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Finished contraptions

Car with Wre Engine, Wire Clutch, Wire 3-SPD Transmission

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Thread: Car with Wre Engine, Wire Clutch, Wire 3-SPD Transmission

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07-26-2007

#1

F12Bwth

Wirererer

F12Bwth's Avatar

Join Date: Mar 2007

Location: NYC

Posts: 163

<div align="center">

1 of 11

6/7/2025, 12:26 PM





</div>

After having my request here for a Wire Axis mostly ignored

<http://www.wiremod.com/showthread.php?t=1780>

My Norwegian partner in crime Longhat (aka-kirderf aka-longy) and I went into his server and after a few hours and many do-overs banged out a working clutch to suffice until our request is fulfilled. Below is a very rough cut video of the events of that night.

<div align="center">----->>>> **Longhat and I Building the Clutch Video** <<<<-----

<http://stage6.divx.com/Game-Caps/video/145...I-make-a-Clutch>

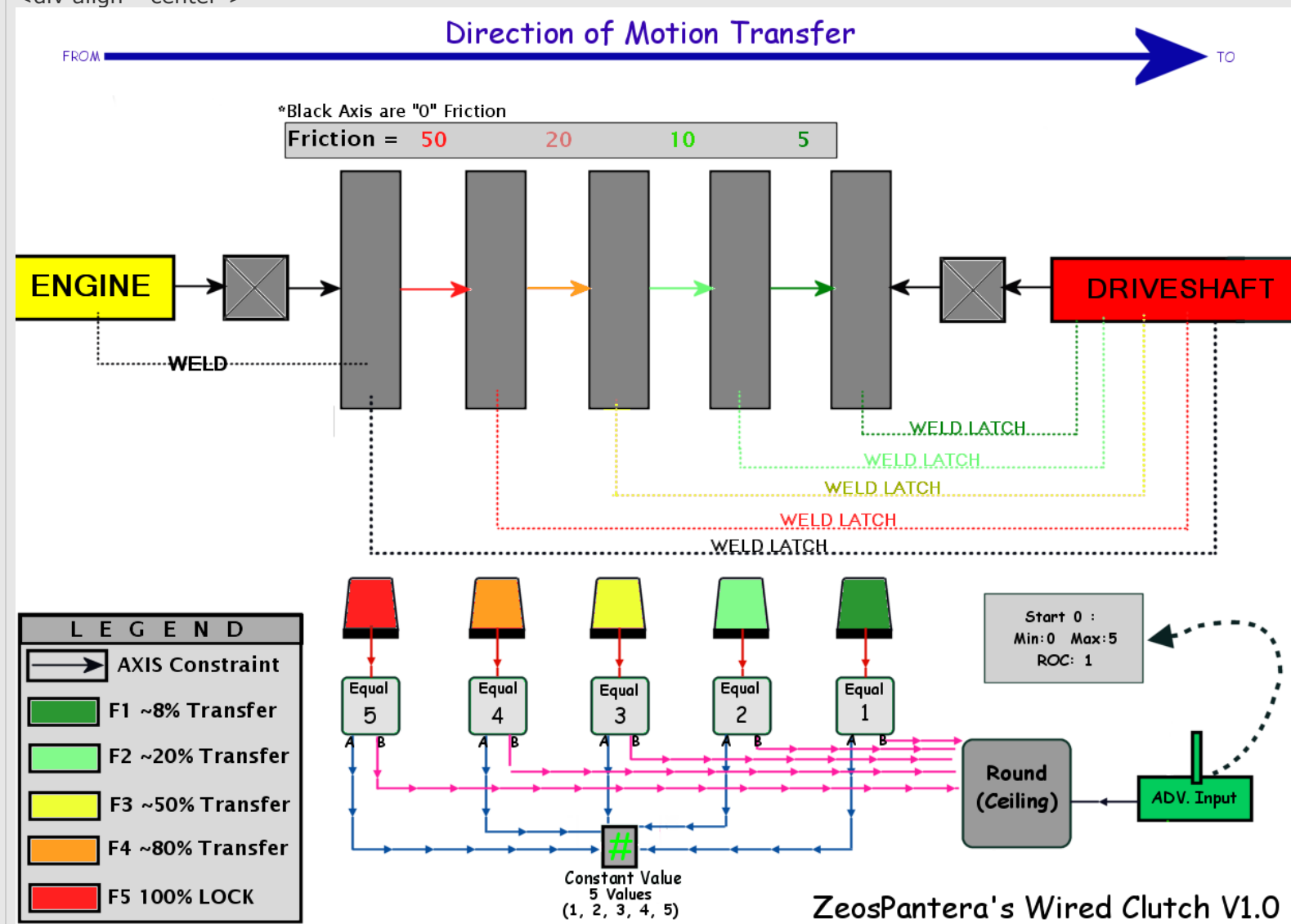
</div>

The end result was my design and long's expression to control the wire latches to operate the clutch. He is a wire wiz and I know the games physics like the back of my hand. It worked well except the fact that to activate / deactivate the clutch toggle you needed to catch the damn car and push a button. That aside we made the car with an A-dup of one of my Boxer-6 engines (the one from the tut I believe) and I made a simple rear differential to get the wheels on. So that was that, he went to bed and I promised to work on the "design" further and do some recording in single-player where there would be no lag.

20 Hours later..

I loaded the Dup of the car He and I had worked on into a freshly loaded Huge construct and BAM - Spazz. The Car was a simple design at best so I decided to build it from scratch once again starting with my A-Dup of the 6 cylinder

boxer engine. I then rebuilt the clutch with some altered friction settings and one more plate and set all the weld latches. Longhat/Kirderf had given me the expression he used on the test car but for the life of me I couldn't edit it to work with the new clutch layout. He being 6 hours ahead of me it was 5am over there so no chance of getting help. Being of sound enough mind to deal with a simple wire tasks I came up with a simple wire setup that took care of my clutch with surprising efficiency. Some point now as your reading this I hope to get long to rewrite the expression to work again with the new design. Below is the schematic of the wire setup I used with all the constraints for making the clutch with basic wiring.



</div>

If you don't understand it. Too bad, get smarter. When Long releases the new expression you guys should just be able to punch it in and go. The physical part is pretty simple if you have smartsnap.

So I had finished attaching the NEW clutch to the engine and a simple gear reduction to the Clutch. I then ran a quick test to better visualize the friction steps I used. In this video the Phx beam is axis'd and I upped the weight to 500.

<div align="center">

----->>>>> **Clutch Torque Video** <<<<<-----

Something went wrong :(

Ruffle failed to load the Flash SWF file.

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If you are the server administrator, please consult the Ruffle wiki for help.

</div>

Now staring at that set of gears I started thinking about the illusive "transmission" everyone is always asking for on cars. Being me I have knowledge of real transmissions and an idea of how to do it, but the PHX gears were the key, they had to fit. As it turned out PHX really knew what he was doing when he made his model pack because a small and large gear line up their centers at the exact same point as 2 medium gears. Bingo, my tranny idea was feasible. It took literally 12 minutes to put the whole thing together. I wired it in a similar fashion to the way I wired the clutch only it had to go 1 2 3 weld latch's instead of 0 1 2 3 4 5. Here is another quick test to show just the transmission working to spin the back drive-shaft at different speeds with a constant engine RPM.

<div align="center">

----->>>> **3 Speed Transmission Video** <<<<-----

Something went wrong :(

Ruffle failed to load the Flash SWF file.

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If you are the server administrator, please consult the Ruffle wiki for help.

</div>

The main systems were in place and I quickly built a front steering assembly and rear gears. All was going well and I was saving the game and making advanced dups of the car regularly. Occasionally I would get a lua error and I would switch to the console to view it. This time though I would fuck up BAD! Instead of hitting resume I missed and hit disconnect. No "are you sure" message. Just gone. Most of you are thinking, eh, no big deal he saved it. And on the one hand you have a point I had just saved it. However you all don't have MY install of Gmod. When you build something involving wire, and Adup's and props with no gravity YOU ARE fine. When I do that the saves FAIL. I can load them but most stools come up with a Lua Stool:94 nil value error or whatnot. So even though the car was right there I couldn't weld or change weights or use rope. I was forced to load an empty map and the last A-dup I created. That was almost no better then the save. Yes, I could use all the tools now, but you know how temperamental Dups can be. The engine had spazzing cylinders, the tranny gears were getting stuck and some no-collides didn't carry. Bottom line I had to remove and completely replace the boxer motor (which was fun) redo

the transmission gears, and reweld most of the support structure. That along with all the little shit and rewiring all the displays and such cost me **two and a half HOURS!** It was 4:30 AM by the time the car was ready to roll again. And I knew it wasn't as well put together as the original because of the unknown banging from the front end (you will hear in the video). It does get the job done as being the first contraption to be engine powered with a real clutch and a real working transmission. [all be it 3rd is a joke gear One to three ratio. HA]

Looking back after watching this video I can't help but think maybe I should have raised the thruster limit up from 1200 max thrust per cylinder. I guess I was too afraid of spazzing in an un-loadable save. Next time I feel like spending 2 hours to get her going maybe I will try it.

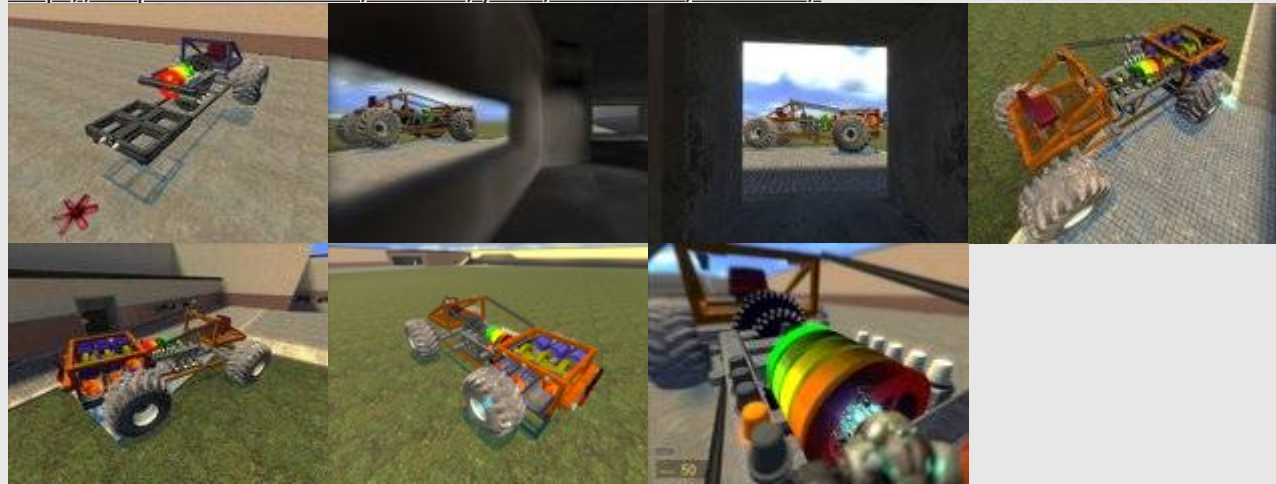
Also, the weight of this car is immense. I made every gear and every beam a gear was attached to weigh 100units OR 250 for critical components. And the front steering assembly (wheels, frame and swing arms) all weigh 400 to support the massive engine weight(2000+). I would have used the Phys Properties tool to make it all no gravity but I found that causing alot of spazz so I steered clear to avoid catastrophe. Just keep that all in mind when you think of writing "Why is it SO SLOW?" It weights more then a red container(8000) maybe more.

<div align="center">
----->>>> **THE DRIVING VIDEO** <<<<-----

"Google is taking forever to process, I will embed it here when it finishes. Until then you are all stuck with the perfect quality of Stage6 which I recommend anyway!"

<http://stage6.divx.com/Game-Caps/video/145...teering,-Engine>)

</div>
More Pictures!
<http://s4.photobucket.com/albums/y136/F12Bwth4/Gmod10/> << Main Pictures Here



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07-28-2007

#2

SuperU

Wirererer



Ok so! We have tons of picture some cool videos. But wheres a save?

PS: Coolest car i have ever seen!



Join Date: Jul 2007
Location: Europe - Latvia
Posts: 337

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There is no fate, but what we make.

Do what you want, but at the end of the day, life is too short.

The universe will not give you what you want, it will only give you what you need.

Everything can be improved upon. Nothing is perfect.

-SuperU 🤖

07-28-2007

#3

-orb-

Wire Sofaking

-orb-'s Avatar
Join Date: Apr 2007
Location: Boston at school,
Maryland at home
Posts: 402



Wow... i just looked over your clutch diagram after watching the creation movie. The movie made a lot more sense after looking at the diagram... when you disengaged all the high-friction parts and the thing was like going backwards I was like wtf until I looked at the diagram.

In any case that's a pretty awesomely intuitive method of making a clutch in wiremod. At first I was thinking it would be cooler if you made a real clutch using disc-on-disc friction with a hydraulic lever, but then I was thinking about how intuitive your clutch is and how it plays to the physics engine of gmod better than a disc-on-disc clutch would.

Bravo!

Hey, if I figured out how to wire up and setup that situation, would you mind if I made a tutorial on making a clutch like that?

EDIT: Just watched the driving video. Absolutely fantastic. Looks like the way the clutch was working you were burning it like they were gears though What was that, a 280 redline or something? Heh, not bad Almost lugged it once or twice

Looked like the most fun car to drive ever.

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Check out my wire mod tutorials at [THIS LINK](#)

07-28-2007

#4



Hey also, I was just looking at your approx measurements for the torque transfer per clutch friction level and I was wondering if you got those from torque levels getting outputted or from estimation/calculation?

-orb- ▾

Wire Sofaking



-orb-'s Avatar

Join Date: Apr 2007

Location: Boston at school,
Maryland at home

Posts: 402

I was wondering because I feel like it would get exponentially less with each clutch level since your friction isn't coming direct from the engine with each clutch... rather it's coming from the higher clutch... meaning its friction would put force on the higher level's friction as well.

Anyways, I was also thinking about the method of the clutch and I realized that the best way to describe it is that rather than having a clutch that slowly engages, you have 5 separate clutches that are constantly engaged to a certain degree, rather than one that has a variable amount of engagedness

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Check out my wire mod tutorials at [THIS LINK](#)

07-28-2007

#5

Zaphod ▾

Wire Amateur



Zaphod's Avatar

Join Date: Jul 2007

Location: UK - Essex

Posts: 73



Wow that is awesome, that clutch is a damn good idea, not over complicated or messy, great job

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07-28-2007

#6

F12Bwth ▾

Wirererer



F12Bwth's Avatar

Join Date: Mar 2007

Location: NYC

Posts: 163



The transfer levels were a complete guess. I mostly put them in there just to better explain to newbies what was going on. I could however set the clutch up on a motor with rpm monitors and attach the other end to something immobile and see what rpm loss occurs. IE if the engine is at redline (210) and I engage the first clutch level and it drops to a steady (189) [-21] I would assume 10% of the engines power has been lost there for 10% would be transfered through the clutch. The only amount I am sure of was level 5 because it just welded the crank to the gear and bypassed the clutch. So thats 100% in any country.

ORB-

"Hey, if I figured out how to wire up and setup that situation, would you mind if I made a tutorial on making a clutch like that?"

Knock your self out.

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07-28-2007

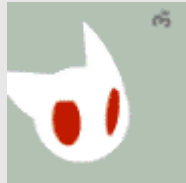
#7

Shandolum ▾

Wire Sofaking



This has been on my "want to make" list for a while, and after seeing the videos I think its about time I got working on mine. Already have an engine for it, and need a clutch, so I will try doing your design.



Join Date: Apr 2007
Location: Europe -> Denmark
Posts: 879



A shame the pistons get into the front wheels on the one you made.

EDIT: made the clutch, and it works great. Now to make it auto, which should be easy when I figure out what the settings should be.

Made a picture of it:

[attachment=872:gm_construct0026.jpg]

Only uses 4 steps, since it looks nicer in the PHX box

Attached Thumbnails
Car with Wre Engine, Wire Clutch, Wire 3-SPD Transmission-gm_construct0026.jpg

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[Everything can be improved upon. Nothing is Perfect.](#)

The only way to move forward, is to surpass what has already been done.

Creator of many things.

07-28-2007

#8

F12Bwth

Wirererer



F12Bwth's Avatar

Join Date: Mar 2007

Location: NYC

Posts: 163



Looks nice. How are you timing that V4? I don't see a gyro or rangers on it.

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07-28-2007

#9

Shandolum

Wire Sofaking



Join Date: Apr 2007

Location: Europe -> Denmark

Posts: 879



Theres a gyro in the middle. and its easily calculated by an expression.

Now I've added the gears as well. Just need something better to hold them.

[attachment=873:gm_construct0027.jpg]

To see roughly how fast it is going at the end, Ive used the delta(rectified) of the roll, which gives me something to compare with.

The board on the right is just temp, so I can make it properly when its done.

PHX should have made a prop special for smartsnap and gears.

EDIT: Made a save of my engine some time ago. [LINK](#)

EDIT: It would be a lot easier to have a clutch-axis (your request) and a transmission-axis.

Attached Thumbnails
Car with Wre Engine, Wire Clutch, Wire 3-SPD Transmission-gm_construct0027.jpg

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[Everything can be improved upon. Nothing is Perfect.](#)

The only way to move forward, is to surpass what has already been done.
Creator of many things.

07-28-2007

#10

F12Bwth

Wirererer



F12Bwth's Avatar

Join Date: Mar 2007

Location: NYC

Posts: 163



Theres a gyro in the middle. and its easily calculated by an expression. [/b]

I am not 100% positive but I think I am the guy who invented gyro timing [Facepunch Thread](#). No expression though. Just good, old fashioned wiring!

Now I've added the gears as well. Just need something better to hold them.
[attachment=873:gm_construct0027.jpg] [/b]

I don't quite understand that "hold them" bit. They are bouncing around? or are you just looking for a cage to put them in? If part A I made all my gears weigh at least 100 units and everything they were attached to weigh 100 for stability. If part B. ??

To see roughly how fast it is going at the end, Ive used the delta(rectified) of the roll, which gives me something to compare with. [/b]

I used the delta rectified for my rpm's off my engines gyro but it was all wrong. I had to run that through a multiply of 3.5 to get the rpm's to even closely match what I VISUALLY counted. Try and get your engine rotation to 1 rotation per second and see what the Delta Rectified says.

EDIT: It would be a lot easier to have a clutch-axis (your request) and a transmission-axis. [/b]

Yes. It would. Q42 from facepunch is giving it a shot. <http://forums.facepunchstudios.com/showthr...467#post6634467>
He says he may have it worked out by tomorrow morning. We will see.

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