

The *Automobilista 2* V1.5.6 FFB Guide by John B. Ellis

Abstract

The methodology described in this article will yield a clear understanding of each Reiza FFB profile and FFB slider and how they interrelate with one another. Reiza's FFB profiles are designed to be relatively simple to set up, and the entire process can be reduced to the following:

1) Set LFB and Damping to Reiza's recommended levels, based on wheel base strength.

Initial FFB Settings by Wheel Strength			
	2 - 5 Nm	5 - 8 Nm	8 - 30 Nm
Gain	75 - 100	60 - 75	30 - 60
LFB	50 - 60	10 - 40	0 - 10
FX	0 - 50	0 - 50	0 - 50
Damping	0 - 10	30 - 40	50 - 70

2) Set FX to achieve desired level of vibration effects and additional EPAS-model enhancement. Once determined, hold LFB, Damping, and FX constant.

3) To optimize FFB dynamic range and minimize clipping, adjust Gain globally, and on a per-vehicle basis, as needed.

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Introduction

The purpose of this guide is to provide a clear methodology for determining optimal force feedback settings, for any wheel base, using Reiza's set of interrelated, FFB profiles in *Automobilista 2*. Table 1, below, visually summarizes what was initially provided in Reiza's official thread about V1.4 FFB Recommendations by [@Domagoj Lovric](#), along with subsequent information derived from more recent V1.5, V1.5.3, and V1.5.6 updates. This flowchart illustrates how Reiza's three distinct, in-game FFB profiles may be deployed in a *hierarchical, progressive manner* to help understand, obtain, and fine tune individual FFB settings:

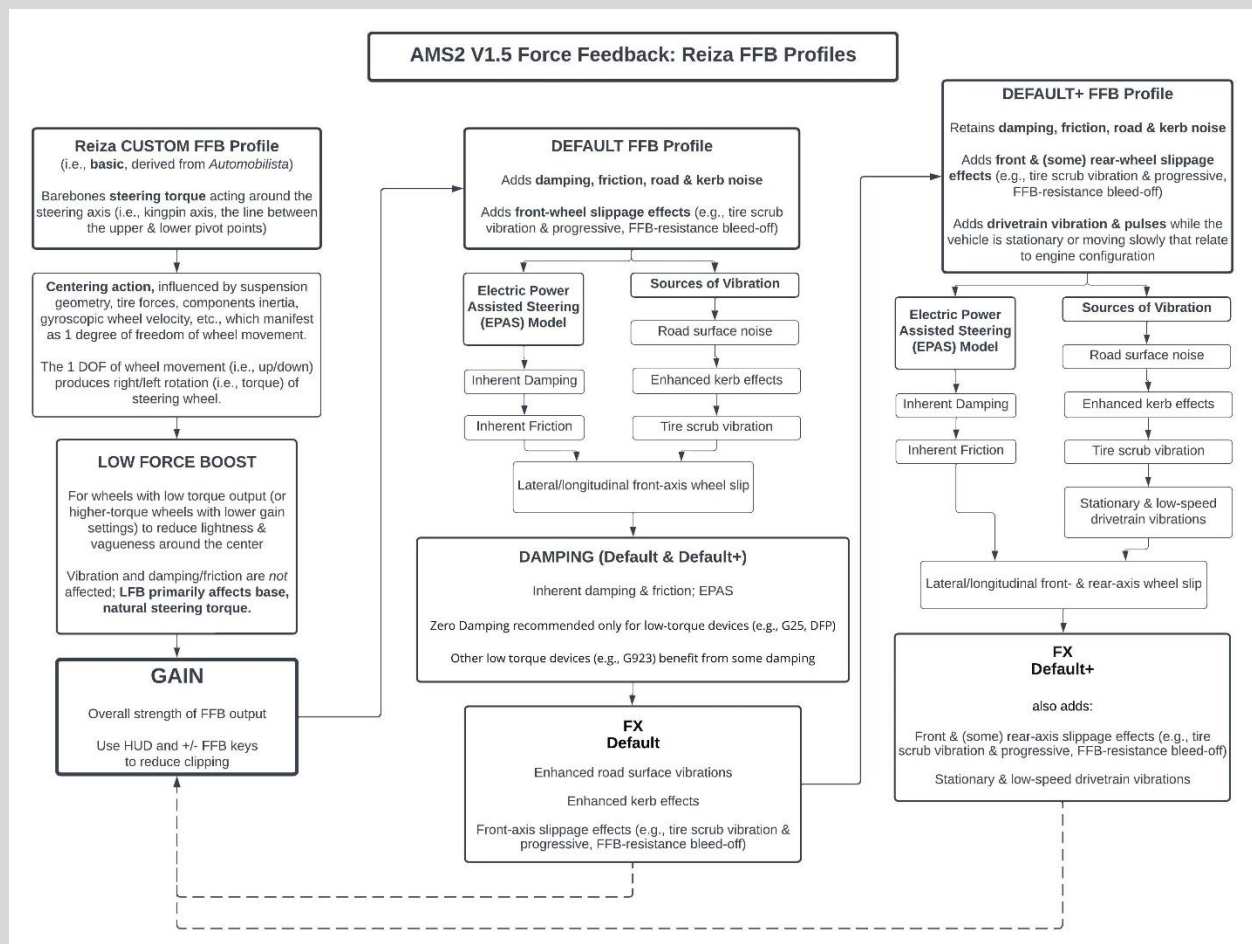


Table 1: AMS2 V1.5 Force Feedback: Reiza FFB Profiles.

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The Methodology

1) **Select the Reiza Custom (i.e., Basic) profile** in order to activate the "barebones steering torque" model, derived from *Automobilista*'s PURE FFB profile. Any vehicle in AMS2 ought to be drivable, and even raceable at the limit, lap after lap, using nothing more than the Basic FFB profile tuned with a sensible Gain setting and (if required) LFB value. A driver might *appreciate* the additional effects simulated by the more complex Default & Default+ profiles, but the sim's kingpin-axis suspension model, tire noises, and visual cues are sufficient and necessary for driving at the limit--and Reiza's Basic model serves as the foundation for *everything* that follows. Consequently, simracers who initially ignore the Basic profile may find it more difficult to determine their optimal Default or Default+ FFB settings.

The following table illustrates how the three, interrelated FFB profiles created for AMS2 correspond to those developed previously for *Automobilista*:

FFB Profiles: <i>Automobilista</i> vs. <i>Automobilista 2</i>				
<i>Automobilista</i>	FFB Effects		<i>Automobilista 2</i>	FFB Effects
PURE	Realfeel forces only; MaxForceAtSteeringRack	→	Custom (basic)	steering torque around kingpin axis; rack_force
	↓			↓
PURE + EFFECTS 1	+ damping, friction, kerbs, jolts & impacts	→	Default (Old_D_raw)	+ damping, friction, enhanced road surface vibration & kerb effects; front-wheel slippage effects (e.g., tire scrub vibration & progressive, FFB-resistance bleed-off)
PURE + EFFECTS 2	+ brake pedal and steering vibration			
	↓			↓
PURE + EFFECTS 3	+ engine RPM & car speed vibration	→	Default+ (NDef.imm)	+ front- & rear-wheel slippage effects; stationary & low-speed drivetrain vibrations

Table 2: Reiza FFB Profiles in *Automobilista* vs. *Automobilista 2*.

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In his [initial post](#) about V1.4, Domagoj includes recommended software settings for several wheel bases (summarized in the “Recommended FFB Wheel Base Settings” table, below). Notably, that table also lists the *exact* Fanatec DD2 Podium settings used by [@Coanda](#) to standardize FFB output across *all* vehicles in AMS2 V1.5.

AMS2 V1.4 Recommended FFB Wheel Base Settings (with available V1.5 updates)													
8 - 30 Nm				5 - 8 Nm				2 - 5 Nm					
	Fanatec *	Fanatec	Fanatec		Simucube		Thrustmaster		Logitech	Logitech		Logitech	Logitech
	Podium DD2	Podium DD1	CSL DD w/bkit		2 Sport DD		TG-T		G29	G923		G27	G25
Gain	35	30-40	60	Gain	40	Gain	75	Gain	80	80	Gain	100	100
LFB	2	0-10	7	LFB	2	LFB	10	LFB	50	50	LFB	60	60
FX	25	10-50	50	FX	50	FX	50	FX	20	20	FX	50	50
Damping	60	50-70	50	Damping	50	Damping	40	Damping	10	10	Damping	0	0
SEN	Auto	Auto	Auto	Overall Strength	40-60	Overall Strngth	75	Oper Range	900	900	Rotation	900	900
FFB	100	50	100	Steer Range	900	Constant	100	Sensvity	50	50	Ov. Strgth	100	100
FFS	Peak	Peak	Linear	Bumpstop feel	Soft	Periodic	100	Centering	20	20	Spring	0	0
NDP	10	10	22	Bumpstop range	900	Spring	100	Trueforce	unchecked	unchecked	Damper	0	0
NFR	3	3	14	Recon. filter	1	Damper	100	apply settings	checked	checked	Center	10	10
NIN	3	5	10	Torque band	2200 Hz	BOOST	OFF				Game adjust	checked	checked
INT	5	3-4	2-4	Damping	8-10	center/by wheel	0						
FEI	100	100-80	80	Friction	2-8								
FOR	100	100	100	Inertia	0-10			Suggested FFB Settings by Wheel Strength **					
SPR	OFF	100	100	Static force red.	0-15			2 - 5 Nm	5 - 8 Nm	8 - 30 Nm			
DPR	OFF	100	100	Slew rate limit	0.21	Gain	80 - 100	60 - 80	30 - 60				
SHO		OFF		UL Latency mode	Off	LFB	50 - 60	10 - 40	0 - 10				
BLI	OFF	OFF		peak notch filter	Disabled	FX	0 - 50	0 - 50	0 - 50				
				DIE damping	0	Damping	0 - 10	30 - 40	50 - 70				
				DIE friction	0								
				Spring	0								
* Note: These Fanatec Podium DD2 settings were used by @Coanda to standardize FFB forces for <i>all</i> vehicles in AMS2 V1.5.													
** Suggested FFB settings for AMS2 V1.5 prior to actual tuning.													

Table 3: Recommended FFB Wheel Base Settings.

Although the above table lists recommended Gain and LFB settings for several wheels, a synthesis of the data yields a *simple, elegant array* of initial FFB settings based on wheel strength:

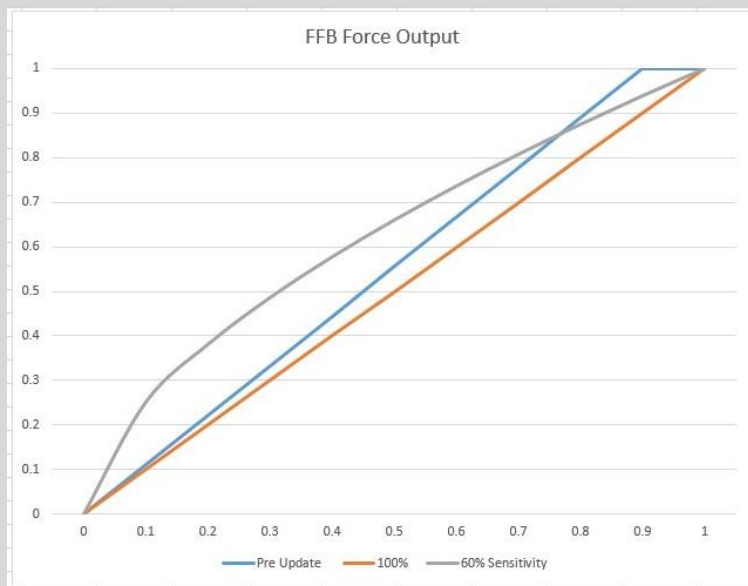
Initial FFB Settings by Wheel Strength			
	2 - 5 Nm	5 - 8 Nm	8 - 30 Nm
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FX	0 - 50	0 - 50	0 - 50
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Table 4: Recommended FFB Settings by Wheel Strength

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2) Using the **Basic FFB** profile, determine the best **LFB** settings for **your wheel**. Both FX and Damping sliders are explicitly designed to have *no effect* when the Basic FFB profile is selected; regardless, both FX and Damping should be set to 0 when *initially* exploring and developing a feel for the Basic model.

In most cases, LFB should be viewed as a "set it and forget it" item; that is, certain wheel bases may benefit greatly from it, while others hardly require LFB, if at all. At one end of the spectrum, the Logitech G25 is the weakest wheel base officially tuned for AMS2 and receives the highest recommended LFB value (i.e., LFB = 60). At the other end, [@Coanda](#) employed only a minimal amount of LFB (LFB = 2) when using a Fanatec Podium DD2 to tune FFB for all V1.5 cars in the sim. In order to better visualize exactly what LFB is intended to accomplish, here is the original LFB graph as provided for *Automobilista*:



Graph 1: Low Force Boost set at 60 (grey line).

Essentially, with LFB set to 60, the weakest 20% - 30% of forces generated by the sim are compressed within the initial 10% - 12% of wheel base force output to help "the forces come in earlier" and allows a lower-strength wheel base to operate within a higher effective range of its output. In most cases, users should begin with Reiza's recommended LFB values;

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however, if recommended LFB values feel overly intrusive or unconvincing, then lower LFB settings (including LFB 0) can be trialed before choosing a final LFB value to be held constant thereafter.

3) Using the Basic FFB profile, determine the best Gain settings for your wheel.

Unlike LFB, Gain is designed to be adjusted, as needed, to optimize FFB dynamic range and minimize clipping in order to maintain the optimal FFB experience. The need to fine tune Gain for each car in the sim is more common when utilizing the Basic profile, especially when switching between radically different vehicle classes. The HUD displays dynamic FFB clipping values in red, and per-vehicle Gain adjustments can be made, either up or down, while driving in the sim.

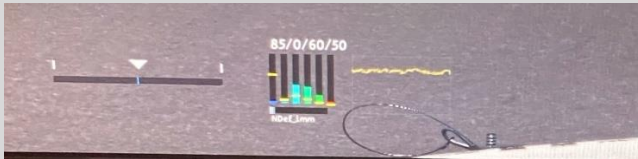


Image 1: FFB Profile meter HUD.

These FFB Gain Increase and FFB Gain Decrease buttons can be assigned under the “Vehicle” subsection (scroll down to it) when configuring a controller in AMS2 to permit real-time, on-track FFB adjustments:



Image 2: Assigning +/- FFB Gain Control to Wheel Base.

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After LFB is set, test out a selection of different cars and tracks to help adjust Gain values to produce a natural centering force and tire feel without undue clipping. The most straightforward method for determining a “natural centering force” is to drive into a corner, induce a bit of oversteer, and “let go of” or “lighten up on” the steering wheel. A more freely-spinning steering wheel at this moment will permit the front tires to automatically straighten the steering wheel, signaling the driver to then resume his normal grip on the wheel and retain control—all after the centering force of the front tires naturally solved the imbalance.

More advanced drivers should keep in mind that changes to suspension settings within the Advanced Setup menu may increase (or decrease) a vehicle’s centering force, perhaps necessitating small changes in Gain values. After testing, select a global FFB Gain setting that best suits *most* vehicles in the sim; after that, tweak individual, in-car Gain adjustments as needed. AMS2 will save individual vehicle Gain differences, and the Force Feedback menu subsection provides the option to erase all of these values if desired.

4) Leave FX and Damping both at 0 and switch over to the Default FFB profile. The Default profile takes the Basic profile’s steering rack forces and adds an Electronic Power-Assisted Steering (EPAS) model that activates the following features: a) inherent friction and damping, calibrated for each individual car, b) enhanced road/kerb vibrations, and c) *front-wheel* slip/tire scrub effects. Similar to how a sports car with EPAS may tighten its steering feel when placed in Sport mode, the default profiles in AMS2 modify friction and damping on a per-car basis within the sim. With AMS2 V1.4, there were little, if any, appreciable differences between the Basic and default profiles when FX and Damping were set to 0. Starting with AMS2 V1.5, however, there are *obvious* differences—even with FX and Damping zeroed--when switching between the Basic, steering-rack profile and the default profiles, which include EPAS modeling. Therefore, keeping FX and Damping at 0 provides a suitable baseline for initial comparisons between all Reiza FFB profiles, prior to further fine tuning.

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Setting Damping

Feel free to consult the suggested Damping values in the Initial Settings table; in short, weaker wheels require 0 to 10 Damping, whereas more powerful wheels benefit from 50 (+/- 10) Damping. The Damping slider primarily accounts for inherent damping and friction within the system, so determine a suitable Damping value first, and hold it relatively constant, before working to fine tune the FX setting. In general, all but the weakest wheel bases (e.g., G25/G27) will benefit from *some* amount of Damping. Once the Default profile is set with the correct LFB and Damping values for a specific wheel base, the user should develop a baseline feel for these settings while keeping FX at 0.

Setting FX

With Damping properly set, tune FX to your preferred level of enhanced road/kerb vibration & front-wheel slip/tire scrub effects, (e.g., progressive bleed-off in front-wheel FFB resistance as tires lose grip). The effect of FX on FFB output is quickly felt when alternating between FX = 0 and FX = 50, prior to further fine tuning. Even with FX set at 0, EPAS modeling is activated to improve overall steering feel and allows the sim to automatically adjust inherent friction and damping for each vehicle, without further amplifying additional kerb and vibrational forces. Weaker wheels (e.g., G25/G27; those that require Damping set to 0) may benefit from using a default profile with FX set to 0, as EPAS modeling alone tends to generate a more consistent FFB Gain level across a wider array of vehicles than the Basic profile.

Also, as Damping and FX values can conceivably interact with each other, the best combination of values may require a final bit of tweaking, but once found, both Damping and FX should be held constant. The Default profile may produce slightly increased FFB levels compared to the Basic profile, so attenuate Gain as needed (either globally or on a per-car basis) to restore the desired FFB level.

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5) **Finally, switch to Default+ FFB profile.** Default+ takes the Default FFB profile and additionally generates stationary/low-speed drivetrain vibrations and *front- & rear-wheel* slip/tire scrub effects. When switching from the Default to Default+ profile, it should be possible to leave LFB, Damping, and FX values unchanged, modifying overall Gain as needed to maintain optimal FFB output. With some hardware, however, FX may also benefit from slight adjustments when moving up to the Default+ profile.

Once set, make note of the optimal LFB, Damping, FX, and Gain levels for each profile. Ideally, LFB, Damping, and FX settings for the Default & Default+ profiles should be identical, with only minimal differences in Gain, if any. With a common reference point now set, feel free to make final comparisons between Reiza's Basic, Default, and Default+ profiles based on your own hardware, testing results, and preferences. Test the profiles (especially the Default and Default+) by driving various drivetrain layouts and configurations (e.g., RWD vs. FWD; front-engine vs. rear-engine, etc.) to determine the optimal FFB profile.

Conclusion

The methodology described here will yield a clear understanding of what each Reiza FFB profile and/or FFB slider actually does in isolation and how they all, in fact, interrelate with one another. Despite all the evidence to the contrary in this article, Reiza's FFB profiles are actually designed to be relatively simple to set up, and the entire process can be reduced to the following:

- 1) **Set LFB and Damping to Reiza's recommended levels, based on wheel base strength.**
- 2) **Set FX to achieve desired level of vibration effects and additional EPAS-model enhancement.** Once determined, hold LFB, Damping, and FX constant.
- 3) **To optimize FFB dynamic range and minimize clipping, adjust Gain globally, and on a per-vehicle basis, as needed.**

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As an example, here is how this tuning process would unfold with a Logitech G25:

1) Consult the Wheel Base table. If specific LFB and/or Damping values are not listed for a wheel, refer to its smaller “Suggested FFB Settings by Wheel Strength” table for a suitable starting range of values. For the G25, set LFB to 60 and Damping to 0.

2) FX is initially set at 0 while testing the Basic profile. After driving a selection of cars with the Basic profile, the recommended Gain value of 100 is reduced globally to 75 (e.g., F-USA 2023 at Indy Oval, F1 cars, etc.).
Note: Gain needs to be increased for low-downforce cars.

3) The Default profile is engaged. FX is set at 0. After driving a selection of cars with the Default profile, baseline EPAS model contributions (FX 0) are judged as positive (e.g., improved steering response due to EPAS modeling of inherent friction, etc.). Gain remains at 75 and better optimized due to EPAS model; hardly any Gain tweaks are required when switching between different vehicles.

4) Higher FX values (up to FX = 50) with the Default profile are trialed. Although, vibration effects and tire scrub are increased in low speed corners, the overall driving feel at the limit seems better with FX set to 0. FX level preference can be confirmed after major sim updates.

5) The Default+ profile is engaged with Gain at 75. Driving stints comparing FX = 0 vs. FX = 50 are carried out. After testing an additional selection of cars, FX remains 0 and Gain remains at 75.

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Final settings:

Basic profile: Gain 75, LFB 60, FX 0, Damping 0 (Note: +/- Gain adjustments needed to optimize)

Default profile: Gain 75, LFB 60, FX 0, Damping 0

Default+ profile: Gain 75, LFB 60, FX 0, Damping 0

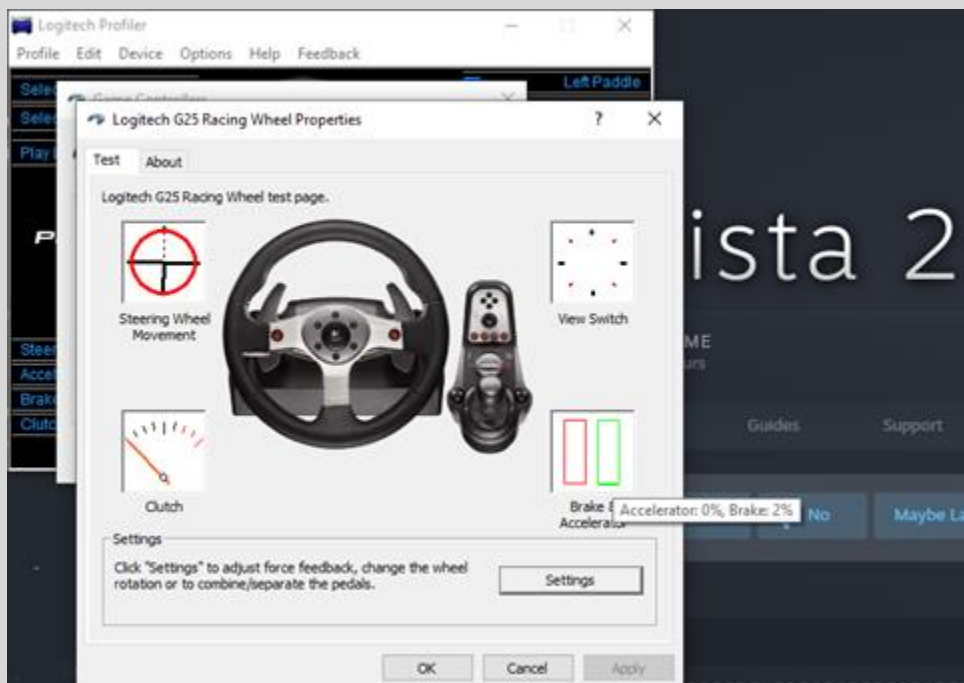
Although all three Reiza FFB profiles were systematically optimized using this method, further comparisons may be required to settle which FFB profile is the preferred choice. In the case provided above, the user will simply need to decide whether the Default's front-wheel EPAS model or Default+ front- & (some) rear-wheel EPAS model is preferred. Also, after major sim updates, comparisons between FX = 0 and FX = 50 can be quickly tested to confirm the best FX setting.

Because all remaining variables have been systematically tested and calibrated, the final, subjective choice is buttressed and supported by a rational, objective methodology. Moreover, the consistency of this tuning approach will help a simracer better discern sim-related issues worthy of report to developers (e.g, "I am confident in my FFB tune, but the Formula Reiza still feels way off compared to other cars in AMS2.") rather than unintentionally misinterpreting noise and variability stemming from suboptimal FFB settings. Simracers who utilize this methodology, but who ultimately fail to connect with any of the original FFB profiles in AMS2--or who are genuinely interested in exploring additional layers of FFB complexity--may be better served utilizing a third-party, custom FFB profile (conveniently available [here](#)) rather than over-complicating Reiza's straightforward approach to FFB.

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Appendix I: Setting Pedal Deadzones Correctly

AMS2 controller settings default to 7% deadzones for all three pedals (0% for steering) when a new driver profile is created. Most simracers typically set all three pedal deadzones to 0% out of habit; however, this practice is not ideal for AMS2, as any residual throttle activity at rest may potentially interfere with how traction control is modeled in the sim. Consequently, it is important for simracers to determine if their pedals exhibit any flickering activity (usually only a couple of percent, if any) at rest, and add the appropriate amount of deadzone either to their wheel base software (preferred) or in-game configuration settings. With a G25, the Windows cursor can be placed on the Brake & Accelerator bar graph to measure 2% of intermittent, occasional flickering (either pedal), so 3% deadzone was added to the in-game wheel profile.



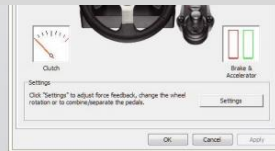
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Appendix II: Enabling Centering Spring for Logitech G25 & G27 Users

According to the V1.4 guidelines provided by Reiza, Logitech G29 & G923 users should set centering spring strength in G HUB to 20. By the same reasoning, though not explicitly stated in the post, G25 & G27 users should set their Wingman Profiler centering spring to 10%, as recommended in the original *Automobilista User Guide*, p. 34:

Rotation

900 degrees. The game will automatically adjust the allowed range based on the car.



Force Feedback

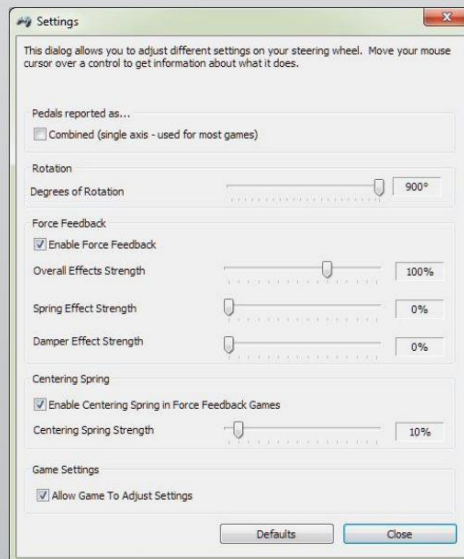
We recommend just running with overall effects strength at 100% and the others reduced to 0%. We want you to feel exactly what is coming from the car.

Centering Spring

We recommend adding a small amount of centering spring as it reduces clipping and doesn't really interfere with FFB

Game Settings

It is very important that you allow the game to adjust settings automatically so we can set the rotation correctly!



Of note, Reiza's G25 wheel profile from *Automobilista* sets Force Feedback Strength at 100 and FFB Low Force Boost at 60, which are *identical* to the Gain and LFB values now recommended for AMS2. Gain, of course, may need to be attenuated using the HUD's FFB display and Vehicle FFB Gain +/- keys. Regarding wheel base profile software, keep in mind that Steam typically selects the AMS2AVX executable in most cases, regardless of VR status (if so, the AMS2 version number on the main menu will end in .AVX).