Manual Transmission & Steering Wheel Support

Version 4.3.0

If you ended up here for version 4.1 to version 4.1.3, use this guide 😃

Manual Transmission for GTA V

This mod will enable manual transmission for vehicles, using the games' real gear box. This means real gears - not speed capping. There are plenty of features to emulate how real transmissions work.

It's highly recommended to play with this mod using a controller or a wheel.

Steering Wheel Support for GTA V

With manual transmission enabled, you'll want to be able to properly control your vehicle. By default, GTA V doesn't support steering wheels. Solutions like x360ce only emulate a controller, and the game will miss definition and force feedback for wheels. For this, a large part of this mod is made to support wheels, natively! A few features:

- all DirectInput compatible steering wheels supported (since 4.0)
- force feedback is fully supported
- multiple input devices supported (since 4.2.0)
- 1:1 mapping of steering wheel to vehicle front wheels

Downloads

- GTA5-Mods.com

Table of Contents

Requirements

- Grand Theft Auto V
- ScriptHookV

Installation

1. Put Gears.asi and the folder ManualTransmission in your GTA V folder (overwrite when asked)
2. Read this README

Additional steps for wheel users

3. Remove or disable any XInput or DirectInput DLL files for your wheel for GTA V
4. Configure your wheel in-game with the menu
5. Toggle the mod off-on to activate force feedback

When reloading the mod by toggling it off and on, the settings are read again and the steering wheel (if connected) is reset again. You can use this to fine- tune your settings and change things on-the-fly, without restarting the game.

FiveM installation

1. Create a plugins folder in FiveM Application Data
2. Put Gears.asi and the folder ManualTransmission in plugins

Updating

Replace Gears.asi and the folder ManualTransmission in your GTA V folder. If the changelog indicated settings version numbers changed, you might want to check the options. Otherwise it should be fine to keep settings_wheel.ini and settings_general.ini.

Recommended mods

You might want to install some additional mods to enhance your experience.

Any speedometer supporting RPM/Gear reading from memory

- NFS Speedo
- LeFix Speedometer

Any handling mod that aims to improve handling accuracy

- Realistic Driving V
- Sim-cade Handling

Mods that counter the power loss when sliding sideways

- InversePower
- Drift Assist

Basic usage and controls

It's useful to know how to drive stick. Alternatively you can also turn off features like stalling, clutch grabbing, or just using sequential or automatic mode.

Read this README to see what the different switches do. You WILL need to configure it correctly, otherwise some features will not work. You can also mess around in the menu, but the intentions of options might not be clear.

Controls

For both keyboard and controller inputs, refer to settings_general.ini for keys. Refer to Keyboard_Keys.txt for usable keys.

Menu

In settings_menu.ini, the keys are stored. Default:

- Press [{ to access the menu
- Up/Down/Left/Right arrow keys to navigate
- RETURN to select
- BACKSPACE to go back

Controller **NAVIGATION** is supported, but not opening the menu. This is due to a lack of buttons and combos available.

Keyboard defaults (US-ANSI)

By default, W and S are assigned to throttle and brake respectively.

- Press \| to disable or enable manual transmission
- Press]} to switch between sequential, H-pattern or automatic
- Press Z for Clutch
- Press X for Engine

Sequential and Automatic:

- Press LSHIFT to shift up
- Press LCTRL to shift down

H-shifter mode:

- Press Numpad 0 for Reverse
- Press Numpad 1-7 for H-shifter gears 1-7
- Press Numpad 9 for Neutral

Controller defaults

By default, RightTrigger and LeftTrigger are assigned to throttle and brake respectively.

- Hold Dpad Right to disable or enable manual transmission (disabled at the moment)
- Hold B to switch between sequential, H-pattern or automatic
- Press A to shift up
- Press X to shift down
- Use LeftThumbUp to control the clutch
- Press DpadDown for Engine

Usage

This mod features dynamic input detection. To switch between inputs, be it wheel, keyboard or controller, you only need to tap the throttle on that device. The mod will automatically switch between these inputs.

Specifically for wheel users, you might need to fully depress the throttle pedal or clutch pedal (once) if the mod keeps swapping away from the keyboard/controller.

Driving with Manual Transmission

To drive forward, ensure that

- the vehicle is not in neutral
- the vehicle is not in reverse

and press the accelerator key, button or pedal. Depending on your settings, you might or might not need to operate the clutch to make a smooth start. Like a real vehicle, remember to not let the RPM dip too low for the current gear. It might stall otherwise.

To brake, press the brake/reverse key, button or pedal. When coming to a halt, the vehicle will not reverse.

To reverse, shift into the reverse gear. Press the accelerator key, button or pedal. Depending on your settings, you might or might not need to operate the clutch to get moving.

All of this can feel unnatural if done on a controller or keyboard, but should feel perfectly normal like a normal car when you use a wheel.

Wheel-specific

Additional functionality is available for vehicles, like operating the lights, horn, blinkers et cetera from the wheel. Refer to the settings_wheel.ini section for details.

Wheel usage without Manual Transmission

The throttle and the brake work like the accelerator and brake/reverse inputs. A clutch pedal won't have any action. The rest of the functions still work.

Configuration files

Warning: This section is just for reference! Please use the in-game menu for configuration!

This guide will explain the usage of the ini files and what the options mean.

Generally, if only 0 or 1 the following holds for that feature:

- 0: Disabled
- 1: Enabled

From version 4.2.0, you will see true or false in the real .ini.

settings_general.ini

This file contains most general settings. Configuring only this is sufficient if no steering wheel is used.

[OPTIONS]

The [OPTIONS] section is where you can configure how the mod behaves globally and turn off and on features you want.

Enable : 0 or 1

This option is whether to enable or disable the mod. Toggling the mod in-game will write the new value to this option, so your preference will be stored between sessions.

- 0: The mod is disabled and the original automatic transmission from GTA V is fully restored.
- 1: The mod is active and this mod will take over the transmission with manual control.

ShiftMode : 0, 1 or 2

This option switched between the sequential gearbox, H-pattern gearbox and automatic gearbox. For the steering wheel and the keyboard this option can be enabled and shifting happens with the numpad or with the

H-shifter. Toggling the mod in-game will write the new value to this option, so your preferences will be stored between sessions.

If controller input is detected, this option automatic reverts to sequential.

- 0: Sequential
- 1: H-pattern
- 2: Automatic

SimpleBike : 0 or 1

Disable stalling and clutch catching for bikes regardless of regular settings. Useful for making bikes easier to operate.

- 0: Clutch grabbing and stalling enabled
- 1: Clutch grabbing and stalling disabled

EngineDamage : 0 or 1

This option turns on or off the engine damage when overrevving or shifting without pressing the clutch. The damage values can be configured: **RPMDamage** and **MisshiftDamage**.

- 0: Engine damage disabled
- 1: Engine damage on over revving and shifting with the H-pattern gearbox without using the clutch

EngineStalling : 0 or 1

This option turns on or off the engine stalling when releasing the clutch with a low RPM at very low speeds. The point it shuts down is configured with **ClutchCatchpoint**.

- 0: Engine stalling disabled
- 1: Engine stalls at low RPM with engaged clutch

EngineBraking : 0 or 1

This options controls engine braking. If driving at speed and downshifting to a lower gear, the car will be slowed down accordingly.

- 0: Engine braking disabled
- 1: Engine braking active when over max gear speed

ClutchCatching : 0 or 1

This option will make the vehicle drive slowly if clutch is released gently, and keeps the vehicle rolling at a speed depending on the gear.

- 0: Clutch catching disabled
- 1: Clutch catches/grabs/bites at specified point

ClutchShiftingH : 0 or 1

This option controls the requirement to hold the clutch for H-shifting.

- 0: No need to hold the clutch while shifting
- 1: Need to hold the clutch while shifting. Gearbox pops into neutral when not holding the clutch.

ClutchShiftingS : 0 or 1

This option controls the requirement to hold the clutch for sequential shifting. This feature is available from 4.2.0 on.

- 0: No need to hold the clutch while shifting
- 1: Need to hold the clutch while shifting. Gearbox pops into neutral when not holding the clutch.

DefaultNeutral : 0 or 1

This option controls whether new vehicles start in neutral or not when you enter them. This is useful to turn on when you have **ClutchCatching** and **EngineStalling** turned on.

- 0: Vehicle starts in gear 1
- 1: Vehicle starts in neutral gear

ClutchCatchpoint : 0 to 100

This specifies the point where the clutch starts making your vehicle roll. The higher this value, the higher you need to lift the clutch pedal to get going.

StallingThreshold : 0 to 100

This specifies the point where your engine stalls with regard to the clutch point. If you're going too slowly and your clutch is lifted higher than this point, your engine will stall. Keep this higher than **ClutchCatchpoint** to get both working together nicely.

RPMDamage : 0 to any value

- Requires: EngineDamage = 1

This specifies how much damage your engine receives while overrevving. Every tick, the engine gets damaged with **RPMDamage/100**.

MisshiftDamage : 0 to any value

- Requires: EnableH = 1
- Requires: EngineDamage = 1
- Requires: ClutchShifting = 1

This specifies how much damage your engine receives when you shift. Every time you shift into a gear without pressing the clutch past **ClutchCatchpoint**, your engine will be damaged by **MisshiftDamage**. When you shift into Neutral with an insufficiently pressed clutch, your engine will be damaged by **MisshiftDamage/10**.

HillBrakeWorkaround : 0 or 1

Turn this on to emulate a hill start and car roll on a hill. It gives your car a little push. Idea and implementation by XMOD.

- 0: No change
- 1: Workaround enabled. A force will push the car down a slope.

AutoGear1 : 0 or 1

Turn this on to automatically shift into first gear when stopped, with a sequential gearbox.

- 0: No change
- 1: Shift into first gear on stop while using the sequential gear box.

AutoLookBack : 0 or 1

Turn this on to automatically look back while in the reverse gear.

- 0: No change
- 1: Look back automatically

ThrottleStart : 0 or 1

Turn this on to be able to start the engine by pressing clutch + throttle, like in some other games. This works alongside the usual button to start the engine.

- 0: Can only start engine with button
- 1: Can start engine with button and clutch + throttle

CrossScript : 0 or 1

Turn this off to disable communication (shift indicators and neutral gear) to other mods. This functionality is automatically disabled when running FiveM or any executable with version 1.0.505.2!

- 0: No mod info available for other mods
- 1: Mod info available for other mods

[HUD]

Some info you can enable or disable at will. It's pretty self-explanatory.

- Gear: Current gear
- GearTopColor: Color for when the top gear is reached
- ShiftMode: Displays gearbox mode
- Speedo: Custom speedometer matching the needle on the dashboard
- RPM Indicator: Linear indicator. Colors can be adjusted
- Redline: When the bar should turn another color
- Revlimit: Absolute rev limit color. (yeah these two are different)

[CONTROLLER]

The controller can only be used for a sequential gearbox or automatic gearbox. Upon having switched to this input, sequential shifting mode will automatically engage if in H-Shifter mode.

The default settings are laid out so they conflict least with regular gameplay. The controller assumes an Xbox 360 controller, the following buttons and options are available.

```
DpadUp
DpadDown
DpadLeft
DpadRight
Start
Back
LeftThumb
RightThumb
LeftShoulder
RightShoulder
A
B
X
Y
LeftTrigger
RightTrigger
LeftThumbLeft
LeftThumbRight
RightThumbLeft
RightThumbRight
LeftThumbUp
LeftThumbDown
RightThumbUp
RightThumbDown
```

Toggle

Hold this button to toggle Manual Transmission on or off

ToggleShift

Hold this button to toggle between Automatic and Sequential Transmission

ToggleTime : Any (milliseconds)

How long it takes for a button hold to register. Example, ToggleTime = 500 means you need to hold it half a second to trigger.

TriggerValue : 0 to 100

How many % the analog axis needs to be pressed in or pushed to, to register as a button press.

ShiftUp : Any button

ShiftDown : Any button

Clutch : Any button

Gearbox controls. Self-explanatory.

Engine : Any button

Turn on or off engine.

ToggleEngine : 0 or 1

- 0: On pressing Engine, engine only turns on when off
- 1: On pressing Engine, engine can also turn off when on

Throttle and Brake

You **need** to correctly set these to get braking and a standstill and reversing with the throttle to work.

[CONTROLLER_LEGACY]

For if you're using a not-Xbox controller. Same stuff applies as in [CONTROLLER].

Control name	Xbox equivalent	Control ID
ControlFrontendDown	Dpad Down	187
ControlFrontendUp	Dpad Up	188
ControlFrontendLeft	Dpad Left	189
ControlFrontendRight	Dpad Right	190
ControlFrontendRdown	??????????	191
ControlFrontendRup	??????????	192
ControlFrontendRleft	??????????	193
ControlFrontendRright	??????????	194
ControlFrontendAxisX	Left stick X	195
ControlFrontendAxisY	Left stick Y	196
ControlFrontendRightAxisX	Right stick X	197
ControlFrontendRightAxisY	Right stick Y	198
ControlFrontendPause	Start	199
ControlFrontendAccept	A	201
ControlFrontendCancel	B	202
ControlFrontendX	X	203

ControlFrontendY	Y	204
ControlFrontendLb	Left shoulder	205
ControlFrontendRb	Right shoulder	206
ControlFrontendLt	Left trigger	207
ControlFrontendRt	Right trigger	208
ControlFrontendLs	Left stick click	209
ControlFrontendRs	Right stick click	210
ControlFrontendDelete	???????????	214
ControlFrontendSelect	Back	217

[KEYBOARD]

This section assumes a regular ANSI keyboard with the US/QWERTY layout.

Look up available keys in Keys.txt.

Toggle

Key to toggle mod on or off.

ToggleH

Key to toggle between shifting modes.

Throttle and Brake

You **need** to correctly set these to get braking and a standstill and reversing with the throttle to work.

[DEBUG]

DisplayInfo : 0 or 1

- 0: No debug info onscreen
- 1: Debug info onscreen with transmission info, input info and force feedback info

LogCar : 0 or 1

- 0: No car address logged
- 1: Car address is logged to Gears.log when changing cars. Just something for me to debug things.

settings_wheel.ini

Warning: This section is just for reference! Please use the in-game menu for configuration!

This file contains all settings for the wheel controls. I recommend using the in-game menu to configure the axis-inputs and H-shifter.

DirectInput steering wheels are fully supported! Every axis, button and 8 directions on the D-pad are supported for inputs. Additionally, steering wheel input has been built in even if you don't want to drive with any gearbox and just want the default behavior. **Force Feedback is fully present and active in all modes.**

When assigning axes and buttons, **DO THIS IN-GAME!** This mod will resolve the correct values.

[OPTIONS] (Wheel)

EnableWheel : 0 or 1

Enable detection and usage of a DirectInput wheel. Turn this on if you want to use your racing wheel with GTA V and this mod.

WheelWithoutManual : 0 or 1

Enable usage of a wheel without using Manual Transmission features.

WheelBoatPlanes : 0 or 1

EXPERIMENTAL Support for wheel input for boats and airplanes. Control boats like how you control cars. For plane, the layout is a bit different and requires a H-pattern shifter.

Control	Effect
Throttle	Yaw right
Clutch	Yaw left
Wheel	Roll left / right
Shift up paddle	Pitch up

Shift down paddle	Pitch down
Gear 1	33% power
Gear 3	66% power
Gear 5	100% power
Gear 2	33% brake / reverse
Gear 4	66% brake / reverse
Gear 6	100% brake / reverse

PatchSteering : 0 or 1

Patch steering correction. Credits to InfamousSabre's original CustomSteering. This is essential for 1:1 steering wheel and vehicle wheel mapping. Only works on anything that isn't flying, a boat or some sort of bike.

Patching/unpatching happens automatically depending on input, so this option can be safely left on if there's playing with controllers or keyboard and mouse.

PatchSteeringAlways : 0 or 1

Override the automatic unpatching, so the steering is still mapped 1:1 to your controller or keyboard input. Recommended to leaving this off, for gameplay purposes.

LogitechLEDs : 0 or 1

Enable the RPM LEDs on Logitech wheels

[FORCE_FEEDBACK]

Enable : 0 or 1

Disable or enable force feedback.

GlobalMult : Any

Multiplier in percentage of how strong all forces are. This feature is available from 4.2.0 on.

DamperMax : 0 to 100

Controls the friction feel when the vehicle is at a stop. A higher value means more friction. Keep this higher than **DamperMin**.

DamperMin : 0 to 100

Controls the friction feel when the vehicle is moving. A higher value means more friction. Keep this lower than **DamperMax**.

DamperTargetSpeed : 0 to any (in m/s)

Sets the speed at which the damper effect is minimal. This is in meters per second!

PhysicsStrength : Any

How much physics affect your steering wheel and pulls it left or right. A higher value means a stronger force feedback.

DetailStrength : 0 to any

How strong the feedback is from suspension compression. Think for terrain details like road texture, potholes, manhole covers, sidewalk curbs etc.

[INPUT_DEVICES]

To this, add your device GUIDs and a name so you can remember what is which. An example entry looks like this:

```
[INPUT_DEVICES]
DEV0 = Logitech G27 Racing Wheel USB
GUID0 = {F69653F0-19B9-11E6-8002-444553540000}
```

This is taken from the data the tool or Gears.asi generates in ManualTransmission/WheelConfigurator.log or Gears.log. A sample detection entry looks like this:

```
[23:20:19.989] Found 3 device(s)
[23:20:19.989] Device: Logitech G27 Racing Wheel USB
[23:20:19.989] GUID:   {F69653F0-19B9-11E6-8002-444553540000}
```

You should not need to configure this manually if you used WheelConfigurator.exe or the in-game menu!

Most controls

The button controls are listed below with how they can be used.

Control	Usage	Effect
Toggle	Press	Toggle Manual Transmission on/off
ToggleH	Press	Switch between sequential, H-shifter or automatic
ShiftUp	Press	Shift up 1 gear (sequential/auto)
ShiftDown	Press	Shift down 1 gear (sequential/auto)
Handbrake	Hold	Applies the hand brake

Horn	Hold	Sound the horn
LookBack	Hold	Look back
Engine	Press	Restart the engine or turn it off
Lights	Press	Switch between off, low beam and full beam
Camera	Press	Switch through cameras
RadioNext	Press	Next radio channel
RadioPrev	Press	Previous radio channel
IndicatorLeft	Press	Switch on/off left indicator
IndicatorRight	Press	Switch on/off right indicator
IndicatorHazard	Press	Switch on/off hazard lights

Every single control can be assigned to any device.

[STEER], [THROTTLE], [BRAKES], [CLUTCH] and [HANDBRAKE_ANALOG]

To properly configure your wheel, use WheelConfigurator.exe! These sections maps your wheel input axes.

DEVICE : Any

The device associated with the control. Matches up against DEV[n] in [INPUT_DEVICES]

BUTTON : Any

Mapping of the control to a button on your wheel/controller.

AXLE : Any of Supported input axes

Analog mapping of the control to your hardware analog input.

Supported input axes and ranges

```
lX
lY
lZ
lRx
lRy
lRz
rglSlider0
rglSlider1
```

MIN : 0 to 65535 are usually reported.

Value of axis while pedal is not pressed (or steering is fully left)

MAX : 0 to 65535 are usually reported.

Value of axis while pedal is fully pressed (or steering is fully right)

FFB : Any of Supported input axes

Force feedback axis is usually the steering axis but you can reassign this to some other axis.

SteerAngleMax : Any

Physical steering wheel steering degrees (lock to lock), in angles. Match this with your wheel spec.

SteerAngleCar : Any less than SteerAngleMax

Soft lock for in cars.

SteerAngleBike : Any less than SteerAngleMax

Soft lock for on bikes.

SteerAngleAlt : Any less than SteerAngleMax

Soft lock for in planes and boats.

[TO_KEYBOARD]

In this section you can assign wheel buttons to keyboard keys. A few examples have been given. The format is [BUTTON] = [KEY]. Up to 128 buttons are supported. Any keyboard key can be chosen, but Num Lock needs to be OFF for keys to be interpreted correctly. Use the included **Keyboard_Keys.txt** for reference!

Only one device can be used for this feature.

Examples:

- 7 = H makes Button 7 act as the H key, which turns on the headlights.
- 20 = E makes Button 20 act as the E key, which is the horn or emergency lights.
- 18 = X makes Button 18 act as the X key. If Slam It is installed, it'll lower the car.
- 16 = LEFT makes Button 16 act as the LEFT key. If Windscreen Wipers is installed and a compatible car is used, the wipers are turned on.

Troubleshooting

Installation dependencies

This mod should work on a bare system with only GTA V, build 350 to 944.2 and the necessary programs to run GTA V and ScriptHookV supporting that version of GTA V.

Non-conflicting software

The mod has been tested with GTA V version 944.2 to 1032.1 with:

- ScriptHookV
- ScriptHookVDotNet
- RAGEPluginHook
- ENB Series
- OpenIV
- FoV 1.33

Limited support for 350, 505.2 (FiveM), 617, 678, 791.2, 877.1. If anything crashes, lemme know.

Full FiveM support is on the way.

Conflicting software

- **x360ce** will conflict with input detection if throttle, brake or steering clutch are mapped, but the mod should still register your wheel. Assigning inputs without overlap is no problem.
- **Strapped** will conflict with inputs.
- **CustomSteering** will conflict with steering patching. Remove CustomSteering if PatchSteering is enabled.
- **ScriptHookVDotNet** might crash the G920. Not sure if there's a workaround.

Steering wheel reports strange values

Check if your wheel is recognized correctly, a recent Windows 10 update forces new Logitech software which will mess up older Logitech steering wheels.

Before using this mod it's highly recommended to test your wheel with other games first. I'm not an AAA-dev, so I'll panic hard if I think something is my fault while it's some other unrelated bug 😉

Steering wheel not detected

- Try toggling the mod (|\ key)
- Ensure you have removed xinput dlls from the GTA V directory
- Check back with WheelConfigurator.exe to see if that thing does see your wheel

Credits

Massive thanks to these people!

- Rockstar Games
- Alexander Blade
- LeFix
- XMOD
- InfamousSabre
- leftas

- kagikn
- aXurez
- All others who helped 😃

Source code

This mod is fully open source. The source code is available at https://github.com/E66666666/GTAVManualTransmission.

Submitting issues, pull requests or contributing in any way is very welcome 😊