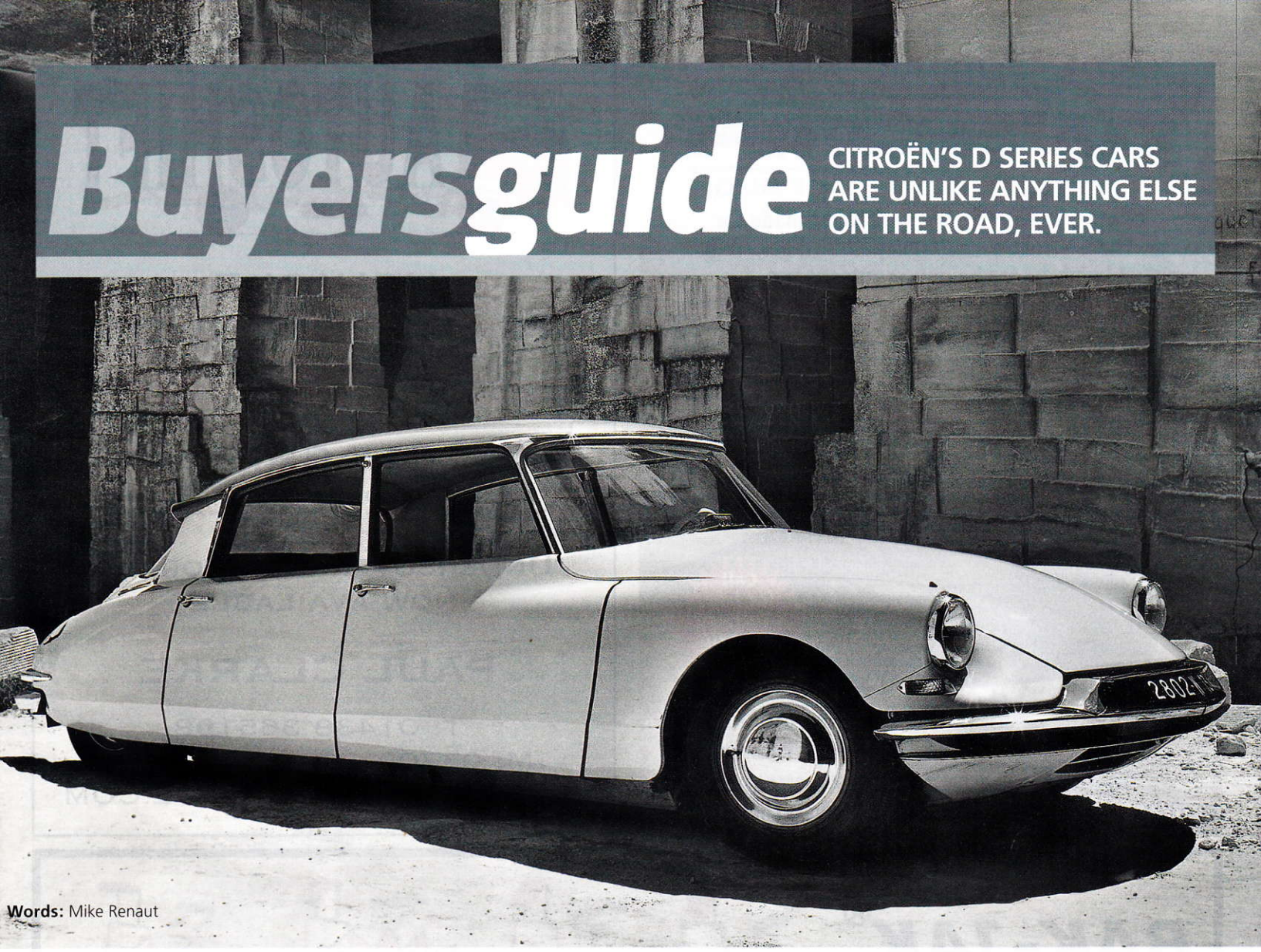
Buyersguide

CITROËN'S D SERIES CARS ARE UNLIKE ANYTHING ELSE ON THE ROAD, EVER.



Words: Mike Renaut

Timelëss Art: DS & ID

ID AND DS SPECIFICATION CHANGES

As a rule of thumb, the DS model received specification changes first. The more lowly ID version got them within the following year to 18 months.

To call the Citroën D series innovative is an understatement. Citroën took the car design rulebook, tore it into pieces, set it alight and then stamped it into ashes. Launched at the Paris Motor Show in October 1955, the car was a sensation. *Autosport* said that the DS "At once renders half the cars of the world out of date." Citroën took 12,000 DS19 orders on the first day alone.

But all wasn't well behind the scenes – hydraulic fluid leaks were rife and cars were unrefined. The D series had been designed in total secrecy so production didn't get underway until 1956 because factory workers used to building Traction Avants had no idea how to assemble this complex new car.

Dealers had no forewarning about specifications or servicing details. The owner of the first DS received visits every few weeks for six months so Citroën engineers could make running modifications. It took until 1960 before teething problems were sorted, and by then the bad press was so severe that the DS was effectively relaunched.

In spite of the poor reputation of early cars, the D series soon became a success. Citroën had combined stunning bodywork with practical, hard-wearing mechanical parts. The engine from the previous Traction Avant model was updated and dropped under the long, curvaceous bonnet but the big news was the hydraulic system that operated suspension, steering and brakes. Construction consisted of a pressed steel hull with a skeleton welded on top. The body panels were then bolted on – a method that Rover later used for their similar-shaped P6. This means that examination of the DS you're thinking of buying is relatively easy provided the current owner is willing to let you start taking their car apart.

"In spite of the poor reputation of early cars, the D series became a success"

Citroën were nothing if not open to change and the D series underwent a number of improvements and specification changes throughout production. Firstly, it's important to note there were several model variants. The DS19 was quickly joined by the cheaper ID model, launched in 1956. The ID Luxe came with unassisted (meaning non-hydraulic) steering and brakes, and an under-dash parking brake (rather than the pedal-operated one of the DS). ID interiors were more spartan, with bare metal and vinyl rather than coloured plastic and carpeting. On the outside the ID had smaller hubcaps, painted rather than chromed roof pillar trims, and aluminium rather than

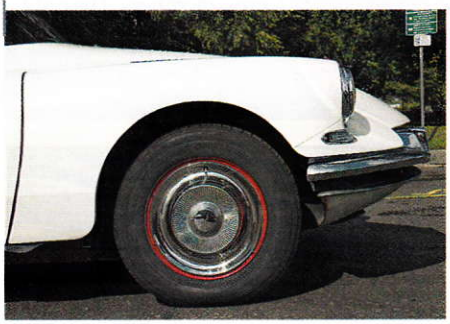
Know your chassis numbers

Citroën had a bewildering array of VIN codes dependant on the car's build year, model type, body style and gearbox. For instance, the first production DS19 saloon (in 1955) got chassis sequence number 000063 and the last DS19 of that year got chassis 005889 – but only 62 were built. Pre-built bodies often bear no relation to their chassis build dates. For those built in other countries, different rules apply.

For a full description of VIN codes, we recommend picking up a copy of *Original Citroën DS: The Restorer's Guide* by John Reynolds (just reprinted in paperback by MBI). The Citroën Car Club can also offer further advice on the age of any potential classic Citroën purchase. The vehicle identification plate with a numéro de série – chassis number – is riveted to the top of the engine bay bulkhead on the left-hand side. A second plate below shows the numéro de coque (the build number).

On cars built between 1963 and 1967, the chassis number was stamped on the right-hand side chassis rail.

From April 1964, a paint reference number tag was fixed to the top left of the bulkhead.



DID YOU KNOW?
Pneumatic suspension wasn't a new idea, but Citroën was the first to make it work. Dulpuech of France experimented with vertical pneumatic assistance for leaf springs in 1910, as did Cowey Engineering of Kew Gardens, but it's not thought either reached production.

chrome bumpers. Most Luxes were sold new as taxis.

The ID Confort, launched in 1957, was placed between the ID and the DS with a little more luxury. An absolute bargain-basement ID Normale model was produced for a few years but only a handful are known to survive.

The ID models regularly outsold the expensive DS. Top of the luxury Citroëns was the DS19 Prestige. Intended for businessmen and civil servants, it was a rare special order car with upmarket interior by Henri Chapron. Production was usually less than 40 a year.

Minor trim and detail changes were applied to Citroëns several times a year. It's vital to bear this in mind if you plan to restore a car to factory specifications – especially if you buy one with parts missing. For instance, major changes include longer rear wings with recessed reflectors in August 1959, 1961 saw a new dashboard style, and manual transmission was available from January 1963.

A DS Pallas was introduced in August 1964 as a 1965 model. Purely an upmarket trim and specifications option, Pallas cars are rare and desirable.

The 1966 range introduced a revised 1985cc engine and a new DS21 model with a 2175cc powerplant. Both engines were mated to an all-new gearbox with lower gearing for improved acceleration and a sychromesh first gear on hydraulic gearchange cars. The brakes were »

CURRENT OVERVIEW

The D series Citroëns have always been popular cars, in demand since production began. A DS will always achieve a premium over an ID but the cars are equally sought after. The estate car variants are also desirable as a practical workhorse. The D cars tend to scare away the unwary due to their complex nature but owners realise just how usable these cars are. A convertible or Slough-built car means a long search and you'll need to dig deep. An already restored left-hooker offers the best value. Prices are difficult to determine as demand exceeds supply to the extent that a decent early DS can command in excess of £12,000. Getting a £6000 car to a £12,000 value usually costs a great deal more than £6000, though.

PRODUCTION HISTORY

1938: Work begins on a faster, more comfortable and lighter version of the Traction Avant – the VGD. Work is cut short by war.

1949: The VGD design is now a teardrop with long nose and short tail – the DS is starting to take shape.

1954: At the last minute, Citroën management change the roofline design. The line between the roof and C pillar is clumsy so cone-shaped indicators are placed there.

1955: Official introduction of the Citroën DS at Paris Motor Show. In the first 45 minutes of the show, 749 orders are taken.

1956: Introduction of the Citroën ID model.

1966: Switch from LHS to LHM hydraulic fluid.

1967: DS gets a restyled 'shark' front with swivelling inner headlights.

1975: DS discontinued, replaced by the CX.

GETTING INTO GEAR
Citroën's twin chevron logo was inspired by the herring-bone teeth of the industrial gear wheels made by the Société Anonymes Des Engrenages Citroën.

uprated, although several owners have since concluded that even unassisted ID brakes are still well up to the job today.

Testers complained that Citroën's new engines were as harsh and unrefined as the ones they replaced – worth bearing in mind when test driving a Citroën from this era for the first time.

The DS21 also got an innovative automatic headlamp height adjustment system that linked the headlamps to the anti-roll bars, counteracting the pitching of the nose under acceleration and braking. The DS got a revised front apron with dual air intakes and the rear sported twin exhaust pipes.

In September 1966, Citroën introduced LHM Liquide Hydraulique Mineral fluid to replace the synthetic LHS. Green in colour, the new fluid was more stable under high pressure and changing temperatures. The LHM was also non-corrosive so didn't affect the condition of the hydraulic system. Since the two fluids – synthetic and mineral – should never be mixed, the key components of the hydraulic system were coloured green instead of black.

The key to buying an old Citroën is to familiarise yourself with the changes and specifications of the car you're searching for so you know what you're looking at. Don't spend Pallas money on something that started out as an ID. It's also worth bearing in mind that different markets may have had individual changes. UK cars built at Slough had numerous small changes compared to French or Australian-assembled cars. Since the DS is so popular, and Slough cars are now extremely rare, expect to find that the majority of the cars you look at are left-hand drive.

DID YOU KNOW?
Different mechanical ideas examined for the DS included supercharging, dual gearboxes and an air-cooled flat-six engine. Luxury versions with 3 and 4.5-litre engines were also considered.

Exterior checks

In a word, rust. You're looking for corrosion in all the outer panels, the base unit and the chassis crossmembers. The pub 'experts' will tell you that the hydraulics are the main source of worry with a Citroën D series but you ignore the condition of the bodywork at your peril. With the suspension on its highest setting, start at the front and work your way back, examining all panels and crossmembers. The only

QUICK VIEW

1 Door bases rot out. Forward and bottom of rear wings rot, as do sills – if they're not perfectly flat then they're corroded.

2 Rear wings are removed with a single bolt. Inner flanges rot from water gathering under the C-pillar trim. Corrosion here usually means serious corrosion elsewhere.

3 Front suspension carrier bolts may be loose but chassis mounting boss welds can crack. Test on the car's lowest suspension setting by prising a crowbar between chassis and suspension arm.

4 Steel bootlids (early cars had alloy ones) and slam panels rot. The sponge/rubber seal holds in moisture. Bootlids are flimsy and can crack or bend halfway down each side as well as along the top edge.

5 Rear corners of the boot can rot when bumper supports corrode. Water collects along the front edge of the boot against the anti-roll bar cover panel. The panel can be removed but bolts often rust solid.

6 The rear suspension crossmember is structural. Water can run down the fuel filler aperture and rot the crossmember. Suspension geometry may be affected or, in extreme cases, it can break the car's back.

7 Remove the spare wheel to check for rust in the front crossmember. Check front apron for parking damage and the apron-to-wing joining brackets.

"Replacing a clutch takes approximately 12 hours"

"Familiarise yourself with specifications so you know what you're looking at"

way to be completely sure is to use a car lift, but a decent torch and prodding with a screwdriver will give you a good idea. Most cars will have a fibreglass roof but they do flex. If possible, use a small screwdriver to lift the seal slightly away from the roof to check the metal edge where the roof panel mounts.

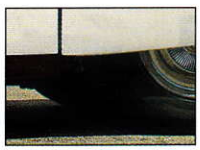
The seams around the rear suspension cylinder brackets are prone to rust and can cause the cylinders to break away from the frame – this is bad news. Pay special attention to the rear crossmember ahead of the boot floor. Look at the condition of the weatherproofing rubbers because once water gets in it will only ever rot its way back out.

Interior checks

It's fairly straightforward to drop a DS or Pallas interior into an ID so make sure you pay the right price for what you're getting as resale values can be affected.

On any car, get the carpets out and examine the floorpan and inner edges of the sills because the carpet foam holds water. Be aware that missing trim can be expensive and time consuming to find – especially on early cars outside of France. »

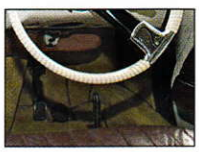
8 Worn driveshaft outer joints on a high-mileage DS can clatter on full lock. Steering balljoints wear if not greased. Front suspension arm bearing replacement is an awkward job, and new front hub bearings get pricey.



9 The main pipe loom for rear hydraulics is vulnerable to corrosion – it's located in front of nearside rear wheel under a panel that is open at the base. All pipes and brackets rust. Replacement of pipework is time consuming and expensive.

10 Replacing a clutch takes 12 hours or so. Gearboxes tend to be strong but hydraulic fluid from the gear selector block can leak into gearbox – the thinner hydraulic fluid affects the lubrication of the transmission gears and could cause eventual damage. Check box fluid levels.

11 Suspension spheres become worn, resulting in a harsh ride, but are fairly cheap to replace.



12 Parking brake pad replacement is a five-hour job. Cable replacement is equally awkward.

THE FACTS

Buy a good example that's well maintained and you'll have a gorgeous car that you can use regularly. The Citroën Car Club have several members who happily use a DS most days. Finding a good example of an early DS is going to be your biggest problem. The cars are much in demand but remember an LHS car that hasn't been regularly used is will need potentially expensive suspension work. Estate cars are rarer due to lower production numbers and a worse survival rate, but values are equivalent to saloons. Genuine Slough-built cars will always command a premium both in the UK and Europe.

PARTS PRICES

Front brake pads set (early cars)	£35
Brake shoes set (saloon)	£42
Brake control valve (used)	£40
Full engine gasket set	£85
Cylinder head gasket set	£50
Piston ring set	£65
Exhaust front flexible section	£45
Steering rack pinion boot (each)	£30
Driveshaft inner gaitor	£28
Suspension cylinder boot (FR / RR)	£35
Door bottom repair section (inner)	£45
Door bottom repair section (outer)	£36
FR wing lower rear repair panel	£30
Inner door handle (chromed brass)	£50
Door to wing vertical rubber	£10
Headlamp glass surround rubber seal	£12
Heater radiator (recon)	£90
Heater valve	£49

SERVICING AND MAINTENANCE

- Irregular use of a D series, especially an LHS car, is the kiss of death for it.
- Replace the oil filter every 6000 miles. Clean hydraulic fluid reservoir, belts and plugs. Flush through radiator.
- Every 12,000 miles replace gearbox oil. Clean carb and air filter.
- Every 18,000 miles, or at least every two years, thoroughly change brake and hydraulic fluids. Check condition of hydraulic pipes.
- Ensure steering and brakes (especially the rarely used rear drums) are set up correctly prior to annual MOT.

INSURANCE COSTS

www.footmanjames.co.uk. A policy with Footman James offers the same premiums for all genders, locations and qualifying ages.

1965 CITROËN DS19 – value £8000

- 1500 miles a year **£134.82 with £50 excess**
- Anything over 1500 is an unlimited mileage policy **£173.70 with £50 excess**

Test Drive

The Citroën D series is a bit different, so if you've never driven one, it's best to let the owner guide you through the controls before taking the wheel. With the engine running, the suspension should rise straight away. The pump will click as it cuts in and out every 20 seconds. A pump that doesn't cut out indicates a defective main accumulator. Verify that the hydraulic fluid has been changed regularly – dirty fluid or rubber particles in the fluid filter are danger signs.

Once in the driving seat, don't rush the car or try to force your way through the gears. Providing the gearbox is set up correctly, a light touch, especially on hydraulically assisted boxes, is all that's required. Smooth changes from the column selector come with practice. A new clutch is a big job so make sure all is well.

The brakes should be immediately responsive and stop the car in a straight line. Don't stamp on the pedal like in a modern machine or the DS will stand on its nose. Some books will tell you the DS is not a car you can hurry, but for its size it's a reasonable performer. Helped by that fantastic suspension, once you gain confidence you can corner enthusiastically.

Powered steering tends to be trouble-free if the fluid' has been looked after but seals can need replacing – and there is 30 or so of them. Heavy steering points to problems and reconditioned racks can be pricey. The steering should centre pointing straight ahead – any steering adjustment usually requires specialist equipment.

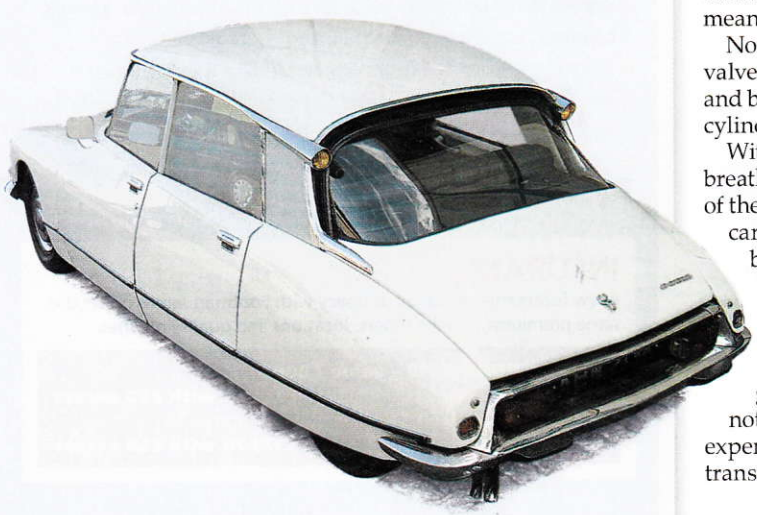
Check the operation of the handbrake by parking on a hill because replacing the pads or working on the cable is time-consuming and awkward so negotiate a lower price.

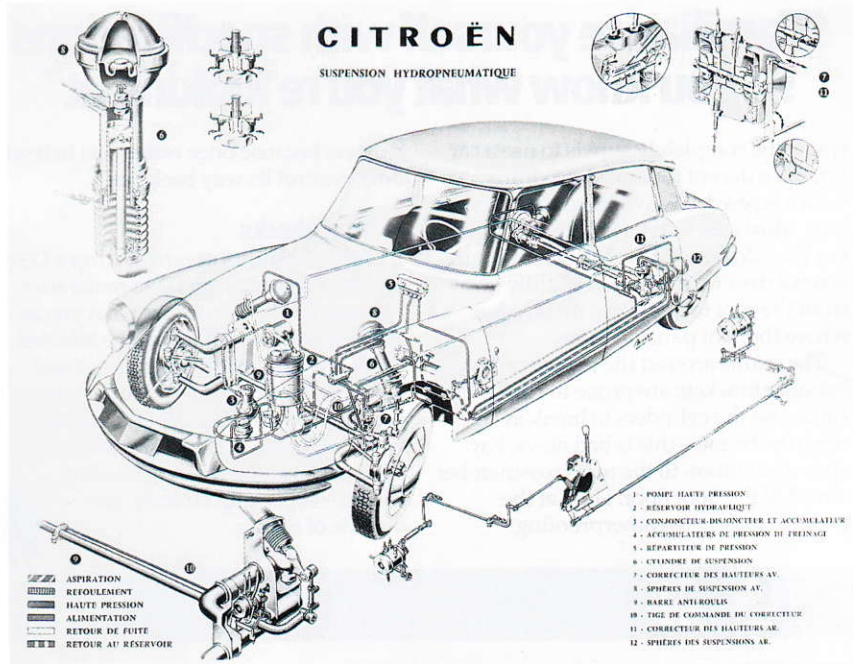
Other than searching everywhere for rust, check for crazing or cracks in the fibreglass roof. Also, check the balljoints by driving on a bumpy road. A knocking noise means they need adjusting or replacement.

Front suspension creaks or shimmies at anything over 50mph can indicate cracks on the suspension arm assembly nuts – another big job to replace.

Do & Don't

- Do buy a car with good bodywork and a solid underpan and base unit.
- Don't buy without seeking the advice of specialists or owners clubs.
- Do test drive the car and ensure all the mechanical parts and equipment works correctly.
- Don't pay over the odds for a car. There are enough out there if you join the club and you're willing to wait for the right one.
- Do check the service records, but don't expect a full service history on a car that's as much as 50 years old. Make sure the owner has changed the fluids regularly, especially with LHS.
- Don't buy a base model that's been disguised unless you're paying a fair price.
- Don't fall into the trap of thinking you can restore a ropey DS or ID easily or cheaply.
- Don't buy over the internet unless you know exactly what you're looking at.





"Synthetic cars left standing will absorb moisture into the hydraulic lines, meaning expensive repairs"

Mechanical checks

D series engines have been known to do 250,000 miles before needing a major overhaul but only those that are well maintained. Oil leaks, especially around the bottom of the distributor, indicate a camshaft-seal leak. Replacing the seal means removing the gearbox.

Noisy tappets could spell a simple valve adjustment or a worn camshaft and bad followers, the latter meaning a cylinder head rebuild.

With the engine running, remove the breather hose that runs from the bottom of the engine to the back of the carburettor. Excessive smoke indicates bad piston rings.

DS gearboxes can last upward of 300,000 miles and most problems are caused by driver abuse. The synchromesh on second and third gears tends to wear (feel for notchiness) and replacement can be expensive. A noisy or whiny transmission can indicate bad bearings or even a worn crownwheel and pinion. Watch for clutch slippage. Check the amount of travel left on the adjustment screw located at the end of the fork at the top of the transmission bell housing. If the screw is turned out 1.5 inches or more, expect to replace the clutch soon.

Problems with the Citromatic (automatic) box include an internal leak in the hydraulic brain causing jumping out of gear. A sticking valve in the clutch selector can prevent the engagement of first or reverse gears. A delay or jump in shifting is usually a small adjustment. Periodic checking of the transmission fluid (open the plug on passenger's side of the transmission) prevents damage from this problem.

With the handbrake on, open the bonnet and rock the car back and forth while watching the driveshafts. Very little movement should be visible. If there is play, check if it occurs at the housings mounted on the brake discs or in the shafts themselves.

The front brake pads can be seen behind the radiator air ducting. A new pad has about 15mm of lining. Replace it if the lining gets below 5mm.

Cars with synthetic hydraulic systems suffer from sticky front brake caliper pistons if the car's been standing. An indication of this is pulling to one side under hard braking. The brake calipers will need to be rebuilt. Synthetic cars left standing will absorb moisture into the hydraulic lines, causing rust particles to circulate around the system and rot out the hydraulic lines – meaning expensive repairs ahead.

Check the operation of the handbrake – engage the brake and attempt to move the car in first gear. Also look for handbrake pad wear. The pads are on the front discs on the side of the transmission bell housing and aren't adjustable. Replacement is expensive, especially on an air-conditioned car because the compressor's in the way.

The rear brakes are usually trouble-free. To be on the safe side, though, check for rear brake cylinder leaks dripping fluid inside the rear wheels.

With the car idling at normal suspension height, push down on the front and rear bumpers of the car. About 8cm of travel is correct. No travel means the spheres need replacing.

Turn the steering from lock to lock. If you hear the pump continually cutting in, the steering has an internal leak.

When raising the car from low to normal position listen for creaks from the rear suspension, indicating a worn suspension rod and/or ball. Left untreated it could cause the rod to snap.

Bad vibrations at idle and low revs can indicate a collapsed engine mount.

Verdict

If it's your first classic, we'd recommend starting with a later (post-1968) LHM car, which will tend to be more forgiving and certainly more plentiful.

If your heart's set on an early car, buy one in regular use that's been well maintained by an enthusiast.

Thanks to:
Paul and Steph Savill, Marcus Carlton and especially Nigel Wild of the Citroën Car Club (www.citroencarclub.org.uk/PostNuke or 07000 248 258) for their help with this feature.

SPECS PANEL

CITROËN DS (1955-66)

ENGINE	Four cylinder in-line pushrod, water cooled, alloy hemi head
CAPACITY	1911cc
COMPRESSION	7.5:1 / 8.5:1 / 8.0:1
FUEL SYSTEM	Single-choke Solex or Weber Dual-choke Solex or Weber
POWER	66bhp / 75bhp / 81bhp @ 4500rpm
TORQUE	97.6 lb/ft / 104 lb/ft @ 3000rpm
TRANSMISSION	Front-wheel drive Four-speed or five-speed manual
SUSPENSION F	Independent, twin leading arms, anti-roll bar, self-levelling hydropnuematic units
SUSPENSION R	Independent, trailing arms, anti-roll bar, self-levelling hydropnuematic units
STEERING	Rack and pinion, fully powered option
LOCK TO LOCK	4.1 turns (2.9 when powered)
TURNING CIRCLE	35ft 6in
BRAKES	Unassisted until 1962 model year when fully powered off high-pressure hydraulics
FRONT	Hydraulic inboard 11.5in diameter discs
REAR	Hydraulic outboard drum (10in internal diameter)
WHEELS AND TYRES	Michelin X 165 x 400 (front), 155 x 400 (rear)
BODYWORK	Four-door saloon, unstressed steel panels on steel body and chassis base unit. GRP or aluminium roof. Aluminium bonnet, until 1960 aluminium boot.
LENGTH	15ft 8in
WHEELBASE	10ft 3in
TRACK	Front: 4ft 11in, Rear: 4ft 3in
WIDTH	5ft 10.5in
HEIGHT	4ft 10in
MAX SPEED	82.6mph
0-60MPH	19.9sec
OVERALL MPG	26.6mpg