

Peugeot 505 FAQ and Buyers Guide-North American Spec

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The Peugeot 505 was the most successful of all Peugeot models sold in North America.

The 505 was sold in NA from 1980 to 1992. Models ranged from 4-Door Sedans to 8 Passenger wagons.

Like most other Peugeot vehicles the 505 offered many different models and engine combinations.

The 505 like most other Peugeots was styled by the famous Italian company, Pininfarina. It is no surprise that even today the 505 sports lines that make it a timeless classic. Despite consumer misconceptions the 505 was far from the economy minded diesel car. While Peugeot sold many a Diesel 505 due to rising fuel costs, they also sold many normally aspirated, turbocharged and V6 gasoline (petrol) models. In this document I hope to answer questions and provide information on those who are curious in purchasing a 505 for transportation, racing or collection purposes.

Body Construction

All models of the Peugeot 505 are constructed on an all-steel unibody frame. The sedans have a 108-inch wheelbase. The 505 wagon has a longer 114.2 inch wheelbase and has a half-ton cargo capacity. Both models are designed by Pininfarina and features design that was modern to its day, and still remain stylish. The forward slope of the hood and backward slope of the windshield yield aerodynamic benefits and esthetic beauty that is common on all Peugeot models. It should be noted that Chrysler was consulted by Peugeot to help with targeting the 505 to North Americans. Chrysler to this day continues to “borrow” their innovations from French carmakers. The 505 from a stylistic point of view is a very flowing car. All of its lines seem to flow and converge with subtle smoothness.

The 505 body is also a very durable body. Many owners have had accidents that yielded little damage to their cars and greater damage to cars that have hit them. My mechanic mentioned a 505 of his that was hit hard in an accident. The first body-straightening machine was not strong enough to pull out the 505's sheetmetal! The owner of the machine exclaimed that most Japanese sheetmetal usually tears on this machine. The 505 was truly ahead of its time in the safety department. All 505's have crumple zones, windshield and door pillars are designed as box sections, and the doors contain side-impact beams. The 505 was also designed with the philosophy to avoid wrecks, and this can be felt most by the way it handles.

More on that later.

Engine Choices

Peugeot has offered a Variety of engines over the course of the 505's life. Here is a partial rundown according to a 1987 fact book:

- ZN3J 2.8 liter (2849cc) V6, fuel-injected, overhead camshaft (STX,STI 2.8 models)
- N9Txx series 2.2 liter (2155cc) 4 cyl, fuel-injected turbocharged, intercooled (86-later only), overhead camshaft (Turbo, Turbo GLS, Turbo S models)
- ZDJL 2.2 liter (2165cc) 4 cyl, fuel-injected, overhead camshaft (GL, GLS, STI models)
- XD3T 2.5 liter 4 cyl, fuel-injected, turbocharged, diesel (GLS 2.5 TD model only)
- XN6 2.0 liter (1971cc) 4 cyl, fuel-injected, overhead valve (Liberte models only)

Other Diesel types:

XD3 2498cc	\
XD2 2304cc	+--- Europe
XD3TE 2498cc Turbo	/

US-Spec:

XD2 2304cc 80
XD2C 2304cc 81-83
XD2S 2304cc Turbo 81-86
XD3T 2498cc Turbo 85-86

Non North America Gas motors:

XM7A 1796cc Carb
XN1 1971cc Carb
ZEJ(K) 1995cc K-Jet

Note: All North American 4-cylinder gas motors before 1987 were XN6. The Liberte model was offered in 1987 only. For more in-depth information visit this link: <http://www.vectorbd.com/peugeot/motor.html>

All Peugeot engines have excellent breathing properties. Cylinder heads feature hemispherical-shaped combustion chambers, large valves, single overhead camshafts, and tuned manifolds. The XN6 is the exception with its cam in the block and use of pushrods. The hemispherical head is also a Peugeot first, dating back to the Peugeot 203 in 1948 as the first production car to use such a head. It has been said that the 203 engine was used as an influence for the Dodge Hemi-cuda V8! All Peugeot 505 engines also use full electronic ignition systems, as well as Bosch Jetronic fuel injection systems. A breakdown follows:

XN6 = K-jet
ZDJL= L-jet
ZN3J= LH-Jet + EZK Ignition
N9Txx=L-Jet + EZK Ignition

The V6 engine is an all aluminum engine designed by Peugeot, Renault and Volvo, and is commonly referred to as the PRV. The PRV has been used in various forms in Volvos, Renaults, Alpines, De Loreans, Eagles, Venturi, and finally Peugeots. While there have been problems in the Volvo versions, the Peugeot versions are nearly indestructible and can be expected to give over 300,000 miles before rebuild if properly cared for. The PRV engine is a 90-degree V6, most V6's are 60 degree. In earlier 604 models one could notice a slight mechanical imbalance at idle due to the 90-degree layout. Peugeot has refined the ZN3J in several ways. The crankshaft journals are offset 30 degrees to insure a combustion stroke

every 120 degrees, which is identical to the firing cycle of a typical V6. The ZN3J also employs gear-driven counter-rotating flyweights on each end of the right-hand camshaft. This helps filter out any other engine vibration. Peugeot claims that with this the ZN3J could be one of the smoothest running V6's in the world.

Also worth noting is that Mercedes-Benz is also producing a similar system for their V6's. (As of 1997) The ZN3J also has the Bosch LH-Jetronic fuel-injection system that uses Platinum heated wire to measure incoming air resistance as a method of adjusting fuel-air mixture. The Bosch ignition system is also a Cartographic system. This means that the system compares many environmental factors such as engine speed, temperature, ignition timing, and throttle position, with hundreds of "maps" stored in its memory. The system also automatically maintains a 750 rpm idle regardless of load.

Suspension

The Peugeot 505 is an excellent handling car, as all Peugeots are. Those who are accustomed to American cars will be in for a treat. Nothing shows off the 505 better than driving a Mercury Grand Marquee beforehand. The 505 has very responsive steering, with little vagueness, and almost no play. The 505 excels at swerving to avoid obstacles, and is easily brought back into control. The steering wheel also provides a level of road-feedback that is neither harsh nor masks road conditions. Those seeking a car that allows the driver to actually drive the car will not be disappointed. Another area where the 505 (and ALL Peugeots) is unrivaled is in shock-absorber technology. The shock absorbers on the 505 are designed, manufactured and patented by Peugeot. They feature twice the number of valves (8) of your standard shock and provide excellent dampening. Peugeot shocks are rebuildable, except on some later models, and should never deteriorate before at least 150,000 miles. According to Pat Whale of the French Revolution, the true test of shock-absorber condition is the 50 MPH railroad crossing check. Pat indicates that the 505 should cross the tracks with a simple "da-dun" and minimal recoil. On the humor side this tactic was one of a Houston, Texas salesman's favorite....find a nice road hump and take it a 70 with a family of 4. I was told that families took the salesman's word when he offered to show off the brakes! One thing that should be investigated on a high mileage car is whether or not the shocks have been replaced with Non-Peugeot shocks. If records indicate that it has this may leave room for negotiation. If this is the case on a V6 or Turbo there is now reason for a nice price decrease. The Turbo S and V6 models have a specially designed Nil-Offset suspension that was designed complement the Anti-Lock Brake system found in these models. Unlike the non-ABS models the Turbo S and V6 models do not have the option of being refurbished by means of an insert cartridge. Regardless of models if price takes a backseat to comfort and handling, by all means have the shocks rebuilt.

Brakes

All 505's with the exception of wagons have 4 wheel disk brakes. As with the suspension, the brake system on the 505 is heavy duty. Large rotors, calipers, and wheel bearings assure a skeptic that corners were definitely not cut here. A Mercedes-owning (or should I say Dodge?) friend was quite impressed with the hardware when witnessing my front pad replacements. Not much more can be said besides the fact that they obviously do their job quite well.

The 1987 and up Turbo S's, STX, and optional STI's feature the ATE Anti-Lock Brake System. The ATE (also known as Teves) system is used on the 505 is a 4-Channel system. Each wheel contains a speed-sensor that can detect if a wheel is spinning and hydraulically change the delivery of brake pressure to that wheel. I can personally vouch for the ATE system, as I am a frequent user of it! However one should be aware of lit ANTI-LOCK and BRAKE lights on a potential car. These indicate possible problems with the system. For more on this please refer to the Problems and annoyances section.

Transmissions

All 505's feature a choice of 5-Speed manuals, or 3-Speed automatics on earlier cars and 4-Speed automatics on later cars. The Peugeot 5 speed is a well-built unit. As always proper maintenance extends the life of all products and the 5-speed is no exception. The German built 3 Speed automatic ZF-Transmission is also a well-built and reliable unit. The 4-Speed automatic (ZF4HP22) has had good and bad years, 1987 was a bad year.

Buyers of all 505 models with the 4HP22 should investigate the repair records and perform a thorough test drive. Owners of BMW, Jaguar, Volvo, and Range Rovers of the 1987 model year also experienced similar problems. For a list of potential problems see the Problems and Annoyances section.

Problems and Annoyances

Like most cars of age the Peugeot 505 can have its share of annoyances. Electrical problems can usually be tracked to bad relays, improperly grounded wiring, or water. Most 505's that have been properly cared for should have minimal problems. Avoid cars that have been re-wired or modified by a non-Peugeot mechanic. I have seen many good cars with basket-case electrical problems due to incompetent mechanics trying to modify what they never understood in the first place. Most good Peugeot mechanics should be able to sort out any problems you have. Most other problems are typical of older cars; starters that need replacement, dead alternators, new mufflers, tie rod ends, and Plastic. Make sure the car you buy has been cared for in a proper way and that the plastic has been taken care of.

Two items of concern that must be mentioned are the ABS system and the ZF 4-Speed Transmission. Attention should be paid to a car that is equipped with the ATE/Teves Anti-lock Brake System. According to ITT (The owner of ATE/Teves) the 505 ABS system has a cycle life of 10 years. This does not mean that a 12-year-old car is in danger of a malfunctioning ABS system, only that greater care and observation is needed. The most common problems are associated with bad speed sensors on the front wheels and electro-magnetic interference from the EFI computer. Buyers of ABS equipped cars should be cautious of cars with lit "Anti-Lock" lights and wary of cars with lit "BRAKE" lights. Since the diagnosis of ABS problems is a rather in-depth task it is best left to a competent mechanic. I had the opportunity of a visit by an ITT engineer, and had many of my ABS related questions answered. Potential owners who hear a pulsating noise emitting from the left side of the dashboard should not be alarmed. This is one of the known sounds of the Teves ABS system and does not indicate a malfunction or unsafe condition. According to ITT this sound reflects the coil energizing, and occurs on units as new as 5 weeks old.

Other issues are with high-mileage speedometers. The Jaeger-model (Magnetti-Marelli) speedometers are total garbage and are prone to failure around 130,000 miles. Most items that go are the odometer and speedometers. These can be serviced by most speedometer shops. Since the mechanicals are made of plastic, they tend to gum-up and wear out. A simple cleaning should fix this. The Veglia speedometers on the older cars are relatively trouble free.

Hirshmann power antennas can stick at times and may refuse to power up or down. Most times this is a bent antenna or dirty motor. Hirshmann will rebuild your antenna for around \$90.00. Sufficient lubrication of the antenna will prevent most problems from occurring.

One other issue is with insufficient voltage reaching the starter motor. This occurs on some models. Most of the time this can be remedied with the addition of adding a relay to the starter wiring. The cause of this can be attributed to older wiring causing a drop of voltage at the end of the connection.

Resources for finding Peugeots

Peugeot sold quite a few cars in North America. Here is a break down according to Flamman's Imported Car book:

80+81 29,000 all Peugeots not just 505
82 14,000 all
83 15,000 505+604
84 20,000 “ “
85 15,000 505
86 14,000 505
87 9500 505
88 6700 505
89 6000 405+505
90 4200 405+505
91- unknown

Conservative estimates would say that there are 5000 505's still in operation. Given the durability of the 505 there could be a good deal more. Of those remaining there is a great deal of differentiation of quality. Considering that the oldest example is soon to be 20 years old (1979) so some things are bound to be shabby. Still it is not very hard to find a good example in good to excellent condition. The first place to look is at your local Peugeot Dealer/Mechanic. They tend to see a good deal more Peugeots than you do, and may know of someone in the market to sell. Another place to look is in your local newspapers. These will provide you with the car closest in proximity to you. You may also want to use the Web to scan the online classifieds of your city and other cities in your surrounding area. While on the Internet there are vast other resources such as Usenet (Newsgroups), mailing lists, Auto Classified Services, and Search Engines. You should also check out the online Peugeot parts dealers as they sometimes list cars for sale. Your best bet once you're on the web is to access Jim Lill's Peugeot Resources Worldwide web page. There are well over 700 links to Peugeot related items, and have links to most items mentioned above. The last resource I would like to mention is Used Car lots. If you are buying from a car lot that does not have some sort of Peugeot connection, do your research and take the car to a competent Peugeot mechanic.

Resources of the web

Peugeot Resources Worldwide- **Error! Reference source not found.**
The French Revolution- **Error! Reference source not found.**
Baillie's Autosport- **Error! Reference source not found.**
PeugeotHolm- **Error! Reference source not found.**

What to look for when viewing the car.

Of course you want to find the tidiest example both inside and out.

Turbo Models

On Turbo models look for smoke during startup, idling, and acceleration. Turbos that have not been maintained will exhibit smoke. This could be any number of things. Blown Turbos, and cracked heads can all be replaced, but at considerable cost. Figure replacement into the asking price. Asking the owner to knock off \$1000+ dollars is not unreasonable. When test driving the Turbo, be sure to keep a watchful eye on the boost gauge. Cars that boost all the way into red should immediately be inspected, as prolonged overboosting can kill the turbo and crack the head.

V6 Models

The V6 is a noisy engine. If you are used to Japanese and American motors then you might think as I thought... "ohh noo something's knocking" More than likely this is not the case. As mentioned before the V6 has a counter-balancing mechanism and this contributes quite a lot to the engine. One other item that contributes to loud engines is the lack of regular valve adjustments. The PRV V6 needs to have its valves adjust every 40,000 or so miles. Most owners do not have this done. The PRV V6 is very forgiving and will continue to operate just fine. (Several owners with high mileage examples can attest to this.) Check for oil leaks around the back of the engine as the rear main seals tend to leak. Also check the distributor for oil residue. Distributor seals sometimes leak and accumulate oil.

As with any European car check the owners maintenance logbook for regularly scheduled servicing. Look for frequent oil changes, belt changes, hoses, and timing belts. Look for cars that have been owned by religious Peugeot fanatics.... and then question why they are selling it!

XN6,ZDJL, and Diesels coming soon.

In closing I hope this guide has been helpful in answering your questions. This is the first release of the FAQ and I expect some items will change. If you have any comments or questions please direct them to my attention on the Peugeot Mailing list. (see <http://www.vectorbd.com/peugeot/list.html>)