

Physics Mod ATS
("Physic Mod")

Product Manual

Pack Information	3
Refined Suspension Dynamics	3
Realistic Steering Behavior	3
Cabin Suspension and Dynamics	3
Realistic Tire Behavior	3
Advanced Drivetrain and Clutch Dynamics	4
Notes	5
Installation	5
Required In-game Settings	6
Optional In-game Settings	6
Optional Advanced Features	7

About Zeemods

Since 2021, we have been dedicated to recording and producing top-quality audio for Euro Truck Simulator 2 and American Truck Simulator. Our sound packs are meticulously crafted for enthusiasts, with each sound carefully tuned to closely resemble its real-life equivalent.

With over 50,000 customers worldwide, our brand has established a strong reputation for excellence. This widespread customer base is a testament to the quality and authenticity of our sound packs, which are not only popular among simulation gamers but also praised for their realistic and immersive audio experiences. Our commitment to delivering high-fidelity sounds has made us a go-to choice for both casual and enthusiast users seeking the most authentic and engaging auditory experience in Euro Truck Simulator 2 and American Truck Simulator.

Pack Information

Experience the most immersive and realistic trucking experience in **American Truck Simulator** with this advanced physics mod. Designed for trucking enthusiasts, this mod brings life-like handling, suspension dynamics, and cabin behavior, making your journeys feel as authentic as driving a real semi-truck.

Refined Suspension Dynamics

- **Chassis Suspension:** The truck's suspension is tuned to allow for natural vertical and lateral motion. Travel and damping parameters have been carefully calibrated to ensure bumps and road irregularities are absorbed realistically without feeling overly stiff or dampened.
- **Trailer Suspension:** Trailer physics simulate the high center of gravity (COG) of loaded trailers, making them prone to tipping during sharp turns or sudden maneuvers, just like in real-life trucking.
- **Wheel Suspension:** Adjusted damping and stiffness factors provide a smoother, more authentic response to different terrains.

Realistic Steering Behavior

- **Enhanced Steering Dynamics:** Less sensitive around the center for a gradual, more controlled feel, reducing twitchiness at highway speeds.
- **Steering Damping:** Fine-tuned to simulate the heavy, deliberate steering effort required in real trucks.
- **Realistic Steering Lock:** With approx 38 degrees of steering available, parking is now a challenge just like it can be in real life.

Cabin Suspension and Dynamics

- **Independent Cabin Suspension:** The cabin moves independently of the chassis, reflecting the air suspension system typical of modern trucks.
- **Natural Pitch and Roll:** Fine-tuned sway bar factors and damping parameters ensure the cabin leans and moves fluidly, mirroring the truck's suspension behavior.
- **Controlled Cabin Bounce:** Reduces excessive bounce while maintaining enough movement to feel realistic over bumps and uneven roads.

Realistic Tire Behavior

- **Dynamic Tire Stiffness:** Tires exhibit realistic deformation, improving grip and responsiveness during acceleration, braking, and cornering.

- **Balanced Slippage:** Slightly increased slippage parameters make driving feel more dynamic and challenging under heavy loads or adverse conditions.

Advanced Drivetrain and Clutch Dynamics

- **Manual and Automatic Clutch Viscosity:** Fine-tuned viscosity factors simulate realistic clutch engagement, minimizing slippage while preserving smooth transitions:
 - **Manual Clutch:** Gradual, responsive engagement under driver control, mimicking real-world mechanics.
 - **Automatic Clutch:** Optimized for quick and precise engagement with reduced gear hunting.
- **Flywheel and Transmission Inertia:**
 - Enhanced **flywheel inertia** creates realistic engine RPM drop and recovery during gear shifts.
 - Adjusted **transmission inertia** provides smooth torque delivery while replicating the mechanical delay typical in heavy trucks.**Improved**
- **Torque Converter Dynamics:**
 - Realistic torque converter slippage for automatics at low speeds, transitioning to a firm lock-up at cruising speeds for fuel efficiency and stability.
- **Transmission Resistance** – More natural power loss through the drivetrain, making acceleration and deceleration feel natural and more authentic.
- **Subtle Air Seat Movement Simulation** – Adds immersion with authentic seat bounce over bumps (med/high seat tension setting).

Notes

- This mod is optimized for use with **the supplied in-game settings (seen below)** and results will vary if you deviate from them.
- For best results, restart the game after changing the in-game settings relating to suspension etc.
- **Be cautious driving in wet weather.**
- Consider using the optional throttle curve settings provided below for an even more realistic experience.
- For best results, we recommend using the tire pack from Jasper. (1)(2).

Installation

Simply drag and drop the provided file into your mods folder and activate the mod using the Mod Manager the usual way. Ensure the mod is at the top of the load order.

If you are not using a Steering Wheel and intend to use a Gamepad, please only install the version denoted with `_gamepad_`.

Required In-game Settings

The following settings are required in order for the mod to be represented as intended. These settings are found in Options > Gameplay:

Truck Stability	40%
Cabin Suspension Stiffness	20%
Suspension Stiffness	20%
Trailer Stability	30% for standard trailers. 50% for low loaders.

Optional In-game Settings

The following settings are optional (or can be configured to user preference). These settings are found in Options > Gameplay and Options > Controls:

Driveshaft Torque	80% (or preference)
Braking Intensity	100% (or preference)
Uneven Surface Simulation	80-90% - (or preference)
Steering Sensitivity	0.5 (mostly for controllers with 900 or 1080 degree limit)
Steering Non-linearity	0.10/0.20 (for wallowy steering at center)

Optional Advanced Features (Wheel only)

Realistic throttle response.

To replicate a realistic throttle response curve, similar to what is found in real semi-trucks, locate and edit the following line in the controls.sii file (be sure to back up the file before making changes):

```
Documents/American Truck Simulator/profiles/MY_PROFILE/
```

Inside the controls.sii find the following line with the below statement (use the Find feature in your editor).

```
mix aforward
```

Take note of the number presented within `config_lines[319]` as it may differ from the number provided in our code.

And replace it with the following:

```
config_lines[319]: "mix aforward `memory(j_throttle_c?1, (0.5 *  
normalize(sel(c_jzthrottle, sel(c_jithrottle, -j_throttle?0,  
j_throttle?0), sel(c_jithrottle, j_throttle?1 * -0.5 + 0.5, j_throttle?-1  
* 0.5 + 0.5)), c_throt_dz) + (0.5 * pow(normalize(abs(sel(c_jithrottle,  
j_throttle?1 * -0.5 + 0.5, j_throttle?-1 * 0.5 + 0.5)), c_throt_dz),  
1.5))) + semantical.aforward?0`"
```

You must change the `[319]` number to correspond with the number that was represented in your file, for example, it may have been 322.

Realistic brake response.

To replicate a realistic brake response curve, similar to what is found in real semi-trucks, locate and edit the following line in the controls.sii file (be sure to back up the file before making changes):

Inside the controls.sii find the following line with the below statement (use the Find feature in your editor).

```
mix abackward
```

Take note of the number presented within `config_lines[320]` as it may differ from the number provided in our code.

And replace it with the following:

```
config_lines[320]: "mix abackward `memory(j_brake_c?1, (0.5 *  
normalize(sel(c_jzbrake, sel(c_jibrake, -j_brake?0, j_brake?0),  
sel(c_jibrake, pow(j_brake?1 * -0.5 + 0.5, 1.3), pow(j_brake?-1 * 0.5 +  
0.5, 1.3))), c_brake_dz)) + (0.5 * pow(normalize(abs(sel(c_jibrake,  
pow(j_brake?1 * -0.5 + 0.5, 1.5), pow(j_brake?-1 * 0.5 + 0.5, 1.5))),  
c_brake_dz), 1.8))) + semantical.abackward?0`"
```

You must change the `[320]` number to correspond with the number that was represented in your file, for example, it may have been 322.

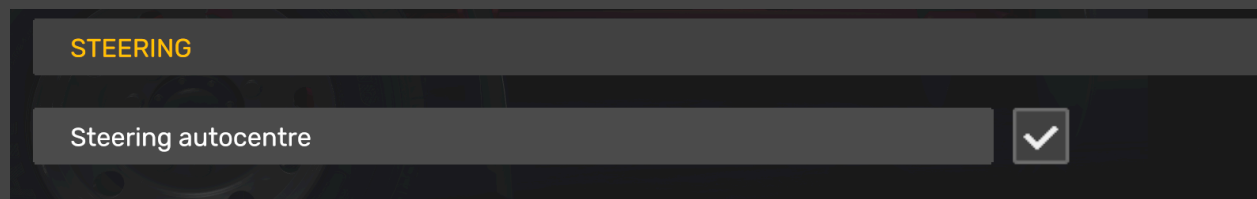
Gamepad Setup

To get the desired experience from this mod when using a Gamepad, such as an Xbox One Controller, please follow the instructions below.



Set the “Steering sensitivity” to around 0.50 (and adjust to taste). Set “Steering non-linearity” to 0.00.

Under the Accessibility section, make sure that “Steering autocentre” is turned on.



You'll now experience steering similar to that of the original Spintires game, whereby it is very easy to control the truck across various speeds.

Thank you for using this mod, we hope you enjoy it. Please [consider a tip](#) for our efforts on our website for this free mod.