

BODY BUILDING FOR A CHAMPION

Metro's new styling continues to reflect the shape of things to come. The improved aerodynamics can only enhance its reputation as one of the quietest and most economical small cars on the market. Clever car body design features work to reduce the cost of ownership. An ingenious suspension layout widens the loadspace between the wheelarches. And the fitment of the advanced TD wheels and tyres on the majority of Metro models is in keeping with Metro's pioneering spirit.

1. What are the four major benefits of Metro's aerodynamic styling?
2. What Metro body feature helps to reduce the cost of ownership?
3. What are the two major features of Metro's front suspension?
4. What is the major benefit of Metro's rear suspension layout?
5. What type of dual circuit brake system does Metro have?
6. Which Metro models now take the TD wheels and tyres?
7. What are the two major benefits of the TD wheel and tyre in its fitment on Metro?

PART ONE

NEWTONS

1. What are the four major benefits of Metro's aerodynamic styling?

- a) Improved performance
- b) Better economy
- c) Greater stability
- d) Reduced wind noise

2. What Metro body feature helps to reduce the cost of ownership?

Bolt-on front wings

3. What are the two major features of Metro's front suspension?

- a) Independent Hydragas units
- b) Anti-roll bar

4. What is the major benefit of Metro's rear suspension layout?

The horizontal units do not intrude into the loadspace

5. What type of dual circuit brake system does Metro have?

H/I split

6. Which Metro models now take the TD wheels and tyres?

All models except MG Turbo

7. What are the two major benefits of the TD wheel and tyre in its fitment on Metro?

- a) Excellent ride and roadholding
- b) Better fuel economy

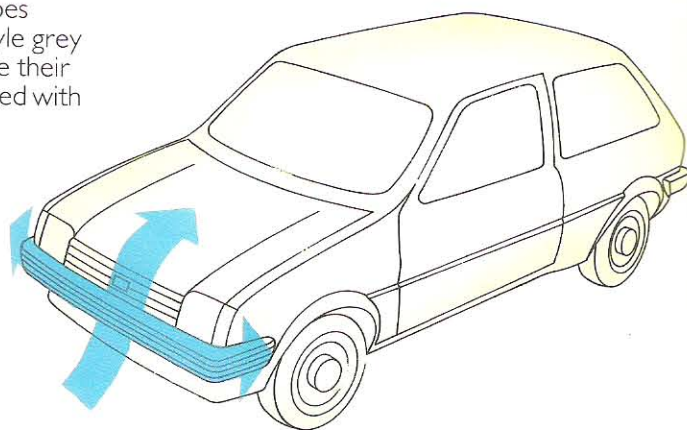


A REAL SMOOTHIE

Metro's pert, cheeky looks are now more chic than ever. The revised front end styling has given it a new bonnet, which slopes smoothly down to re-designed headlamps and grille. New-style grey bumpers round off Metro's different character. L models have their own distinctive style, in the form of halogen headlamps integrated with white lamp indicators, and moulded bumpers.

Slippery character

It's not easy achieving a low drag coefficient with a small car – which makes Metro's slippery shape all the more special. The benefits show in its unruffled stability, and of course in those outstanding performance and economy figures. The new styling has simply enhanced what has always been a highly aerodynamic little body.



Rakish looks

Metro's steeply raked front end offers as little resistance as possible to air flow. Sloping from grille to bonnet, and from bonnet to low-angled windscreen, the front end deflects air flow smoothly over the top of the car. The front spoiler helps to prevent turbulence beneath the car, shovelling air flow over the bonnet or round the side panels. On MG and HLE models, the tailgate spoiler improves stability, performance and economy by flipping the airflow away from the back of the car.

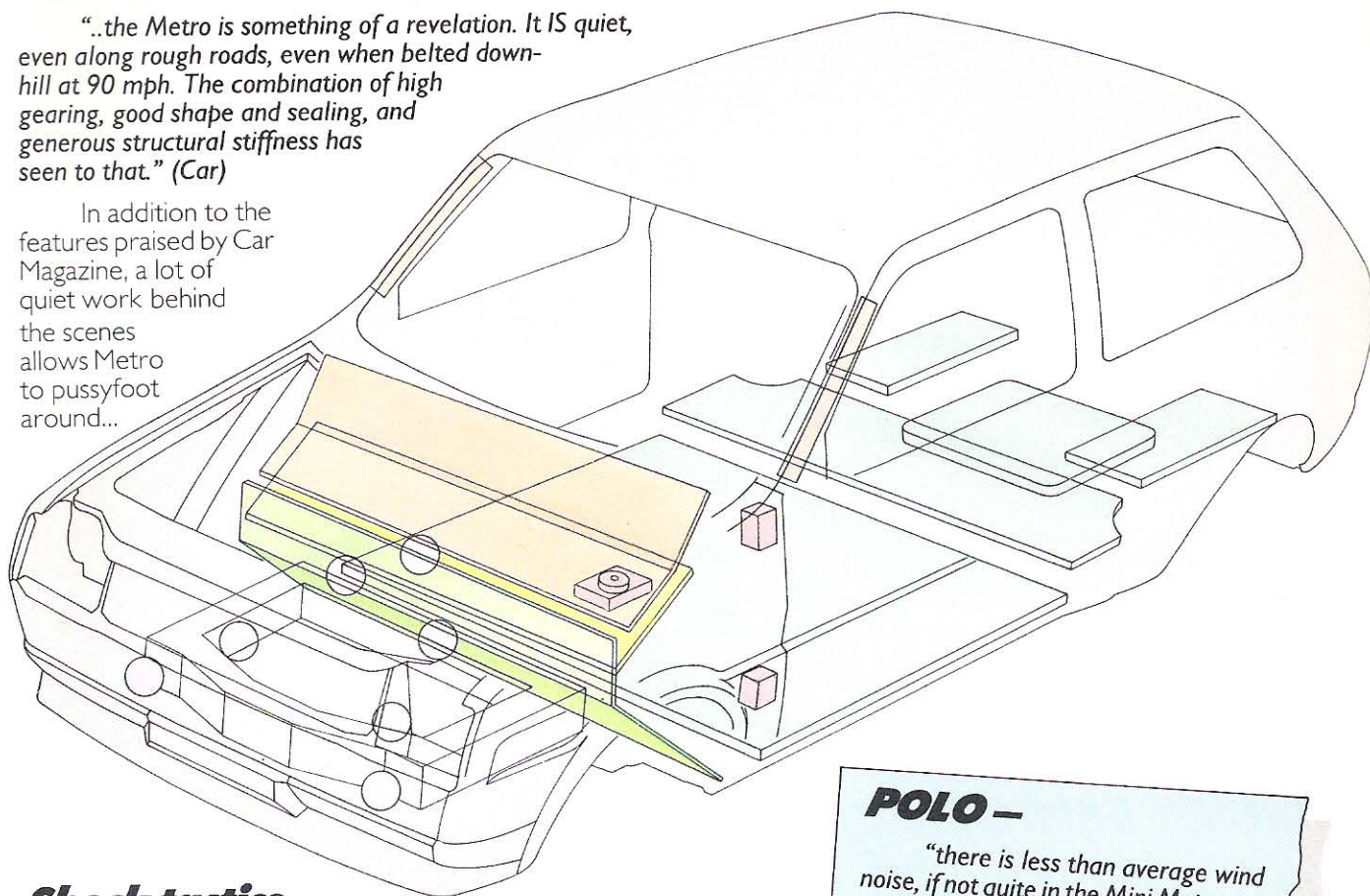
In addition to greater stability, better performance and improved economy, what is the fourth major benefit of Metro's good aerodynamics?

	Drag coefficient
Metro City, City X, L and Vanden Plas	0.38
Metro HLE and MG Metro	0.37
MG Metro Turbo	0.39
Metro Automatic	0.40

SHHHHH – YOU KNOW WHO

“..the Metro is something of a revelation. It IS quiet, even along rough roads, even when belted downhill at 90 mph. The combination of high gearing, good shape and sealing, and generous structural stiffness has seen to that.” (Car)

In addition to the features praised by Car Magazine, a lot of quiet work behind the scenes allows Metro to pussyfoot around...



Shock tactics

Road shocks from rough surfaces and potholes are isolated from the passenger compartment by the extra-soft rubber mix used in the front subframe mounting rubbers. The use of front and rear subframes is in itself an unusual feature in a small car, helping to isolate Metro's passenger compartment from the road.

Sound barriers

The whole of the passenger compartment is layered with carefully chosen sound insulation materials, including heat-fusible bitumen pads which reduce panel vibration on the floor and in the boot. Even the interior posts are foam-filled to absorb vibration. On City, City X and 1.0L models, 2mm of bulkhead insulation absorbs noise from the engine compartment. This thickness is increased to 12 mm on 1.0HLE models and above, giving additional refinement.

Spare ribs

The unusual design of Metro's air filter has nothing to do with engine breathing, but a lot to do with less noise. The special ribbing gives it extra strength to reduce vibration, and helps to prevent the filter from amplifying noise from the engine and from air movement. Metro's electric fan eliminates another major noise source, cutting in only when it's needed.

In addition to reduced wind noise, what are the three other major benefits of Metro's aerodynamic design?

POLO –

“there is less than average wind noise, if not quite in the Mini Metro class”. Autocar

NOVA “RACKET” –

“Most of our testers found the high-rev racket exceedingly tiresome... what it needs is better muting.” Motor

METRO “REMARKABLY REFINED” –

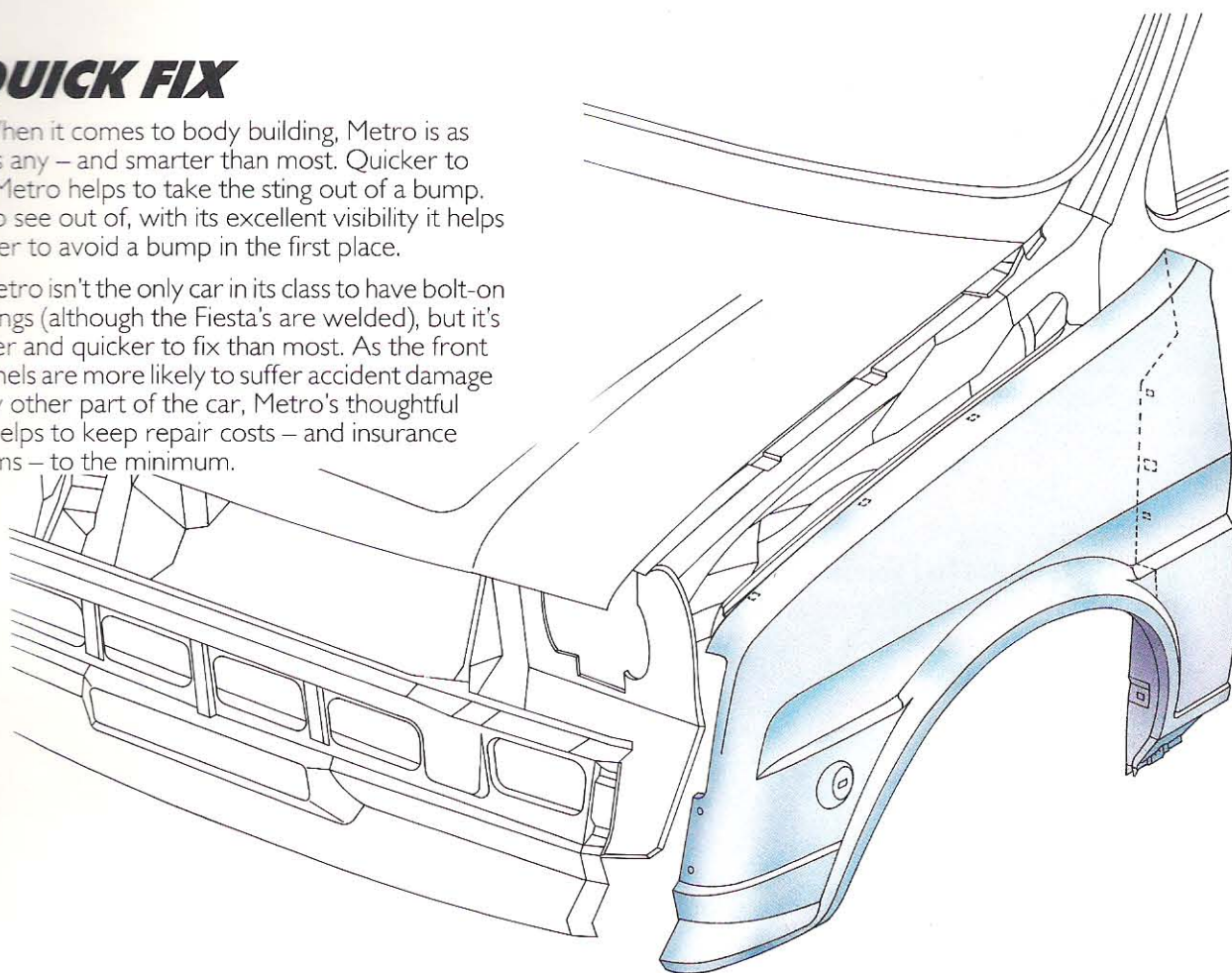
“The Metro is an excellent machine...in an impressive way it is remarkably refined at motorway speeds, beating the Polo easily there...the German car lets itself down with too much road noise”. Autocar

1. Improved performance
2. Better economy
3. Greater stability

A QUICK FIX

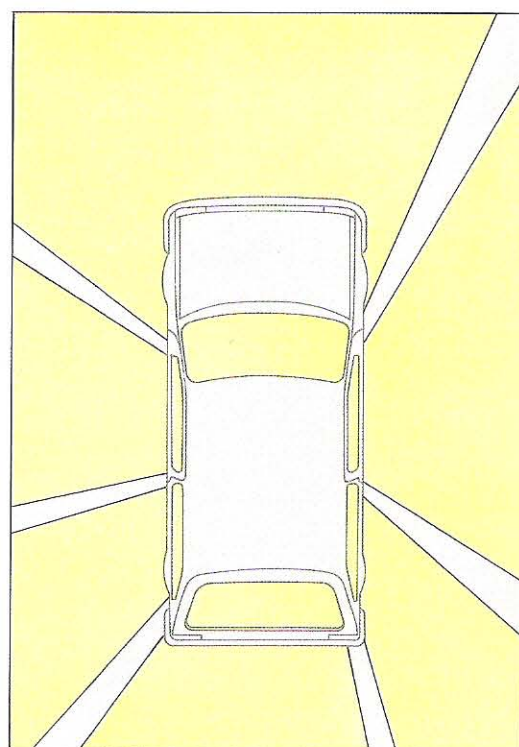
When it comes to body building, Metro is as tough as any – and smarter than most. Quicker to repair, Metro helps to take the sting out of a bump. Easier to see out of, with its excellent visibility it helps the driver to avoid a bump in the first place.

Metro isn't the only car in its class to have bolt-on front wings (although the Fiesta's are welded), but it's still easier and quicker to fix than most. As the front wing panels are more likely to suffer accident damage than any other part of the car, Metro's thoughtful design helps to keep repair costs – and insurance premiums – to the minimum.



EYE OPENERS

“With slim door pillars, large deep windows, and a well-positioned door mirror, the Metro is exceptionally easy to see out of. The low fascia and steeply raked nose enable you to see the road right up close to the car.” (Motor) Metro's wipers are well-designed too, so that they clear a huge screen area to maximise the forward vision in bad weather.



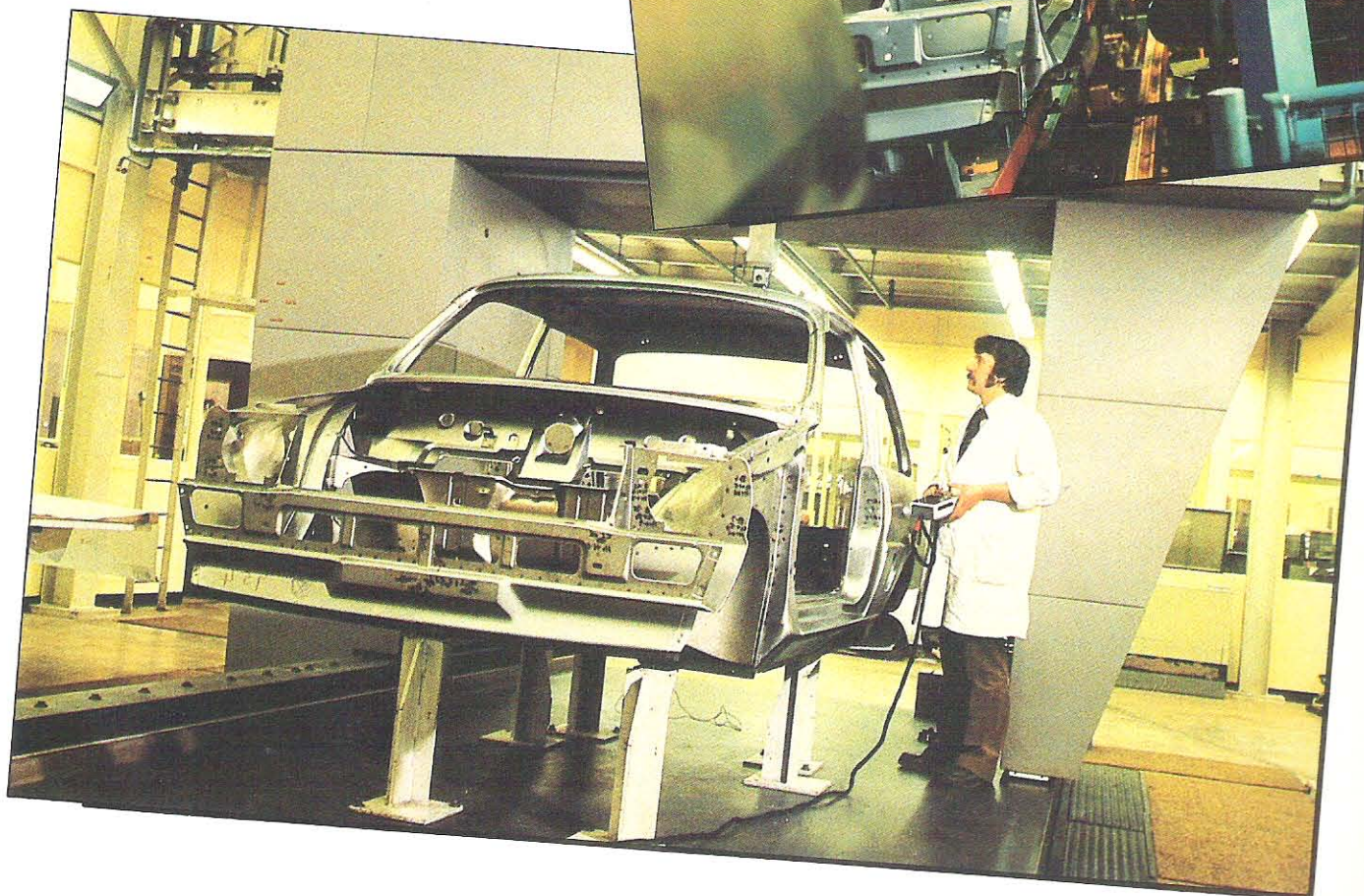
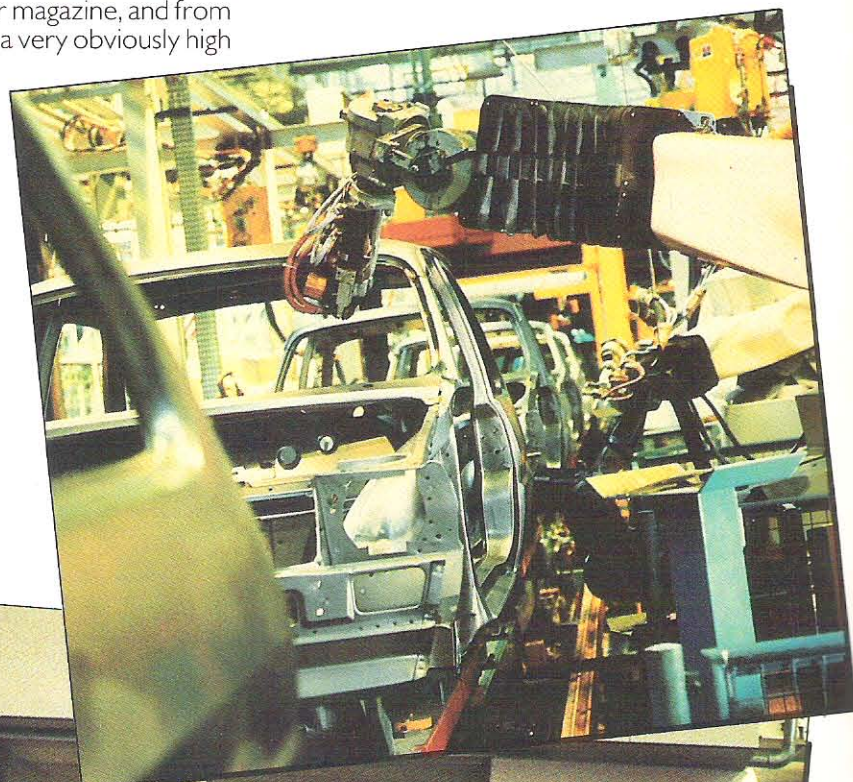
BIRTHDAY SUIT

In one of the most advanced body manufacture plants in Europe, computers hold the data on every Metro body panel from the moment it comes into Longbridge; incredibly accurate automated welding equipment shapes the car body; more computers help to check the dimensional accuracy. But it's human skill and commitment that checks the computers.

Metro production saw the dawn of a new era in the quality standards that could be achieved, given the right investment, and the right commitment. As the comments from Motor magazine, and from countless other sources have shown, the result is a very obviously high quality little car.

"The paint finish and body panel fits are a testament to the success of Austin Rover's efforts in these areas".

Motor



AUSTIN ROVER

SUPERSHIELD

WETSUIT

Years of rain, mud and salt won't make Metro catch a cold. During production, built-in temperature controls and special conveyors keep vulnerable panels perfectly dry and clean. And throughout the production process, a series of special treatments gives Metro a waterproof coat that is proof against the very worst that time and the weather can inflict – and guaranteed for six years by the promise of Supershield.

Taking a bath to keep dry

A rust-inhibiting primer is applied over the entire bodyshell by immersing it in a paint bath. Opposite charges are passed through the paint and car body to attract the paint particles to the metal, and give a totally thorough coverage.

More sealed than it seams

To ensure that the body seams are completely water tight, plastic based sealants are applied before welding. The completed weld is then sealed again.

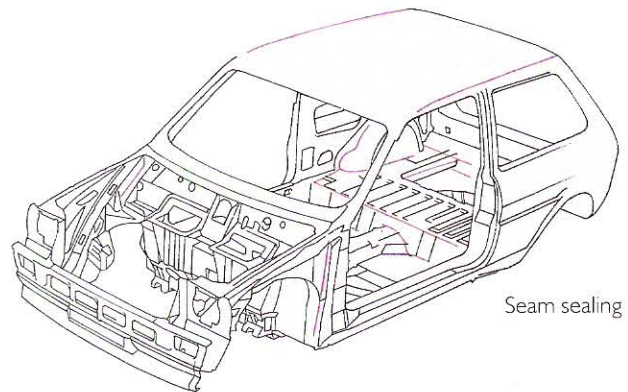
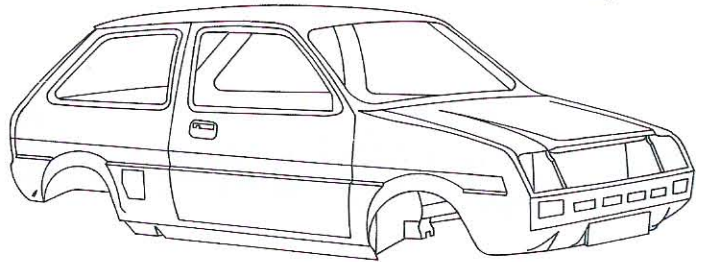
Injections for long life

Wax injection of box sections and door panels sprays a water proof coating right into the heart of Metro's car body.

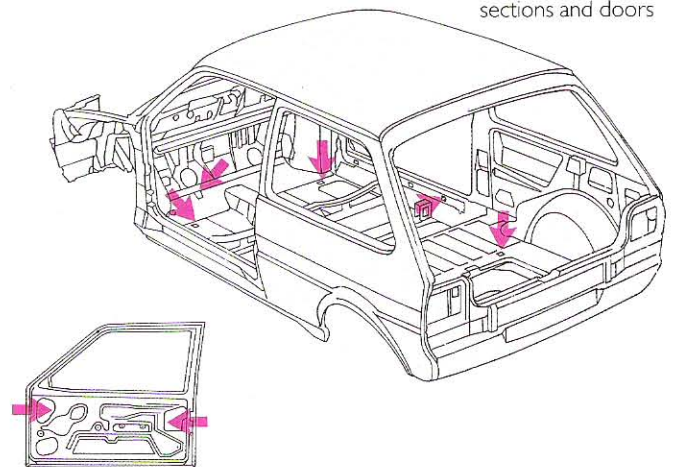
Tough coat for rough treatment

A tough, bitumen based coating applied over the whole of Metro's underbody resists damage from stones thrown up from the road.

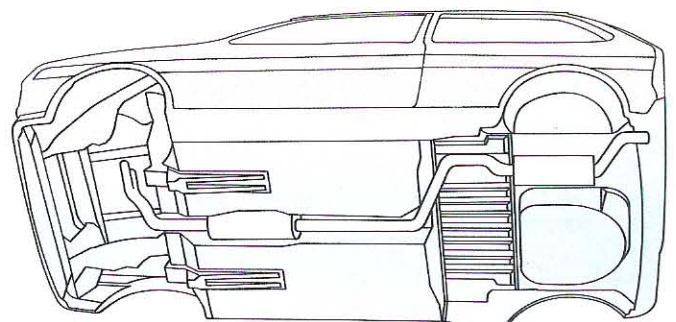
Electroprime over entire body shell



Seam sealing



Wax injection of box sections and doors



Chip-resistant coating to underbody

Which aspect of Metro's car body design helps to reduce accident repair costs?

THE PICK OF THE BUNCH

"The Metro has the best handling balance of the three, resisting understeer yet having agility... This car has clearly the most able chassis..Its response to steering wheel movements is quick and precise, yet at the same time it is easy to relax and let the car's natural stability take it down the motorway.. The Metro is the pick of the bunch." (Car Magazine: Metro versus Fiesta and Fiat Panda)

Anyone who has ever driven a Metro will know exactly what Car Magazine meant. Forgoing for the most clumsy driver, highly responsive to the capable enthusiast, Metro's well-balanced handling and elastic, cushioned ride are an example to the small car sector. And, as the loadspace dimensions show, many competitors still have a lot to learn from Metro's clever rear suspension design.



High pressure handling

Hydragas units form the basis of Metro's suspension design. The front units (like the rear) now perform the function of both springs and dampers. (The previous external dampers have now been eliminated, with a useful weight saving.)

A front anti-roll bar provides additional cornering stiffness.

A good angle on loadspace

At the rear, the Hydragas units are horizontally mounted in the subframe. The beauty of this arrangement is that the units do not thrust into the loadspace area, giving Metro its small wheelarches, and wide, flat loadspace floor.

Turbo stiffens up

The MG Turbo matches its eyebrow-raising performance with increased spring rates in both front and rear Hydragas units, plus revised telescopic dampers, a modified front anti-roll bar, and the addition of a rear anti-roll bar.

"IF YOU CARE ABOUT DRIVING, THE CHOICE STILL HAS TO BE THE METRO".

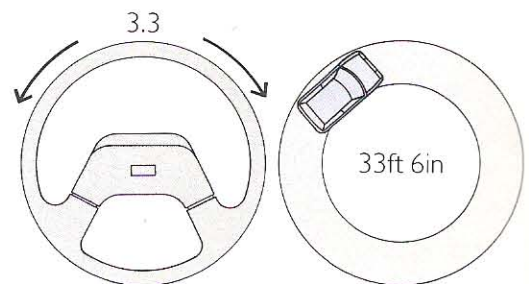
Car

"THE TURBO'S RIDE IS ACTUALLY RATHER CIVILISED FOR A SPORTING SMALL CAR".

Motor

RUNS RINGS ROUND THE COMPETITION

Metro's light but responsive steering, needing only 3.3 turns lock to lock to negotiate a 33ft 6 in turning circle, gives just the right feel for town or open road driving. *"The steering is light even at parking speeds, and endowed with excellent feel in press-on motoring".* (Motor)

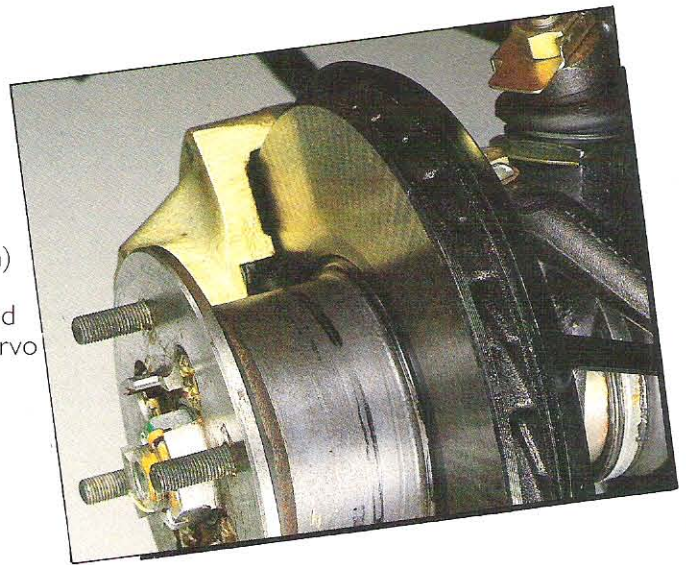


- Hydragas units are one major feature of Metro's front suspension. What is the other feature?
- What is the major benefit of Metro's rear suspension layout?

- a) The horizontal units do not intrude into the loadspace
- b) Front anti-roll bar

60-0 WITH VENTILATED FRONT DISCS

Metro's highly engineered four-piston (instead of two-piston) front discs were rare in the small car sector. Now Metro's stopping power is more special still, with the efficiency of ventilated front disc brakes (previously fitted to the Turbo only), and also servo assistance, on all models.



Four pistons

The use of four pistons, with each pair independently piped, allows larger brake pipes to be used, giving a greater effective braking area. It also provides greater security in the rare event of brake failure, because fluid is fed to the cylinders through two independent systems instead of only one. With ventilated front discs, the additional cooling increases efficiency under the hardest, sustained braking.

H/I – up front

Metro's dual circuit braking system is equally advanced. The two circuits are split in an H/I formation, so that should any circuit fail, the front wheels are braked by the remaining circuit.

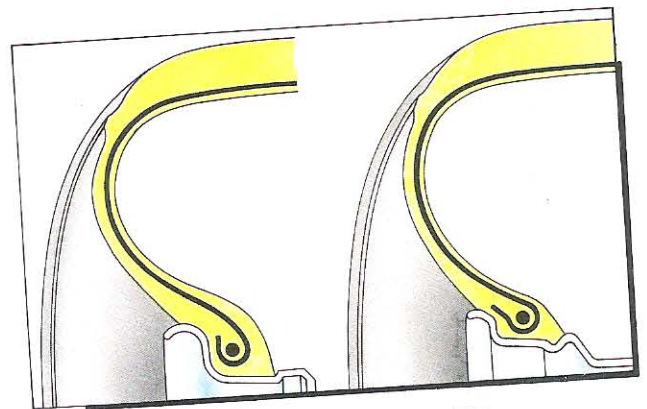
	Metro Tyre Fitment
All Austin models	160/65 TD tyres 315 mm TD wheels
MG Metro	160/65 TD tyres 315 mm alloy TD wheels
MG Metro Turbo	165/60 HR tyres on 13in. alloy wheels

MAKING BIGGER TRACKS

Making tracks that the competition can't follow, all Metro models, with the exception of the MG Metro Turbo, are equipped with TD wheels and tyres. The 1.0 models now take the same, wider tyre size as the 1.3 models.

A MEAN GRIP ON ECONOMY

In its fitment on Metro, the TD wheel and tyre is a unique combination of two outstanding benefits, offering superb roadholding qualities, and the fuel-efficiency of the economy tyre.



Conventional tyre

TD tyre

Natural curves for greater suppleness

Conventional tyre designs pull the tyre into the rim in a strained S-shaped curve, which inflicts unnatural stresses on the shape of the tyre carcass. On the TD tyre, the angle of the rim follows the line of the tyre carcass in a natural C-shaped curve. This allows stresses to be more evenly distributed over the tyre, giving greater suppleness. The result is not only a more pliant ride, but a superb grip too, because more tread is in contact with the road during cornering.

- a) Which Metro models are fitted with the TD wheel and tyre?
- b) What, in summary, are its two major benefits?

- a) All models except the MG Turbo
- b) i) Excellent ride and roadholding
- ii) Better economy

TAKING A LESSON FROM THE MASTER

Big car quietness and refinement, outstanding build quality, and the most impeccable handling, ride and road manners are benefits where Metro is still teaching a lesson to the small car sector. It's an example which continues to be followed – but never equalled.