
Porsche 934 by Brickyard Legends Team

Geschrieben von B8man - 01.03.2013 09:04

<http://www.altbierbude.de/images/cars/Porsche934.jpg>

Porsche 934 Physics.

The real 934, heavy and sluggish feeling at low speed and lacking rear end grip at high speed it was a hard car to like right away.

Al Holbert said of the 934:

“Compared to the 3-liter RSR the 934s high speed stability and cornering are impaired by the small rear spoiler and relatively narrow rear tires needed for homologation. They make the car a handful to drive quickly”.

But one could not argue with the lap times. In early testing the 934 lapped over 3 seconds faster than the factory RSR at Paul Ricard and 15 seconds faster at the ring.

By late 1976 every car in the European GT championship was a 934.

Often blamed for killing the European GT series this quote from the history of the ETCC web site sums it up the best:

“Porsches new 934 Turbo did not leave any room for opposition - and since only a few drivers were capable to tame this difficult car most races were far from exciting”.

In America, The SCCA Trans Am had embraced Group-4 cars and allowed the 934 to run. It proved to be very competitive winning the championship in 76 with George Follmer driving.

IMSA initially resisted the 934. IMSA already allowed the RSR, 17in rear wheels, lighter weight, and higher down force bodywork than was allowed in Europe and the teams said they did not want the expense of switching to the new exotic turbo 934 for the tighter slower American race tracks that might favor the RSR anyway.

However near the end of 76 it was clear that even in modified form the IMSA RSR was now out gunned by the new tube frame V8 powered cars in IMSA.

So at the end of 1976 IMSA allowed the 934 to race in standard group 4 trim.

It did not prove to be a class beater, for 1977 IMSA would allow several modifications to it that would make it very competitive indeed but that is a different Mod.

This is the standard Group-4 934.

I have done my best to try and recreate the handling traits mentioned above but still have a car you can drive with out feeling like you going to crash every corner.

That said it is not a car for everyone, over powered, over weight, and under tired.

It has been said it was never a car you drifted, and was famous for being difficult to drive at the limit.

The best way to drive it is with patience what I mean is unlike the light weight RSR you cant go rushing in to corners in an opposite lock drift and slam the throttle to the floor on exit.

You need to keep it well within its grip window, brake early, smooth into and out of corners always respecting the power as it comes up on the torque peek at 5500 RPM.

It is not a car you can force.

It is going fast at the end of any decent straightaway and you need to brake earlier than you think at first.

Mid corner its best to always manage the amount you are allowing the tail to step out, it will tolerate some of this but if you step too far over the line it will come around on you.

Like any high powered Porsche a full throttle lift in a high speed corner is not recommended.

However the rotation of the car can be easy altered by feathering off the throttle mid corner and on corner entry but must be done gently.

Throttle control is key in this car.

2640 pounds (1200kg) with driver

485hp at 7000 rpm

435 pounds of torque at 5500rpm

4 speed gearbox

Top speed 188mph

Brickyard Legends Team present :

Porsche 934

Using the 930 Turbo as a basis, Porsche built the 934 for Group 4 GT racing. The first 934 prototype appeared in

September of 1975 and it was instantly faster than the outgoing Group 5 Carrera RSR 3.0. This meant almost every team upgraded to the 934 including Kremer and Gelo. As a result the car was very successful in the European GT Championship which was won by Toine Hezemans in the Gelo car. The same could be said about the German GT Championship which effectively became a Porsche-only affair.

At Le Mans, the 934 was a regular fixture and competed against the Ferrari 512 BB LM. They took class honors in 1977, 1979 and 1981.

Porsche built the 934 from a standard 930 bodyshell using the production rear spoiler. they used the standard 930/75 engine as a base and fitted new pistons and a large KKK turbocharger - around 485 bhp was possible at 1.4 bar of boost.

- the mod is linked to GTC-TC-76 class and the Porsche 911RSR.

Credits :

- papag21 : 3d, mapping, file structure, skins
- greg7 : physics, testing
- kiwistevie : template, skins
- hkhoy : skins
- hpiracer : skins, testing
- Ned : skins
- rallymaster : testing
- rsvmille : sounds

Installation instructions:

- extract folder to X:/GTL/

Enjoy

Altbierebudenversion:

- You need the Altbierebuden CarClasses to run this Mod

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Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von UweLaenger - 01.03.2013 09:54

gibts das auch in Deutsch, oder bin ich auf der falschen Seite?

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Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von Moorhuhn - 01.03.2013 10:13

Naja, eigentlich nur im falschen Film,

englisch hat sich nun mal als sog. "Weltsprache" dank der expansiven Kolonialpolitik durchgesetzt...

Wir können froh sein, dass die Ersteller nicht allesamt zufällig zB in Finnland oder Russland oder Indien leben und die Release-Notes nur in Landessprache abfassen... :whistle:

Gruß
Georg

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Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von Philipp - 01.03.2013 10:50

UweLaenger schrieb:

gibts das auch in Deutsch, oder bin ich auf der falschen Seite?

Benutze doch einfach den Google-Translator. Ist zwar nicht gerade optimal, aber besser als gar keine Übersetzung.

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Re:Porsche 934 by Brickyard Legends Team

Geschrieben von CasparGTL - 01.03.2013 10:51

B8man wrote:

- hpiracer : skins, testing

Wow, er ist GUT!

Macht SO schÃ¶ne Skins mit perfektem GefÃ¼hl fÃ¼r Zeitgeist.

Er macht jetzt auch Skins fÃ¼r real life Profi Rennteams!

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Aw: Re:Porsche 934 by Brickyard Legends Team

Geschrieben von MichaW - 01.03.2013 10:56

Das Sabbern hat ein Ende, vielen Dank fÃ¼r dieses feine Auto, der fehlte hier einfach...und ich freu mich auf die neuen Serien, die es gar nicht gibt...;)

GlÃ¼ck auf!

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Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von Erel 68 - 01.03.2013 12:32

Gefahren bin ich das Fahrzeug noch nicht, habe aber mal ne Frage:

Ist der extrem Hohe Verbrauchsindex gewollt?

In der Gruppe 5 liegt er mit 8,55 mehr als doppelt so hoch wie der 935er und in der GTC-TC-76 Ã¼ber der Corvette.

Trotzdem schÃ¶nes Auto, dass ich dringends austesten muss.

Roger

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Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von Nepomuk - 01.03.2013 16:42

That car is seriously challenging - but really fun!

Very high quality mod again - i especially love the sounds.(The "Blop" when decelerating - lovely)

I have a question about those though:

How do you produce them? Do you record them directly from the original? That would be a hell lot of work!

Hammer Fahrzeug wieder einmal! :woohoo:

Ich hab allerdings eine Frage zum (exzellenten) Sound - Wie macht ihr den denn? Direkt vom Fahrzeug abnehmen, das waere ja ein unglaublicher Aufwand!?

GrÃ¼sse,

Nepomuk

Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von GreenHellRacer - 01.03.2013 16:46

So habe das Fahrzeug eben getestet.

Zunächst bin ich ohne jegliche Streckenvorkenntnisse auf den Server gegangen, da lief Daytona... naja, das hat mich so ziemlich genervt, irgendwie ist die Strecke mal garnicht mein Ding....

Also hab ich mir gedacht drehste offline paar Trainingsrunden auf der NOS ;)

Das war dann schon viel angenehmer! Ich muss sagen dass mir der Wagen sehr gut gefällt! Der Sound ist mal der Wahnsinn, wirklich der Hammer ich finde den sehr authentisch, hervorragende Arbeit!

Die Optik ist ebenfalls astrein, genauso das Fahrverhalten wenn man ihn mal etwas an seinen Stil angepasst hat! Großes Kino, ich konnte quer über Schwedenkreuz brettern!

Was mir aufgefallen ist:

Hat das Ding (bin den Gelben Nr. 80) gefahren keine Tacho? Habe in der Cockpitsansicht vergeblich gesucht! In der Außenansicht hält er bei 260 kmh auf und hat noch gut 1500 Upm übrig, ich wünscht schon gern wie schnell ich bin ;-)

Meinen Glückwunsch, meine Anerkennung und meinen Dank zu diesem Mod, wirklich ein geiles, rundum gelungenes Fahrzeug!

Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von MichaW - 01.03.2013 16:51

So, mal ein erstes Fazit nach einigen Runden in Daytona: Was für ein giftiges, geiles, kleines Scheißerchen, der macht richtig Laune. Führt sich, genau wie der RSR, mit vollem Tank wesentlich entspannter, mit leerem kann er schon mal seeeeehr leicht werden auf der VA. :lol: Die Getriebeabstimmung ist auch nicht ganz einfach, die Drehzahl darf mal gar nicht unter 5000 U/min fallen, ansonsten beschleunigt den jeder Mini aus, aber ab 5000 U/min, Hala die Waldfee!!! Gefällt mir persönlich wesentlich besser als der RSR, aber das ist ja auch keine Kunst...)

Vielen Dank noch mal für das Auto!

Glück auf!

Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von Ron Zacapa - 01.03.2013 21:11

Tolles Auto!! Alle Achtung und Glückwünsche an Brickyards Legends & company. Super sounds, tolles Fahrgefühl und sehr realistisch. Habe soeben einige Runden auf R1 circuit und Riverside mit ihm erleben können. Dann habe ich auch zum Vergleich den BMW CSL GR5 gefahren. Dabei viel auf das die Rundenzeiten fast nahe genug beieinander liegen, aber es fehlt dem GR.5 ein Quantum an Speed das er mit dem Porsche 934 mithalten könnte. Schade eigentlich finde ich. Die hdc files erzählen das der P934 eine super Aerodynamik von 0.39 hat, gegenüber 0.50 des GR.5. Der Porsche ist schwerer als der GR.5 - 1200 gegenüber 1055 kg. Da kommt natürlich die Überlegung ob es eine Möglichkeit gibt die beiden Racecars etwas näher in der performance zueinander zu bringen.... Just thinking :alcoholic:

Amazing car the Porsche 934. Fantastic effort by Brickyards Legends & company, well done! Had the pleasure of doing a few laps on R1 Circuit and at Riverside with the P934 - goes like stink and is real fast. Great engine sounds and feels super realistic.

Then I tried the BMW CSL GR5 for comparison. The cars are fairly close to each other in terms of overall performance with the Porsche being a clear winner as far as lap times are concerned. Pity really as if the cars had been closer to each other it might have made for some good online racing.

The hdc files tell a story, with the Porsche having a super slippery drag coefficient of 0.39 versus the CSL GR.5's CD of 0.50. No wonder the 934 disappears into the distance on any long straight then. Porsche is a bit heavier than the CSL

GR.5 1200kg vs 1055kg. Anyways, just thinking its a great new car to have in GTL, if however we could bring the performance of the BMW and Porsche closer to each other this might make for better online racing :alcoholic:

Ron

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Re:Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von Greg7 - 01.03.2013 23:17

Hi

The aero drag number for the 934 is the same as the wide 3.0 RSR in fact this is I suspect to high for the 934 as the biggest contributor to drag on all these late Porsches is the rear fenders and tires. When viewed from the front they add considerably to the over all frontal area of the car.

The 934 due to its homologation paperwork has very small rear tires and so also smaller rear fenders when compared the 3.0 RSR also a better front spoiler more similar to the IMSA RSR that was allowed in the USA but not in Europe.

This is also a function of the Drag VS HP equation to set the correct top speed.

And keeping the standard RSR drag number rather than a lower one gave me the correct top speed at LeMans.

Also the 934 is harder to drive than the Group-5 CSL which has considerably more down force and tire grip than the 934.

Also I would somewhat disagree that having all the cars the same speed makes for better online racing. Having a group of cars that are somewhat different in speed can make for better racing if the faster drivers take on the challenge of the slower car allowing the slower guys to drive the faster ones I think we end up with better tighter racing, though a good argument can be made for either position.

Also if you have a look at the lap time at Riverside 70 while it is true that the fastest lap is faster for the 934 at 1:17.6 next 4 positions would be held by the Group-5 CSL

1:17.6 934 (Dominic Engelmann.)

1:18.2 Gr-5 CSL

1:18.3 Gr-5 CSL

1:18.4 Gr-5 CSL

1:18.7 Gr-5 CSL (me)

1:18.8 934

1:18.9 934

1:18.9 Gr-5 CSL

1:19.1 934

1:19.1 Gr-5 CSL

1:19.2 Gr-5 CSL

1:19.3 Gr-5 CSL

1:19.7 934

So really not too far off and the long straight at Riverside tips the balance some what in favor of the 934 with its power advantage.

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Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von Erel 68 - 02.03.2013 06:33

Habe ihn jetzt endlich mal gefahren.

Das Anfahren ist wirklich gewöhnungsbedürftig. Ohne Kupplung wäre ich mit einem Scirocco am Start schnellen:whistle: .

Das Fahrgefühl ist echt super, die Toppspeed erstaunlich. (LeMans77: 306 km/h laut GTLPD auf dem 2. Monitor, echt zu empfehlen bei Fahrzeugen ohne Tacho) Für mich der passende Gegner für den CSL Grp. 5.

Roger

Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von FireHead - 02.03.2013 12:33

Hi Jungs,

erst einmal glückwunsch zu dem extrem geilen Porche! Sieht super aus, hat einen Sound in den man sich echt verlieben kann, rund um echt genial!

Driving:

Ich bin Ihn am Anfang mal mit dem Standart Setup gefahren, um zu sehen wie die kleine Wildsau sich denn so verhält... Goil, geht im ersten moment echt gut das Teil.

Nach einiger Zeit fñhlt er sich jedoch so an, als sei der 934 etwas unwillig um in die Kurve zu fahren. Etwas steif, sehr untersteuernd, was ich Ihm auch nicht abgewñhnen konnte.

Dann viel mir auf, Das Diff ñsst sich nur im Bereich von 80% - 100% verstellen.

Ich lasse mich gerne korrigieren wenn ich falsch liege, jedoch sollte der Bereich nach meinen Recherchen zwischen 0% - 80% liegen.

Aber wie gesagt, ich lasse mich da gerne eines besseren belehren =)

Glückwunsch jedenfalls zu diesem echt sehr gut gelungenen Mod!

VG

Firehead

Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von Darth Maul - 02.03.2013 14:06

Was fñr ein Geschoss!!!!

Macht echt Spaß, auch wenn er verdammt schwer zu kontrollieren ist (oder vielleicht gerade deshalb?).

Ich habe mich auch schon ein wenig ñber das Differential gewundert.

Wikipedia meint dazu:

Um den Schlupf der Hinterrñder beim Beschleunigen aus Kurven heraus zu verringern, wurde werksseitig ein Sperrdifferential eingebaut, das eine maximale Sperrwirkung von 80 % entwickelte.

Genau wie Firehead bin ich aber keineswegs sicher;)

Darth Maul

Re:Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von Greg7 - 02.03.2013 16:55

Yes the 934 came with the differential set to 80% lock however because of the tail happy nature of the car and to fight over steer at high speed it was common for many teams to install a ñespool or fully locked differential, a spool or fully locked diff was also what was almost always used in all the big turbo 911 based cars like the 935.

So I set the diff range from the factory 80% up to the 100% locked setting I thought I might set it for only 2 settings, only 80% or 100% but I figured the few extra adjustments in between for extra tuning was artistic license.

Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von FireHead - 06.03.2013 00:33

Hi Greg7,

Thanks for your information about the diff.

Please, correct me if I'm wrong. In the Setup from the 935 I can choose the diff locking between 0% and 100% and in the wikipedia article is written that the 934 has an diff lock from 0% till 80%. The 80% is the maximum lock of the diff, so I understood these part of the article.

But please be indulgent to me and correct me if I'm wrong.

Thanks a lot in advance.

Best regards,
Firehead

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Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von Nepomuk - 06.03.2013 10:09

Hi Greg,

I doubt that the Porsche was driven on race tracks with a spool, which is really a fixed 100% lock, like is if there was no differential at all.

It causes massive under- and oversteer as well as heavy tire wear and is therefore used only in Drag Racing, Drifting and maybe a few low - powered low-budget race cars but definitely would make a 400hp - car like the porsche undriveable...

Cheers,

Nepomuk

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Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von Greg7 - 06.03.2013 18:01

Hi Nepomuk

Iâ€™m sorry and I donâ€™t intend to be rude but that is not correct at all. In fact you have it backwards.

The low power cars run less lock sometimes even open diffs are run because there is less need to solve the problem of the inside unload tire spinning under power. And at lower speeds the throttle off over steer issue that all rear engine Porsches have is not as bad. And more diff lock helps both of these issues.
It does not cause over steer to run a locked diff in a real car.

Far from undrivable it makes the car much easier to drive, or said correctly more stable.

This is why even the first customer turbo race car from Porsche (the 934) already came from the factory with 80% lock.

And that is with less than 500hp. And eventually Porsche shipped 935s with spools already installed.

Almost all of the high power Porsches ran spools or what the Porsche drivers called â€œsolid driveâ€• Porsche themselves made them from Titanium to replace the LSD section of the ring and pinion.

Here is a real Porsche one for a 917 not exactly a low powered or low budget race car in my eyes.

<http://www.retro-sport.com/products/race-cars/917/race-cars/96-917/por-917-ts01/P140-porsche-917-titanium-spool.html>

Anyway almost every 935 raced this way

It was said of the High power 935s that even with the "Solid drive" there was very little under steer

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Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von Nepomuk - 07.03.2013 11:48

Hi Greg,

You're not rude at all - also I don't intend to be rude - i hope it didnt seem so :cheer:

In fact - I didnt believe spools were used in serious racing but I'm very curious to learn new things. I must admit, I'm still sceptical but your argumentation seems logical.

Still it seems not logical that a spool - causing the inner wheel to spin in corners and making slow cornering very difficult will provide an easier to drive car than a nicely set - up LSD using multi-plate clutches which should be able to stop wheelspin in all thinkable situations but still make different wheel rpms possible while cornering...

But yeah, Porsche should know :ohmy:

Is it maybe a question of control electronics which they were not able to build in those days and which makes such LSDs possible today? As seen in the supposedly wonderful BMW x-drive system for example.... Probably that stuff would be impossible without electronics.

Unfortunately there is very few high quality information about this on the internet - If you could help out I'd be very pleased.

Well thanks again to you for that wonderful mod and the information. If you could provide me with some info about spools I'd be even more pleased.

Nepomuk

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Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von R8 Gordini - 07.03.2013 14:05

Hello guys,

I think the 934 had a LS-Differential and the 935 had a spool.

Unfortunately I can't find these sites in English.
The drivetrain is described under "Kraft¼bertragung".

<http://www.porsche.com/germany/sportandevents/motorsport/history/racingcars/70ies/1976-934coupe/>

<http://www.porsche.com/germany/sportandevents/motorsport/history/racingcars/70ies/1976-935coupe/>

Cheers
Tom

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Re:Aw: Porsche 934 by Brickyard Legends Team

Geschrieben von Greg7 - 07.03.2013 18:43

Yes correct the 934 was shipped with a 80% locked limited slip differential (LSD)
And I am sure many of the teams ran the car just as Porsche delivered it but very quickly some figured out that a locked

rear end could help to solve the scary off throttle rotation that 911 based race cars often suffer from. So many teams built there own spools to replace the LSD. Also even though it seems it would make the tire wear worse it in fact can improve it because you are no longer spinning the inside rear off the corners which in cars as powerful as turbo Porsches will fry the inside tire in only a few laps. I was reading about it again last night and it seems even many of the standard 3.0 RSR teams experimented with spools as well.

And it seems right that Porsche may have shipped all the 935s with titanium spools. According to the books I have. Though I am sure some teams experimented with an LSD even in the 935.

Nepomuk,
No I did not think you were rude, I just did not want to offend you by responding the way I did.
And you are right at first glance it seems like a very crude solution to the problem and in truth it was. But it was the best bad solution they had.
The compromise in slow corners of having the rear wheels locked together was more than made up for the increased stability in the faster sections and most race tracks only have one or two slow corners. And more importantly all of the drivers liked the car better with the spool.
Like everything in a race car itâ€™s all about compromise in the fastest direction.
You are also correct that if Porsche were building the 935 today they would use an LSD we have very sophisticated limited slip differentials now even leaving the electronics out of it they are externally adjustable with a simple wrench from the out side of the transaxle to adjust the coast and power lock up, so several changes can be made during a test session.
Donâ€™t forget to change the lock up in a LSD in 1977 would require disassembling the center section of the transaxle, taking apart the LSD and changing parts, reassembling the whole mess and the installing back in the car. This is quite a lot of work even for a professional race team.
And LSD tuning is a bit of a black art I see race teams today get lost trying to set them up.
So itâ€™s not hard to see how you might just fit the Porsche spool and be done with it.

One last thing, you are also correct that it is hard to find reliable information on the web and while I do use the web for information of course.
I try not to if I can find it in a book written on the subject. When ever I work on Physics for a car I first try to see if any good books have been written on the car.
I have an unfair advantage here because my father is an avid collector of racing books and runs a magazine for vintage racing and has a large library at his house that I go and steel books from when he is not looking. :) Other wise there are several good book dealers on the web that you can find good racing books from however they are not cheep.

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Re:Porsche 934 by Brickyard Legends Team

Geschrieben von Nepomuk - 07.03.2013 19:12

Very interesting, thanks for the info.

Btw I got a reply on youtube from the owner of a lovely racing video channel who is as far as I remember active here on the forums also and he pointed out one more interesting thing concerning the LSD - question.
In fact the tire quality was significantly lower in the 70s to the ones in use today which is one more reason to use such a solution.

Nepomuk

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Re:Porsche 934 by Brickyard Legends Team

Geschrieben von Greg7 - 07.03.2013 20:24

good point.

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Re:Porsche 934 by Brickyard Legends Team

Geschrieben von CasparGTL - 08.03.2013 01:07

Sehr interressant!

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