MIDAS CARS

INDEX

METRO DONOR COMPONENTS

1 Pair Pre 89 Metro front side Indicators Part No.AFU 4133/ 4

1 Pair Metro Door Latches Part No. FQJ 10054/5

1 Pair Metro External Door Handles Part No. BAM 1396/7

1 Pair Metro Key Locks Part No. JRC 2866/7

1 Pair Window Regulators Part No. AFP 1030/1

1 Pair Window Regulator Channels Part No. AFP 1126/7

1 Pair Window Regulator Channel Rubber Part No. 37H 6300M

2 window Regulator Handles Part No. YXX 3199 _LG

2 Window Regulator Handle Escutcheon Part No. YXX 2653 _LG

2 Regulator Handle Fixing Screws Part No. JPC 3475

2 Regulator Handle Plugs Part No. YXX 3200 _LG

1 Pair Inner Handles Part No. AFP 6154/5 _LG

2 Inner Handle Bezels Part No. YXX 3265 _LG

1 Pair Metro Armrests Part No. XXX 9570 _LG

2 Metro Door Strikers Part No. EAM 9481

1 Metro (3 door) Fuel Tank as8embly complete with gauge unit.

1 Metro (3 door) Filler cap

1 Metro Rear Brake compensating valve.

1 GBH 183 N/S Rear Flexible Brake Pipe and lock nuts

1 GBH 182 0/5 Rear Flexible Brake Pipe and lock nuts

1 Metro Rear Subfrane assembly complete with all suspension, but less hydragas suspension units and associated parts.

1 Handbrake Lever, complete with forkend and connecting nut to handbrake cable.

1 Handbrake Guide Clip Part No. FAM 7656

1 Metro Pedal Box assembly complete with mounting plate, pedals, servo, brake master cylinder and clutch master, cylinder.

1 Metro Accelerator Pedal

1	Metro Heater Fan assembly, complete with resistor and resistor shield..
1	Metro Wiper Motor and rack assembly complete with mounting bracket, spindle nuts and washers
1	Metro Screenwasher Bottle, piping and jets or suitable proprietary kit with a single twin outlet jet.
1	Pre Oct. 1984 Metro Heater Assembly
1	Pair Pre Oct. 1984 Metro Side Window Demister Ducts (inner and outer)
1	set Demister duct Y pieces
1	Set Demister duct 1 1/4” dia. air ducting
1	Pre- October 1984 Metro Radiator assembly complete with fan, fan motor, fan motor bracket and rubber mounting bushes.
1	Metro Front Subframe assembly complete with power unit, suspension and all other parts.
1	Metro Gear Change assembly
1	(Thermostat cover) Suitable hoses, depending on model
1	GRH 633 Engine Top Hose
1	Metro Radiator Header Bottle
1	Steering Column assembly complete with lower mounting clamp, rubber boot and retaining ring.
1	3 way Brake Pipe Connector (Front Brakes)
1	4 way Brake Pipe Connector (Front Brakes)
4	GBH 184 Front Flexible Brake Pipe and Lock Nuts
2	Exhaust Pipe / Manifold Clamps
1	Exhaust two into one Down pipe
1	Battery - NB Check battery is correct size
1	Battery Clamp (clamp bar, 2 hook bolts, 2 wing nuts)
10	ft.length of Boot Seal
1	Metro Wiring Loom

NON METRO COMPONENTS

2 Cibie Headlamps Part No. C6670060 / 02

2 Cibie Mounting Frames Part No. C9999810S

2 Cibie Driving Lights Part No. C3670038 /02

2 Mounting Frames Part No. C9999800S

1 Fiesta Bonnet Latch Part No. 6100813 ‘1 Fiesta Bonnet Release Cable Part No. 6050783

1 Bonnet Stay Part No. 7 / 3099 (Western Body Hardware) N2 Bonnet Adjusters Part No. GHF 1380

2 Rubbers for above Part No. (unknown)

1 Pair Vauxhall Cavalier Rear Lights Comp1ete (Pre 1988)

Light Unit	90141626	/ **7**
Backing Plate	90141630	/ 1
Bulb Holdet	90141632	(2 off)
Gasket.	90141633	(2 off)

1 Pair Montego Saloon Boot Hinges Part No. CDP 1702 / 3

1 Pair Montego Saloon Assister Springs Part No. BMK 32001

2 Mini Front Bump Rubbers Part No. PAM 2764

1 Pre ‘89 Rover 200 Boot Latch Part No. DPB 1939

1 Pre ‘89 Rover 200 Boot Striker Part No. DBP 1944

1 Metro Door Lock assembly Part No. JRC 2866

1 Fiat 126 Windscreen

2 Lengths Reliant 3 wheeler Waistseal

2 ft. 2” dia. Heater Assembly air ducting

2 Spax/Avo Metro Challenge, Front Shock Absorbers.

1 Length 5/8’ Water hose

1 Exhaust System

1 Positive Battery Cable

1 Negative Battery Cable

1 Mini Petrol Tank Rubber Grommet Part No. 14A 7057

MIDAS GOLD CONVERTIBLE - BUILD SEQUENCE

INTRODUCTION

The building of a complete motor vehicle from a kit involves more than the simple mechanical assembly. If the final vehicle it to fulfil long term requirements, careful thought should be given to the selection of the mechanical components. After all, although the build up might take a month; the finished product must give years of service. For example, you must decide on the balance of performance and economy you require, whether insurance needs to be considered, the availability of parts and spares, and your overall budget.

We are pleased to pass on fifteen years experience of building kit cars, together with information on engines, brakes, wheels and tyres to make sure that your Midas will safely meet your needs for years to come.

THE SELECTION OF THE DONOR VEHICLE

The Midas Gold has been specifically designed to require components from only one donor vehicle, the Austin Rover Metro range.

The Metro was launched in October 1980 in a variety of forms using the 998cc and 1275cc A-plus power units. In 1983, both the MG Metro and the MG Metro Turbo were introduced. In the modern marketing trend, there have been a wide range of models differing only in minor trim details, but the major mechanical specifications of the Metro models are listed below:

To 1984

1.0 litre:	Final drive	Power (Bhp)
Metro, Metro L, 1.0 Van City	3.65	44
HLE	3.44	46
1.3 Litre:		
1.3L, 1.35, HLS, HL Van, Vanden Plas	3.44	63
MG Metro	3.44	72

1984 on

1.0 Litre:	Final Drive	Power (Bhp)
Gala, Surf, Mayfair, City X	3.65	46
LE	3.44	46
HLE	3.10	46
1.3 Litre:		
1.3 Gala, Moritz	3.44	63
MG Metro, Vanden Plas	3.44	72
MG Metro Turbo	3.21	93

Note: The pre - 1984 HLS, Vanden Plas & MG have the correct instrument pack (with tacho)

In October 1984 the Metro underwent a major facelift. The cofripo— nents which were affected as far as the build of your Midas were concerned were the radiator, the steering column, the instrument pack, and the heater assembly. Using a post October 1984 donor and the standard dash you will need to source only a pre — October '84 heater and instrument pack as the later type radiator and steering column will fit without modification.

Alternatively, our optional dash using the later type Metro heater and Rover 200 instruments gives a thoroughly modern feel to the interior.

WHICH DONOR VERHICLE IS BEST FOR ME ?

Of course, there is no single answer to this question. In general, by far the best donor car in our opinion is a late model insurance write off, with rear end, side impact, or roll over damage. (Any Metro with heavy frontal damage should be rejected). You should select the newest possible vehicle,prefer ably only nine to eighteen months old: such a car will probably have done less than 15000 miles, and the mechanical parts will be in excellent condition, requiring the minimum of reconditioning. Manyyears of listening to our customers tell us that those people who start with the newest donor cars, end up with the best Midas in the shortest possible time — and not necessarily more expensively. Don't forget that you will have many bits that you don't require for your Midas, such as doors, glass, trim, etc., that you can sell to offset the cost of the original purchase.

The other main decision is engine capacity. Since both 1 litre and 1.3 litre Metros are readily available, the choice becomes one of preference. If you want your Midas to have a more powerful power unit than the standard 1.3 Metro, then obviously you could obtain a MG Metro donor vehicle. However, since these tend to be disproportionately expensive, and are identical to all other Metros apart from the power unit and the level of trim, we would suggest that you consider purchasing a 1.3 Metro and having the engine up rated by one of the many reputable engine tuners. The MG Metro Turbo differs considerably from the rest of the range and is NOT recommended as a donor vehicle. There are many detail differences throughout the car which render it unsuitable, and its extremely poor suspension characteristics would require considerable modification to give the high standards of ride and road—holding that we demand at Midas.

SMMT Kit Car Code of Practice

The Specialist Car Manufacturers Group has been set up within the SMMT, and have established a code of practice for its members.

At the heart of the Code are a rigorous set of engineering standards which aim to.show that Code approved cars meet a detailed specification covering a demanding range of mechanical, safety, and quality checks.

To carry out the 91 point, two day inspection, the SMMT appointed the UK office of the renowned German TEN product testing organisation. The purpose of this testing is to ensure that the kit which the customer collects meets the rigorous standards set down, and because the Code also lays down the standards for the assembly guide, purchasers of Code approved cars can be confident of building a high quality product quickly and safely. Your Midas Gold and this assembly guide comply with the Code of Practice although Midas Cars Ltd are no longer a member of the SMMT.

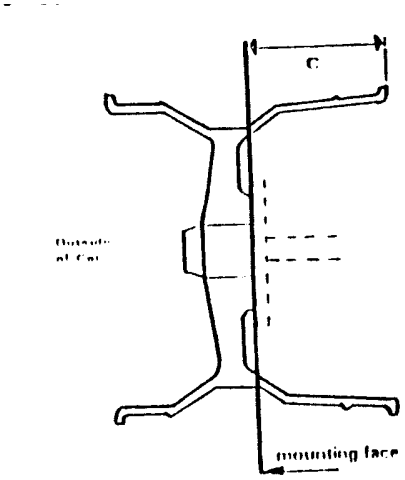
POWER UNITS, BRAKES, WHEELS & TYRES

BRAKES

All Metros are fitted with disc brakes at the front and drum brakes at the rear. Apart from the early base 1 litre models, all cars have been fitted with servo brakes. IT IS ESSENTIAL FOR YOU TO USE THE SERVO BRAKE ASSEMBLY. The braking system is used unmodified, and complete with the appropriate brake pressure control valves from the donor vehicle. Since October 1984, all Metros have been fitted with servo ventilated disc brakes, and your Midas will also accept these components without modification.

WHEELS & TYRES

Although it is permissible to use 12" wheels on your Midas Gold, we strongly recommend the use of 13" wheels. You may either use the 5 **"** x 13" wheels from the MG Metro Turbo, or alternatively use any of the wide range of proprietary alloy wheels of your choice. You should not use a wheel wider than S **",** and they should be of correct offset to fit a Metro. Checking wheel for correct offset can be done at the time of purchase by measuring from the inside rim of he wheel to the mounting face (see diagram). For correct use on the Midas this dimension 'C' should be between 115mm and 130mm.



If you are using 12" diameter wheel, then the correct tyres are 195/70—12. If you are using 13" wheels, then the only tyre size which you may use is 165/60—13. These tyres are HR rated, and should be used in any case if your Midas has a maximum speed in excess of 113mph. ANY CAR BUILT USING AN ENGINE WITH A POWER OUTPUT IN EXCESS OF 80 bhp MUST USE 13" WHEELS AND TYRES.

POWER UNITS

ONLY Austin Rover A plus power units from the Austin Rover Metro range of cars may be used in the Midas Gold. Approved power units are 1.0 litre (all models), 1.3 litre (all models), MG 1.3 litre, and MG Turbo 1.3 litre.

TYRES & TIRE PRESSURES

The normal tyre pressures on a Midas are 28 psi in the front tyres and 22 psi in the rear tyres. If you are carrying a great deal of luggage then these should be increased to 32 psi front and 28 psi rear. Remember to reduce the pressure when the car is unloaded. For sustained high speed driving with one or two people in the car, use 30 psi front and 24 psi rear.
The table below lays out the maximum speed and load ratings for the tyres recommended for your Midas.

TYRE	MAX. LOAD PER WHEEL	at	PRESSURE	SPEED
155/70— 12	325 Kg		36 psi	113 mph
165/60— 13	355 Kg		32 psi	130 mph

Note: If your Midas has a maximum speed in excess of 113 mph you should use 165/60 — 13 tyres.
Maximum permitted vehicle weight is 950 Kg.
Maximum permitted front axle weight is 550Kg.
Maximum permitted rear axle weight is 450 Kg.

CONSTRUCTION & USE REGULATIONS

Although cars built by amateur builders are exempt from Type Approval requirements, they must comply with the Construction and Use Regulations. These Regulations are lengthy and complex, but in general a Midas kit built using the recommended components will comply.

To ensure compliance with the seat belt regulations, the seat belts should be fitted exactly as stated.

In order to comply with the requirements for windscreen wiper swept area, only the specified wiper motor and gear, wiper arms and wiper blades should be used in the pre—drilled holes provided.

In order to comply with the breaking regulations, only the standard servo assisted Metro braking system may be used, as specified.

In order to comply with the radio interference suppression requirements, only the standard compressed sparking plugs and leads may be fitted.

In order to comply with the accuracy of speedometer requirements, the speedometer drive gears must be matched to the final drive ratio.

The correct gears are:

FINAL DRIVE	METAL GEAF	PLASTIC GEAR
3.44	2202022	DAM 2904
3.2	2202022	DAM 2905
3.1	2A3720	DAM 6365

For any other final drive, or any other speedometer problems, we recommend Speedy Cables Ltd., 10/12 Gaskin Street, London, Ni 2SA. Tel: 01 226 9228

MIDAS GOLD KIT ASSEMBLY GUIDE

This guide is intended to give you the best sequence in which to assemble your Midas. It is necessary that you also have access to a good Metro workshop manual, such as the Haynes or BL's own, in order to correctly overhaul the Metro parts before final assembly. The BL Metro workshop manual is Part No. AKM 4694

Before starting work, lift the body shell onto blocks placed about 12" — 18" off the ground. These blocks should be placed at the edge of the floor pan where it begins to angle upwards.
MAKE SURE THE BODY SHELL IS SECURE IN THIS POSITION BEFORE STARTING WORK.

WORKING & DRILLING GLASSFIBRE

Tools and Equipment

FILES

To cut effectively, files should be of coarse metal-cutting type, and new. The life of a file used on glass fibre is very limited, and it should be discarded when it shows signs of becoming blunt.

DRILLS

Glass fibre must be considered as metal for the purpose of drilling. Only high speed steel twist drills should be used, with the lowest possible drilling speed (particularly with larger drill sizes). Drilling should always be done from the gel side, and the other side of the moulding backed up with a block of wood to limit the extent of tearing or cracking when the drill breaks through. A hole drilled from the opposite side will almost invariably damage the gel coat, even if backed up.

Drills used for drilling glass fibre should always be sharp, and ground to the same point angle as for cutting metals. In the case of drill sizes of 3/8" and above, the point angle of the drill can be reduced with some advantage. No lubricant is normally required, but if a drill does show sign of running hot, water can be used to cool it.

ABRASIVE PAPERS

Any "finish sanding" on GRP mouldings should always be done with wet and sry abrasive papers, used wet and frequently rinsed off to clean. Some authorities also recommend the addition of a little soap to the rinsing water to act as a lubricant.

For "rough" sanding 240 grit will be suitable. Progressively, finer grades down to 800 or even 1000 grit can be used for final smoothing. The surface can be further inproved by buffing and polishing with metal polish, polishing compound or jeweller's rouge. A final overall finish can be given by wax polishing, provided this is acceptable to the application.

There is no laminating to be done qp the Midas but some finishing of edges, flattening of external seams and drilling of holes will be necessary.

FINISHING EDGES

Although all the edges are ready trimmed to size we advise you smooth them to neaten the moulds and reduce the risk of cuts *from* handling raw edges of glass fibre. This operation can be done with either production paper (dry) or wet and dry paper and simply requires rubbing around all the moulds which have open edges. Take care not to scratch the finished gel—coat of the moulds with the production paper.

FLATTENING SEAMS

The external seams caused by joining of the mould i.e. along the tops of the front & rear wheel arches. The moulds are triple gelled at these points so there is plenty of gel coat to work at, however, great care should be taken to keep the shape whilst removing the minimum of gel coat. These seams need to be removed starting with 600 grit wet & dry paper and work up to 1200 grit, smooth the seam until it is flat and then rub with 'T cut or rubbing compound to bring back the shine. A strip of masking tape run down either side of the seam will ensure that only the seam line is removed and reduce the area to be polished.

DRILLING HOLES

All holes and apertures have been marked onto the main moulds and should be drilled out to remove the mark line, this will give the correct hole sizes for the appropriate components to be fitted. It is best to complete all the drilling and cutting in one operation as all the dusty work is then finished, paper overalls, face masks and goggles are essential for this operation.

Once all holes have been drilled and apertures cut the final assembly can begin.

SIDE/INDICATOR LIGHTS

Tools Required

1 Electric drill with 1/4. drill bit and if available rotary sanding wheel
1 1/2 round file, bastard cut

Donor Vehicle Parts Required

1 Pair pre'89 Metro Side Indicators Part No. AFtT 4133/ 4

Other Parts Required

None

Fixings Required

None

These must be fitted before the bumper. The lights used are from any pre 1989 Metro using the separate side indicator lights. Some early units were fitted with studs, whilst the later units simply had holes to receive self tapping screws.The side indicator lights are fitted to the moulding behind the front bumper, and the aperture should be cut out to the scribe line. Please note that the mounting holes just break in to this aperture, and particular care should be taken with the filing of these holes.

Careful inspection of the lens of the side/indicator lights will reveal an arrow moulded in. The light must be mounted with this arrow pointing to the outside of the car, and with the writing the right way up. In order to get the light unit to sit correctly in the aperture in the bumper, the outer side must be packed out from the body using either washers, or a short length of 1/4" bore plastic tubing.

FRONT BUMPER

Tools Required

1 Electric Drill and 3/8' diameter drill bit

1 M10 open ended spanner and/or 1 10mm ratchet socket

Donor Vehicle Parts Required

None

Other Parts Required

None

Fixings Required

5 1/4" penny washers
5 1/4" rectangular spring washers
5 M6 plain nuts

The front bumper is secured to the main body by means of the five studs built into the front bumper. These correspond to holes scribed on the body.Firstly, drill out the scribed holes using a 3/8" diameter drill bit. Make sure that the drill bit does not have too much "lead", otherwise it will chip the Gel Coat. Having drilled the holes, clean off the reverse with a little 40s grit sand paper, and then assemble the bumper.Secure the bumper with 1" dia. penny washers, spring washers, and 6mm plain nuts.

HEADLIGHT.

Tools Required

1 Electric drill with 1/4" drill bit and if available rotary sanding wheel
1 1/2 round file, bastard cut

Donor Vehicle Parts Required

None

Other Parts Required

2 Cibie Headlamps Part No. C6670060 / 02
2 Cibie Mounting Frames Part No. C99998l0S Headlamp Cover

Fixings Required

None

Great care was taken during the design of the Midas to provide the best possible lighting, and the car is designed to use Cibie Headlights. Firstly, the large diameter hole to take the back of the headlight must be cut in the body. This aperture is scribed on the body, and is best cut by chain drilling holes with an electric drill using (typically) a 1/4" diameter drill bit. These holes are then joined using a pad saw, and the aperture finally cleaned with a 1/2 round file, or rotary abrasive wheel in an electric drill. Remember to take great care when using power tools to prevent slippage, and possible damage to the body surface. With the main aperture drilled, it only remains to drill the three 1/4" diameter holes for the mounting bolts that are scribed on the body. Assemble the headlamp into its frame by unclipping the wire hooks from the back of the frame, inserting the headlight, and then reclipping the hooks on the back of the frame. Remove the plastic wing nuts and washers from the studs on the headlight, and then assemble the headlamp unit (complete with springs on the studs) into the aperture from the front. Secure with the wing nuts with the springs approximately half compressed.

FRONT DRIVING LIGHT.

Tools Required

Same as for headlight

Donor Vehicle Parts Required

None

Othet Parts Required

2 Cibie Driving Lights Part No C3670038 / 02

2 Mounting Frames Part No. C9999800S

Fixings Required

None

If you wish to fit this option, the procedure and tools required are exactly the same for the headlamps, but note that the driving lights are 5 3/4" diameter compared with the 7" diameter head -lamps.

BONNET CATCH AND RELEASE MECHANISM.

Tools Required

1 Electric Drill with 1/4" and 3/8" diameter drill bits
1 Dalton Power File

Donor Vehicle Parts Required

None

Other Parts Required

1 Fiesta Bonnet hatch Part No. 6100813
1 Fiesta Bonnet Release Cable Part No. 6050783

Fixings Required

8 1/4" Penny washers
2 (M6 x 20mm) Hexagonal head set screws
2 1/4" UNF by 1 1/4" Hexagonal Head set screws
2 1/4" UNF nyloc nuts

The bonnet catch recommended is from an early Fiesta and the Part No is given below. Prepare the catch by removing the tension spring, and overstretching it slightly to reduce the load it exerts on the latch lever. This is necessary because the Midas bonnet is considerably lighter than the Fiesta Bonnet. The latch is secured into the threaded inserts in the body using 2 (M6 x 20) fixings. However it is necessary to pack the latch away from the body slightly, and it should be assembled with 2 1/4" penny washers between the latch and the body on each side. There should also be a penny washer under the head of the set screw to take account of the large square adjustment hole provided in the catch. Bolt the latch into place approximately centrally in the available adjustment, taking care not to over—tighten. Final adjustment of the latch cannot take place until the bonnet has been fitted. The bonnet release handle fits under the nearside horizontal structural dash surface, with a cable passing forward

into the box section over the nearside front wheel, and then through the nearside inner wall of the engine compartment to the catch. The hole in the side of the engine compartment is scribed, and should be drilled out to 3/8" diameter to take the rubber grommet on the release cable. Having drilled this hole, feed the cable from inside the car up into the box section, through the drilled hole, and loâate the ferule on the end of the cable in the slot provided on the catch. When you are happy with the lie of the cable, mark two holes on the underside of the dashboard and drill 1/4" diameter holes, securing the handle with two 1/4" diameter bolts of suitable length.

NB. CHECK OPERATION 0F THE LATCH BEFORE FITTING THE BONNET.

Tools Required

1 Electric drill with 1/8" and 5/16" diameter drill bit
1 medium size posidrive screw driver

Donor Vehicle Parts Required

None

Other Parts required

2 Bonnet Hinge Pins Part No. MM17

1 Bonnet Striker Part No. MM16

Fixings required

12 No. 8 x 3/4 posipan self tapping screws

Before assembly the bonnet must have the front hinge pins and the rear striker bar fitted. Place the bonnet upside down on foam to prevent scratching the outer surface. In the middle of the rear cross brace, you will see eight hole centres marked. These should be drilled out carefully using only an 1/8" diameter drill. The bonnet striker, Part No. 141416 can then be fitted using 8 off No. 8 x 3/4" Posipan self tapping screws.

The holes for the bonnet hinge pins are pre—drilled, as the alignment of these holes is crucial for the fit of the bonnet. Carefully push a bonnet hinge pin, part No. 141417 into each hole until the screw flange is hard up against the bonnet inner. Mark through the holes in the flange and drill 2 1/8" dianeter holes, ensuring that the hinge is so aligned that you will be able to reach the holes that you have marked with your drill. **DO NOT SCREW THE HINGES TO THE BONNET AT THIS STAGE**. Retract the hinges until the ends are just flush with the outer ends of the bonnet. Coat the end of the hinge with a suitable marking medium (a good quality gasket cement such as Hylomar is ideal), and being careful not to accidentally remove this marker..place the bonnet on the car. With a friend ensuring that the bonnet is ABSOLUTELY square and even in the aperture, working from underneath the car in the engine compartment, push the hinges carefully outwards so as to mark the body. Make sure that you withdraw the hinges again

before removing the bonnet. Using the marker as an indication, carefully mark the centre of the holes. Remember that the position of these two holes defines the fit of the bonnet, and we strongly advise that you double check, perhaps by repeating the process or perhaps by some simple measurement, before drilling them.

Drill these holes 5/16" diameter, taking great care to use a drill without too much lead to avoid chi pping the Gel coat. The bonnet is now ready to fit, but should obviously not be fitted until the mechanical assembly is complete. We suggest that you secure the hinge pins with self tapping screws to avoid accidental loss, and then put the bonnet safely to one side for later assembly.

BONNET STAY

Tools required

1 Electric Drill with 1/4" diameter drill bit
2 7/16 UNF spanners

Donor Vehicle Parts Required

None

Other Parts Repuried

1 Bonnet Stay Part No. 7 / 3099 (Western Body Hardware)

Fixings Required

1 1/2" or 2" x 1/4 UHF hexagonal head set screw
2 Nyloc nuts
2 l/4' penny washers
1 1/4" plain washer

The bonnet stay that we recommend is fitted with brackets at either end. The bracket at the lower end 6hould be removed by drilling out the rivet. This lower end secures to a bolt fitted through the side of the engine bay just behind the offside headlight. The hole for this fixing is scribed and should be drilled 1/4" diameter. Because the thickness of the laminate can vary in this area use either a 1 1/2" or 2" long by 1/4 UNF hexagonal head set screw. Fit a penny washer under the head of this fixing and insert from under the offside front wheel arch through the hole into the engine compartment. Secure with a penny washer and nyloc nut, leaving sufficient thread beyond the nyloc nut to accept the bottom of the bonnet stay which is then secured by a plain washer and a further nyloc nut. It is essential that sufficient thread remains to penetrate the insert in the second nyloc nut. Fit the bonnet stay as described, and leave lying down the side of the engine compartment ready for when the bonnet is fitted at the end of assembly.

BONNET BUFFERS

Tools Required

1 Electric drill with 5/16" dia. drill bit
small flat file

Donor Vehicle Parts Required
None

Other Parts Required

2 Bonnet Adjuster Part No. GHF 1380

Rubber for above Part No. 391287A

Two Adjustable Bonnet buffers are fitted at the rear of the engine compartment to ensure the best possible fit of the bonnet of your Midas. Drill 2 5/16" diameter holes on the scribe marks indicated, and carefully file square to suit the plastic insert on the bonnet buffer. Be very careful not to file this hole too large. Tap the bonnet buffer into place, and wind fully down, and then fit the rubber cap. Final adjustment of these items will take place when the bonnet is fitted later in assembly.

REAR LIGHT UNITS

Tools Required
1 Electric drill with 1/4" dia. Drill bit
1 pad saw
1 half round file, bastard cut
1 medium sized posipan screw driver

Donor Vehicle Parta Required
None

Other Parts Required

1 Pair Vauxhall Cavalier Rear Lights complete (Pre 1980)

Light Unit	90141626	/ 7
Backing Plate	90141630	/ 1
Bulb Holder	90141632	(2 off)
Gasket	90141633	(2 off)

Fixings required

8 8 1 1/2" x 10 pos ipan self tapping screws
8 3/16" Plain washers

Your Midas uses rear light units from a pre 1980 Vauxhall Cavalier. These lights vary during the life of this model, but all are suitable. However, the very late cars were fitted with smooth lenses(as opposed to the ribbed lenses of earlier models) with horizontal black lines. These lights were used with a central

full width reflector and therefore do not have a return from the face of the lens back to the body on the inner edge. It is perfectly in order to use these lights, but you will have to make up a suitable finishing piece. The light units are otherwise identical and interchangeable. Firstly it is necessary to cut out the large rectangular aperture which is scribed on the body. This is best done by chain drilling, cutting and filing. With the aperture cut, drill the four fixing holes scribed on the body using 1/4" drill bit. Make sure the lights are sitting square to the body, and adjust the aperture if necessary. **MAKE SURE THAT YOU FIT A GASKET BETWEEN THE LIGHT AND THE BODY BEFORE FINAL ASSEMBLY**. Fit the light unit to the body using 4 1 1/2" x 10 posipan self tapping screws with plain washers under the head. Take great care not to over tighten these fixings, as this will split the plastic moulding. If you have removed the bulb holder assembly, this may now be refitted. Take great care when doing this, as the retaining clips are fragile, and should give a positive "click" when the unit is secure.

REAR BUMPER

Tools Required

1 Electric drill with 3/8"diameter drill bit
1 10mm open ended spanner or socket.

Donor Vehicle Parts Required

None

Other Parts Required

None

Fixings Required

5 1/4" penny washers
5 1/4" rectangular spring washers
5 M6 plain nuts

The rear bumper is supplied with captive studs already fitted. The corresponding holes in the body are scribed, and should be drilled 3/8" diameter. Assemble the bumper onto the body and secure loosely using a penny washer,spring washer and plain nut on each fixing. With the fixings just "nipped", carefully position the bumper and then tighten all fixings.

TAKE GREAT CARE NOT OVER TIGHTEN THESE FIXINGS, OR THE BUMPER WILL DISTORT.

BOOT HINGES

The Midas uses standard Montego saloon boot hinges and assister springs. The hinges are handed, so make sure that you get a pair.

BOOT LID

Tools Required

1	Electric drill with 5/16" dia. & 3/16" dia. drill bits
1	M10 socket and ratchet drive
1	Junior hacksaw

Donor Vehicle Parts Required

None

Other Parts Required

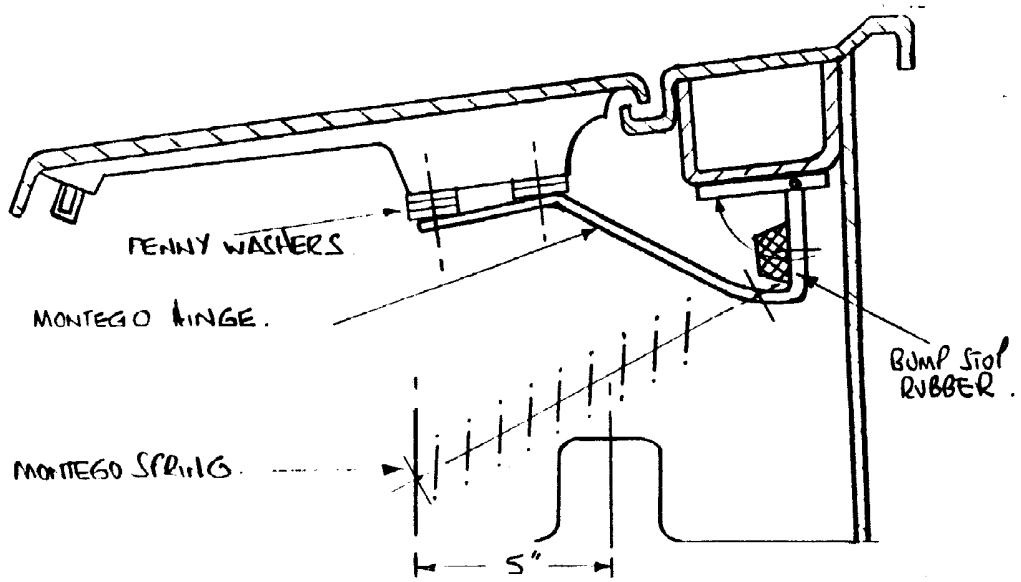
1	Pair Montego Saloon Boot Hinges Part No. CDP 1702 /3
1	Pair Montego Saloon Assister springs Part No. BMK 32001
2	Mini Front Bump Stop Rubbers Part No. FAM 2764

Fixings Required

14	M6 Jacknuts	
14	M6 x	20 Hexagon Head Set Screws
14	1/4"	Plain washers
14	1/4"	Rectangular Spring Washers
10	1/4"	Penny Washers

The Midas convertible uses standard Montego saloon boot hinges, together with the assister springs. These hinges bolt directly onto the mounting boxes at the front of the boot. These mounting boxes are already cut to accept the hinge and should be drilled to accept M6 jack nuts. Insert jack nuts in all four mounting holes, and then assemble the hinge using M6 x 20 hexagonal head set screws, spring washers, and plain washers. Nip the hinges loosely, and make sure that the blades are parallel to each other and the centreline of the car before final tightening. Moving to the boot lid, place it upside down on the bench, taking care to protect the outer surface. There are 6 holes scribed on the boot inner, 4 for the hinges, and 2 for the striker. Drill all 6 holes 5/16" diameter, **TAKING GREAT CARE THAT THE TIP OF THE DRILL DOES NOT STRIKE THE BOOT OUTER.** Insert M6 jack nuts in all 6 holes.
The boot lid may now be mounted onto the hinges on the car using M6 x 20 hexagonal head set screws, spring washers and plain washers. Initially, only nip up these fixings, and then close the boot to check for alignment. Care taken at this stage to align the body panels will pay dividends in the final quality of your Midas. It is sometimes necessary to use 1/4" penny washers between the hinge and the boot inner on the fixings nearest to the rear of the boot lid in order to obtain a correct fit. When you are happy with the fit of the boot lid, finally tighten all the hinge fixings. The assister springs are fitted from the spring mounting on the hinge at an angle about 45 downwards towards the rear of the car. The other end of the spring fits in to a 3/16" diameter hole drilled through the inner side wall of the boot. The best position for this hole for your particular application should be established by trial and error, but it is approximately 5" to the rear of the rear damper mountings. The next operation on fitting the boot lid is to limit it's upward travel to prevent

the front edge of the boot lid striking the up stand on the rear of the body. We recommend the use of Mini front bump stop rubbers, the later type with a single stud fixing. These are fitted simply by drilling a hole in the flat blade of the hinge so that the bump rubber reacts on the part of the hinge which bolts to the body. Approximately 3/4" will have to be cut from the bump rubbers to give the right opening angle, and this can be estab lished during fitting.



BOOT LATCH

Tools required

1 Electric drill with 5/16"dianeter drill bit 10mm socket and ratchet drive
1 pair of pliers
Vice
1 3/8" diameter round file
1 half round file

Donor Vehicle Parts Required

None

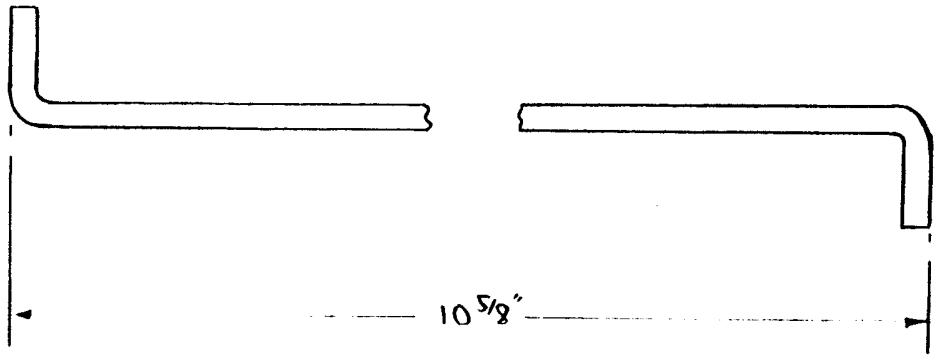
Other Parts Required

1 Pre '89 Rover 200 Boot Latch Part No. DBP 1939
1 Pre '89 Rover 200 Boot Striker Part No. DBP 1944
1 Metro Door Lock assembly Part No. JRC 2866

Fixings Required

4	M6 x 20 hexagonal head set screws
4	1/4" rectangular spring washers
4	plain washers

Boot latch is from a pre 89 Rover 200 series. The hole to accept this latch is already cut, and the holes for the jack nuts are scribed adjacent to this. Drill out these holes using a 5/16" diameter drill bit and fit 2 P46 jack nuts. The latch is operated by an additional Metro external key lock, and this can be cut to the same key as your door keys to give you one key operation throughout the car. The hole for the key lock is scribed on the rear of the car to the right of the rear number plate recess. Drill and file this hole to accept the Metro key lock, taking great care to ensure that it is good fit. The operating rod is bent from 1/8" diameter steel rod(wilding rod is ideal), to the diagram shown.



Fit the operating rod to the boot latch, and feed into the mounting aperture carefully so that the operating rod passes through the slotted hole in the side of the latch mounting. Engage the operating rod in the key lock, and then bolt the latch into position using 2 M6 x 20 hexagonal head set screws, spring washers, and plain washers. Check for ease of actuation of the latch using the key.

Finally, fit the Rover striker to the jack nut previously inserted in the bonnet inner. **HAVING ENSURED THAT THE LATCH RELEASES ON THE KEY**, shut the boot and adjust the striker to give a good fit.

BOOT SEAL

Tools Required

1 pair of tin snips

Donor Vehicle Parts required

None

Other Parts Required

10 ft length of Boot Seal

Fixings Required
None

The boot seal simply pushes over the up stand round the boot aperture. Fitting is made easier by abrading both sides of the very top of the up stand with coarse (40's grit) production paper, taking great care not to damage the body finish. Any areas where the thickness of the upstand varies should be ground down to give a constant 1/8" to 3/16" thickness.

Start fitting the boot seal in the centre of the front of the boot, then carefully work round the aperture taking great care not to damage the gripper strip in the seal. Take great care to "push the seal beck" into the corners, and when you reach the end cut the seal approximately 3/4" long. Fit the last section by pulling the seal back about 6" from the joint, fitting the end first, and then pushing down the ensuing bulge to complete the seal.

ROLL OVER BAR

Tools Required

1	1/2" AF socket and ratchet drive
1	1/2" AF open ended or ring spanner
1	Electric drill and 5/16" drill bit

Donor Vehicle Parts Required
None

Other Parts Required
None

Fixings Required

12	5/16"	dia. UNF bolts of length appropriate for laminate on your car
25	5/16"	diameter penny washers (approx)
12	5/16"	diameter plain washers
12	5/16"	UNF nyloc nuts

The roll over bar on your Midas provides not only roll over protection, but also mountings for the seat belts and the hood frame. Look carefully at the roll bar before installing in the car. The hood frame sockets are to the front of the car, and the angle brackets at the feet bolt through the floor, and through the rear bulk head.

Lift the roll over bar carefully into the car being careful not to damage any of the outer surfaces. Position the feet in the rear corners of the floor pan, and tilt the top of the bar until the hood mounting sockets are central in the recess in the body.

Assess the fit of the feet to the floor pan, and if necessary remove the roll bar and grind the fibre glass in the area of the feet to provide a flat mounting surface. Refit the roll bar and drill the four vertical holes through the floor pan. Bolt the roll bar into place using 5/16" diameter bolts from underneath the car with 5/16" diameter penny washers under the heads. THE USE OF THESE PENNY WASHERS IS ESSENTIAL. Secure with a plain washer and nyloc nut, nipping these fixings until they are just tight. Now drill the four horizontal holes through the rear bulkhead, again securing with 5/16" diameter bolts WITH PENNY WASHERS UNDER THE HEADS, and plain washers and nyloc nuts on the inside. If the hood sockets are not central in the recesses on the side of the car, it may be necessary to pack between the vertical part of the foot bracket and the rear bulkhead until this can be achieved. When you are happy with position of the rollover bar, drill the two holes each side through the hood socket mounting brackets into the inner side panel, taking great care that the drill does not strike the outer surface of the car. It is normal for there to be a clearance between the hood socket mounting brackets and the inner side panel, and this should be packed with 5/16" penny washers to take up this clearance. Assemble using 5/16" diameter hexagonal head bolts with plain washers under the head through the hood socket mounting bracket, the packing washers, and the inner side panel, securing with a penny washer and nyloc nut. In all instances ensure that the bolts are long enough to engage in the locking inserts in the nyloc nuts. When all twelve fixings have been installed, carry out a final tightening. The roll bar is now ready to accept the seat belt inertia reel (lower threaded hole), and the upper seat belt mounting (upper threaded hole).

DOORS

First job to do on the doors is to drill all the holes, and cut all the apertures, in the positions which are already scribed on the doors. Remember to clean off the edge of all apertures and the back of all holes with 40's grit production paper. The Midas convertible uses standard Metro latch, external handle, key lock, and operating rods.

Door Latch.

Tools Required

Large posidrive screwdriver

Donor Vehicle Parts Required

1 Pair Metro Latches Part No. FQJ 10054 / 5

6 standard Metro Latch fixing screws

Other Parts Required

None

Fixings Required

6	M6 x 1" Posidrive countersunk set screws

Offer up the door latch into the back of the door and secure with the original 3 countersunk posidrive set screws. Note that you will have to countersink the GRP carefully so that the heads of these fixings are flush with the back edge of the door. **NB. IT IS ESSENTIAL THAT ALL THREE OPERATING RODS ARE ENGAGED IN THE OPERATING LEVERS ON THE LATCH BEFORE THE LATCH IS ASSEMBLED INTO THE DOOR.**

External Door Handles

Tools Required

1	Medium Posidrive screwdriver
1	10mm Spanner

Donor Vehicle Parts Required

1	Pair Metro External Door Handles Part No. BAM 1396 / 7

Other Parts Required

None

Fixings Required

4	1/4"	plain Washers
4	M6	Nyloc nuts

Before assembling this handle, you must remove the operating lever from its spindle by undoing the central retaining set screw. Assemble the outer handle into position, and secure with 2 M6 nyloc nuts and plain washers. Refit the appropriate operating lever from the latch, using the standard plastic sleeve and metal retaining clip.

Key Lock

Tools Required

None

Donor Vehicle Parts Required

1	Pair Metro Key Locks Part No. JRC 2866 / 7

Other Parts Required

None

Fixinqs Required

None

The standard Metro key lock is retained in the door by a metal spring clip. The thickness of the GRP lay up on the Midas convertible prevents this.You may therefore either thin the laminate locally to accept the original spring clip, or retain the lock barrel using an epoxy adhesive**. NB. IT IS ESSENTIAL WHEN CUTTING THE APERTURE OP THE LOCK THAT THE TWO NOTCHES TO PREVENT THE LOCK ROTATING PROPERLY ENGAGE IN THt LOCK.** WITH THE LOCK BARREL IN PLACE FIT THE OPERATING ARM TO THE BARREL, AND ENGAGE THE APPROPRIATE OPERATING ROD FROM THE DOOR LATCH.

With the lock latch components fitted, the next stage is to prepare and fit the window frames.

WAIST SEAL

Tools Required

1 Electric Drill & 1/8" drill bit

Donor Vehicle Parts Required

None

Other Parts Required

2 Lengths Reliant 3 wheeler Waistseal

Fixings Required

4 1/8" x 3/4" Aluminium pop rivets

Place the door with the outer surface downwards on the bench (remembering to protect the body finish with some foam). You will find that the Reliant waist seal is too long for the Midas application, and should be cut down with tin snips to the appropriate length(approximately 27" long) it is secured to the door by four rivets, one approximate 1" in from each end, and the other two equally spaced. These rivets should be of 3/4" reach. PLEASE NOTE: Great care must be taken when drilling the holes for these rivets not to break through the outer surface of the top of the door. In addition, the rivet holes are very close to the top of the door, and the laminate is extremely thick in this area. It is therefore unlikely that your drill will break through, and you will end up with a blind hole. If you drill too close to the top surface of the door, the expanding rivet will crack the gel coat.

DOOR HINGES

Tools Required

suitable 1/2 AF Spanners

Donor Vehicle Parts Required

None

Other Parts Required

1 Set Door Hinges

Fixings Required

12	5/16”x 1”	Hexagon head set screws
12	5/16”	Penny washers
12	5/16”	Nyloc nuts

The door hinges are specially made for the Midas, and must be fixed to the front edge of the door before the window frame is assembled. Please note that the hinges are drilled and tapped for a grease nipple, and we recommend that this nipple is fitted, and the hinges greased, before fitting. The hinge is fitted to the door. using 3 5/16” x 1’ Hexagonal head bet screws which must be inserted from outside the door, with penny washers and nyloc nuts on the inside of the door. Bolt both hinges loosely into place, and use the straight edge to ensure that the hinge pins are in line before finally tightening the hinges.

WINDOW FRAME - Preparation

Front Ouarter Liuht

Tools Required

1 stanley knife

Donor Vehicle Parts Required

None

Other Parts Required

1 1/2 x .070 Everseal rubber from kit

Fixings Required

None

The front quarter light frame has a removable lower section to allow assembly of the glass. With this lower section removed, carefully place quarter light glass into the aluminium frame and lightly mark the frame in pencil where the glass ends. Using the flat rubber strip supplied in the kit, cut three lengths equivalent to the sides of the triangle formed by the front quarter light. Remember to allow an additional 1/2” on the front leg to reach into the top corner. Starting with this piece, hold the rubber into a U section and-~-inaart into the aluminium frame. Repeat on the jgain upright, and in the loose lower section. The front quarte~t light glass can now be carefully slid into place and retained with tape until the window frame is ready for assembly.

Door Drop Glass

Tools Required

1 Hammer
1 pr. Tin snips

Donor Vehicle Parts Required

None

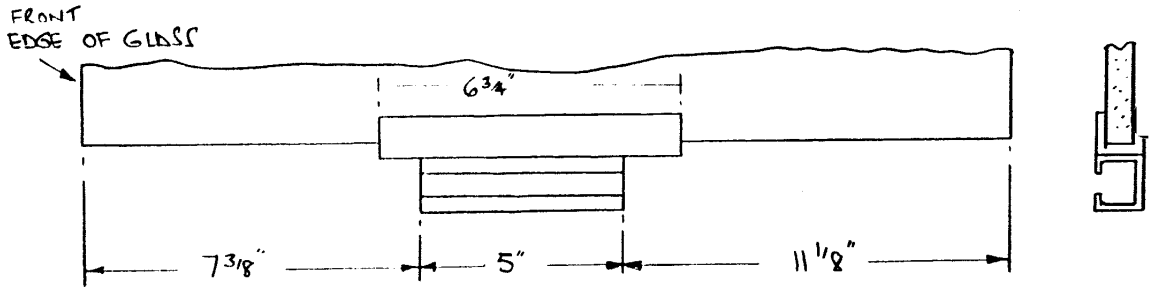
Other Parts Required

Piece 4 mm Ply
U section Window channel from kit

Fixings Required

None

The main door drop glass runs in the U section window channel supplied with the kit. Cut two lengths of this section for the front and rear of the frame and,supporting the frame carefully, tap the U section gently into place in the frame using an off cut of 4mm ply wood that will fit neatly into the channel. It is essential that this U channel is firmly bedded into the bottom of the aluminium section. Before fitting the door drop glass, the channel to accept the window lift mechanism must be fixed to the bottom of the glass. The steel channels that fit to the bottom of a standard Metro door drop glass are approximately 14" long, and contain two 5" long U channels for the nylon wheel of the window lift arm. Only one of these channels is needed for each Midas window, and a 6 3/4" long section should be cut out of the channel. (See diagram)



Using the original rubber to actually grip the glass, and with the side glass vertically on the bench, carefully hammer the steel section onto the bottom edge of the glass in the position shown in the adjacent diagram ***** NB. EYE PROTECTION MUST BE WORN FOR THIS OPERATION.

When this channel is securely in place, the door drop glass can be slid into position in the window frame, using a little WD 40 on the runners if necessary.

WINDOW FRAME ASSEMBLY

Tools Required

1 Electric drill with 1/8" x 5/32 drill bits Medium Posipan screwdriver
1 Sikaflex gun

Donor Vehicle Parts Required

None

Other Parts Reguired

Masking tape

Fixings Required
2 1 1/2" x 10 Posipan self tappers
2 3/4" x 8 Posipan self tappers

The frame is now ready for assembly onto the door. Remove the tape which has been temporarily securing the front quarter light, and slide the bottom of the front quarter light frame into position. Secure with tape. Slot the complete window frame and glass assembly carefully into the door. The position of the window frame is critical for the correct operation of the side windows and hood, and please check the critical dimension shown on the adjacent sketch. It should be noted that a common fault is not to clear out the cut out in the rear of the door to allow the frame far enough back. When you are satisfied with the positioning of the frame on the door, hold securely in position and drill through the mounting holes in the main upright into the door using a 5/32" dia. drill. Secure using 1 1/2" x 10 posipan self tappers. NB TAKE GREAT CARE WHEN DRILLING THESE HOLES NOT TO BREAK THROUGH THE OUTSIDE OF THE DOOR.

With the main frame secured in position, secure the bottom bar of the front quarter light frame by drilling through the two holes and securing with 3/4" x No.8 posipan self tappers.

The lower edge of the window frame must now be secured to the inner edge of the door frame. This is done simply by clamping the window frame to the inner edgd of the door and drilling 5 evenly spaced holes to accept 1/8" diameter rivets of suitable length. The window frame is now securely attached to the door.

Finally, it is necessary to seal the window frame to stop water ingress under the front quarter light. Carefully mask a straight line approximately 5/16" from the bottom of the front quarter light on both the inside and outside edges of the door. Place a similar strip of tape on the window frame itself. Using your sealant gun, run a bead of sealant between these two strips of tape, and then tool to a semi circular shape using a suitable piece of shaped wood. (The rounded end of a P clip makes an ideal tool for this job) Remove the masking tape before the

sealant is dry, and leave to harden.

WINDOW WINDER ASSEMBLY

Tools Required

1 Sikaflex 221 sealant and cartridge gun
1 Hack saw and welder
1 Rivet gun
2 10mm spanners

Donor Vehicle Parts Required

1 Pair Metro Window Regulators Part No. APP 1030 / 1
1 Pair Metto Window Regulator Channels Part No. AFP 1126 / 7
1 Pair Metro Window Channel Rubber Part No. 37H 6300M
2 Window Regulator Handles Part No. YXX 3199 — LG
2 Window Regulator Handle Escutcheon Part No. YXX 2653 — LG
2 Regulator Handle Fixing Screws Part No. .JPC 3475
2 Regulator Handle Plugs Part No. YXX 3200 — LG

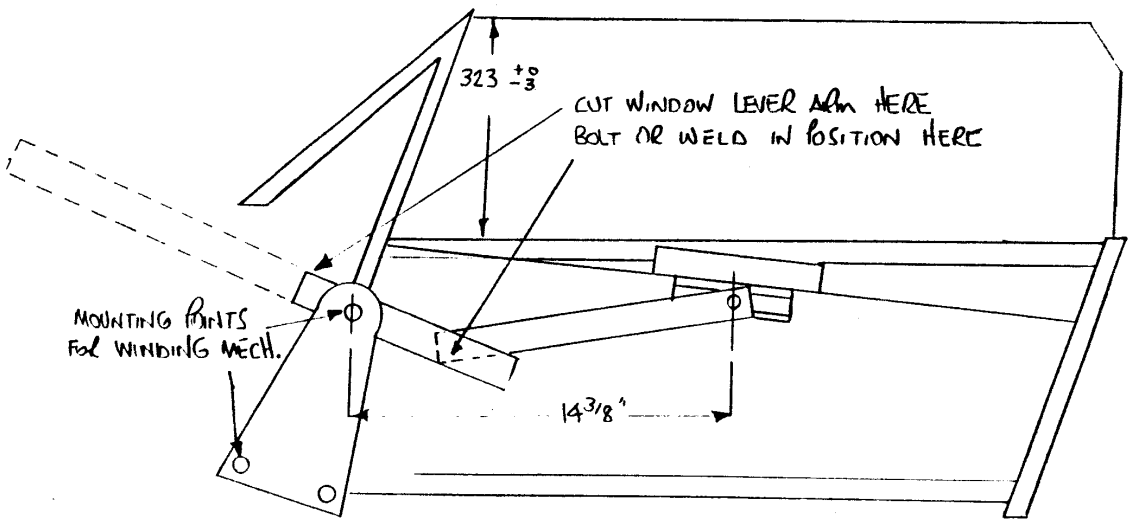
Other Parts Required

1 Roll of 1" masking tape
1 Tin Wax or WD4O

Fixings Required

1 M6 x 40 Hex head set screw
2 M6 x 10 Hex head set screw

The window winder assembly is Metro, but requires cutting and welding as shown in the attached drawing.



When the winder mechanism has been modified, it is ready for mounting onto the window frame. Firstly, engage the nylon runner into the channel on the bottom of the drop glass. Next, engage an

M6 x 40 hexagonal head set screw into the threaded bush which forms the top mounting, with two M6 x 10 hexagon head set screws into the brackets off the window frame which form the lower mounting. When you are happy with the position of the window winder, tighten all three fixings. Fit the window winder handles provisionally (it is usually easier to do this properly using the retaining screw) and check the window for ease of operation. Do not use excessive force, and the glass may need some assistance for the first few operations. Some form of lubrication in the glass run channels is advised, and this can either be a little wax or WD4O. If the glass does not run freely, the most likely cause is an incorrect length of the winder operating arm, as it is essential that this acts on the glass in exactly the right place.

INNER DOOR HANDLES

Tools Required

1	stanley knife
1	Sikaflex Gun

Donor Vehicle Parts required

1	Pair Metro Armrests Part No. XXX 9570 — LG
1	Pair Inner Handles Part No. AFT 6154 / 5 — LG
2	Inner Handle Bezels Part No. YXX 3265 — LG

Other Parts Required

1	roll 1" Masking Tape
	Suitable contact adhesive

Fixings Required

None

The inner door handles are standard Metro components and mount directly onto the door trim.
Starting with the fibre glass door trim, cut out all the scribed apertures. NB.PLEASE NOTE THAT ALL METROS ARE FITTED WITH COLOUR KEYED INTERIORS, WHICH MEANS THAT FITTINGS SUCH AS INTERIOR DOOR HANDLES AND WINDOW WINDER HANDLES ARE AVAILABLE IN THE SAME COLOUR. ONE OF THE MOST POPULAR COLOURS IS FLINT GREY, AND THE MATCHING FLINT LEATHERCLOTH (SUCH AS IS USED IN THE DEMONSTRATOR) IS AVAILABLE FROM THE FACTORY.

Using a material colour of your choice, cover the door trim panel using a suitable contact adhesive. The leather cloth should be cut approximately 2" larger than the panel all the way round, and remember that the contact adhesive must be "dry" before bringing the leather cloth and fibre glass panel into contact. Dart the material around external corners and internal apertures and stretch to achieve a neat finish. It is best to leave a covered panel to harden overnight before use.

Onto the lower two holes in the panel, fit a standard Metro arm rest (again this should be in a colour to match your trim). Look carefully at your inner door handle assembly. You will see that the operating part of the handle, (the part connected to the

operating rod), mounts directly into the bezel. Position the bezel in the aperture in the door trim, and secure in place temporaily using masking tape on the leather cloth side. Turn the panel over and CAREFULLY bond into position using a bead of Sikaflex. Leave to one side to harden. Whilst the Sikaflex is curing, you need to bend the two inner door handle operating rods to suit.

FITTING THE DOORS & DOOR TRIMS

Before the inner door handle is finally assembled, the door trim must be secured to the door. The best way to do this is with the door shut, so that you can ensure that the door trim is positioned centrally within the door seal. Please note that the fit of the door trim adds considerably to the quality of your f inished Midas, and great care should be taken over this part of the operation. Apart from the visual aspect of the fit of the door trim, the door trim can also be used to adjust the fit of the outer door. It is therefore essential that the doors are hung before the door trims and inner door handles are fitted.

HANGING THE DOORS

Tools Required

2	1/2" AF Spanners, 1 of which must be a socket with ratchet drive.
1	3/8" Round file
1	Electric drill with 3/8" dia. drill bit

Donor Vehicle Parts Required

2	Metro Door Strikers Part No. EAM 9481

Other Parts Required

None

Fixings Required

14	5/16' dia. Penny washers
12	5/16" UHF Nyloc nuts
2	12mm (fine) Door Striker Nuts

It is possible to hang the doors by yourself, but it is much easier if you have an assistant. It is also essential to have a 1/2" AF socket with a ratchet drive, rather than an open ended spanner. You will note that the hinges are fitted with 5/16" UNF studs, and these are secured to the monocoque using a penny washer and nyloc nut. If you have some spare 5/16" plain nuts, these would he useful to avoid destroying the nyloc insert during assembly. Of fer the door up to the car, position the retaining studs in the holes and push into position. Your assistant working from inside the car, should place a 5/16" penny washer and nut on just one of the top. hinge fixings and one of the lower hinge fixings, and then nip them up. With the door retained in the position, carefully study the fit.

The fit of the doors is probably the single most important external feature to determine the quality of your Midas. Look for even shut lines all the way round the door and the fit of the window frame to the windscreen pillar. Most importantly, check the fit of the angled feature that runs along the top of the door to the matching feature on the body at the rear of the door. It is also important that the door should fit properly on the door seal. You will find that you can adjust the door by carefully slackening the two mounting bolts, reposition the door and re—tightening. You may find that you only need to loosen one hinge to achieve the desired result. In some exceptional cases, there may not be sufficient adjustment on the holes in the body, and you may need to slot the holes to achieve the desired door fit. This should be done extremely carefully, as small changes in the holes make a huge difference to the fit of the rear of the door.

When you are happy with how the door fits the car, assemble all the remaining penny washers and nyloc nuts and do up tight.

Note: It may be necessary to "D' the penny washers to clear the dashboard structure.

With the door hung, the door striker may be fitted to the body by drilling the scribed hole and assembling the standard Metro striker, gaining access to do up the nut through the large hole cut in the inner side wall of the car adjust the position of this striker as necessary to ensure that it engages in the latch on the door, and that the rear of the door fits flush to the car.

Note: This is not a final adjustment.

FITTING THE DOOR TRIM

Tools Required

1	Medium sized posidrive screwdriver
	1/2" AF socket, a range of extensions, and ratchet drive.
1	17mm spanner to fit nut on striker
1	Electric drill with 3/16" & 5/16" drill bit sizes
1	Jack nut tool.

Donor Vehicle Parts Required

None

Other Parts Required

1 Marker

Fixings Required

12	M4 Jack nuts
12	M4 x 20mm posidrive countersunk set screws

With the door now fitted, the door trim and the inner handle can be finalised. With the door shut and latched, position the door trim onto the inner door flange and position centrally within the door seal. Mark the position of the door trim on the door. Drill a hole through the door trim and into the door on the top front corner.

Remove the door trim enlarge the hole in the door and fit an M4 jack nut. Replace the door trim and secure in position using an M4 fixing through this hole. The next hole in the door trim is going to be on the rear lower edge(diametrically opposite the hole you have just drilled), and we are going to use the door trim to adjust the final fit of the door. Carefully close the door, ensuring that the door trim does not become jammed against the seal. Study the fit of the door. If the external fit is good, simply fit the interior trim to the position you have masked. If the lower rear edge of the door is sticking out from the body work then it may be "pulled" in using the door trim. Assess the degree of mis —match, carefully open the door whilst supporting the inner door trim, and twist the lower rear edge of the door inwards by twice the amount required to obtain a flush fit (this is obviously best done with the door open). Whilst holding the door in this position, your assistant should drill a hole through the door trim and into the door, ensuring that the door trim is aligned with the marks that you made earlier. Enlarge the hole in the door fit an 144 jack nut and secure the door trim to the door using an M4 fixing. With just these two fixings securing the inner door trim, carefully shut the door and check the fit. If you are satisfied with the fit, then proceed to drill round the door trim at evenly spaced intervals to provide a total of S or 6 fixings around the door trim. Remove the door trim and fit the remaining M4 jack nuts. Note: You really only get one chance at using the door trim to adjust the fit of the outer door. If you have not put sufficient set in the door, it is unlikely that you will be able to re—position the jack nut as it will be too close to the original. It is best to err on the side of having the bottom corner too tight rather than too loose.

The door trim and inner handle are now ready for final assembly. Secure the inner door handle to the bezel using the standard Metro screw. Offer the door trim and handle assembly up to the door, and engage the operating rod in the door latch. Position the door trim and secure in position using the M4 fixings. Check the inner handle for correct operation. Fit the window winder handle and finishing bezel, and check the window for correct operation.

With the door now complete, the finishing touch is the final adjustment of the door striker..

FUEL TANK

Tools Required

2 7/16 AF Spanners, one of which should be a socket with an extension.
1 Hacksaw
1 Medium blade screwdriver
1 Small blade screwdriver

Donor Vehicle Parts Required

1 Metro (3 Door) Fuel Tank assembly complete with gauge unit.
1 Metro (3 Door) Filler Cap

Other Parts Required

10.5" 1 3/4" dia. petrol resistant hose
10.5" 3/8" dia. pet rol resistant hose
2.5" petroflex hose
1 Bracket 11141
1 Mini Petrol Tank Rubber grommet Part No. 14A 7057

Fixings Required
6 1" x 1/4" UNF HHSS
6 1/4 UNF nyloc nuts
12 1/4 penny washers
2 38/54mm hose clips GEC 1217
3 16/22mm hose clips GHC 507

Preparation

The fuel tank filler neck needs to be extended using the 1 3/4" dia. rubber hose. The filler neck therefore needs to be cut 3 1/2" down from the flange which retains the filler cap. You will see that there are various breather pipes on the filler neck, and the small one must be bent out of the way before the cut is made. The large one is cut with the filler neck. Clean the sawn edge of the tank and the off cut with a file, and retain the off cut. Cut the 1/2" diameter breather pipe again to provide a connecting piece approximately 2" long for the additional breather hose. Secure this breather hose with the hose clip. Secure the filler neck extension rubber to the tank with the hose clip: the tank is now ready to fit. Before fitting the tank, secure the 2 1/2" long petroflex hose to the end of the main fuel line, and if necessary bend the end of the fuel line away from the body slightly.

Installation

To fit the tank you will need the help of an assistant. Firstly, bolt fuel tank bracket MM1 loosely to the two holes adjacent to the offside rear spring turret using 1" x 1/4" UNF HESS, penny washers and nyloc nuts.N.B..The set screws must be inserted from inside the car. "Nip" these fixings, but do not finally tighten. Offer the tank up from under the car, and secure in position using 1" x 1/4" UNF HESS, penny washers and nyloc nuts. Please note that there must always be a penny washer between the head of any fixing and the fibreglass: Please also note that because of the oversize holes in the fuel tank, you must use a penny washer under the nyloc nut as well.
Pay particular attention to the rear mountings, which are slots rather than holes to ensure that they are properly retained by the penny washer. Tighten all fixings, including the two fixings retaining the bracket to the car.

Fit the other end of the petroflex fuel feed hose to the feed pipe which is situated in the sender unit. Tighten the pipe clip.

The green/black wire is fitted to the insulated terminal in the centre of the gauge unit, and the black (earth) wire is fitted to

the uninsulated terminal on the side of the gauge unit.

For earlier tanks, extend the earth wire to one of the tank mounting bolts using an adaptor available from the factory.

The top part of the fuel tank neck which was previously cut off should now be inserted through the body using the body grommet. As you will sed. your Midas shell is double thickness in the area of the fuel tank. filler, and the body grommet should fit onto the outer body alone. It may be necessary to trim some of the inner flange of the grommet to allow it to pass between the two fibre glass body sections. Before fitting the filler neck, ensure that the very small diameter breather pipe (if fitted) is crimped flat to prevent any leakage. Insert the filler neck from underneath, and secure both the filler pipe and the breather pipe using the clips provided. Please note that the position of the fuel filler neck detetmines whether the filler cap projects outside of the body line of the car, and some care should be taken with it's final positioning. Fit the filler cap.

REAR BRAKE PIPES (See diagrams on pages 71-72)

Tools Required

1	7/16	AF spanner
1	7/16	AF open ended spanner
2	16mm	open ended spanners for brake hoses

Donor Vehicle Parts Required

Metro Rear Brake compensating valve.
Lock Nuts for Flexible Brake Hoses.

Other Part Required

1	Metro 0/S flexible brake hose	(GBH 182)
1	Metro N/S flexible brake hose	(GBH 183)
1	Bracket MM4	
1	Bracket MMS	

Fixings Required

3	1/4" penny washers
3	1/4 UNF nyloc nuts

Locate the brake valve bracket, part number MM4 in your kit. Fit the standard Metro brake valve to this bracket so that it lies inside the angle. Ensure that the register on the valve is properly engaged with the large hole on the bracket. Secure the bracket complete with the valve onto the two holes drilled in the nearside rear floor using two penny washers and two 1/4 UNF nuts.

Fit the brake fitting on the ehd of the main brake pipe from the front of the car into the tapping marked "in" opposite the securing bolt. Please note that on all brake pipe fittings, you should tighten them until they just "nip", and then tighten a further half turn **ONLY**. Moving to the other side of the car, fit rear

brake pipe bracket part number MM5 to the single hole drilled on the offside rear floor so that it is pointing at right angles to the direction of the car, i.e. so that the flexible brake pipe leaving it points towards the outside of the car.

You now need to run the brake pipe between the brake valve on the nearside, and the brake pipe bracket on the off side. This pipe is 1200mm long, and is fitted with a male metric fitting on one end and a female metric fitting on the other end. Fit the male metric fitting into the tapping marked "out" on the brake valve adjacent to the "in" tapping from the front of the car. Bend the pipe carefully, avoiding kinks, and run it along the bottom of the rear bulkhead. Fit the standard Metro offside rear flexible hose through bracket MM5, secure with the correct lock nut, and then fit the female metric fitting on the brake pipe. Returning to the nearside of the car, fit a standard Metro nearside brake flexible hose into the remaining tapping in the brake valve and tighten. The rear brake pipes are now complete and ready for the subframe to be fitted. it is often a good idea at this stage to run a spanner over all the brake pipe fitting to ensure that they are tight, as they are extremely difficult to get to once the sub-frame is in place.

REAR SUBFRAME (Special Coil Over shocker System)

Tools Required

1	Medium length Posidrive screwdriver
1	Hacksaw
1	Flat file
1	Electric drill, and l/4",5/l6", 3/8" drill bits
2	1/2" AF spanners, one open ended, one socket
1	Jack + piece of wood (approx. 4" x 2" x 4')

Donor Vehicle Parts Required

1	Metro rear subframe assembly complete with all suspension but less hydragas suspension units and associated parts.

Other Parts Required

lpr	Rear subframe rear mountings, (4 shaped steel washers, 4 rubber mountings).

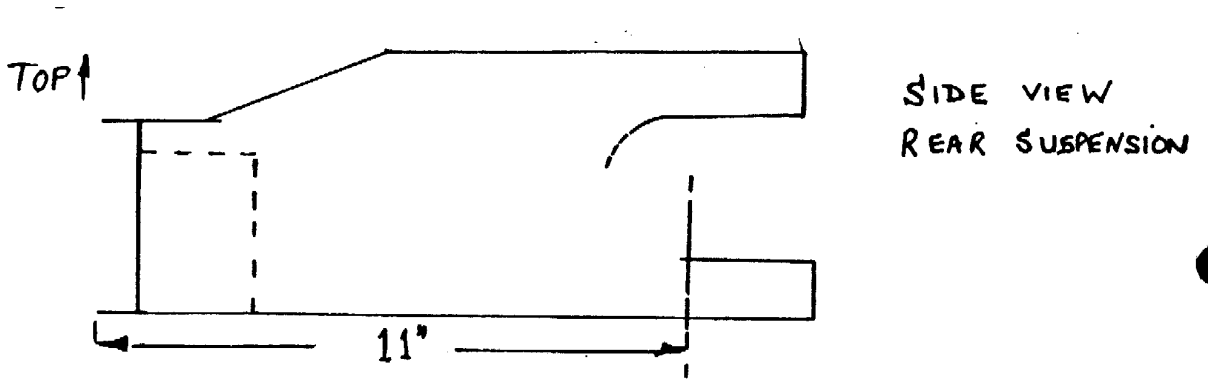
Fixings Required

6	1 1/4" x 5/16 UNF Hex head bolts
6	5/16 penny washers
6	5/16 UNF nyloc nuts
6	5/16 plain washers
2	2 1/2" x 3/8 UNF Hex head bolts
2	3/8 penny washers
2	3/8 plain washers
2	3/8 nyloc nuts

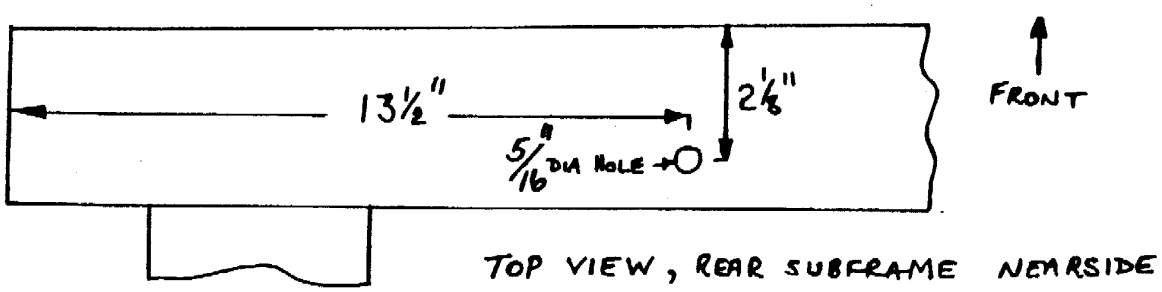
Preparation (see also next section "Rear suspension lower mounting brackets")

Before fitting the rear subframe you must remove from the car the two subframe end cappings situated immediately in front of the rear wheels. These cappings are retained by two 3/4" x 8 self tapping screws which are accessible from under the wheel arch.

If you are planning to fit the undertrays, or think that you might do so at some future date, then the lower section of the rear arms on the subframe must be cut off as indicated in the diagram below.



Also, the handbrake guide clip must be removed, and a new hole drilled. The hole is positioned on the nearside top of the sub— frame, as indicated in the diagram below:



Having carried out this modification, the subframe should be fully assembled with the suspension arms and all the brake components including the brake pipes which run on the suspension arms, and the handbrake cable.

Installation

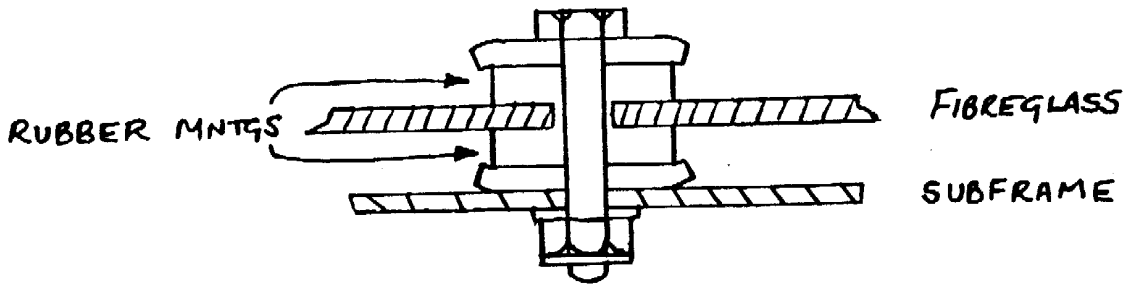
Since the complete subframe and suspension assembly is quite heavy, we would suggest that it is supported on a stout piece of wood and then lifted into place using a jack. We also strongly recommend that you have one, or possible more helpers available to assist with this process. **ON NO ACCOUNT SHOULD YOU WORK BE-**

NEATH THE SUBFRAME UNLESS IT IS PROPERLY SUPPORTED.

Using a jack and/or helpers, lift the complete subframe assembly into place and secure the front mountings to the drilled holes using a 1 1/4" x 5/16 UNF HHSS inserted from inside the car. (Ensure that there is a penny washer under the head of the set screw). Please note that you may have to "strain" the rubber mountings to line the holes up but this is perfectly normal, and the holes in the car are in the right place. Having inserted all four bolts, secure with nyloc nuts using an ordinary plain 5/16" washer under the nut. Tighten all four fixings.

N.B. If you are using a later type subframe with six fixings drill the additional holes through the outer mountings and secure in the normal way.

Because the subframe is rubber mounted, the rear of the subframe will still need supporting even when the front mountings are tightened. The best way to do this is again using a piece of stout timber and a jack, as it is very important to jack the rear of the subframe up against the body for assembly. Having done this, you will need to drill through the subframe to provide the rear mounting holes. For this you will need an electric drill with a 3/8" diameter drill bit. Move inside the car and drill down through the S/B" holes immediately in front of the rear suspension turrets. **N.B. IT IS VERY IMPORTANT THAT THE HOLE YOU DRILL IS CENTRAL WITHIN THE LARGER HOLE**. Having drilled through the subframe, deburr the hole and then secure the rear subframe using the mountings provided, as indicated in the diagram below:



The rear subframe is now fitted, and the only remaining task is to connect the flexible brake hoses to the brake pipes fitted to the suspension arms.

REAR SUSPENSION UNIT LOWER MOUNTING BRACKETS

Tools Required

2 13mm spanners, one of which should be a socket

Donor Vehicle Parts required

None

Other Parts required

lpr Suspension unit mounting brackets

2 Distant pieces

Fixings Required
None

This operation can be carried out either before the suspension arms are mounted onto the subframe, or after you have mounted the subframe assembly onto the car.

First remove the rear brake drums and rear brake shoes to give access to the nuts holding the rear back plate retaining bolts. Remove these bolts and the handbrake abutment bracket that they retain, being careful to retain all the spacers. Select the correct hand of Midas spring unit mounting bracket and affix to the rear arm using the back plate mounting bolts. Please note that an additional spacer is required on one of the bolts. Tighten all the mounting bolts, re—fit the brake shoes and re—fit the brake drum.

REAR SUSPENSION UNITS

Tools Required

2 9/16 RE spanner, one of which should be a thin open ended spanner for the locknuts on the top of the suspension unit.
1 tin WD4O

Donor Vehicle Parts Required
None

Other Parts Required
lpr Coil spring/damper assemblies
4 Rubber Mountings
4 Steel Cup Washers

Fixings Required

2 3/8 x 1" washers

2 3 1/2" x 3/8 UNF Hex head bolts

The first stage.is to fit these onto the brackets on the suspension arms. make sure that the adjusting screw is facing to the rear of the car, fit the lower suspension unit mounting into the bracket on the suspension arm. It may be necessarj to pack ber tween the bracket and the suspension unit using the 1" x 3/8" washers. Secure using the 3 1/2" x 3/8 UNF bolts into the cap tive nut on the bracket. Having secured the suspension units to the suspension arms, the next stage is to fit the top of the unit through the hole in the rear wheel arch. Firstly, remove the two

nuts, one steel washer and one rubber mounting frbm the top of the suspension unit. Raise the rear suspension arm and suspension unit, and support it so that the top of the unit passes up through the hole in the wheel arch. Please ensure that the step portion of the lower rubber mounting engages correctly in the hole in the monocoque. (A little WD40 may be used on the rubber mountings to ease assembly). Hold the suspension unit firmly in this position (a jack underneath is ideal), and then move inside the car to position the top rubber mounting (remember the step portion again), the steel washer and the retaining nuts. Do up the lower nut until the mounting rubbers are just beginning to bulge. **DO NOT OVER—TIGHTEN**. Lock the lower nut in this position with the top nut.

HANDBRAKE ASSEMBLY

Tools Required

1	Tin medium grease	1	10mm open ended spanner
1	pair pliers	2	1/2 AF spanners
1	small blade screwdriver		

Donor Vehicle Parts Required

1 Handbrake Lever, complete with forkend and connecting nut to handbrake cable.

Other Parts Required

1 Handbrake Guide Clip
1 Modified h/b cable

Fixings Required

2 1' x 5/16 UNF HHSS
2 5/16 UNF nyloc nuts

A specially shortened handbrake cable is supplied in the kit. The handbrake end of this, fitted with a threaded stud, must be passed up through the hole in the rear bulkhead. Ensure that the cable is lying with the bracket that joins the two portions of the cable lying on the NEARSIDE of the car and is engaged in the re—positioned guide clip. Starting on the nearside, pass the "wheel" end of the cable through the large hole in the subframe and out along the nearside suspension arm. Repeat this operation for the offside part of the cable. Secure both ends of the outer Bowden cables in the subframe and abutment brackets on the suspension arms respectively. Do not forget to secure these abutments with the steel spring clips, secure the ends of the cable to the operating levers projecting from the brake back plates using a clevis pin and a split pin in the normal fashion. (Don't forget to grease them well). Ensure that the handbrake guide moves freely in the re-positioned plastic clip. Moving inside the car, secure the handbrake to the bracket bolted to the central tunnel. The handbrake lever should lie to the driver's side of the vertical brackets on the handbrake bracket. Don't forget to connect the eyelet on the black wire of the handbrake warning light switch to one of the handbrake mounting bolts to provide

the necessary earth. Connect the Lucar terminal on the black and grey wire to the terminal on the handbrake switch. Using the standard fork end and adjusting nut connect the handbrake cable to the handbrake. Ensure that the end of the outer Bowden cable is properly engaged in the handbrake abutment bracket fitted to the top of the central tunnel. Secure with a steel clip. Adjust the handbrake until it is fully on on the third click of the ratchet.

The assembly at the rear of the car is now completed, and you should fit the rear wheels so that the car can be moved around when necessary.

The next stage is to move to the front of the car as you will be working under the bonnet and in the dashboard area.

PEDAL BOX ASSEMBLY AND ACCELERATOR PEDAL

Tools Required

1	10mm spanner, preferably a socket
2	7/16" AF spanners, one of which should be a socket
1	13mm spanner, preferably a socket

Donor Vehicle Parts Required

1	Metro Pedal Box assembly complete with mounting plate, pedals, servo, brake master cylinder and clutch master, cylinder.
1	Metro Accelerator Pedal

Other Parts Required

None

Fixings Required

2	20mm x M6 HHSS	2	30mm x MR HHSS
2	1/4 spring washers	2	1" x 1/4 UNF HHSS
6	1/4 penny washers	4	1/4UNF nyloc nut8
2	3/4 x 1/4 UNF HHSS	8	5/16 penny washers
2	5/16 spring washers		

Before fitting the pedal box, it is necessary to cut off the flange used to bolt through the steering column bracket. See the section entitled "Steering Column for a diagram on how this should be done.

The standard Metro pedals may be used unmodified. Fit the pedal box assembly complete with pedals, master cylinders and servo on its mounting plate into the hole pre—cut in the monocoque. Secure with two 20mm x 146 hex head set screws, spring washers, and penny washers from inside the car in the two captive nuts at the top rear of the pedal box mounting plate. DO NOT TIGHTEN. The two inboard mountings may he secured, using either the original metric set screws, or two 3/4" x 1/4" UNF hex head set screws, plain washers, and inside the car penny washers and nyloc nuts.

Please note that on the top mounting plate, the lower front offside mounting (the one at the front nearest the outside of the car) is not used. The holes for the lower pedal box should be drilled in the front bulkhead. Please note that there is a gap between the two legs that hang down behind the pedals and the front bulkhead. These must be packed, using the 5/16" penny washers supplied in the kit. Secure using the 30mm x M8 Hex head set screws into the captive nuts on the pedal box assembly, remembering to use a spring washer and a penny washer under the head of the bolt in the engine compartment. Tighten all six fixings.

Accelerator Pedal

Of fer the accelerator pedal up to the two holes pre—drilled in the floor, and you will see that the top arm must be bent to clear the end of the brake pedal return spring. Please also note that the accelerator pedal arm now operates on the bulkhead side of the metal accelerator pedal stop fitted to the side of the pedal box. Having bent this arm, (it may be done cold in the vice), the accelerator pedal should be fixed to the pre-drilled holes using 1" x 1/4 UNF Hex head set screws, with penny washers under the head of the bolts, and nyloc nuts on the inside of the car. The hole in the accelerator pedal to accept the throttle cable should now line up with the hole for the throttle cable abutment which should be drilled in the bulkhead.

From that part of the wiring loom which is hanging down near the pedal box assembly, select that portion which is contained within a rubber grommet and has the following components:

Item 1. A three way connector with orange, black and yellow, and black and red wires (heater feed).

Item 2. Two Lucar connectors, one on a green wire and one on a black/white wire (low brake fluid warning)

Item 3. A white wire and a black wire, both fitted with bullet connectors (anti—run on valve, MG only)

Item 4. Two Lucar connectors, one light green/black, the other black (screen washer bottle)

These wires should be passed through the hole in the metal pedal box mounting plate and the grommet secured into the hole in the plate. Check the run of these wired under the dashboard that they are free of the pedal movement and any other obstruction. Connect item 2., the wires for the low brake fluid warning light, to the two terminals on the top of the brake fluid reservoir.

HEATER FAN ASSEMBLY

Tools Required

1 Medium posidrive screwdriver
1 pair pliers
1 Rivet gun (to accept 1/8" pop rivets)

Donor Vehicle Parts Required

1	Metro Heater Fan assembly, complete with resistor and resistor shield.

other Parts required

None

Fixinga Reayired

4	1" x No. 8 Posipan self tapping screws
4	No. 8 spire nuts
2	1/2" x 1/8" dia. aluminium pop rivets

Preparation

The heater fan motor must be removed from it's metal mounting plate, as in the Midas application it mounts direct onto the bulkhead. You must also drill out the small rivets securing the resistor which is mounted adjacent to the heater motor. Run a bead of silicone sealant around the base flange of the heater motor then fit the heater motor to the moulding on the bulkhead using four 1" No. 8 self tapping screws and spire nuts on the inside of the car. Rivet the heater resistor to the two holes drilled in the flat portion of the bulkhead adjacent to the heater motor. Connect the heater electrical plug to the three socket moulded plug previously described. (Item 1.)

DASHBOARD

Preparation

Before carrying out any work behind the dashboard, you must remove the trim dash. The trim dash is secured by five studs which can be accessed through the four inch diameter holes under— neath either end of the dash and through the two inch diameter hole immediately above the semi circular moulding to the left of the steering column. You will need a 10mm spanner to remove the nuts. Having removed all five nuts, carefully withdraw the trim dash. You will see that there are now four posidrive countersunk self tapping screws retaining the glove box. Remove these, and the glove box. You will now have full access to the area behind the dash through the glovebox aperture and through the instrument pack aperture.

WINDSCREEN WASHER JETS

The jet used should be a single twin outlet type. Fit in the centre of the car immediately under the windscreen. Make sure that the rubber sealing washer is under the head of the jet, and that the plastic retaining nut is not over tightened. Before fitting the plastic water tubing and the water bottle, the wiper motor assembly should be fitted.

WIPER MOTOR ASSEMBLY

Tools Required

1	7/8 AF spanner (open ended)
1	8mm spanner
1	14mm spanner (open ended)
2	7/16 AF spanners
1	'Bullet' crimping tool
1	Medium posidrive screwdriver

Donor Vehicle Parts Required

1	Metro wiper motor and rack assembly complete with mounting bracket, spindle nuts and washers

Other Parts Required

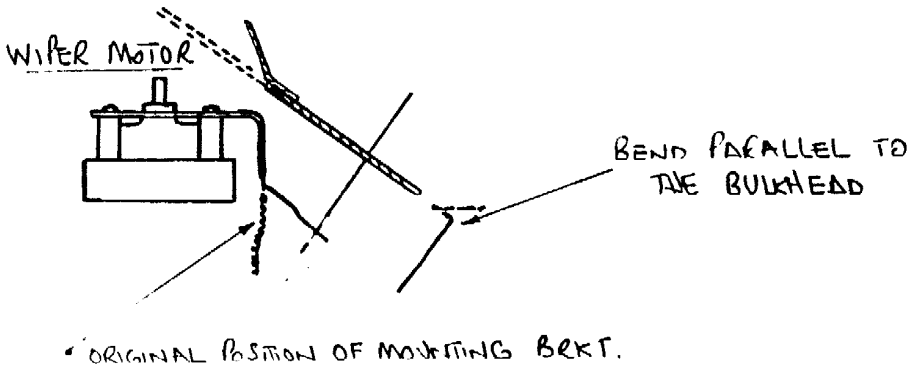
2	20mm polythene spacers
2	Rubber washers

Fixings Required

1	1 1/2 x 1/4 UNF HHSS
2	1/4 penny washers
2	1/4 UNF nyloc nuts

Preparation

Remove the shaped black rubber sleeves from the wiper spindles and discard. Fit the two 1" long clear polythene spacers to the wiper spindles. Undo the central nut which connects the motor drive arm to the reciprocating arms. Undo the three screws which retain the motor mounting bracket to the motor and remove the bracket from the motor.
Bend the bracket to the diagram below.



Ref it the bracket to the motor assembly and re—connect the drive mechanism. Carefully insert the wiper motor and rack assembly through the instrument pack hole with the wiper spindles pointing upwards, and the motor towards the front of the car. Carefully engage the nearside spindle in the nearside hole, and then swing

the motor up into place and engage the offside spindle. Secure the drive spindles in position using the rubber washers together with the standard Metro metal washer and nut. Secure the wiper motor mounting bracket through the drilled hole in the front bulkhead using a 1 1/2" x 1/4 UNF Hex head set screw, two penny washers and a 1.4 UNF nyloc nut. For neatness, insert the set screw from the engine compartment so that the nyloc nut is behind the dashboard. Connect the multi—socket electrical connector on the motor to the corresponding socket in the wiring loom. It is a good idea at this stage to temporarily fit the battery, and plug in the three steering column electrical connectors, so that the wipers may be operated. Check that the moving arms do not foul the body.

WINDSCREEN WASHER

Tools Required

1 Medium posidrive screwdriver

Donor Vehicle Parts Required

1 Metro screenwasher bottle, piping and jets or suitable proprietary kit with a single twin outlet jet.

Other Parts Required

None

Fixings Required

2 3/4 x S posipan self tappers
2 4" cable ties

The screen washer assembly may now be completed. Fix the plastic screen washer bottle to the side of the engine compartment adjacent to the pedal box assembly, using two 3/4" x 8 posipan self tapping screws into the drilled holes. Connect the water tubing to the outlet on the pump and then pass it through the rubber grommet in the pedal box mounting plate. (Be careful when carrying out this operation not to damage the wiring loom. We suggest that you push up a posidrive screwdriver from inside the car through the centre of the wiring loom, push the water tubing over the end of it and then gently withdraw the screwdriver). The water tubing should then pass up with the wiring loom into the area behind the dashboard and so on to the back of the screen washer jet. Remember that the wiper mechanism will be rotating behind the dashboard and that the washer tube must be kept clear of this. Secure the piping into position using the cable ties.

HEATER ASSEMBLY

Tools Required
2 7/16 AF spanners
1 13mm spanner, preferably a socket
1 small posidrive screwdriver

Donor Vehicle Parts Required

1	Pre Oct. 1984 Metro Heater assembly
lpr	Pre Oct. 1984 Metro side window demister ducts (inner and outer)
1	set Demister duct Y pieced
1	set Demister duct 1 1/4" dia. air ducting

Other parts Required

lft	'Tank' tape
2ft	2" dia. air ducting
1	Midas heater inlet duct Silicone sealant
1	Heater mounting adaptor bar (if necessary)

Fixings required

1	1 1/2" x 1/4 UNF HHSS
3	1/4 penny washers
2	1/4 UNF nyloc nuts
2	25mm x M8 HHSS
2	5/16 spring washers
2	5/16 penny washers

It is essential that your Midas uses a pre— October, 1984 Metro heater assembly. These units were fitted with two types of mounting: one type has two M8 threaded holes positioned 150mm apart on the top of the heater unit approximately 100mm back from the front edge. The other type of heater unit does not have these holes drilled, and is mounted by angle brackets from the side of the heater at the front. The Midas will only accept the heater with the threaded inserts, but the other type of heater may be fitted using an adaptor bracket.

PREPARATION

Before fitting the heater assembly, locate the mounting on the top of the heater which takes the form of a small angled metal bracket. This bracket is fitted centrally on the heater and to the rear of the heater unit, i.e. towards the front of the car. Into this bracket fit a 1 1/2 x 1/4 UNF Hex head set screw with a penny washer either side of the mounting bracket and secured by a 1/4" UNF nyloc nut. Ensure this is done up tight, as access to it is not possible after the heater is fitted. Remove the standard plastic ducting that runs from the side of the heater to the heater fan motor. It is retained by 4 small posidrive self tapping screws. It will be quite difficult to remove from the heater as it is sealed with mastic to keep it airtight.
Once removed it may be discarded. Your kit contains a fibreglass duct which fits onto the heater in exactly the same way, and accepts the original fixings. Remember to run a bead of silicone sealant round the flange before assembly onto the heater. The heater and inlet duct assembly is now ready to be fitted into the car. Offer the heater up into place, ensuring that the electrical wiring loom for the cigar lighter and the heater itself is

not trapped by the heater water pipe inlet assembly.

As the heater goes up into position, the rear mounting stud that you have just fitted into the rear mounting bracket will pass up through the pre—drilled hole in the structural dashboard and the air intake ducting will press up close to the heater motor outlet. Secure the rear mounting with a penny washer and 1/4" UNF nyloc nut. Still supporting the heater, secure the front of the heater with two 25mm x M8 Hex head set screws, with spring washers and penny washers. Tighten all three fixings.

ELECTRICAL CONNECTIONS

The electrical connection to the heater is by a three socket multi-connector plug in the loom to a matching plug in the heater: push these together to connect. If your heater assembly is fitted with illumination for the controls, the red/green and black wires should be connected to the appropriate wires on the heater. Please note that there are two sets if illuminations and is the same length as, and adjacent to, the heater plug on the loom, and the other set is the same length as, and adjacent to, the purple feed to the cigar lighter, and the red/green and black wires for the cigar lighter illumination.

DEMISTER AND SIDE WINDOW DEMIST

Fit the passenger side demister duct in position. The drivers s side demister duct is fitted after the wiper motor assembly is installed. The 'bend' in this duct is to clear the wiper motor. The side window demist assemblies are those fitted to the Metro. Push the side window demist vents through the holes in the end of the dashboard and secure in position by fitting the standard tube connectors on the inside. Make sure that the indents in the tube connectors have snapped over the lugs in the side window demist vent. The hot air from the heater is split to the demister duct and the side window demist by a 'Y' piece. On the passenger side, this 'Y' piece lives immediately under the structural dash and is connected to the heater, the demister duct, and the side window demist using flexible ducting. The feed to the side window demist is the standard 1 1/4" ducting which you will have removed from the Metro Donor Vehicle. This passes through a separate hole in the structural dash to the 'V piece. The connection up to the demister duct and down to the heater is by 2" ductinq. Please note that this ducting fits over the demister duct, but into the 'Y' piece. From the 'Y' piece to the heater also use the 2" ducting, which you will see is the same size as the heater outlet: it must be secured to the heater outlet using the 2" cloth tape.

On the driver's side, the 'Y' piece fits directly ont o the bottom of the demister duct and the 2" trunking from the heater passes up through the hole in the dashboard which is shared by the wiring loom. Again the 2" tubing must be secured to the heater using the cloth tape. **N.B**. When connecting the 1 1/4" dia. tubing to the side window demist vents, be careful not to dislodge the wires from the courtesy light switches. The heater assembly is now complete.

RADIO

If you are fitting a radio it should be fitted at this stage. The radio aperture in the Midas Gold is the standard DIN size, and should be cut out to a size appropriate for the fitting instructions of the radio you are using. Behind the dash you will find that the wiring loom provides you with a black wire to earth the radio unit, a purple for the permanent live connection that some radios require, and a white/green wire which becomes live when the ignition switch is in the "auxiliary" position. If you are fitting your own aerial, follow the manufacturers instructions.
We suggest that the aerial is positioned on the passenger side at the rear of the car, into the boot area.

Although the area behind the dashboard is now complete, the final assembly of the dashboard cannot take place until the steering column is fitted.

RADIATOR

Tools Required

1 Large Posidrive screwdriver

Donor Vehicle Parts Required

1 Pre- October 1984 Metro radiator assembly complete with fan, fan motor, fan motor bracket and rubber mounting bushes.

Other Parts Required

2 MM2 Radiator mounting brackets

Fixings Required
2 3/4 x 1/4 UNF posidrive countersunk set screws

Firstly, fit the standard Metro rubber bushes into the holes drilled into the lower front crossmember. Locate the top radiator mounting bracket, part number MM2, and fit two standard Metro radiator mounting bushes into the large holes. Fit the two radiator mounting brackets onto the radiator, with the angled part pointing away from the radiator. Carefully insert the radiator into the space at the front of the car: please note that you must insert the top of the radiator into the space in front of the bonnet rain channel to give sufficient height for the mounting prongs on the bottom of the radiator to be swung into position. Engage the lower mounting prongs, push the radiator firmly home in it's lower mounting rubbers, and then align the top mounting brackets with the countersunk holes drilled in the front of the car. Secure the top brackets using the two 3/4" x 1/4 UNF Posi — drive countersunk set screws.

ELECTRICAL CONNECTIONS

The white/green and black wires on the nearside of the car connect directly into the thermostatic switch on the side of the radiator. The white/blue plug on the offside of the car connect directly to the plug on the cooling fan motor.

FRONT SUBFRAME ASSEMBLY

Tools Required

2	1/2 AF spanners, one of which should be a socket
2	7/16 AF spanners, one of which should be a socket
1	Rivet gun, suitable for 3/16 pop rivets
1	Electric drill with 1/4" x 1/2" dia. drill bits

Donor Vehicle Parts Required

1	Metro front subfraxne assembly complete with power unit, suspension and all other parts.
1	(lengthened) Metro gear change assembly

Other Parts Required

2	Front brake hose brackets	MM8
1	Heater take of f adaptor	MM6

Fixings Required

4	1/2" x 3/16 dia. aluminium pop rivets
2	3/4" x 1/4 UNF HHSS
2	1/4 spring washers
2	3/4 x 5/16 UNC HESS
2	5/16 spring washers
6	2 1/4 x 5/16 UNF bolts
10	5/16 plain washers
10	5/16 penny washers
10	5/16 nyloc nuts
4	1 1/2 x 5/16 UNF bolts

The front subframe assembly consists of the engine, gearbox, front suspension and front subframe. i.e. the entire assembly which you remove from the donor Metro by undoing the subframe mounting bolts. This assembly should be fitted to the Midas as one piece. If you have carried out any renovation on this part of your donor car ensure that it is fully re—assembled before f it— ting to the Midas. We would suggest the use of a Metro workshop manual for this work. The following components should be fitted onto the subframe before assembly into the car:

1. Engine/gear box assembly

2. All suspension drive shafts and brakes.

3. Front road wheels.

4. Gear change assembly, (see note A.)

5. Front brake hose mounting brackets, part number MM8 should be riveted to the recess on each side of the front sub frame to form an abutment for the front brake hoses. offer the brackets up into the recess, and you will see that they fit snugly. Using the bracket as a template,drill two 7/32 dia. holes into the subframe, and secure the brackets with the two 3/16 dia. rivets provided. Secure the ends of the two flexible hoses onto these brackets using the standard Metro retaining nuts.

6. The heater take off adaptor, part number MM6, must be fitted to the engine. Locate the two tapped holes and
recess on the front offside of the cylinder head. Drill a 1/4" guide hole through the centre of the recessed portion using a well greased drill to pick up the swarf.
(N.B. Do not let the drill become too hot, or the grease will melt). Open up this hole using a well greased 1/2" dia. drill. Clean up all excess swarf, and fit adaptor
MM6 to the two tapped holes using the gasket and two 3/4 x 1/4 UNF HHSS and spring washers supplied in the kit.
(N.B. Earlier cylinder heads already have this hole drilled, and covered by a blanking plate. Clean the surfaces and fit the adaptor MM6 with the new gasket).

ASSEMBLY

With the complete front subframe assembly (as described above) blocked securely on the floor, you will need a total of three people for the next stage. The front subframe assembly should be positioned immediately in front of the car, and in line with it. The front of the Midas should then be lifted up and forward over the subframe assembly and lowered down onto it. Starting with the rear mountings, align one side and secure with one 1 1/4" x 5/16" bolt inserted from underneath the car, remembering to use an ordinary 5/16 plain washer under the head of the bolt. Secure (nip, but don't tighten) inside the car using a 5/16 penny washer and 5/16 UNF nyloc nut. Move to the other side of the car and align the other rear mounting and secure with a single bolt in the same way. Move to the front of the car and align and secure each of the front mountings with a single 1" x 5/16 UNF bolt, again remembering to use a penny washer under the nut. With all four mountings aligned, fit the remaining four rear and two front mounting bolts and tighten. Do not forget to tighten the original four bolts as well. Your front subframe is now installed, and it remains only to complete the "plumbing".

ENGINE ELECTRICAL CONNECTIONS

The loom that supplies the engine electrics leaves the main loom at the centre front of the bonnet area. The electrical connections should be made as follows:

1). The black three socket plug with brown wires, to the back of the alternator. Make sure that this plug is correctly retained by the wire clip.

2). The blue/green wire to the water temperature sensor situated at the front of the cylinder head.

3). The white/brown wire to the oil pressure sensor situated to the left of, and slightly below, the distributor.

4). The white/black wire by itself to the distributor. NB If your Metro has the later electronic ignition distributor, this connection is not used, and should be taped neatly out of the way using insulating tape along the loom.

5). The white/yellow wire to the coil positive terminal,the two white/black wires to the coil negative terminal.

The electrical connections to the engine are now complete.

FRONT DAMPERS

Tools Required

1 9/16" open ended spanner
1 9/16" rin g or socket spanner

Donor Vehicle Parts Required

None (standard Metro danpers not suitable)
Suggest Spax adjustable front dampers for Metro.

Other Parts Required

None

Fixings Required

None

Whilst the standard Metro dampers can be used, we recommend the use of uprated adjustable dampers such as those manufactured by Spax / AVO etc.

Since the damper top mountings can only be accessed from the dashboard area, it is essential that the dampers are fitted to the monocoque before the dash is rebuilt. You will need an assistant to hold the dampers in position while you reach down from the dashboard to position the top mounting rubbers and tighten the mounting nuts. On the left side of the car you must reach down through the glove box aperture, and on the right side of the car you must reach through the instrument pack aperture. Ensure that the rubber mountings are properly engaged in the hole drilled in the monocoque, and that the securing nut is properly tightened. Connect the lower end of the dampers to the suspension top arm using the long bolt and spacer in the normal way. If using Spax dampers, adjust to 5 'clicks up (clockwise) from fully soft (fully anti clockwise).

ENGINE WATER HOSE CONNECTIONS

Tools Required

1	Medium sized blade screwdriver or hose clip tool
1	1/2" AF spanner, preferably a ratchet socket
1	1/2" AF open ended spanner
1	stanley knife or junior hacksaw
1	Hacksaw

Donor Vehicle Parts Required

(Thermostat cover)
Suitable hoses, depending on model

Other Parts Required

1	GRH 633	Top hose
1	DRM 31	Top hose connector
1	Length 5/8"	Water hose

Fixings Required

3	1 1/2" x 5/16"	UNC bolts
3	5/16"	plain washers
2	size 30—40mm	Hose clips
2	size 25—35mm	Hose clips
4	size 13—20mm	Hose clips

The water hose connections of your Midas are quite straight forward, and use largely standard Metro hoses. However, there are two basic systems, one for the 1 litre and standard 1.3 litre power units, and the other for the MG Metro power units, which use a water heated manifold and oil/water inter cooler. Please note that this layout only applies if you are using a pre—October 1984 Metro radiator, and you will need to refer to the seperate instructions supplied with the radiator adaptor kit if you are using the later type Metro radiator.

For all systems

It is necessary to remove the heater take—off sandwich plate from beneath the thermostat cover. Remove the three 5/16" UNF nuts, and carefully withdraw the thermostat cover, thermostat, and heater take—off adaptor. Using two nuts locked together, or a stud extractor, remove the three studs. Carefully cleaning the surface of the head fit a new thermostat gasket, and the thermostat direct into the cylinder head. It may be necessary to clean out the groove in the cast iron head where the edge of the thermostat sits. Secure the thermostat cover direct to the cylinder head using the three 1 1/2" x 5/16" UNC bolts.

Water Hoses

The top hose layout is the same for all types of engine. Starting from the radiator, a GRH 633 should be fitted to the top radiator

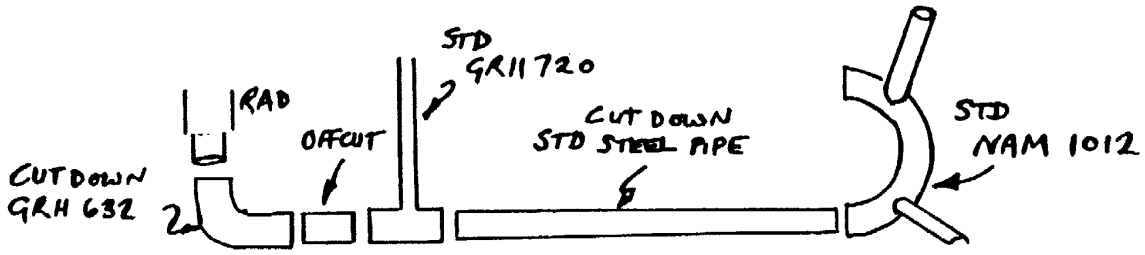
connection so that it sweeps round and ends up pointing toward the thermostat and lying on top of the alternator. Next, the standard Metro top hose, GRH 651 should be temporarily fitted to the thermostat cover so that it points forward and down. Mark this hose carefully at the point where it would abut against the lower GRH 633, then cut it off using a sharp knife or junior hacksaw. These two hoses should then be connected.

Bottom Hose Standard 1.0 litre and 1.3 litre engine

This is exactly as for the Metro, except that the steel water pipe needs to be cut at its lower end to remove the right—angle bend. File the ends carefully to remove all sharp edges, and clean off all the swarf. Using the standard water pump hose, fit approximately into position.
Fit the GRH 632 hose onto the radiator, mark and cut to fit onto lower end of steel water pipe.

Bottom Water Pipe 1.3 MG Metro

The MG Metro differs from the standard 1.3 Metro in having a water cooled inlet manifold, and an oil/water inter—cooler. The bottom hose should be made up as indicated in the diagram below:



Heater Water Connections

On all models, hot water to the heater is taken from the MM6 adaptor on the cylinder head. using 5/8" internal diameter rubber hose, run a hose from the heater takeooff adaptor on the cylinder head direct to the heater through either of the two holes in the bulkhead. It is a good idea to have the carburettor and air cleaner on when you do this to ensure that the pipe run allows suitable clearance on these items for engine movement. Secure the hose using two hose clips. The return water hose from the heater either goes to the bottom hose in the case of the standard 1.0. litre and 1.3 litre models, or to the nearside end of the water cooled inlet manifold in the case of the MG engine. In the case of the standard engines, use the remainder of the 5/6" water hose and run it from the heater to the hose bonded in to the bottom radiator hose. These two may be connected using a short length of 5/8" pipe. In the case of the MG Metro power unit, the pipe can

be continuous from the heater to the nearside end of the water heater inlet manifold. ENSURE THAT ALL HOSE CLIPS ARE TIGHT, BUT NOT OVER-TIGHTENED, ESPECIALLY THOSE ON THE HEATER UNIT AS ACCESS TO THESE IS IMPOSSIBLE ONCE THE DASHBOARD HAS BEEN RE—ASSEMBLED.

RADIATOR HEADER BOTTLE

Tools Required

1	Medium posidrive screwdriver
1	7/16" AF ratchet socket
1	7/16" AF open ended spanner
1	Medium blade screwdriver or hose clip tool
1	Stanley knife or junior hacksaw

Donor Vehicle Parts Required

1	Metro radiator header bottle

Other Parts Required

1	Fibreglass mounting bracket

Fixings Required

2	1/2"x No. 8	Posipan self tapping screws
2	3/4"x 1/4"	UNF HHSS
2	1/4"UNF	Nyloc nuts
2	1/4"	Plain washers
1	size13—20mm	Hose clip

The radiator header bottle is mounted to the left side of the engine compartment by means of a moulded fibreglass bracket. Secure the bracket to the side of the engine compartment using two 1/2" x No 8 self tapping screws into the holes drilled in the side of the engine compartment. Bolt the radiator header bottle into this bracket using two 3/4" x 1/4" UNF HHSS and two 1/4" UNF nyloc nuts. There are two hose connections to this header bottle:
1). Small diameter pipe runs from the thermostat cover to the top of the radiator header bottle, and should be secured by the original clips. Please note that there is clearance on the bonnet rain channel moulding to allow for passage of this hose. 2). The other connection to the radiator header bottle is from the bottom of the bottle to the radiator bottom hose. This hose is bonded into the radiator bottom hose, and will need shortening to suit the lower height of the header bottle in its Midas application.

Filling the cooling system

The system can be filled simply through the radiator header bottle, but fill slowly, squeezing the rubber hoses as you do so. (Start at the bottom of the engine and work towards the top as the hoses fill up. Pay particular attention to the heater water hoses as these are the highest part of the water system and must be filled carefully to avoid air locks).

Cooling system capacity

5 litres (83/4 pints)

Anti Freeze levels

For a 25% solution add 1.25 lts(2 1/4 pints) of anti freeze to 3.75lts (6 1/2 pints) of water. (Begins freezing at —13℃). For a 33% solution add 1.7 lts (3 pints) of anti freeze to 3.3 lts (5 3/4 pints) of water. (Begins freezing at — 19℃).

STEERING COLUMN

Tools Required

1	Hacksaw
1	Medium flat file
1	13mm open ended spanner
1	1/2"AF ratchet socket
1	1/2"AF open ended spanner

Donor Vehicle Parts Required

1	Steering column assembly complete with lower mounting clamp, rubber boot and retaining ring.

Other Parts Required

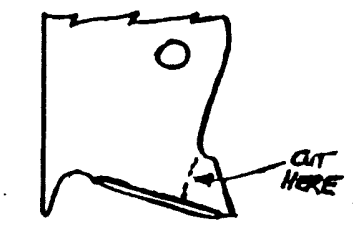
1	MM12 lower steering column mounting bracket

Fixings Required

2	2" x 5/16" UNF bolts
3	5/16" nyloc nuts
26	5/16" penny washers
1	3/4" x 5/16" UNF HESS
2	5/16" plain washers

This section applies to all pre—October 1984 steering columns: a separate instruction sheet is available with an adaptor kit if you are using a post—October 1984 steering column.

Before fitting the column to the car, it is necessary to modify the lower mounting bracket which braces the column to the pedal box. The standard bracket is of right—angled configuration, and it is necessary to cut it off as shown in the diagram below:



SIDE VIEW OF PEDAL BOX

Make sure that you round off the sawn edges with a file. Remember that before the steering column can be fitted the front section of carpet must be fitted as the steering column passes through it. Make sure that the standard rubber boot is fitted to the bottom of the column, and that the retaining ring for the boot is over the column. Secur& the bottom of the column to the steering rack using the MS nuts from the donor vehicle. Moving to the dashboard are, insert the two 2" x 516" UNF bolts through the holes in the bottom of the structural dash, remembering to use 5/16" penny washers under the heads of the bolts. The steering column is spaced off from the bottom of the structural dash by using a column of twelve 5/16" penny washers for each bolt: these washers should be taped together using masking tape for ease of assembly. Secure the column to these bolts using a 5/16" plain washer and a 5/16" nyloc nut on each bolt. Nip the nuts, but do not tighten. Secure the lower column mounting bracket to the pedal box using the MM12 steering column mounting bracket. It is necessary to drill a 5/16" diameter hole in the pedal box to accept this bracket.

Having ensured that the steering column is correctly positioned, and lying centrally in the recess in the structural dashboard, the top mounting bolts and the lower column bracket bolts may all be tightened.

PLEASE DOUBLE CHECK THESE SAFETY CRITICAL ITEMS, ESPECIALLY THE BOLTS SECURING THE COLUMN TO THE RACK.

FRONT BRAKE PIPES (See diagrams on pages 71—72)

Tools Required

2	7/16" AF spanners, one of which should be open ended

Donor Vehicle Parts Required

1	3 way brake pipe connector
1	4 way brake pipe connector

Other Parts Required

None

Fixings Required

2	1 1/4" x 1/4"	UNF HHSS
2	1/4"	penny washers
2	1/4" UNF	Nyloc nuts

ONLY NEW BRAKE PIPES MAY BE FITTED. WE STRONGLY RECOMMEND THE USE OF RUSTLESS KUNIFER 10 PIPE:
COMPLETE BRAKE PIPE SETS MANUFACTURED IN THIS MATERIAL ARE AVAILABLE FROM THE FACTORY.

Brake Pipe Set

NB: All unions are metric

Length (mm)	End Unions	Qty.	Use
380	Male/Female	1	M/cyl to 3 way
390	Male/Female	2	Rear suspension arms
450	Male/Male	1	M/Cyl to female connector *
470	Male/Male	1	M/cyl to 4 way
530	Male/Female	1	3 way to o/side front
580	Male/Female	1	4 way to n/side front
690	Male/Female	1	4 way to o/side front
780	Male/Female	1	3 way to n/side front
1200	Male/Female	1	Brake valve to o/side rear
(2300	Male/Male	1	4 way to rear brakes)
	Female/Female	1	Connector

* For post ‘84 Metro System Only

In addition you will need the following flexible hoses:

Front	4 off	GBH 184
N/S rear	1 off	CBH 223 (was GBH 183)
0/S rear	1 off	GEE 182

The pre—October 1984 Metro system uses a 4—way and 3—way connector for the brake pipes on the front bulkhead.Your Midas is drilled for these fittings, with the 4-way going in the centre of the car, and connecting directly to the main brake pipe to the rear of the car. The 3—way connector is situated under the pedal box assembly.Bolt these fittings in place using a 1 1/4” x 1/4” UNF HHSS,a penny washer and a 1/4” UNF nyloc nut. Secure the main brake pipe to the rear of the car into the lower tapping on the 4—way connector. The top fitting of the 4—way connector connects to the lower tapping on the brake master cylinder using a 470mm long pipe. The top brake master cylinder fitting then connects to the top of the 3—way connector using a 380mm long pipe. You will appreciate that there are two flexible brake hoses to each front brake, and that these are secured on their inboard end to the MM8 bracket on the front subframe. These hose terminations in the MM8 bracket will be designated front and rear. Run a 580mm long pipe from the 4-way junction to the left side rear brake hose on the front subframe. Run a 780mm pipe from the 3—way connector to the left side front brake hose on the front subframe. Run a 690mm pipe from the 4—way connector to the right rear brake hose on the front subframe. Run a 530mm pipe from the 3—way connector to the right front brake hose on the front subframe. make sure all these connections are tight.The braking system is now complete.

Bleeding the Brakes

The Metro H—I split braking system must be bled exactly in accordance with the procedure laid down in the Metro workshop manual.

Choke Control Cable

The choke control cable is fitted to the side of the pre—1984 steering columns. The cable should be run through the rubber

grommet in the pedal box and connected to the carburettor in the normal way. Make sure that there is sufficient 'slack' in the cable to allow for engine movement. The electrical connection for the choke warning light clips on to the side of the .choke cable. The electrical connection is made to the orange and black two pin connector in the wiring loom.

Speedometer Cable

The speedometer cable runs from its fitting on the gearbox round the back of the engine and through the hole in the bulkhead to the instrument pack. If the cable from your donor Metro is too short, then use a current production Metro cable, Part No. DRC 9020. Having secured the cable at the gearbox end and fed it through the bulkhead, you are now ready to fit the instrument pack.

Instrument Pack

The Midas Gold is specifically designed to use a pre—October 1984 Metro instrument pack. Any of the three basic variations of the instrument pack may be used, but it is obviously best if you can use one with a rev, counter, and these were fitted to the Metro
1.3 HLS, Metro Vanden Plas, and MG Metro. There is a second type of instrument pack which is identical to the first type, but has a large analogue clock as the main left hand instrument in the place of a rev, counter. This type of instrument pack has an identical printed circuit, and can be uprated by changing the clock for a rev, counter.

Fitting

Two types of fixing have been used to secure Metro instrument packs in production: one type has threaded inserts in the pack, and are secured by short set screws, and the other type has set screws bonded into the pack, and is therefore secured by nuts. The fixing principle is the same for both: Before fitting the instrument pack, it must be raised by fitting four 5/16' penny washers under each fixing.
These washers should be taped together for ease of assembly.

Secure two multi socket electrical connections into the appropriate slots on the rear of the instrument pack. Secure the speedometer cable to the back of the instrument pack. Push the pack forward and down into position and secure with the appropriate fixing through the four holes pre—drilled in the structural dashboard.

DO NOT OVER TIGHTEN THESE FIXINGS. MAKE SURE THAT THE WIRING LOOM TO THE PACK IS NOT TRAPPED AS YOU PUSH THE PACK INTO THE DASHBOARD

The trim dash may now be re-fitted by pushing into position and securing with the M6 nuts accessed through the holes in the bottom of the structural dash.

EXHAUST SYSTEM Only appropriate if using the Midas factory system

Tools Required

1	Hacksaw
1	pencil or chalk
1	Half round file
1	1/2"AF open ended or ring spanner
1	1/2"AF ratchet socket

Donor Vehicle Parts Required

Exhaust pipe/manifold clamps
Exhaust down pipes

Other Parts Required

'Exhaust kit ' consisting of:

1	Exhaust front pipe	
1	Exhaust central pipe	
1	Exhaust tail pipe	
1	Tube Firegum' exhaust sealant	
4	1 3/4" Benelli clamps	
2	15/8'	Benelli clamps
1	Bracket	MM9
1	Bracket	MM10
1	Bracket	MM11
4	Rubber bobbins, spring washers and nuts	
4	5/16" penny washers	

The Midas exhaust system runs from a point about 6" back from the front of the central tunnel where the three different Metro exhaust systems become common. You will therefore require the down pipes from your donor vehicle which will be appropriate to the power unit you have fitted.

Preparation

The fitting of the exhaust system will be made considerably easier by raising the car on to four axle stands placed at each corner of the floor pan, giving a working height of approximately 18" under the car, **ENSURE THAT THE CAR IS SAFE IN THIS POSITION BEFORE WORKING UNDERNEATH.**

Cut any silencer box from the down pipes of your Metro donor vehicle, and loosely clamp the remaining pipe onto the exhaust manifold. Working from under the car position the Midas front pipe (with the small "bomb" silencer and spherical joint) into position so that the bomb lies centrally in the tunnel. and the bend in the exhaust system clears the gear change. Mark the Metro down pipe for cutting so that it will fully engage in the front of the Midas system. Remove the Metro down pipes and saw as marked, remembering to clean up the edges with a file. The down pipes may now be permanently fitted, remembering to use some form of exhaust sealant (Firegum) on the joint. Make sure that both the pipes and the clamp are properly seated as they have to be

perfect if they are not to leak. Moving back under he car, the Midas front pipe may now be positioned over the end of the down pipe and loosely clamped using a 1 3/4" Benelli clamp from the kit. The rear of this pipe should now be supported while the central section of pipe is positioned. The central section of pipe is approximately 720mm long and should be fitted with the slotted end towards the front of the car. Working from the rear of the car thread this pipe fotward over the top of the rear subframe until it locates on the rear end of the front pipe. Support in position. From your kit select bracket MM11 and fit two of the exhaust mounting rubber bobbins through the wider spaced set of holes. The bracket is fitted as shown on the lower drawing for Part N. MM11 in your assembly guide. i.e. with the bracket rising towards the front of the car. The rubber bobbins should therefore be positioned on the top of the bracket as it is drawn. These bobbins then mount directly through the two holes pre—drilled in the floor pan between the rear seat mouldings. Secure using a 5/16" penny washer and a 5/16" plain nut. The rear of the central exhaust section may now be secured to the MM11 bracket using a 1 3/4's Benelli clamp from the kit. (Do not tighten). Also fit a 1 3/4" Benelli clamp from the kit loosely to the jo int between the centre pipe and the front pipe. Before fitting the tail pipe and sile~çer, the other two exhaust brackets must be fitted to the car. Ftit a single rubber mounting bobbin through the end hole on bracket MM9. The holes at 2" centres are for the exhaust clamp and it is the single hole through the short "twis ted" end which should be used. The other end of the bobbin is secured through the single hole in the side of the spare wheel well using a 5/16" penny washer and 5/16" plain nut. **DO NOT TIGHTEN THIS MOUNTING NUT**. Fit the last rubber bobbin through the single hole on drilled immediately behind the fuel tank rear fixings on the nearside of the car. Secure using a 5/16" penny washer and plain nut. **DO NOT TIGHTEN THIS FIXING.**

The tail pipe and silencer may now be fitted by engaging the front (swaged and slotted) end over the rear of the central pipe and swinging up in position so that the tail pipe exits through the recess on the nearside of the rear bumper. Secure to the two mounting brackets using the 15/8" benelli clamps supplied in the kit. With all the clamps and mountings nipped but not tight, work down the exhaust system from the front ensuring suitable clear— anne on the floor pan and all mechanical components. As a guide, you should be able to just slide your fingers between the exhaust pipe and the floor pan, gear change, or any other part of the car to allow for movement of the exhaust system when the car is being driven. Pay particular attention to clearance on the gear change, and on the central seat mounting bolts. When you are satisfied with the positioning of the exhaust system tighten all benelli clamps and nuts on the rubber mountings.

BATTERY BOX AND BATTERY

Tools Required

1	Medium sized posidrive screwdriver
1	Pair pliers
1	1/2" AF spanner

Donor Vehicle Parts Required

1 Battery — NB Check battery is correct size
1 Battery clamp (clamp bar, 2 hook bolts, 2 wing nuts)

Other Parts Required

1 positive battery cable
1 Negative battery cable

Fixings Required

4 3/4" x No. 8 Posipan self tappers
4 3/16" Penny washers

The battery box is now secured to the side of the engine compartment using 4 3/4" x No. 8 self tapping screws and 4 1/4" penny washers through the holes drilled in the right side of the engine compartment. It is essential that these fixings are properly tightened. The battery is then secured in the battery box using the standard battery clamp form the donor vehicle. This is hooked into the drilled holes in the side of the battery box and tightened in the usual way. A spacer may be necessary behind the battery to clear the bonnet stay.

Battery

There have been two different sizes of battery fitted to the Metro during its production, and only one size is suitable for use on the Midas. The correct battery size for the Midas is:
Length 8.2" (207mm), width 6.9" (175mm) and height 6.9" (175mm). The standard BBMS designation is 377, and the Unipart number is GBY5617. Alternatively, a Chloride Torquestarter RE2 battery may be used.

Battery Cable Connections

The red battery cable should run from the positive terminal of the battery to one side of the starter solenoid. The other side of the starter solenoid runs to the starter motor. The black battery lead should run from the negative side of the battery to one of the 5/16" diameter studs securing the clutch cover to the flywheel housing.

WIPER ARMS

The standard Metro wiper arms are used , but with 14" blades in place of the standard 16" blades. However, the wiper arms do need modification from the standard shape. This can be done cold in the vice, using soft jaws. If you do not have 'soft jaws' for your vice, pad the jaws well with rag.
The first step is to remove the standard 'kink' from the top end of the arms. Clamp the short 'kinked' end of the arm horizontally in the vice and applying steady pressure, straighten the arm. Unclamp the arm and reposition so that a bend can be made 1" above the main structure of the arm. Bend the arm in the same direction as the original 'kink'.

Moving back to the car, switch on the wipers and stop the spindles in their 'furthest from parking' position USING THE IGNITION SWITCH. It may take several attempts to stop the spindles exactly at the limit of their travel, but it is essential. Fit the modified wiper arm and blade to the driver's side spindle so that the blade is pressed hard up against the rubber on the windscreen pillar — the tip of the blade may even ride up the rubber at the top corner. Tighten the clamp nut on the spindle. Wet the windscreen and operate the wipers. The arm should park on the screen. If it rides up onto the lower rubber, undo the arm and move it slightly anti—clockwise. Please note that the wiper arc will fit on the windscreen if this procedure is adopted — BUT ONLY JUST. Some care is needed during this setting up procedure.

The passenger side wiper arm is set up parallel to the lower screen rubber, and about 2" above it. Again, operate the wipers and ensure that the 'V' shaped unswept portion of the screen between the blade swept areas is minimised.

Remember tighten the clamp nut on each arm when you have completed the adjustments.

MODIFIED GEAR CHANGE ASSEMBLY

Because of the difference in seating positions between the Metro and the Midas, the standard Metro gear change must be lengthened by 2 + 7/16" (62mm). It is essential that both the static and moving rods are extended by exactly the same amount, and this can be achieved by cutting and sleeving the rods. Make sure that you cut the static and moving rods at opposite ends so that the sleeves do not interfere with each other. it is also essential that the rotational relationship of the moving rod is not lost.

FRONT SEATS

Tools Required

1	Large Posidrive screwdriver
1	1/2" AF open ended spanner
1	1/2" AF ratchet socket
1	7/16" AF open ended spanner
1	7/16" ratchet socket

New Parts Required

1	Pair suitable proprietary seats (Huntmaster Targa recliners recommended)
1	Pair non—tilting subframes

Other Parts Required

None

Fixings Required

2	1" x 1/4" UNF HHSS
2	1 1/4" x 1/4" UNF HHSS
4	1/4" Penny washers
4	1/4" UNF nyloc nuts
10	5/16" Penny washers

Most proprietary seats can be adapted to fit the Midas, but we would regard it as essential that you offer up the seats of your choice before finally purchasing them. The Midas requires seats of narrow overall width, and we recommend the Huntmaster Targa recliner seats which have good internal width and support, but a low overall width. Some proprietary seats have very wide 'wings' and are therefore not suitable for installation in your Midas Gold.

Installation

Fit the seat runners supplied with your seats to the seats using the fixings provided. It is essential that you use spring washers under the head of the set screws, even if they have not been provided by the seat manufacturer. The typical non—tilting sub-frame supplied by most seat manufacturers allows a wide variation of height for the finished seat. We would suggest that you block the seat in position and experiment with various heights before finally cutting the subframe to size. Remember that the seats will quickly settle by about 1" from their 'as new' depth . When fitting seats ourselves, we cut down the front part of the sub— frame to an overall height of 2" and do not use any rear subframe at all. Instead, at the rear, the runners bolt direct to the floor of the car through a distance piece of 5 x 5/16" penny washers. The installation is now completed by bolting the front part of the subframe to the front of the runners, and then in turn securing the subframe to the pre-drilled holes in the floor pan with two 1" x 1/4" UNF HHSS, with a 1/4' penny washer and a 1/4" nyloc nut from under the car.

NB. IT IS ESSENTIAL THAT THE SEATS ARE FITTED WITH THE RECLINE WHEEL FITTED TOWARD THE CENTRE OF THE CAR.

Having loosely bolted the front part of the subframe to the floor pan using the subframe or an appropriate length of spacer.

(Two 1 1/4" x 1/4" UNF HHSS, two 1/4" penny washers and nyloc nuts). Having ensured that the seat slides smoothly, tighten all four fixings. repeat for the other seat. Check for smooth movement of the seats, and that the seat adjuster locks correctly in its mechanism.

NB. IT IS ESSENTIAL THAT 1" X 1/4" PENNY WASHERS ARE USED UNDER THE CAR ON EACH OF THE FOUR SEAT MOUNTING BOLTS.

WINDSCREEN

Tools Required

	Appropriate files and grinders to trim screen aperture
1	Stanley knife and spare blades

Donor Vehicle Parts Required

None

Other Parts Required

1	Fiat 126 Laminated Windscreen
1	roll of 1/2" masking tape
1	roll of 1" masking tape
1	cartridge gun
2	310m1 tubes of screen sealant
	vinyl to trim inside of windscreen
	adhesive to fix vinyl

Fixings Required

None

The windscreen on your Midas convertible is directly bonded to the screen frame in the normal way. The process to achieve this is very straightforward, but will take some time and patience to achieve the best results.

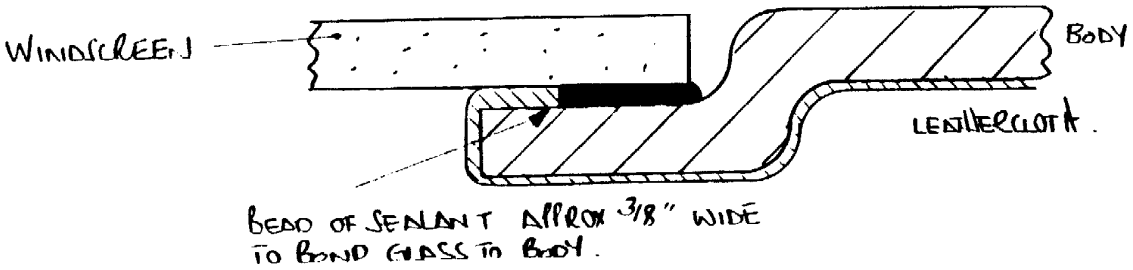
Firstly, look at the screen aperture on your car. This is the "hole" that you will spend all your time in the car looking through, and it is therefore important that it looks right. Ensure that the aperture is parallel to the rebate all the way round, and that the corners are nicely radiused. Do not worry too much about the thickness of the laminate, although any excessively thick parts (thicker than 5/16") may be ground down;

When you are satisfied with the aperture, using 40's grit production paper, carefully remove the sharp edge of the Gel coat, and any sharp pieces of fibreglass on the inside which may have resulted from your work.

Midas uses a standard Fiat 126 windscreen, and although toughened screens are available, we would strongly recommend the use of a laminated screen. Place the screen of your choice into the windscreen rebate, placing packings at the bottom of the glass and adjusting laterally until it is central in the rebate. Using a felt marker, carefully mark round the inside of the screen aperture onto the inner surface of the glass to give an exact reproduction of the screen aperture. Remove the glass and place face down on the bench (ie. so that the glass curves up from the bench).

There are a range of screen bonding adhesives available. This adhesive is dispensed from the usual 310m1 cartridge using a standard cartridge gun. The first stage of the bonding procedure is to apply an "obscuration band" to the win dscreen this part of the process will significantly affect the appearance of your Midas and please allow sufficient time to carry it out with the necessary care. Using 1/2" wide masking tape, carefully mask round the inside of the windscreen to the felt line drawn from the aperture. Having done this, mask the rest of the screen using wider masking tape and newspaper, leaving the approximately 1" wide band round the outside of the glass. Degrease this strip of glass thoroughly with solvent, and then using the cartridge gun apply a bead of sealant approximately 1/4" diameter all the way round in the centre of this band. Using a plastic spreader,

spread this bead of sealant out to an even thickness of approximately an 1/8" all the way round the glass. **WE STRONGLY RECOMMEND THE USE OF DISPOSABLE GLOVES WHEN USING THIS SEALANT**. When you have completed this, remove the inner masking and then finally the 1/2" tape adjacent to sealant**. IT IS ESSENTIAL THAT THIS TAPE IS REMOVED BEFORE THE SEALANT DRIES.** The windscreen should now be put to one side for the sealant to dry. Returning to the car, the next stage is to trim the inside of the windscreen aperture. This is done using adhesive and a vinyl leather cloth of your choice. Cut a large U section piece sufficient to do both windscreen pillars and the top of the windscreen in one piece. Brush contact adhesive carefully onto the material and onto the fibreglass, and when it is dry carefully fit the vinyl. It is essential that this vinyl should wrap round the edge of the screen aperture onto the mounting surface of the glass, and therefore both the cut edge of the aperture and the Gel coat outer rebate should be carefully glued as well. When applying the vinyl wrap tightly round into the screen aperture, darting at the corners as necessary. **LEAVE TO FULLY DRY**. When the glue is fully dry, carefully trim the vinyl halfway back across the screen rebate to leave a strip of Gel coat approx.3/8" wide (see diagram).



Using the appropriate solvent for the glue, **REMOVE ALL TRACES OF CONTACT ADHESIVE FROM THIS STRIP OF GEL COAT**. When the adhesive has been removed carefully roughen the surface using a small piece of 40's grit production paper. The screen is now ready for fitting, but again careful preparation is needed. With the sealant dry on the windscreen, re mask the inner edge and centre of the glass in the same way as previously. On the car, thoroughly degrease the roughened area of Gel coat around the windscreen rebate, and using 1/2" and 1" masking tape, carefully mask round the top edge of the windscreen rebate. Using the sealant gun apply a bead of sealant approximately 1/2" diameter all the way round the screen aperture. Have ready the packers which you use to position the screen centrally previously, and with the help of a friend, carefully lower the screen into the screen rebate and on to the bead of sealant. Position the screen centrally using the packers, and apply steady pressure at right angles to the screen until the screen is flush with the aperture, and the

sealant has squeezed out evenly all round the glass.

Clean off excess sealant and remove all masking from the inside of the screen, the outside of the screen, and the body. Leave to dry at least 4 — 6 hours.

The final stage of the installation is to fit a finishing bead around the glass. This can either be done using a T section plastic strip available from the factory, or simply by using a bead of sealant. If using a bead of sealant, mask up round the outer edge of the glass and the top edge of the screen rebate resulting in a gap of approximately 3/16" between the masking tape all round the glass. Fill this carefully with the sealant gun and "tool" to a smooth radius finish using an appropriate tool made from a scrap of wood. Remove inner and outer masking tape before the sealant sets. You will also need to mask the outer edge of the glass to protect it from sealant which squeezes out when the screen is fitted. Alternatively, you could commission one of the windscreen fitting companies to fit the glass for you.

Although great care should be taken to ensure that the detail as above is completed. If not the finished job could look very untidy. The screen installation is now finished.

REAR VIEW MIRROR

Before sticking the mirror to the screen, the area on the inside of the screen where the mirror will be stuck must be thoroughly de-greased using methylated spirits. The positioning of the mirror is critical, and it is recommended that you adjust the driving seat to the correct position and offer the mirror up to the windscreen with the protective paper still covering the adhesive. When you are happy with the positioning, mark the screen, remembering that the sun visors must be able to clear the mirror. For information, we position the top of the mirror mounting pad 1" down from the screen rubber at the top of the screen. For best results, both the adhesive pad on the mirror and the windscreen should be warmed. a hairdryer is ideal for this, but be very careful not to crack the windscreen by a concentrated blast of heat — keep the heat moving. When the adhesive pad and the glass have been suitably warmed remove the protective paper and push the mirror firmly into position.

SPARE WHEEL

The spare wheel on your Midas Gold Convertible fits into the recess in the boot.

FRONT RIDE HEIGHT AND FRONT HYDRAGAS UNITS

The method of operation, testing and ride height adjustment of the front hydragas units is fully detailed in the Metro workshop manual. The ride height can only be adjusted using the correct equipment, and under no circumstances should you be tempted to tamper with it, in particular to release pressure as you would from a tyre. The pressures involved are extremely high, and such tampering could result in serious injury. Any Austin Rover dealer

will be able to set the front ride height for you.

If you have fitted new units, or for any reason have de—pressurised your old units as they were removed from the Metro, then your Midas will be sitting on its bump stops. It is perfectly in order to drive your car slowly in this condition to your nearest Austin Rover dealer to have the ride height set. The ride height is measured from the centre of the road wheel to the bottom of the wheel arch vertically above the centre of the wheel. The ride height dimension for the Midas is 12 1/4" +/— 1/8"

PLEASE NOTE THAT THIS IS DIFFERENT FROM THE METRO SETTINGS.

FINAL STAGES

The assembly of your Midas is now virtually complete, and it only requires the finishing touches.

Firstly check that the following items have been carried out:

1. The brakes have been bled correctly (see workshop manual).

2. The clutch has been bled correctly (see workshop manual).

3. That the engine has been filled with the correct grade of oil.

4. That the cooling system has been filled with water and antifreeze. (see appropriate section).

Starting the engine

If your engine has not been run for some time, as will probably be the case, then you should remove all the sparking plugs and crank the engine over on the starter until the oil pressure light goes out. This may take 30 — 40 seconds of continuous cranking. As soon as the oil pressure light goes out, replace the sparking plugs and start the engine.
Run the engine at about 1500 rpm (not idle speed) and check round the engine compartment for oil leaks, particularly from the oil filter and main external oil pipe. if you have an oil leak, stop the engine immediately and rectify. Having checked for oil leaks, leave the engine running at 1500 rpm and check for water leaks, remembering the heater circuit and especially the connections inside the car. Check that the water temperature gauge is registering, and that as the temperature rises to normal, the thermostat opens, and the top water hose then becomes hot. Finally, as the water temperature rises slowly above normal, check that the thermostatically controlled radiator cooling fan cuts in before the temperature gauge reaches the red section.. As soon as the fan cuts in, reduce the engine speed to tickover and leave the engine ticking over until the fan cuts out again. You should also check the exhaust system for leaks, and these can be heard most clearly by gently "blipping" the throttle. Any leaks on the exhaust system should be rectified immediately.

If all is well, the bonnet may be refitted, and your Midas engine compartment is now complete.

NB WHEN CHECKING ROUND THE ENGINE COMPARTMENT WITH THE ENGINE RUNNING, KEEP WELL CLEAR OF THE EXPOSED BELT DRIVING THE ALTERNATOR AND WATER PUMP.

Before using the car, we would suggest that you double check the following safety critical items:

1. Have you bled the brakes ?
   Have you pressure tested the brakes ? (Maximum pressure on the pedal while a friend checks all the brake pipes and connections for leaks).
   Are the brakes correctly adjusted ?
   Does the hand brake work ?
   Is the brake fluid at the correct level in the reservoir 7
2. Is the steering rack tight on the subframe ?
   Are the track rod end nuts tight ?
   Are the steering column to steering rack fixings tight ?
   Are the steering column mountings tight ?
   Are the wheel nuts tight ?

3. Are all the major components correctly assembled and tight ?
   It pays to spend a further half hour running over the major components to ensure that all the fixings are tight.

Tracking the front suspension

We suggest that your first journey should be a gentle one to check out all the systems on the car. Your first visit should be to a garage to have all the front track set to 1/16" toe out, and if necessary to have the front ride height adjusted.

As you will now from your factory visit, the Midas Gold has very high levels of performance and road holding. Although you will have become familiar with the car during its assembly, we would recommend that you gradually acclimatise to the capabilities of the car before extending it fully.

REGISTRATION PROCEDURE

You will need a Form V55/5: this is the correct form for the first registration of a motor vehicle. Your Midas Gold will receive a 'Q' prefix registration to indicate that it does not use all new components, and is therefore not liable for car tax. Apart from the V55/5, you must also obtain an MOT certificate. This is obtained in the normal way, and you may drive your car to the MOT garage without number plates, provided that you have booked an appointment for a test. In addition, the Local Vehicle Licensing Office (LVLO) will require a police inspection. This procedure is to ensure that none of the secondhand components that you have used are stolen! However, this procedure can take up to three weeks, so it is a good idea to notify the LVLO in good time.

The final check list of paperwork to take or send to your LVLO is as follows:

1). A completed form V55/5
2). A MOT certificate
3). A valid certificate of insurance
4). Your cheque for the road fund licence

The LVLO will also want confirmation that the police inspection has been carried out. Provided your paperwork is in good order, and that you allow enough time for the inspection, registration is straightforward.

HELP

Although we have attempted in this assembly guide to give every possible assistance during the assembly of your Midas, there may be occasions when you have a problem, or simply wish to clarify a point. In these circumstances, we would be grateful if you would phone the factory IMMEDIATELY, and as often as you like, rather than struggle, and perhaps make things worse. We have eleven years of experience at building kit cars, and usually find that two minutes on the phone can save hours in the garage. We are of course open for such calls between 9.00am and 5.00pm.

INSURANCE

Please ask at the factory for the recommended insurance companies. for the Midas Gold Convertible.

a)	Marlows	Tel:	0543 414224
b)	A Flux	Tel:	0533 691266
c)	Osborne & Sons	Tel:	01 641 2016