Car Mechanic Simulator 2018

CAR MODING Guide 0.7
MODELING OR EDITING EXISTING MODELS

You can modeling or editing your vehicles in most 3D modeling software which will allow you to export your model in .fbx (FBX) format. Keep in mind your model must have pivot in 0.0.0 (x,y,z) space.

Most popular 3D Modeling Software

- Blender
- Cinema 4D
- Modo
- Lightwave
- Autodesk Maya
- Autodesk 3DS Max

MODEL PREPARATION – BODY PARTS

Keep in mind all parts must be located in ”model” object.

It is also important to use the appropriate part names otherwise you will not be able for example to open a door.
When you name parts to car be aware some car have additional lights on back and window inside truck.

In situation when window open with whole trunk use window_trunk in other case window_back.
BODY PARTS - NAMING

hood = Hood
door_front_left = Front Left Door
door_front_right = Front Right Door
door_rear_left = Rear Left Door
door_rear_right = Rear Right Door
trunk = Trunk
fender_front_left = Front Left Fender
fender_front_right = Front Right Fender
bumper_front = Front Bumper
bumper_rear = Rear Bumper
headlight_left = Left Headlight
headlight_right = Right Headlight
taillight_left = Left Taillight
taillight_right = Right Taillight
taillight_left_trunk = Left Trunk Taillight
taillight_right_trunk = Right Trunk Taillight
fender_rear_left = Rear Left Fender
fender_rear_right = Rear Right Fender
mirror_left = Left Side Mirror
mirror_right = Right Side Mirror
front_end = Front End
body = Body
details = Body
wskażówka - Tachometer
wskażówka2 - Speedometer
window_front = Front Window
window_back = Rear Window
window_back_left_1 = Rear Left Window A
window_back_right_1 = Rear Right Window A
window_back_left_2 = Rear Left Window B
window_back_right_2 = Rear Right Window B
window_door_front_right = Front Right Door Window
window_door_rear_left = Rear Left Door Window
window_door_rear_right = Rear Right Door Window
window_body_left_1 = Left Body Window A
window_body_right_1 = Right Body Window A
window_front_left = Front Left Window
window_front_right = Front Right Window
window_trunk = Trunk Window
window_body_left = Left Body Window
window_body_right = Right Body Window
window_rear_left = Rear Left Window A
window_rear_right = Rear Right Window A
window_back_right_2 = Rear Right Window B
window_door_front_left = Front Left Door Window

MATERIALS

Wood materials – int_wood / int_wood2 / int_wood3
**Wood materials** – int_wood4 / int_wood5 / int_wood6

**Plastic materials** – int_plastic_piano / int_plastic3 / int_plastic4 / int_plastic

**Plastic materials** – int_plastic1 / int_plastic2 / int_plastic10 / int_plastic11
Plastic materials – int_plastic12 / int_plastic13 / int_plastic14 / int_plastic20

Plastic materials – int_plastic21 / int_plastic22 / int_plastic23 / int_plastic24


Fabric materials – int_fabric3_quilted_1 / int_fabric12_carfloor / int_fabric13_quilted_1


Headlights material – body_light_glass_old

Headlights material – body_light_glass_old2

Headlights material – body_light_glass_old3
Headlights material – body_light_glass_old4

Headlights material – body_light_glass_old5

Taillights material – body_glass_white, body_glass_red, body_glass_orange
Taillights material – body_glass_white_2, body_glass_red_2, body_glass_orange_2

Taillights material – body_glass_white_3, body_glass_red_3, body_glass_orange_3

Taillights material – body_glass_white_4, body_glass_red_4, body_glass_orange_4

Taillights material – body_glass_white_5, body_glass_red_5, body_glass_orange_5
body_mat - placement

body_glass_black - example

List of materials (body):

- body_glass_black - Black glass
- body_glass_orange - Turn-Signal material
- body_glass_orange_2 - Turn-Signal material
- body_glass_orange_3 - Turn-Signal material
- body_glass_orange_4 - Turn-Signal material
- body_glass_orange_5 - Turn-Signal material
- body_glass_orange_6 - Turn-Signal material
- body_glass_red - Turn-Signal material
- body_glass_red_2 - Turn-Signal material
- body_glass_red_3 - Turn-Signal material
- body_glass_red_4 - Turn-Signal material
- body_glass_red_5 - Turn-Signal material
- body_glass_red_6 - Turn-Signal material
- body_glass_white - Turn-Signal material
- body_glass_white_2 - Turn-Signal material
- body_glass_white_3 - Turn-Signal material
- body_glass_white_4 - Turn-Signal material
- body_glass_white_5 - Turn-Signal material
- body_glass_white_6 - Turn-Signal material
- body_lights - Headlights material
- body_lights_black - Headlights material
- body_light_glass_clear - Headlights material
- body_light_glass_old - Headlights material
- body_light_glass_old2 - Headlights material
<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>body_light_glass_old2</td>
<td>Headlights material</td>
</tr>
<tr>
<td>body_light_glass_old3</td>
<td>Headlights material</td>
</tr>
<tr>
<td>body_light_glass_old4</td>
<td>Headlights material</td>
</tr>
<tr>
<td>body_light_glass_old</td>
<td>Headlights material</td>
</tr>
<tr>
<td>body_mat</td>
<td>Put this material on parts under hood and fenders</td>
</tr>
<tr>
<td>body_mirror</td>
<td>Mirror Material</td>
</tr>
<tr>
<td>body_paint</td>
<td>Main car body material</td>
</tr>
<tr>
<td>body_paint_plastic</td>
<td>Main car body material</td>
</tr>
<tr>
<td>body_paint_plastic_invert</td>
<td>Inverted paint plastic</td>
</tr>
<tr>
<td>body_plastic</td>
<td>Plastic for body car</td>
</tr>
<tr>
<td>parktronic</td>
<td>Parktronic</td>
</tr>
<tr>
<td>parktronic_black</td>
<td>Black parktronic</td>
</tr>
<tr>
<td>underbody2</td>
<td>Wheel arches, elements under the bumper</td>
</tr>
<tr>
<td>underbody3</td>
<td>Car chassis</td>
</tr>
<tr>
<td>underbody4</td>
<td>Metal wheel arches (for old cars)</td>
</tr>
<tr>
<td>black_hole</td>
<td>Material to mask holes</td>
</tr>
<tr>
<td>body_steel</td>
<td>Steel material</td>
</tr>
<tr>
<td>body_carbon</td>
<td>Carbon</td>
</tr>
<tr>
<td>body_chrome</td>
<td>Chrome</td>
</tr>
<tr>
<td>body_steel</td>
<td>Steel</td>
</tr>
<tr>
<td>body_brushedaluminium</td>
<td>Brushed Aluminium</td>
</tr>
<tr>
<td>body_glass</td>
<td>Glass material (windows)</td>
</tr>
<tr>
<td>body_gum</td>
<td>Glass material (windows)</td>
</tr>
<tr>
<td>int_fabric1_alcantara</td>
<td>Dark Alcantara</td>
</tr>
<tr>
<td>int_fabric1_alcantara_quilted</td>
<td>Quilted Dark Alcantara</td>
</tr>
<tr>
<td>int_fabric2_carfloor</td>
<td>Dark Carpet</td>
</tr>
<tr>
<td>int_fabric3</td>
<td>Dark Fabric</td>
</tr>
<tr>
<td>int_fabric3_quilted_1</td>
<td>Quilted Bright Fabric</td>
</tr>
<tr>
<td>int_fabric3_quilted_2</td>
<td>Quilted Bright Fabric</td>
</tr>
<tr>
<td>int_fabric4</td>
<td>Dark Fabric</td>
</tr>
<tr>
<td>int_fabric4_quilted</td>
<td>Quilted Dark Fabric</td>
</tr>
<tr>
<td>int_fabric5</td>
<td>Bright Fabric with Pattern</td>
</tr>
<tr>
<td>int_fabric6</td>
<td>Dark Fabric</td>
</tr>
<tr>
<td>int_fabric11_alcantara</td>
<td>Bright Alcantara</td>
</tr>
<tr>
<td>int_fabric11_alcantara_quilted</td>
<td>Quilted Bright Alcantara</td>
</tr>
<tr>
<td>int_fabric12_carfloor</td>
<td>Bright Carpet</td>
</tr>
<tr>
<td>int_fabric13_quilted_1</td>
<td>Quilted Bright Fabric</td>
</tr>
<tr>
<td>int_fabric13_quilted_2</td>
<td>Quilted Bright Fabric</td>
</tr>
<tr>
<td>int_fabric14_quilted</td>
<td>Quilted Bright Fabric</td>
</tr>
<tr>
<td>int_fabric14</td>
<td>Bright Fabric</td>
</tr>
<tr>
<td>int_fabric15</td>
<td>Bright Fabric with Pattern</td>
</tr>
<tr>
<td>int_fabric16</td>
<td>Bright Fabric</td>
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<tr>
<td>int_red</td>
<td>Red Plastic in seat belts</td>
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<tr>
<td>int_glass</td>
<td>Glass for interior parts</td>
</tr>
<tr>
<td>int_paint</td>
<td>Basic Interior material</td>
</tr>
<tr>
<td>int_paint_plastic</td>
<td>Plastic material for interior</td>
</tr>
<tr>
<td>int_pedals</td>
<td>Material for pedals</td>
</tr>
<tr>
<td>int_plastic</td>
<td>Dark grey plastic</td>
</tr>
<tr>
<td>int_plastic1</td>
<td>Dark grey plastic</td>
</tr>
<tr>
<td>int_plastic2</td>
<td>Dark grey plastic</td>
</tr>
<tr>
<td>int_plastic3</td>
<td>Dark grey plastic</td>
</tr>
<tr>
<td>int_plastic4</td>
<td>Dark grey plastic</td>
</tr>
<tr>
<td>int_plastic10</td>
<td>Light grey plastic</td>
</tr>
<tr>
<td>int_plastic11</td>
<td>Light grey plastic</td>
</tr>
<tr>
<td>int_plastic12</td>
<td>Light grey plastic</td>
</tr>
<tr>
<td>int_plastic13</td>
<td>Light grey plastic</td>
</tr>
<tr>
<td>int_plastic14</td>
<td>Light grey plastic</td>
</tr>
<tr>
<td>int_plastic20</td>
<td>Yellow plastic</td>
</tr>
<tr>
<td>int_plastic21</td>
<td>Yellow plastic</td>
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<tr>
<td>int_plastic22</td>
<td>Yellow plastic</td>
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<tr>
<td>int_plastic23</td>
<td>Yellow plastic</td>
</tr>
<tr>
<td>int_plastic24</td>
<td>Yellow plastic</td>
</tr>
<tr>
<td>int_plastic_piano</td>
<td>Glossy black plastic</td>
</tr>
<tr>
<td>int_wood</td>
<td>Wood material for interior</td>
</tr>
<tr>
<td>int_wood2</td>
<td>Wood material for interior</td>
</tr>
<tr>
<td>int_wood3</td>
<td>Wood material for interior</td>
</tr>
<tr>
<td>int_wood4</td>
<td>Wood material for interior</td>
</tr>
<tr>
<td>int_wood5</td>
<td>Wood material for interior</td>
</tr>
<tr>
<td>int_wood6</td>
<td>Wood material for interior</td>
</tr>
<tr>
<td>int_chrome</td>
<td>Chrome for interior</td>
</tr>
<tr>
<td>int_steel</td>
<td>Steel for interior</td>
</tr>
<tr>
<td>int_brushedaluminium</td>
<td>Brushed aluminium for interior</td>
</tr>
<tr>
<td>leather1</td>
<td>Black Leather</td>
</tr>
<tr>
<td>leather11</td>
<td>Dirty Blue Leather</td>
</tr>
<tr>
<td>leather11vent</td>
<td>Black Leather with dots</td>
</tr>
<tr>
<td>leather12</td>
<td>Blue Leather</td>
</tr>
<tr>
<td>leather13</td>
<td>Dirty Blue Leather</td>
</tr>
<tr>
<td>leather2</td>
<td>Black Leather</td>
</tr>
<tr>
<td>leather21</td>
<td>Brown Leather</td>
</tr>
<tr>
<td>leather21vent</td>
<td>Brown Leather with dots</td>
</tr>
<tr>
<td>leather22</td>
<td>Brown Leather</td>
</tr>
<tr>
<td>leather23</td>
<td>Dirty Brown Leather</td>
</tr>
<tr>
<td>leather3</td>
<td>Dirty Black Leather</td>
</tr>
<tr>
<td>leather31</td>
<td>Dirty Yellow Leather</td>
</tr>
<tr>
<td>leather31vent</td>
<td>Yellow Leather with dots</td>
</tr>
<tr>
<td>leather32</td>
<td>Yellow Leather</td>
</tr>
<tr>
<td>leather33</td>
<td>Dirty Yellow Leather</td>
</tr>
<tr>
<td>speaker1</td>
<td>Door Speaker texture</td>
</tr>
<tr>
<td>speaker2</td>
<td>Door Speaker texture</td>
</tr>
<tr>
<td>speaker3</td>
<td>Door Speaker texture</td>
</tr>
<tr>
<td>wskazowka</td>
<td>Material for tachometer and speedometer</td>
</tr>
</tbody>
</table>

**DOWNLOADING AND INSTALLING UNITY (GAME ENGINE)**

**Downloading Unity:** [https://unity3d.com/get-unity/download](https://unity3d.com/get-unity/download)

**Installing Guide:** [https://docs.unity3d.com/Manual/InstallingUnity.html](https://docs.unity3d.com/Manual/InstallingUnity.html)
DOWNLOADING AND INSTALLING CMS17 PLUGIN

Downloading CMS17 Plugin for Unity 5.6.x:
https://www.dropbox.com/s/dgh9a80vo3i1gtp/CMS18CarExporter2.unitypackage?dl=0

Instalation CMS17 Plugin:
Right Mouse Button on Project shelf and choose Import Package/Custom Package and find CMS17 plugin.

IMPORT MODEL TO UNITY (GAME ENGINE)

After instalation the Unity3d 5.6.x – Game Engine and Setting up new project you can easily import your 3D model by Click in Assets/Import New Asset.

Best is to place it in some folder. For example CARS\YOURCARNAME

then in your car subfolder import model.fbx (car model), also collider.fbx (car collider)
Make sure to use materials from our list – they will be changed from default to ours once imported in game. To generate car for game, last thing you need is to create CMS file with script that you have imported into Unity3d.

**PREPARING CMS PACK**

Select folder with your model and press Right Mouse Button and choose **CMS17/Create Car Bundle Extended**

After that operation there will be new folder in Streaming Assets called as your Car and inside it will be file called `car_<yourcarname>.cms`

You can copy it to game Streaming Assets folder and try to load your new model into car editor (launched via Steam)
STREAMING ASSETS

To get access to Streaming Assets:

1. Click right mouse button on steam icon on desktop and click on Open file Location
2. Find and open steamapps folder
3. Find and open common folder
4. Open Car Mechanic Simulator 2018 folder
5. Find and open cms2018_Data
6. Find and open Streaming Assets

Or default steam path if you install steam on disk C is:

C:\Program Files\steam\steamapps\common\Car Mechanic Simulator 2018\cms2018_Data\StreamingAssets\n
In Streaming Assets you can find five folders:

- Cars
- Dials
- LicensePlates
- Localizations
- Music

In Cars folder you can find following files such as:

- Liveries
- PartThumb
- RustMaps
- bodyconfig.txt
- car_boltatlanta.cms
- config.txt
- name.txt

CONFIGURATION FILES

To create or edit a configuration file you need software which allow you to edit .txt file (Microsoft Notepad is fine). There are three configuration files:

name.txt – Here you can change name of your vehicle

bodyconfig.txt – In this file you can find logic which is responsible for the disassembly of body parts.

config.txt – Here are all information saved from Game Editor (engine type/size etc. You can access the game editor in the steam game library)

Before making any changes remember to make backup of files you want to modify.
EDITING NAME.TXT (Example on Bolt Atlanta)
EDITING BODYCONFIG.TXT

[unmount_with]

door_front_left=mirror_left,window_door_front_left

door_front_right=mirror_right,window_door_front_right

bumper_front=license_plate_front

bumper_rear=license_plate_rear

After [unmount_with] line you see name of each part of car body. From starting from left (before the sign of equality) you need to type part of car body which can be disassembly with other parts just as it can be happen in real life.

Let's analyze first case now:

Unmount left door (door_front_left) causing unmount also mirror(mirror_left) and window (window_door_front_left).

But be aware in some cars you can't take off for example bumper and licence plates in same time (becouse licence is not mounted on the bumper (examples below). In this case do not type anything for these parts into bodyconfig.txt (no interactions).
EDITING CONFIG.TXT INSIDE GAME EDITOR

Editor Controls

W/S/A/D – Camera Movement
Hold Right Mouse Button and move mouse – Rotate Camera

Within the editor we can find the following bookmarks and buttons:

**Save** - Save all setting in the editor
**Reload Car** - Load car to state of current config file
**Show body** - Turn on / Turn off transparency shader
**Show sky** - Turn on / Turn off skybox inside editor
**Change sky** - Change skybox texture to another inside editor
**Show lifter** - Turn on / Turn off lifter
**Auction Car** – Random color and condition of car

**Car Stripping** – With this option you can check which parts you can disassemble/assemble
**Explode Car** – Open/Close (doors/hood/trunk). If for some reason some parts do not open in your car check name of your parts.

**Sit Inside** – Camera position inside car

**Change Color** – Change color/paint type and type of livery
All yours thumbnails you can find in StreamingAssets/Cars/Part Thumb.

**Generate car** – Generate car thumbnails (appears in list of orders and missions)
**Generate thumbnails** – Generate part thumbnails (appears inside shop)
**Generate all car thumbs** – Generate thumbnails for all cars. **Can take some time to complete**
**Generate all** – Generate thumbnails for all thumbnails and cars. **Can take some time to complete**

**Main** – In this tab you can change name of car, assign name for rustmask, and scale model.

**Suspension** - Here we can change type of front and rear suspension and ...
Suspension - … and change distance of front axle, wheelbase, front track, rear track, height of car, and height of the springs in the shock absorbers.

The most important parameters in this tab are: (Wheelbase, Front and Rear Track)

Wheelbase - Is the distance between the centers of the front and rear wheels. (https://en.wikipedia.org/wiki/Wheelbase). Axle track - In automobiles and other wheeled vehicles which have two or more wheels on an axle, is the distance between the centerline of two roadwheels on the same axle, each on the other side of the vehicle. (https://en.wikipedia.org/wiki/Axle_track).
**Engine** – here we can change position, rotation, scale and engine type.

**Parts** – in this tab we can add different types of parts to our car. (like exhaust, fuel tank, battery, etc.)
**Interior** – in this tab you can change: size, rotation, position, and type of bench, seat, steering wheel and set height of the seats for your cars.

**Other** - In this tab the most important parameters are: (Transmission type, Lifter arms angle, Door angle).
Transmission type - In Car Mechanic Simulator 2018 we have 3 types of transmissions FWD (Front Wheel Drive), RWD (Rear Wheel Drive) and 4x4 (Four-wheel drive). Each of drive behaving differently on Test Track. (each of one have own advantages and disadvantages)

Lifter arms angle - When you modeling or editing models be aware some of model are shorter then other. Try to observe if lifter arms do not collide with for example wheels. If you have this situation decrease angle from 45 to lower values for example 20.

Door angle - Changes the angle of the opened door (by default 70).

Wheels – here we can change type and adjust size of rims and tires.

Driveshaft - here you can turn on driveshaft for car with Rear Wheel Drive and Four-wheel drive transmissions. In case if you want to make car with Front Wheel Drive, inside suspension tab you have also different types of transmissions for example Front Center Powered 2 (with driveshaft).

Tuning – here you can preview your car skins.

Exterior - in this shelf you can set licence plates on your car.
RUSTMASK

Car Mechanic Simulator 2018 has many advanced shaders. One of them is rust. Rustmask is kind of texture on which one by using black and white values, where material must be rusted. (white value on UV texture means place where rust is, black value = no rust in this area).

Example of rustmask of Bolt Atlanta

To visualize how rustmask looks like on your car, use slider inside Game Editor (highlighted on red) and move it from left(full rust) to right(clean).
Rustmask can be created using programs like:

- Substance Painter
- Mari
- Quixel Suite
- Adobe Photoshop
- Gimp
- Affinity Photo

Please note that with only a few materials can get a rusting effect: (body_paint, underbody2, underbody3, underbody4, body_chrome) To prevent errors, it is recommended to:

Make folder **RustMaps** inside your StreamingAssets/Cars/yourcar

In case when you do rustmask make sure its resolution is 2048 pixels (width) and 2048 pixels (height), save it in .png format and name it like below

```bash
nameofyourcar_rustmask.png
```

**MUSIC**

Inside MUSIC folder you can find music tracks which plays on the radio. Inside **User** folder you can put your own tracks. Default path (if you install Steam on default location)

```
C:\Program Files\steam\steamapps\common\Car Mechanic Simulator 2018\cms2018_Data\StreamingAssets\Music
```
LIVERY

Skins for car can be created using programs like:

- Substance Painter
- Mari
- Quixel Suite
- Adobe Photoshop
- Gimp
- Affinity Photo

You can make your own skin for car by apply textures where UV parts are placed.
**CAR COLIDER**

Collider - components define the shape of an object for the purposes of physical collisions. A collider, which is invisible, need not be the exact same shape as the object’s mesh and in fact, a rough approximation is often more efficient and indistinguishable in gameplay.

for more info check:

https://docs.unity3d.com/Manual/CollidersOverview.html

**Dials**

Inside Car Mechanic Simulator you can find 2 types of dials:

- 3D Dials inside car (speedometer and tachometer)
- 2D Dial (tachometer) in right bottom corner (appears for example in Race Track)
3D Dials

To edit 3D dials you must do two thinks. Firstly you must check rotation values of wskazowka(tachometer) and wskazowka2(speedometer) inside Unity. To set min and max range for example speedometer you must add few lines to config.txt.

```
[dials]
dialname=licznik_Muscle_2
rpm_max=8000
rpm_max_angle=170
rpm_min_angle=-87.5
speed_max_angle=180
speed_max_kph=240
speed_min_angle=-90
```

dialname= folder dial name (examples of dials you can find inside csm2018_Data/StreamingAssets/Dials)

rpm_max= maximal rpm (on texture) in this case 8000

rpm_max_angle= maximal range of rpm in angles on texture in Z axis (highlighted in red)
rpm_min_angle = minimal range of rpm in angles on texture in Z axis (highlighted in red)

speed_max_angle = maximal range of speed in angles on texture in Z axis (highlighted in red)
speed_max_kph = maximum value of kilometers on texture (in this case 240 km/h in case if you have texture in MPH divide value by 1.6)

speed_min_angle = minimum range of speed in angles on texture in Z axis (highlighted in red)