

**PENRITE**  
Established 1926 **OIL**

Veteran, Vintage  
& Classic Car



*Classic*  
TM



## A Better Class of Oil

### The Penrite difference

- Family owned, Australian made since 1926
- Over 150 products
- All industry segments covered
- Technical Training
- Complete technical backup
- Customer Service Support 7 days a week
- Ability to make "problem solving" products for specific applications
- Full Zinc, Extra 10 SAE Viscosity Rating Products including shear free
- Premium Quality Base Oils and Additives
- First to market with the latest industry specifications and standards
- 100% quality satisfaction guarantee

From small beginnings in 1926, Les Mecoles founded Penrite Oil Company, soon purchasing his first factory in Melbourne, Australia, manufacturing high quality lubricants from Pennsylvania base stocks, regarded at the time as the best in the world.

In 1979, due to ill health, Les sold the company to John Dymond, Lubrizol's Australian National Sales Manager, a mechanical engineer by trade and a car enthusiast at heart, who rapidly expanded the Penrite range of products. John's technical background and commitment to quality ensured that Penrite continued to produce the highest quality product for every application and this philosophy, implemented by John in 1979, remains a core value of the company to this day.

Establishing Team Penrite in the early 80's, John was able to complete all the R & D requirements for his products on the race track, not only with cars, but also bikes, karts and trucks!

Driven by his "every product, every application, every customer" philosophy John expanded and developed the capabilities and capacity of the business to produce specific products for any market, effectively ensuring Penrite has every industry segment covered.

Supported by the largest range of speciality products and all backed up with a 100% product guarantee, John established a product range and brand that is, today, synonymous for its high quality and reliability.

For 85 years Penrite has been family owned and managed. Today, Toby and Nigel Dymond manage this World Wide business from Melbourne Australia, taking John's technical knowledge, his passion and his philosophy forward into the future.

Penrite is proud to be one of the few companies with a range of products specifically designed to meet the needs of classic and veteran vehicles manufactured before the 1970s.

Some additives and ingredients used in modern lubricants, gearbox oils, greases & coolants etc. may have an adverse effect in some veteran and classic vehicles due to the technologies used at the time of manufacturing. Some metals used such as brass & copper that were commonly used for parts manufacturing at the time, are not compatible with some late technologies used in modern lubricants. Therefore, these vehicles require specialised lubricants. Penrite manufacture a complete range of products compatible with these older technologies that provide compatible products to what was originally specified by the manufacturer for the correct operation of that vehicle.

The Penrite Lube Guide has a special section for pre-1970s vehicles and equipment to assist you in finding the correct product solution to keep your classic vehicle on the road for many more years to come!

The Penrite Oil Company and its owners actively maintain a classic & veteran car & motorbike collection as well as race historic cars in Australia. The company is a major sponsor of this type of motor racing in Australia and supports its participants and followers with information nights, product training and advice on the right products for the right application.

## Penrite History

## Introduction

## Engine Information

### WHY DO OUR HOBBY CARS NEED A SPECIAL ENGINE OIL RATHER THAN THE LATEST PRODUCTS ON THE MARKET?

Modern engine oils are formulated to meet the requirements of the latest designs and also the fuel consumption and emission targets laid down by the legislators in many parts of the world.

To meet these targets the latest engine oils are very light viscosity multigrades which whilst being suitable for modern engine designs, are not suitable in our earlier veteran and historic engines.

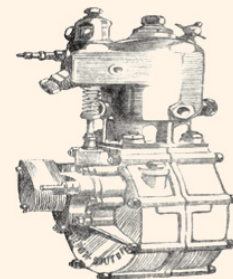
A big problem is that, generally speaking, the cars in question spend the vast majority of their time not working. Whilst a non-working engine is not wearing itself out, unprotected surfaces such as cylinder walls, camshafts, etc can be subject to corrosion.

Modern thin oils will drain away from the internal surfaces back to the sump leaving little protection to the parts above the oil level and therefore prone to corrosive attack.

Penrite **Heritage**, **Shelsley** and **Classic** oils are specially formulated to overcome this problem in two ways:

1. Incorporation of a special component which makes the oil remain on the surface of the hot metal which not only provides an oil film to protect the surface from corrosion but overcomes the “dry start-up” problem.
2. Making sure that the residual oil film has exceptional corrosion protection by means of special anti-corrosion additives in the oil formulation.

The engine is thus protected whether it is running or resting.



### WHAT ARE THE ROLES OF DETERGENTS AND DISPERSANTS IN ENGINE OILS?

Detergents are incorporated into all modern motor oil formulations and have been since the 1940s. Their function as the name suggests is to maintain internal engine cleanliness particularly in areas of high temperatures such as piston skirts, ring lands and other components. They are also useful in combating the effect of acid contamination of the crankcase oil caused by the by-products of combustion.

Dispersants keep all the soot particles and other solid contaminants in a “dispersed” condition and stops these collecting together-agglomerating-into larger molecules and forming engine sludge and other harmful deposits.

These two additives are mainly instrumental in giving us the marked improvement in engine lubrication when comparing today’s formulations with those of the vintage and classic period.

These improvements are: -

- (a) All the contaminants that caused sludging in engines is now neutralised and removed during oil change. This is why modern oils discolour with use but the engine stays clean where as in the past oils stayed clean but the engine became dirty. To summarise, if modern oil gets dirty it’s doing its job.
- (b) Problems of piston ring sticking have been virtually eliminated and engine life extended. Corrosion of bearings etc, are now a thing of the past.

In cars with restored engines, the use of an engine oil containing detergents and dispersants will not cause any problems. Non-dispersant oils are designed for use in vehicles which have been using either unknown oil or where there maybe a possibility of sludge in the internal galleries of the engine.



### CAN I USE MODERN OILS IN A CAR WITH NO OIL FILTER?

There has been a common misconception that modern oils shouldn't be used in veteran and vintage cars with poor or no oil filters. This is completely unfounded and bears no relationship to the use of modern oils as such.

Cars lacking oil filters will no doubt need to have more frequent oil changes, and if originality of the lubrication system is not an issue a modern filter system can be fitted.

### I'VE HEARD THERE IS A PROBLEM WITH MODERN MULTIGRADE OILS ATTACKING RUBBER SEALS. IS THIS CORRECT?

There was on the market a number of years ago an inferior supply of synthetic rubber seals which gave no end of trouble causing significant leaking problems. Rubber seals today are made from viton and polyacrylate and if properly fitted will certainly do their intended job.

Prior to the use of rubber, seals were either made of cork or felt, and before that leather, and trying to make them leakproof was nearly an art in itself! Modern oils will not harm these seals.

Cars of the 1950s and 1960s still fitted with original type seals may encounter leakage past the seal due to hardening. In such cases the seal should be replaced.

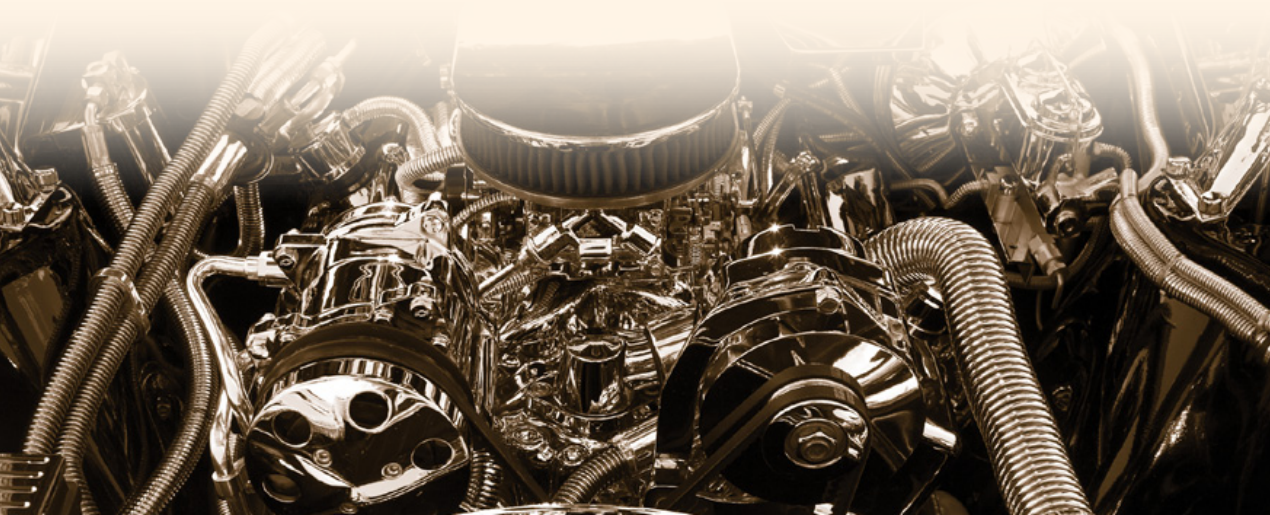
### PENRITE PRODUCES A RANGE OF ENGINE OILS CALLED "HERITAGE", "SHELSLEY" AND "CLASSIC". WHAT ARE THESE OILS?

These oils have been designed specifically to cater for veteran, vintage and classic vehicles based around the characteristics of engine design of the period.

The **Heritage** range comprises two grades and caters for vehicles up to 1920. The oil for these engines has been designed around the lubrication system incorporated in these early vehicles; namely total loss, wick feed, mechanical and the early forms of pressurised lubrication.

The **Shelsley** range comprises of three oils and relates to the manufacturing period of 1920-1950. The oils in this range have been formulated to cover a wide span of ambient temperatures, which is more beneficial in these types of vehicles than the more modern oils used in vehicles of today. SAE viscosity ratings as used in modern type oils to determine temperature parameters are not representative of or are relevant to the conditions experienced in engines 1920-1950.

The **Classic** range comprises of three oils and covers the period from 1950-1989. The additive package used in these oils differs from the **Shelsley** and **Heritage** range in that these oils have been designed specifically for vehicles of this period, but with far superior performance levels than those used at the time. These oils are also based on ambient temperatures rather than SAE viscosity performance levels.



### MY CAR IS 1920S VINTAGE AND I'VE BEEN TOLD THAT I MUST USE A MONOGRADE OIL BECAUSE THAT IS WHAT WAS USED WHEN NEW. IS THIS CORRECT?

There is no problem using 1920s technology if you are prepared to put up with the problems associated with these types of oils.

One of the problems encountered in the '20s was that prior to moving off from cold, the engine had to be warmed up to reduce the viscosity to enable the oil to "flow" and depending on the thickness of the oil probably determined the time it took to warm up.

Another problem encountered with monograde oils was how rapidly the viscosity fell away once the oil was hot, leaving little oil pressure, and consequently little in the way of engine protection.

The **Shelsley** range of engine oils has been developed to offer good low temperature flowability, the necessity to "warm up" being reduced. Coupled to that, the rate of viscosity loss with increasing oil temperature is far superior than the original oils used, thus maintaining better oil pressure, oil consumption and general overall protection.

### WHY CAN'T I USE MODERN THIN GRADE MULTIGRADES SUCH AS 0W-30 OR 5W-40 IN MY OLD CAR?

There are a number of reasons why it is imperative to use a HIGH viscosity multigrade oil in the lubrication of veteran, vintage, and classic cars. Listed here are just a few.

1. Most of the early engines stipulated a 40 or 50 grade engine oil or equivalent. In many cases oil travelling down vertical shafts usually ended up lubricating bevel gears and cross shafts etc. A thin oil being used in the same application would result in the oil being thrown from the bevel gears leaving the cross shaft gears dry.
2. Most of the cars covering this period had, by modern standards, poor oil pumps. A light viscosity oil will not provide the sealing required and loss of both volume and pressure will be noticed.
3. Oil seals in these vehicles are somewhat rudimentary, and oil leakage would certainly be a problem with the use of thin grade multigrade.
4. Oil consumption and smoking will be noticeably higher with low viscosity oils due to ring design and lack of valve stem seals. It is therefore important to choose the correct oil for the right application / classic period.

### I'VE RECENTLY PURCHASED A VINTAGE CAR, BUT I DON'T KNOW WHAT OIL IS IN IT. WHAT SHOULD I DO?

If the vehicle is currently registered and has been used on a fairly regular basis, the chances of it having run on a modern oil are fairly high. It is important when purchasing a vehicle to ask the owner what engine oil was used and the grade.

If on the other hand the vehicle is "ripe for restoration" and the engine needs to be run to evaluate condition etc, then a few pointers may be handy.

- Drain old oil and remove and clean out sump of any sludge that may have collected.
- Whilst sump is removed look at general condition of bearings and amount of play etc.
- Replace sump with a new gasket and fill with an engine oil such as any of the Penrite **Shelsley** range.
- Don't use a flushing oil, and don't fill the sump with a modern detergent engine oil.

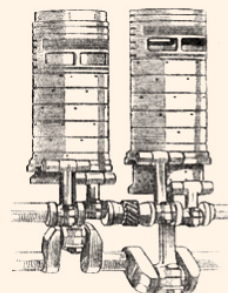
### I HAVE A SLEEVE VALVE ENGINE. WHAT SHOULD I BE USING?

The Charles Knight designed sleeve valve engine used in large vintage cars such as Minerva, Daimler and Mors have always had a reputation of consuming large amounts of oil mainly due to poor sealing of the sleeves.

It was of great importance to build up a good carbon seal, which would aid this consumption problem. Today this problem has been largely overcome by better machining practices and the use of far superior lubricants, which certainly go a long way in reducing oil consumption.

Having said that, sleeve valve engines today are far better off using an oil such as those found in PENRITE **Shelsley** range, the two most common grades being **Shelsley Medium** and **Shelsley Heavy**.

Being of a heavy viscosity when hot, these oils will go towards both sealing sleeves and reducing consumption and at the same time maintain excellent oil pressure.



### ARE THERE ANY MAJOR BENEFITS IN USING SYNTHETICS IN OLD CAR ENGINES?

The word “synthetic” conjures up such things as “full”, “part”, “semi” and “fortified” without really telling the user much in the way of product knowledge or use, nor about the benefits synthetics have over mineral based oils. To the average classic car owner, there would probably be none.

However, the competition enthusiast competing in historic rallying or prolonged highway road racing using a synthetic oil may find a more sustainable level of oil pressure on his gauge and, coupled with longer drain intervals are really the only benefits one will see in using a synthetic based engine oil.

As most synthetics today are fairly thin in viscosity it is not recommended to use these oils in any pre 1970 engine unless used in reasonably hard long distance competition.

### WHAT CAN YOU TELL ME ABOUT CASTOR OILS AND ARE THEY OK FOR USE TODAY?

Castor based oils were developed as far back as 1912, and used initially in rotary aero engines before being widely used in both production and racing cars.

Vegetable based as opposed to mineral based oils, they were made from castor or bean oils and treated with an oxidation inhibitor.

Whilst castor based oils provided excellent lubrication in aero engines with total loss oiling systems, in car engines the use of this type of oil produced excessive carbon deposits the end result being in having to “de-coke” the engine every 1,000 miles or so.

The other drawback was high viscosity at low temperatures and a very rapid drop of viscosity as temperatures increased. The high viscosity problem at low temperatures was solved by gently warming the engine, or to be more precise the engine’s lubricant.

Today castor-based oil differs remarkably to their ancestors. Still incorporating vegetable oils, they are now blended with synthetics used to reduce the formation of gum and lacquer deposits and are of a multigrade type viscosity. Their application is mainly associated with two stroke engines or where fuels such as methanol/alcohol are used in competition engines.

Running a vintage car or a racing car on old style castor oil is now a dated and long since superseded technology. Its use, although traditional, should no longer be contemplated. The only thing that castor can do that mineral oil cannot is to make the right smell and this can still be achieved by adding a cupful of castor synthetic in with the petrol, thus re-smelling the glorious past

## Unleaded Fuels

### I'M TOTALLY CONFUSED WHEN IT COMES TO THE USE OF UNLEADED FUELS FOR OLD CARS. CAN YOU EXPLAIN IT IN SIMPLE TERMS?

Leaded fuel was introduced in the mid 1930s so every car made before that date ran when new on unleaded fuels.

Lead based additives (Tetra Ethyl Lead or TEL) were blended into petrol to improve the octane rating, which enabled the use of higher compression ratios, which improved engine efficiency.

Octane number is the measure of the anti-knock qualities of a fuel. The higher the number the higher the compression ratio that can be used. Octane numbers are based on numbers 1-100.

One of the side benefits of TEL has been to act as a lubricant to eliminate exhaust valve seat wear.

Valve seat recession will be experienced in engines designed to run on leaded fuels when using unleaded gasoline, but the severity of this problem is dependent on many variables.

#### Engine Speed

It is generally accepted that the VSR (valve seat recession) problem increases as the cube of the maximum crankshaft RPM. This is why the potential problem in veteran and early vintage engines, whether in vehicles or stationary low speed engines, is virtually zero.

#### Specific Power Output

Generally speaking, the greater the power output per litre the greater the exhaust gas temperature. VSR is greatly influenced by hot gas corrosion.

#### Exhaust Valve Seat Material

As a generalisation, the softer the valve seat the greater the chance of VSR. Modern cast iron head material is softer than castings used in the 1930s. Today's castings are made from alloyed iron, which provides good machineability.

#### Valve Rotation

The higher the valve rotational speed the higher the potential for VSR.

#### Trip Length

Long high speed operation is much more severe than low speed short runs, therefore the driver who competes in historic events is much more liable than the "once a month trip to the local pub" owner.

### LEAD REPLACEMENT FUELS ARE NO LONGER AVAILABLE IN AUSTRALIA AND MANY OTHER PARTS OF THE WORLD. WHAT SHOULD I USE IN MY CLASSIC CAR?

This question is doubtless the most common one asked in present times and it is in some ways caused by the confusion created by completely unfounded claims and allegations one reads in magazines aimed at the classic car owner.

There are two main approaches that can be made to reduce the problems of VSR - mechanical and chemical. By mechanical we refer to the fitting of hardened valve seat or inserts to the cylinder head or block in the case of side valve engines. There are devices on the marketplace which claim to reduce VSR by the insertion of pellets in the fuel supply system. These have no technical supporting data available and cannot be recommended. They are as effective as placing lead fishing weights in the fuel tank.

The chemical approach or the use of fuel additives is an area which has much more technical and testing support. These chemical additives are based on either sodium, potassium, phosphorus or manganese systems. We at Penrite have chosen to use potassium in **Penrite Valve Shield** as it provided the proven value for money.

The system has been tested against the performance requirements of the Federation of Vintage Car Clubs in the UK as well as the Australian Standard AS 4430.2-1996 procedure.



**Penrite Valve Shield** is sold in a 200 ml bottle which incorporates a 25 ml measuring chamber - enough product to treat 25 litres of unleaded fuel.

**Penrite Valve Shield** can be added to either normal or premium unleaded according to which one supplies the octane number required by your car. **Penrite Valve Shield** is not an octane booster but the vast number of vintage and classic cars will have an octane requirement satisfied by the present level of standard unleaded, ie 91 octane.

If further information is required on this subject please contact your local Penrite office and request a copy of "The Classic Car Owner's Guide to Lead Free Fuel".

### **I'M GOING AWAY FOR A COUPLE OF YEARS. HOW DO I LOOK AFTER MY CAR WHILST I'M AWAY?**

Firstly let's assume the vehicle will be kept in a well-ventilated garage and not left out in the open.

Before shutting the garage door for the last time, it will certainly pay dividends to go through the following list.

- Drain the engine, gearbox and rear axle and replace with new oil.
- Circulate the oil by driving the vehicle until normal operating temperature has been reached.

Do not forget the cooling system of the vehicle; that is prior to storing, drain and refill the radiator with PENRITE **Classic Car Coolant** corrosion inhibitor and run the engine to circulate. This product can then be either left in the radiator or drained

Lubricate all linkages etc, place the car on good quality axle stands, and make sure all breather holes and the exhaust pipe tail pipe are taped up to prevent moisture forming.

Disconnect the battery completely from the car, and place on a timber board or bench.

A good quality dust cover will protect the paint and duco from dust and any other foreign body falling on the vehicle.

Finally, don't do what many people do and get a friend to start the car up every once in a while -to keep the battery charged". This does more harm than good.

Close the door walk away, and on your return, your vehicle will be in exactly the same condition as when you left it.

Storage  
Solutions



## Gear Oils

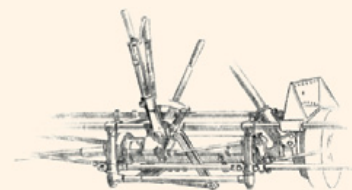
### DOES YOUR TRANSOIL RANGE OF GEAR OILS CONTAIN ADDITIVES?

The only additive used in straight gear oils is an anti-foam and some anti-wear agents. Excessive foaming, through agitation leads to ineffective lubrication.

Water contamination can also lead to foaming.

These oils can therefore be used in veteran, vintage and motorcycle transmissions without the worry of chemical additives attacking yellow metals.

These gear oils are today available from PENRITE in grades of SAE 90,140 and 250 and whilst a 160 grade was offered in the 1920s, this grade can be substituted for a SAE 140.



### THE GEARS IN MY VINTAGE CAR ARE HARD TO OPERATE WHEN THE CAR IS COLD. HOW DO I WORK OUT WHICH GEAR OIL TO USE?

Supposing the gearbox is in good condition and the seals don't leak, it would be found that the heavier the oil bears significant relation to the degree of difficulty in changing gear, especially when cold.

Most vintage cars used a straight 90-gear oil, which offered good cold shift requirements. If sealing is a problem then going to something heavier may solve the sealing problem, but the increase in viscosity would certainly provide more drag on the gears when cold. This is fairly common with veterans who have poor sealing capabilities, and in this case the use of PENRITE **Semi Fluid Grease** often solves the sealing problem. As with vintage cars, gear changing can be heavy, but once warmed up can be an absolute joy.

The solution is to experiment to find the best viscosity that will suit your needs, however it would be unwise to use anything less than a SAE 90-gear oil in a vintage box.

### MY 1950s CAR REQUIRES AN EP80 OR EP90 GEAR OIL IN THE REAR AXLE. CAN I USE A MODERN 80W -90 HYPOID GEAR OIL?

The PENRITE equivalent of an EP80 or EP90 gear oil of the 1950s is **Mild EP Gear Oil**. This oil is a mild extreme pressure gear oil suitable for early forms of hypoid gear design. This design was such that the oil required the addition of chemical based additives to control wear.

Many of these rear axles contained yellow metals, the additional additive packages used having to be compatible with the likes of brass, bronze and copper.

Some modern additive packages used to produce GL5 rated hypoid gear oils can be corrosive to yellow metals and so in cases where the incorrect oil has been used, it is advisable to change as soon as possible.

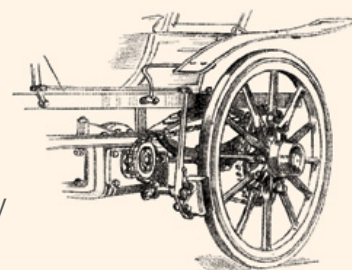
### WHAT IS A SELF-LEVELLING GREASE?

Self-levelling type grease is usually found in applications such as motorcycle gearboxes or in gearboxes of early veteran cars.

If one were to compare self-levelling grease with conventional grease used in the same application you would notice that a self-levelling grease will be picked up by the gears, flung around, and will fall back to resume its natural level in the box ready for the gears to pass by and pick it up again.

Using conventional grease in the same operation, the tendency would be for the gears to "track" through the grease, which offers very little in the way of general lubrication. It would also be found that it takes considerable time before the grease resumes its natural level, the "track" quickly becoming a trench, and the gear wheels becoming drier and drier.

When using self-levelling grease such as PENRITE **Semi Fluid Grease**, you may find it hard to dispense due to its viscosity. A good tip is to warm the tube in warm water for a few minutes which will make the grease easier to pour from the container. For best results & ease of handling, use a grease gun.



### I HAVE A VERY EARLY VETERAN CAR, WHICH CALLS FOR A STEAM CYLINDER OIL IN THE GEARBOX AND BACK AXLE. WHAT IS THE EQUIVALENT TODAY?

The myth that cylinder oils and valve oils were of a very high viscosity is incorrect and those people requiring something slightly heavier than a SAE 140 may find a SAE 250 more beneficial. Both these oils form part of the **Transoil** range. Anything heavier still and you are looking at a semi fluid type grease.

EP 140 gear oils should not be used.

### MY MANUAL EXPLAINS THAT FOR THE STEERING BOX I NEED A MIXTURE OF GREASE AND OIL. WON'T THE OIL SIT ON TOP OF THE GREASE?

The lubrication of steering boxes in the early days centred around the use of transmission oils which were fine when cold, but had a tendency to leak out past the drop arm when hot.

Grease was added to the oil to give it a bit more "body" but usually the grease would "slump" to the bottom of the box, with the oil on top thereby offering very little to the lubrication of the working surfaces of the gears.

Do not use modern gear oils, as they could be corrosive to brass and bronze.

**Steering Box Lube** is a high viscosity product containing non-corrosive extreme pressure additives to provide film strength and is ideal for the task.

### WHAT OIL DO I USE IN A RACK AND PINION STEERING BOX?

In these particular units, the correct lubrication calls for a mild extreme pressure gear oil such as PENRITE **Mild EP Gear Oil**.

It's often the case that because of leakage, people tend to use a semi fluid grease, or even PENRITE **Steering Box Lube**. This is incorrect, as the product is far too heavy for this application.

It would be imperative that if leakage is a problem, that the unit be removed, the seals replaced, and filled with the correct lubricant.

### WHAT'S THE DIFFERENCE BETWEEN DASHPOT AND DAMPER OIL?

Both oils are used for the lubrication of S.U. type carburettors.

PENRITE **SU Dashpot Oil** is suitable for early pre-1940 carburettors, which do not incorporate a damper in the dashpot assembly. Removing the dashpot can readily identify this type of carburettor design. There is no damper rod on the inside.

**SU Damper Oil** on the other hand is required for post 1940 vehicles using S.U. or Stromburg carburettors incorporating a damper in the dashpot assembly. The damper assembly is attached to the dashpot cap and can be seen when the cap is removed.

Steering

Carburettors



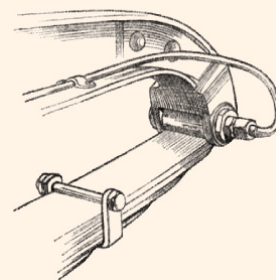


## Springs

### SHOULD I SMEAR GRAPHITE GREASE BETWEEN LEAF SPRINGS OR LEAVE THEM DRY?

There have always been two schools of thought in regard to the lubrication of spring leaves.

One thought was to leave them dry because it was felt that steel on steel gave a harder ride whilst others were of the belief that the leaves should be coated with an engine oil and then covered with leather gaiters to stop dirt and grime.



It is our opinion that spring leaves should be coated with a graphite-based grease smeared between each leaf. This prevents metal to metal leaf contact, eliminates wear and possible leaf breakage and protects the springs against moisture forming between the leaves. As the grease is administered whilst the springs are apart, and is trapped between the leaves when assembled, it only requires a set of gaiters to keep the rubbish out and a light grease from time to time through the grease nipple on the gaiter.

## Cooling

### I'VE BEEN VERY WARY OF USING ANYTHING OTHER THAN WATER IN MY VINTAGE CAR. WHAT PROBLEM CAN I ANTICIPATE BY JUST USING WATER?

Water is the most efficient product for cooling engines, but it has two distinctive drawbacks. Firstly it freezes in winter, and secondly it does nothing to stop corrosion.

There are four types of primary corrosion to consider. They are deposits, oxidation, electrolysis and erosion, and it's worthwhile to look at each one to gain more of an understanding into why there is a need for a corrosion inhibitor

**Deposits:** - Typical of these are calcium carbonates which are the hard deposits one finds in such things as kettles if the water supply in the area is "hard" or contains minerals. These deposits adhere to the tubes in the radiator, restricting water flow and reducing the overall efficiency.

**Oxidation:** - Oxygen combines with iron to form rust and aluminium to form the white deposits so often found in castings. Oxygen also affects copper and causes the rapid colour degradation.

**Electrolysis:** - This is defined as the chemical reaction with dissimilar metals, which react with one another via water conducting electricity. Where aluminium is involved, such electrolysis preferentially attacks the aluminium and deposits it elsewhere leaving holes where there should be no holes!

**Erosion:** - Mainly a mechanical problem caused by water flow and turbulence and is normally found in isolated areas of the engine. Erosion is often confused with electrolytic corrosion.

With the above in mind, and in particularly with vintage cars featuring large amounts of aluminium, copper, brass and bronze, it is imperative that a corrosion inhibitor be used to protect the engine's cooling system.

### OK THAT MAKES SENSE. HOW ABOUT USING ANTI-FREEZE?

Most anti-freeze products which also can increase boiling temperature are based on glycol, either ethylene or propylene.

The use of ethylene glycol became common practice during the Second World War in Rolls Royce Merlin aero engines.

Ethylene glycol is very corrosive apart from being highly toxic. The package as purchased also contains a corrosion inhibitor to neutralise the corrosivity of the ethylene glycol. This is why you must be very careful when selecting the dilution rate according to your radiator capacity. Too much water and the effectiveness of the corrosion inhibitor is reduced to the stage where the entire contents of the radiator becomes corrosive.



There is little doubt that engines cooled by glycol mixtures run hotter than those using just water. This sounds strange, but is due to certain basic physical characteristics of water when compared to glycol such as specific heat, thermal conductivity and heat transfer or thermal convection coefficient. It has been reported by some vintage car drivers to be as much as 16°C (30°F).

The corrosion inhibitor used in conjunction with the glycol can also influence engine operating temperature. Basically the corrosion inhibitor works by chemically modifying or sealing the internal surfaces of the water jackets in the block and cylinder head. The problem is that in many cases the corrosion resistant surfaces are a poor transferer of heat thus resulting in higher temperatures.

### **I DON'T THINK A GLYCOL BASED COOLANT IS THE WAY TO GO IN VINTAGE CARS. WHAT ELSE CAN I USE?**

PENRITE **Classic Car Coolant** is a non-glycol based corrosion inhibitor which offers a host of benefits for the vintage car enthusiast both in cars on the road or during restoration.

**Classic Car Coolant** is a very efficient inhibitor against electrolysis and oxidation. Its effectiveness in "soft" and "hard" water is well proven. The product contains no glycol as mentioned and is also biodegradable and non-toxic.

Over diluted with excessive quantities of water, the product never becomes corrosive, nor does it change the basic cooling characteristics of water. Engines indeed will run cooler, yet not suffer from internal corrosion.

However, one must bear in mind that PENRITE **Classic Car Coolant** whilst being a very effective anti-boil agent because of its superior heat transfer characteristics is not an anti-freeze.

If you use your car under conditions where freezing may be experienced then the use of a glycol product is essential and to ensure that the correct concentration is used. Otherwise corrosion could be experienced.

You may even want to boost the level of corrosion protection in situations when using glycol. This is fine, the glycol will not harm **Classic Car Coolant**.

If you are using **Classic Car Coolant**, and wish to do some restoration work over winter, then simply drain the cooling system of water and coolant.



## ENGINE OIL PRODUCT LISTING

### HERITAGE LTM AND MTH

Take specialist care of pre-1920 veteran, Edwardian cars, stationary engines and agricultural machinery fuelled by petrol, kerosene (paraffin) or diesel, with HERITAGE LTM (Light to Medium) and HERITAGE MTH (Medium to Heavy).

*Key Specifications:* SAE 30 (LTM), SAE 50 (MTH).

Available in 5L

### SHELSLEY LIGHT, MEDIUM AND HEAVY

You can't go past Shelsley if you want a quality product for 1920-1950s era petrol and diesel engines. Use SHELSLEY LIGHT, for original SAE 30 recommendations, SHELSLEY MEDIUM for SAE 40 and SHELSLEY HEAVY for SAE 50.

*Key Specifications:* API SC/CC.

Available in 5L + 20L (Medium Only)

### CLASSIC LIGHT, MEDIUM AND HEAVY

If 1950-1970s era petrol and diesel engines are your passion, this is the range for you. Use CLASSIC LIGHT where SAE 30 or old style SAE 20W-50 or 20W oils were originally recommended. For warmer climates or for engines that originally used SAE 40 oils, try CLASSIC MEDIUM. CLASSIC HEAVY is your best bet for high ambient temperatures or where old style SAE 50 oils were originally used.

*Key Specifications:* API SG/CD.

Available in 5L

### 10 TENTHS RUNNING-IN OIL (15W-40) Mineral

Running In Oil (Break in Oil) is a mineral, SAE 15W-40 engine oil designed for the running-in of mainly older design, rebuilt petrol and diesel engines. Specifically formulated to provide the best possible lubrication during the critical run-in period while allowing the engine parts to achieve the correct level of wear to enable good gas sealing of piston rings to cylinder walls.

*Key Specifications:* API SF/CC.

Available in 5L & 20L

### HD OIL (MOTORCYCLE) 50-70

HD Oil is a SAE 50-70 non-friction modified four stroke motorcycle engine oil for older large capacity engines. HD Oil is primarily recommended for use in classic motorcycles where SAE 50 monograde oils were specified by the manufacturer. It is made from a unique combination of additives and viscosity modifiers that have been shown to control deposit formation in older motorcycles.

*Key Specifications:* API SF.

Available in 5L

### ENDURO 4 STROKE (MOTORCYCLE) 25W-70

Penrite Enduro is a classic premium mineral, high zinc, 25W-70 non-friction modified four-stroke motorcycle engine oil. Enduro is primarily recommended for use where SAE 40 grade oils were specified for both air and water cooled 4 stroke engines.

*Key Specifications:* API SG, JASO MA.

Available in 4L & 20L

## GEAR OIL PRODUCT LISTING

### TRANSOIL 90, 140, 250

A series of API GL-1 rated monograde gear oils for use in veteran, Edwardian and vintage gearboxes and final drives. These oils do not corrode ferrous and non-ferrous materials and are compatible with leather and synthetic rubber seals. Do not use Transoil 250 if exposure to water/steam is likely.

*Key Specifications:* API GL-1

Available in 1L & 5L (UK Only)

### MILD EP GEAR OIL

Avoid corrosion in bronze components with this API GL-4 rated gear oil, specially formulated for worm differentials, pre-1960 hypoid differentials and motorcycle shaft drives. Do not use if exposure to water is likely.

*Key Specifications:* API GL-4

Available in 1L

### GEARBOX OIL 30 & 40

Gear oil suitable for classic cars, especially those fitted with overdrive gearboxes. Designed for use where the original monograde 30, 40 or 50 engine oils were recommended in gearboxes.

*Key Specifications:* API GL-1, SAE 20W-60 (30), 25W-70 (40)

Available in 1L & 5L (UK Only)

### GEAR OIL

80W-90, 85W-140, 140

Designed for use in differentials, both hypoid and limited slip, manual gearboxes, transfer cases and transaxles in passenger cars, light commercials, 4WDs, trucks, construction, earthmoving and agricultural equipment, where this viscosity grade is required.

Available in 1L, 2.5L & 20L

## GREASES PRODUCT LISTING

### SEMI FLUID GREASE

Ideal for veteran car transmissions and for veteran and vintage motorcycle gearboxes such as the Burman, this NLGI 00 semi fluid grease is a must-have for your tool box.

*Key Specifications:* NLGI 00

Available in 450g & 20kg

### STEERING BOX LUBE

Suitable for veteran/vintage and some classic car steering boxes, this high viscosity self-levelling grease features non-corrosive extreme pressure additives to provide film strength.

Available in 450g

### EXTREME PRESSURE GREASE

Lithium grease for general purpose industrial and automotive greasing applications.

Available in 450g & 500g

### MOLY GREASE EP 3%

Lithium grease containing molybdenum disulphide for the lubrication of ball joints, king pins and universal joints, as well as open surfaces such as trailer couplings.

Available in 450g & 500g

### HIGH TEMPERATURE WHEEL BEARING GREASE

Purple coloured, lithium complex grease for the lubrication of wheel bearings, particularly those in vehicles fitted with disc brakes, trailer applications, marine use and for general chassis greasing. Excellent resistance to water washout.

Available in 450g & 500g

### GRAPHITE GREASE

A quality calcium-based grease brake cables, flexible drives, exposed chains and for general chassis lubrication of pre-1960 vehicles.

Available in 500g

### QCA Grease MX9

With 9% solids, this advanced mixed complex grease can be used in the lubrication of ball joints, king pins and universal joints, as well as open surfaces like as trailer couplings and CV Joints.

Available in 450g

### CAM ASSEMBLY LUBE

Formulating specifically for lubricating engine components during assembly. Ideal on camshafts, connecting rods and bearings. Not for use on pistons or in ring area.

Available in 40g

## SPECIALITY PRODUCT LISTING

### SHOCKER OIL No 1 & 2

Series of high viscosity index oils for use in lever arm type shock absorbers and motorcycle forks that need SAE 20 or 30 type oils.

*Key Specifications:* API SF.

Available in 1L & 500ml (UK only)

### CLASSIC CAR COOLANT

Classic Car Coolant is a Type B colourless, hybrid-organic, non-glycol based corrosion inhibitor designed specifically for use in veteran, Edwardian, vintage and classic car cooling systems that protects against corrosion, cavitation, scaling and oxidisation.

*Key Specifications:* AS 2108-2004 Type B.

Available in 1L

### VALVE SHIELD

A fuel additive formulated to substantially reduce the problem of exhaust valve seat wear (VSR) when using unleaded fuel.

*Key Specifications:* AS 4430.2-1996.

Available in 250ml

### SU DASHPOT AND SU DAMPER OIL

Two carburettor oils for use in pre and post 1940 SU carbs. Damper oil may also be used in post 1940 Stromburg carbs also.

*Key Specifications:* ISO 15.

Available in 150ml

### SUPER DOT 4

A high quality SUPER DOT 4, non-petroleum based, premium fully synthetic brake fluid designed for use in a wide range of brake and clutch applications where DOT 3, DOT 4 or Super DOT 4 products are called for.

Available in 500ml, 4L & 20L

### DOT 3

A high quality DOT 3, non-petroleum based, premium fully synthetic brake fluid designed for use in a wide range of brake and clutch applications.

Available in 500ml, 4L & 20L

### 10TENTHS RACING BRAKE FLUID

Racing Brake Fluid is a premium full synthetic polyalkylene glycol ether ester based brake fluid for long life and maximum performance.

Available in 500ml



I started at Penrite in 1981, two years after Dad bought the business, working in production. Here I learned and understood very quickly that product quality and innovation was indeed the foundation of Dad's philosophy for Penrite.

Working in production was not my destiny so I went back to university and obtained a Bachelor Degree in accounting and returned to Penrite working in administration, in an accounting and customer service role. Here I learned that not only was the quality of the product important but, equally so, was the necessity to provide exceptional customer service.

In 2013, as General Manager Operations, I oversee the administration, supply chain and production components of the business. I like to think that the many years of service with Penrite has instilled in me the qualities my father brought to the business; the importance of a quality product, to be a fearless innovator, to work with customers, to work with integrity.

With such a sound base, I am really looking forward to the future. Our plans to take the organisation and products into countries and industries, that until now, have been unexplored is truly exciting.

**Nigel Dymond**  
General Manager, Operations



**The Dymond Family**

I followed in the footsteps of my late father, John, and studied Mechanical Engineering in Melbourne, Australia. After receiving my degree, I was employed as a Design Engineer for General Motors. During this time, I continued studying, receiving a Masters of Business Administration (MBA). Utilising my qualification's, I travelled internationally working for a number of blue chip insurance companies and banks.

I recently joined Penrite in April 2011 as General Manager Sales and Marketing. In this role, I am committed to our on-going success in product innovation and manufacturing premium, quality products. Penrite has always had the philosophy that we make the right product for the right application with a 100% quality satisfaction guarantee and this will continue under my leadership. I am also very passionate about our staff and customers. We offer excellent support services to all our customers including 7 days a week technical phone advice, product and Industry training, as well as monthly business representation. These services together with our product range and next day delivery offer are some of the factors why Penrite is the Number 1 Recommended Oil Brand in Australia by Independent Mechanics.

I am very excited and positive about the future and our on-going commitment to manufacturing products for use throughout the world.

**Toby Dymond**  
General Manager, Sales and Marketing



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# PENRITE

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