



## **Process Performance Certification for Transional Technologies Titan 772 HHO Generator Performed and Certified by Howard P Bankston, ISO 9000:2000 Auditor, Certification # LA2/01US/997 A-17024**

July 10, 2010

### **Purpose and Scope**

To perform an independent performance certification and documentation of the Titan 772 HHO Generator on a stock medium size car. The audit covers inspection of the component parts, the installation per the instructions provided in the users manual, testing, recording and the certification of the resulting data.

The primary goal is to document the ability of one specific HHO Generator, the Titan 772's ability to enhance the performance and extend the mileage derived from a gallon of gas in an Internal Combustion Engine, ICE. The audit did not cover any of the manufacturing processes in producing the product, as the audit was a performance audit.

### **Plan & Methodology**

Install and operate the Titan 772 HHO Dry Cell, as per the instructions included with the kit in a 2001 Nissan Pathfinder, as pictured on page 2. **Specifications:** 3,498 cc 3.5 liters 6 V engine with 95.5 mm bore, 81.4 mm stroke, 10-compression ratio, double overhead cam, variable valve timing/camshaft and 4 valves per cylinder, Premium unleaded fuel - 22 Gal tank.

Perform a series of test runs on planned courses that included city and highway travel over roads that were level, hills & mountains for distances from 158.5 to 276.5 miles for each run.

Minimizing the variables is a very important criterion and careful attention was given to the day of the week and the time of the day so that traffic conditions were similar, that goal was accomplished. The Auditor was the only driver of the Pathfinder and cruise control was used at all times, when operating above 30 MPH, for the purpose of acceleration and maintaining consistent speeds. There was some variation in distance due to construction detours. Those variations did not influence the test results.

All fuel was purchased at the same station where there was a forward slope and the same pump was used for each refuel. After the second click the nozzle was removed to the top of the tank opening and fuel was again supplied until the tank was topped off.

Temperature at the runs starting point averaged 91°F. Temperatures during the runs ranged from 78° to 103°F

### **Results and Conclusions**

The HHO Run Performance Chart Records, pg.3, reflect to the recorded data. HHO gas when combined with the fuel in an ICE will improve performance, in this case 26.35% on the road trips and 27.27% for the local to and from the office runs. *Note: Electrolyte, a 28% KOH solution in distilled water, and the Performance Chip have a great influence on the HHO Systems performance but no variable testing of those components was incorporated in this certification.*

I certify that the data, charts and images presented in this report to be true and accurate.

Howard Bankston,  
Professional Consultant & Certified ISO Auditor

# Images & Charts for Titan 772 Performance Certification Produced by H. Bankston Certified ISO 9000 – 2000 Auditor Certification # LA2/01US/997 A-17024



Nissan 2001 3.5L V6



Titan HHO Kit (2-771 Pictured)



Installation Team



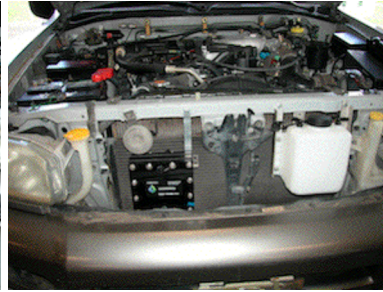
Open and Ready



Preparing the 772



Hanging the 772



In Place to Wire



Wiring the 772 to Go



Switch In



Gas Up



Hit the Road



Obey the Limits



Cruise Control All the Way



Puerto Rico is Beautiful



Even Some Flat Roads, Not Many



Beautiful Ocean Views



Interesting Art



and Yes Some Road Hazards



Questions or Concerns, Contact me at  
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# HHO Performance Certification Data for Transitional Technologies LLC With a Titan 772 HHO Dry Cell Installed on a 2001 Nissan Pathfinder

[www.hhokitsdirect.com](http://www.hhokitsdirect.com)

## Distance Run Data With Runs From 246.5 Miles to 276.5 Miles

HHO Generator	Amps to Cell	HP Chip	Distance	Liters of Fuel	Gal	*\$'s Per Gal	\$'s Per 22 Gal Tank	MPG	% Mileage Increase	\$ Per 400 Mi.	% of \$'s Saved
None	NA	No	276.5	60.08	15.87	\$2.99	\$65.78	17.42	Base	\$68.66	Base
Titan-772	28	Yes	267.6	46.60	12.31	\$2.72	\$60.94	21.74	24.78%	\$50.98	25.75%
Titan-772	28	Yes	246.5	42.39	11.20	\$2.72	\$60.94	22.01	26.35%	\$50.34	26.68%

**Certified Distance Run Data:** Collected and Recorded by ISO Auditor Howard P. Bankston Certificate #LA2/01US/997

### Base Distance Runs

Starting from the Texaco Station fueling point, at 26.5Km on Highway 1 to Caguas onto Highway 52 through the mountains to Ponce picking up Highway 2 to the intersection of 2 and PR100 and then back the same rout via Homaco to the fueling point for the fill-up.

**Distance Run Terrain:** Mountians, 2,047ft. 35%, Moderate Hills, 45%, Flatlands, 20%.

\* All Gas Cost are Calculated at the National Average on 7-10-10; \$ 2.99 Premium and \$2.72 Regular. Premium fuel was not required when HHO was introduced.

**Cell Operating Temperatures:** The Titan 772 was operated @ 28 amps for the duration of the 6 hr. plus distance runs. Utilizing a Raytec ST Pro laser temperature gun I recorded these readings at the end of the run: Cell Casing 118°, Terminals 94°, Car Frame to the side of the cell 116°. Mounting in front of the radiator provides excellent air-cooling.

## Local Run Data With Runs From 158.5 Miles to 269.2 Miles

HHO Generator	Amps to Cell	HP Chip	Distance	Liters of Fuel	Gal	*\$'s Per Gal	\$'s Per 22 Gal Tank	MPG	% Mileage Increase	\$ Per 400 Mi.	% of \$'s Saved
None	NA	No	158.5	46.87	12.38	\$2.99	\$65.78	12.80	Base	\$93.44	Base
Titan-772	28	Yes	225.2	53.73	14.20	\$2.72	\$60.94	15.86	23.94%	\$69.84	22.25%
Titan-772	28	Yes	269.2	62.55	16.53	\$2.72	\$60.94	16.29	27.27%	\$68.02	27.21%

**Certified Local Run Data:** Collected and Recorded by ISO Auditor Howard P. Bankston Certificate #LA2/01US/997

### Base Local Runs

Starting from Quentivilla Condominiums in Garnoba onto Highway 20 @ 55MPH for 7.6 miles to Highway 1, 35MPH Stop & Go for 17.8 miles plus another 2 miles of Flat City Roads.

**Local Run Terrain:** Moderate Hills 92.7%, Flat City Roads 7.3%.

\* All Gas Cost are Calculated at the National Average on 7-10-10; \$ 2.99 Premium and \$2.72 Regular. Premium fuel was not required when HHO was introduced.

### General Conclusions from the Performance Certification

The addition of HHO gas into the fuel system provides several benefits to the user and the environment. The charts and recorded results of the very controlled testing verify the fuel improvement but other non-measured benefits were very obvious, a much cleaner burning fuel and exhaust plus a smoother running engine.

In the near future I will be certifying performance in other makes and vintage automobiles, diesels and yachts. In the interest of our environment and reducing our countries dependence on foreign oil think HHO!

I would add one personal comment to this report: "Those that say a properly designed HHO system doesn't work either hasn't correctly installed a professionally manufactured product or they work for "Big Oil."