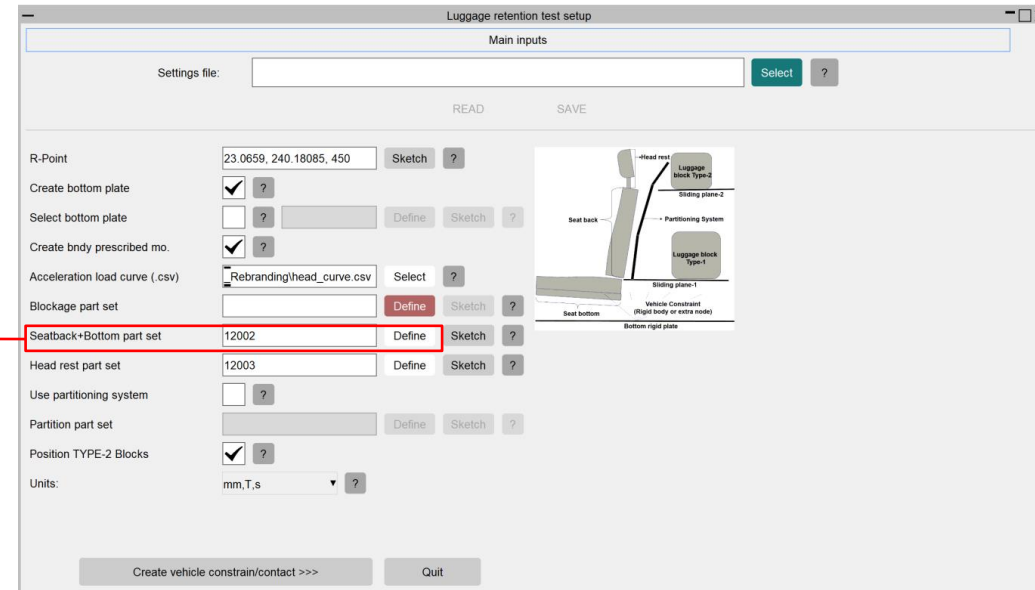
Blockage Part Set

This is optional and it can be used to provide part set that the luggage block should not impinge while positioning the luggage block at 200 mm away from rear seat (as per the regulation ECE R17).



Seat Back + Bottom Part Set

- Specify a part set that consist of rear seat back and bottom parts.
- This information is used to position sliding plane-1 and position Type-1 luggage block.



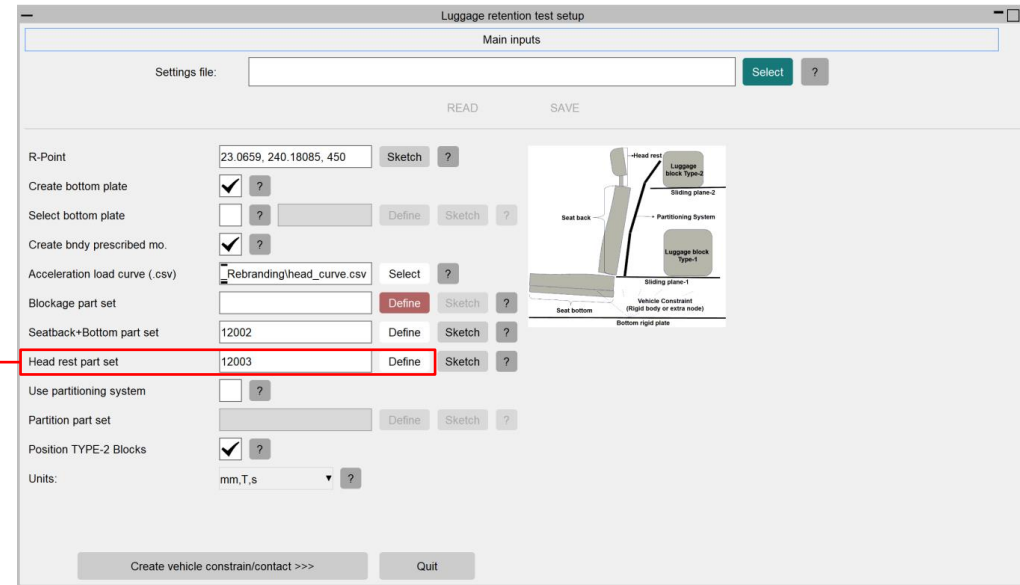
Rear Seat



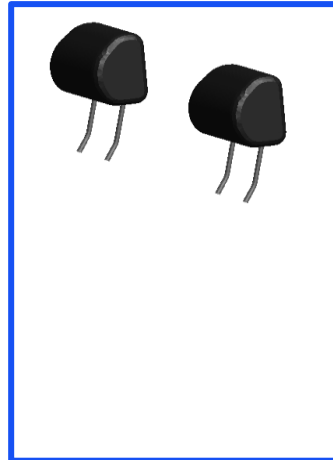
Rear Seat Back + Bottom Parts

Head Rest Part Set

- Specify a part set that consists of the rear seat's head rest parts.
- This information is used to position sliding plane-2 and Type-2 luggage block.



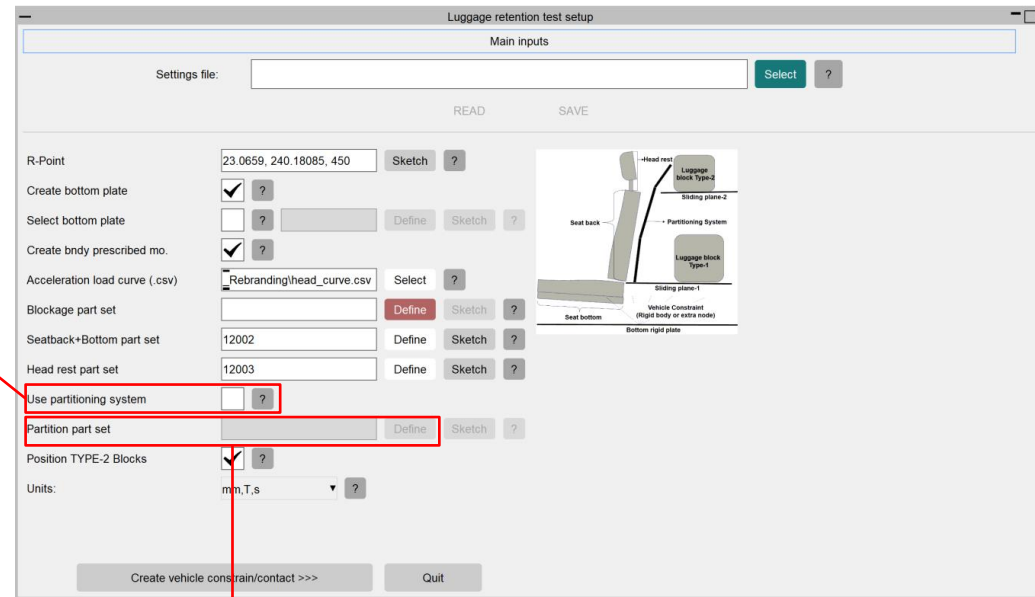
Rear Seat



Rear Seat Head Rest Parts

Rear Partitioning System

Select this option if the vehicle has partitioning system (for example a net) which prevents luggage from sliding.



Luggage retention test setup

Main inputs

Settings file: Select ?

READ SAVE

R-Point: 23.0659, 240.18085, 450 Sketch ?

Create bottom plate: ☒ ?

Select bottom plate: ☐ ? Define Sketch ?

Create body prescribed mo.: ☒ ?

Acceleration load curve (.csv): Rebrandinghead_curve.csv Select ?

Blockage part set: Define Sketch ?

Seatback+Bottom part set: 12002 Define Sketch ?

Head rest part set: 12003 Define Sketch ?

Use partitioning system: ☒ ?

Partition part set: Define Sketch ?

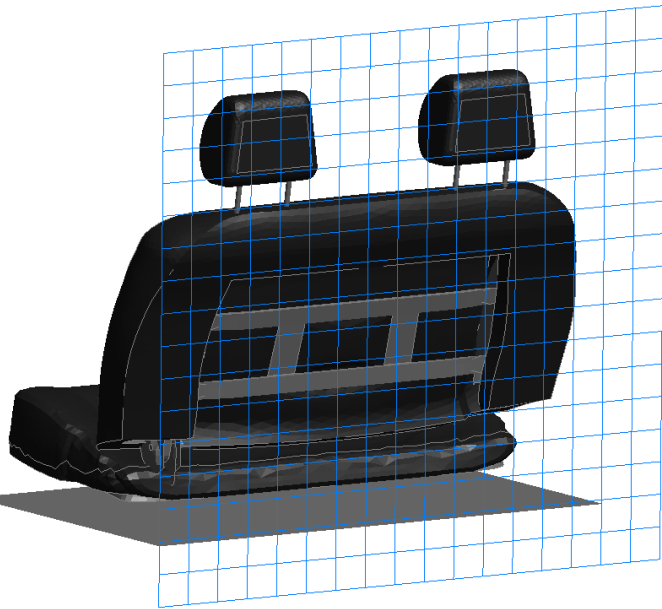
Position TYPE-2 Blocks: ☒ ?

Units: mm,T,s ?

Create vehicle constrain/contact >>> Quit

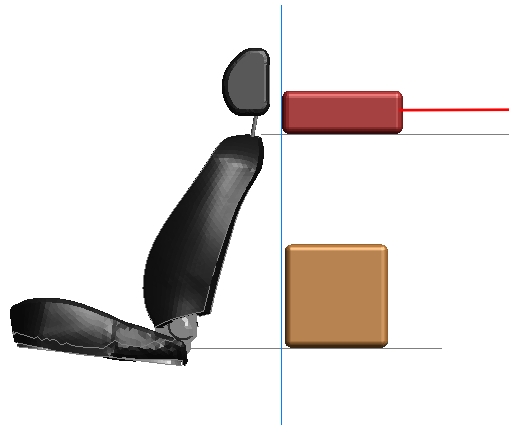
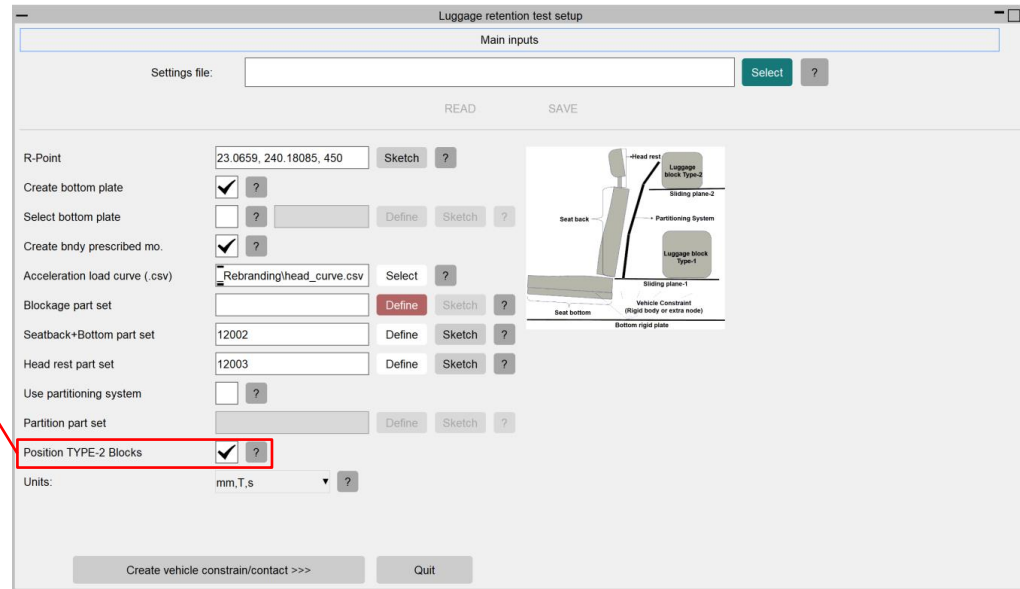
Diagram labels: Head rest, Luggage block Type-2, Sliding plane-2, Partitioning System, Luggage block Type-1, Sliding plane-1, Vehicle Constraint (Rigid body or extra node), Seat bottom, Bottom right plate.

Partitioning part set which contains partitioning system including net part.



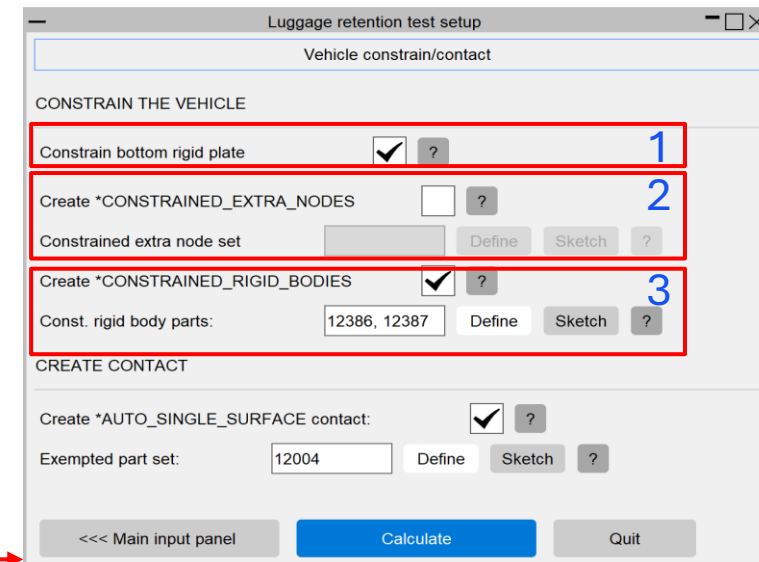
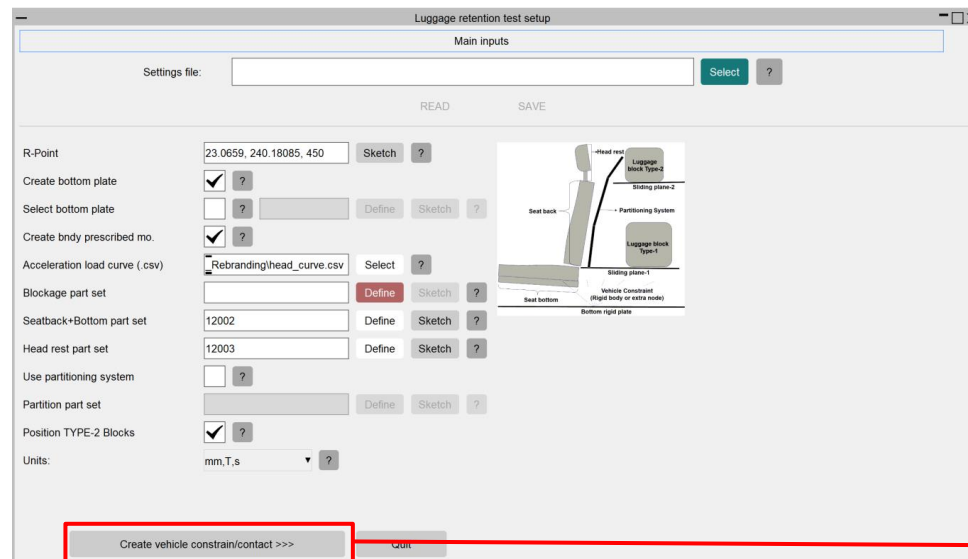
Position Type-2 Block

Select the tick box if you wish to position Type-2 blocks. By default, it will be OFF.



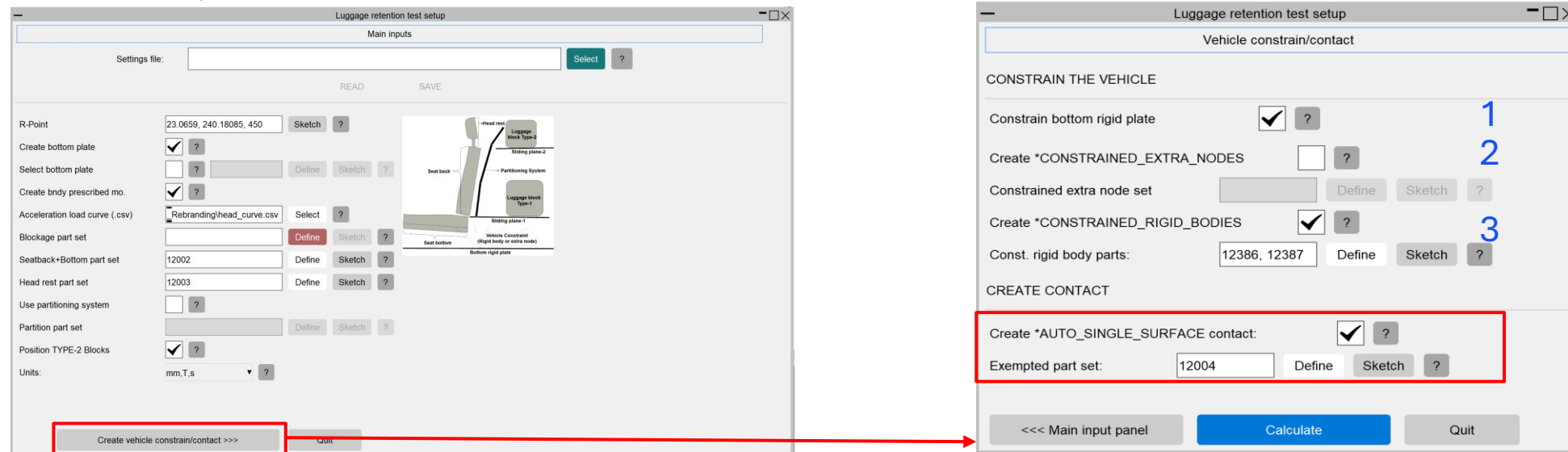
Create Vehicle Constraint

- Click **Create vehicle constraint/contact** to create vehicle constraint and contact. All the options available on "Vehicle constraint/contact" input panel are optional and can be skipped if constraints and contacts already exist in your model.
- Select "Constrain bottom rigid plate" option (shown in red highlighted box 1) to constrain the bottom rigid plate in all DOFs (including rotations) except X-translations.
- Select "Create *CONSTRAINED_EXTRA_NODE" option (shown in red highlighted box 2) to constrain the vehicle with the bottom rigid plate using *CONSTRAINED_EXTRA_NODES. Use "Constrained extra node set" to specify a node set.
- Alternatively, select "Create *CONSTRAINED_RIGID_BODIES" to constrain the vehicle on the bottom rigid plate using rigid bodies. Use "Const. rigid body parts" to provide parts for *CONSTRAINED_RIGID_BODIES.



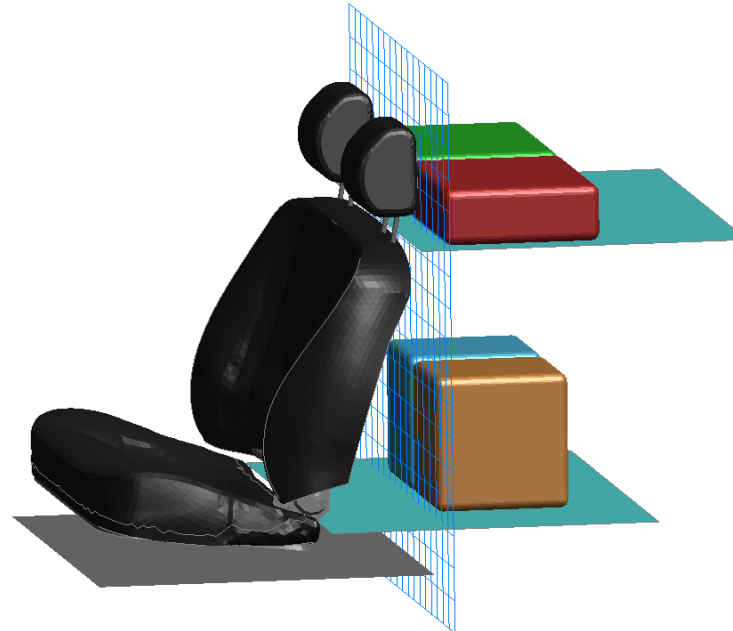
Create Vehicle Contact

- Select "create *AUTO_SINGLE_SURFACE contact" option to create a *CONTACT_AUTOMATIC_SINGLE_SURFACE with exempted part set on the slave side.
- Impactor parts will get added automatically to the exempted part set. Use "Exempted part set" option to add any other part set in the exempted part set.



Calculate and position the blocks

- Once all the input conditions have been defined, "Calculate" will become active. Press "Calculate" to start the calculation.
- After the calculation, the sliding planes/luggage blocks will be positioned in the vehicle as shown below.
- Script will create the necessary contacts between the sliding planes and the luggage blocks.



Contact us

Global / UK

T: +44 121 213 3399

E: dyna.support@arup.com

India

T: +91 40 69019723 / 98

E: india.support@arup.com

China

T: +86 21 3118 8875

E: china.support@arup.com

USA

T: +1 415 940 0959

E: us.support@arup.com

Subscribe to
our newsletter:



Follow us on:



@Oasys LS-DYNA
Environment



@Oasys LS-DYNA
Environment



@Oasys



@Oasys

www.oasys-software.com/dyna/