should have been moved in to allow for the new larger brake pads.

21) Insert the pad retaining pins and secure with the spring clips.

22) Pump the brakes several times to adjust the brakes and top off the brake reservoir with fluid if necessary.

23) Refit the wheels and don't forget to tighten the wheel nuts when the car is on the ground. You'd be surprised!

24) Road test the car. If you develop a wobble at 60 or so, you may not have tightened the bearings enough. You will need to carry out steps 16, 18 and 19 again.

'A Jensen-Healey parts list page on the internet, not only are there exploded line diagrams but the original suppliers part numbers also.'

The above was written for the Healey/GT but the principle is the same for the Interceptor, C-V8 and FF but the torque figure for the calipers is **65 lb/ft**.

Jensen-Healey Internet Parts List

One thing that is specific to the **Healey/GT** — in issue No.131, January 1997, Gary Schwer announced a Jensen-Healey parts list page on the internet, not only are there exploded line diagrams but the original suppliers part numbers also. Gary and Mike Dunstan compiled the pages, it's not fully comprehensive but still there and well worth the visit, the address is http://www.web-masters.com/gms/

Interceptor Starting

A problem or characteristic that keeps cropping up is starting an Interceptor. 'I have to pump the throttle up to ten times before starting.' is a popular phrase. If the carburettor is empty of fuel, no amount of pumping will put fuel into the intake (although I'm not sure if you get any suction from the accelerator pump). The only way to get fuel into the carb is by cranking the engine, and yes sometimes this can take up to 20 seconds, especially on the later interceptors that have a vapour separator.

The technique I use is to crank the engine until a few seconds after the oil pressure warning light has extinguished, then pump the accelerator a couple of times and then crank again, hey-presto it starts.

The techniques for starting a hot engine is as in the handbook — part throttle and then crank the engine until it starts.

The reason for an empty carb is fuel evaporation, the engine gets very hot — and how many of us have still got that foil bag of insulating material between the inlet gasket valley and inlet? Another reason could be that you have a leaking fuel float chamber. Next time the carburettor is off or you suspect a leak have a look underneath for cracks or a seepage past one of the blanking plugs, both can be cured with well keyed Araldite or similar.

Another way to prime the carb is to fit an electric fuel pump, but my opinion is that if there was a drill for the oil pressure light coming on it would be to stop the engine, so why start the engine with no oil pressure to start with? So I prefer to prime the oil while I prime the fuel. I know this argument is debatable, so it's up to you.

JOC OPEN DAY BRITISH MOTOR HERITAGE CENTRE GAYDON SUNDAY 25th FEBRUARY 2001

All members of the JOC are cordially invited to the second Open Day to be held again at the Motor Heritage Centre, Gaydon.

Those members who attended last year's Open Day will confirm that this an event not to be missed. It is the intention to build on last year's successful formula but to introduce a number of new features. A detailed programme will be included in the next issue of the magazine. If there are any topics that YOU would like included in the programme please get in touch with either Alan Smith or Keith Andrews.

JENSEN

Internet Jensen

JOC Online:
http://joc.org.uk

Jensen Motors Ltd:
http://www.jensen-motors.com

Jensen Web Page:
http://www.british-steel.org/jensen

Jensen Mail Group:
The wonderful online technical support and chat group:
Send an email to:
jensen-cars-on@british-steel.org

JOC Berkshire Area!
http://www.geocities.com/MotorCity/Downs/7907/

JOC Wessex Area!
http://www. jensen-oc.co.uk

Jensen-Healey Preservation Society:
http://www.jensenhealey.com

John Cohen:
http://www.jncohen.net

Jencraft Tech:
http://ourworld.compuserve.com/homepages/JENSEN

Jensen Club
Another British club that is independent of the JOC:
www.jensenclub.com

John Wild's FF page:
http://www.geocities.com/jensenff/

Martin Robey:
http://www.martinrobey.co.uk/

Cropredy Bridge Garage:
http://www.jensen-cars.co.uk

Tony Bailey's Jensen Brochures Page:
http://www.british-steel.org/jensen/brochure/

Jensen Interceptor Owners' Club:
http://jioc.org

Jensen Owners' Club Denmark:
http://www.adtention.dk/jensen.htm

Jensen Car Club of Switzerland:
http://www.jcc.ch

A CURE FOR CERTAIN INTERCEPTOR STARTING PROBLEMS

by J. Ireland

WORKSHOP

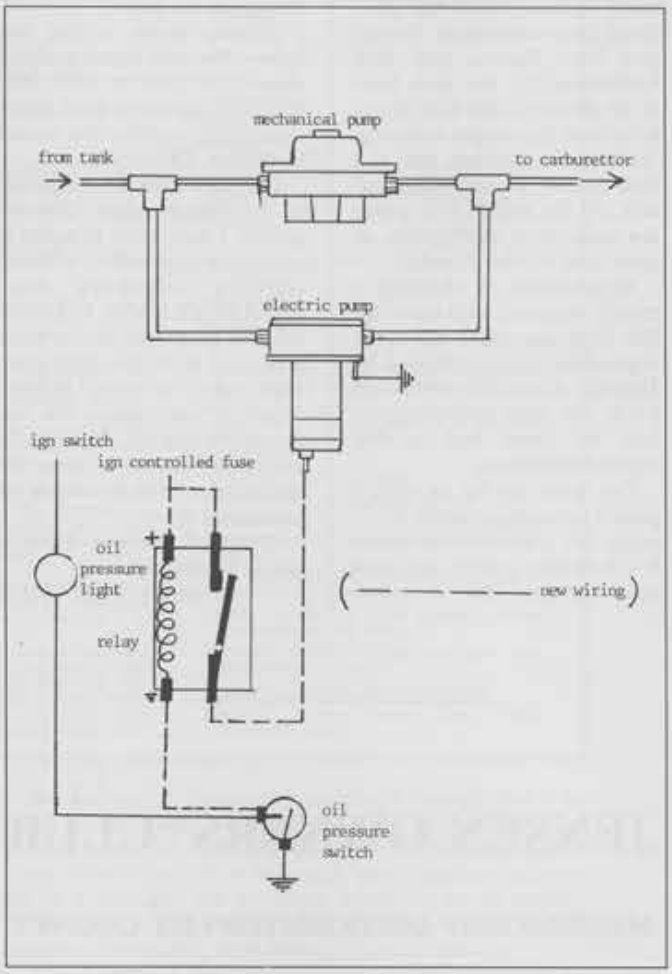
My MkIII Interceptor has proved over the last few years to be a fairly reliable vehicle requiring little more maintainance than many cars half it's age. The exception to this happy state of affairs is it's cold start behaviour after a few weeks lay-up and the amount of cranking required if left for about an hour when hot.

I concluded that both were caused by the same condition – the fuel had evaporated from the carburettor. My remedy was a small electric fuel pump in parallel with the original machanical pump. This is only a *priming pump* and is not intended to replace the mechanical one.

The pump from a Morris Minor 1000 was mounted on some home made metalwork. Jensen have thoughtfully provided a bracket on the chassis almost opposite the mechanical pump – be careful the new pump clears the steering column.

The flexible fuel pipes were cut either side of the original pump and 10mm microbore copper pipe and T-pieces inserted. The electrical side is a bit more difficult; if the pump was run off the ignition circuit, the combined pressure of the two pumps could overcome the float-chamber needle-valves and flood the system. You could put an ordinary switch in the circuit and remember to switch off after starting. The *subtle* way is to activate a relay from the oil-pressure warning light switch. When you turn on the ignition the engine is at rest, oil pressure is zero and the red dashboard light is on. The pressure switch will also turn on the new fuel-pump relay and thus the pump itself. When the engine starts the oil pressure rises (hopefully!), therefore the pressure switch goes off and so does the dashboard light and the pump relay. They will stay off until the next engine start up.

The system has been on my car for 18 months with no problems, Judging by the frantic clickings of the pump as it primes the carb this modification must have saved the battery and starter motor a lot of hard work. Any 12 volt car relay will do – you would have to work out the connections yourself. The oil pressure switch is at the back of the engine on the right-hand side. The relay was fitted under the existing relay/fuse-box.



REGISTER NEWS

Pre 541 Registrar's Report

There have been a good number of new members with early cars, including Mr Ruben, whose family has owned the S type since the year it was first registered in 1939 – perhaps he will write an article on the history for the magazine? Such a long ownership seems to be the exception, with most early Jensens passing through many hands – in my search for parts, I have come across a surprising number of people who owned these early Jensens.

Of particular interest is a new member with a Jen Tug – it's a shame that we cannot track down the owners of any JNSN lorries – they are part of Jensens history and highlight the Jensen Brothers innovation. With the increasing membership of early cars, and the commitment and enthusiasm of Alan in the spares, I am looking for parts for the early cars – anyone finding the whereabouts of such items, please let me know.

Marcus Garbe

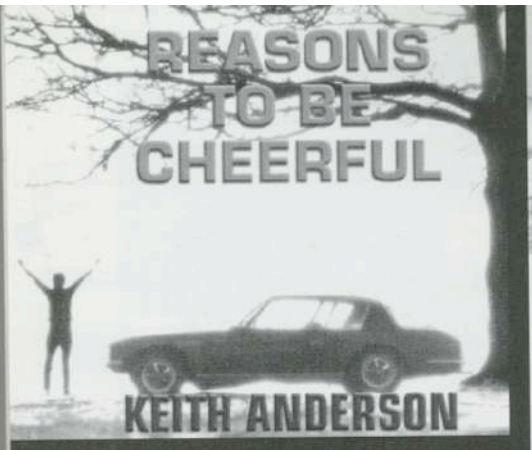
FF Register

Thankyou to the 'FF' owners who replied to my plea in the last magazine.

I heard from 8 in the UK and H. Sjoberg in Sweden who sent me owners/chassis numbers and plate numbers of 19 in Sweden. What about USA and Australia? I know some of you have owned them and sold them (DH!) PLEASE advise all the information. I received info from one owner who bought a MkII new and still has it. He thinks he maybe the only one, but Mr Burton (yes, the tailor) still has his MkI he bought new. Another interesting point that came up, an ex-owner of a MkIII remembers his when new. He had pictures taken of two IIIs together then said the other one was completely written off. Funny, its in my listing and is in very good condition and I know the owner. He doesn't know and my lips are sealed. Yes, we can rebuild them. Mr 'JCB' also owned an FF. I hear you say 'That's where they designed the JCB from!'

PLEASE keep all info coming in. (Except of course 127-206 – You definitly are the third owner of that car.)

Regards, *Norman Long*



Welcome to Torque 2!

It really doesn't seem like twelve months since the first one, does it? Well, if it's technical information you want, the roller-coaster starts right on this page, with Alan Smith's excellent 'no-start' fault-finding article. And it doesn't let up, loads of technical stuff, some restoration news from Derek Chapman (he's bought another Jensen . . .) and an interesting, recent road test on the Jensen FF, reprinted from the original German. Blame me if the translation is not very accurate but I think it's not far off and it gives a slightly different insight than we are used to, certainly in the last paragraph.

Now if you are a **541** owner (or even early Interceptor / PW), I must recommend Mike Byrne's new CD version of the 541 Workshop Manual. The **541**, **R** and **S** series cars had never benefited from a workshop manual until he produced a photostated version in the 1970s. Even then the cost was prohibitive and it cost a small fortune to post them abroad.

Now Mike has produced the **ultimate CD version** — much more than just a workshop manual — when you first open the CD you are confronted with an impressive set of folders:

541 & R Handbook
Jensen 541-S Handbook
Jensen 541 Workshop Manual
Jensen 541 Sales Brochures
JML Original Parts List for 541 & R
Photo galleries 1 to 8
Various Company Letters re: 541

Just to give you a taste of what's in store, Mike's article on the 541 on page 34 of this issue is really just an introduction to the CD volume — and there's so much useful info in just that one article! There are over 1000 files on the CD and over 550 megabytes of information. The cost of amazing piece of work is just £15.00 plus £3.00 p&p for the UK and £5.00 p&p overseas. Mike even incorporates your own car on the CD sleeve! He is working on the second volume now and purchasers of the first CD can buy that for half price.

Contact Mike Byrne via email on:
mikebyrne@jentune611.freeserve.co.uk

The car won't start!

Can't get started at home or on the road? Alan Smith explains the basics and then offers a diagnostic route to get going when your car won't start

We need three things for an engine to run: compression, fuel and a spark.

To get the compression and fuel, on a car with a mechanical fuel pump, we need to turn the engine. This is done with the starter using the battery. Turn the key and all you hear is a click or nothing!

Now eight U2 batteries will give you 12 volts but won't start an engine so a battery that is showing over 12 volts is not always a good one. A quick check is to turn on an interior light and now turn to start, if the light stays bright then no current is getting to the starter. If the bulb wasn't bright to start with then the same applies but it may be just the battery and earth connections. Check the battery by turning the terminals onto the posts and then tighten. Also check the connections at the starter solenoid and body to engine earth strap.

If all is well you may just need a jump start, i.e. using another car's battery via jump leads or a 'starter pack'. Another option for manual gear-box cars is to get help to push the car, turn the key to 'Run' and slip the car into a forward gear; the wheels will turn the engine just like the starter. If the battery is OK and the connections good we can bypass all relays and solenoids by connecting the two terminals on the starter solenoid. This will require a large screwdriver or other suitable metal tool. Don't be afraid of doing this but beware you can weld with twelve volts so be firm and quick. The two terminals to be connected are the large ones with normally no insulation, touch the top one first and then press firmly onto the bottom one (if for some reason you have a horizontal solenoid it's side to side). If this turns the engine over nicely then turn the ignition key to 'Run' and do it again to start the car. You may need assistance if your normal start procedure involves accelerator movement. ***The fault here must be in the starter circuit***, which is the ignition switch, starter relay, the gearbox neutral switch or the solenoid, which can be dealt with another time. Or if you have the time, go through the wiring diagram systematically to trace the fault.

If you are satisfied that a good twelve volts is now getting to the starter but still not turning the engine then a number of things could be wrong.

The starter could be seized or indeed the engine itself, you would get the starter 'clunking' when it engages if this were the case. Or the starter may have a fault; it is worth giving the starter a few thumps with a hammer when trying to turn it. If this works, the starter is due for replacement or overhaul, but not at the side of the road.

Going back to the problem of a bad battery; this may be due to it not being charged, being left to discharge (lights left on?) or simply a dud. If it is a charging problem you can get a long way on a charged battery, but the problem will be to get it charged. Continually swap with fellow travellers if this is an option. If the battery is charging you will see around a one volt increase over the nominal battery voltage, a rise from 13 to 14 approximately.

If you are not charging look at the alternator, is the belt turning it, or is it seized?

To find out if the alternator can produce electricity, by-pass the regulator. Do this by removing the small spade connected wires, if one is connected back to earth, leave this one alone and jump the other terminal to the battery. If the alternator has two spade terminals, both going back into a wiring loom then connect one to earth and the other to the battery. You should now get a full charge rate (obviously with the engine running). If not, then the alternator will need renewing or servicing. If this is the case, disconnect the main feed and insulate it, as this could be the route of the battery drain and continue your journey with battery power only. If this procedure does charge the battery you can run in this manner but you will have to take a large electrical load to stop the battery boiling. Keep the fans or lights on or alternatively, charge for 15 miles or so and then disconnect for 15 miles and so on.

We now have an engine turning over; the diagnosing may start here for 'no start'.

The next requirement is fuel. You may have too little or too much, let's find out.

Remove the air filter cover and look into the carburettor throats. If you can see and smell lots of petrol the chances are that the engine is flooded. This may have been caused by over exuberance of 'priming' during starting; if this is the case the solution is to open all the 'flaps', the throttle by flooring the accelerator and the choke, if its closd, with a suitable implement and then turn the engine for

alan smith

about five seconds — if you start during this time, take your foot of the accelerator quickly.

The other reason for flooding could be a stuck needle valve (this shuts off fuel to the carb. when it's full); you may see fuel still dribbling into the throat if this is the case. A roadside fix is to tap the carb. near the float chamber (two on a Chrysler engine). If this doesn't work the top will have to come off the carb. If the problem is no fuel try moving the throttle lever back and forth; this will activate the accelerator pump and squirt a stream of fuel into the chokes or throats. This can be seen and if so the problem is probably not a lack of fuel. If there is no sign of fuel our attention must turn to the fuel pump. Try pouring about an egg-cup of fuel directly into the throats and try a start; this may cause the engine to fire up and give the pump sufficient speed to deliver fuel. If the engine stops or didn't fire up, try again, but beware of flooding.

If still no luck, disconnect the inlet to the carb. and turn the engine again to see if fuel is being pumped.

A pulse of fuel is normal. If there is still no fuel, try priming the pump with fuel as it may be trying to compress air. The best way is to provide suction at the hose we have just disconnected and fill everything up to the hose. But beware petrol is carcinogenic and you shouldn't do it with your mouth. The other way is to pour fuel down the hose with whatever you can adapt or find. If you still have a solid metal final hose the last procedures will be difficult. Now try the pump again and hope for the best. If there's still no fuel, check all the associated plumping for leaks, not just a fuel leak but also the possibility that air is getting into the system and reducing the pumps efficiency. If all this fails we have to suspect the pump or a blocked filter in the tank. A roadside repair? It's your decision. This all assumed you had fuel in the tank to start with, just an idea!

If you are desperate to keep going with a failed pump you can use a borrowed electric pump or if you started with an electric pump then this is the first thing to be checked. Check for power at it, then the fuses and you may end up 'hot wiring' it directly from the battery. If its still not operational then you will have to look inside.

The third requirement is a spark.

Checking for a spark is pretty easy; just pull the wire from the central position on the distributor (this comes from the coil), and hold it about a quarter of an inch from any ground, i.e. any metal that's attached to the body or engine. Now turn over the engine and you should see decent size spark jump from the wire end to the ground. Some people carry a spare plug and lead to do this.

If the spark is very weak see if the coil is baking hot, if it is cool it down with blowing air or a fine spray of water away from the terminal end.

Now try again and if the spark is stronger go for a start but the coil will either need replacing or moving to a cooler position sometime. If the spark was strong it could have been finding another route to ground instead of the plugs in or outside of the distributor, if it's dark you may see it 'arcing'. Permanent damage may have been done by this resulting in a new distributor cap being required but it is worth trying to dry out the cap or spraying inside and out and all the leads with WD40 or an equivalent. Again beware WD40 is flammable so watch for the first few seconds of starting.

If we have no spark, we shall continue diagnosing.

Check to see if there is about nine volts on the + terminal of the coil (this may be marked 'Bat') with the ignition key on and near battery voltage during start. For this you will need a meter, test bulb or try jumping a small spark to earth. If there is nothing here or low during starting suspect the ballast resistor or wiring. The solution is to change the ballast resistor or jump a lead from a twelve volt supply, the battery or you may find a supply at the ballast to the + terminal of the coil. This is a get you home fix only as this will eventually damage either the coil, points or electronic control unit (ECU), then when at home you can find the defect.

If this is OK then the problem is either in the distributor or with the ECU. Not much can go wrong inside the distributor if you're electronic but with points and a condenser check that on rotation the points close and then open to a small gap. The point of opening will coincide with the timing mark on the end of the crank showing about ten degrees before top dead centre (TDC). While you have got the distributor cap off, just have a look for misplaced or broken wires and rectify them. Also if the timing mark is near TDC the rotor should be pointing towards the number one terminal of the cap, or 180 degrees out. If it isn't you have probably got internal damage, something like the plastic teeth have stripped which means other damage as well.

This all may seem complicated but it is logical and you will probably be missing only one item of the three.

It assumes you have some rudimentary knowledge and skills but the worst happens to most of us and pure breakages and lack of spares and equipment mean we have literally broken down.

This is the time to hold your hands up in surrender and call for assistance. You may have had some spares for the car, but what about you and any passengers. Should our spares pack include, food, water and warm clothing for the wait?

Alan Smith is Chairman of the Jensen Owners' Club and believes in using his Jensen the way it was intended!

BACK TO BASICS...

DIAGNOSING FAULTS IN THE IGNITION SYSTEM

You can talk all you want about 500 bhp fuel-injected Chrysler V8s, but what if the damned thing won't start? This article goes **back to basics** and should be useful for all Jensen owners from early cars, through 541 and C-V8 to Interceptors and Healeys without electronic ignition.

There is nothing in the car electrical system quite as essential as the ignition because without ignition it's just no go! Tracing an ignition fault is therefore a top-priority job, and the task becomes that much easier if you are clear about the basic principles. So, first of all, let's have a quick run-down on these.

The heart of the coil ignition system is the induction coil, which is a form of transformer. A battery supply is fed to the low-tension terminal of the coil via the ignition switch. From this low-tension terminal, current passes through the primary winding of the coil, and is then connected to the distributor, where it passes through the contact-breaker points to earth on the car body. It returns along this path to the earthed battery terminal (Fig. 1).

Interruption of the primary circuit is obtained by the rotation of the distributor shaft, which opens and closes the CB points by its attached cam. Current passed through the ignition coil primary winding magnetizes the iron core. At the instant of contact-breaker opening the current falls off, causing a sudden collapse in the magnetic field of the primary winding. In turn, this induces a very high voltage into the coil secondary winding. The collapse of magnetic field is helped by the condensor, which is connected in parallel (or across) the contact-breaker points. The condenser in effect becomes charged when current passes in the circuit, then discharges at the instant the CB points open.

BASIC FAULT-FINDING KIT

The induced high tension (HT) current so produced is then fed through HT cables to the distributor cap and rotor, then to each plug in turn.

With that 'field plan' of the system borne in mind, you can now concentrate on fault-finding. For equipment, you will need a test lamp, jumper cable, and a spare condensor. These basic items should be quite sufficient for making all the tests.

First, where there is no spark at all, always check the ignition coil supply. Older coils had 'SW' marked on the supply (switch) terminal, but modern coils are marked 'POS' and 'NEG' or more simply + or -. A negative-earthed car will have the feed at 'POS', while if the car is positive-earth, the feed to the coil will be made to the 'NEG' terminal. If in doubt, check the cable colours. The switch feed is white, while the distributor feed is white with a black tracer. Use the test lamp as shown in Fig. 2 to check. If there's no light from the test lamp with the ignition switch on, then there's an obvious case for further checking of the connections in the ignition switch circuit.

Now transfer the test lamp across the CB terminal and earth, as shown in Fig. 3. With the ignition on, the test lamp should light at about half brilliance when the distributor contact points are opened. With the points closed, the test lamp should go out. If it doesn't go out when the points are closed, then obviously the points are not closing properly!

PRACTICAL CHECKS

These tests prove the ignition primary circuit, and at this point it is probably best to make some more practical checks. Make sure the car is in neutral gear. Remove one plug lead from its terminal, switch on the ignition, and arrange the end of the H.T. cable about a quarter of an inch away from the engine block. Operate the starter, and a spark should jump from the H.T. terminal to the engine block as the distributor moves through the appropriate segment in the H.T. distributor cap. If there's no spark on this test, investigate further in stages.

Visual clues are important, so keep a sharp eye on those contact-breaker points. If the points are clean, and adjusted to the correct gap, then make the H.T. test direct from the ignition coil. Remove the centre H.T. cable from the distributor cap, and hold this cable end close to the engine block. Turn the engine over with ignition on, and look for a spark. No spark here points to a faulty ignition coil — providing the feed is intact, and the contact-breaker points are operating correctly. However, it should be said

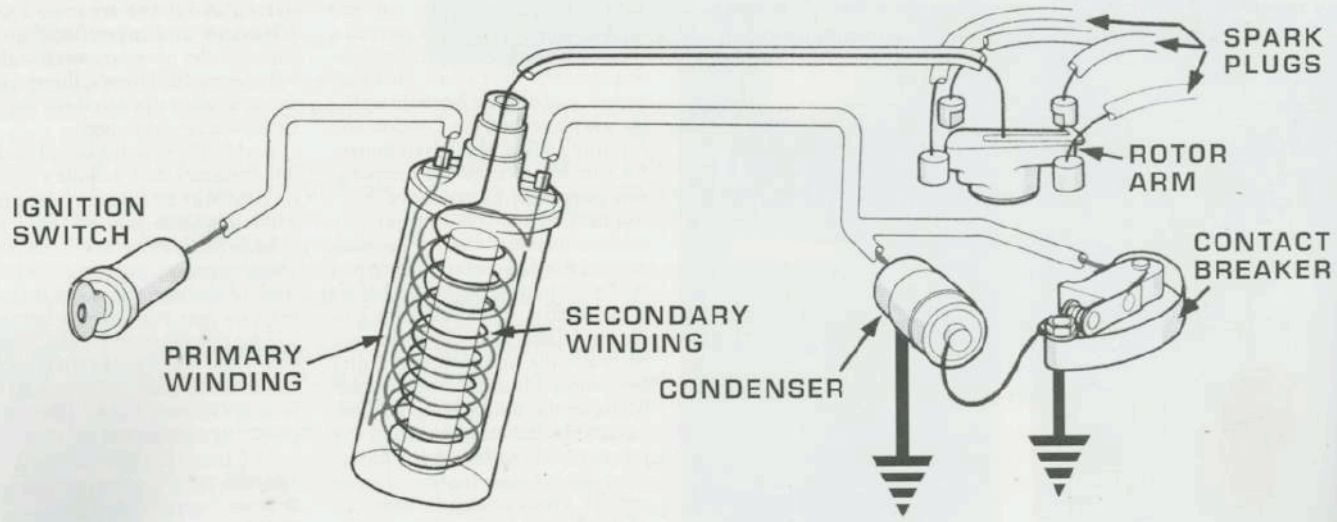


FIG 1: COIL IGNITION CIRCUIT

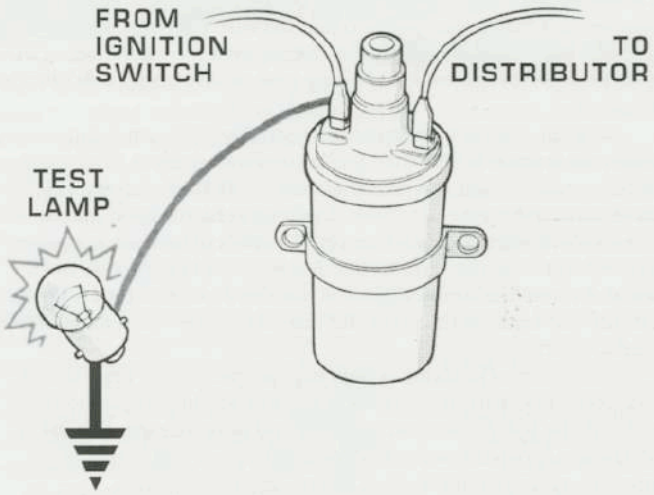


FIG 2: TEST IGNITION COIL SUPPLY

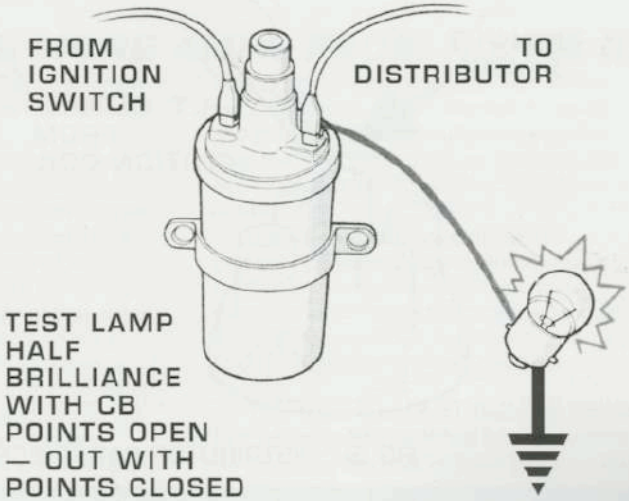


FIG 3: TEST COIL PRIMARY AND CB POINTS

at this point that ignition coils do not often break down — you would have to be unlucky to experience this — so it's more likely that the cause of no spark at this stage would be a faulty condenser.

CRACKED DISTRIBUTOR CAP?

Now, it is not easy to test a condenser, except by substitution. If you have a spare condenser, it may be easier to disconnect the existing condenser in the distributor, and then rig up the spare condenser across the ignition coil CB terminal and earth (Fig. 4). Once a good H.T. spark has been established from the ignition coil itself, further problems must be in the H.T. distribution side of the circuit — distributor cap, rotor arm, H.T. cables, or spark plugs. A faulty distributor cap will often show signs of 'tracking', where the stray currents make their own inimitable zig-zag lines from segment to segment. The rotor arm may also track down, and this can often be seen as a tell-tale mark.

A good test of both components is to use the ignition coil H.T. output cable. With the ignition on, operation of the starter will cause a stream of H.T. sparks to issue from this cable to earth. Place the suspect distributor cap on the engine block, right side up, and hold the H.T. cable from the coil approximately a quarter of an inch away from each input terminal of the distributor cap in turn. A very thin spark should be observed. If the spark is fat, then the cap is probably tracking — it might even be possible to see this when the sparks are being applied, as the tracking area will show up like small streaks of lightning if they are on the surface of the material. Fig. 5 shows this simple test. Incidentally, make sure the coil H.T. cable is in good condition and dry, or you may receive a proportion of that volatile current!

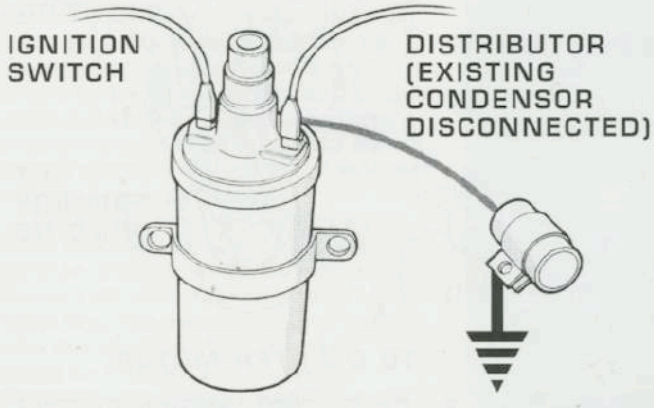


FIG 4: CONDENSER CHECK

The rotor can be tested by leaving it in position on top of the cam assembly, and directing the H.T. output to the rotor electrode. Again, a thin spark only should occur — not a fat healthy spark, which indicates a leak to earth.

SPARK PLUG LEADS

Apart from the contact-breaker points, probably the most likely items to cause ignition troubles are the H.T. cables or the spark plugs. Always check the cables (plug leads), to make sure they show no signs of insulation damage or cracking. If they are more than three years old, renew them!

Plugs should, of course, be regularly checked, cleaned and renewed at the correct intervals — usually at least every 10,000 miles. Plug insulators must also be kept clean and dry. It is dampness which is most likely to cause H.T. troubles, as the damp attracts dirt and oil, which then creates current leakage. With the H.T. voltage around 12,000, it's not surprising that some of this potential will leap off in all directions at the slightest opportunity! Careful attention to cables and plugs will forstall this.

Two types of advance-retard mechanism are in common use, and they must work correctly if the ignition is to be efficient. The standard centrifugal advance-retard unit consists of a pair of weights fitted to the rotating shaft of the distributor, susceptible to centrifugal force. The weights tend to fly outwards at speed against a pre-determined spring tension. As the weights are linked to the contact-breaker cam, they will advance the cam and cause the CB points to open earlier, thus advancing the H.T. spark. Slowing down the engine reduces centrifugal force and the weights return to their original position by degrees in proportion to engine speed. The H.T. spark is then retarded, as the points open later at lower engine speeds. These weights can stick — so make a point of adding a few drops of light machine oil to the little hole under the rotor arm, at the very top of the distributor shaft. Also, check the weight operation by twisting the rotor in the direction of rotation — it should move through a few degrees.

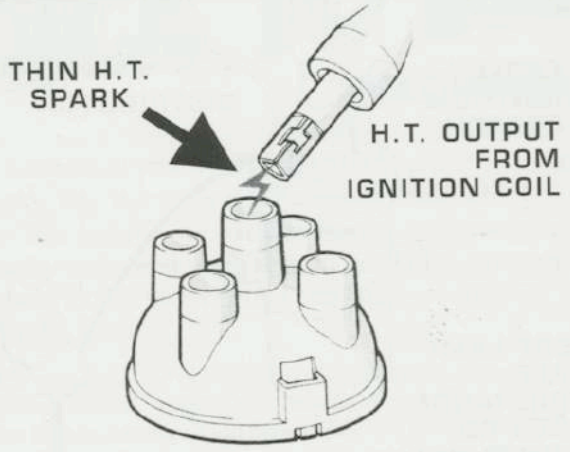


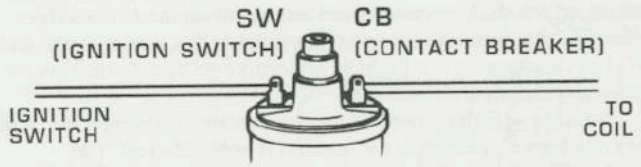
FIG 5: DISTRIBUTOR CAP CHECK

BASE PLATE

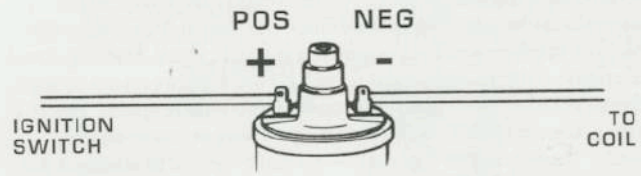
Vacuum advance-retard can be an additional fitting. In this system the distributor contact-breaker base plate moves a few degrees each way. Moving the base plate has the same effect as moving the cam, except that the base plate is moved against the direction of rotation of the distributor shaft in order to obtain advance. Movement of the base plate is controlled by a diaphragm unit fitted to the distributor body. A small pipe is connected from the diaphragm to the engine induction manifold. Varying air pressures in the manifold create varying amounts of vacuum strengths, which affect the diaphragm. When the engine is on a light load the vacuum is high and the ignition is advanced — with a steep hill and big engine load, vacuum is low and the ignition is retarded slightly to cope with changed conditions.

To check a vacuum unit, disconnect the suction pipe at the diaphragm end, run the engine slowly,and place a thumb over the pipe. A definite suction should be felt. Check for a blocked or leaking air pipe if there is no suction.

Stop the engine and remove the distributor cap, exposing the moveable base plate. Turn the base plate by hand. When it reaches the extent of travel against the restraining spring, place a thumb over the vacuum unit air intake. Now release the base plate, which should then remain in this position — or nearly so. As soon as the thumb is taken away from the vacuum intake the base plate should move back to its original position as spring pressure exerts force.



POSITIVE EARTH COIL



NEGATIVE EARTH COIL

FIG 6: IGNITION COIL POLARITY

These tests prove that no leaks exist on the induction pipe or the vacuum unit diaphragm, and also that the base plate restraining spring is operating efficiently. Any discrepancies in operation on the tests must be investigated, and a new pipe or diaphragm unit fitted as required.

Misfiring often occurs under heavy engine loads, since this is when the ignition is operating under the greatest strain. Wide plug gaps, low coil output, a weak condenser, or H.T. breakdown can be the causes of this type of trouble. Misfiring at high engine speeds is often caused solely by a sticking pivot on the contact-breaker points in the distributor. Use a smear of contact-breaker cam grease here, and make sure the contact spring is not distorted. A distorted spring creates side loads on the pivot and this may restrict movement of the contact points.

Some cases of misfiring at high engine speeds have been traced to incorrect polarity of the ignition coil low-tension connections. Fig. 6 shows the polarity for both negative and positive earth circuits. A reversed coil polarity will still allow ignition, but coil output is severely reduced in these cases and poor general ignition performance is encouraged, so always check this point.

BALLAST RESISTOR

In the 'cold-start' ignition system (Fig. 7) a ballast resistor is used to improve cold starting — not a new idea by any means, but one that has recently been re-introduced. The basic checks are the same, except for one additional feed to the ignition coil from the starter solenoid switch. This feed should be 'live' only when the starter motor is turning the engine over (check with the test lamp) and should not be 'live' once the starter motor is released. The ignition coil used here is a low-resistance type, and a resistor is connected in series with the supply to the coil — either in the shape of a separate disc resistor fitted to the coil itself, or a resistive cable from the ignition switch to the coil. If the resistor breaks down, the engine will start but will not continue to run after the starter is released. If the additional feed from the starter solenoid to ignition coil breaks down, the engine will be difficult to start. These points should be borne in mind when checking this type of ignition system.

So there's nothing really that difficult about tracing that ignition fault — providing the basic system is fully understood before tackling the job. Maybe you will be lucky first time and spot the fault visually — but if not, get out those simple testing tools and get back to basics!

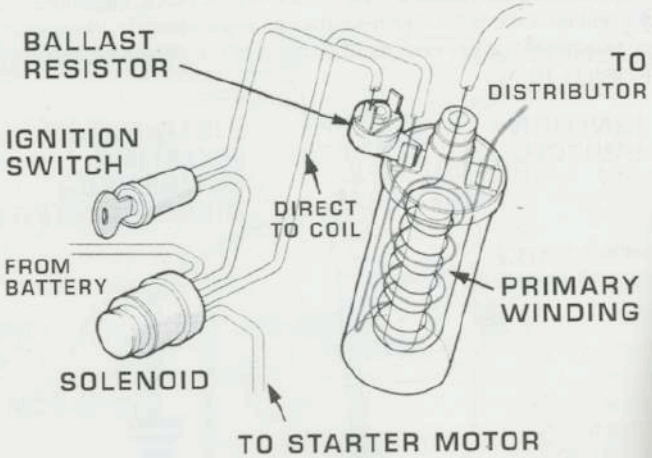


FIG 7: COLD START IGNITION SYSTEM WITH BALLAST RESISTOR AND LOW IMPEDANCE IGNITION COIL

Tuning Chrysler V8s

John Wild looks at tuning our Chrysler V8s without breaking the bank . . .

I think that American V8s must be one of the most cost effective engines to improve. Chrysler V8s seem slightly more expensive than others (Fords, Chevs, etc). However, every part is available new, if not exactly to the original design.

Almost all parts are available in various performance levels. The most exciting part for me, listed in the Chrysler Mopar Performance catalog for 1999, was the alloy 383 cylinder block, with steel liners, and just under US$5000. Alongside was the note that this was not suitable for nitromethane engines. A nitro grade block, good for 3000+ BHP, according to the book, would cost another $800.00. Although the weight, fuel and brake improvements appear considerable, at least on the surface.

'My view on tuning these engines, after speaking to many who have tried, is that for a car which is going to see much road use, avoid fitting any cam hotter than a standard SP camshaft.'

Additionally, the engine could be painted black, and would look quite original. One give away might be the distributor mount, which requires the use of an old 440 style distributor. This was done so that conversion to electronic ignition can be as simple as bolting on a '70s or '80s 440 distributor unit!

The weight of a block, totally stripped, and without crank, while heavy, is not as much as I imagined (I can move it). The inlet manifold is quite a lump, as are the water pump, water pump housing, and heads. The Inlet manifold and water pump are probably the easiest to change. I have an Offenhauser alloy inlet manifold from the '70s, and a brand new Chrysler Hemi water pump, in alloy. The water pump cost $65.00 or so, has stainless impeller blades, and is a minor work of art in its self. This alloy Hemi pump bolts onto our 383 and 440 water pump housings, and is widely recommended these days. Remember to check impeller clearance with the water pump housing, as when fitting any new water pump.

My view on tuning these engines, after speaking to many who have tried, is that for a car which is going to see much road use, avoid fitting any cam hotter than a standard SP camshaft. The Jensen SP engine has a 3-bolt timing gear attachment on the cam, whereas the FF has single bolt. Chrysler reproduce this popular SP (High Power) profile in single (Plymouth Roadrunner) and 3-bolt (SP) form. It is a very popular profile for muscle car restorers, and comes in a kit with camshaft bedding in lube, new lifters, and basic instructions. A sane cam and big valves.

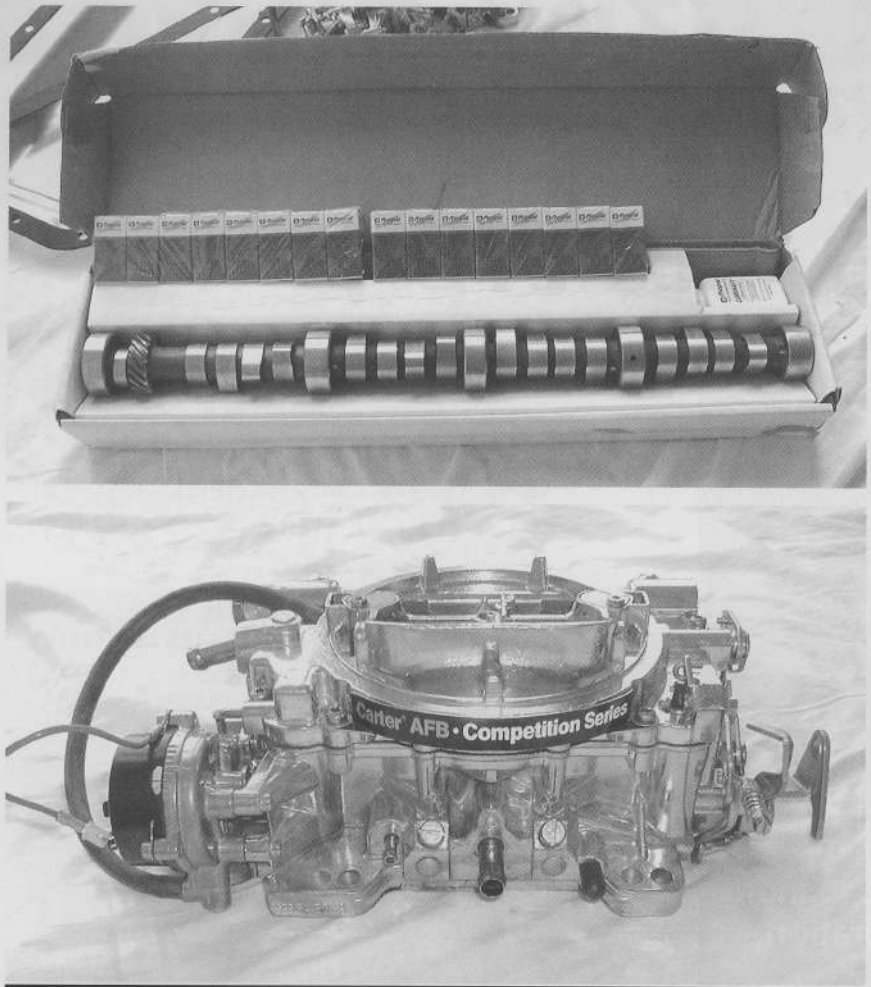
FF no 6 currently has a hotter cam with .5" lift and 283 degrees duration, and this is too much for comfortable use in traffic, and gives a poor idle. Fitting a cam like this without a high stall torque converter (to compensate for the loss of low down torque) is a disaster. On a hot summer's day, the bad idle causes the car to miss more often, loose vacuum, and even stall when floored from idle. I think this cam actually makes the car accelerate more slowly, as any increased power at the top end does not get used much, and a lot of torque is lost low down. I have one of these Mopar 'purple shaft' kits, single bolt (PN 4452783) and intend to fit it to FF6 shortly, hoping to get a decent idle back.

Good cool air flow into the engine can be worth a lot, but the open air cleaners are a worry (no fire trap), plus they suck in hot air from the exhaust manifolds in traffic. 119/011 has a fibreglass bonnet, which I believe was supplied by Jensen. This bonnet fools many FF owners, but has a deeper air scoop, and on the inside, there is a moulding which directs the cold air over the cleaner. This does make a difference with an open cleaner, compared to a twin snorkel. Bristol cars have what looks like a good system, with the cleaner intake sucking cold air from inside the wing. I intend to experiment with a system like this.

Exhaust wise, the standard system is good, except for no balance pipe and the reduced size of the pipe under the boot, between the silencers and resonators. As well as being reduced in size, this pipe also has a bend in it.

By keeping a sensible cam profile, and porting the heads, fitting larger stainless Chrysler valves, air flow can be dramatically improved. Chrysler sell porting template kits for a few dollars, allowing you to benefit from years of flow bench development.

Apparently, one of the obstacles to even better flow is the position of the exhaust ports. Chrysler produce a bolt on 'Stage 6' alloy head, which can be ordered bare, unported, or fully CNC ported and assembled with big valves. This head has the exhaust port raised slightly (1/4" or so). The standard manifolds still fit, but flow is increased greatly, especially at low revs, dramatically improving torque as well as top end power. The alloy heads should let the engine run much cooler, and reduce problems associated with low octane fuels. They have bronze guides and seats. I think the heads are about $4000.00 per pair.



New 'Purple Shaft' cam & lifter set (top) and new Carter AFB carburettor (above).

Edelbrock offer a rival product for the 383, again alloy, with stainless big valves, springs, etc for $1279.00 per pair of heads. See http://www.jegs.com, part number 350-6092K. These heads are advertised as having 83cc chamber volumes, a bit on the high side perhaps. The idea must be that you can mill them to the desired volume. Jegs ship to the UK, but you will have to pay import duty and VAT to customs at this end. As a guide a $400 order usually comes close to £400 Sterling all in when I get my credit card statement.

With the alloy heads for $1300.00, alloy manifolds for $150.00, water pump housing for $150.00, and water pump for $65.00, a lot of weight and heat retaining iron can be got rid of for less than $2000.00. This keeps the original engine, and converts to unleaded into the bargain! Worth taking a trip to Florida for!

£500.00 to spend on parts? — I wouldn't want to go much further than this:

1) Windage tray (to avoid Alan Smith's Milbrook problem, save fuel and power at high rpm). $65.00.
2) Strong Oil Pressure Relief Valve Spring. $10.00.
3) Air cleaner cold air ducting.
4) Roadrunner/SP spec. cam if not fitted.
5) Big stainless valves, bronze seats & guides, porting as per Chrysler template kit. $350.00
6) Exhaust pipe mods, to increase bore of link pipe under the boot.
7) Alloy Water pump, large vanes. More power, means more heat. $65.00
8) Alloy Inlet manifold, matched to heads? $150.00

This assumes:
1) The existing cam is good, the lobes not worn (reducing lift) and that the lifters are modern (an early FF road test mentioned that lifters tended to 'pump up' at high RPM.).
2) The cam chain is in good shape, and the original silentglide Nylon coated gears have been replaced. Slack or stretched chain will upset cam timing.
3) The distributor and points are in excellent shape, bushings within spec, etc. I think the original single points distributor is simple and good enough. However if the original distributor is beyond repair, a Chrysler electronic conversion kit is 'allowed' ($150.00 or so).
4) HT leads are perfect, and checked with a resistance meter from inside the distributor cap.
5) Good alternator and Voltage regulator performance.
6) Good mechanical fuel pump. Very old ones can rupture.
7) Good carb or acceptable replacement (eg Carter AFB).
8) Decent plugs, eg, Autolite 85 for a 383.
9) On a 440, the compression ration should have been raised to an acceptable level. Many factory spec 440s would have trouble making 200 to 250bhp net on modern unleaded.
10) That the bores/rings and bottom end are suitable.

That brings us to engine & transmission mounts, etc. All these can be serviced economically. Nylon mounts with keeps to stop the engine ripping them out are available. Stopping flex saves power. The transmission shifts can be firmed up, ($30.00) once the transmission has been rebuilt (strip kit, new bands, seals, etc $163.00) etc.

Most of these ideas have come from the Jensen Cars list and/or Mopar Performance Catalogue. There is also the Mopar mailing list on the internet. I have chatted to Frank Casser (won best modified Interceptor) about this, and he had some interesting ideas, quite a few are above. His engine has had lots of other mods, but nothing that makes it look dramatically non-standard.

I have not mentioned exhaust manifold headers. Most I have seen look a bit tame, and the cast iron ones do have a reasonable volume. If my iron ones crack, I would consider replacement tubular ones. But I don't think headers would make a massive improvement unless they are custom built.

Have a look at www.jensenff.com go to the main site, and see For Sale FF no 255. These FF headers have a collector under the floor pans. ●

V-8 Advance Curve

Kerry Moore tries to see if more performance could be achieved by modifying the ignition advance curve. The answer is yes, but it will mean buying a custom modified or adjustable distributor. Below Is the experimentation he did to find out if the altering the advance can improve performance.

No question about it, it improved power and economy, but there is no means of limiting total mechanical advance in the standard distributor, so we couldn't stop the engine pinking. See the panel on the following page on the Mopar Performance distributor I bought which allows you limit the amount of total advance. The 'advance curve' of the ignition system can affect how the engine performs. Too little advance, and the engine will be sluggish. Too much and it will create 'pinking' (also known as 'pinging', 'spark knock' or 'detonation').

Whatever you call it, it is very bad news and you must ***stop*** immediately you hear it. It occurs *before* you can hear it, and by the time you do hear it, it is very advanced so *be careful*. For a brief explanation of the advance curve, read on.

When the spark plug ignites the fuel in the cylinder, the fuel takes time to burn fully, and the gas this burning produces takes time to fully expand. This happens in milliseconds, but even at idle the pistons are travelling at hundreds of feet per second. Because of the time needed for the fuel to burn, and because of the speed of the pistons, the spark plug fires BEFORE the piston reaches the top of it's stroke. The top of the stroke is called TDC (Top Dead Centre), and the point at which the spark plug fires is called BTDC (Before Top Dead Centre).

Because the speed of the fuel burning is fixed, it needs to be fired earlier as the engine speed increases to allow it more time to burn fully as the pistons are travelling faster. This increase at the point at which the plug is fired is called 'Ignition Advance', and the rate at which it is advanced is called 'The Advance Curve'. Due to the compression of the fuel in the cylinder, the cylinder pressure reaches such a level that the fuel can ignite itself, rather than the spark plug igniting it. This is 'pinking'.

The things that affect cylinder pressure are:

The compression ratio of the engine.
The amount of ignition advance.
The 'octane' rating of the fuel.
Engine temp and altitude.

Low octane fuel will self-ignite sooner than high octane, and so cause pinking. With a lot of ignition advance at idle, the starter motor will struggle to turn the engine. This is due to this increased cylinder pressure.

The other cause of pinking is when there is so much ignition advance that the burning fuel hits the piston on the way up, rather than pushing it on the way down. This collision of the burning fuel onto the piston is the cause of the 'pinking' noise, and whether through excessive ignition advance, or self-ignition of the fuel, is very serious.

In a standard distributor setup, there are two means of ignition advance. The first is 'mechanical' and is caused by weights in the distributor being pushed out by centrifugal force as the distributor shaft is rotated by the engine. The faster the engine revs, the more the weights move out, advancing the ignition timing. The rate at which the weights move is controlled by the advance springs.

The other method is 'vacuum' advance, where a pipe from the carburettor to a canister on the distributor causes the vacuum generated by the engine to suck on a diaphragm in the distributor, advancing the ignition. This is only available on 'cruise' when the engine is producing high vacuum, and the cylinder pressure is low due to only partial opening of the throttles. It is not in operation during hard acceleration.

'**Static Advance**' relates to the ignition timing at idle. '**Total Mechanical Advance**' the the amount of advance that the distributor weights create **added** to the static advance, i.e. 'Static Advance' + 'Mechanical Advance'

'**Total Advance**' is 'Static' + 'Mechanical' + 'Vacuum Advance'.

Experimenting with the static timing on 136-8779 gave very noticeable improve-ment in acceleration and throttle response. Changing from 10 (standard 440 static timing) to 14 degrees static timing at idle made a huge difference. You need to be careful adding static advance, as what ever you add here is added to the total mechanical advance, i.e. with all the mechanical and static advance included.

The point at which maximum advance is reached is another deciding factor in the engine's performance. The standard 440 distributor gives maximum advance by 2600rpm. The distributor fitted to the Six Pack or Magnum engines gives maximum advance at 1700. This will make a stock 440 much more responsive.

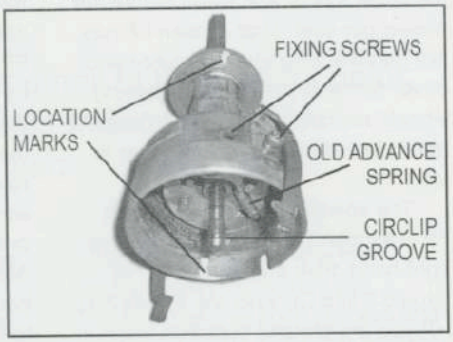
Changing the standard 440 distributor for a Six Pack or Magnum model is a quick easy performance upgrade. The distributor fitted to 136-8779 already had the Six Pack advance, so for more aggressive advance curve, a set of Mopar Performance advance springs were purchased for the princely sum of $10.95, plus postage from Mancini Racing (www.manciniracing.com) Part number MOPP2932675.

It was obvious on opening the packet that these springs were of a much lighter gauge than the standard springs, which will allow the centrifugal weights to spin out and advance the ignition much quicker.

If you are lucky enough to have low fuel prices (like the USA), then not using vacuum advance is not a problem (vacuum advance occurs at cruise, and vastly improves fuel consumption), but in countries like the UK with very high fuel prices, it is not really an option.

Fitting the performance advance springs

Unfortunately, the battery on my camera went flat at the start of the job, so I only have pictures of the later stages, but the job went like this:

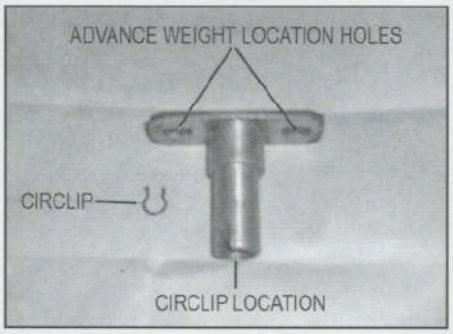


Use Tippex or white paint to mark the distributor's location in the engine block before removing it. This will allow you to reinstall it in the correct location (see photo above).

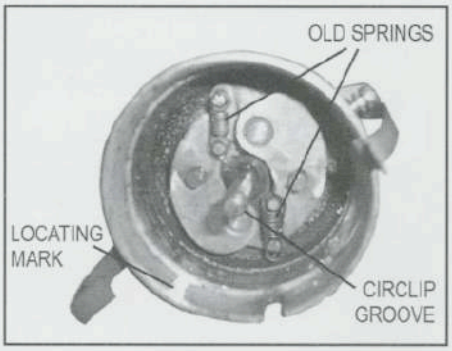
Remove the distributor cap.
Mark the position where the rotor arm is pointing on the distributor with Tippex. If you don't do this, you could reinstall it 180 degrees out.
Remove the vacuum pipe.
Unplug the distributor wiring.
Undo the 1/2" clamp bolt.
The distributor will now pull out. You can now start dismantling the inside of the distributor as follows:

Remove the rotor arm.
Remove the 8 sided magnetic rotor under the rotor arm (this may be stuck with old grease, but *gentle* prising with a screw-driver will ease it off. Take care not to lose the small locating pin that holds it in place.)
Remove the fixing screws from around the outside of the distributor, including the vacuum canister. You can now pull out the mounting plate on which the magnetic pickup sits. This is tricky as the vacuum arm is still attached and takes gentle removal.

Remove the circlip which holds the advance weight shaft (see photo below). If you think it's awkward taking it out, wait till you try to put it back!



Once the shaft is out, you can now see the weights and springs (see photo below).



Remove the old springs.
Clean and grease all the moving parts.
Fit the new springs.
Reassemble the distributor in the reverse of the above.

The next step involves several different operations. Read and make sure you fully understand the information in the article below before starting. To set the ignition system, follow the following directions (an extract from *'Instruction Sheet DCF-194CC MOPAR PERFORMANCE ELECTRONIC IGNITION KIT'* (The original is at: www.imperialclub.com/Repair/Electrical/Electronic/

Ignition Tuning for Maximum Performance

Tuning for maximum performance assumes the rest of the engine is also suitable for maximum performance. The octane rating of the fuel being used must be sufficient to accommodate the engine's compression ratio. The engine's harmonic balancer must have either degree marks or a timing tape P4529070 which correctly shows up to 60° before top dead centre. The carburettor must be properly jetted so that detonation or surging is not caused by the fuel mixture being too lean when the ignition is at maximum advance. The ignition coil and spark plug wires must be able to deliver sufficient spark to fire the plugs under maximum engine loading. If you are unsure about any of the above, consult the Mopar

continued on page 27

Mopar Performance Adjustable Distributor

For little more than the cost of a new standard dizzy, you can add this adjustable dizzy which will allow you to adjust your ignition to give the best results on modern fuels with these old design of engine, especially the older 383 and SP engines which require 5 star high octane petrol.

After experimentation with the standard distributor, it was apparent that increasing the ignition advance can give great benefits to not only engine performance, but to fuel economy, with 136-8779 returning 16mpg on a Monday Club trip to Scotland cruising at 80-85mph. The problem was limiting the amount of total advance the distributor gave to prevent pinking or knocking. To read up on ignition advance, and modifying a standard distributor, see main article.

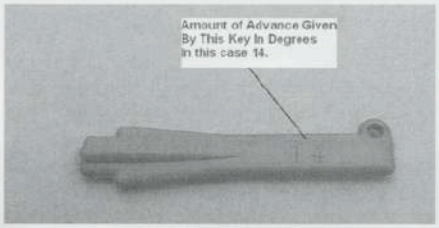
A conversation with Jensen guru Dave Barnett revealed that Mopar make a distributor that is adjustable for the rate of ignition advance *and* the amount of total advance, which is just what I was looking for. Dave had sourced his distributors previously from Scoggins Dickey and a quick part number search P3690432 found the distributor required (see picture below). The dizzy is $160, or basically the same as a standard dizzy. It even looks exactly the same as a standard dizzy. It undersells itself on most parts sites being simply described as a 'performance advance curve' distributor, rather than as an adjustable one. There is a version of this distributor for the 383 engine, but it is a different part number due to the 383 dizzy having a shorter drive shaft. Unfortunately, Scoggins Dickey do not have a great parts listing, so an e-mail will be required to get the 383 part number.

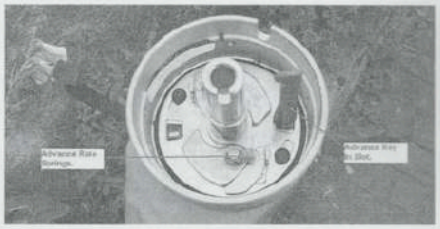
You will also need MAL29014, which is the Mallory ignition adjustment kit. This had the adjustment keys and colour coded advance springs (see picture above). These are $32, so very reasonable. With the new dizzy it is much easier to replace the advance springs than the old one.

I started by deciding how much total mechanical advance I wanted (I was going to go for 36 degrees to see if the engine would take it, but 34 degrees seems to be as much as I can give it before pinking sets in on unleaded petrol. 36 degrees may be possible on Super (premium pump gas) Unleaded, but not on unleaded (pump gas) with an aggressive advance curve). I then decided on what rate of advance I required. As I already had the Mopar Performance advance springs fitted, I went for the fastest rate I could get.

Part of the advance curve fit includes charts to show the various advance curves available, and what spring combinations are required (I went for 2 x Pink springs). I next decided I wanted 14 degrees of static advance, so 34 minus 14 = 20, so I used the 20 degree key to setup the amount of total advance. (see picture below) I had previously been running 18 degrees of static advance, and found 14 degrees a little flat in comparison, so I will be re-setting the advance with the with the 16 degree key so I can have 18 degrees static, and 34 total (18 + 16 = 34).

When I settle on my final figures I will update this article, but as all engines and quality of petrol is individual, you will need to find your own optimum settings.





Performance Engine Modifications Manual. The manual outlines the proper ways to construct a race engine.

If the procedures outlined for maximum performance are followed and the engine begins to detonate, you must decrease the timing advances until the detonation is eliminated. Detonation not only severely reduces power, it also destroys pistons, rings and rod bearings. ***Do not run an engine that is detonating***.

Tools required:
Timing light, 3/32" Allen wrench, vacuum gauge with long hose, vacuum source ('Mighty Vac') and a friend or helper.

1. Set the basic timing for total mechanical spark advance:

a) Disconnect and plug the vacuum advance hose.
b) Connect timing light to the battery and number 1 spark plug wire.
c) Loosen the distributor hold down clamp so the distributor housing may be rotated by hand.
d) Start the engine and allow it to warm up fully.
e) Set the idle speed at 2000 RPM.
f) Set the timing according in accordance with the following: (See Note 1 below on the figures for static timing, and limiting the maximum mechanical advance)

Engine	Heads	Max Mechanical Timing
B/B	Production (Iron)	38° BTDC
B/RB	Stage IV, V (Iron)	38° BTDC
B/RB	Stage VI (Alum)	38° BTDC
B/RB	Indy (Alum)	35° BTDC

g) Tighten the distributor hold down bolt.
h) Reduce the idle to the original setting, unplug and reconnect the vacuum advance line.

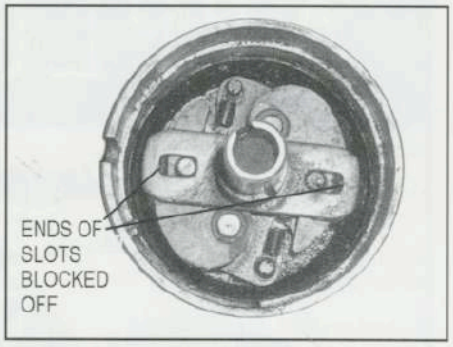
2. Set the Vacuum Advance for Total Ignition Advance:

a) After the basic timing has been set for total mechanical spark advance, disconnect the vacuum advance hose at the carburettor. Connect a vacuum gauge to the carburettor's vacuum advance port and route the gauge and hose in to the passenger compartment. Place the gauge in a location where an assistant can read the gauge while the vehicle is being operated.
b) With the vehicle in operation, note the maximum amount of vacuum generated by the engine while in gear and being held at a steady speed between 2000 and 4000 RPM.
c) Stop the vehicle, turn off the engine and connect a timing light to the battery and number 1 spark plug wire.
d) Start the engine and raise the idle speed to 2600 RPM. Connect a vacuum source (Mighty Vac) to the distributor's vacuum canister and draw vacuum up to the reading noted in step b.
f) Note the total advance shown on the harmonic balancer.
g) Total Advance, mechanical plus vacuum, should be set according to the following chart:

Engine	Total Advance
B/RB	58° BTDC (See Note 2)

h) Disconnect the vacuum source and insert a 3/32 Allen key into the internal vacuum canister adjusting screw. Turn the Allen screw (clockwise to decrease, anti- clockwise to increase) to obtain the correct setting. Reconnect the vacuum source and recheck the timing. Continue repeating this procedure until the correct setting is obtained.
i) Remove the timing light and vacuum source. Reconnect the vacuum advance hose. Reset the idle speed to your original setting.

Note 1: JOC member Pete Burton contacted me to say the latest Mopar performance manual lists 32degrees static and 52 degrees total are the maximum you can use with modern unleaded fuels. This pretty much agrees with what we found from experimentation. We restricted the maximum mechanical advance by blocking off the slots in the distributor. We did this with pieces of cable ties glued into position (see photo below).



Note 2: There is no indication of the age of the article, and it may have been written when high octane leaded fuel was available, so you may need to reduce some of the figures mentioned, especially maximum advance. 52 degrees maximum should be the used on unleaded-pump fuel. You may be able to use 58 degrees total on high octane Super Unleaded-premium fuel.

You will now need to road test the car. Pinking is the sign of detonation in the engine and can cause ***sertous damage*** if it is not corrected ***immediately***.

You will need a strobe timing light. A digital light will be a great help as with these you set the timing degrees on the gun, then alter the distributor position until the timing marks line up with the pointer. This is the opposite of the old guns where the flash rate was fixed, and you altered the distributor so the timing marks moved away from the pointer. The digital gun also has the ability to show you the maximum amount of advance you have, and at what RPM.

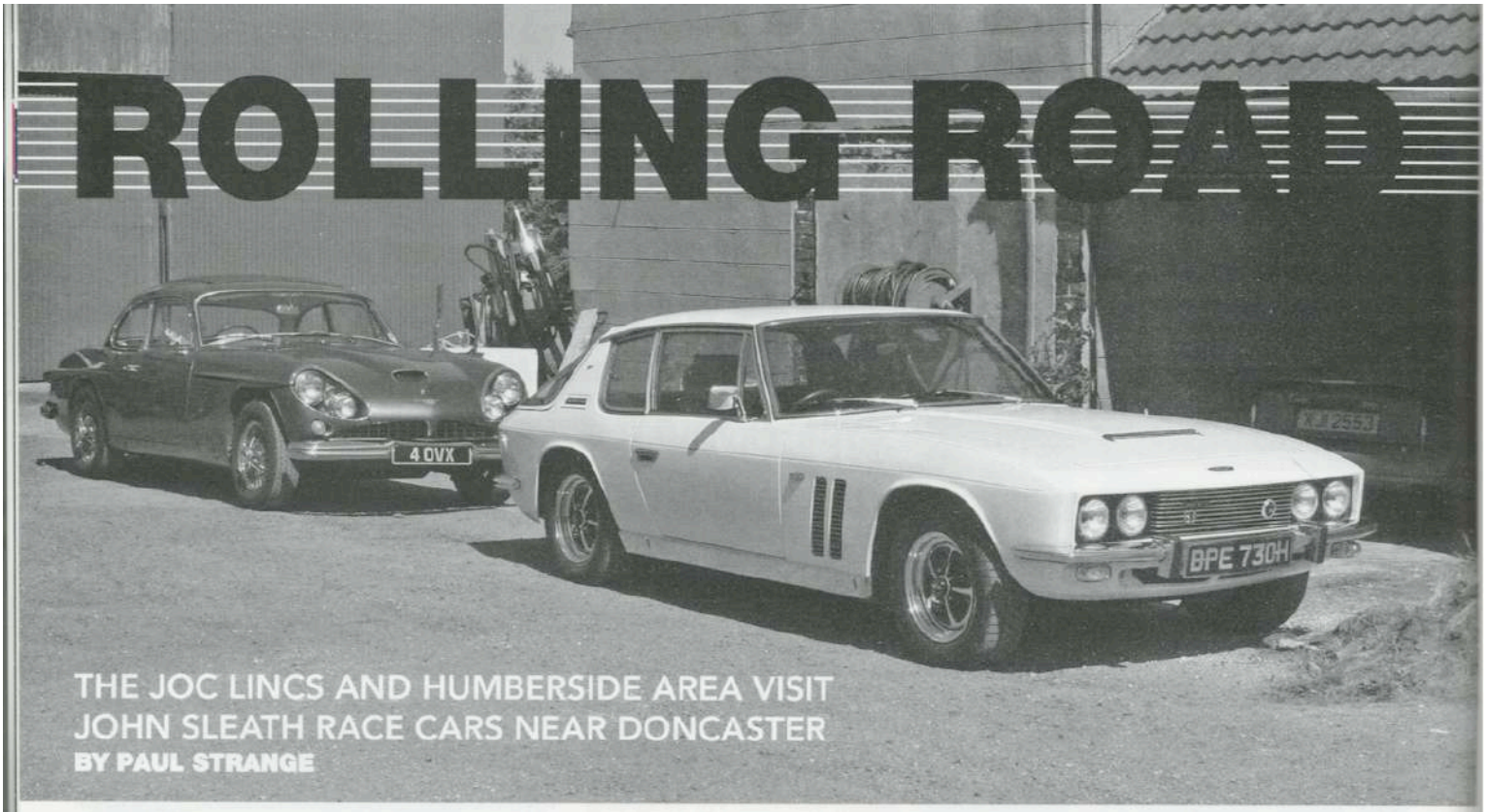
Make sure during the testing that the engine is fully warmed up, and that you cover all ranges of driving, i.e. pulling away from idle, full power, hill starts with the engine under heavy load, etc. Make sure you back off immediately you hear pinking, and reduce the amount of advance you have.

TECHNICAL ADVISORS

The following members have volunteered to try and solve any problems that you may have with your Jensen. Do take advantage of this service but remember to call at a reasonable time of day. You can of course, write to them if the problem is not urgent.

Jensen 541:
Paul Boulton 01768 484007
Jensen 541:
Ron Smith 01283 760535
Jensen C-V8:
Chris Walton 0121 3547441
Jensen Interceptor:
Alan Smith 01380 726876
Tony Davies 01270 761444
Jensen FF:
Dave Barnett 01708 456439
Torqueflite Auto Trans:
Pete Sims 0181 5514635
Jensen S-V8
Keith Anderson keith.a@joc.org.uk
Jensen-Healey:
David Booth 01244 336331
Martin Shirley 02476 385535
Martinshirley@enta.net

ROLLING ROAD



THE JOC LINCS AND HUMBERSIDE AREA VISIT JOHN SLEATH RACE CARS NEAR DONCASTER

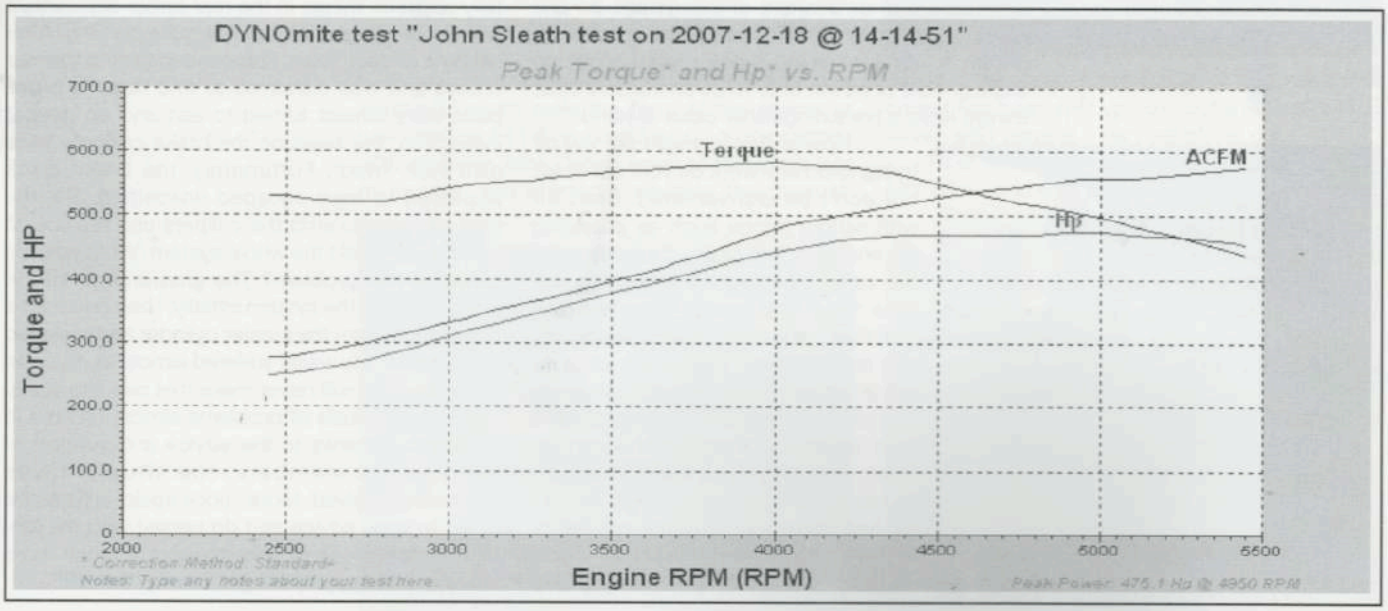
BY PAUL STRANGE

Like many owners, I have always been concerned that the mighty V8 fitted to my FF was, possibly, not so mighty after all – unlike its thirst... My FF's E-Series 383 engine had apparently covered some 123,000 miles, and could best be described as 'tired', which is quite understandable as I don't think it had ever been rebuilt during its 39 year life. I therefore bit the bullet, and decided to have it rebuilt, and uprated as well as fitted with unleaded heads, etc.

The search for someone able to do this work finally lead me to John Sleath. John has been modifying and racing V8s for many years now, and undertakes much of the engine and transmission work himself, including the fitting of the F.A.S.T. fuel injection system. John therefore rebuilt an E-Series 383 for me to an improved spec based upon better torque rather than outright power — which I think the FF particularly needs as it's a heavy beast, and gelded even more by its 4WD transmission. After boring and stroking the engine to some 489 cu in, and fitting a ProForm Street Dominator carb, different crank and camshaft, etc – all using really top quality components (aircraft/racing quality) – John managed to get a max torque figure of 581 lb ft, and max power of 475 bhp from my new engine, as measured on his Dynamometer. This is, of course, a totally different figure to that measured at the wheels, as we found on the rolling road rig — and that latter figure is surely the one that really matters! Nonetheless, the diagram below is a plot of my rebuilt 489 on John's engine dynamometer.

The idea of a **JOC rolling road rig day** was formed when I realised through talking to many members that some of us (including myself) were not certain that their cars were running/performing as well as they should. Although some (lucky?) people have more than one car, many of us had no yardstick for comparing the performance of our treasured vehicles beyond the original road tests, and even these are not fully representative either, since the petrol formulated for these engines has changed its constituents over the intervening period.

Thus was born the idea of using a rolling road test rig to provide a baseline for our cars, so that meaningful comparisons and conclusions could be reached and then we would know if our own cars were running as intended. At least then we'd also



CAR	OWNER	ENGINE	GROSS POWER (Manufacturer's Figure)	NET POWER (Rolling Road)
Interceptor SP	Phil Hayes	440 cu in	390 bhp	208 bhp
Interceptor SP	Brian Birkin	440 cu in	390 bhp	220 bhp
FF Mk II	Paul Strange	489 cu in (uprated inc EFI)	475 bhp	290 bhp
FF Mk II	David Newby	383 cu in	330 bhp	149 bhp
C-V8 Mk II	John Bell	383 cu in	330 bhp	172 bhp
Interceptor Mk III	Mark Maniatt	440 cu in (factory-fitted sports cam)	280 bhp	186 bhp
Jensen-Healey	David Newby	134.2 cu in (2.0 litre)	140 bhp	85 bhp
Interceptor S4	Simon Heap	360 cu in 'crate engine' from USA	Not known	243 bhp
Interceptor Mk III	Colin and Diane Mayes	440 cu in.	280 bhp	162 bhp
Interceptor Mk III	Brendan Murtagh	440 cu in.	280 bhp	166 bhp
FF Mk II	Andrew Tweddle	383 cu in (rebuilt 2009)	330 bhp	166 bhp

Results of Rolling Road Rig

(All figures based on best of three runs and rounded to nearest whole number)

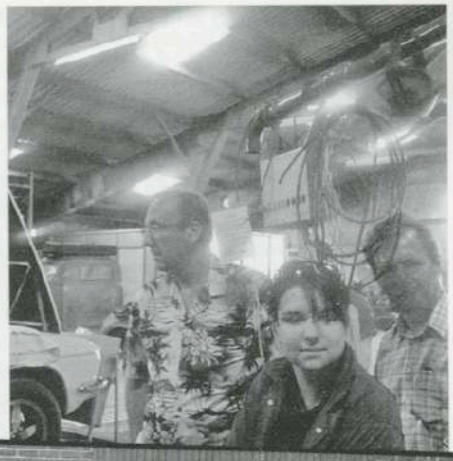
know, 'Well they all do that!' as is so often said to those of us who have less Jensen experience than others.

So the Lincs and Humberside JOC section decided to organise a rolling road rig day at John Sleath's establishment near Doncaster; John's rig could accommodate 4WD too, so FFs were not a problem. The testing was to be combined with a very enjoyable barbecue at our Illustrious Chairman's abode, which fortunately is but a few miles away from John's premises.

Some 30 members and friends therefore attended on the Sunday, preceded by Brian Birkin's SP and the SP too of Phil Hayes, who both arranged to attend separately on the previous day so that facilities for more extensive testing and adjustment of their engines could be provided.

The rolling road was carefully adjusted in turn for each car's measured wheelbase, the car then being driven very slowly on to the rig, and a check made that all wheels were sitting centrally within their individual set of rollers. The car's tyres were then temporarily inflated to a higher pressure to prevent them becoming too hot during testing. The car was then strapped down securely to the rig's foundations and an extremely large air fan placed in front of the car radiator to facilitate cooling – although the car engine would be turning at max rpm and power, the cooling effect from road speed would otherwise be negligible. A Lambda probe was then inserted into the exhaust to measure the fuel/air ratio throughout the three test runs to be made for each car.

Finally John Sleath then ran each engine, checking its timing and adjusting as necessary, and then measured and adjusted the air-fuel mixture if required, to facilitate the best result from the car. Fortunately John is an expert with American carburettors, so this did not take too long between vehicles — and also improved the post-test running of more than one car, to the delight of its owner!



Three test runs were made for each car; the automatics being held in 2nd gear. As you can see from the photos, the noise was, well, absolutely tremendous and deafening! But this was as nothing compared to the sheer terror of standing next to one's pride and joy, and seeing it driven without mercy to its maximum. Fortunately, not one of the engines tested went bang! — perhaps due to John's care in setting each one up and the condition in which they are maintained, as well as to the V8's engine design – unstressed/fat and lazy?

All cars had their results recorded and printed out (and laminated for keeping).

continued on following page

LOOKING SERIOUS – IT'S HIS CAR UNDER TEST! Mark Maniatt and Katie Murtagh.

COLIN MAYES LOOKING A LITTLE CONCERNED as Andrew Tweddle looks on at the computer screen data

RICHARD CLEWES' lovely 541 (which wasn't tested)

ROLLING ROAD

I'm not really qualified to comment upon the figures above, except to observe that the considerable losses seen come from a combination of the following:

- Air cleaner
- Exhaust manifolds and pipes
- Torque converter
- Transmission
- Overall condition of engine and transmission

John Sleath commented that the losses for manual transmission cars are always less than those for the automatics; he feels that a lot of this is actually within the torque converter itself. That said, it is of interest that (compared to more modern cars) the real outputs are not so mighty as one might initially suspect; on the same day we got net figures of 139 bhp (Polo Mk V 1.9 TDI rechipped) and 231 bhp (Saab CSE Aero 2.3 rechipped).

After all the excitement and relief that our engines were still intact, we all adjourned to David and Helen Newby's house nearby for an excellent barbecue, and much discussion on the morning's results.

Our thanks go to John Sleath for his expertise, good humour, and skill in preparing and testing the cars with his staff; also to his wife Michelle who very kindly proved us with refreshments to keep us going. Finally our thanks to David and Helen, who put in a lot of effort to make the end of the day so enjoyable.

Paul Strange
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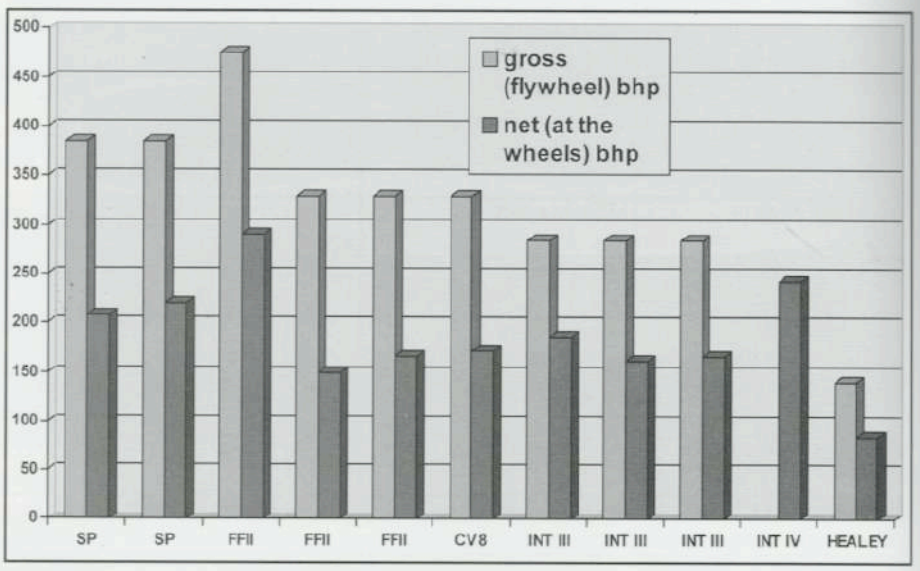

Gross (flywheel/manufacturer's figures) v. net (at the wheels) figures obtained on the rolling road rig

JOC TECHNICAL ADVISORS

The following members have volunteered to try and solve any problems that you may have with your Jensen. Do take advantage of this service but remember to call at a reasonable time of day. You can of course, write to them if the problem is not urgent.

Jensen 541:
Ron Smith 01283 760535

Jensen C-V8:
Chris Walton 0121 3547441

Jensen Interceptor:
Alan Smith 01380 726876
Tony Davies 01270 761444

Jensen FF:
Dave Barnett
01708 456439

Jensen-Healey:
David Booth 01244 336331
Martin Shirley
02476 385535
martin.shirley@hotmail.co.uk