

LUBRICANTS FOR THE PORSCHE 928, 928S, 928S4, GT AND GTS

Prepared by Doug Hillary - Airlie Beach, Australia

(Updated "e&oe" August 2009)

This Post is in a six parts. Of course the reader must in the end make their own choice of lubricants! Information will make the choice a reasoned one!!

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Preamble

PREAMBLE

The subject of lubricants for the Porsche 928 is **complex** for some and a **religion** for others. It is really all quite **simple** but the real problems are obsolescence and constantly emerging technologies

Complex. It is complex now because of the extensive range of modern lubricants available. These are constantly being updated as new engine/chemical technologies emerge and become available at a competitive price

Religion. Lubricants are a “religion” for some. Many people have a history of using a certain Brand or viscosity range or maybe they are simply biased against a Brand or the Oil Company involved

Simple. It is all quite simple really as is all written in the Porsche 928's Driver Handbook. The problem is that the Lubricant specifications and the API Quality standards outlined in the Owner Manuals are now long since outdated. The good news is that they have been regularly super-ceded by the almost annual Technical Information Service Bulletins (TISBs) released by the Porsche Engineers in Stuttgart

This Link shows the progression of 928 engine lubricant recommendations over the life of the 928:

<http://928.landsharkoz.com/Blogs/tabid/370/EntryID/13/Default.aspx>

Complexity

No “magic elixir” lubricant(s) exist despite the many claims otherwise. Yes, some oils are marginally better than others in some areas and in a general sense you get what you pay for. Expensive Group 5 ester derived synthetic lubricants (sometimes using coconut or other oils and/or more advanced substances) certainly have some benefits. They can be quite expensive and the benefits occur mainly under severe heat stress and at very low temperatures. Group 3 synthetic or semi synthetic lubricants and especially Group 4 lubricants can minimise wear in valve train components and keep the internals cleaner. These benefits show up after many thousands of kilometres of use - sometimes longer than most people keep their cars. Some offer better corrosion resistance in engines that sit inactive for long periods. The best synthetic lubricants appear to be the Group 4/Group 5 hybrids

Religion

Many people treat their automotive lubricant choice as a “religious” issue. They have their own special Brands or brews, or they use the Brands and types recommended by so-called “experts”

Most likely, advertising plays a major role. But at the very extremes of racing or rallying as advertised, where special “brews” or formulations are sometimes used and these are developed by extremely skilled people.

In the real World there is actually very little difference between the various brands and types of oils - both mineral and synthetic - as long as they meet the same Manufacturer and/or ACEA standards

Brands

The real issue here is to consider a few facts;

- a) Lubricants meeting the same specification from all Oil Major Companies will perform about the same. Any difference in engine life will be minimal
- b) “Boutique” Oil Blenders such as Redline, Amsoil etc purchase their Additive Packs and Base Fluids from a small group of suppliers. The largest supplier of advanced Base Fluids is ExxonMobil. No Boutique Oil Blender has ever produced a lubricant of higher quality and performance than that of a Major Oil Company – when compared specification to specification. They charge more only to deliver the same or

- perhaps even a lesser quality/performance product.
- c) The major Oil Companies spend Billions annually on lubricant research and development VW, BMW, MB and Porsche (and many others) have resident Oil Company Engineers from their lubricant suppliers that carry out in-house R&D
 - d) Unless controlled Lab Tests are used it will take around 1m miles to compare one lubricant against another by using Used Oil Analysis (UOAs). That is, two million miles to compare two lubricants. Even then and due to many variables, the results will most likely be inconclusive
 - e) One additive such as ZnDDP does not make a lubricant. Chemists and Blenders use Lab Tests, field trials over millions of miles and the likes of Radioactive Tracer Technologies (RATT) and etc. to accurately measure lubricant performance. The lubricant must then pass the API and/or ACEA Quality Testing sequences. After that the Manufacturer (such as Porsche) approves the end product if it passes their additional demanding and specific Tests. In the case of Porsche this includes foaming controls and viscosity retention over extended trials amongst others
 - f) Using a lubricant with the correct specification is most important – the correct viscosity is a prime part of this!
 - g) Using a Porsche Approved and Listed lubricant (or in a 928 as an alternative, a viscosity compliant “mixed fleet” HDEO) is the very best insurance Policy available

Additives

No “magic additive” such as Slick 50, Wynn’s etc. has ever been shown to extend the life of an engine. No research has ever conclusively proven that the likes of Teflon actually work at all in lubricants in automotive engines despite the regular advertising (even DUPONT says that it doesn’t).

New Anti Wear (AW) chemicals and other “new age” tailored additives form the original lubricant’s blended Additive package. This is tailored to the Base Fluid used. These new combinations have been introduced during the last decade or so and are proving to be at least as good (or better) than the old types that are being gradually withdrawn! This has been the process for lubricant development over the last several decades

Some “older” chemical additives that still form part of the Additive package, such as ZnDDP and MoS₂, do work very well - at the levels already carefully blended into good quality “branded” lubricants. **With these chemicals it is not a case of “the more the better”! In fact it may be the reverse! This is especially so with the latest lubricants where the chemical mix is already very complex in its own right!**

Don’t add anything at all to your oil - it can do more harm than good. Additive “clash” and overdosing is a very real issue - almost similar to adding too much sugar to water! Some supplementary additives such as ZnDDP may actually pollute exhaust catalysts or cause localised build up of deposits

Summary

Contrary to many unproven theories, the new wave of Porsche Approved lubricants and API and/or ACEA Quality rated Heavy Diesel Engine Oils (HDEOs) are significantly better products than ever before. The Chemists and Blenders that produced your expensive oil have taken great care to provide the very best products available. This is why using Porsche Approved lubricants (or certain “mixed fleet” HDEOs) is so important in a 928!

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PART 2

Oils ain't oils
Oil type (mineral versus synthetic)
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Oil specifications

OILS AIN'T OILS!

Sadly, very few Mechanics and Repairers have a "professional" knowledge of lubricants. Some Oil Company Sales people also have very little Technical knowledge! It is also true that many prejudices and myths about lubricants exist in workshops. Most automotive workshop Employees and Employers have never been trained in lubricant technology area recently - if ever at all. Most will simply sell the product that returns the best profit to them or the one they feel "comfortable" with or "believe" in. Sometimes it is simply an "I know better" attitude and such opinions are not usually based on reality!

This applies to some Porsche 928 "specialists" too! Therefore and with due respect, do not simply take their word or advice about a product as being "absolute"! And, like at a Doctor's surgery, always ask questions! You are paying the bill and you own the car!!!

Do some homework for yourself as well - use the Porsche Handbook as a starting point, try and get the latest Lubricant TISB and consult with others

If in doubt call the Oil Company's Lubricant's Engineer who will give their answer accurately

LUBRICANT TYPE (MINERAL versus SYNTHETIC)

The early 928s were delivered with a factory fill of mineral oil but the 928's engine was designed with synthetic lubricants in mind right from the very start and long before production commenced.

Since 1992 Porsche have used synthetic lubricants as the factory fill. In the 928 it was Shell's TMO in a 10w-30 viscosity. After "in field" experience they moved on to a more viscous 5w-40 version of TMO

In Service Bulletins just prior to the cessation of 928 production and again about 2000, Porsche issued retrospective standards and specified a synthetic 5w-40 ACEA A3/B3(B4) engine lubricant

For a 928 a synthetic 5w-40 "mixed fleet" Heavy Duty Engine Oil (HDEO) is probably the best choice of all and far exceeds the A3/B3 or A3/B4 ratings

NO EVIDENCE

There is **NO EVIDENCE** that synthetic lubricants will make an engine last longer

There is **NO EVIDENCE** that modern synthetic lubricants will make an engine leak, they may in fact assist in controlling minor seepage if the lubricant is Ester based

A LOT OF EVIDENCE

There is **A LOT OF EVIDENCE** that synthetic oils perform better at very low and very high temperatures. They will typically keep the engine's "internals" cleaner over a longer period. As a bonus they also offer a degree of "protection" in an overheated engine. They may reduce valve train wear in certain types of engines

There is **A LOT OF EVIDENCE** that synthetic gear lubricants and Auto Transmission Fluid (ATF) will make these components last much longer and perform much better at very low and very high temperatures. Some synthetic gearbox lubricants will last for up to 1 million kms or more. They will handle over 125000 gear changes and beyond - with very little component wear or lubricant degradation

SPECIAL NOTE - If you do not know what lubricants are being used in your car now read the "WHAT'S IN IT NOW??" section at the end of the document

THE 928 ENGINE'S OIL

NOTE 1 - FIRSTLY, IN NORMAL USE 928 ENGINES ARE VERY EASY ON ENGINE OIL!

The same Handbook lubricant recommendations have applied virtually from first release 928 to final GTS production. Mandatory improvements in lubricant technology have caused many changes on the way and many 928 engines have between 500 000 & 800 000kms on them without a rebuild! Only the minimum Technical standards for Porsche 928 engine oil has been used throughout this document!

OIL SPECIFICATIONS – QUALITY & PERFORMANCE “RATINGS”

Porsche's 928 oil specifications were initially based on the American Petroleum Institute (API) quality performance ratings. Check your Handbook - they will look like this "SH/CD" on the container

After 1996 the ACEA's (Porsche plays a pivotal role in ACEA) quality ratings have been widely embraced by all Euro engine makers!

API rating examples;

S? (S = **spark ignition**) is a petrol engine rating with the second letter being the quality level (SM> is the latest - in 2005)

C? (C = **compression ignition**) is a diesel engine rating with the second letter being the quality level (CJ-4> is the latest - in 2006)

The 928 requires both petrol and diesel oil ratings for its engine oil and the container should read SH>/CD> (or higher - see later). Porsche has always insisted on the secondary diesel oil rating

ACEA rating examples;

ACEA ratings are those determined by the European Engine Manufacturers and were first introduced after the last 928 was built but they are much more important to us, and independent of the API

In the ACEA rating system “A” applies to petrol engines and “B” applies to light diesel engines

The approval quality is shown as a number. The approval year is shown after the letter and number (eg: A3-07). If there is also or only an “ACEA” rating on the lubricant container it should always be “**A3/B3 or A3/B3/B4 or A3/B4-96>**” for a 928 regardless of the API rating! This ensures that it will meet Porsche’s minimum quality standard **but see NOTE 2 below**

References in here to HDEOs refer to “mixed fleet” (diesel/petrol engines) lubricants and the ACEA “E” ratings apply. These lubricants exceed the performance of the “A” and “B” ratings

*The ACEA’s wear performance Quality standards have remained the same since 1996!
Some have become stricter in areas of emission/wear controls*

NOTE: ACEA ratings as “A1-04” or “B5-01” (as examples) are totally unsuitable for the 928!

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PART 3

Viscosity

VISCOSITY (SAE - "THICKNESS" GRADING according to SAEJ300)

Oil viscosity grading uses the Society of Automotive Engineer's (SAE) J300 system which has been around for many decades. For engine oils it commences at SAE 0W (cold start) and ends at SAE 60.

The viscosity grade is shown as a single number for mono-grade oils (eg. SAE30) and by using two numbers for multigrade oils (eg. SAE 15W-40).

The viscosity is always given at two points, 40C and 100C. For Porsche 928's a viscosity rating called "High Temperature High Shear" (HTHS) which is measured at 150C is critical – it must be at/above 3.5cP in our engines when used normally. Personally I prefer a lubricant at around 4cP

Multi-grades grade lubricants have a lower cold start rating and an upper viscosity limit. As an example a SAE 15W-40 lubricant must fit between 12.5cSt and 16.3cSt at 100C and have a High Temperature High Shear (HTHS) viscosity at 150C of 3.7cP

The 15W (cold start) rating indicates that it must have a maximum low temperature pumping viscosity of 60000 cP at -25C

NOTE: The ?W rating applies only to the cold start/flow characteristics of the lubricant. Therefore in general terms 0W-40, 5W-40 and 15W-40 lubricants will all have relatively similar viscosities at 100C but will flow quite differently at lower temperatures – they may have different HTHS viscosities (at 150C) too

It was recognised by ACEA in 1996 that an engine lubricant's HTHS viscosity measured at 150C has a significant influence on both engine and oil durability. Porsche uses this as a baseline for their Approval system

The correct viscosity for YOUR CAR AND CLIMATE is extremely important and it is shown in your Handbook. Whilst this has long been outdated by Porsche TSBs this is the prime guide if you chose to use non Approved oils. After all the Porsche Engineers knew and still know the 928 engine best!

As an example, a non Approved 15W-40 viscosity multigrade HDEO is suitable in a 928 at down to -15C. The 15W bears no relationship to the -15C temperature figure it is a cold start lubricant rating. A 15W-40 viscosity HDEO is suitable in a 928 for temperatures up to 40C, and at higher temperatures for short periods. The 15W-40 viscosity range therefore embraces both these extremes very well for most owners

In a general sense;

Mineral Oils (Porsche suggest a minimum of a Group 3 synthetic from MY84)

1 - For 16v engines a 15W-50 viscosity lubricant is a good all year round choice

A 15W-40 HDEO can be used too – see “NOTE 2” below.

A 20W-50 mineral oil should be a last choice and only in a suitable ambient temperature range

(Note that 25W-50 or 10W-60 etc oils should NOT be used in your 928's engine)

2 - For 32v engines 10W-40 or 5W-40 viscosity lubricants are good all year round choice

A 15W-40 HDEO can be used too – see “NOTE 2” below

A 15W-50 should be a last choice

(Note that 25w-50 or 10w-60 etc oils should NOT be used in your 928's engine unless racing)

Synthetic Oils (Group 3 (hydro-cracked), Group 4 (PAO) and Group 5 (Ester))

Porsche issued TISBs in 1992 and just prior to the cessation of production - and again in 2004, and specified a Group 3 synthetic 5w-40 grade A3/B3 lubricant as a minimum requirement

3 - For 16v engines a 15W-50 lubricant is a good all round choice

A 5W-40 petrol engine lubricant or an HDEO can be used too

A 20W-50 should be the last choice

4 – For 32v engines a 5W-40 (or 10W-40) lubricant is a good all round choice

A 5W-40 HDEO can be used too

A 15W-50 should be the last choice

(Note that unless racing 10W-60 synthetic oils should NOT be used in your 928's engine)

5 - For all GTS engines a 0W-40 or 5W-40 synthetic lubricant should be the only choice

Never use ultra low viscosity lubricants such as 0W-20 or even 10W-30 in any 928 engine - these will NOT be ACEA rated as A3/B3 and they may cause premature wear!

NOTE 2 - “MIXED FLEET” HEAVY DIESEL ENGINE OILS - (HDEO)

A 928 engine that is in good condition will take very well to a “mixed fleet” HDEO

Such oils have the previously mentioned API ratings reversed (instead of being labelled “SH/CI-4” it would read CI-4/SH). They usually come in a 15W-40 viscosity mineral or semi-synthetic oil.

As mentioned earlier they exceed the ACEA’s A3/B3/B4 HTHS ratings too

At the very highest level of lubricant quality the HDEOs are available as a 5W-40 viscosity synthetic

These “mixed fleet” synthetic HDEOs will assist in keeping the engine and its engine’s oil cooler, various valving, valve lifters, oil galleries and the oil pump screen cleaner. The latest versions (2007>) will have a CJ-4>/SM> rating. As synthetics these oils are at the very top of the pecking order!

Earlier API ratings for these HDEOs - CD>/SH> - will be suitable for your car too - and at a much cheaper price than some other “normal” oils that are extensively advertised

Check your Handbook to confirm the correct viscosity for your car's operation but a 5w-40 lubricant can be safely used at the lowest cold start temperatures likely to be normally encountered

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PART 4

Oil pressure-oil flow
Oil cooling
Oil filter

OIL PRESSURE - OIL FLOW

Oil pressure is a factor of resistance to flow and the 928 has high oil pressure as standard!
The oil's flow is constant for every revolution of the oil pump and a factor of the oil pump's capacity

The 928's engine has a relief valve that opens at 8 or 9bar (depending on the MY) - this is a very high setting indeed!

This means that very viscous oils (**such as a non specified 25W-50 mineral oil for instance**) when cold will have a lot of the oil flow by-passed back to the oil pump via the relief valve and without being fully circulated. They will also tend to by-pass the full flow oil filter via its differential by-pass valving in this condition for much longer time too – giving minimal filtration - perhaps for up to 30mins after a cold start!

It is worth trying to limit revving the engine above 3000 rpm with any cold oil - IT IS NOT A GOOD PRACTICE and should be avoided if possible until a normal hot idle oil pressure is reached.

This can take up to 30 minutes

This Link may be of interest:

<http://928.landsharkoz.com/Blogs/tabid/370/EntryID/14/Default.aspx>

A **RENNLIST 928** owner survey showed that the following Oil Pressure readings are "normal"!

The 928's oil pressure parameters (with the oil's temperature at 80C-100C) are;

@ idle 1 to 1.50bar (no figure is given by Porsche) Porsche uses 1.5bar in other engine families

@ 3000 rpm >4bar (later engines 5bar)

@ 4000 rpm 5bar (later engines)

@ 5000 rpm 5bar

A lighter viscosity oil (5W-40 compared to a 5W-50) when hot may give a lower oil pressure reading at idle but flow will still be maintained (there is no engine load anyway) with no lubrication system by-pass

Early 32V engines had their oil pump modified in order to show better pressure at idle.

The upper rev range oil pressure **MUST ALWAYS BE MET** on any engine!

From MY82 the cylinder heads contained non-return valves to ensure rapid lubrication of the valve lifters. Earlier cars may suffer from some lifter noise on cold start if the engine has been inactive for some time or when using non-Approved mineral or high viscosity lubricants

OIL COOLING

Learning from its experience with their air cooled engines and their mandatory oil coolers, Porsche wisely decided that oil plays a special role in cooling the 928's engine too. From the very start the 928 had a large oil capacity and thermostatically controlled oil cooler. Its thermostat commences to open when the oil reaches 87C

The oil cooler is an integral part of the 928's overall cooling system. It is most important in those (few) S4 cars that have "under piston crown" oil jets that operate at 4bar oil pressure and above and that were installed briefly in MY87. The jets do help transfer heat from one of the hottest engine components directly into the sump oil enabling the oil cooler to carry out its true "secondary" cooling function

Comparable viscosity synthetic lubricant will usually operate at up to about 10% lower temperature than a mineral version. This has a desirable outcome for the oil and the components it touches – just as Porsche intended!

An engine lubricant is best kept operating in a temperature "band" from about 88C to about 110C and the 928's total cooling system handles this task very well indeed. Anti Wear chemicals (Pho/ZnDDP) are active above about 40-50C and they and others operate selectively at various temperatures

Some 928 Owners who have experienced very low OP at hot idle have replaced the oil cooler thermostat valves and springs which has restored the OP to "normal"

From my experience the 928S4 will usually have an oil temperature of from 88-95C in normal use. This means that a 15W-40 lubricant is actually functioning as a SAE50 lubricant at that temperature!

From a cold start the oil's temperature trails the coolant's temperature by around 20C for the first 20 minutes or so depending on the ambient temperature

OIL FILTER

It is wise to use only a MANN, MAHLE or KNECT Brand filter. These are very special in their construction with a large contaminant capacity and a very high pressure differential by-pass relief valve. This ensures the earliest possible filtering of cold oil. MANN filters are rated as the very best by many people

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PART 5

Oil change interval (OCI)
Oil consumption
Transaxle
Auto transmission

OIL CHANGE INTERVAL (OCI)

Porsche has always recommended around 20k kms or a maximum of 12 months (changed in the spring) as their OCI for the 928. They promoted this aspect based on the engine's design with the massive sump capacity, the thermostat controlled oil cooler and the excellent oil filter. My own testing shows this to be conservative and with a hefty safety margin even for the oils of that time.

With Porsche Approved lubricants the recommended OCI is a real breeze! Most CI-4>/SL> "mixed fleet" HDEOs would easily go out to two years or 25k kms of use. The annual time limit however should be observed. Always change your oil in the spring (as the maximum time OCI) if the kilometre limit has not been reached before then

NOTE 3 – USING USED OIL ANALYSIS TO SET YOUR OCI

A systematic programme of Used Oil Analysis (UOA) on my car's synthetic oil over many years has confirmed Porsche's OCI recommendations and with a considerable margin in reserve. This oil would have lasted for around two (2) years or more with ease

As mentioned earlier, always use a genuine MANN or MAHLE oil filter. The design of this filter allows the oil to be filtered earlier when cold thereby extending the life of the oil and the engine

NOTE 4 – CHANGING OIL OFTEN

Contrary to common perception, changing oil more often than recommended has been shown to be likely to increase engine wear. Ongoing SAE and University of Michigan studies appear to have shown that the greatest wear occurs in the first 3000km of an oil's life in an engine!

There are many reasons for this which we cannot cover here but mostly they relate to the anti-wear chemicals used in the old oil's additive package being stripped away and being replated by the new lubricant

Porsche's recommended drain intervals for the 928 engine family when using their Approved and Listed lubricants are already long enough. Their Approved lubricant List includes Group 3, 4 and 5 and some of the Group 4/5 hybrid variety

NOTE 5 - IF YOU RACE YOUR CAR A VERY CAREFUL SELECTION OF THE OIL IS NEEDED.

In any event it needs a HTHS viscosity of 4>cP.. A reduced OCI may be needed too and this can be confirmed by a \$50 UOA

OIL CONSUMPTION

The 928 engine family is not known to use a lot of oil in normal use. Even engines with considerable

kilometres on them still seem to fit into the original consumption guidelines
Since MY81 the Porsche factory however has consistently published the following consumption rate as the “maximum permissible” when using the recommended oil type and correct viscosity

MY81 and prior - 1.0 litre per 700 kms (approx.)

MY82 onwards - 1.5 litres per 1000kms

If your car uses oil at the above rate or less this is judged to be permissible by the Engineers who designed the engine. You might not like it but that’s the way they saw it then and they still do!

If your car uses more than this you have a burning or leakage problem to be attended to

Check for leaks and repair as required. Then, the car’s oil consumption can be monitored using a 5w-40 or 15w-40 oil and by keeping accurate records. Letting the oil go from Full to Low on the dipstick equals 1.5 litres used

TRANS-AXLE (AND THE AUTO TRANSMISSION CAR’S DIFFERENTIAL)

The trans-axle requires a 75w-90 (was SAE90) GL5 API rated gear oil. A fully synthetic 75w-90 will always do a better job than a mineral oil. Some new formulations of these oils are now rated as both GL4 and GL5. The GL5 rating must always be present on the oil’s container when used for the 928

Use Porsche’s recommended OCI if you are using a normal GL5 mineral oil

If you choose to use synthetic GL5 gear lubricant you can safely double the OCI or it can be done after 100 000kms of use

Check the lubricant level regularly and adjust according to the Driver’s Handbook

NOTE 6 – SUPPLEMENTARY ADDITIVES?

DON’T ADD ANY ADDITIVES TO MANUAL OR AUTO TRANSMISSIONS - THERE IS ALWAYS A DOWNSIDE TO THIS PRACTICE!

AUTO TRANSMISSION

The Automatic Transmission Fluid (ATF) is the most complex lubricant used in your car and it needs to be regularly checked. Its task is truly amazing. It is a hydraulic lubricant, a coolant, a cleaner, a friction medium and a sophisticated gear lubricant as well - all in one very sophisticated combination

All modern ATF’s are at the least “part synthetic” and a GM-Dexron 3 rated ATF is recommended for both the three and four speed 928's MB transmissions

Porsche’s recommended ATF change period is valid if you use a “normal” ATF. Changing the ATF, draining the torque converter and changing the filter is really all that is needed. If you race the car and use a mineral ATF it (fluid only - not filter) should be changed according to a UOA report or at half the recommended interval

NOTE 7 - FLUSHING?

There is some evidence that “flushing” any auto transmission may cause premature transmission failure! My advice is to avoid flushing your transmission unless some guarantees are given by those recommending the process - and the guarantees should be bullet proof!

A fully synthetic ATF such as Castrol's Transmax Z is a real plus in the 928. This particular fluid which meets many German Manufacturer specifications seems ideally suited to the Mercedes Benz made transmissions. You can expect smoother changes and a reduction in operating temperature of up to 20C. The temperature reduction significantly prolongs the life of all transmission components

If you do use Castrol's Transmax Z the recommended OCI can safely be doubled or it can be done after 100 000kms use

NOTE 8 - THE A28 4 SPEED AUTO

a) This transmission includes a drain hole should fluid leak between the Transmission and Diff unit. Leakage from here will require the replacement of various seals

b) The transmission requires the regular use of the "Park" position lock in order to fully lubricate an inter-component seal - this is worth remembering

c) There is no ATF thermostat in this transmission and in very cold conditions gear shifting may initially be slower or slighter harsher due to the ATF's temperature (just another reason why a fully synthetic ATF will work better in 928s)

Check the ATF level regularly and adjust according to the Driver's Handbook

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PART 6

Power steering
What's in it now??

POWER STEERING (PAS)

The correct lubricant for your power steering is the same ATF as is used in the Auto transmission. This is a ATF with Dexron 3 compliance. It should be noted that the PAS's fluid operates at around 75bar and up to 100bar so it gets quite hot, operating around the 80-90°C range at times due to the high operating pressures and of course its location on the vehicle.

The power steering ATF should be changed when you change the transmission's ATF even though no parameters were set for this by Porsche. It is probably best to use a suction pump to withdraw the fluid from the reservoir (this holds about 300ml) topping up each time - then running the car for a day or two. Do this 5 or 6 times and you will have most of the old ATF removed. Do not overfill!

NOTE 9 - SYNTHETICS?

If you have recently overhauled your steering rack and use Castrol's Transmax Z synthetic ATF in your Auto you can also use it confidently for the PAS system.

You can at the least double the PAS's fluid change interval if using Transmax Z.

WHAT'S IN IT NOW??

If you don't know what lubricants are in your car now this may help ensure a smooth transition;

Engine

It is wise to drain the oil and change the oil filter as soon as possible. You should use a robust and modern HDEO such as Castrol RX Super 15W-40 or Delvac 1300 15w-40 CJ-4/SM and a new MANN oil filter. This oil will gently clean the engine if left in for about 3-5000kms and the car regularly gets up to full operating temperature. Ideally it should stay hot for a fair time - at least for an hour or so a few times during this period. Check for leaks and monitor oil pressure and consumption during this time as well.

After 3-5000kms if all is well, change to an Approved oil of your choice (or continue using what you have been) using a new MANN filter.

Auto Trans

If no previous records exist, ensure that you change to fresh Dexron 3 rated ATF as soon as possible.

If after 3-5000kms all is well with no leaks plan for a change of filter, drain the torque converter and ATF again as a minimum. You could consider using Castrol's synthetic ATF "Transmax Z" at this point if you believe it is cost effective.

Transaxle (and the differential on Autos)

If no leaks are present a simple oil change using a GL5 rated 75w-90 oil is all that is needed. After covering 3-5000kms consider changing to a synthetic GL5 rated 75w-90 oil if you feel it is cost effective.

