

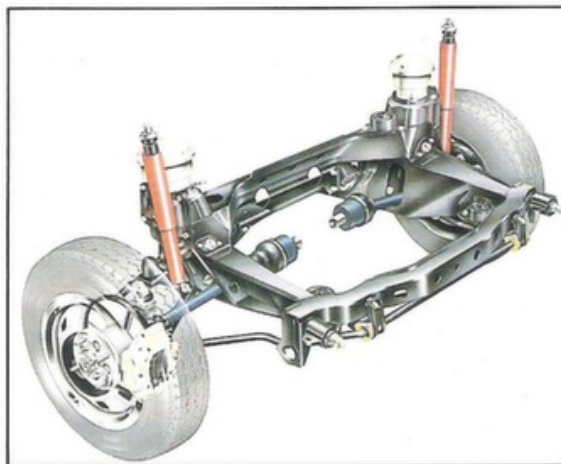
Suspension

The development of a Hydragas suspension system specially for Metro has produced an arrangement ideally suited to Metro's size and load carrying characteristics. The results, combined with the virtues of front-wheel drive and Metro's extremely precise steering, are standards of ride, handling and roadholding that are unquestionably among Metro's most powerful selling points.



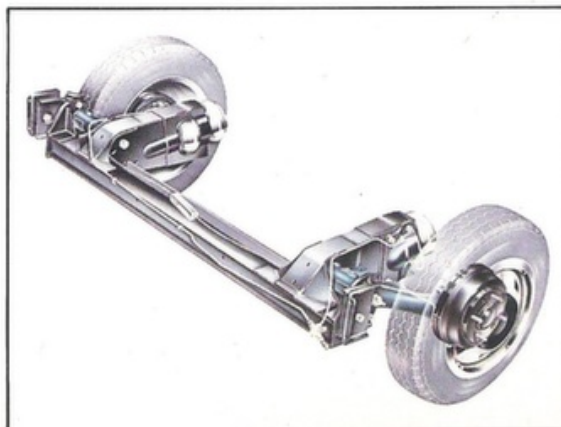
Front suspension

The front suspension consists of Hydragas units which are independent (rather than being connected from front to rear as they are on Allegro, Maxi and Princess). External damping for the front units is provided by telescopic shock absorbers. Both the Hydragas units and the dampers are mounted on the front subframe, which provides additional insulation from road shocks and vibration. A front anti-roll bar gives useful additional cornering stiffness.



Rear suspension

The rear suspension geometry has been carefully designed so that there is no need for external dampers. The tremendous advantage of this arrangement for Metro is that, as the Hydragas units are small in size and mounted horizontally, they do not intrude into the loadspace area. The rear units are also interconnected by a small diameter pipe, which helps to equalise pressure between the two units.



What are the three major features of Metro's front suspension?

- i) Independent Hydragas units
- ii) External dampers
- iii) Anti-roll bar

Ride

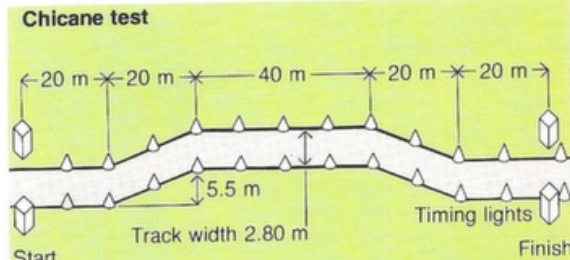
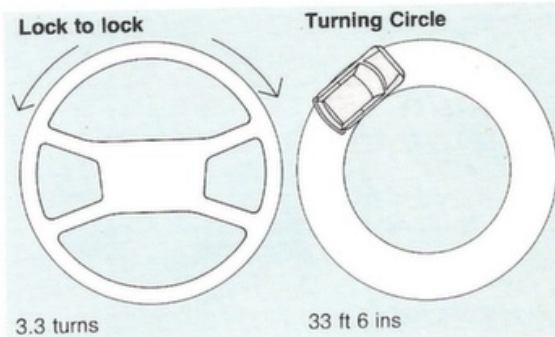
In addition to the important loadspace advantages provided by the arrangement of the rear suspension, its quality of springing and damping provides an unusually good rear seat ride for a small car - (Metro's competitors feel distinctly less cushioned and comfortable). Like every other aspect of Metro, the benefits are the result of long and arduous testing - in this case, 7,500 miles of pavé endurance to check durability and reliability.

Steering - 3.3 turns lock to lock : 33 feet 6 inches turning circle

Metro manoeuvrability means the ability to slip easily into a parking space only about 2 feet longer than a Cortina - a virtue of its nimble 3.3 turns lock to lock, 33 ft 6 in turning circle, and superbly compact shape. In addition, Metro's rack and pinion steering has a positiveness and a precision which are key benefits to handling and roadholding.

Roadholding and handling

Metro's roadholding and handling qualities are the total result of many features - its well-engineered suspension, the stability inherent in its front-wheel drive system and aerodynamic shape, and its extremely precise steering. Subjective though this topic is, we can do no better than give you the reactions of the engineers who helped to develop Metro. Because of their extensive experience, these men are the hardest of all to impress, but without exception they have rated Metro's handling and roadholding qualities as simply outstanding.



One of the many tests Metro had to go through was the Chicane test, which it whipped through with sure-footed agility in a faster time than most of its competitors.

In addition to providing good ride qualities, what is the other major benefit of Metro's rear suspension layout?

The Hydragas units do not intrude into the loadspace area.

Brakes

Metro's brake system benefits from the same background of intensive engineering as the rest of the car, and this has given it probably the most advanced system yet fitted on a car of its class.

Four piston discs

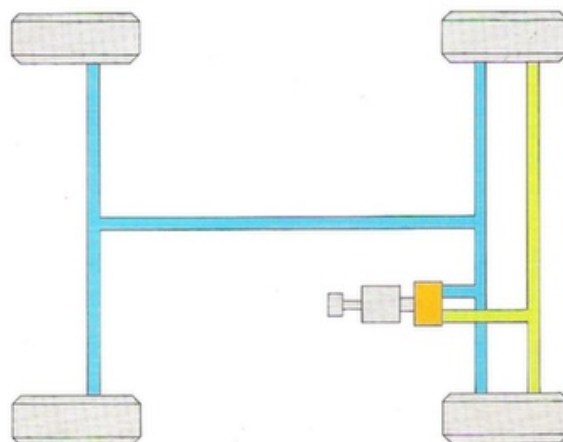
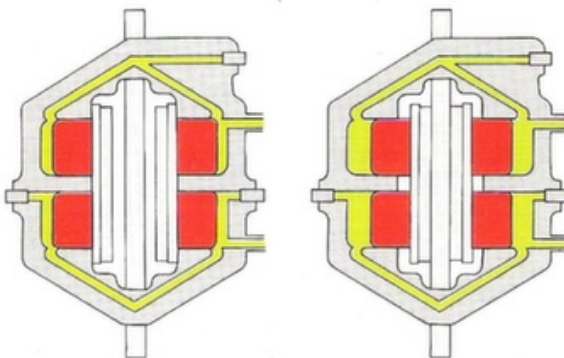
The most common form of disc brake has two single-piston cylinders, operated off one brake pipe. However, Metro's front discs are each operated off four pistons, with each pair independently piped. A major advantage of this arrangement is that larger pads can be used, giving a greater effective braking area. A further advantage is the extra security of having the brake fluid fed to the cylinders through two independent systems instead of only one.

H/I split dual circuit

The H/I split braking system is different to the three existing types of dual circuit currently used on Austin Morris cars. One circuit is linked to all four wheels, the other to the front wheels, ensuring that the front brakes will always remain operative.

Servo assistance

To reduce the pedal pressure required for the heavier 1.3 S and 1.3 HLS, these models have servo assistance fitted as standard.



In addition to the front anti-roll bar, what are the two major features of the front suspension?

- i) Independent Hydragas units
- ii) External dampers

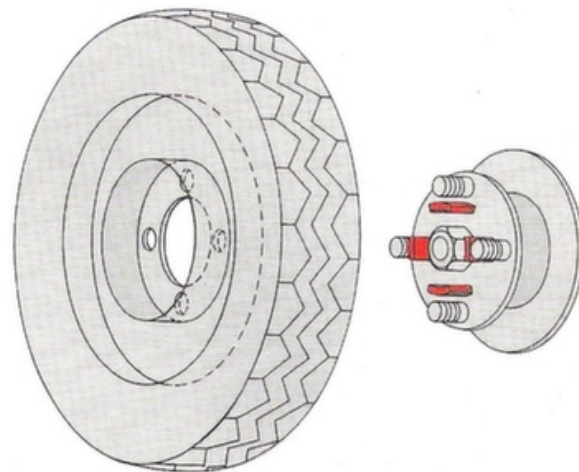
Wheels and tyres

All Metros are fitted with steel braced radials on 12 inch wheels with 1.0 models taking 135 SR12 tyres and 1.3 models taking the wider 155/70SR12 tyres, and using lower tyre pressures than the 1.0's.

Wheel location

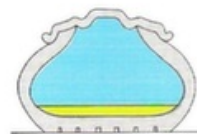
Reflecting the immense effort that has gone into making every aspect of Metro a better engineered car than the rest, careful attention has gone into the design of the wheel mounting. The common four stud system has been improved on by adding a central spigot to the wheel hub to give more precise location of the wheels, because the smallest inaccuracies can affect wheel balance. The resulting Metro benefits are better ride and handling, and reduced tyre wear.

Tyres Size	1.0		1.3	
	Front	Rear	Front	Rear
Pressure (psi)	32	28	28	26

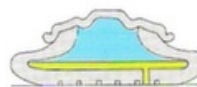


Denovo option

Denovo wheels and tyres are optional on all Metros. The safety and convenience benefits of Denovo have not yet been equalled by any commercially available product. With imperturbable road behaviour in the event of a high speed blow out, and their unique ability to self seal after the majority of punctures, Denovo wheels and tyres offer valuable benefits to Metro owners. A further highly useful advantage, particularly on a small car, is the elimination of the spare wheel to gain valuable extra bootspace.



A specially designed rim retains the tyre bead and the sidewalls provide additional strength.



After a severe blowout the wheel rim rides squarely in the centre of the tread preventing distortion. Polygel lubricates to prevent heat build-up.

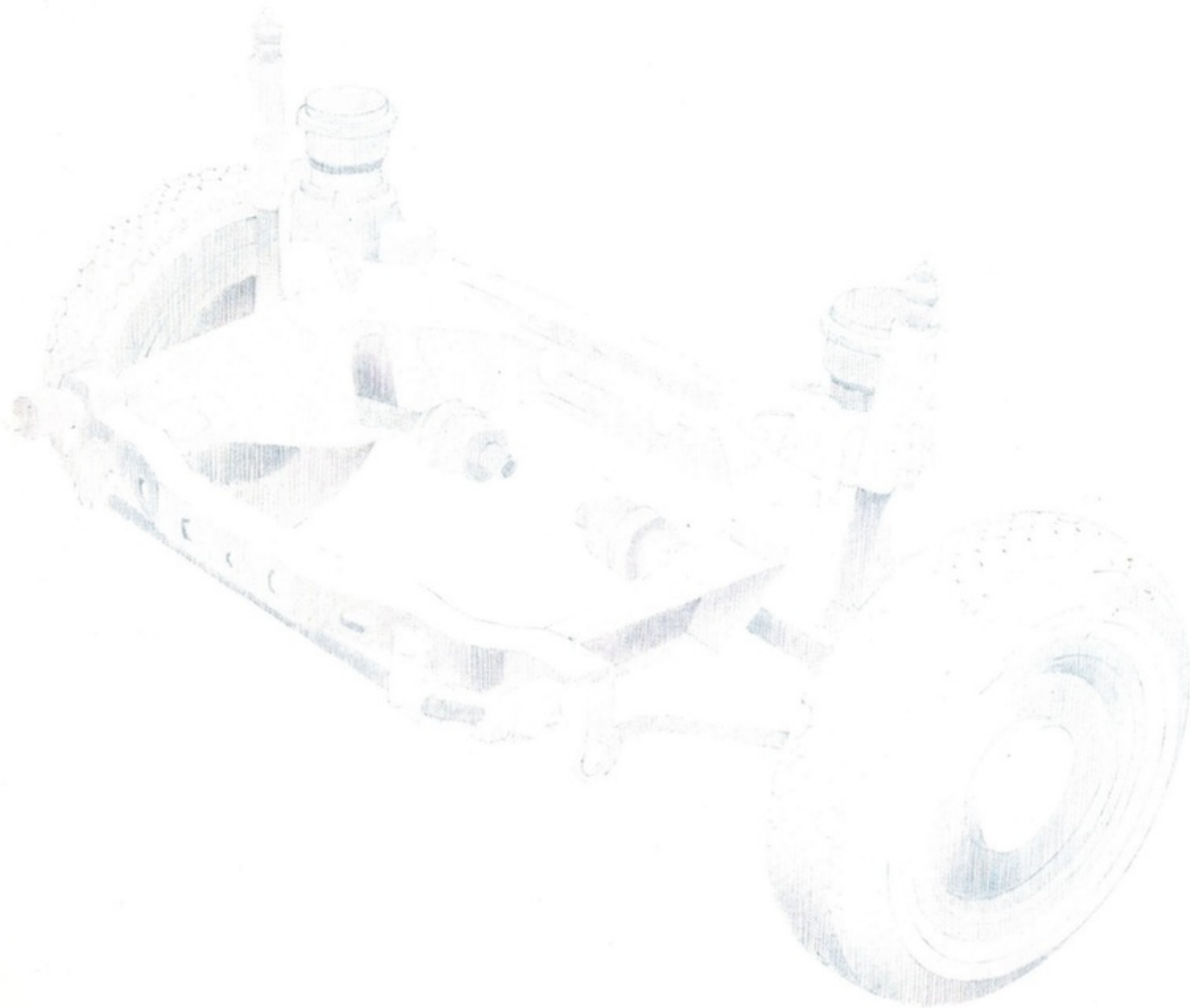


Polygel seals over 50% of punctures as they occur, with minimal loss of pressure.

What sort of dual circuit brake system is fitted to Metro and which brakes does each circuit operate?

- a) H/I split.
- b) Front and rear or just front.

This section has covered some of the more interesting and unusual features of Metro when compared with the competition. You should now complete the following test to check you have mastered all the major facts, and revise any points you are unsure of.



End of Section Test

1. What are the three major features of Metro's front suspension?
2. What are the two main benefits of Metro's rear suspension?
- 3.a) What sort of dual system brakes are fitted on Metro?
b) Which brakes are operated by each circuit?

Answers

1. What are the three major features of Metro's front suspension?

- i) Independent Hydragas units.
- ii) External dampers.
- iii) Anti-roll bar.

2. What are the two main benefits of Metro's rear suspension?

- i) Good ride qualities.
- ii) The Hydragas units do not intrude into the loadspace.

3.a) What sort of dual system brakes are fitted on Metro?

a) H/I split.

b) Which brakes are operated by each circuit?

b) One circuit (H) operates on all four wheels, the other (I) operates the front only.

6 FEATURES

Metro's unusually high level of equipment is one of its major selling benefits, and provides every model in the range with powerful advantages over the competition. Within Metro's carefully graded range structure, each model offers a different combination of economy, performance and comfort, from the well-equipped Base and highly specified L model, to the luxurious standards of the HLS. This section identifies the key features which differentiate each highly individual model.



Metro

Metro

The first model in the range line-up shows an attention to trim detail and equipment that leaves its base model competitors in the shade. The attractive Metro styling is emphasised by a single coachline following the body feature line, and by the black treatment of the rolled section bumpers, radiator grille and driver's door mirror. The rectangular tungsten headlamps are also defined by black surrounds. Metro models are identified by the new Austin Morris badge on the grille, and the derivative badges at the rear.

Equipment levels are high, with side repeater indicators, integrated neatly into the single coachline, giving extra warning to pedestrians and traffic. In addition to the standard driver's door mirror, a heated rear window ensures good visibility in all weather. Rear fog guard lamps are styled into the rear bumpers, and the indicators and side lamps are fitted in the front bumpers. Rear mudflaps protect the bodywork from mud and stone chippings.





Metro L

Metro L

The Metro L model, shown on this page, offers four exterior features of style and equipment over the Base, two of which are immediately identifiable.



What are the two obvious additions the L model has over the Base?

Rear screen wash/wipe
Twin coachline

L from Base

Rear screen wash/wipe

The rear screen wash/wipe (which is optional on the Base) gives extra visibility in poor weather.

Twin coachline

On the Metro L, the twin coachline adds extra style and provides a marked distinction over the Base model.

Reversing lights

The third exterior feature differentiating L from Base is reversing lights. These are optional on the Base, which is already fitted with reversing lamp lenses.

Laminated windscreen

As you know, Metro L also has a laminated windscreen, which is an optional safety feature on the Base.



Metro HLE

There is no mistaking the Metro HLE model shown on the opposite page, which, in addition to the retractable radio aerial, has two major features giving distinctive evidence of the extra style and equipment it offers over the L.

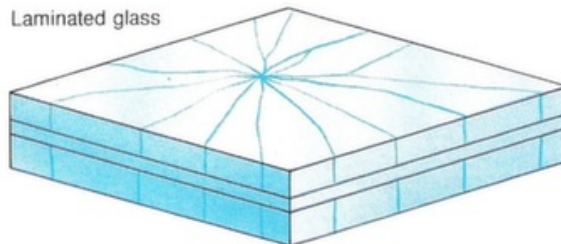
Metro 1.3 S

The Metro 1.3 S, also shown on the opposite page, is obviously the sports model of the range. Tinted glass is standard and one other feature conspicuously puts the 1.3 S in a different class to the HLE.

From the photographs,

- 1. What are the two major exterior features differentiating the HLE from the Metro L?*
- 2. What exterior feature, in addition to tinted glass, differentiates the Metro 1.3 S model from the HLE?*

Laminated glass





▲ Metro HLE

▼ Metro 1.3 S



1. Metro HLE from L - styled headlamps and rubbing strip
2. Metro 1.3 S from HLE - twin broad stripes

HLE from L

Styled halogen headlamps

The HLE's distinctively styled headlamps with bright surrounds incorporate pilot lamps and indicators in the same unit, and have powerful quartz halogen beams to give the brightest illumination at night or in poor weather.



Rubbing strip

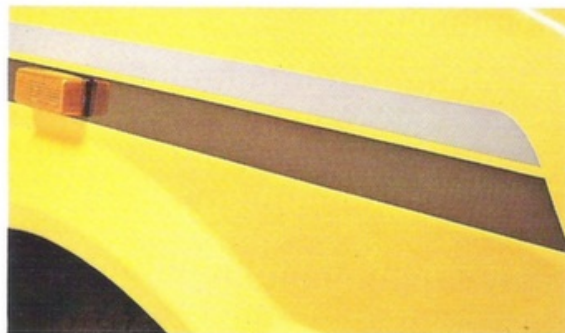
The neatly moulded rubbing strip adds extra style, and extra protection from careless door openers.



1.3 S from HLE

Twin two-colour broad stripes

Sharing the styled halogen headlamps, which are standard from the HLE upwards, the Metro 1.3 S displays its sporting personality with the eye-catching two-colour broad stripes which sweep along the body sides.



Tinted glass

Metro 1.3 S also has tinted glass, which keeps a cool interior and reduces solar glare, in addition to its cosmetic appeal.



The Metro L models are distinguished from the Base by their twin coachlines, laminated windscreen, and by two items of additional exterior equipment. What are the two additional items?

- i) Reversing lights
 - ii) Rear screen wash/wipe.
-

Metro 1.3 HLS



The Metro range leader offers its high levels of performance and luxury within a totally distinctive package. The HLS adds to the S with its own unique styling features and extra equipment, which includes a lockable fuel filler cap to protect a valuable tank of petrol.



In addition to the lockable fuel filler cap, from the photographs, what other three features distinguish Metro 1.3 HLS from the 1.3 S?

- i) Bright wheel rim embellishers
- ii) Rubbing strip.
- iii) Passenger door mirror.

HLS from S

Bright wheel rim embellishers

Bright wheel rim embellishers add an obvious touch of distinction to the top line Metro.



Rubbing strip

The HLS, like the HLE, has a rubbing strip to give style and protection to the bodywork.



Passenger door mirror

The passenger door mirror provides valuable extra visibility for motorway overtaking and tight parking spaces.



Now check that you know all the key exterior features of the Metro range before looking at interiors.

Interim Test

1. What four exterior features differentiate Metro L from the Base?
2. What two major exterior features distinguish the Metro HLE from the L?
3. In addition to its two-colour body stripes, what other exterior feature differentiates the Metro 1.3 S from the HLE?
4. What four exterior features distinguish Metro 1.3 HLS from 1.3 S models?

Answers

- | | |
|---|--|
| 1. What four exterior features differentiate Metro L from the Base? | Laminated windscreen
Twin coachline
Rear screen wash/wipe
Reversing lights |
| 2. What two major exterior features distinguish the Metro HLE from the L? | Styled halogen headlamps
Rubbing strip. |
| 3. In addition to its two-colour body stripes, what other exterior feature differentiates the Metro 1.3 S from the HLE? | Tinted glass |
| 4. What four exterior features distinguish Metro 1.3 HLS from 1.3 S models? | Rubbing strip, bright wheel rim embellishers, passenger door mirror, lockable fuel filler cap. |

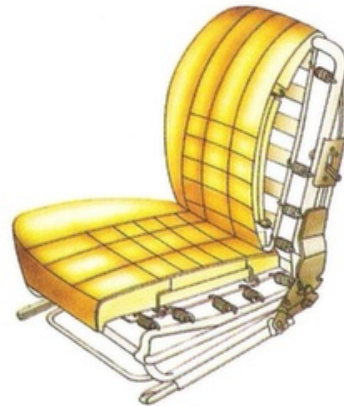
Metro 1.0

Seats and upholstery

Inside its comfortable, fully carpeted passenger compartment, the Metro base model provides seats carefully contoured to give plenty of lateral support for cornering and the firm lumbar support that is so essential for longer journeys.

Seat coverings are in foam backed vinyl, with an attractive 'biscuit weld' pattern, which combines extra comfort with a hard-wearing, easily cleanable surface. The door and rear quarter casings are trimmed in vinyl to match the seats.

The needle-punched carpet covers the complete floor area and includes a hard-wearing rubber heel mat below the pedals.



Which Metro models have a rear parcel shelf?

All of them.

Load area

Competitors often skimp on the rear parcel shelf in their base line models, but on Metro a carpeted rear parcel shelf is standard throughout the range with the accompanying advantages of a secure boot and extra insulation of road noise. The Metro Base also has a foam backed PVC mat covering the loadspace floor, which gives a neat finished appearance.



Stowage space and fittings

Stowage space is not limited to the load area. The base model is equipped with a full width fascia tray with a useful cubby on the right of the instrument binnacle.

All Metros have twin sunvisors and the driver's has a handy ticket pocket. Also fitted as standard is a dipping rear view mirror to avoid night time dazzle.

Concealed inertia reels enhance the well-trimmed interior as well as giving easier access to the rear seats, and ashtrays are provided front and rear.



Controls and instrumentation

Around Metro's inviting four-spoke steering wheel, controls and instruments are laid out in a logical system which the driver can quickly and easily get to know.

Metro's instrumentation provides a panel of 9 warning lights which is one of the most comprehensive in its class.



From your present knowledge of Metro you are already acquainted with one of the most important warning lights. What is it?

The brake pad wear warning light.

The other 8 warning lights signal indicators, main headlamp beam, brake failure, handbrake on, fasten seat belts, choke on, ignition warning and low oil pressure.

Other important equipment rarely found on the base model is a trip mileage recorder, so useful for monitoring business mileage and fuel consumption. Switches for hazard warning lights, rear fog lamps and heated rear window are ranged within easy reach in a panel to the right of the driver. The stalk mounted controls operate indicators, horn and headlamp flash/mainbeam from the left, and the two-speed wipers, electric washers and flick wipe - another valuable base model feature - from the right. The lights switch and choke control are conveniently placed on the left side of the steering column cowl.

Heating and ventilation

Metro's system is as simple to operate as it is effective in use; four slides control the direction of the air flow, the fresh air volume, temperature and the 2-speed fan. The central face-level vents are multi-directional and large enough to keep a cool interior in the stuffiest weather. The 2-speed air blending heater, highly praised on other Austin Morris cars, is efficient and quiet in operation, and at full speed can quickly clear the windscreen through the carefully positioned screen vents.

What other feature, mentioned as standard on all Metros, promotes good rearward visibility in cold or wet weather?



The heated rear window.



Metro L from Base

The Metro L models provide advanced levels of specification in the key areas of comfort and equipment, and offer the unique versatility of the asymmetrically split rear seat. Smaller trim details which provide the overall feel of a well-appointed interior include the easy-to-grip, soft rim steering wheel, the convenient passenger vanity mirror, and the styled door-pull armrests. Front and rear seat passengers have grab handles equipped with coat hooks, and the rear side trays provide handy stowage for sweets and cigarettes.

Reclining seats, covered loadspace sides

Among the Metro L model's five major additions to comfort and equipment are the fully reclining front seats, and the covered sides of the loadspace.



Reclining seats

The front seat rake is continuously adjustable by a knurled knob placed conveniently on the inner side of the seat, where it is not obstructed by the door bin or armrest.



Covered loadspace sides

On Metro L the sides of the loadspace are covered to give extra protection to luggage and a smarter appearance.

From the photographs, what are the Metro L model's other three major additions to the Base model interior?

1. Fabric seat trim
2. Glovebox
3. Front door bins

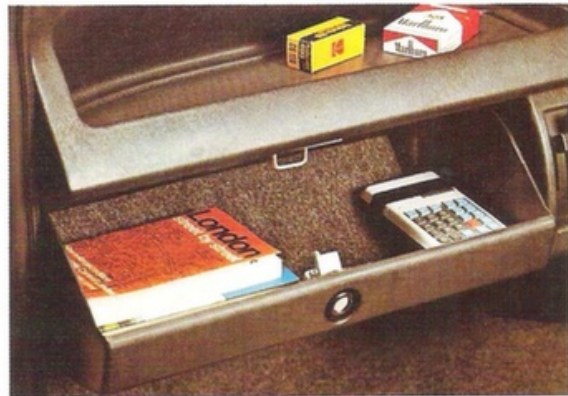
Marle fabric seat trim

The Marle fabric covering the seat facings is available in a choice of three colours, with toning vinyl seat backs and borders and matching door trims. The smooth, brushed nylon pile has a soft, comfortable feel, and is easy to keep clean.



Glovebox

L models have the additional security of a glovebox which provides concealed storage for handbags and other valuables. The glovebox is lined with carpet to prevent annoying rattles.



Front door bins

For the untidy drivers who usually end up scattering articles over the front and rear seats, Metro L is extraordinarily accommodating, with front door bins big enough to take anything from cassettes to sandwich boxes.



Apart from these three features and the asymmetrically split rear seat, what are the two other major interior additions which Metro L provides over the Base?