

VPS Hot Rod Build Blog

Volume 4 – Teens Can Have Fun – 2021, 2022, 2023

Progress During January 2021 – Not really any progress, I took a small sabbatical.

January came and went with continued shop reorganization and cleaning.

Progress During February 2021 – Snowmageddon Strikes

A very slow start in February but then the Great Texas Freeze came upon us. The freezing temperatures started on 02/12/21 and continued for a week with low occurring on 02/14/21 at 3°F. A single copper pipe in the attic to the hot water heater froze up. On 02/16/21 it thawed and we discovered that we had a PIPE BURST. We were out of the house for about an hour and upon our return we found that about two thirds of the house was flooded. Major damage occurred to the ceiling, walls, carpet, etc. February ended quickly with clean-up and repairs.



Progress During March and April 2021 – NONE

All our time was dedicated to the repair work on the house.

Progress During May 2021 – Can We Get the Hot Rod Painted

The house repairs were finally complete on 05/17/21 so it is time to get the Rod painted. Color selection was an agonizing task that started years ago, pre-day one, and the color choice changed very frequently. After about six months of real research during the summer of 2020, I started to home in on the PPG Vibrance Collection. I solicited input from all my friends and anybody who would listen and I began to lean towards a candy apple red, but which one? With a glass of wine in my hand, my beautiful wife next to me, and a stack of PPG Vibrance color shots in my other hand, on 12/07/2020, I proclaimed: this is the one, it will be the Radiance II Candy Color, Number 908330 Hellfire Tri-Coat.



Back in November 2020 and after I sanded all the fiberglass parts, I concluded that I was ill equipped, both with lack of experience and equipment, to perform any primer or paint application. I will leave it up to the professionals. I contacted several shops and after about a week of discussions, I finally selected Murpho's Rods and Customs. By the end of May, we agreed on a start date of June 07, 2021.

While in discussions with the paint shops, I prepared the doors by adding the sound insulation (0521-02) to the interior of the doors. I also wanted to prepare the doors to attach the interior upholstered door panels that came with the kit. But when I placed the panel on the driver's door, it did not fit very well (0521-03). However, the passenger side fit was acceptable. Obviously, the panels will need to be slightly bent to fit to the contour of the doors.

The original supplied door panels are still an option but another idea is to make a couple of panels from the mahogany plywood to match the wood on the dash and lower console. Since the driver and

passenger panel cutouts in the door are slightly different, templates were made for each door to model the door panels. It started with a cardboard template and then fine-tuned using felt board (0521-04). Holes were drilled into the door panel mounting sills for the mounting clips using the templates.



May ends with the with the anticipation of the Hellfire Hot Rod.

Progress During June, July, August 2021 – Paint the Hot Rod

The Paint Job Begins: Discussions from May continued with several local paint shops and Murpho's Rods and Customs in Buda, Texas, was selected.

06/07/21: With a rented U-Haul trailer, all the fiberglass body parts were delivered to Murpho's. They floated, sanded, primed, applied basecoat, applied color coats, applied clear coats, sanding between coats and then sanding the top clear coat in steps up to 3000 grit, ending with a final buff and polish. During June, July, and August, it was fun to go down to Murpho's and see the progress.

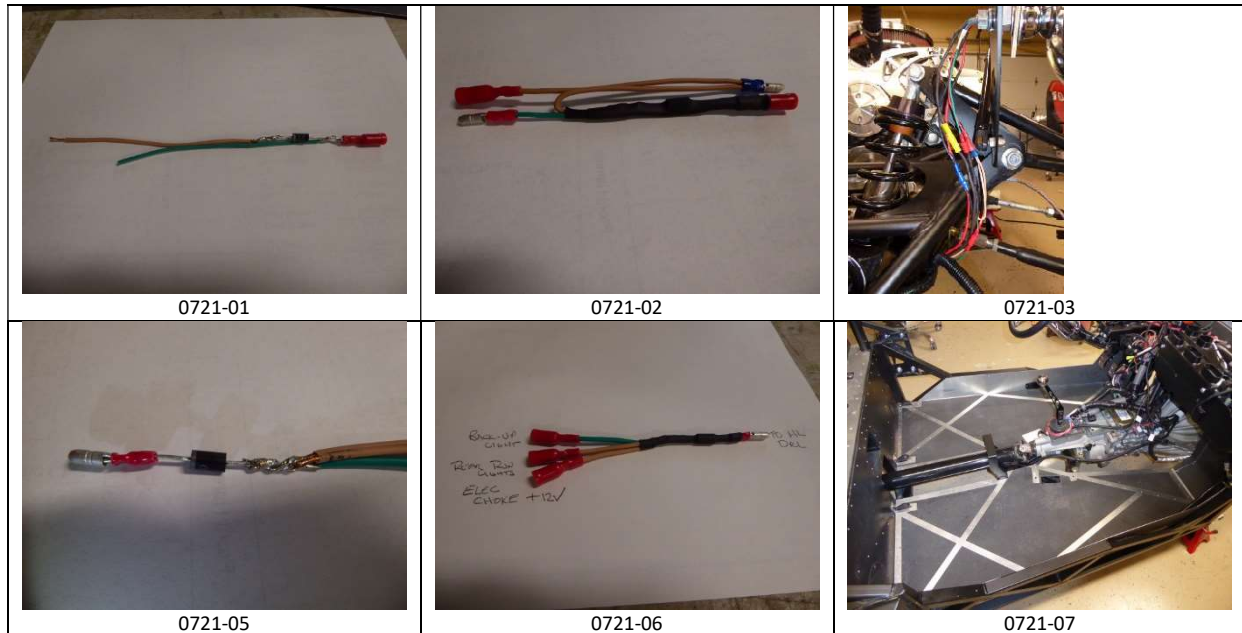


While the body was being painted, chassis and electrical work continued. It was discovered that the new LED headlights have a real problem in the flashing hazard light mode. If an emergency occurred with the Rod flashing its emergency lights and one had to leave the vehicle, with the current wiring system anybody could just drive it away because the key must be in the ignition switch and in the key-on position. The hazard lights work well in the key-on state, with or without the engine running, however with the engine off, the battery will be drained rapidly. Apparently, after a few emails back and forth to F5R, they admitted that F5R does not have a solution to flash the headlight amber parking lights when the hazard switch is turned on and when the Rod is in the key-off state and the key removed.

Fortunately, a good person was willing to share a solution and posted it in the F5R forum. Placing two very inexpensive diodes in the right place allows the hazard light to work with the key removed from the

ignition switch. A jumper containing diode #1 was put together and placed at the driver side headlight connections (0721-01 to 0721-03). The second jumper for diode #2 was put together and was placed near the fuse box (0721-04 and 0721-05). (Future Note: In December 2021 some additional headlight wiring was changed and a schematic is posted there showing the diodes and other wiring improvements.)

The next job completed was to permanently install the floor panels and the driveshaft cover (0721-07).



The remainder of July and most of August was spent on the chassis wiring harnesses by cleaning up wire lengths and removing redundant and unused wires. Talk about spaghetti westerns, the unsightly wire cluster under the dash will be hidden by the lower console.

On 08/23/21 an attempt was made to calibrate the speedometer. At this time the F5R kit supplied speed sensor was installed. After two attempts to calibrate, the speedometer was not indicating an accurate speed. Previously purchased was a TKO Speed Sensor Connector Pigtail, Part PG-094. This plugs directly into the TKO transmission's speed sensor. The F5R rear wire harness utilizes a dark green speedo signal wire and Gray EFI speedo signal return wire. However, only the dark green wire is utilized on my hot rod. The TKO pigtail has a yellow and purple with. Since it is a two-wire system, one of the wires produces a sine wave that is used to measure the speed. I had a 50-50 chance of connecting it right on the first try so I connected dark green to yellow and gray to purple.

08/26/21: I performed another speed calibration test and now it appears that the speedometer is properly calibrated. Just to tidy up a bit, I removed the F5R speed sensor and reinstalled the port plug that came with the TKO (0821-01 to 0821-03).



During all of August the body parts were being finished at Murpho's. The parts were picked up and brought home as follows:

- 08/12/21: Picked up both doors.
- 08/16/21: Picked up body and waterfall from Murpho's.
- 08/19/21: Picked up driver side engine side panel, Trunk Lid, and the nose cone.
- 08/26/21: Picked up passenger side engine panel, all fenders, the forward and aft interior console panels.

No pics of the painted body will be shown at this time, it's to keep the suspense, but it must be said that Murpho's did an excellent job.

June, July, and August Ends

Just in time with hot August nights, a painted body in the garage, and the wine in Texas just keeps getting better.

Progress During September thru December 2021

All work on the Rod is going ever so slow, never seems to be any time to be in the shop. Oh Well!

Final Transmission Tunnel Installation

The next job was to find solutions for the incoming cable harnesses through the transom tunnel. Early on the transom tunnel top edge was cut off to allow the tunnel to be installed and removed easily as shown in 0921-01. Slots were cut into the top panel so that it could be installed around the harnesses (0921-02). Then the slot covers were designed and 3D printed using ABS filament. The grommets that came with the harnesses will then be used to seal the openings when the cockpit interior is caulked and sealed. The transmission cover was installed to the floor using bolts just in case it needed to be removed in the future.



EFI To Control the Radiator Fan

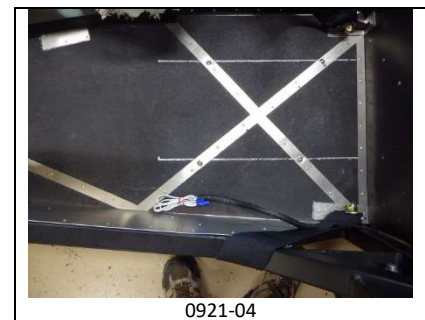
The radiator cooling fan was originally wired as per the assembly manual. The on/off function of the Radiator fan is currently controlled by a thermostat switch mounted into the lower body of the radiator. When the coolant reaches 150°F, the cooling fan relay is ground activated, thus turning on the fan. The radiator cooling fan can be controlled by the EFI Computer which has a temperature sensor mounted to the upper water manifold on the engine. This is the recommended method because it utilizes the EFI computer sensors to control the engine temperature which results in a more efficient system.

However, if you are using a Holly 4150 Sniper EFI do not use the instructions on page 44 of the Chassis Wiring Harness Manual on how to hook up. The manual and emails to/from F5R all assume the EFI computer will provide a 12V source to trigger the fan relay. This may be true for other EFI systems but not with the Holly 4150.

If you are using a Holly 4150 Sniper EFI, the EFI 10 pin connector, Pin C, light blue wire, Output #1 (-), is a fan #1 ground trigger just like the radiator thermostat. So, the EFI light blue wire was connected to the green ground fan relay ground trigger and the green wire at the thermostat switch in the radiator was unplugged and tucked away. The system was tested and the computer turned on the radiator fan at 190°F.

Seat Foundation Rivnuts

So far, the seats have only been set into the cockpit and for test rides it is assumed that the seatbelts will hold me and the seat in place. I want the seats to be raised about 1-1/2" above the aluminum floor but I do not know that right dimension after the sound and heat insulation and the carpet are installed. I will most likely need to make a custom foundation so ¼" rivnuts were added to the cockpit floor to accept the foundation bolts (0921-04). Careful dimensions were documented so that they could be located after the insulation and carpet were installed.



New Dash and Console Wood

In early November the decision was made to rearrange the HVAC ducts. All three ducts were originally designed to be mounted in the center console but this became too clustered. A single rectangular duct is to be mounted in the center console and a round duct will be installed on the body in the driver and passenger areas. Mounting plates for the round ducts were designed and 3D printed.

The impact of this is that a new wood trim plate is required for the center console. The main dashboard wood trim unfortunately was scratched up a bit so it also needed to be replaced. Therefore, all wood trim pieces were created (again!) so that they would all match. Hopefully this is the last time this is done!



Hot Rod Completion Plan

In addition to this blog, I keep a separate document, the VPS Completion Log, which documents the build progress, my private notes, and follows the Assembly Manual Order. However, during the build, File: VPS-Build-Blog-Volume4-Teens-2021-2022-2023

In late November and early December, I sat down and developed the Final Assembly Completion Plan which will become part of the Log. This plan incorporates all the outstanding ToDo's and, hopefully, has all the work listed in the correct order. This was a very time-consuming exercise and included the following:

The main dash instrument panel includes toggle switches to supply 12 volts to:

The diagram illustrates the wiring for an iPod connected to a car stereo. Key components and connections include:

- Power and Ground:** The iPod's Power and Ground pins are connected to the Car Stereo's Power and Ground pins.
- Control Lines:** The iPod's Control pin is connected to the Car Stereo's Control pin.
- Data Lines:** The iPod's Data pins are connected to the Car Stereo's Data pins.
- Accessory Schematic:** The diagram shows the internal wiring of the car stereo, including the iPod, Car Stereo, and various control lines.

12/21/21 Update: During December the main dashboard gauges were transferred to the new wood trim. When reviewing the use of the kit provided headlight switch, the following was concluded:

Key-Off Hazard Flasher Schematic

The diagram illustrates the electrical connections for a key-off hazard flasher system. It includes two main sections for the Driver and Passenger Headlights, a central Front Harness, and various flasher components.

Driver Headlight Section:

- Black: Ground
- White: High Beam
- Yellow: Low Beam
- Red (DRL): 12V Power
- Green: Turn Signal

Passenger Headlight Section:

- Black: Ground
- White: High Beam
- Yellow: Low Beam
- Red (DRL): 12V Power
- Green: Turn Signal

Front Harness Section:

- Black: Ground
- Dark Brown: High Beam
- Red: Low Beam
- Tan: Parking Light
- Dark Green: Left Turn Signal
- Light Blue: Right Turn Signal

Flasher Components:

- Diodes #1 and #2:** 3A 50V PN-1N5400
- 12V Supply from Hazard Flasher:** Represented by a circle symbol.
- Electric Choke:** Represented by a coil symbol.
- Fuse Box IGN FEED:** Represented by a rectangle symbol.

Wiring Details:

- The 12V Supply from Hazard Flasher is connected to the 12V Power lines (Red) of both Driver and Passenger Headlights.
- The Electric Choke is connected to the 12V Power lines (Red) of both Driver and Passenger Headlights.
- The Fuse Box IGN FEED is connected to the 12V Power lines (Red) of both Driver and Passenger Headlights.
- The Tan line (Parking Light) is connected to the Tan line of the Driver Headlight and the Tan line of the Front Harness.
- The Dark Green line (Left Turn Signal) is connected to the Green line of the Driver Headlight and the Dark Green line of the Front Harness.
- The Light Blue line (Right Turn Signal) is connected to the Green line of the Passenger Headlight and the Light Blue line of the Front Harness.

headlight switch were removed. The following wiring changes were made:

- The Red HDLT SW2 Feed from the fuse box BAT FEED was used to power the on/off toggle switch. A jumper from the LT Blue HDLT SW --> Dim SW was installed directly between the on/off toggle to the high/low beam toggle. The now obsolete LT Blue wires in the harnesses and connectors were removed.
- Also, a jumper from the LT Blue HDLT SW --> Dim SW was connected to the dash lights feed.
- The new dash arrangement was plugged into the chassis wiring harnesses and was successfully tested.
- Refer to 1221-01, LED Headlights with Key-Off Hazzard Flasher Schematic, in the VPS Completion Log for the complete wiring update. This schematic also illustrates where the key-off hazard flasher diodes are placed.

The new dashboard instruments were plugged into the chassis harnesses and successfully tested.

Cockpit Caulking

The last step in the Complete Pre-Body Installation Items is to caulk and seal the cockpit interior. This was completed by New Year's Eve.

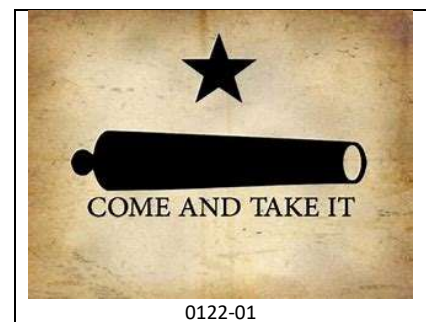
2021 Ends – Let's Bring On A New Year

Progress During January thru May 2022 – OMG It's the Omicron Outbreak

The USA appears to be in turmoil, the Vid's Omicron is out there, what the heck is going on. We are very thankful that we live in Texas, God Bless Texas, Don't Tread On Me!

Progress was slow (again) for the first 5 months of 2022. However, the end is in sight. Items completed during this period include:

- The Fiberglass Body Parts were Painted in August 2021.
- Installation of the Center Console.
- Prepared the Chassis for Body Install.
- Prepared the Shop for Body Installation.
- Installed the Body onto the Chassis.
- Started the Second Cockpit Outfitting.
- Started the Trunk Outfitting.



0122-01

Painted Body Parts

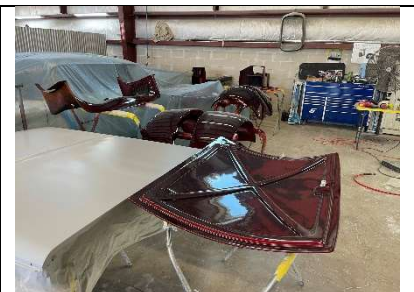
It is time to reveal what some of the body parts look like. This work was completed June-August 2021. The sample pictures include 0122-02 to 0122-04.



0122-02



0122-03



0122-04

Install The Center Console

The next step, which started in January, was getting the chassis ready for body installation. First was to install the center console. The forward and aft console sections were test fitted onto the transom tunnel. While they were installed, the locations for the interior lights and accessory plug were determined. The console sections were removed and the interior lights and accessory plug were installed. The forward console was permanently installed onto the transom tunnel. The next step was to hook up all the console's equipment. This work included (0222-01 to 0222-03):

- Prepare the lower wood dash plate by inserting the AC vent and radio cage into the plate.
- Run the center AC hose from AC unit to lower console area.
- Attach the AC host to the Vent.
- Attach hose to the AC vent on the wood dash.
- Mount audio system to cage.
- Plug in 9-pin, power, memory, and ground wires.
- Mount the wood dash to console.
- Pull HVAC wire harness through wood dash.
- Be sure HVAC wire harness is run through the back attach bracket and slip bracket to a position behind the wood dash.
- Attach HVAC wires to control unit.
- Attach AC controls to wood dash.
- Run the thermistor wire up to the AC unit and plug it into the condenser.
- Perform complete EE Test including Heater Controls. Note: AC cannot be tested at this time as there is no freon and the system hook-up is incomplete.
- Install shifter section wood and trim piece wood.
- Install shifter boot.
- Note: Aft console work to be completed after waterfall is installed.



Prepare Chassis for Body Install

The chassis was prepared to accept the body for the final time. The below list illustrates the work that was completed. Note: This work was started in February 2022 and was completed on February 25, 2022.

- Test fit defroster hoses from AC unit to defroster locations. Cut to length as required.
- Add defroster hoses to vents.
- Check ease of fitting defroster vents to body after body installation. Install defroster hoses to AC unit. Vent installation after body is installed.
- Run AC hoses to DS and PS locations and attach to the HVAC unit.
- Paint the AC DS and PS Vent Plates.

- Remove trunk release handle.
- Install the sound dampening materials on the forward firewall.
- Install cockpit footbox carpet, DS/PS.
- Remove headlights and taillights.
- Install expanding weatherstrip onto the upper 1"x1" upper tube.
- Install weather stripping as per the manual onto the trunk aluminum sides.
- Mount chassis onto the roller skids.
- Remove rear wheels.
- Move chassis over to the right side of the shop.
- Roll body into the shop under the hoist.
- Touch-up brake calipers.

Body Preparation for installation:

- Body Painting – Painting was completed by Murpho's Hot Rod and Customs and all body parts were received from Murpho's during August 2021 and are ready for mounting.
- The body interior was (again) black faced to eliminate the red overspray.
- Prepare windshield for installation. Scuff to clean. Mount seal to windshield.
- Install Windshield on painted body. Secure with fender washers.



0322-01

Body Installation

The body installation onto the chassis started the final assembly process. This work included the below list and was completed during May 2022.

- Prepare chassis for body install:
 - Tape back door striker brackets out of the way.
 - Remove trunk bottom panel.
 - Fold back trunk aluminum.
- Cover body forward wing with protection. Hoist body into position, careful of the windshield.
- Maneuver chassis under body.
- Start to lower body onto chassis.
- Complete body install onto chassis.
- Secure with aft bolts, firewall button heads, and striker brackets with striker.
- Fiberglass repair crack on forward body PS flange that interfaces with the nose cone connection. Install forward bolts for body to chassis mounts, DS and PS (0522-01).
- Final Body install:
 - Determine door area sill body screw patterns and install. Note: 1-1/2" Square tubing. Pattern should use 3 screws spaced 6" apart with the first screw 1-1/2" aft of forward weld seam. Use 1/8" pilot hole, 5/32" screw hole, with 13/64" shaft hole in the fiberglass.
- Mount defroster vents to body (0522-03).
- Locate and mount DS and PS HVAC Vents to body (0522-04).
- Install door hinges onto chassis (0522-05).
- Install rear fenders onto the body.
- Install rear wheels (0522-06).

At this point in time, it is starting to look like a Hot Rod (0522-07).

Trunk Outfitting

The trunk outfitting was completed on 05/22/2022 and included the following work:

- The finalize trunk aluminum was installed and included the following work:
 - Install trunk lower floor panel. Remove license plate bracket.
 - Rivet in place trunk side panels with sealant.
 - Rivet in place trunk lower floor panel with sealant. Reinstall license plate bracket.
 - Install trunk latch bracket.
 - Install trunk hood weather stripping.
 - Install 2 each upper trunk block-off panels with sealant.
 - Install 1 each lower trunk block-off panel with sealant.
- Caulk trunk interior.
- Install taillights and rewire connections.
- Remove battery, battery box, amplifier box and trunk Prop Rod (Temporarily until carpet is installed.)
- Install trunk latch opener cheat wire loop.
- Install trunk carpet left and right sides. Cut holes for taillight cables.
- Install trunk floor carpet, cut access holes for battery cables, amplifier cables, and prop rod connections.
- Install battery, battery box, and amplifier box.
- Install and trunk Prop Rod.
- Install trunk hood weather stripping.
- Install trunk hood on hinges. Check fitment. Test trunk hood action.





May 2022 Ends – Pay no attention to the current politics, Midterm elections are coming.....

The Hot Rod is looking good, more reason to savor a glass of red, and the upcoming work in June will focus on the final assembly.

June 2022 – Let's Get the Hot Rod Completed

Hey baby, it's hot out there, really hot. Fortunately, the shop is air conditioned so it is a good place to be while Texas sun shines down on us.

The work planned for June includes the following:

- Complete the Forward Body Parts Fitment and Installation, including:
 - Installing the Hood, Headlight Panels, and Engine Side Panels
 - Developing a Nose Cone Skid Saver
 - Installing the Nose Cone
- Replace the radiator thermal sensor
- Install the radiator chrome upper hose
- Second Cockpit Outfitting
- Final Cockpit Outfitting

So, let's get going.



Forward Body Parts Fitment and Installation:

A few items needed to be completed before mounting any of the forward body parts. These included:

- The nose cone skid saver aluminum to be fabricated, powder coat flat black, and installed onto nose cone (0622-01 and 0622-02).
- Secure hood latch cable, forward engine compartment.
- Black face the interior side with the truck bed paint including the engine side panels, the headlight panels, nosecone.
- Add the mesh and the headlight panel brackets to engine side panels (0622-03).
- The radiator fan temperature sensor was leaking radiator fluid so it was removed and replaced with a bull plug. This sensor is not needed since the EFI computer controls the radiator fan. (0622-04).
- Shape and powder coat matte black firewall pins.

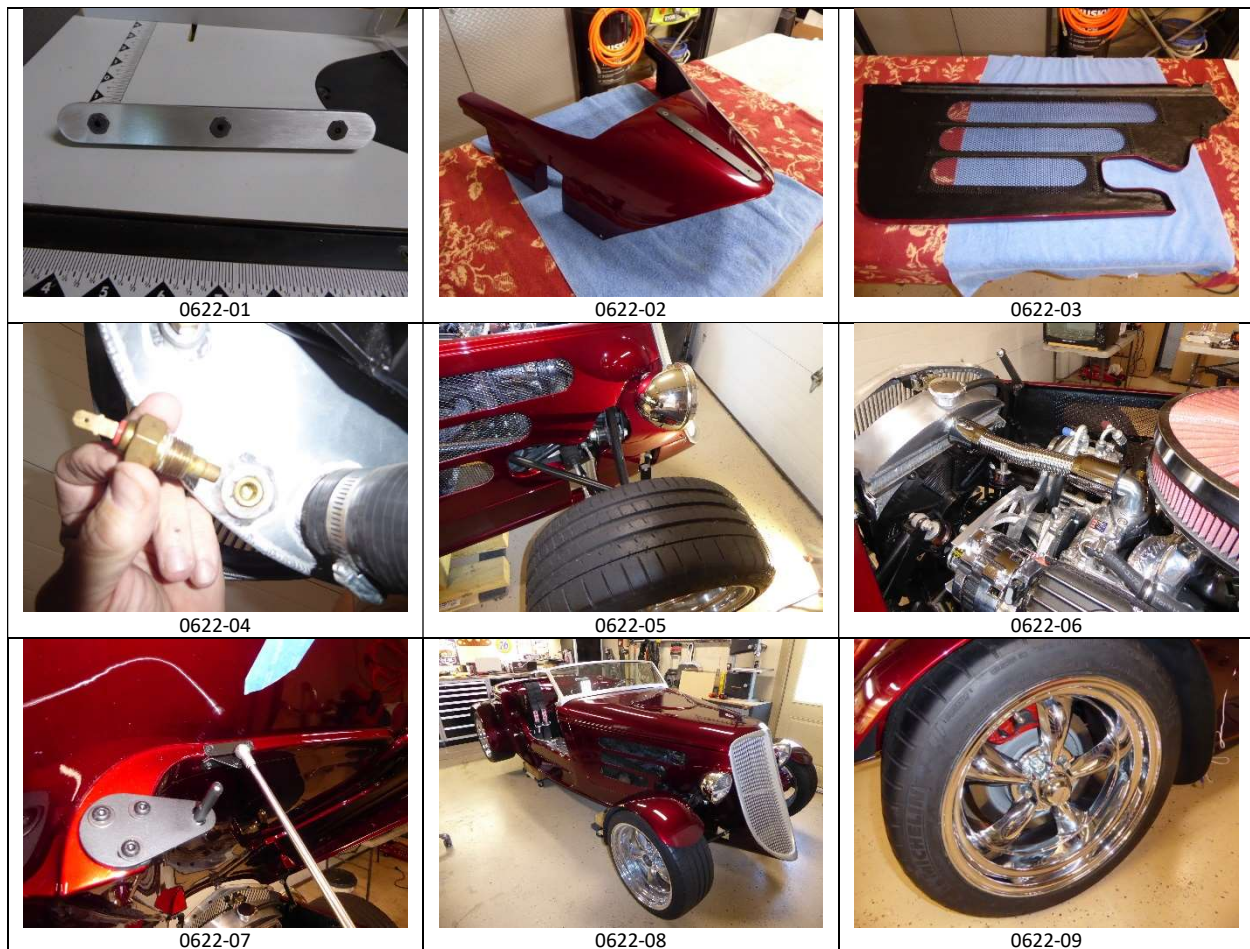
The final position for the radiator was determined by installing engine side panels and adjusting the radiator fitment by aligning engine side panel to radiator mounting hole. This allowed for the installation of the headlight panels and nose cone (0622-05).

The final check on the hood fitment was to temporarily place the hood felt pads and the radiator rubber grommets in place. The hood hinge chassis hardware was removed so that the hood can be placed onto the body, engine side panels, and radiator directly. The hood was put in place and all fitments were checked. Perfect fit.

The hood was removed hood hardware was installed back onto the hood including the hood prop rod. The chassis hood hinge hardware was re-installed. The radiator rubber grommets and body felt were installed. This was a good time to install the chrome upper radiator hose and the chrome radiator cap. (0622-06).

The hood was mounted onto the chassis hood hinges and hood open/close action was tested. The hood latch to striker was adjusted. To install the hood firewall pins, the engine side panels were removed and with the hood closed, the firewall pin mounts and pins were installed (0622-07). The engine side panels were installed and the hood action was checked.

The front fenders and wheel axle chrome covers were installed. (0622-08 and 0622-09).



Second Cockpit Outfitting

The new upper dash was finalized with some modifications included.

When reviewing the use of the kit provided headlight switch, the following was concluded:

- LED Interior Courtesy Lights are installed and are operated by a separate switch.
- The parking lights are always on when the key is turned on.
- The new LED headlights were completely rewired to meet their power requirements.
- The kit provided headlight switch was basically an on/off switch for the headlights and dash lights. Hence, this switch was replaced by a simple SPST toggle switch.

All unused wires from/to the kit provided headlight switch were removed.

- The Red HDLT SW2 Feed from the fuse box BAT FEED was used to power the on/off toggle switch. A jumper from the LT Blue HDLT SW --> Dim SW was installed directly between the on/off toggle to the high/low beam toggle. The now obsolete LT Blue wires in the harnesses and connectors were removed.
- Also, a jumper from the LT Blue HDLT SW --> Dim SW was connected to the dash lights feed.
- The new dash arrangement was plugged into the chassis wiring harnesses and was successfully tested.

The dash gages and switches were transferred to the new wood. This included:

- The 3 major dash connectors.
- EAS connectors.
- Courtesy Lights 12V Power CL12V IN (red).
- Courtesy Lights Out CL OUT (red).
- Wiper 12V Power W12V (purple).
- Exhaust Cutout ECOUT (red).
- Accessory Plug (wiper) WCP (red).

The upper dash instrument panel was installed onto the body (0622-10).

The remaining cockpit aluminum was installed which included:

- Aluminum parts 33481 and 33482, cockpit rear lower corner side covers, DS/PS.
- Aluminum parts 33958 and 33959 cockpit rear upper corner by fuel tank, DS/PS (0622-11).
- Aluminum parts 33961 and 33962 cockpit front striker cover, DS/PS, cutting out areas where striker bracket interference areas were cut out and the panels were powder coated black (0622-12).

The cockpit outfitting also included:

- The remaining cockpit insulation and sound dampening materials were installed (0622-13 and 0622-14).
- Install rear cockpit wall carpet.
- Hook up and install rear speakers (0622-15).
- Install under door carpet (0622-16).

The cockpit waterfall was installed as follows:

- Clean the back side of the waterfall to remove paint shop residue.
- Check waterfall clearance, remove waterfall, and add sound insulation to back of the waterfall starting at the top edge (0622-17).
- Install waterfall and rollbar (0622-18).

The aft center console section was installed and included:

- Installing the aft center console to the cockpit.
- Moving the engine computer and mic into the armrest pop-out storage tray.
- Developing the Velcro mounting foundations for the arm rest, painting them black, and bolting them into place. Attaching Velcro where required and mounting the arm rest onto the aft console. (0622-19)

The cockpit floor carpeting and the E-brake boot was installed (0622-20).

The seat foundations were made from 1" square aluminum and bolted to the previously installed cockpit floor rivnuts. With the seat in place, matching holes were drilled through the seat bottom frame and the square foundation tubes. Rivnuts were installed in the foundation tubes and the seats were installed. (0622-21 to 0622-23).

All we need are some doors (0622-24) and a Hot Rod is Born!





June Ends – It is still HOT outside, but the Hot Rod is pretty COOL.

As Eddie Vedder sang “Just Breathe”.

July 2022 – The March to the Finish Line (or until I want to change something!)

It is asked “When will it be finished?” Answer: Most likely NEVER, there will always be something to tweak.

But the tasks for July include:

- Installing the doors.
- Door interior panel finishing and installation with arm rests and speakers.
- Door sill aluminum finished matt black and installed.
- Install rear cockpit top edge cover vinyl.
- Install Vehicle ID plate.
- Buff out radiator.



By completing this work, it will be very close to obtaining a certified weight and the ASE Safety Inspection. So let us get after it.

Installing the Doors

Back in May 2021 the decision was made to set the kit provided interior door panels aside and create custom door panels from mahogany veneer. Using the template, the panels were cut out and were ready to be installed. The interior face of the doors does have a curve to them and the panels, 5mm thick, are too stiff to curve naturally. The solution was to router a stress relief groove about half the

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thickness of the veneer on the back side of the panels (0722-02). The panels were test fitted to the doors as shown in 0722-03.

Time to install the doors. The ½ moon door weatherstripping was installed onto the body and the doors were installed onto the door hinges. A little alignment tweaking was done and the doors were installed (0722-04). At this time just a couple of items to finish up but overall, a Hot Rod was born.



0722-02



0722-03



0722-04

Albeit the Hot Rod is still an infant. The door panels still require some more work and the door sills need to be installed. The speakers, armrests and rear cockpit trim panel are missing but these items will come as the Hot Rod matures in the coming months. And of course, the Registration process has yet to be formally addressed, oh help us all.

Born on the 4th of July 2022



0722-05



0722-06



0722-07



0722-08



0722-09



0722-10



Interior Door Panels

It is now August 2022; it is time to put the final finish on the interior door panels. The same process that was used to finish the upper dash and center console wood was utilized. In summary, this includes:

- Prepare the wood pieces by sanding with 320 grit and remove dust with a damp cloth. Wipe with a tack cloth.
- Apply the thinned Woodgrain Filler, consisting of two parts filler to one part wood stain.
- Sand smooth 220 grit and remove dust with tack cloth.
- Apply 1 additional coat of stain with foam brush, let stand for 5 minutes, wipe excess off. Let dry overnight.
- Use water-based polyurethane, stirring to mix, (no shake, no bubbles) apply 4 coats.
- Sand smooth starting with 320 grit and progressing with 400, 600, 800, 1000, 1200 grit alternating with the grain and then against the grain.
- Aerosol spray on water-based poly and wet sand with 1500 grit to clear dust nibs.
- Let the poly cure for 3 days then polish with car wax, ie Turtle Wax.

The finished driver side wood panel was installed onto the door. I sat in the driver seat and determined a comfortable height/spot for my elbow and marked it. After removing the panel, the armrests and speakers were attached to the door panels and the panels were installed onto the doors (0822-01 to 0822-03). The door sill aluminum pieces were finished matt black and installed onto the chassis/body just below the door panel as shown in 0822-02 and 0822-03.



Install the Rear Cockpit Trim Panel (Top Edge Vinyl Cover)

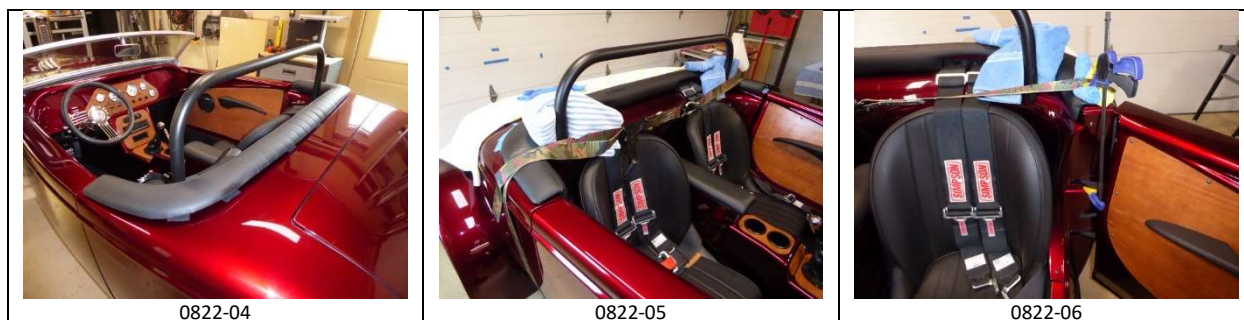
The guidance in the Build Manual states “If building the car as a roadster, install the rear cockpit trim piece. The hardtop footprint is covered by this piece if you are going to run both. Attach this piece so you can remove it by using Velcro, silicon, or anything of your choice.” Needless to say, I was perplexed on how to accomplish this. My Hot Rod is a Roadster with a possibility of a soft top in the future so I considered being able to remove the trim panel. I went to the Forum and requested suggestions and received minimum responses. I assume no one has successfully attached the trim panel since no one really responded (sarcastically joking, in hindsight I should have also asked F5R directly.) I did accomplish this but it was through a trial-and-error process.

First Attempt: Use Heavy Duty Velcro. The first observation was that the trim piece did not fit the body shape very well and did not follow the curves of the body. Though with enough pressure it would. Added Velcro all along the body and trim panel, would not even hold. The back edge popped up as shown in 0822-04.

Second Attempt: Use silicon. I rigged up some clamps and straps, added silicon to the body surface and to the trim panel, set it in place, strapped it down, and left it to dry overnight (0822-05 and 0822-06). The next morning, I released the clamps and straps and the panel just popped up off the body, total failure.

Third Attempt: The lessons learned from the first two attempts; With the front part by the door flat on the body, the back part was raised up quite a bit. As one would expect, when the back part was against the body, the front part was way up in the air. Nothing I found was strong enough to hold both areas to the body, even though I could push down on both areas forcing the trim piece to conform to the body shape. The trim piece backing is made of plastic (I believe). So, I used a heat gun to soften it up and gently reshaped it. After multiple sessions, the reshaped trim piece laid flat onto the body in all areas. I then used some extra strength double-sided tape (0822-07) to attach it to the body and it feels pretty firmly connected. Final installation is shown in 0822-08 and 0822-09.

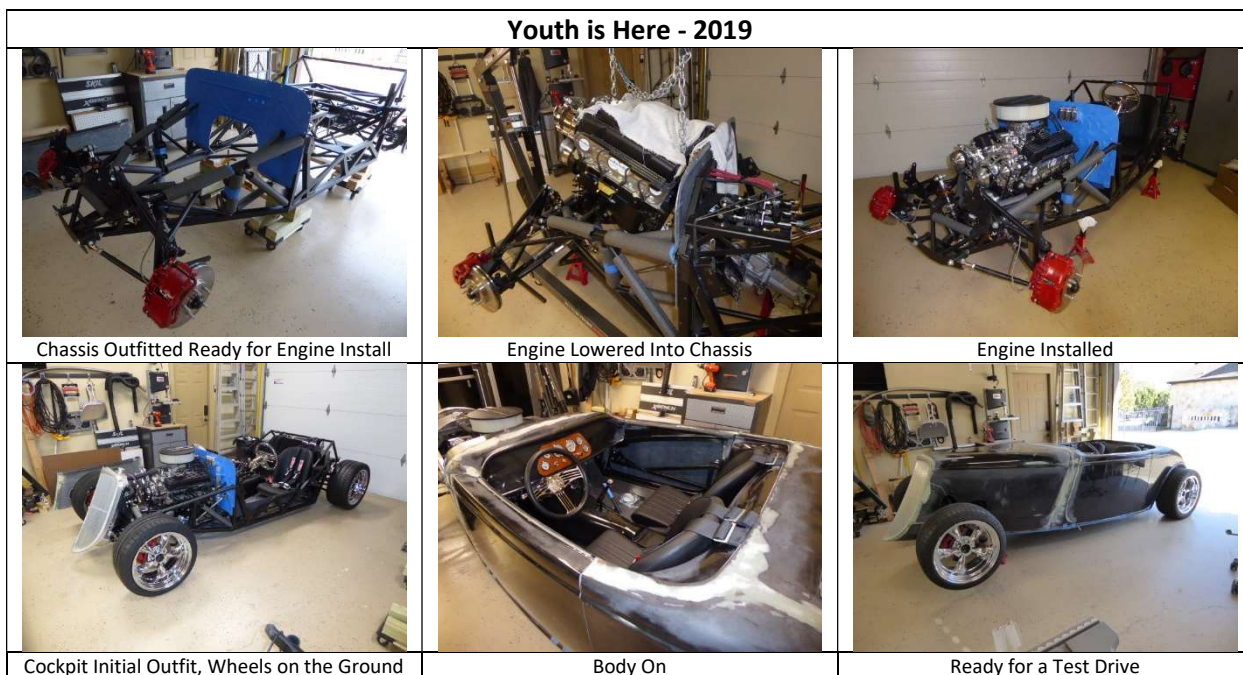
(A note from the future: I drove the Hot Rod to an Inspection, a 72 mile round trip, most of it at 55-60 mph, no issues with the trim piece, seems to be holding in place. Just wondering if the Velcro would have worked after the trim piece was reshaped?)





A Summary of the Hot Rod Build 2019-2023

Now that the rear cockpit is installed one could say that the hot rod is complete. We all know that that will never be a true statement as there will always be something to tweak, upgrade, or just mess around with. So, I thought I would take a little time to summarize how the hot rod was born in a pictorial review as shown below.





And that is how a Hot Rod comes alive. But what good is it if it can be driven on the road. Just the next step.

September 2022 – What's Left? Just Title, Tax, License (and Registration)?

The Hot Rod was born and lives in Hays County Texas. The below description are the steps I took to obtain a title, etc., your steps will most likely be different. Consult with your local TxDMV for your needs. Also as a note, I will not name private companies that I used in order to satisfy various DMV needs but I will name the public entities.

Step 1: Go online to:

https://www.txdmv.gov/sites/default/files/body-files/Assembled_and_Reconstructed_Vehicle_Manual.pdf

and download the latest version of the Assembled and Reconstructed Vehicle Manual. In that manual you will locate a list of document requirements for kit cars. In the version I used, the list included the following:

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1. Approval letter/checklist from the TxDMV RSC;
2. Application for Texas Title and/or Registration (Form 130-U);
3. Government-issued photo ID;
4. Evidence of Ownership:
 - Kit (evidence typically covers the body and frame) - Bill of sale or Certificate of Origin;
 - Frame (if not included in kit) - Bill of sale, Component Part(s) Bill of Sale (Form VTR-63), Invoice/Receipts for material used, Certificate of Origin, title, or photocopy of title (if titled in applicant's name);
 - Motor - Bill of sale, Component Part(s) Bill of Sale (Form VTR-63), or photocopy of title (if titled in applicant's name);
5. Rebuilt Vehicle Statement (Form VTR-61);
6. Vehicle Inspection Report (if applying for registration that is not custom vehicle/street rod);
7. ASE Safety Inspection performed by an ASE Certified Master Technician:
 - ASE Safety Inspection for Assembled Vehicles (Form VTR-64); or
 - If applying for Custom Vehicle or Street Rod License Plates, the ASE Safety Inspection and Application for Custom Vehicle or Street Rod License Plates (Form VTR-852); and
 - The printout of the master technician's ASE Certification Status, showing the master technician has the required A1 through A8 certifications.
8. VIN verification in the form of one of the following:
 - Law Enforcement Identification Number Inspection (Form VTR-68-A);
 - If an assigned/reassigned number is obtained, the Law Enforcement Identification Number Inspection (Form VTR-68-A) and Notice of Assigned or Reassigned Identification Number (Form VTR-68-N). The original Form VTR-68-A will remain with the TxDMV RSC, and a copy will be submitted to the county; or
 - Vehicle identification number provided on the Manufacturer's Certificate of Origin.
9. Photographs of the front, rear, side, and if a replica, a photograph of what the vehicle replicates; and
10. Certified weight certificate

Step 2: Make preliminary preparations:

- Take pictures of your engine serial number and your frame serial number. My frame serial number became my VIN number.
- Download all the forms (except for the 68A, more later) and become familiar with them.
- Take pictures of the Hot Rod per Item 9 and find a good representative 1933 Ford (in my case Ford roadster) photography on the internet.
- For Item 3, I scanned my Driver's License.

Step 3: Activate your Auto Insurance. I did this because it was necessary for me to complete Step 4 as described below.

Step 4: Offsite Activities. Items 6, 7, 8, and 10 all require assistance from entities that are offsite. My issue was how to get the Hot Rod from my house to their site without title, registration, or license, but at least I had insurance. I could rent an auto trailer and tow it, requiring an on load and off load 3-4 times. But then I discovered a commercial rental required 6" clearance and the Hot Rod just clears 4". Well, that's a NoGo. I queried a flatbed tow truck, loading issues again and COST. That's another NoGo. After a couple months of soul searching and some bad weather, we are now at Christmas 2022. Time to get off the pot, the decision was to chance it and just drive the Rod to where we need to go.

Step 5: Item 10 requires a Certified Weight Certificate. Talking with some friends it was suggested that I try a Landscaping Stone and Materials company that 7 miles from the house. They sold landscaping

gravel and stones by weight via a certified scale. I stopped in one day and they told me they were a DMV recommended scale. So, on 01/05/2023, we had a nice weather window, I took off down HWY 290 with my Wife following close behind (playing blocker to my plate), stopped in, got my weight, came home, no issues. Item 10 Complete.

Step 6: ASE Safety Inspection. Go to the ASE (Automotive Service Excellence) website to find a certified automotive professional in your area. There are only two in the Austin area and, fortunately, one of them is located 3.1 miles from the house. After waiting a bit for a weather window, on 02/10/2023, a dash to the ASE shop where I received the inspection and had the VTR-64 complete. Item 7 complete.

Note: Item 6 could have been done at the same time but I was originally attempting to get a Street Rod designation which did not require a Vehicle Inspection Report. This was later changed to "Assembled Vehicle" which does require a VIR so I returned on 03/16/2023 to complete the VIR. The VTR-64 is much more comprehensive but the VIR requires a brake test.

After collecting the following documents: Form 130-U, Certificate of Origin, VTR-61, VTR-64, Required Photos, the Weight Certificates, and various backup documents I made an appointment at the TxDMV Austin Regional Service Center for 02/13/2023 in order for their review so that I could receive my approval letter/checklist from the TxDMV RSC. After the review, which was very professionally and knowledgeably done, he asked me "Everything is here but where is your VTR-68-A?". I say, "What's a 68-A"? He hands me an instruction sheet, says you live in Hays County, this is for Travis County, the process is probably similar, but you need to find out how to complete this in Hays. It basically says a Sheriff inspects the car and fills out the 68-A.

Step 7: Get the VTR-68-A Inspection. On my way home I stopped by at the Dripping Springs Sheriff's Office and asked them how to get a 68-A inspection. She hands me an instruction sheet that says to call the Hays County Sheriff's Office Headquarters and make an appointment, so I go home and call the Sheriff's office. This is still Monday, 02/13. She informed me that the next available appointment was Wednesday March 08, 2023, at 10:30am. What could I say, "OK, I'll take it." Now the HQ is in San Marcus, 36 miles from the house, 72-mile round trip, going to see a Sheriff, with no license, no registration, and no title. But I have insurance!

Rain was forecasted all the way up to 03/08. The morning of 03/08, NO Rain, but it was kind of cool outside. I take off down to San Marcus. After a 36-mile run, I pull up to the inspection area, wait about 10 minutes for the guy getting a 68-A for a homemade BBQ trailer (same deal, no license, etc.) and he pulls away. The Sheriff and I chat, I give him my documentation, he inspects the Rod and goes off to fill out the form. He comes back and we chat some more and he explains that he is classifying the Hot Rod as a 2018 "Assembled Vehicle" (ASVE) instead of a Street Rod. (Hence the late necessity for the VIR, but I was not aware of this.) OK, nothing I can do about that. Then he said he really liked the car and took a bunch of pictures of it. I said Thanks and Goodbye, and I pulled out, 36-mile ride home without incident. Got home and made an appointment with the RSC for Friday.

Step 8: Back to the Austin RSC. I made my second appointment for document review for Friday 03/10/2023. A couple of issues with the first reviewer's knowledge level so I was punted to a more experienced representative (who was very knowledgeable). After his review, he asked where my VIR was, since it was changed to ASVE designation. He told me I can add it later but his supervisor also needed to review this and he would call me by next Tuesday. Sure enough, Tuesday afternoon he called me and Wednesday, 03/15/2023, I went up to the RSC and picked up the package which included the approval letter and checklist.

I had to wait for some weather issues because on the morning of Thursday 03/16/2023 it was raining, however, it cleared in the afternoon. Quick phone call, I hopped in the Rod, a short jump down to the ASE shop where they assisted with the VIR inspection as discussed above. Item 6 complete and all documentation complete.

Step 9: Register The Hot Rod. On Friday 03/17/2023 I proceeded to the Hays County Tax Office in Dripping Springs and presented them with my Title Application and documentation. Small office, no wait, professional and knowledgeable help. After about a 15-minute review and some computer entries, I received my registration, window sticker, 60-day temporary license plate. I was informed that my title and permanent plate will come in about 3 weeks in the mail and that my Hot Rod was now Street Legal. Then the conversation went like this:

I asked: "That's it, it's all done?"

She said: "Yep."

I looked at her and said: "What in the World am I going to do now?"

She said with a smile and a chuckle: "Well now that's up to you, y'all have a good day now!"

As if on right on que and three weeks later, my plates and title came in the mail on Friday April 7, 2023.

THE END

(or until I change something!)

Now the Adventure Begins