

INITIAL RESULTS OF THE
VEHICLE NUMBER SURVEY

By: Caroline Robinson 78-415
Ben Munday 79-698
John Twist 78-415

And with help from:

Jeff Allison 78-618	Robins AFB GA
J T Dorbandt 81-2237	San Marcos TX
Harold Jensen 82-3158	Derby CT
Jack Barkley 82-3169	Valparaiso IN
Bill Koechig 81-2678	Pontiac MI
Gerald Lee 81-2699	Dayton OH
John Gwynne 80-1308	Stony Brook NY
Nino Catalano 80-1375	New Fairfield CT
Tom Edwards 81-2171	Woodlyn PA
Bob Quick 81-2421	Terra Alto WV
John Miles 82-3048	Montclair CA
Chuck Genrich 76-155	Annandale VA
Jan Sander 79-939	Jeffersonville VT
Michael Hutchinson 82-3050	Rome NY
Tom&Jean Weedman 81-2477	Milwaukee WI
Fred Speacht 80-1300	Farmingdale NY
Bob Levandusky 80-1076	Delaware OH
Jon Rosenthal 80-1642	Willowdale Ont
Tony DeLellis 81-2767	S Pasadena CA
Greg Kocher 80-1779	Portland OR
John Gardner 82-3010	Santa Rosa CA
John Chatley	Troy MI
James Rainer 80-1682	N Vancouver BC
John Frost 81-2005	Kenosha WI
Jim Kern 81-2745	Manassas VA
Gerry Acquilano	Geneva NY
Ken Smith 81-2043	Semmes AL
Neil Purcell 80-1593	Evergreen CO
Susan Musa 76-135	Mesa AZ
Don Holmes 76-164	Quilcene WA
Jim Omrie 82-3084	Morris IL
Mike Debreczenyi 82-3235	Des Plaines IL
Fonty Carthel 82-2965	Plainview TX
Daniel Wagner 80-1029	Lafayette CA
Randy Balogh 80-1722	Eugene OR
David Pinkston 82-3472	Macon GA
Skip Finley 81-2538	Rockville Cen NY
Bill Busby 82-3429	Raleigh NC
Karl Agee 81-2348	Livonia MI
Larry Standifer 79-848	Eugene OR
Greg Glassner 81-1915	Olmsted Falls OH
Gary Lynn 82-2915	Long Valley NJ
Mike Zavinski 80-1773	Pineville NC
Robert Vance 81-1808	Rochester NY
David Gray	Mundelein IL
Patton McGinley 80-1254	Stone Mountain GA
Charles Manley 82-3055	San Jose CA
Mike Mostert 79-702	Andover MA
C Roy Henderson 82-3108	Union City CA
Steve Scott 80-1048	Mt Pleasant SC
Adrian Tyndale 81-2509	Wimbledon England
* and a special thanks to	
Floyd Garren 77-323	Lompoc CA

The MGB Vehicle Number

From 1963 to 1979, all the MGB VINs were prefaced with "GHN" or "GHD".

"G" designated for the MG model in the Morris Group.

"H" BMC designation for engine capacity of 1400cc to 1999cc

"N" designation for roadster OR

"D" designation for GT or Coupe.

Following the GHN prefix is a number: 3, 4, or 5. This is the model series. The series began with the MGA 1600 with GHN, then the MGA

1600 MKII with GHN2, then the MGB 1963-1967 with GHN3, then MGB 1968 and 1969 GHN4, and from 1970-1979 GHN5.

In 1980 the entire prefix was changed to GVVDJ2AG.

Following the GHN3 was the letter "L" for left hand drive. At GHN4 the letter was changed from "L" to "U" to denote "United States" export. We do, however, have one MGB/GT prefixed GHD3U, but that may be an error

Beginning in 1970, another letter was added to denote the model year. GHN5UA was the designation for 1970. Those letters follow:

A	1970
B	1971
C	1972
D	1973
E	1974
F	1975
G	1976
H	1977
J	1978
L	1979

It is understandable that "I" was omitted for fear of confusion with the number "1", but what happened to "K"?

Following this alphanumeric prefix is the serial number of the MGB. This serial number began with 101 and continued until 1980 -- to the end of production. In about 1974, the serial number at the end of the year's production was rounded up to the next hundred, thousand, and finally ten thousand so that the beginning number of any model year was easier for the parts and service personnel to remember. Therefore, subtracting the first serial number from the last gives an inflated production number.

The MGB "Consecutive Number"

This number is not mentioned in any of the factory literature we've examined to date. It is not recorded in factory records now held by BL Heritage. Yet, it seems to closely parallel the serial number. The first consecutive number we have on file is 5 for GHN3L 111. The last is 92182 for GHN3L 103672. These consecutive numbers have not appeared on the MGB/GT's we've examined, and apparently cease by the introduction of the GHN4 model.

The MGB Body Number

Remember that Abingdon was an assembly plant and that the bodies were built and welded elsewhere. Further, our field experience only covers the US MGB models. We have found that the body numbers skip fore and aft in relation to the serial number, and it appears that they may have been delivered to the factory in large lots, then built and given numbers without regard to the consecutive sequence.

The body numbers begin "MGB 101" in 1963 and begin again at "MGBU 101" for the 1968 model year. The "U" in the later number, no doubt, designates "United States."

The VIN SURVEY (Con't)

We do have a 1973 MGB UK model on file with an "MGB" body prefix, and it would appear that the body style/construction did not differ in the UK from the 63-67 USA MGBs until after 1973.

Throughout the 1971 model year, the body numbers take quantum leaps, beginning with c30,000 and ending c300,000. Following:

- 1972 number leap to 400,000
- 1973 number leap to 500,000
- 1974 number leap to 600,000

At the beginning of the raised ride height MGB (1974½), the body prefix changes to GU 23 T beginning with 101. Following:

- 1975 number rises
- 1976 number leap to 50,000
- 1977 number leap to 760,000
- 1978 number leap to 860,000
- 1979 number leap to 960,000
- 1980 continues

The GT models carry a different prefix:

- thru 67 GBD beginning at 101*
- 1968-1969 GBU beginning at 500,001
- 1970-1974 GBUD following consecutively
- 1974½ GU 23 D beginning at 101

* The earliest MGB/GTs on file show a prefix of GBUP or GBDP!

The MGB Commission Number

The Commission numbers begin with the 1968 model year at G 23 N 000101(?) for the roadsters and are prefixed G 23 D for the GTs. These follow consecutively until the 1972 model year when they rise from 40,000 to 50,000, then:

- 1973 60,000 - 80,000
- 1974 80,000 -106,000

The Commission numbers were dropped with the introduction of the 1974½ model. It appears that they were not used for the home market.

The MGB Build Date

Beginning with the 1970 model year (GHN5UA), a build date was stamped on the identification plate in the left door pillar. This is simply the month and year the car was built. We do have one 1969 MGB with a build date (9/69 with a GHN4U prefix).

The MGB Engine Number

The engine numbers on the early cars are straightforward. Beginning in 1968, however, the letters following the "18" became more complex to denote the various forms of smog equipment, the markets for which the engines were intended, etc. By 1972, the letter combinations were dropped in favor of a number, as the varieties of engines were increasing greatly. The engines used in 1972 and later are all prefixed "18 V" which also denoted a change in the pushrod length, tappet construction, and a change in the timing chain.

The many different varieties of the engines are too great to explain in this initial report and will be the subject of a future article.

Numbers of Interest

The numbers given below are generally the first and last numbers we have in each sequence, or the most complete number near the beginning or end. Please complete the survey so we can make this chart more complete!

NUMBERS OF INTEREST

<u>BUILD DATE</u>	<u>VIN</u>	<u>BODY</u>	<u>CONSEC</u>	<u>COMMISSION</u>	<u>ENGINE</u>
		101	*Production begins 7/62 for 1963 model year		
	GHN3L	111	MGB 000106	5	None 18GUH 112
	GHN3L	18327	MGB 018621	18412	None 18GUH 18299
		19586	*Production begins 8/63 for 1964 model year		
	GHN3L	27546	MGB 026813	26658	None ----
	GHN3L	41928	MGB 040916	40671	None 18GA UH 11353
		48766	*Production begins 10/64 for 1965 model year		
	GHN3	53844	MGB 053070	52812	None ----
	GHN3L	70821	MGB 070421	---	None 18GBUH 25560
	GHN3L	129933	MGB 105362	---	None 18GBUH 83502
		138801	* Production begins 10/67 for 1968 model year		
	GHN4U	140442	MGBU 000655		G23N 000663 18GF WEH 392
	GHN4U	155912	MGBU 008796		G23N 010384 replaced
		158371	*Production begins 10/68 for 1969 model year		
	GHN4U	166988	MGB 014588		G23N 018164 18GH WEH 7036
	GHN4U	185632	MGBU 023070		G23N 000527 18GH WEH 20262
		187213	*Production begins 10/69 for 1970 model year		
11/69	GHN5UA191845		MGBU 027359		G23N 031862 18GHRWEH 25226
	GHN5UA213173		MGBU 034636		G23N 010611 18GH WEH 39518
		219021	*Production begins 9/70 for 1971 model year		
9/70	GHN5UB221349				
1/71	GHN5UB232916		MGBU 307342		G23N 023474 18GK WEH 10251
6/71	GHN5UB251946		MGBU 317323		G23N 035832 ----

NUMBERS OF INTEREST (Con't)

<u>BUILD DATE</u>	<u>VIN</u>	<u>BODY</u>	<u>COMMISSION</u>	<u>ENGINE</u>
	258001	*Production begins 9/71 for	1972 model year	
12/71	GHN5UC 265867	MGBU 404727	G23N 0436872	18V 584 ZL 6077
7/72	GHN5UC 289627	MGBU 417278	G23N 059424	18V 584 ZL 18730
	294251	*Production begins 8/72 for	1973 model year	
8/72	GHN5UD 294808	MGBU 500548	G23N 062557	18V 672 ZL 1112
8/73	GHN5UD 326199	MGBU 516410	G23N 086100	18V 672 ZL 19311
	328101	*Production begins 8/73 for	1974 model year	
8/73	GHN5UE 328213	MGBU 600396	G23N 086226	18V 672 ZL 14891 (R?)
8/74	GHN5UE 358805	MGBU 617819	G23N 106960	18V 672 ZL 37458
	360301	*Production begins 9/74 for	1974½ model year	
12/74	GHN5UE 367350	GU23T 006198	G23N 114338	18V 836 ZL 3037
	367901	*Production begins 1/75 for	1975 model year	
1/75	GHN5UF 370334	GU23T 007707	G23N 115009	18V 797 AEL 1437
8/75	GHN5UF 385827	----	----	----
	386601	*Production begins 9/75 for	1976 model year	
9/75	GHN5UG 386771	GU23T 050291	G23N 129440	18V 801 AEL 1610
6/76	GHN5UG 409259	----	----	----
	410001	*Production begins 7/76 for	1977 model year	
7/76	GHN5UH 411252	GU23T 760413		18V 883 AEL 820
7/77	GHN5UH 441585	GU23T 784288		18V 883 AEL 16315
	447001	*Production begins 9/77 for	1978 model year	
11/77	GHN5UJ 448529	GU23T 860473		----
4/78	GHN5UJ 465923	GU23T 873609		18V 883 AEL 26760
	471001	*Production begins 6/78 for	1979 model year	
7/78	GHN5UL 474101	GU23T 961481		18V 883 AEL 29033
5/79	GHN5UL 498149	GU23T 978700		18V 883 AEL 04058 (R?)
	501001	*Production begins 6/79 for	1980 model year	
8/79	GVVDJ2AG 504422	GU23T 984080		18V 883 AEL 043540
6/80	GVVDJ2AG 520973	GU23T 995644		18V 884 AEL 010349

THE MGB/GT MODEL

	71933	*Production begins 10/65		
	GHD3L 73192	GBUP 000272		18GB UH 30038
	GHD3U 137687	GLD 021588		18GB UH 89811
	139824	*Production begins 10/67 for	1968 model year	
	GHD4U 142744	----	----	----
	158233	*Production begins 10/68 for	1968 model year	
	GHD4U 169941	GBU 506108	G23D 011180	18GH WEH 12918
	GHD4U 186822			
	187213	*Production begins 9/69 for	1970 model year	
10/69	GHD5UA 188454	GBUD 510630	G23D 018042	----
3/70	GHD5UA 204012	GBUD 514385	G23D 024014	----
	219355	*Production begins 9/70 for	1971 model year	
9/70	GHD5UB 221503	GBUD 520235	G23D 029048	18GK WEH 1639
6/71	GHD5UB 255301	GBUD 526236	G23D 044611	18GK WEH23701
	258004	*Production begins 9/71 for	1972 model year	
	GHD5UC 259976	GBUD 620193	G23D 047002	18V 584 ZL 1186
	296001	*Production begins 8/72 for	1973 model year	
11/72	GHD5UD 304420	GBUD 721269	G23D 060754	18V 672 ZL 801
4/73	GHD5UD 319057	GBUD 723066	G23D 065270	----
	328101	*Production begins 8/73 for	1974 model year	
	GHD5UE 332438	GBUD 820513	G23D 070589	18V 672 ZL 13234
3/74	GHD5UE 346896	GBUD 822499	G23D 075415	18V 672 ZL ----
	361001	*Production begins 9/74 for	1974½ model year	
10/74	GHD5UE 362367	GU23D 002390	G23D 080239	18V 837 ZL 499
11/74	GHD5UE 363427	Last GT on file		

THE TECHNICAL SECTION

INTRODUCTION

AMGBA TECHNICAL PROJECTS

Vehicle Number Survey: The response from the questionnaire included in the rear of the tech section of the Winter 82/83 Quarterly has been truly amazing. No further information is included in this Quarterly concerning the numbers questionnaire and the results -- but we are logging as many as five responses per day! into our files. By the summer Quarterly, we should have a much more definitive view of the starting and ending numbers and dates, relevant to the MGB production.

Both Caroline and myself want to thank each member very much for helping us on this project.

MG Colour Listings: Our new and improved list will be back next Quarterly, helping you to find the exact colour for your MGB!

Technical Indexing: We are continuing to get organized on this large project. We hope to be able to bring you something soon-- as this index can help each member in trying to find relevant information concerning his/her problem.

SAFETY FAST!

It does not matter how quickly your MG accelerates, or how fast it goes, if it cannot stop. The proper functioning of your brakes must ALWAYS be at the top of your list of priorities. You owe this degree of safety to yourself, your passenger, and all others on the road!

John H Twist #78-415
Technical Chairman

SPRINGTIME 1983 -- Another Year for your MGB

Springtime is a time for special care of your MG. Whether it has been stored all winter, or whether you've been driving it every day, there are annual inspections and maintenance items that are now due!

Just as some of us adopt a "spring cleaning fever" all of us should find an "MG cleaning fever" and restore our MGs to full brilliance. It's going to be a nice summer, with conventions and mini-conventions across the Continent. So, you'll want to have your MG prepared for the long drive (Lake Tahoe) or for the local event.

Approaching the MGB with everything in mind, there are considerations of maintenance and inspection; lubrication; cleaning; and tuning. Plus, you should inspect the body for tell-tale signs of rust.

The "Complete lubrication" is given on the next page. This is a checklist you can use yourself or show to your local repair shop for their use. A "standard" or "book" time to complete these items is three to four hours. Of course, this covers the time for inspection and the basic adjustments. If bulbs have to be replaced, a U joint changed, front brake pads changed -- the job will obviously take longer than three hours!

The Complete Lube, will take care of almost all of the maintenance items, and is drawn from the list we use at my own shop. If you have any questions regarding the lube, please call!

Cleaning the MG is necessary if the car has been stored or driven all winter. A really good annual cleaning can help to preserve the exterior and interior of the car. Too, it can allow you advance warning of a problem that now is only starting -- perhaps a bit of bubbling of the paint on the sill, or a tiny tear in the upholstery.

If the car has been stored in less than favorable conditions -- in a barn for instance, then this cleaning can help to remove the bits of seed and shucks that the mice have left behind. Mice love the inner fenders and the area just under the pedal box and master cylinders.

If the car has been stored in wonderful conditions, this annual cleaning is helpful to keep the car in excellent condition! Despite all efforts to keep the car clean, dust, dirt, and grime build up on certain body parts, in the lamp housings, under the bonnet, etc.

Rust inspection and prevention is not usually part of routine maintenance. BUT, although parts are easily available and not too expensive now, they will be in the future. The only one who can help to preserve your MG is yourself. And the less rusting, the better!

When the MG is withdrawn after the long winter, the first item on the owner's mind is the tune-up. "I've got to get my car tuned," they say. "Why," I ask? "Well, it's been a year since the last tune-up!"

Actually, a tune-up is needed when the car begins to run in less than top form -- some tune-ups last for years! But a good home, clean and tune is really helpful.

(SPRINGTIME 1983 Con't)

The COMPLETE LUBRICATION -- 12 Month or 12,000 Miles
(tick off as completed)

- ___ Check shocks by bounding fenders
 JACK UP LEVEL ON FOUR JACK STANDS
- ___ Inspect rear wheels and tires -- tread wear, wheel runout, loose spokes, slices
 REMOVE REAR WHEELS
- ___ Drain differential and gearbox -- drain into pails, and allow to drip for several minutes
- ___ Remove rear brake drums -- Inspect piston movement/springs/lever movement/sand drums and shoes
- ___ Lubricate adjusters - replace rear drums - adjust rear brakes (Handbrake relaxed!!)
- ___ Fill differential (90/140 hypoid gear oil)
- ___ Inspect universal joints/ drive shaft alignment / flange nuts / lubricate drive shaft
- ___ Inspect rear shocks (arm lateral movement) / shock links / leaf springs (leaves separated?)
- ___ Tighten rear anti-sway bar (1977-1980 MGB only)
- ___ Inspect petrol tank / fuel pump / fuel sending unit for leaks or "sweating"
- ___ Inspect rear exhaust for holes / rust / hangers
- ___ Fill gearbox (90/140 hypoid T types & Midget 1500; GTX 20/50 for all others)
- ___ Inspect front wheels / tires / suspension -- tread wear, wheel runout, loose spokes, slices
 REMOVE FRONT WHEELS
- ___ Drain Engine oil
- ___ Inspect front suspension / kingpins / tie rod ends / A Arms / wishbone rubbers / coil springs
- ___ Inspect front exhaust for holes / rust / hangers
- ___ Lubricate front suspension
- ___ Top up front shocks (Castrol Forkoil 20 or 30)
- ___ Change engine filter and refill engine (Castrol 20/50 GTX)
- ___ Inspect front brake hoses and lines
- ___ Remove one pad at a time, exercise caliper while lubing piston with brake fluid
 WITH A HELPER
- ___ Bleed rear brakes / bleed front brakes / bleed clutch
- ___ exercise and adjust handbrake cable
- ___ Remove shim pack from rack and pinion, remove thinnest shim, fill rack with 90/140 hypoid
- ___ Inspect rack clamping bolts / steering U joints / steering column stability
- ___ Lubricate and exercise bonnet release cable
- ___ Top off brake and clutch master cylinder
 REPLACE TIRES AND SET ON GROUND (Lubricate splines if wire wheels)
- ___ Inspect and tighten fan belts
- ___ Inspect radiator hoses / pressure check cooling system / Antifreeze good to °F
- ___ Inspect air filters
- ___ Inspect PCV lines
- ___ Top up washer solvent level
- ___ Remove and sandblast (glassbead) fusebox
- ___ Inspect / adjust / clear windscreen washers
- ___ Inspect windscreen wipers
- ___ Inspect operation of ALL lights -- headlights / turn signals / brake lights / reverse lights /
 parking lights / licence lights / side markers
- ___ Inspect operation of ALL dash and console lights -- each gauge, interior, overhead,
- ___ Lubricate -- seat rails (move seats fore and aft several times) / door strikers (also tighten
 with large phillips) / bonnet slide
- ___ Inspect tool kit (jack, lug spanner?) / lubricate jack / lubricate boot lid slide / tighten
 boot latch assembly
- ___ Inspect tire inflation and condition of spare
- ___ Inspect and correct tire inflation of all four road wheels
- ___ Top up rear shocks (Castrol Forkoil)
- ___ Service battery / replace clamps / clean earth cable

(SPRINGTIME 1983 Con't)

The COMPLETE SPRINGTIME CLEANING

(tick off as completed)

EXTERIOR

- ___ Paintwork -- wash, rub out, touchup, wax, and remove wax "white lines"
- ___ Bumpers -- Chrome-Clean with chrome polish, respray insides of overriders
Rubber-Polish with Armorall or floor wax
- ___ Lenses -- Remove all lenses, wash in soap and water, allow to dry, replace
- ___ Glass -- Clean with Windex, prepare wind-screen with Rainex
- ___ Top -- Clean with prep solvent, then use Armorall or similar
- ___ Grille -- Clean with chrome polish; newer models remove and paint black
- ___ Wheels/tires -- Remove wheels from car, wash inside and out. Wire wheels allow to dry and respray with FML49 silver paint. White walls clean with SOS.

INTERIOR

- ___ Remove seats (7/16" headed bolts) and clean.
- ___ Vacuum or shampoo carpets
- ___ Clean bezels, escutcheons, interior chrome
- ___ Wipe down dash and prepare with Armorall
- ___ Clean glass faces of instruments with Windex -- 1977-1980 have plastic faces
- ___ Clean vents

BOOT

- ___ Remove everything from boot
- ___ Clean and dry floor
- ___ Touchup paintwork / allow to dry
- ___ Replace only the important items!

UNDERBONNET

- ___ Spray off at carwash
- ___ Paint touch up / car color / black
- ___ Lubricate all metal parts with WD40

UNDERCARRIAGE

- ___ Spray off at carwash
- ___ Paint touch up / use heavy duty black paint for suspension components

The COMPLETE RUST INSPECTION AND RUST PREVENTION CHECKLIST (tick off as completed)

The first part of this list is the inspection for evidence of rusting -- bubbling of the paint, brown staining, or perforation.

- ___ Front Fender - top of fender near bonnet; above and below the headlamp; base of fender behind wheel opening
- ___ Door - bottom of door; base of door; or tear at vent window
- ___ Sill - beneath door
- ___ Chrome strips - between strips and body

- ___ Rear fender - base in front of wheel opening; along wheel arch; under taillite housings.
- ___ Front splash apron (under front bumper)

Now that you have inspected for rust, and dutifully noted the results, the next step is to prevent further rusting. This is done by ensuring adequate ventilation to the hidden body cavities, and by oiling some of the metal parts to slow the rusting process. Oiling is probably the best form of rust prevention -- but it does require annual attention!

- ___ Drill eight holes along the base of the front fender/sill/rear fender -- the holes should be 1/4" diameter. They should be drilled upwards, vertically, along the 1/2" lip at the base of the fender and sill.
If the holes have previously been drilled, ensure that they are clean.

- ___ Drill one 1/4" hole under the base of the rear taillites, or clean out the existing hole.

- ___ Remove the front wheel, then remove the splash panel to the rear of the wheel (a series of 7/16" headed bolts). Clean out the exposed cavity, then spray a thin coat of oil all round (engine oil in a "Mr Muscle" sprayer).

- ___ Remove the door interior panel, clean out the base of the door (leaves, silt), and ensure that the drain holes are clean. Oil the inside of the door.

- ___ Clean out any trash under the taillites in the boot, ensure the taillite drain holes are open, spray some oil in the area.

- ___ Spray oil from the boot forward into the "V" made between the inner rear fender and outer rear fender.

Now the MG is ready for the road -- and we can attend to the tune-up.

The COMPLETE SPRINGTIME TUNE-UP

The tune-up is broken into three areas: the engine (valves); the ignition (points and plugs); and the carbs (balance and mixture). Prior to beginning on the tune-up, or "attention to tune", carefully examine the engine compartment for any loose hoses, broken fittings -- anything visably wrong. These must be corrected first!

Engine -- Run the engine to bring it to operating temperature (about 15 minutes). Remove the valve cover and inspect the valve cover gasket. If it is hard, change it; if it is supple, keep it. The valve cover grommets should also be changed (12A 1358).

Following the torque sequence, loosen each cylinder head nut by about one full turn, then tighten it to its approximate original position before going to the next nut in the helical pattern. This breaks the rust free from the nut and stud and allows a better torque reading.

Now follow the torque sequence and bring all the nuts to about 55 lb-ft. The four rocker pedestal 1/2" nuts are 23 lb-ft.

(SPRINGTIME 1983 Con't)

Tune-up continued

Remove the four plugs, and check the compression on each cylinder. Readings within 10% of each other are acceptable. Replace the plugs with new ones (N9Y) or glassbead the old ones and regap them.

Adjust the valves, two at a time, following the sequence in the workshop manual. Use .015" before 1972, and .013" for all 18V prefixed engines.

Ignition -- Remove the distributor from the engine, remove the coil from the inner fender. Clean the coil, cap, and wires in hot soap and water -- or use a carb cleaner to remove all dirt and grease. Replace the cap, rotor, or wires if you KNOW they're bad. A lot of money is wasted on these parts!

Check the vacuum advance unit by drawing on it -- watch out for gas in your mouth! Replace the points, and ensure that the mechanical and vacuum advance is working. The dwell is 60° for all the four cylinders, and the timing varies by year. Generally, after 1972 the timing is between 10-15° BTDC at 1500 rpms, vacuum disconnected.

If you have an ohmmeter available, check the ignition wires. The wires should all have the same resistance, around 10,000 ohms.

Carbs: Twin SU's -- Remove the fuel line from the carb, place it into an old can, have an associate turn on the key and watch the fuel flow. It should really spurt out -- if it trickles, the fuel filter may be plugged.

Remove the float bowl tops and sop out the gas with an old rag. Then use carb cleaner and more rags (or compressed air!) to clean the varnish from the base of the float bowls. (Check the float height at 1/8" to 3/16" HS style). Don't take apart the HIF carbs to clean the float bowls!

Remove the dashpots and pistons (don't mix front to rear) and clean with carb cleaner. DO NOT damage the needle! Clean the throats of the carbs, and oil up the linkages.

Refit the parts, start the car, set the idle to 850rpms, and adjust the mixture until there is a slight rise in rpms as the piston is lifted. It will be necessary to work between the idle screws and the mixture several times. Use a unisyn or length of hose to adjust the air flow so each carb is drawing the same quantity. Don't forget oil in the dashpots!

Single Stromberg -- TIGHTEN the three screws holding the choke assy to the carb body. The screws are copper colored, slotted heads. Do not confuse them with the three tiny screws holding the water jacket to the choke assy.

Remove the dashpot and withdraw the piston. If the car has more than 50,000 and the needle has not been changed, do so now (AAU 7092). Remove the diaphragm from the piston before cleaning it with carb cleaner -- otherwise the diaphragm will be ruined. Clean the throat with carb cleaner and a rag. Reassemble and adjust the mixture and idle.

If you have QUESTIONS about the lube, the cleaning, the rust prevention, or the tune, please contact your TECHNICAL CHAIRMAN:

John H Twist
614 Eastern Avenue SE
Grand Rapids Michigan 49503
(616) 245 2141

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These new warning lamps give a clear visual indication—especially at night—whenever overdrive is selected. They will fit any MG with overdrive and match the existing 'Fasten Belts' warning lamps which are fitted to later MGs. Each assembly is supplied complete with a 12 volt bulb and fitting instructions.

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- 227 -

THE TECHNICAL SECTION

INTRODUCTION

AMGBA TECHNICAL PROJECTS

Despite your technical chairman's promises to include the results of some of our technical projects in this issue of the Quarterly, this Summer 1983 technical section is nowhere near the size and scope that we'd all wish. I have been busier than ever at my shop and not only am I behind there, but I have several months of technical correspondence lying on my desk at home. The AMGBA special projects have suffered -- but we hold out hope for the Fall issue. I remind each AMGBA member who needs technical assistance quickly to call me. Days (616) 245-2141.

Vehicle Number Survey: We have received nearly 150 responses from our survey form in the Winter 82/83 Quarterly. We have included it again in this issue to urge you to complete the form and return it to us if you haven't already done so. We've received responses from Canada, England, and South Africa -- in addition to the many responses from this country. Caroline has dutifully been recording all the information from the Vehicle Number Survey -- and when we list it out again there will be a lot of interesting information regarding the dates and numbers. It is our goal to compile as much information as we can as soon as we can. Questions naturally arise after a period of years about what is "stock" or original, and what is not. By getting this information today, there will be fewer questions twenty years from now! We urge you to fill the form in -- and send it to us!

MG Colour Listings: The three pages of paint cross references we printed in this 1982 Summer Quarterly has been a great help to a number of members judging from the kind letters and phone calls we receive. If you need colour information and do not have the Summer 82 Quarterly, you can always call for information. Several members have suggested that we obtain chips for all of the colours -- which would be a wonderful idea -- but almost impossible because of cost. And, we continue to make slight corrections. Many MGC owners have written about Snowberry White! Again, if you need to have a paint code for your car -- or need to know what colour it might be -- then please call us.

The Technical Index: Bob and Sally Russell of Lorain, Ohio are indexing the over 200 pages of technical information already printed in the past four years of the AMGBA Quarterly. When this massive task is complete, we'll print it in the Quarterly.

SAFETY FAST!

It does not matter how quickly your MG accelerates, or how fast it goes, if it cannot stop. The proper functioning of your brakes must ALWAYS be at the top of your list of priorities. You owe this degree of safety to yourself, your passenger, and all others on the road!

OLDER TECH

Although I can answer some questions regarding the earlier MG models, it is best for the owners of the MG"T" and MGAs to join the national clubs designed for them. Technical inquiries should be directed to:

"T" Series
F E Old III #2271
9301 Old Harford Road
Baltimore MD 21234

"A" Series, Z type and Farina
John Wright
5405 Temple Hills Road
Temple Hills, MD 20031

Both the New England MG"T" Register and the North American MGA Register have technical information concerning their specific MGs in their publications.

SINGLE STROMBERG UPDATE

The single Stromberg carb fitted to the USA specification MGBs from Jan 1975 have been a source of confusion and frustration for a number of owners. Not as easily adjustable as the earlier SU's, the common theme was "throw it away and replace it with dual carbs." But with eight years experience on those carbs, I no longer suggest a wholesale replacement of the system. The single carb can be slightly modified to give reasonable performance and excellent mileage. Of course, it's far less expensive to work with the existing carb and manifold than to change to dual carbs or to a Weber.

Several "rules" apply:

After 35,000 the needle AAU7092 needs to be replaced. A worn needle makes idle impossible to adjust.

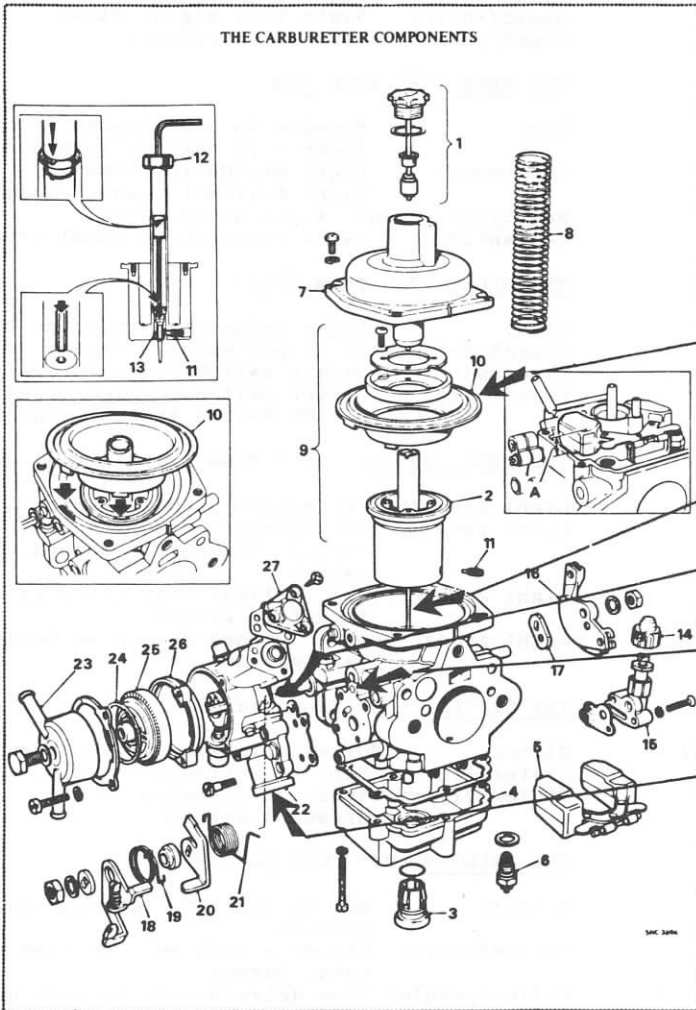
The diaphragm needs to be replaced when it becomes stiff, when it develops "ridges", when it "grows" and is oversized, and certainly when it is perforated. The diaphragm BLM225480 can help to reduce high fuel consumption.

The automatic choke cam assy often becomes loose, and the 5/16 nut on the backside should be checked for tightness as often as the choke is removed for cleaning.

The bottom of the auto choke (a brass welch plug) sometimes falls out and is trapped on the frame member beneath the carb. Flatten this plug and reseal it into the base of the auto choke. If it has been lost, another steel one can be purchased and used -- or the sealing can be made with GE silicone gasket compound.

The vacuum port at the top of the auto choke sometimes becomes plugged and the auto choke is forced to remain "on." When cleaning the carb and auto choke during a tune-up, ensure that this passageway is clear by working a small diameter wire through the passageway.

THE CARBURETTER COMPONENTS



DIAPHRAGM BLM 225480

NEEDLE AAU 7092

5/16" NUT (UNSEEN)

VACUUM PORT TO BE CLEANED

BRASS WELCH PLUG (UNSEEN)

KEY TO THE CARBURETTER COMPONENTS

- | | |
|--------------------------------|---|
| 1. Damper assembly | 15. Idle air regulator |
| 2. Air valve piston | 16. Throttle quadrant |
| 3. Float chamber plug | 17. Locating plate |
| 4. Float chamber | 18. Operating lever assembly - auto choke |
| 5. Float | 19. Spring - outer |
| 6. Needle valve | 20. Operating lever - inner |
| 7. Top cover | 21. Spring - inner |
| 8. Spring | 22. Auto choke |
| 9. Air valve assembly | 23. Water jacket |
| 10. Diaphragm | 24. Sealing rim |
| 11. Grubcrew - air valve | 25. Heat mass |
| 12. Tool S 353 | 26. Insulator |
| 13. Needle housing assembly | 27. Cover - vacuum kick piston |
| 14. Cover - idle air regulator | |

A. .625 to .672 in (15.87 to 17.07 mm)

WIRING CODES by
John H Twist #78-415

The Lucas wiring code was pretty much standardised by the mid fifties, and the following listing may be of help to those members with MGs earlier than the MGB. The majority of color combinations and uses are taken from a 1978 MGB, but some of the earlier combinations are also included. Few of the colors are used in more than one place, or for more than one function.

As a note, for any work with the wiring and electrical system, a 12volt test light is a MUST.

This article first appeared in the AMGBA Quarterly in the Winter 80/81 Issue.

The BLACKS ("B" from Black)

Black: Always earth (ground)
Black/Green: URP switch to cooling fans

The BROWNS ("N" from Brown)

Brown: Always HOT, unfused
Brown/light green: windscreen motor to switch
Brown/yellow: Indicator light to alternator
Dynamo "D" to regulator
Brown/purple: Fitted for seat belt system
but unused.
Brown/green: Dynamo "F" to regulator
Alternator "F" to regulator ('68)

The WHITES ("W" from White)

White: HOT with ignition on, unfused
key to ignition relay
key to fuel pump
key to coil
key to fusebox
White/black: distributor to coil
coil to tachometer
White/brown: igtion switch relay to fusebox
starter relay to starter solenoid
White/blue: stepped down voltage for distributor amplifier
White/green: Keyswitch to radio
HOT, unfused at first key position
White/light green: Solenoid to coil
resistor cable to coil
White/red: Keyswitch to solenoid relay
Starter relay to brake warning
diode

The PURPLES ("P" from Purple)

Purple: Always HOT, fused
Purple/black: Horn to horn switch
Purple/green: Key buzzer to time delay buzzer
Purple/pink: Key switch to key buzzer
Purple/white: Courtesy lamp/boot lamp to earth
switch

The GREENS ("G" from Green)

Green: HOT with ignition on, fused
Green/black: Fuel tank unit to gauge
Green/blue: Temp sending unit to gauge
Green/brown: Reverse lamp switch to lights
Heater fan to switch
Green/orange: Brake pressure switch, handbrake
switch, brake warning diode,
brake warning light
Green/pink: Service interval counter
(EGR light)
Green/purple: Brake light switch to brake lites

Green/red: Left turn signal lites
Green/white: Right turn signal lites
Green/yellow: Heater fan circuit

The REDS ("R" from Red)

Red: Fusebox to sidemarkers
Fusebox to parking lights
Red/green: Light switch to fusebox
Light switch to panel rheostat
Red/light green: Wiper motor circuit
Red/white: Panel rheostat to panel lites

The BLUES ("U" from Blue)

Blue: Light switch to dimmer switch
Blue/light green: Wiper motor circuit
Blue/red: Dimmer switch to low beams
Blue/white: Dimmer switch to high beams
Dimmer switch to beam indicato

The LIGHT GREENS ("LG" from Light Green)

Light Green/black: Washer pump to switch
Light green/brown: Flasher to turn signal
switch; flasher to hazard
switch
Light green/green: Voltage stabilizer to
fuel/temp gauges
Light green/purple: Hazard switch to hazard
warning lamp

The SLATES ("S" from Slate)

Slate: HOT when igniton off, unfused.
Slate/pink: Fuse to anti-run on valve
Slate/yellow: Anti-run on valve to oil
pressure switch

The YELLOWS ("Y" from Yellow)

Yellow: HOT in 3rd/4th, ignition on,
unfused
Yellow/brown: Driver's seat belt to time
delay buzzer
Yellow/purple: Time delay buzzer to seat belt
warning light, overdrive
circuit
Yellow/red: Gearbox 2/4 switch to TCSA
switch.

Common Electrical Problems:

Battery: The battery is the source of about half of all electrical problems! It is important to replace the battery clamps on an annual basis. This seems overkill -- but faulty clamps will cause the alternator to fail -- and those are over \$100. Battery clamps are only \$1.50 each. Keep the battery top clean, and ensure that the battery is secured with the proper holddowns.

Fusebox: The fusebox is the source of about a quarter of all electrical problems! Yearly removal for cleaning is always a good idea. Sandblasting the fusebox is excellent, but even cleaning it with Brasso is better than naught. There are two types of fuseboxes -- the two fuse and the four fuse types. The two fuse variety include the "Brown/Purple" fuse and circuit, and the "White/Green" fuse and circuit. Losing the brown/purple fuse or connections will result in a failure of the horn, interior lights, bright light flashers, cigarette lighter, etc. Losing the white/green fuse or connections will result in losing the turn signals, brake lights, wipers (some years), heater (some

years), electric tachometer, fuel gauge, temp gauge (68 on). The four fuse variety also has two fuses for the parking lights -- one fuse controls the left side, one fuse the right side (except some cars where the split is made from corner to corner). The headlights are not fused.

The front side of the fusebox is the "unfused" side (brown, white, or red/green), while the rear side is the "fused" side (purple, green, or red). The top four forward terminals of the four fuse variety are common.

Several Common Faults with Solutions

Starter: Turns over very slowly -- either the starter is faulty, the connections to the starter are faulty (usually the earth strap on the engine), or the battery is discharged.

Solenoid clicks repeatedly-- battery is discharged.

Solenoid clicks once -- starter relay has lost power (usually a dirty fusebox); or the solenoid or starter is faulty.

Alternator: If the fan belt is loose, the alternator will not charge satisfactorily, BUT the indicator often acts normally. If the alternator pulley can be rotated counter-clockwise the fan belt is too loose. There are FOUR bolts/nuts which must be loosened to properly adjust the alternator. Pull the alternator away from the engine by hand. NEVER use a pry bar!!

The red ignition light is designed to indicate a "no charge" condition. The light should come on when the ignition is turned on, but dim to completely dark over 1000 rpms. If the light glows dimly at higher speeds, especially when the heater is turned on or the brakes operated, then a fault is indicated in the unit. If the ignition light flashes on and off, at speeds over idle, then the brushes are usually suspect.

Hazard Switch: The hazard switch turns the turn signals ON when the switch is OFF, and turns the hazards ON when the switch is ON. It is very common to lose the use of the turn signals after operating the hazard switch. Should this happen, SNAP the hazard switch OFF as this usually restores the use of the turn signals.

Turn Signals: It is necessary to have both the front and rear bulb illuminate for the turn signals to flash. If one side flashes while the other does not, then one of the bulbs on the non-flashing side is probably not working. If the signals flash at different rates, then the slower side either has a faulty ground (lamp base), or the front or rear bulb on the slow side is not matched with the other side.

Gas Gauge: The most common fault of the gas gauge is to read empty all the time. This is usually the fault of the sending unit in the tank. However, the remainder of the circuit can be tested by using your 12volt test light. Ground one end of the lamp, and connect the other end to the green/black wire which is found on the sending unit (right side of tank). With the ignition ON, the bulb in the test lamp will glow and after ten seconds begin to pulse. At the same time, the gas gauge on the dash will begin to climb to full.

An uncommon fault of the gas gauge is to read too high. This is accompanied by the temp gauge reading too high also -- and the problem is usually located in the voltage stabiliser, found on the extreme left side of the under-dash firewall. If this unit is not grounded (a small phillips screw holds the 1½ x 1 inch unit) then the voltage coming to the gauges will be 12volts rather than 8 with the gauges reading that much higher.

Temp Gauge: The faults of the temp gauge are just as those explained with the fuel gauge. Test the circuit by using the test light and the green/blue wire from under the thermostat. A new temperature transmitter GTR 101 or GTR 103 is about \$14. While the fuel gauge is not necessary (you can use the odometer), the temp gauge is critical for safe engine operation.

Oil Gauge: The oil gauge was a mechanically operated unit (part of the "Safety Gauge" from 63-67), and has been a mechanical unit since 1970. But for two years a transmitter was used on the side of the engine (white/brown is the circuit color). This transmitter sometimes fails by reaching a low upper limit, or sticking at a certain pressure. Needless to say, the oil gauge is as important, if not more important, than the temp gauge.

Horn: Horn operation can be faint, irregular, or inoperable from faulty connections. Any problem with the horns, especially the "chirping" that some make, can usually be corrected by cleaning each of the connections in the circuit. Starting with the fusebox, then the spade connectors on the horns themselves, the spade connectors on the wires, the "brush" within the steering column, and the center push on the wheel. The horns require an enormous amount of power, and if any of the connections are not clean (have too much resistance to pass the current) then the horns won't work.

Reverse lights: If the reverse lights fail to work, or worse, if they remain on all the time, then the reverse light switch is the culprit. The switch is located on the right side of the gearbox, just above the crossmember. It can be loosened with a pair of pliers and unscrewed by hand. Adjustments are made by shims (orange washers).

Glowing headlights: A light bulb either works or it doesn't. A glowing bulb is an indication of a faulty earth connection (black wires), NOT a faulty headlight. As the driver is not often in front of his MG when the lights are on, the interior indication of a problem is the bright light indicator. If that glows when both the dims and the brights are on, then a faulty earth connection is an almost certainty.

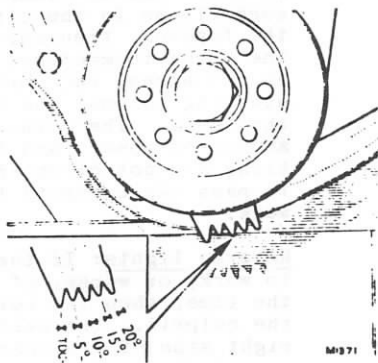
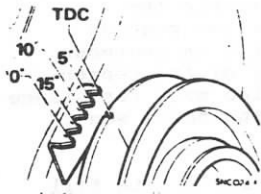
White Circuit Safety: 1977-1980. If the TCSA switch as been removed from the vacuum advance plumbing (desmogging), and the MGB doesn't have overdrive, then DISCONNECT the White/brown wire from the gearbox loom. This is an unfused circuit, and the switches on the gearbox sometimes dead short. That's enough to completely burn up the wiring loom. If you do have overdrive, then fuse the White/brown wire.

QUESTIONS & ANSWERS

Q: I tried to set the timing on my 1975 MGB with a timing light at 10° BTDC, but you have to be below 500 rpms to stop the centrifugal advance. I set it at 10° BTDC static which worked well when returning to normal idle speed, but if you "blip" the throttle, the timing drops below 10° and consequently the idle drops below 600 rpms. Does it sound like my distributor weights are sticky or something?

Dave Kunte #78-0526
Nichols, New York

A: Dave -- The timing on your 1975 MGB should be set at about 12° BTDC at 1500 rpms, with the vacuum disconnected. Setting it at 10° BTDC static really advances the spark a bit too far which can result in hot running or dieseling. "Blipping" the throttle causes the timing to retard momentarily (if the vacuum advance is connected) -- the timing can also change because of slackness in the timing chain. However, it is good practice to disassemble the distributor on a regular basis (each time you tune up the MGB) and keep the weights oiled.



Q: I want to install dual carbs on my 1978 MGB but am concerned about the spacing for air cleaners. Is it a big job to change from the existing power brake unit back to the regular brake system?

Peter Dye #80-1109
Fremont, Ohio

A: Peter -- There is no problem installing some varieties of air cleaners with the power brake unit in place. The Stelling and Helling filters M-128, available from Moss Motors 223-200, work wonderfully. Changing that power unit back to a dual circuit brake system (as used on the MGB 1968-1974) involves changing the pedal box, and re-routing the brake lines in addition to relocating the brake failure switch -- its a real hassle!

Q: The tires on my 1969 MGB are getting pretty worn, so I've been shopping around for some new radials, and I've got some questions:

1) I have the 4.5 x 14 wire wheels. What is the process of "tuning" wire wheels? I've assumed that it is the process of insuring the wheels are round and the spokes are of proper tension, but I cannot find anything about this in writing. What is entailed in tuning, and can it be done at home?

2) I've heard that the common service station tire mounting equipment can damage wire wheels (too much strain). Should tires be mounted by hand?

3) What are other members using in tire sizes on wire wheel rims these days? What are the preferences?

Bruce Ransom #80-1419
Walla Walla, Washington

A: Bruce --

1) It is virtually impossible to "tune" wire wheels at home, mostly because the threaded joint between the spoke and spoke nipple is rusted tight. Even frequent applications of WD40 don't seem to free up these nipples -- and heat doesn't seem to work either. If the nipples could become free, however:

It is important that the rim is concentric with the hub. With the tire removed and the wire wheel on a front hub where it can be spun easily, the rim shouldn't move "up and down" as the wheel is rotated.

It is also important that the rim doesn't "flex". The rim shouldn't move "in and out" as the wheel is rotated.

Almost always, tuning a wire wheel involves replacement of spokes, some expertise, a lot of patience, and a lot of time!

2) The reason that common service stations have a problem with wire wheels is that their machines are set up to hold the rim from spinning by the use of a rod which normally sticks up into a wheel lug hole. Since there are no lug holes in the wire wheel, that rod is often allowed to pass through the spokes. When the machine begins to force the tire into place, the rim turns and the spokes are bent. It's best to find someone with a machine that grasps the inside of the rim -- or do it by hand.

3) Tire sizes are usually within the 155-165x14 radial range. Wider tires, 175x14 can be fit, but often with clearance problems in the rear wheel arches. Be certain to fit "tube type" tires. Tubeless tires have large ridges on the inside which will quickly reduce an inner tube to ribbons. Be certain that there is a "rubber band" inside the rim to help protect the tube from the spokes

Q: I went to get my MGBs front end aligned and when I went to pick it up, the mechanic told me that they tried to get it as close as they could but it still is not lined up. He told me he thought the front end was sprung.

(QUESTIONS AND ANSWERS CONTINUED)

When I bought the car I noticed a lot of small dents underneath, but that is not unusual for such a small car that is so low to the ground.

What puzzled me is that the MGB doesn't dog track, and the B doesn't shake or shimmy at any speed. Another peculiar thing is that the tires are not wearing unusually -- which is a symptom of a "sprung" front end. I am spoofoed.

Michael Thomas #80-1587
Granville New York

A: Michael -- There are three considerations for the front end alignment: castor, camber, and toe-in. Only the toe-in is adjustable on the MGB. The castor is the inclination of the kingpins -- you'll note that the bottom of the kingpin is slightly further ahead than the top of the kingpin. Actually, the castor is adjustable, but requires removing the front cross member! The camber is a measurement of how verticle the tires are (as seen from the front of the car).

See if you can get the alignment shop to be more specific. A "sprung" front end is about as specific as saying the engine is "blown up." If there is a problem with the front cross member, or the frame of your MGB, the repair is complex and repairs start at about \$200.

Be certain to inspect the wearing parts of the front suspension -- A arm bushings, the kingpins and kingpin bushings, and the A arms themselves (is the hole at the base of the kingpin elongated?).

Q: We have a 1979 MGB and would like to convert the engine to dual carbs. Which year or type of carbs and manifolds would be best to use? Should we leave the distributor and camshaft the way they are or change to a different year? Someone told me that a single Weber is better than two SUs, but there are a lot of MGs with dual carbs -- they can't be all bad!

Gary and Mary Starr #81-2227
Algonquin Illinois

A: Gary and Mary -- Any year SU carbs will be wonderfully satisfactory -- but they must be used in their entirety. From 1964 to 1968 there is a Smith's POV valve which must be fitted; but the carbs from 1972-1974½ (HIF type) will be the easiest to fit. What you want to find is a junked MGB with the entire carb and manifold system intact. You will need to purchase new: a front exhaust pipe, air cleaners, choke cable, and throttle cable.

A Weber carb is great for speed and acceleration, but it's often not that hot on fuel mileage.

I would leave the distributor and cam the way they are. You will find that if you run the vacuum advance line directly from the distributor to the manifold (and not through the TCSA switch on the brake M/C box), the B will perform slightly better.

Q: I just installed a new windscreen glass in

my 1968 MGB roadster because the old glass was very pitted and reflective. However, specks (pits) are already beginning to appear in the new windscreen. How can this be prevented or at least retarded? I'd like to protect my investment!

Scott McGredy #80-1224
Concord New Hampshire

A: Scott -- I've asked around, but can get no clear ideas on what might be happening. You might first ask the shop from whom you purchased the windscreen -- or ask around at different glass shops -- even showing them what's happening. I'm drawing a blank -- perhaps our readers can enlighten us!

Q: When I purchased my 1978 MGB, I found that the former owner had clipped off the connector to the thermostatic switch for the electric fans in an attempt to find a short. My local dealer explained that the only way to get this connector is to purchase the entire wiring harness. Where can I find this white plastic connector?

David Brez #81-1826
Fresno California

A: David -- Perhaps our readers can help! Anyone with this connector, please drop me a line. John Twist

Q: My shop manual indicates it is necessary to check the end float of the front wheel bearings with a dial indicator (which neither myself nor most MG owners have) and add or remove shims to adjust the end float to within 0.002-.004". If everything was working fine before the repacking operation, why not put it back together being careful to get the original shims all back in -- and forget about the use of a dial indicator?

Patton McGinley #80-1254
Stone Mountain Georgia

A: Pat -- I don't use the dial indicator either; instead:

Clean the hub and bearings, smear a bit of grease on the inside of the hub, a bit on the spacer, pack the rear (inside) bearing, place the spacer and inner bearing into the hub, and fit a new seal. Then, place the hub assy on the front axle, and with clean shims and a clean, lightly oiled outer wheel bearing, begin the adjusting procedure.

First, replace the old shims, the bearing, the washer, and tighten the nut TIGHT. If there are too many shims, you can feel movement by pushing and pulling rather forcefully on the front rotor. The trick, of course, is to remove enough shims so that there is no perceptible free play, and the rotor spins without dragging.

Once the proper number of shims are found, remove the outer bearing, pack it, and assemble the front hub. It's very important that NONE of the wheel bearing grease gets on the rotor or pads!

The shims come in four thicknesses:

ATB 4240	.003"
ATB 4241	.005
ATB 4242	.010
BTB 656	.030

(QUESTIONS AND ANSWERS CONT)

and perhaps a regulator, you've already spent over \$200

Q: My windscreen wipers on my 1977 MGB make a terrible screech at each end of their cycle and don't move as quickly as they should until they are thoroughly warmed up. This has been happening ever since I accidentally turned them on after a freeze last winter. The motor unit has been removed and "freed up" once prior to this. What can I do?

Gary Modun #80-1149
Tumwater, Washington

A: Gary -- The wiper motor is probably at fault.

1) Remove the three wiper arms by using a large bladed screwdriver under each arm and pry each from the wheel box. If placed immediately under the arm where it meets the wheel box, a twist of the blade should lift the arm off.

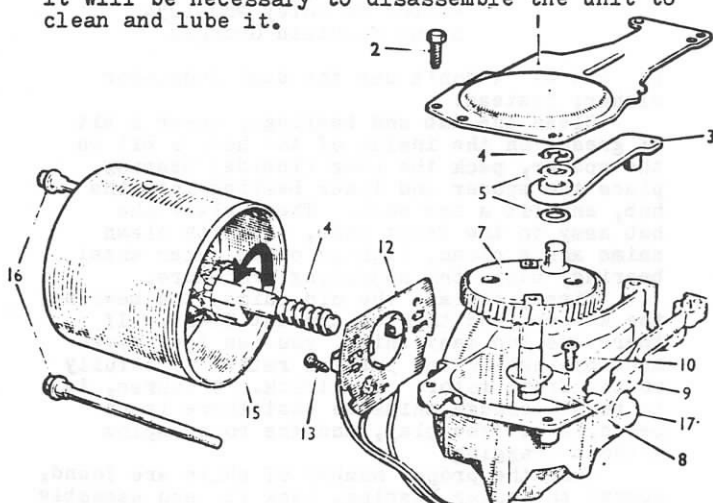
2) Remove the kick panel under the right side of the dash (three phillips screws).

3) Remove the 3/4" coupling nut holding the motor to the rack housing (arrow).

4) Remove the band which holds the motor to the firewall (7/16" socket). Disconnect the motor from its electrical plug, and withdraw the motor and rack (6) from the rack housing.

5) Spin each of the three wheel boxes by hand to insure that they are free. If not, liberally apply WD40 to the outside and turn the splined wheel until it is free. If this fails, it will be necessary to free it up from under the dash.

6) Reconnect the wiring to the motor, turn on the ignition switch, and turn on the wiper switch. If the motor does not move freely, it will be necessary to disassemble the unit to clean and lube it.



7) Remove the screws (16) and withdraw the case (15). Further, withdraw the armature (14) from the unit, and clean the commutator

(arrow) with fine emery paper. Place a small drop of oil at the end of the armature where it fits into the rear bearing in the case.

8) Remove the cover (1) and grease the gears and slides with multi-purpose grease.

9) Reassemble the armature and case to the unit, then replace the cover (1).

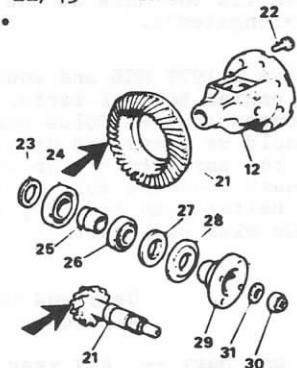
10) Apply multi-purpose grease to the rack (6) and prepare to reinstall it into the rack after first testing it again.

11) Once into position and fastened onto the firewall, allow the motor to operate for several minutes -- then allow it to "park" turn off the ignition, and reinstall the wiper blades and arms.

Q: Why is the gearing in my 1980 MGB set up so that the engine has to work so hard when cruising at 55/60? The tach reads about 3000 rpms while most sports cars turn about 2200 at these highway speeds? What sort of mileage should I expect? What's the life expectancy of this engine?

Paul Daigneault
Albany New York

A: Paul -- The MGB engine is virtually the same as the MGA, and that is a slight variation of the earlier Austin "B" series engine dating from just after WWII. Although it may seem to be turning more quickly than necessary at highway speeds, this is a "tried and tested" engine that performs wonderfully at those rpms. The earlier MGs -- the TD and TF, turn about 4250 rpms at 55/60!! The crown wheel and pinion (shown below) have a ratio of 11/43 -- which has been the same since 1963.



You should be getting 25-30 mpg depending on your driving habits. Careful tuning and frequent adjusting allows you the best chance at good mpg. You can increase the efficiency of the engine by installing dual carbs which the MGB used from 1963-1974. This increase in efficiency comes from a better design of the inlet and exhaust manifolding -- dual carbs also increase the power available.

Generally a B engine can handle 100,000 miles. You can insure longevity by following a rigorous schedule of frequent oil and filter changes (ie every 3000 miles). You can increase the life of the engine by the installation of an oil cooler (about \$150).

High speed running over long periods of time do not seem to be harmful -- I've seen very late model MGBs with 75,000+ without

(QUESTIONS AND ANSWERS CON'T)

valve or bearing work.

Q: I have fit a pair of HS4 carbs to my 1978 MGB. I also purchased a set of K&N air filters only to discover that they are too wide to fit between the carb and the brake servo. Do I have to revert to the earlier style of brakes (which involves changing the pedal box, master cylinder, metering valve, and brake lines)?

Ed Loest #81-2016
Brandywine Maryland

A: Ed -- Return the K&N air filters and purchase instead a pair of Stelling and Hellings M-128 filters available from Moss Motors 223-200 or from one of Moss' many dealers. The 1975 MGB is the only year in which there is considerable difficulty in fitting the dual SUs because of the larger diameter of the brake servo.

Q: I replaced the kingpins and bushings in the front end of my Midget when it had 45,000 miles. Now, at 66,000 I get a persistent clunking in the front end coupled with a looseness in the steering. The kingpin set is about \$100 -- do I have to spend this every 20,000 miles? Also, I noticed that the seals on the rack and pinion were wet and seem faulty -- is it important that they be replaced? Is it difficult to change them?

Greg Grohoski #81-1830
Champaign Illinois

A: The Midget front suspension can have many problems -- usually caused by a lack of lubrication. The system is not as strong as the MGB, but unfortunately, just as expensive to repair. It's important to determine just what the problems are:

1) Steering -- The steering wheel should have NO rotational freeplay. If it does, an inch or so, tighten the bolt and nut at the base of the steering column, where it attaches the column to the rack and pinion (7/16" socket and wrench). If there is still freeplay, grasp the junction of the inner and outer column (beneath the air cleaners) and have someone move the steering wheel back and forth through that small distance of freeplay. If there's movement between these two columns, you'll feel it in your hand. The freeplay here is not repairable unless you render the collapsible column inoperative. Do so by drilling two 1/4" holes through both columns and then lock the columns together with bolts and locknuts. REMEMBER: After this, the column will not collapse during and impact. This is the loss of a Federally mandated safety feature.

Have someone turn the wheel back and forth while you watch the rack and pinion itself -- located under the radiator. If the rack housing moves AT ALL -- it's too much. You'll need to remove the radiator to snug down the bolts holding the rack and pinion to the Midget's frame.

Test the tie rod ends by grasping the tie rod end in your fist and have someone turn the wheel back and forth a SMALL distance (don't squash your hand!). There should be no freeplay at either tie rod end, or between the rack and the tie rod.

Test the rack and pinion by grasping the tie rod near the rack housing and attempt to move the rack up and down. It shouldn't move at all. If it does, you'll need to reset the shim packs, necessitating the removal of the radiator.

The steering bellows (the accordion seals between the rack housing and the tie rods) should be free from perforation. The rack holds 90 weight gear oil, and if the bellows are faulty the rack will no longer be properly lubricated.

It is necessary to remove the tie rods from the tie rod ends to install new bellows. This isn't a difficult task except that the tie rod must be screwed back into the tie rod end with EXACTLY the same number of turns it took to unscrew it. If the count is different then the toe-in will be different than before. It wouldn't be a bad idea to have the front end aligned anyway.

2) Kingpins -- Having jacked up the Midget and having placed jack stand under the outer end of the A-Arms, check to see if the hub assembly has play up and down. It should have virtually none. Then grasp the tire top and bottom and attempt to wiggle it. If the kingpin is worn, you'll see movement between the kingpin and swivel. Faulty wheel bearings can also give this same sort of feel -- so it's important to look carefully and use a bright light to inspect. If it becomes necessary to replace the kingpin bushings, it's imperative that the new bushings be reamed IN LINE, otherwise misalignment can occur, causing early failure.

3) A Arms -- It is difficult to determine the play here, but with the A Arms on jack stands, attempt to move the bottom of the kingpin using a large screwdriver between the kingpin and A Arm. Wear between the fulcrum pin and A Arm is very common.

4) Shocks -- Ensure that the arms are tight to the shafts through the shock, and be certain that the bolts holding the shocks to the frame are TIGHT (9/16" socket).

5) Wheels -- If you have wire wheels, make certain that the spinners are TIGHT. Loose spinners are the most common cause of front end clunking!

Q: I own a 1972 MGB and am having trouble removing the clutch master cylinder. Do you have any tips that would make the job easier for me?

Dana Brussel #81-2065
Orlando Florida

A: Dana -- You need to remove the clutch master cylinder ONLY if you need to replace the unit. You need to replace the cylinder only after having rebuilt it to find that a rebuild is unsatisfactory. Generally, the cylinder can be rebuilt several times.

To rebuild the cylinder:

1) Remove the air cleaners.

2) Remove the pedal box cover by removing the four phillips screws -- and these can be a problem if they've never been out or if

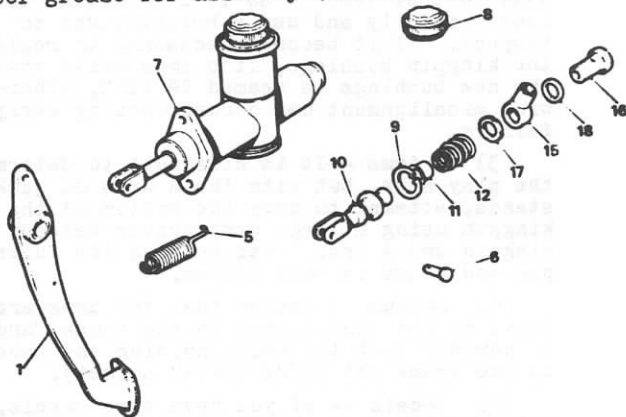
they're rusted. With a long, sharpened ice pick or suitable tool, clean the rust and dirt from the slots in the four screws. With a good quality phillips screwdriver, seat the tool into the screw and give the handle a solid, hard rap with a hammer. This seats the screwdriver into the screw -- and helps to separate the screw from its threads. It should now come out effortlessly. DON'T round out the slots in the screws if you encounter difficulty. Use the hammer trick several times if necessary. Worse come to worse, you can drill out the top of the screws with a long 1/4" drill, then wind them out from below with vise-grips. The screws are 10/32.

3) Remove the bleeder screw from the slave cylinder and pump the cylinder dry.

4) Remove the clevis pin and split pin from the pedal/master cylinder fork. You will need a new 5/16" clevis pin 3/4" long.

5) Fill the footwell with rags and newspapersto keep brake fluid from draining onto the floor mats. Use a good pair of angled snap ring pliers and remove the circlip from the front of the cylinder (9). Remove the piston/cups/springs.

6) DO NOT hone the cylinder, but simply replace the rubber components using a suitable rubber grease for assembly (or brake fluid).



7) Reassemble the unit and prepare to bleed the system:

Fill the master cylinder with Castrol LMA Brake fluid.

Place your finger on the bleeder screw hole on the slave cylinder.

With another person operating the clutch pedal: Remove the finger, depress the pedal, replace the finger, release the pedal, wait ten seconds. Repeat this process about five times then have the other person refill the master cylinder reservoir.

Continue in this manner, waiting the ten seconds between operations, until a stream of fluid, without air, rushes out of the slave when the pedal is depressed.

Then, while the pedal is depressed, instead of replacing the finger on the hole, replace the bleeder screw and tighten.

Again bleed using the bleeder screw instead of the finger for several more strokes. REMEMBER -- don't let the master cylinder run dry!!

If it is necessary to remove the master cylinder:

1) Remove the kick panel under the left side of the dash with three phillips screws.

2) Remove the rubber access plug on the firewall.

3) Bleed the master cylinder empty.

4) Use a 5/8" socket with a universal joint and a long extension and remove the rear banjo bolt (16) from the rear of the cylinder -- BE CAREFUL not to lose the copper washers (17 & 18).

5) Remove the bottom nut/bolt on the master cylinder by gaining access through the heater side of the master cylinder box under the brake master cylinder, with a long 1/2" open end wrench.

6) With the pushrod depressed, the cylinder will lift out.

UPKEEP AND PERFORMANCE HINTS

CLUTCH PEDAL FREEPLAY If the freeplay in the clutch pedal is the MGB is more than one inch, the clevis pin (6) and pushrod (10) are probably worn. Remove the pedal box cover and replace the clevis pin (5/16" x 3/4") and the master cylinder pushrod (17H 7985). Coat the pin and fork with grease before reassembly. Both the clutch and brake pedal use the same return spring (AAA 1628) (illus 5).

HIGHER OCTANE Mixing unleaded premium with leaded regular DOES make a difference -- no ping! The ratio is one part premium, three parts regular.

Dave Kunte #78-0526
Nichols New York

STICKING BONNET CABLE Try loosening the cable from the body, then lubricating it along its entire length with LOCK-EASE liquid graphite (available in small cans at hardware stores). After the graphite has penetrated the cable housing, wipe any residue from the outside with lacquer thinner.

Tony Hillard #80-1389
Chicago Illinois

PIRANHA IGNITION Many thanks to Jim Ireland #77-327 for his note on electronic ignitions, but I have a Piranha already successfully installed on my MGB.

David Rothermel #80-1448
Wyomissing Pennsylvania

AUTO EMISSIONS WARRANTY I've often found people who do not know about the extended warranty, or don't know the extent of it. Items as the EGR valve, air pump, catalytic converter, etc are covered. The coil, ignition wires, and

(UPKEEP AND PERFORMANCE HINTS CON'T)

carb can be covered too. My 1978 MGB went thru a common problem -- a cracked exhaust manifold. This, along with the needle and seat of the carb, were changed and repaired under this warranty.

For those members considering de-smog or a new exhaust system on an MGB under this five year, 50,000 mile warranty -- waiting until after this warranty expires might be good advice.

The EPA publishes a pamphlet, "What You Should Know About Your Auto Emissions Warranty," and it's available from: Public Information Center, US Environmental Protection Agency, Washington, DC 20460.

David Brez #81-1826
Fresno California

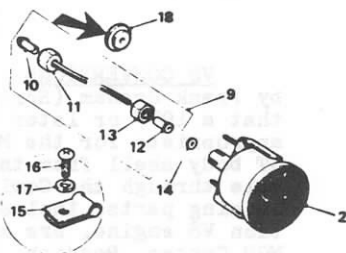
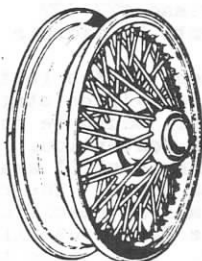
PAINTING WIRE WHEELS You may not have a compressor or the money for sand blasting and repainting your wire wheels. But you can do a good job by yourself, working carefully.

Wash the wheels with an SOS pad inside and out. Remove all the grease build-up of any kind. Then sand the rims with medium grit sandpaper, and lightly sand the spokes too. For a good finish, make certain that the wheel is smooth to the light touch.

Lightly prime the wheels two or three times with RUST-O-LEUM Grey primer #2089. When dry, lightly wet sand and wipe off all the dust. Then spray with metallic silver #7715.

HINT: To keep the spray off the tires, thoroughly wipe the tire with lacquer thinner, allow to dry, and use masking tape.

Tony Hillard #80-1389
Glen Ellyn Illinois



INSTRUMENT NUTS The plastic caps on small lantern batteries are just pliable enough to use in place of the thumb nuts on the rear of dash instruments (illus 18) -- if you've lost one from the back of your dash. Cut off the top of the plastic cap so that it can be threaded onto the stud.

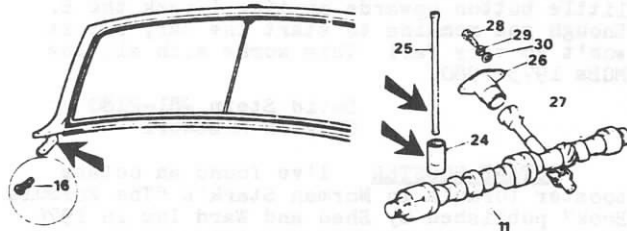
Bill Thieme #80-0995
Page Arizona

LOOSENING FROZEN BOLTS LIQUID WRENCH LIQUID WRENCH fares far better than WD40 for penetrating rust on old bolts and screws. It's available in any hardware store in liquid or spray form. Allow the LIQUID WRENCH to soak over a period of time, tapping on the rusted bolt or screw occasionally.

Tony Hillard #80-1389
Glen Ellyn Illinois

LIFTERS AND PUSHRODS We have been using the Huffaker lightweight lifters and pushrods in both the MGA and MGB engines. They cost less than the stock items, can take two or three thousandths off the valve clearance, and at high rpms, the engine doesn't sound quite so likely to come unstuck.

Verl Wilkins
Hopkins Minnesota



EASIER WINDSCREEN REPLACEMENT The windscreen frame on a roadster is more easily installed if you first chamfer the 3/8" holes in the aluminum bracket. Chase the threads in the bracket before re-installing into your MGB. See arrow above.

Tony Hillard #80-1389
Glen Ellyn Illinois

BRIGHTWORK POLISH For the ultimate shine on all of the brightwork (including side moldings and the aluminum trim around the GT's windows) a fine product is HAPPICH SIMICHROME POLISH. It cleans any metal down to its best shine, then leaves a protective film. SIMICHROME comes in handy little tubes.

Michael Johnson #79-0930
Maple Valley Washington

SOFT TOP WINDOWS At a recent Chicago Chapter meeting, we had a representative from Meguiar's. He recommended Meguiar's MIRROR GLAZE plastic cleaner and polish for the windows. If you're not using these products already, go get some!! The results are fantastic. Your windows will look like new. I don't know how widely available Meguiar's products are, but I got mine at Beck Arnley Auto Parts in Chicago.

Al Ribskis #79-0926
Chicago Illinois

HIGHER OCTANE I burn 92 octane fuel in my MGC/GT (when I can find the stuff) and I add a can of SILCO octane treatment to boost the octane level. At \$2.50 per 12 fl oz can, I've found it more economical than other products at up to \$6.00 per can. This smooths out the engine, and there is no more pinging and knocking, at any load.

Michael Johnson #79-0930
Maple Valley Washington

WEBER CARBS About a year and a half ago, I decided to experiment on my girlfriend's 1978 MGB. She was having cold starting problems and I had experienced many broken exhaust manifolds on customer's MGBs. I went with the 45 DCOE Weber and headers. The conversion is

UPKEEP AND PERFORMANCE HINTS (continued)

FUEL PUMP SWITCH I use the electric fuel cut-off switch under the fascia as an anti-theft device in my 1980 MGB. I simply pull the little button upwards anytime I park the B. Enough gas remains to start the car, but it won't go very far! This works with all the MGBs 1975-1980.

David Stein #81-2180
Clayton Missouri

OCTANE BOOSTER I've found an octane booster formula in Norman Stark's "The Formula Book" published by Shed and Ward Inc in 1976. The anti-knock additive consists of:

- 1 cup denatured (wood) alcohol
- 1/2 cup benzene
- 1 Tbs hydrogen peroxide (H₂O₂)

Thoroughly mix and keep in a tightly capped metal container. (I've found that the alky-benzene combination attacks most plastics) Most ingredients can be found at any good drug store, but the H₂O₂ may have to be ordered from a chemical supply house since the common drug store variety is usually a 5% aqueous solution.

To use, just add one teaspoon for every five gallons of fuel at fill ups. The ingredients for one batch will run about \$2.50 but will treat about 600 US gallons of fuel (about 4 ¢ per MG tankful). That beats the heck out of 98¢ additives!

Jim Korn #81-2350
Indianapolis Indiana

PERFORMANCE INCREASE I've embarked on a program to restore my 1979 MGB to its pre-'74 glory days and thought I'd share some of the early results. My biggest accomplishment was to have a rebuilt, late '60s MGB engine installed in place of the stock engine. This involved removing the catalytic converter, reverting to a points&condenser distributor (I'd already had to replace the electric ignition once on my stock engine at a cost of \$160 plus labor!), removing all smog equipment except the PCV valve, and putting in a hand choke. The job (which, of course, included restoring a dual carb setup) was expertly done by a firm called "MG and Triumph Only" in Sylmar, CA, and cost about \$1,100 including putting in a new clutch.

During the first few thousand miles of breaking-in the rebuilt engine, the performance increase was definitely noticeable, but I had my reservations about having spent so much. But after about 3,000 on the engine, I believe it was a good idea. The engine is running stronger than ever -- a lot quicker than the original -- and it now sounds like a real MG engine. I also have a Monsa free-flow exhaust which seems to help, but the exhaust pipe seems to be of poor quality as it is deteriorating from the exhaust.

Worth noting on the performance increase is that while Road and Track tests the MGB at 0-60 in 13.9 seconds (not particularly blazing),

I would estimate my rebuilt engine brings that time down to a respectable 10 or 11 seconds (in the Mazda RX-7 range for comparison's sake) While \$1,000 is a lot to pay for three seconds, the MGB doesn't lug in higher gears or over-drive because of the twenty or so extra horsepower I get. One thing that has remained constant is my gas mileage (25 highway/19 city), probably because I take advantage of the extra HP and drive fast.

Michael Kurtz #81-2382
Los Angeles California

SEAT BELTS I am a new member of the AMGBA and recently received my second quarterly magazine. I noted with interest the letter from Peter Oaten of Milford CT concerning seat belts and the NHTSA.

As it turns out, I have a distinct interest in promoting increased safety belt use by American drivers (and MG owners!), as I am NHTSA's Director of Public Affairs and Consumer Participation. In this office I am in charge of a nationwide campaign to achieve increased use of automobile safety belts.

Please keep me in mind should you need any information that this agency might have. As an AMGBA member, and also as head of consumer affairs, I would be happy to help out.

Edmund Pinto
NHTSA
Washington DC

GREASE REMOVER I've found that the new Prestone Grease Eater is the best grease remover available to the common mechanic. It is much better than the product from STP, and is quite potent. It is easily controlled, due to its narrow stream of spray, but caution should be exercised, as this product can remove paint too!!

Jim Ireland #77-327
Sacramento California

V8 CONVERSIONS In comment to the letter by Frank Graham (Spring Quarterly), he states that a 1977 or later body shell would be most appropriate for the MGB-GT V8 conversion. A GT body shell from those years is still available through the Cowley Parts House. The remaining parts, including a factory specification V8 engine, are available from John Hill's MGB Center, Reddich, England. With these two contacts you can have a "factory" MGB/GT V8.

Steve Later #81-1870
Wethersfield Connecticut

PETROL TANK REPAIR Steve Boslet asked about repair procedure on gas tanks. If the tank is too badly rusted, stainless steel tanks are now available from Quiverfield Ltd, Lilac Cottage, Main Road, Nether Broughton, Leicestershire, ENGLAND; and they cost about £70-00.

Jim Ireland #77-327
Sacramento California

INSTRUMENT DIAGNOSIS My water temp gauge was reading "C" permanently, but I knew the cooling system was working properly since I had recently overhauled the dreaded Stromberg with its fiddley water-heated automatic choke. A simple test, taught to me by a local auto electrician, to determine whether the sensing element in the engine block was at fault, is

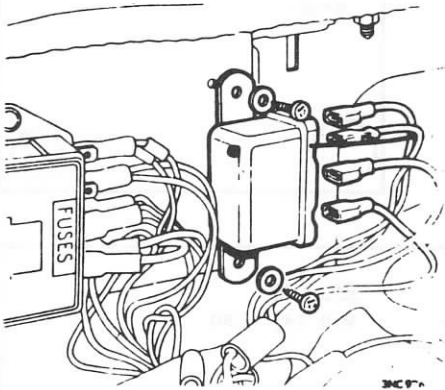
(UPKEEP AND PERFORMANCE HINTS CON'T)

this can result in a blown fuse. It is possible to disconnect one of the fans, if it is one fan which has bound up. Only in the hottest weather are both fans really needed. NOTE -- if one fan is disconnected, best to remove it and have it repaired in case the other fan begins to pack up also!

WATER VALVE When the water valve begins to leak (located above the distributor), the antifreeze solution will drip directly onto the distributor cap. This will often result in misfiring -- and should be corrected, that is the valve replaced, before the misfiring eventually causes the cap to "track" requiring a distributor cap replacement. If the valve begins to drip, removing the radiator cap to relieve pressure on the cooling system is an effective way to slow that leak.

REAR BRAKE CYLINDERS: There are two varieties of rear brake cylinders. The most common size (larger piston diameter) is Lockheed 4241-575. The locating pin on the cylinder indicates the proper cylinder and makes fitting an incorrect cylinder obvious.

STARTING FAILURES On the MGBs with the starter motor relay (1971 and newer), a loose connection at the fourth fuse (brown/purple) in the fusebox can cause the relay not to work.



FRONT SHOCK REPLACEMENT When replacing the front shocks on the MGB, it is advised that the two rubber bushings at the end of the shock arms be replaced also. You'll need two 88G274 bushings.

STROMBERG DIAPHRAM FAILURE When the diaphragm in the Stromberg (MGB and Midget 1975-1980) becomes perforated, the piston cannot rise enough to allow air to pass through the carb -- resulting in a top speed of 10-20 MPH. The replacement diaphragm for the MGB is BLM 225480.

PCV LINES The right angle hose used in the PCV system (1968-1974) fitted between the front tappet breather and the plastic "Y" piece can be replaced with a Goodyear 63192 hose.

ARMREST CATCH The catch in the armrest of the MGB is available as a 90 346 140 unit.

CLUTCH HYDRAULIC OVERHAUL The clutch hydraulics should be rebuilt when the clutch disc/cover/release bearing are replaced. DO NOT hone the master cylinder bore.

- 17H 7985 Master cyl pushrod
- KL 71534 M/C kit (Lockheed)
- KL 49301 Slave hose (Lockheed)
- KL 71525 Slave kit (Lockheed)
- 5/16 x 3/4 clevis pin two required

BRAKE AND CLUTCH RETURN SPRINGS These are available as BHH 2387 and are fitted from the pedal to the firewall, above the feet.

TURN SIGNAL SWITCH Replacing the turn signal switch on the 1977-1980 MGBs requires that the steering wheel be removed. Ease out the "MG" medallion in the center of the wheel, back off the 1" nut holding the wheel to the steering column, and leave the nut just below the face of the end of the column. While one person pulls on the wheel with hands and knees, another strikes the column with a hammer -- BE CAREFUL! Don't hit the steering wheel -- and don't hit the driver on the hammer's backswing. Once the wheel is loosened, align the wheel directly ahead, remove the nut, remove the wheel, replace the switch (LUCAS 30897), and replace the wheel -- note the "tags" on the back side of the wheel. Tighten the nut securely!

TURN/PARK/STOP BULBS These bulbs are interchangeable with American variety bulbs, an 1156 working for the single filament (turn signal) and an 1157 working for front and stop/park.

RING GEAR REPLACEMENT A new ring gear must be heated so that it expands to fit around the flywheel (MGB 1963-1967). Overheating the gear can destroy the temper of the steel. Heat the gear until it will just melt electrical solder, and it will be hot enough to fit.

MGB FRONT WHEEL BEARINGS These bearings are the same as Volkswagen bearings. The bearings are available as:
211 405 645
211 405 625

CLUTCH FORK WOBBLE The fork holding the clutch release bearing begins to wobble after miles of service. Replace the bolt and bushing to gain a steady fork. To replace the bushing, place the new bushing on the new bolt, slide the exposed, shouldered portion of the bolt into the old bushing in the fork, support the fork in a vise, and drive the new bearing in by striking the bolt with a hammer. The new bushing will be driven into place, and the old bushing driven out.

- 11G 3196 bolt
- 11G 3195 bushing

MIDGET FRONT WHEEL BEARINGS The roller bearings in the Midget front hub assembly can be replaced with taper roller bearings! Leave the spacer out of the assembly, and tighten the nut until the hub spins without dragging. Use a NEW split pin!

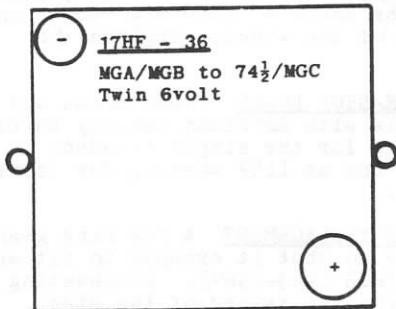
- 05185/05066 Timken bearings
- 07204/07097 " "

MG BATTERY APPLICATIONS 1950-1980

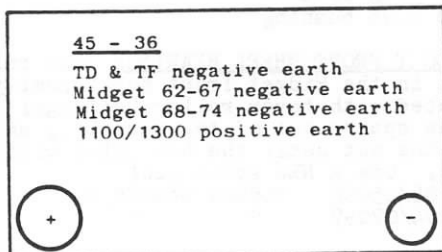
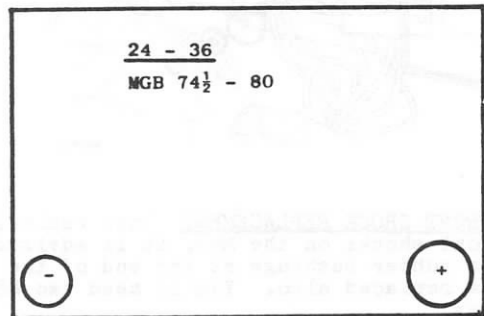
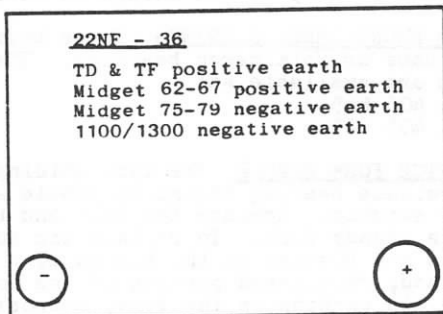
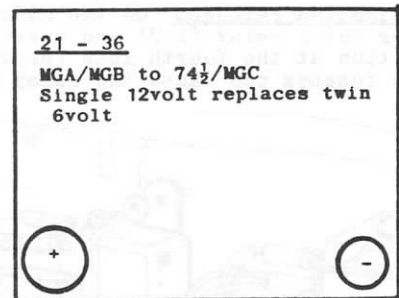
by John H Twist

INTERSTATE BATTERY CODE (1)	COLD CRANKING AMPS (2)	RESERVE CAPACITY (3)	LENGTH	DIMENSIONS	
				WIDTH	HEIGHT
17HF - 36 (6volt)	400	115	7 3/16	6 3/4	9
22NF - 36	400	86	9 7/16	6 13/16	8 1/4
45 - 36	330	68	9 7/16	5 1/2	9
21 - 36	455	78	8 3/16	6 13/16	8 3/4
24 - 36	400	90	10 1/4	6 13/16	8 5/8

- NOTES:**
- (1) This code is comprised of the industry standard code (first set of digits) and the length of guarantee (second set -- all 36 months in these examples).
 - (2) The output of the battery for 30 seconds at 0° F.
 - (3) Minutes of 25 amp output at 80° F.



YEAR/MODEL APPLICATION



This data has been provided by Interstate Battery Systems of Dallas, Texas; and applications are from University Motors, Grand Rapids, Michigan.

For your closest Interstate dealer: dial 1-800-331-1000

Questions regarding MG application can be answered by University Motors 616 245 2141

MGB PRODUCTION STATISTICS

by Caroline Robinson, University Motors

MODEL YEAR	FIRST MONTH BUILT	ROADSTER (N) GT (D)	CAR NUMBER (VIN)	ENGINE NUMBER	BODY NUMBER	
1963	7/62	N	GHN 3L 000101	18G U H 00101	MGB 000101	MARK I
1964	8/63	N	GHN 3L 019586	18G U H (con't) 18GA U H 00101 *1	MGB (con't)	
1965	10/64	N	GHN 3L 048766	18GB U H 00101	MGB (con't)	
1966	N/A	N	N/A *2	18GB U H (con't)	MGB (con't)	
		D	GHD 3L 071933		GBD 000101	
1967	N/A	N	N/A	18GB U H (con't)	MGB (con't)	
		D	N/A		GBD (con't)	
1968	10/67	N	GHN 4U 138801	18GF WEH 00101 *3	MGBU 000101	MARK II
		D	GHD 4U 139824		GBUD 500101	
1969	10/68	N	GHN 4U 158371	18GH WEH 00101	MGBU (con't)	
		D	GHD 4U 158233		GBUD (con't)	
1970	9/69	N	GHN 5UA 187213	18GH WEH (con't)	MGBU (con't)	
		D	GHD 5UA 187841		GBUD (con't)	
1971	9/70	N	GHN 5UB 219021	18GK WEH 00101	MGBU 300101	
		D	GHD 5UB 219355		GBUD (con't)	
1972	9/71	N	GHN 5UC 258001	18V 584Z L00101 18V 585Z L00101 OD	MGBU 400101	
		D	GHD 5UC 258004		GBUD 620101	
1973	8/72	N	GHN 5UD 294251	18V 672Z L00101 18V 673Z L00101 OD	MGBU 500101	
		D	GHD 5UD 296001		GBUD 720101	
1974	8/73	N	GHN 5UE 328101	18V 672Z L(con't) 18V 673Z L(con't) OD	MGBU 600101	
		D	GHD 5UE 328801		GBUD 820101	
1974½*4	9/74	N	GHN 5UE 360301	18V 836Z L00101 18V 837Z L00101 OD	GU23T 000101	MARK III
		D	GHD 5UE 361001*5		GU23D 000101	
1975	1/75	N	GHN 5UF 367901	18V 797AEL 00101 18V 798AEL 00101 OD	GU23T (con't)	
1976	9/75	N	GHN 5UG 386601	18V 801AEL 00101 18V 802AEL 00101 OD	GU23T 050101	
1977	6/76	N	GHN 5UH 410001	18V 883AEL 00101 18V 884AEL 00101 OD 18V 890AEL 00101*6 18V 891AEL 00101 OD*6	GU23T 760000	
1978	9/77	N	GHN 5UJ 447001	As 1977 (con't)	GU23T 860000	
1979	6/78	N	GHN 5UL 471001	As 1978 (con't)	GU23T 960000	
1980	6/79	N	GVVDJ2AG 501001	As 1979 (con't)	GU23T (con't)	

NOTES

- #1 Engine 18GAUH00101 introduced at car number 31021.
- #2 Strap petrol tank discontinued at 56743, recessed door handles discontinued at 57986; both several thousand cars before the 1966 model year.
- #3 Overdrive for engines 18GF, 18GH, 18GK denoted by "R" before "WE".
- #4 1974½ Model Year introduced the rubber bumpers and raised ride height.

#5 GT model discontinued to US market at end of 1974½.

#6 California specification engine

"OD" indicates Overdrive.

"N/A" indicates Not Available

"U" in both VIN and Body Number indicates "US" market, "L" in earlier numbers indicates Left Hand Drive.

QUESTIONS? ERRORS to: University Motors, 614 Eastern SE, Grand Rapids, MI 49503

M G B C O L O U R C O D E S A N D A P P L I C A T I O N S (1963-1980)

By Caroline Robinson, University Motors

<u>COLOUR</u>	<u>DESCRIPTION</u>	<u>FACTORY CODE</u>	<u>AFTERMARKET CODES</u>	<u>APPLICATION</u>	<u>YEARS</u>
BLACK	Black	BK 1	DITZ 9000 DUP 99	Roadster GT	1963-80
OLD ENGLISH WHITE	Creamy	WT 3	RM BM149[1] RM BM150[2] DITZ 8177 DUP 8207	Roadster GT	1963-67
SNOWBERRY WHITE	Gray White	WT 4	RM BM151	Roadster GT	1968-69
GLACIER WHITE	Blue White	BLVC 59	RM BM155 DITZ 8845[3] 90074[4] DUP 8579	Roadster GT	1970-77
LEYLAND WHITE	Refrigerator White	BLVC243	DITZ90106 DUP H7896	Roadster	1978-80
GRAMPIAN GRAY	Dark Gray	GR 12	RM BM018	GT	1967-69
CHELSEA GRAY	Light Gray	GR 15	RM BM008 DITZ31733 DUP 8198	Roadster	1963-65
MIRAGE	Mauve	BLVC 11	RM BM176 DITZ33135 DUP 43277	Roadster GT	1974
SANDY BEIGE	Medium Gray Brown	BG 15	RM BM146 DITZ22213	GT	1965-68
GOLDEN BEIGE	Medium Brown	BG 19	RM BM140	GT	1967-68
BEDOUIIN	Cream Beige	BLVC 4	RM BM163	Roadster GT	1971
RUSSET BROWN	Dark Brown	BLVC205	DITZ24378 DUP 44848	Roadster	1978-80
PALE PRIMROSE	Light Yellow	YL 12	RM BM131 DITZ81499	Roadster GT	1965-70
BRONZE YELLOW	Dark Yellow	BLVC 15	RM BM157 DITZ81827 DUP 8581	Roadster GT	1970-73
HARVEST GOLD	Muddy Yellow	BLVC 19	RM BM170 DITZ82018 DUP 30013	Roadster GT	1972-76
SANDGLOW	Caramel	BLVC 63	DITZ24300 DUP 44565	Roadster GT	1976-77
BRACKEN	Muddy Orange	BLVC 93	RM BM187 DITZ60760 DUP 43275	Roadster GT	1974-76
CHARTREUSE	Pale Yellow	BLVC167	DITZ45189 DUP 44629	Roadster	1976-77
INCA YELLOW	Sun Yellow	BLVC207	DITZ83209 DUP 44880	Roadster	1978-79

NOTES

[1] 1963 only [3] Thru 1976
[2] 1964 onwards [4] 1977 only

QUESTIONS/ERRORS/ADDITIONS:

University Motors
614 Eastern SE, Grand Rapids, MI 49503
PH (616) 245 2141

MGB COLOURS (continued)

<u>COLOUR</u>	<u>DESCRIPTION</u>	<u>FACTORY CODE</u>	<u>AFTERMARKET CODES</u>	<u>APPLICATION</u>	<u>YEARS</u>
SNAP DRAGON	Sun Yellow	BLVC235	DITZ 82462 DUP 45475	Roadster	1980
DAMASK RED	Maroon	RD 5 BLVC 99	RM BM112R DITZ 71064[3] 72261[4] DUP 8819	Roadster GT	1973-77
TARTAN RED	Bright Red	RD 9	RM BM124R DITZ 71062[1] 71416[2] DUP 8204	Roadster GT	1963-69
BLAZE RED	Orange	BLVC16	RM BM162 DITZ 60637 DUP 30007	Roadster GT	1971-75
FLAME RED	Red	BLVC 61	RM BM160R DITZ 71861 DUP 8571	Roadster GT	1970-72
BLACK TULIP	Dark Purple	BLVC 23	RM BM168M DITZ 14417 DUP 43274	Roadster GT	1973
ACONITE	Dark Purple	BLVC 95	RM BM181D DITZ 14728 DUP 43274	Roadster GT	1974-75
VERMILLION RED	Orange Red	BLVC118	DITZ 60932 DUP 45471	Roadster	1978-80
CARMINE RED	Maroon Red	BLVC209	DITZ 72065 DUP 43019	Roadster	1978-80
BRITISH RACING GREEN	Medium Dark Green	GN 25	RM BM079 DITZ 43342 DUP 8193	Roadster GT	1964-70
BRITISH RACING GREEN	Medium Dark Yellow Green	GN 29	RM BM078 DUP 8194	Roadster GT	1964-70
GREEN MALLARD	Dark Green	BLVC 22	RM BM169D DITZ 44638 DUP 30014	Roadster GT	1972-73
NEW RACING GREEN	Very Dark Green	BLVC 25	RM BM167 DITZ 44446 DUP 30012	Roadster GT	1971
AQUA	Light Turquoise	BLVC 60	RM BM159 DITZ 14075 DUP 8821	Roadster GT	1972
LIMEFLOWER	Dark Lime Green	BLVC 20	RM BM166 DITZ 44448 DUP 30010	Roadster GT	1973
CITRON	Chartreuse	BLVC 73	RM BM177 DITZ 44947 DUP 43276	Roadster GT	1974-76
TUNDRA	Olive Drab	BLVC 94	RM BM178 DITZ 44978 DUP 43278	Roadster GT	1974-76
BROOKLANDS GREEN	Medium Green	BLVC169	DITZ 45190 DUP 44630	Roadster	1976-80

NOTES:

[1] 1963 only [3] Thru 1976
[2] 1964 onwards [4] 1977 only

MGB COLOURS (continued)

<u>COLOUR</u>	<u>DESCRIPTION</u>	<u>FACTORY CODE</u>	<u>AFTERMARKET CODES</u>	<u>APPLICATION</u>	<u>YEARS</u>
MINERAL BLUE	Dark Blue	BU 9	RM BM060 DITZ 12115 DUP 8182	Roadster GT	1965-69
IRIS BLUE	Medium Light Blue	BU 12	RM BM054 DITZ 12235 DUP 8184	Roadster	1963-65
BLUE ROYALE	Dark Blue	BU 38	RM BM039 DITZ 12635	Roadster GT	1970
TEAL BLUE	Medium Dark Blue	BLVC 18	RM BM164 DITZ 14244 DUP 30006	Roadster GT	1971-1974
TAHITI BLUE	Bright Blue	BLVC 65	DITZ 14866[3] 15096[4]	Roadster	1975-77
PAGEANT BLUE	Brighter Blue	BLVC224	DITZ 15231 DUP45473AH	Roadster	1978-80

NOTES

[3] Thru 1976
[4] 1977 only

PAINT MANUFACTURER ABBREVIATIONS

DITZ Ditzler
DUP Dupont
RM Rinshed Mason

OTHER COMPONENTS

Engine 18G to 18V	Deep Maroon	RM E3123M
Engine 18V	Black	
Cooling Fan & Pulley	Yellow	Duplicolor T-211
Wheels	"Hammered" silver	DITZ DAR2593 Duplicolor FM-149
Washer Bottle	"Tudor Blue"	Krylon 3107

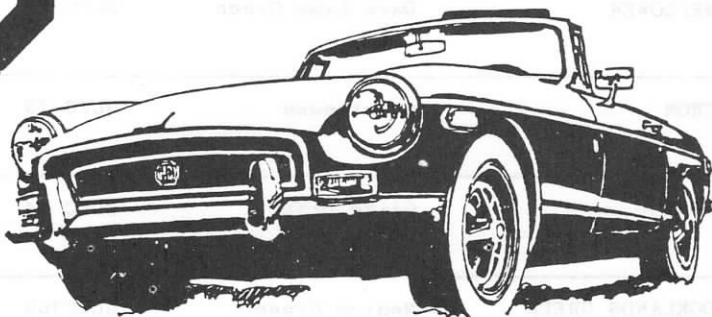


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QUESTIONS & ANSWERS

Q: I have a 1976 Midget 1500 with 38,000 miles which I purchased used. The oil pressure registers at 60 psi when the engine is cold, but gradually drops to 20-30 psi running hot. But -- it shows only 3 psi at a hot idle. I've had the gauge checked to find that while it reads 3 psi, the mechanic's gauge reads 18 psi. When I change the oil and filter (20W50) the readings are a bit higher for a while. Is the gauge really the problem, or does this engine run at this very low pressure. What should I do?

Edward Neumann 80-1757
Morgantown West Virginia

A: Edward -- The 1500 Midget engines run at a much lower pressure than their earlier counterparts. Those 1275 engines run at about 80 psi and have a hot idle not less than 40 psi. The oil pump is probably the cause of your low oil pressure -- altho if, in fact, the actual pressure is about 20 psi, that's not much different from most 1500's. The oil pump seems very small for the engine, but maybe it's just that we're not used to seeing such low idle pressures.

You can always change the gauge, but that's a real hassle. You might simply accept that it reads low and leave it at that.

You'll note that the later Midgets (1977-1979) dropped the oil pressure gauge in favor of an oil light -- perhaps because they were receiving so many complaints about the seemingly low oil pressures???

Q: I have converted my 1975 MGB to dual carbs, higher compression pistons, removed the smog equipment, have an Auto-world header with a complete ANSA exhaust system. But I haven't rid the engine of the "sewing machine" sound at high revs. What can I do? Do I need another exhaust, or does the cooling fan cause the noise?

Pete Cosmides #76-069
Lynbrook New York

A: Pete -- To determine the origin of the "sing", remove the fan belt and run the "B" quickly up and down the block -- you shouldn't have an overheating problem for a couple of minutes running. If that eliminates the sound, then change the engine fan. Since that same "sing" emanates from the 1977-1980 MGB's, I doubt if it is simply the cooling fan. My guess is that it lies with the combination of the single roller timing chain and the front crank pulley -- an expensive project to replace with the older double roller chain and smaller pulley. Perhaps a member could write in and explain how he's been able to eliminate this dreadful whining sing.

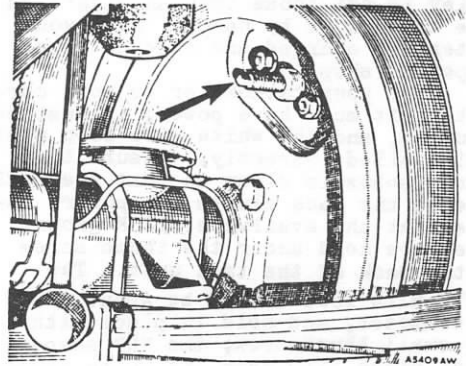
Q: I have a 1971 MGB/GT. My problem is soft brakes. I have replaced the front disc pads, rear shoes, rebuilt the rear cylinders, replaced the master cylinder, and replaced the "H" component (on the left inner fender with the warning switch). I've bled the system twice normally and twice with a power bleeder. I still have "soft" brakes. One or two pumps bring the pedal up and it holds, so it appears that there is not a leak in the line -- and I can sit on a hill and the brakes hold with no problem. What's left to do?

Ken Bray #81-2155
Bay St Louis Missouri

A: Ken -- Several possibilities occur to me. First is the rear brake adjustment.

1) The rear brakes are adjusted with the 1/4" square headed adjuster at the top of the rear backing plates. To ensure proper adjustments, the handbrake must be completely released. If the handbrake is frozen -- either the handle or the cable, disconnect the handbrake cable from the left rear. Then pull the right cable from the swing assembly on the diff, towards the right backing plate. Then tie up the left cable with heavy mechanic's wire so it won't drag.

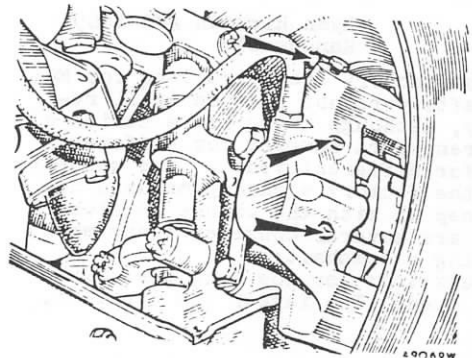
If the handbrake does work, then loosen the adjuster nut at the base of the handbrake handle (under the chassis) by holding the cable with vise-grips and unscrewing the 9/16" brass nut with a deep socket or wrench.



2) Backthe adjuster all the way out and

grease the threads of the adjuster with white lithium grease. Then tighten the adjuster until it will get no tighter. Now back the adjuster off, quarter turn by quarter turn, until the drum turns freely. There usually isn't more than two quarter turns between completely locked and completely free.

The second possibility is that the front brake calipers are reversed. ENSURE that the bleeders are at the TOP.



THE TECHNICAL SECTION (continued)

Q: My 1967 MGB/GT is still wired positive earth. A friend told me he could not jump start my car because of the positive earth. Is this true? If not, how do you do it? Also, my electric tach does not work well; does it have to do with the shape of the white wire loop on the rear of the tach?

James Johnson
Pinole California

A: James -- You can get a jump from any 12 volt (modern) car, positive or negative ground. To jump your "B", connect the RED POSITIVE jumper cable to your engine block. Connect the BLACK NEGATIVE jumper cable to your starter solenoid (to the post with the spade terminals and the brown wires). Remember when jumping, POSITIVE to POSITIVE, NEGATIVE to NEGATIVE.

On the other hand, your "B" should not have to be jumped -- there must be something wrong. You might remove the battery clamps, clean the clamps and battery posts. Remove the earth (ground) strap from the chassis, clean the strap and the chassis with sandpaper, and use a new 5/16" x 3/4" fine bolt and nut with a new lockwasher. Remove the engine ground strap from it's bolt on the left front engine mount and clean it in the same way. Ensure that the generator pulley is not loose (you shouldn't be able to turn it by hand). Have your batteries charged and checked by a competent shop.

For your tachometer to work correctly, it must have power, it must be grounded, and the white wire loop must be installed correctly. Ensure that your fusebox is clean so that the GREEN wire to the tach always has power. Ensure that the available BLACK ground wires are held under the thumb screw on the back of the tach unit. The WHITE wire loop should be about 3/8" in diameter, and held in place with the small thumbscrew; the "U" shaped metal piece fits over the white plastic block, and should make contact with the slightly exposed prongs. If the tach still works erratically, you may need a replacement unit.

Q: I need a camshaft for my 1973 MGB. Would a stock cam from another year work in my "B", and give me added torque and performance in the 2,000 to 5,500 rpm range. Or should I purchase a reground cam (DOBI with a 272 duration and .441 lift, or ISKY with a 284 duration and a .450 lift)?

Lynn Hickman #80-1469
Hamden CT

A: The factory specifications for MGB camshafts were not changed until recently, although there are a series of different part numbers for different cams for different years. One suspects that the factory workshop manuals did not keep up with the change in specs. There are several considerations when choosing a camshaft:

Duration: or how long the valve stays open. The larger the duration,

the better the cam will perform at higher rpms. The larger the duration, the larger the overlap (both valves open at the same time) and the worse the car runs at idle and low rpms. The factory cams usually have a duration of 252°.

Lift: or how far the valve opens. The larger the lift, the easier it is for the gases to enter and exit the cylinder. The larger the lift, the faster the cam is worn. The larger the lift, the sooner the valves "float" unless stiffer valve springs are fitted. Factory cams give a valve lift of .365".

New or Reground? The price of a new factory cam is about \$175. Be certain to determine whether the cam you send to the regrinder will be suitable for his regrinding standards. Sometimes a "core charge" is involved, and the reground cam can cost more than the factory cam. Sometimes not.

I run an ISKY T-32 in my MGA, and it's wonderful.

Q: I am considering an electric fan for my MGB so that there's not such a drag and horsepower loss on the engine. Have you heard any good or bad comments about them?

Tom Trainor #80-1607
Martinez Georgia

A: Tom -- I have heard comments both good and bad about the change to electric fans. Of course, if you're driving a fan, it requires power, and that power must come from the engine -- whether it's through a mechanical drive (as you now have) or through a higher load on the alternator. The advantage of the electric fan is that it doesn't run all the time, but when it is running, the horsepower consumed by the alternator will rise. That places an additional strain on the alternator, and you might consider changing the present 16ACR unit to an 18ACR unit. You will probably encounter problems mounting the heat sensing device (perhaps having to solder a fitting to the radiator). If you do connect the fan, be certain to wire it to the GREEN side of the WHITE/GREEN fuse -- so that it is both fused, and runs only when the ignition is on.

Q: I have a 1977 MGB roadster with overdrive. This seems a waste since the speed limit is 55mph. Can I change my differential ratio to afford faster acceleration?

Art Foley
Olympia Washington

A: Art -- Your present 3.9 diff gives you 18mph per 1000rpm. Two other options are available: 9/38 (4.2) which gives you 16.7mph per 1000 rpms; and 9/41 (4.55) which gives you 15.5 mph per 1000 rpm. You can expect an expense of about 12 shop hours plus the cost of the CWP (crown wheel and pinion).

THE TECHNICAL SECTION (continued)

Q: I've owned a 1974 MGB since 1979 and had to disconnect the oil cooler two summers ago, as it was leaking. I replaced it with a bypass hose. Will this cause any problems?

John Sweeney
Schaumburg Illinois

A: The oil cooler was dropped from the 1975 and newer models as an economy move-- the factory's bookkeeper's economy, not yours! The cooler the oil in the engine, the better its lubricating capabilities (to a point). I would suggest replacing the cooler when you can.

Q: I have a very early MGB roadster, GHN 3L/235. What can I do to stop the oil drip off the back of my engine? We just went through the engine completely with new gaskets, seals, etc, but of course, there's no seal at the rear main. I don't remember the drip when the car was newer, but in the last few years it has become progressively worse.

Larry Standifer #79-848
Eugene Oregon

A: Larry -- Early MGB is right!! The sequence began at 101. If it makes you feel any better, you're not alone with the oil leak. Almost all of the MGA's leak, and the early MGB's (3 main engine) have the same rear slinger design as the MGA's. The rear slinger works in the following way:

Oil is pushed out of the rear bearing to the front and to the rear. That oil escaping from the front falls into the sump. That oil escaping to the rear first meets a small wall on the crankshaft which allows most of the oil to run back into the sump through two small holes in the rear main cap. That oil which gets over the "wall" is screwed back towards the engine by means of a thread cut into the crankshaft. That screw thread rides several thousandths of an inch within a hole formed by the block and the rear main cap. The solution to your problem probably lies in that slinger assembly, which means that the engine must come out again!

The larger the clearance between the crankshaft and the rear main bearing, the more oil will be spilled out towards the slinger. You might try a new bearing at the rear main -- or you might have the crankshaft cut to a smaller sized bearing, but with a closer tolerance between the main journal and the under-sized bearing.

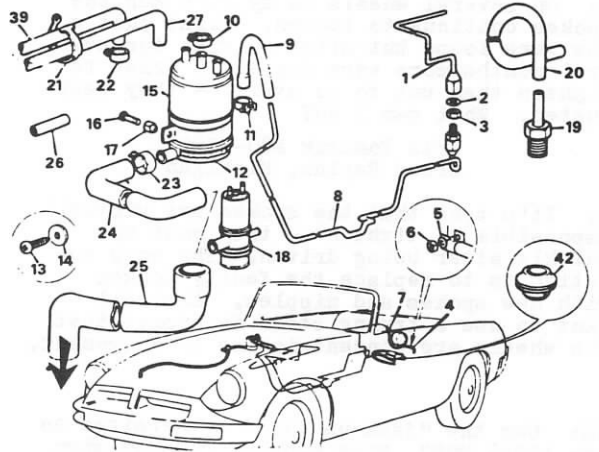
When replacing the rear main cap to the block, use a gasket compound (I prefer Dow/Corning silicone gasket compound), to insure that the seam between the block and cap, at the rear face of the block, is sealed. And, of course, you should insure that the drain holes in the rear main cap are clean.

PRIOR to removing the engine, insure that the Smith's PCV valve (the mushroom shaped apparatus in the center of the intake manifold) is working correctly. If the inside of the engine pressurizes, oil is blown out everywhere.

Q: I have a 1974 MGB and this is my problem: The MGB starts but the fuel pump continues pumping fuel which runs out of the anti run on valve and the air vent pipe. The B then stalls out. Any suggestions?

M A Antosiak
Chicago Illinois

A: Mike --- The problem you are having is probably a sticking needle and seat in one of the carbs. The needle and seat is sticking open because dirt is caught in it -- or because it's old and worn. The best plan is to replace both the needles and seats in the carbs. You'll need two AUD 9096 (about \$4 each) and six AEC 2083 gaskets (about 80¢ each).

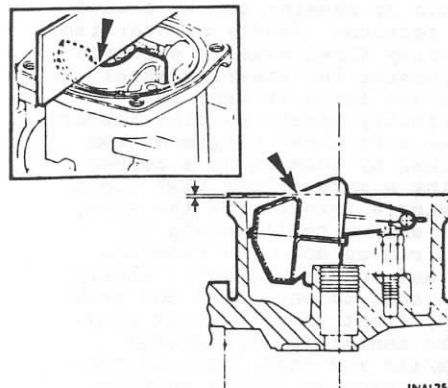


Remove the carbs from the intake manifold along with the spacer blocks and the heat shield. Clean off the old gaskets from the surfaces, and replace the new gaskets, coated on each side with a liberal amount of multi-purpose grease.

Remove the base of the carbs, remove the jet securing screw, remove the float, and remove the needle and seat. Ensure that the float is adjusted properly when you begin to reassemble the carb (see illustration).

Also, change your oil and filter. Not only was the gasoline entering the charcoal canister through the overflow line, but some of it was being scraped into the sump by the oil rings -- you may note that now there's more "oil" in the sump than before.

It's also common to find that the heat shield is cracked at the rear. If so, remove the asbestos, wire brush the heat shield along the crack, and braze the metal together again. BE CAREFUL -- DO NOT braze where the gaskets will be placed -- or you'll never get rid of an induction leak!!



THE TECHNICAL SECTION (continued)

Q: What paint can I use for my rostyle wheels -- the silver?

Dr Walter Lingo #80-1609
Haslett, Michigan

A: Use a 1975 Ford Granada Silver. This should provide a close match. The silver is wonderful for wire wheels as it's not shiny as spray aluminum or spray chrome. It's marketed by Duplicolor in small spray cans (FM 149).

Q: On several wheels on my 1979 MGB the spokes continue to loosen. First just a few were loose but after driving for several months more were loose. I tried to tighten them but to no avail -- they were rusted. What can I do?

Iris Tomasik #80-1550
Grand Rapids, Michigan

A: It's true that the spokes are virtually impossible to tighten -- they rust up quickly after being driven. The only solution is to replace the faulty spokes with new spokes and nipples. You will want to use a truing stand to ensure that the wheels are concentric and in alignment.

Q: Can the "jack-up tube" be repaired on my 1974½ MGB? Mine popped (rusted) when I attempted to elevate my car.

Dr Walter Lingo #80-1609
Haslett, Michigan

A: Although the tube can be repaired, I would suggest purchasing a good scissors jack and use that in place of the factory jack -- which, even when new, is creepy at best. Jack a corner of the MGB at a time.

Q: Both my MGB's (1968 and 1974½) have a very definite and irritating (unsafe?) vibration and shaking at 75-80mph. The 1968 has had the front end redone (alignment, tires balanced, new shocks, etc.). The 1974½ I've owned for one year and haven't done anything in that department. The common factor is that they have Semperit M401 radial tires. Do you have any suggestions or advice?

Don Holmes #76-164
Quilcene, Washington

A: The vibration or shaking can be caused by a number of factors: faulty or oversize tires -- the faulty tires usually evidence themselves by causing the steering wheel to pulsate back and forth at very low speeds (5 mph); faulty wheels -- disc wheels rarely go bad -- wire wheel alignment can be grossly checked by jacking up a corner of the B, holding a screwdriver VERY close to the rim, having a friend spin the tire, and watching to ensure that there's no movement of the rim up and down (concentricity) or in and out (alignment); wheel/tire balance -- spin balancing is the best type of balance; front wheel bearing play (there should be none); faulty shocks/kingspins/A Arms/tie rod ends; lack of oil in the rack and pinion or faulty adjustment of the damper.

If the U joints are faulty or the drive shaft is not properly aligned the entire car will shake at higher speeds.

Q: I have had a history of electrical problems with my 1976 Midget. In Feb 80 I had to replace the battery, starter, and alternator. It ran well after that for a while. Then I lost the lights -- and now it won't even turn over. What should I check to remedy the situation?

Fred Stein
San Antonio Texas

A: Fred -- A quarter of all electrical problems come from faulty battery/earth connections. If you have the original Lucas terminals (cap style), replace them with American style clamps (fitted around the post). If you have American style clamps that are over a year old, replace them again. If it appears that the length of the battery cables will be too short if you cut the old terminals off, then melt them off using a propane torch. Of course, the battery can be serviced easily only after the bonnet is removed!

Clean the battery and battery tray with a solution of baking soda and water. Clean the terminals with a post cleaner and use "post pads" under the new terminals. Ensure that the battery is tied down securely. The plates in the battery are really not "plates" at all, but more like coarsely woven fabric. If the battery slides around and bangs against the heater and firewall, its life is greatly shortened.

Remove the earth cable from the right side of the firewall, clean the end of the cable and the firewall with coarse sandpaper, and replace the bolt (5/16 fine x 3/4") and lock-washer.

Loosen the connections at the starter solenoid (7/16" wrench) found under the fresh air inlet hose for the heater. Reposition the brown wires, and retighten the nuts. Remove the spade terminals from the solenoid and lightly crimp them with pliers.

Ensure that the earth strap between the engine and frame is fitted tightly. You'll find it either at the right front motor mount or at the rear of the gearbox.

Inspect the alternator belt -- if you can move the alternator pulley without the engine pulley turning, the belt is too loose.

If you charge the battery, disconnect the alternator first. The Lucas alternators are not as heavy-duty as their American cousins and they can be ruined by charging or jumping.

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THE TECHNICAL SECTION (continued)

Installing a Group 21 12 Volt Battery in a 1965 MGB

by John Burchard #83-4369

First off I did not want to cut, weld or beat the original battery boxes. I measured the battery box where the battery actually sits. It measured 8" x 7-3/8". The B.C.I. book and as it turns out, the interstate list, show the group 21 battery is 8-3/16" long x 6-13/16" wide. UG! What do I do with the extra 3/16"?

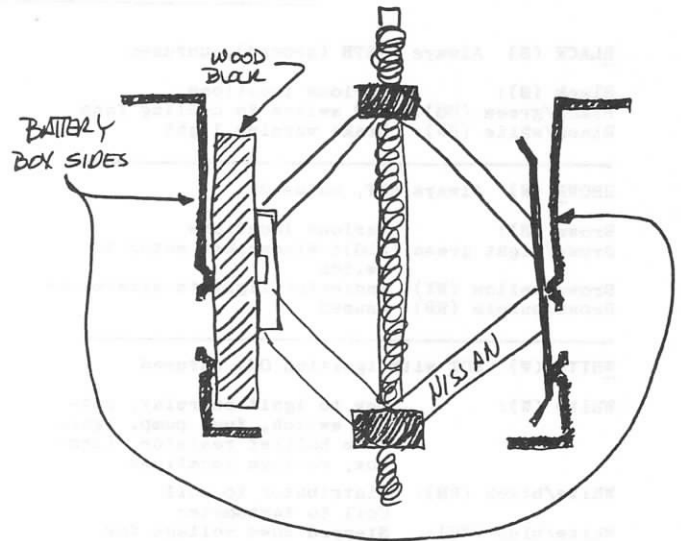
Enter the Sears catalog. They state their group 21 is 8" x 6-3/4" x 8-1/2" high. The old 6 bolters are 9" tall so no problem here. So I went over to Sears and measured the real battery. Waalaa! 8" x 6-3/4" at the top and a bit less at the bottom where the battery actually fits in the box.

I checked Delco and a private label, they all measured 8" x 6-3/4".

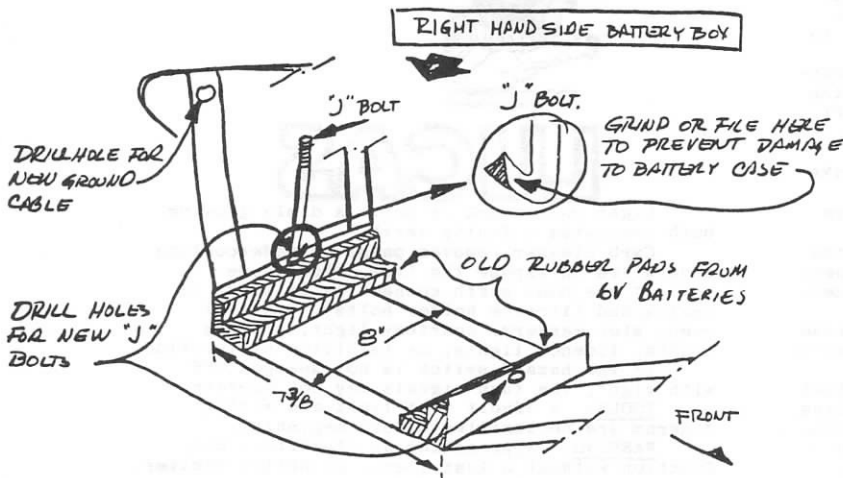
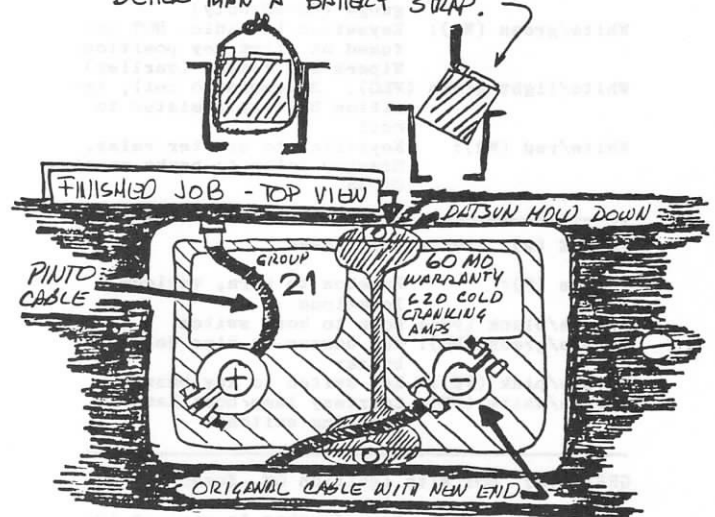
So now I have a high tech, state of the art, heavy-duty battery. OK "Prince of Darkness" I got you, this time, before you got me.

A few notes on doing the job on your MGB with 2 old dead 6 volt batteries.

1. Save and clean up the old rubber pads.
2. Use a Ford Pinto positive cable.
3. Get 2 9" battery hold down "J" bolts at any parts house.
4. A Datsun (Nissan) 210 hold down strap will work fine.
5. This is the time to scrub and paint both battery boxes. You might turn the left hand box in to a oil can storage bin.



7. TO INSTALL THE BATTERY A ROPE WORKS BETTER THAN A BATTERY STRAP.



6. I HAD TO SPREAD THE BOX SIDES ABOUT A 1/4". I USED A DATSUN SCISSOR JACK AND A BLOCK OF WOOD.

Technical Information

If you have any technical information that you believe other readers could benefit from, please send it to "AMGBA Technical Information", P.O. Box 11401, Chicago, IL 60611.

BLACK (B) Always EARTH (ground), unfused

Black (B): Various locations
 Black/green (BG): URP switch to cooling fans
 Black/white (BW): Brake warning light

BROWN (N) Always HOT, unfused

Brown (N): Various locations
 Brown/light green (NLG): Windscreen motor to switch
 Brown/yellow (NY): Indicator light to alternator
 Brown/purple (NP): Unused

WHITE (W) HOT with ignition ON, unfused

White (W): Key to ignition relay, cut-off switch, fuel pump, ignition ballast resistor, fusebox, various locations
 White/black (WB): distributor to coil
 Coil to tachometer
 White/blue (WU): Stepped down voltage for distributor amplifier
 White/brown (WN): ignition switch relay to fusebox, starter solenoid to starter relay, Oil pressure sending unit to gauge (68-69 only)
 White/green (WG): Keyswitch to radio, HOT unfused at first key position; Wipers and heater (earlier)
 White/light green (WLG): Solenoid to coil, ignition ballast resistor to coil
 White/red (WR): Keyswitch to starter relay, Starter relay to brake warning diode.

PURPLE (P) Always HOT, fused

Purple (P): Fusebox to horn, various locations
 Purple/black (PB): Horn to horn switch
 Purple/green (PG): Key buzzer to time delay buzzer
 Purple/pink (PK): Key switch to key buzzer
 Purple/white (PW): Courtesy lamp/boot lamp to earthing switches

GREEN (G) HOT with ignition ON, fused

Green (G): From fusebox to various locations
 Green/black (GB): Fuel tank unit to gauge
 Green/blue (GU): Temp sending unit to gauge
 Green/brown (GN): Reverse lamp switch to reverse lights; heater fan to switch
 Green/orange (GO): Brake pressure switch, hand-brake switch, brake warning diode, brake warning light
 Green/pink (GK): Service interval counter (EGR light)
 Green/purple (GP): Brake light switch to brake lights

Sorting out electrical problems requires a step by step, methodical approach. It is necessary to identify the problem, examine the wiring diagram, then trace the circuit, connection to connection (usually from the HOT side), until the problem is found.

A quarter of all electrical problems arise from faulty battery connections; another quarter from a dirty fusebox.

As a rule: Wires do not fail. The bullet connectors may corrode at the ends of the wires (rarely), or the connections may be loose (common!), but the wires are usually OK. Another rule: Wires begin and end outside the loom. There is no reason to cut through the PVC tape.

It may be easier to visualise the wiring as plumbing: wires as pipes; switches as valves; the battery as pressure; and all "juice" must return to the battery.

Green/red (GR): Left turn signals to switch
 Green/white (GW): Right turn signals to switch
 Green/yellow (GY): Heater to fan switch

RED (R) Parking lights, fused or unfused

Red (R): Fusebox to sidemarkers, parking lights
 Switch to lights (63-69)
 Red/green (RG): Light switch to fusebox, panel rheostat
 Red/light green (RLG): Wiper motor to switch
 Red/white (RW): Panel rheostat to panel lights

BLUE (U) Headlamps, unfused

Blue (U): Light switch to dimmer switch
 Blue/light green (ULG): Wiper motor to switch
 Blue/red (UR): Dimmer switch to low beam
 Blue/white (UW): Dimmer switch to high beam, high beam indicator

LIGHT GREEN (LG) Various applications

Light Green/black (LGB): Washer pump to switch
 Light green/brown (LGN): Flasher to turn signal switch, flasher hazard switch
 Light Green/green (LGG): Voltage stabiliser to fuel/temp gauges
 Light Green/purple (LGP): Hazard switch to hazard warning lamp

SLATE (S) HOT with ignition OFF, fused and unfused

Slate (S): Key to in-line fuse
 Slate/purple (SP): Fuse to anti-run on valve
 Slate/yellow (SY): Anti-run on valve to oil pressure switch

YELLOW (Y) HOT in 3rd/4th, ignition ON, unfused

Yellow (Y): Overdrive switch to relay (63-67); overdrive switch to 3/4 switch (68-76)
 Yellow/brown (YN): Driver's seat belt to time delay buzzer
 Yellow/purple (YP): Time delay buzzer to seat belt warning light; overdrive circuit
 Yellow/red (YR): Overdrive circuit



LUCAS

Light bulbs work or not. A dimly glowing bulb indicates a faulty earth.

Carb cleaner removes paint or undercoating from wires to expose the true colour code.

If the boot earth connection is loose or unattached (licence holder bolts), the fuel pump, side markers, courtesy light, reverse lights, licence lights, or taillights malfunction.

If the hazard switch is not snapped OFF with vigor, the turn signals may not operate.

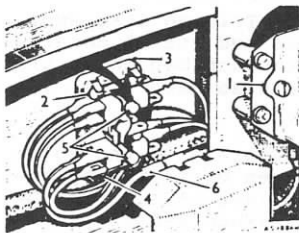
TOOLS: A 12volt test light and wiring diagram are necessities before beginning.

WARNING: Approaching an electrical malfunction without a test light, or helter skelter, is a certain route to madness.

Questions: John H Twist, University Motors Ltd, 614 Eastern Avenue SE, Grand Rapids, Michigan 49503 PH 616 245 2141

UPKEEP AND PERFORMANCE HINTS

FUSEBOX: Both the early (two fuse) and later (four fuse) fuseboxes have the provision for carrying two extra fuses. Carrying those extra fuses can be a great help!



Piranha Ignition: When the ignition amplifier module begins to fail, it will cause the tachometer to "spike" either up or down scale at the same time that the engine misfires. The problem can often be spotted well before total failure occurs. I just spent \$170 to replace the Lucas component on my MGB (less than three years old) but intend to replace that unit - when it fails - with the Piranha.

Patton McGinley #80-1254
Stone Mountain Georgia

Electronic Ignition: To David Rothermel, an option to the Lucas electronic ignition is offered by Huffaker Engineering; I would recommend their catalogue.

Fuel Pumps: A faulty electrical connection at the "hot" white wire or at the black ground wire can cause erratic fuel pump operation. It is best when a problem occurs to: 1) clip off the existing female spade terminal on the white wire and SOLDER a new spade terminal to the wire; 2) make up a new ground wire with SOLDERED ring terminals to fit under one of the six 2BA screws in the fuel pump base at one connection, and under one of the 1/4" bracket mounting studs at the other connection. This ensures the electrical connection!

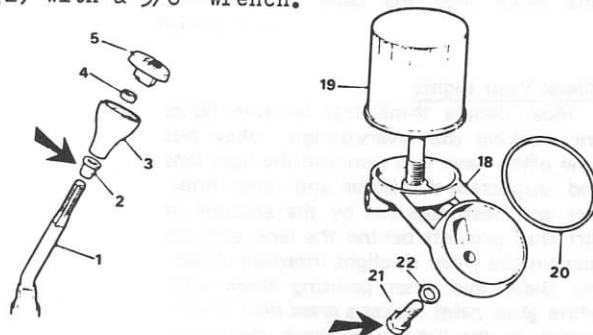
Heater Core: Because of the placement of the heater hoses on the MGB (inlet at the bottom, outlet at the top), sludge can collect in the heater core and prevent a full flow of water through the fins. By reversing the hoses (water valve to the top, return line to the bottom), the heater core will clean itself out after a short period and allow the driver and his passenger a bit more heated comfort.

Bill Marsh
Grand Rapids, Michigan

Hazard Warning Switch: Especially on the MGB's and Midgets 1968 to 1976, the hazard warning switch can cause problems with the turn signals. The hazard switch turns the hazards ON when it is tipped down -- and sometimes it has to be SNAPPED, not gently tipped, to get all four flashers going. When the switch is tipped off, then the turn signals work. Again, it is often necessary to SNAP the switch off.

AFTER MARKET ROAD WHEELS Several of the after-market road wheels which can be mounted on the MGB can cause interference problems with the rear wheel arches. Although this is usually not the case in the raised body MGBs (1974 1/2 and later), the offset is so great that the tires can be badly worn by the top of the rear wheel arches on the earlier models. This is especially true if the rear leaf springs are beginning to sag. It is possible to raise and stiffen the rear end by replacing the roadster leaf springs with GT springs.

GEARSHIFT RATTLE The gearshift knobs on the 1977 and newer MGBs can work loose, causing an annoying rattle. Simply tighten the nut (2) with a 5/8" wrench.



OIL FILTER HOUSING The oil filter housing on the MGB engines 1968 and newer can come loose and allow a bit of oil to be lost at higher rpms. When changing the oil, be certain to snug this bolt (21) with a 3/4" socket.

PIRANHA IGNITIONS It is imperative that when fitting the piranha unit to the newer MGBs and Midgets, that the WHITE wire from the Piranha amplifier be connected to the WHITE side of the fuse box. DO NOT connect it to the WHITE w/GREEN post on the ignition coil as the voltage there is not a full 12-volts.

SEAT SLIDES The seats in the MGB or Midget can be made to slide back and forth more easily by the application of a small amount of grease to the seat rails. Push the seat all the way forward and liberally apply grease to the exposed rails at the rear -- then move the seat all the way back and apply

MGB Clonks

Having owned three MGBs and experienced worn kingpins and elongated wishbone arms, another 'clonk' was found to be the brake calliper. There are no locating pegs, and if bolts are slightly worn and not tightened to 40-45 lb/ft. this can be the cause.

— Philip Reed

Water in MGB Roadster Boot

Check the water is not coming under the MG badge on top of the boot, i.e. spare wheel full of water. Smear Bostick black sealant around the three pins on underside of boot lid.

— Richard Smith

UPKEEP AND PERFORMANCE HINTS (cont)

Wet Carpet

I found that persistent wet carpet in the rear wells of my BGT was only cured by taking out the rear side windows and drilling out the poprivets holding the sill trim on. Removal of the trim then revealed that, on both sides of the car, the final poprivet holding the gutter trim had been omitted even though the holes had been drilled to accept them. Hence water was creeping under the sill trim and finding its way down through the holes into the back compartment.

- D.Bishop

Check Your Lights

Most people think that because lights are working that everything's okay but how often have you removed the light lens and inspected the bulbs and lamp interiors and been surprised by the amount of dirt that gets left behind the lens; and the rust on the front sidelight interiors. Cleaning these and then painting them with white gloss paint makes a great deal of difference to the light, also check the bulbs, if they have gone black, they need replacing. When replacing screws for the lens cover remember to put a spot of grease or oil on for easy removal next time. This tip also applies to dash light bulbs, as these get really filthy, removing and cleaning will give a better night view of instrument.

- D. Taylor

Tuning Your Engine

I decided to have the engine tuned up on my 1976 MGB Roadster, but found that the distributor unit had jammed in the block, so I was unable to turn it for tuning. The liberal application of WD40 easing fluid, verbal abuse and finally a oil filter removal strap wound around the unit applied with some hefty, frustrated taps against the strap twisting bar did the trick. It took me about six days to free it, so a liberal helping of patience is a must.

-W.R. Gillis

I need information on how to install a early '60s GM, 215 CID, aluminum V-8 into my '66 MGB roadster.

After having owned a TC, a 100-4 & 100-6 and my current "B", I considered myself well versed on the subject of British cars. You can imagine my amazement when I found out that BL actually manufactured over 2000 MGB-V8s in 1976. The reason the MGB V-8s were not imported into the U.S. was to protect Triumph Stag and Jaguar sales. This led one BL observer to quit: "BL is in such bad shape that they have begun to stab each other in the front".

The V-8 engine in England is the Rover 3.5 liter having been purchased by their Roots group in the late '60s, after GM decided that an aluminum V-8 was something they no longer had use for.

An article I once read mentioned that the front end suspension remained the unaltered because of the light weight of the V-8. It went on to say that the transmission (and I suppose the axle and driveline if they are indeed different) come from an MGC.

I have also heard of one installation where a "B" was fitted with the Rover/BOP V-8 and then was Jaguar "E" type from the flywheel back.

Correspondence is due in from England where I have written to 3 shops who are reported to still do the conversion. By the way, the first MGB V-8s were conversions done by a garage in England for 1000 pounds. BL saw that the car was being so well received that they decided to include a V-8 in the line. I will be happy to share whatever I learn with anyone who is interested.

Send any information (leads, rumors, etc.) about this conversion to:

Marsh Terry
P.O. Box 11161
Bainbridge Island, WA 98110

Upkeep and Performance Hints

Please send any information that you may have that you believe would be of help to our readers. Send to AMGBA upkeep and performance hints, P.O. Box 11401, Chicago, IL 60611

QUARTERLY CLOSING DATES

<u>ISSUE</u>	<u>DATE</u>
FALL	August 1, 1984
WINTER	November 1, 1984
SPRING	February 1, 1985
SUMMER	May 1, 1985

QUESTIONS & ANSWERS

Q: What is the recommended mileage for repacking the front wheel bearings on my 1978 MGB roadster?

Ken Lynch #80-1268
West Hartford CT

A: Ken -- The 1978 MGB driver's handbook does not give a suggested mileage! It has been my experience that the bearings rarely fail from lack of grease, meaning that they were packed well at the factory. The easiest time to pack them is when the the front rotors have to be removed for truing on a brake lathe. My recommendation would be at 50,000. Remember to change the front hub oil seals at the same time.

Q: I have a 1967 MGB that has a leak in the oil cooler. I took the oil cooler out to be repaired, but was told it could not be fixed because is only leaked when the aluminum expanded under high temperatures. I cannot afford another cooler right now.

For the past few months I've been running without the cooler, using one of the hoses as a bypass. Can I leave that cooler out altogether?

Scott Shiple #80-1732
Marietta Georgia

A: Scott -- The cooler is designed as a benefit to the engine, not a necessity. The newer MGBs (1975-1980) do not have an oil cooler fitted as standard. A cooler will extend the life of your engine. My suggestion is to continue to run the engine as you are doing so now -- but religiously change that oil EVERY 3000 miles -- and keep your eyes open for a cooler at a junkyard, swap meet, or somewhere!

Q: I have a 1964 MGB with a three-main engine. I've replaced the asbestos gaskets between the exhaust manifold and the downpipe about four or five times -- and they still blow out within a few weeks. I've had the manifold off to check it for cracks and replaced the studs, nuts, and washers. Put together, it sometimes works fine for as much as a month, but sometimes blows out within a few days.

I've tried putting the gasket in with the asbestos up and tried with the asbestos down, without any difference. What's correct?

Peter Brunner #80-1571
Applegate Oregon

A: Peter -- Ensure that the front pipe is constructed correctly -- that there is a continuation of the pipe that enters the exhaust manifold which stands 1/2" above the doughnut gasket. The metal side of the gasket should be placed downwards.

Loosen the entire system, start all the nuts on the manifold, and tighten the system front to rear. Ensure that there is a strap from the gearbox to the front exhaust pipe to keep the system from swinging side to side. Is there a chance that something is partially blocking the muffler(s), causing the pressure to be higher at that joint than normal?

Q: I have trouble shifting my 1980 MGB. It is sometimes hard to get into first after sitting at a light (car hot) and is often hard to get into reverse, especially first thing in the morning. The local dealer removed the gearbox and replaced some parts -- but the problem still persists. Should I get JRT to fix it? The warranty has expired. What oil should I use in the gearbox?

David Stein #81-2180
Clayton Missouri

A: David -- The first, and easiest, step is to rebuild the master and slave cylinders for the clutch hydraulics. The clutch disc is not able to freewheel, hence your shifting problems. If that fails, then it would be necessary to remove the engine and inspect the component parts of the clutch assy -- the problem lies in the clutch, not the gearbox.

It might be that the spigot bush (pilot bush) in the back of the crankshaft is too tight or burred. It might be that the clutch disc is faulty. It might be that the clutch disc is not able to slip along the first motion shaft (input shaft). All these possibilities involve the removal of the engine.

It is imperative that you correct the problem quickly, as the first gear synchronizer will wear out prematurely, or the reverse gear will lose its teeth -- either possibility costing you about \$600 to repair.

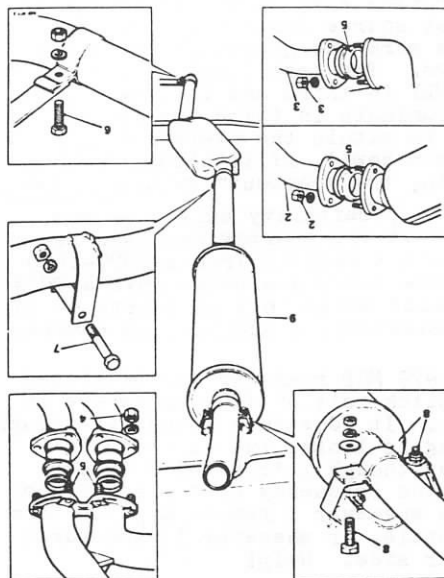
I would contact JRT in Leonia, explain the problem, and work it out from there.

The gearbox uses engine oil -- Castrol GTX 20W/50 is fine for that use.

Q: I have a 1978 MGB roadster and want to know if there is a replacement muffler or something I can do to give my "B" a better sound. I enjoy a little bit of a blast -- you know, a sports car sound.

Bill Wolf
Oaklawn Illinois

A: Bill -- There are several aftermarket exhaust systems available, but I am familiar with only the ANSA system. If you are looking for a real blast, try this:

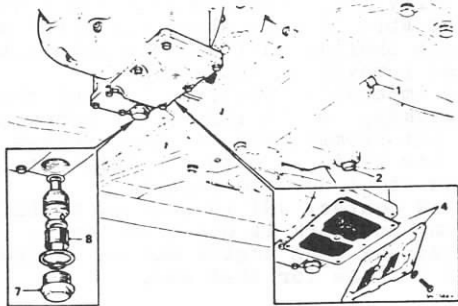


Using 1 3/4" ID exhaust pipe, have a muffler shop bend a piece of this pipe in the exact form and length as your

Q: I recently purchased a 1974½ MGB/GT and have driven it only about 100 miles (just three times) because of the winter here. This GT has overdrive, but it works only in fourth, not in third. The gearbox shifts OK, but I'm baffled. What's the problem?

Arnold Beebe #80-1460
Schenectady New York

A: Arnold -- The overdrive unit is electrically controlled, but works by oil pressure from an oil pump within the overdrive unit. It is almost inconceivable that the problem is due to pressure loss, but you should always check the level of the gearbox oil as a first step (side fill). There are filters in the OD unit which can be replaced or cleaned (#4 and #8 in the illustration). However, I suspect that the problem is electrical.



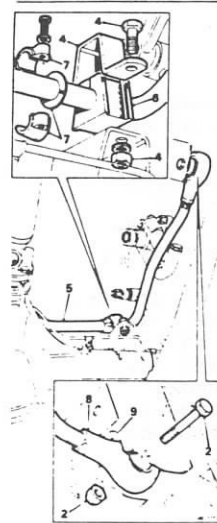
There are two switches involved, one on the column and one on the gearbox. The column switch is not the problem. The "lockout" switch on the gearbox may be the source of the trouble, however. To test this switch you will need an automotive test light (as an ice pick, with a wire and alligator clip). FIRST, disconnect the YELLOW overdrive wire in the main loom from its complementary wire in the gearbox loom. This connection is made above and to the rear of the ignition coil on the right inner fender. SECOND, connect the test light between the overdrive wire in the gearbox loom and a hot source (bottom fuse). Have a friend work the gearshift lever thru all gears. The test light should illuminate ONLY in third and fourth. If it does illuminate in third and fourth, the problem is within the overdrive unit (I don't know how!), if it illuminates only in fourth, the "lockout" switch is faulty.

An extreme possibility exists -- and that is that the gearbox has been replaced with a gearbox from a 1977-1980 MGB. These later gearboxes have a TCSA switch which works only in fourth -- but that possibility, I suppose, is remote.

Q: My 1979 MGB roadster has developed a "low pitch rattle" from somewhere in the rear. It sometimes sounds as though something is loose, but at times it sounds as though it's related to car speed. The frequency of the sound does increase whenever I remove my foot from the throttle, or whenever I make turns to either side. Help!

Nino Catalano 80-1375
New Fairfield CT

A: Nino -- It's very difficult to make an armchair analysis of a sound without actually hearing it. However, if it is a rattle, it is probably not connected with the moving parts of the drive line. Points to inspect are:



Exhaust system -- does the pipe between the center and rear muffler interfere with the handbrake assy?

Rear shocks (arrow) -- Are they fastened tightly to the frame. Are the shock links tight at the shock and at the leaf spring?

Rear Sway Bar -- Are all the bolts and nuts involved in this assy tight? Especially #2!

The Battery -- is it tightly mounted? Is the battery box cover tight?

Handbrake Cable -- is it mounted too loosely in the clamp at the base of the battery box?

The Boot -- Insure that you have no car tools (jack etc) free to bounce around.

To further test the "B", have a friend drive while you sit on the rear shelf. Feel and listen to try to determine the source of the rattle. Interior panels can rattle and squeak!

Q: I have a 1972 and a 1973 MGB/GT, and am considering purchasing an engine to build as a replacement, so that the "down time" for either MG would not interfere with our short six month driving season. What problems will I encounter using a very early or very late "E" engine?

Steve Ross #80-1314
Quebec, Canada

A: Steve -- You'll be able to use any five main bearing engine from 1965 to 1980. Several differences exist among the various years, but none so great that they cannot be overcome. To wit:

Starter/flywheel -- The "E" engines 1965 thru 1967 used a bendix style starter. The engines 1968 thru 1980 used a "pre-engaged" or "solenoid" starter. The systems are interchangeable, and all that is necessary is to change the backing plate, flywheel, and starter, as an assembly.

Generator/Alternator -- The earliest blocks were not drilled for the alternator mount, and the latest blocks were not drilled for the generator mount, but most blocks have both mounting points available. If the proper mounting holes are not available, use the existing mount, and use a piece of 3/8" pipe as a spacer. Run a long 5/16" fine bolt thru the middle. It's best to cut the pipe a bit shorter than is necessary, and make up the remaining distance with 5/16" flat washers. Remember that the generator mounting flanges are fixed and should not be stressed. The alternator rear flange has a moveable spacer, allowing about 1/4" movement.

Motor mounts -- The mounts and front engine bearing plate are interchangeable 1965-SEP 1974. The mounts used after SEP 74 (two bolt) also included a change in the front engine bearing plate. But either system can be changed, block to block, as an assembly.

Water pump -- There are four water pumps 1965 thru 1980, varying in height and impeller diameter. You will have to use the proper pump and pulley assemblies for the block you're using.

Overall, if you use a block from 1968 thru 1974, you should encounter no problems at all.

Q: Is there any way to tell from one of my serial numbers the following: engine compression (high or low); month and year of manufacture. I have the original bill of sale for the MGB -- and I purchased it from the original owner who bought it 23 September 1963 in Cologne, Germany. The numbers are:
18G U H 15260
GHN 3L 15029

Was there actually a 1962 MGB or is my 1963 really the first model year? It has 128,000 miles and drives like a dream. How many earlier MGBs were produced?

Douglas L'Hommedieu #81-2444
Merritt Island Florida

A: Doug -- The MGB entered production in June of 1962, but only 4518 were produced that year. I believe that they are 1963 model year MGBs -- but perhaps our readers can provide more information.

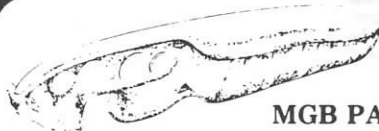
Yours was the 10,410th built in 1963, out of a production of 23,308. Just making a simple ratio gives us a date of about 15th May 1963 for a production date. You can be certain by writing JRT, 600 Willow Tree Road, Leonia, New Jersey. They will forward your letter to BL Heritage in England and you should get a very specific response. A total of 115,898 MGBs were built 1963-1967. The "H" in your engine prefix indicates a high compression engine.

Technical Information

If you have any technical information that you believe other readers could benefit from, please send it to "AMGBA Technical Information", P.O. Box 11401, Chicago, IL 60611.

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#GHF1360 Armrest Catch (1972-80)	1.25	1.00 ea.
#GHF1370 Armrest Striker (1972-80)	1.00	.80 ea.
#HZA5390 Ashtray (1972-80)	13.95	11.20 ea.
#BHH2072 Gearshift Boot (1968-80)	23.95	19.25 ea.
#BHH788 Gearshift Knob (1971 on--except 77 on with O/D)	9.95	7.99 ea.

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Sprite-Midget 1971 on (#6137)	119.95	95.99 ea.
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Electrical System Troubleshooting

By John H. Twist

If winter has taken its toll on your car's wiring or battery, it may be time for a few simple tests, and perhaps a new battery.

Sorting out electrical problems requires a step by step, methodical approach. It is necessary to identify the problem, examine the wiring diagram, then trace the circuit, connection to connection (usually from the HOT side), until the problem is found.

A quarter of all electrical problems arise from faulty battery connections; another quarter from a dirty fusebox.

As a rule, wires do not fail. The bullet connectors may corrode at the ends of

the wires (rarely), or the connections may be loose (common!), but the wires are usually OK. Another rule is that wires always begin and end *outside* the wiring loom. There is *no reason* to cut through the PVC tape.

It may be easier to visualize wiring as plumbing: the wires as pipes; switches as valves; the battery as pressure; and all "juice" *must* return to the battery.

Light bulbs either work or they don't. A dimly glowing bulb indicates a faulty earth.

Carb cleaner removes paint or undercoating from wires to expose the true color code.

On MGs, if the boot earth connection is loose or unattached (the license holder bolts), the fuel pump, side markers, courtesy light, reverse lights, license lights, or taillights malfunction.

Also on MGBs, if the hazard switch is not snapped OFF with vigor, the turn signals may not operate.

The basic tools necessary before starting any electrical system check are a test light and a proper wiring diagram.

A final warning: Approaching an electrical malfunction helter-skelter, or without a test light and wiring diagram, is a certain route to madness.

MG Battery Replacement

INTERSTATE BATTERY CODE (1)	COLD CRANKING AMPS (2)	RESERVE CAPACITY (3)	LENGTH	DIMENSIONS WIDTH	HEIGHT
17HF - 36 (6 volt)	400	115	7-3/16	6-3/4	9
22NF - 36	400	86	9-7/16	6-13/16	8-1/4
45 - 36	330	68	9-7/16	5-1/2	9
21-36	455	78	8-3/16	6-13/16	8-3/4
24 - 36	400	90	10-1/4	6-13/16	8-5/8

NOTES: (1) This code is comprised of the industry standard code (first set of digits) and the length of guarantee (second set—all 36 months in these examples). (2) The output of the battery for 30 seconds at 0° F. (3) Minutes of 25 amp output at 80° F.

YEAR/MODEL APPLICATIONS	
17HF - 36 MGA/MGB to 1974½/MGC Twin 6 volt	45 - 36 MGTD & TF, negative earth Midget 1962-67, negative earth Midget 1968-74, negative earth 1100/1300, positive earth
22NF - 36 MGTD & TF, positive earth Midget 1962-67, positive earth Midget 1975-79, negative earth 1100/1300, negative earth	21 - 36 MGA/MGB to 1974½/MGC Single 12 volt replaces twin 6 volt
	24 - 36 MGB 1974½ to 1980

Battery information was provided by Interstate Battery Systems of Dallas, Texas; applications are from University Motors, Grand Rapids, Michigan.

For the location of your nearest Interstate Battery dealer, dial 1-800-331-1000. Questions regarding MG battery applications can be referred to University Motors, 616-245-2141.

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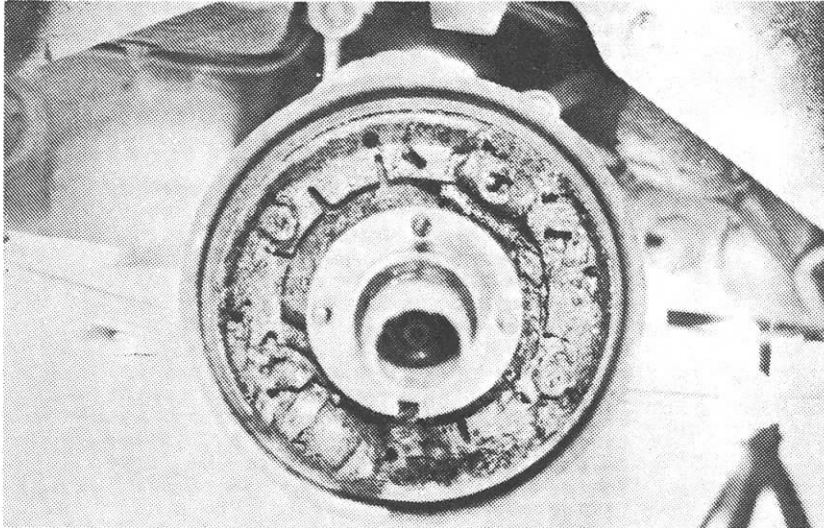
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UPKEEP AND PERFORMANCE HINTS

John Twist



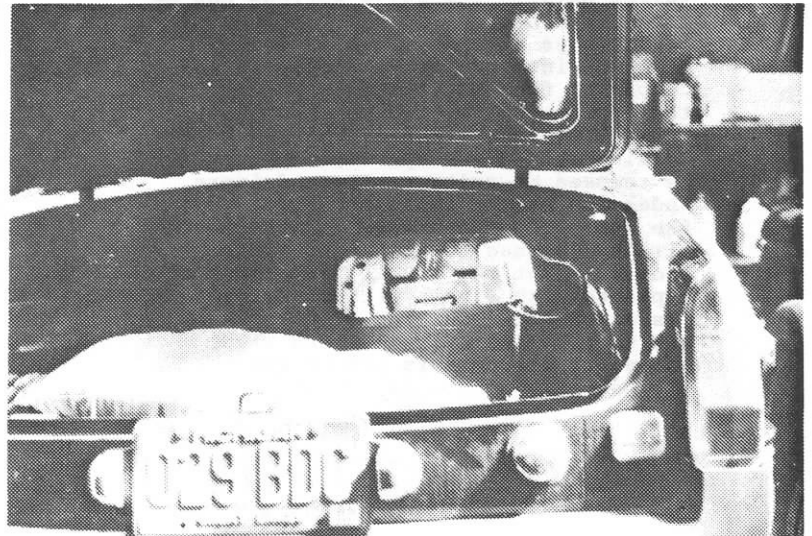
This is about the worst rear brake assembly I've ever seen. Grease from the differential, and brake fluid from the wheel cylinder both leaked onto the shoes and mechanism.

This mottled picture does not give a sense of depth to the grease and goo -- which was thick.

Repair included removing the hub, replacing the oil seal, rebuilding the wheel cylinder, replacing the shoes, and providing a turned drum.

Batteries in the boot are not a good idea! If uncovered, metal objects (as one customer's nine iron) can short out the battery, melting both the battery and the conductor. Even if covered, and not secured, the battery can tip over, leaking acid into the floor of the boot. This spill can eat through the boot and into the petrol tank. If the battery is older, or if it becomes severely discharged, then hydrogen enters the air within the boot. This makes a potentially explosive mixture.

A single twelve volt battery can be placed into the passenger battery box. The size is Group 21. Just move the earth cable to the passenger box.



Upkeep and Performance Hints

Please send any information that you may have that you believe would be of help to our readers. Send to AMGBA upkeep and performance hints, P.O. Box 11401, Chicago, IL 60611

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UPKEEP AND PERFORMANCE HINTS (cont)

The customer complained of a slow car, lagging acceleration, and virtually no high speed ability. Sometimes the problem lies in the ignition system, sometimes in the carburetion, sometimes in the evaporative loss control system (in the newer MGBs) -- but rarely does it appear in the engine itself.

After a normal tune-up (torque head, adjust valves, check compression, clean/gap plugs, check plug wires, check coil, replace points and condenser, set dwell and timing, disassemble and clean carb, check for vacuum leaks and ELC system, and adjust carb) it was still very slow. A 1976 MGB can be relatively fast.

We were about to call the humane society.

The problem had to lie in the engine. First we tested the valve springs. If the engine has been overheated, the valve springs begin to lose their tension and valve float occurs in the lower rpm range -- and we couldn't get this one over 4,000 rpms. The owner had never overheated it, but he didn't purchase it new, either. We changed six valve springs, but none of the six were really that weak. At the same time we installed umbrella valve seals to reduce oil burning (on the inlet valves only). The valve springs can be replaced "in situ" as the workshop manual says by one of two methods: 1) lower into the spark plug hole a couple of feet of clothesline. Turn the engine over until the clothesline is pressed to the top of the cylinder, holding the valves up. The spring can be removed by using two screwdrivers under the rocker shaft, pressing down the top spring retainer; or, compressed air can be used to hold the valves closed -- but the rocker shaft must be replaced with a unit without rockers (as a pry point for the screwdrivers, and to hold the cylinder head tight while air pressure is fed to the cylinders).

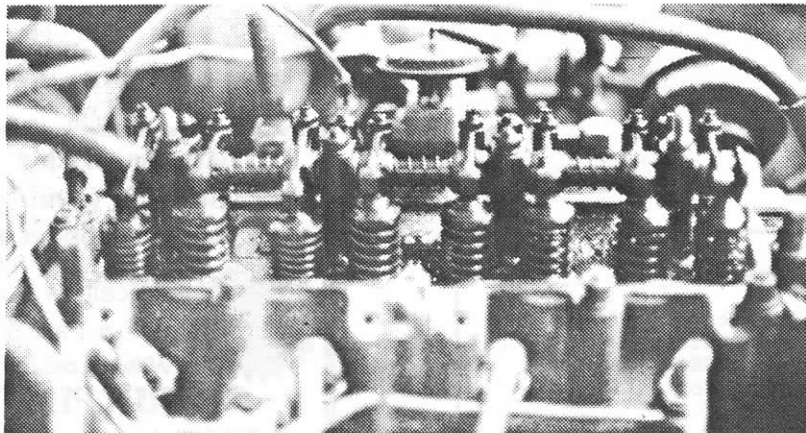
That did not correct the problem by itself.

Second, we checked the lift of each pushrod with a dial indicator, using a magnetic base. The lifts varied from .255" to .265" a value of .262" seems

to be most common. None of the lobes were faulty.

Finally, the valve timing was checked, using a clearance of 0.055 for number one inlet on adjustment, then turning the engine to TDC. At TDC, the clearance between the rocker and valve stem should be reduced to zero. In fact, the clearance wasn't reduced until about 15° ATDC. It was as though the chain was stretched beyond belief, or it was one tooth off on the timing gears with another problem. The timing chain was stretched, but failed to make a difference of more than five degrees at the most. We changed the timing gears with a used set to no avail. Finally, we removed the sump, oil pump, distributor, and distributor drive gear to change the cam itself. This made all the difference in the world, and the valve timing check indicated correct valve timing (zero clearance at TDC).

The camshaft had been faulty from the beginning and had apparently been fitted incorrectly when the engine was built. This is not a usual problem at all, but the valve timing check is described in the workshop manual and only takes half an hour to perform.



VIBRATION

by Charles Genrich (76-155)

The question, in the summer quarterly, by Don Holmes, concerning the vibration in his cars reminded me of a chart supplied to the Metro D.C. Chapter by one of our sponsors. The next time you have a vibration in your MG that is

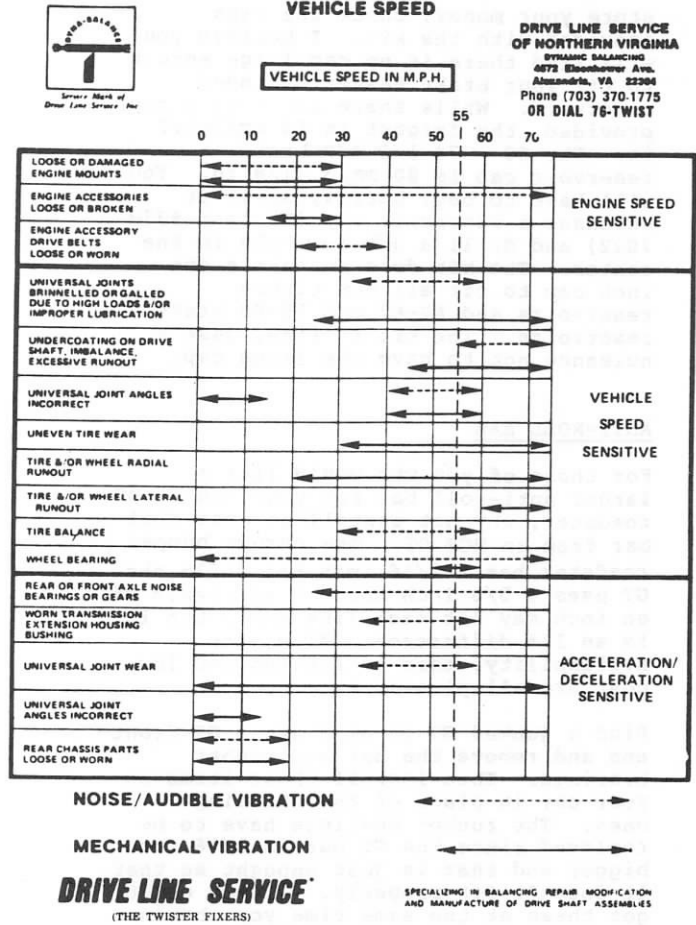
difficult to trace use the information on the accompanying chart to do a little investigative work of your own and possibly save some money. Interestingly enough, after wheel balance, dented or bent drive shafts and bad universal joints are probably the most common causes of vibration. Also, one area not shown, bad shock absorbers, can cause vehicle speed sensitive vibration. This is especially true with the front lever arm shocks on an MG. If they are, or have been leaking, top them up and then take a test drive. If the vibration is no longer present and you had to add fluid, you probably need to replace them.

EEZI BLEEDER

by Charles Genrich (76-155)

For those who have a 68 - 74-1/2 MGB and are thinking of purchasing an Eezi Bleed brake and clutch bleeder kit, a warning. Before you give the

MOST FREQUENTLY OBSERVED CAUSES OF VEHICLE VIBRATIONS AS RELATED TO VEHICLE SPEED



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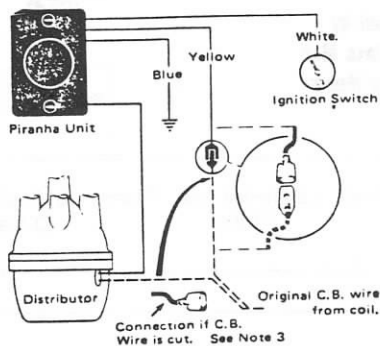
store your money, check the caps provided with the kit. I believe you will find there is no cap large enough to fit your brake master cylinder reservoir. While there are 5 to 8 caps provided, the largest is 64 mm/2-1/2 in. The 68 - 74-1/2 MGB brake reservoir cap is 80 mm/3 1/8 in. You will have to beg, borrow, steal or purchase a reservoir cap (BL part #37H 7022) and drill a 3/8 in. hole in the center. The kit does contain a one inch cap to fit all MGB clutch reservoirs and 62-67 and 75-80 brake reservoirs. The kit is fine, just a nuisance not to have the large cap.

ANTI-ROLL BAR

For those of you who would like a larger anti-roll bar for your pre-75 MG roadster, why not install an anti-roll bar from an MGB GT. The chrome bumper roadster has a 9/16 inch bar while the GT uses a 5/8 inch bar. A sixteenth of an inch may not seem like much, but it is an 11% difference. Also, the availability, ease of fitting and low cost are all pluses.

Find a junked GT or at least a GT front end and remove the bar and rubber bearings. Then install those items on your car in place of the existing ones. The rubber bearings have to be replaced since the GT bar is 1/16 inch bigger and that is just enough so that it doesn't fit properly. If you can't get these at the same time you obtained the bar they can be ordered.

Talking Piranha's: If you find your Piranha ignition system "talking" (buzzing and groaning, accompanied by tachometer "spiking" with the ignition ON but engine not running), check the WHITE power wire for the amplifier unit. It must be connected to the WHITE side of the WHITE/GREEN fuse at the fusebox. Connecting it to the positive post of the ignition coil allows a power source of only eight volts, rather than twelve, as is specified in the instructions.



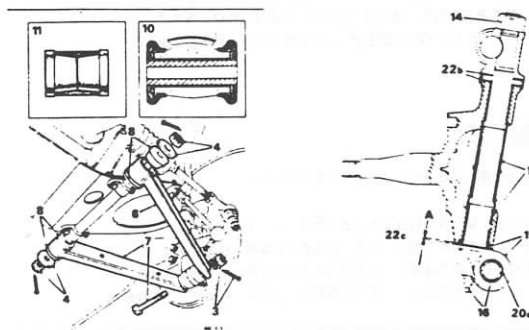
Exhaust systems: I feel that the "free flow" exhausts are worth the money. An MGB seems to accelerate more quickly with the "free flow" than with the stock system.

MICROLON: I have used MICROLON in my 1980 MGB, but with only 1000 miles it is too soon to tell the effects. I have also used it in my Lincoln, a small Buick V-6, and in two Chrysler marine engines. It reduced engine temperature allowed the idle rpms to increase (both signs of less internal friction), and in the marine engines, allowed the mileage to increase by 20%!

Edwin Vann
St Joseph Michigan

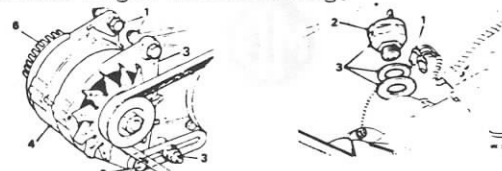
A Arm Bushings: I replaced my A Arm bushings with a set of DELRIN bushings from DOBI. They cost \$25 for a set of eight, plus shipping. Huffaker also stocks them but their price is a little higher. The delrin bushings will make the ride a little more harsh; however, the front end alignment can be set very accurately and held there for a much better tire wear pattern.

Tom Trainor #80-1607
Martinez Georgia



Tight Steering: Although common on older (and usually poorly maintained Midgets), the steering on newer MGB's can become VERY TIGHT. This is dangerous and should be remedied quickly. It is necessary to separate one tie rod end from the steering arm on one side to ascertain which side is tight. An oxy/acetylene torch should then be used to heat the tight kingpin (shown above at right) to reduce the solidified grease to a liquid state. After getting the kingpin VERY HOT, the steering wheel can be spun back and forth, and fresh grease pumped into the three grease fittings.

Fan Belt: If the alternator/generator pulley can be moved by hand, without the fan belt moving, the belt is too loose. This will cause wear on the fan belt, accelerating wear, and will cause the battery to slowly lose its charge WITHOUT the alternator/generator light illuminating.



NOTE: Fit a new belt with a moderate degree of tension, run the engine for five minutes at 1000 rev/min, stop the engine then set the belt to the correct tension.

REVERSE LIGHT SWITCH