



SPECIAL TUNING

PREPARED BY: THE B.M.C. SPECIAL TUNING DEPARTMENT
THE M.G. CAR CO. LTD., ABINGDON ON THAMES, ENGLAND

ISSUED BY: THE BRITISH MOTOR CORPORATION/HAMBRO INC.
734 GRAND AVENUE, RIDGEFIELD, NEW JERSEY 07657

IMPORTANT: Tuning of the kind described on this sheet is expressly excluded by the terms of the warranty of the vehicle manufacturer.

MODEL:	SHEET:	ISSUE:
GENERAL	Z - 2	4

The following chart shows details of the various BMC camshafts produced for 'A' series in-line and transverse engines.

Part Nos. with pin type oil pump drive.	8G 712 2A 297 2A 571	12G 165 AEA 630	AEG 148	88G 229 2A 948 12A 122	AEG 510	AEA 731	AEA 648
Marking	-	2 rings	-	1 ring	1 ring	3 rings	AEA 649
Cam lobe width	3/8"	3/8"	1/2"	3/8"	1/2"	3/8"	1/2"
Standard use	Mini	ADO 16 Midget	Cooper 'S' Midget II	Cooper 997cc.	Cooper'S' 1966 *		Racing
Inlet opens BTDC	5°	5°	5°	16°	10°	24°	50°
closes ABDC	45°	45°	45°	56°	50°	64°	70°
Exhaust opens BBDC	40°	51°	51°	51°	51°	64°	70°
closes ATDC	10°	21°	21°	21°	21°	29°	45°
Inlet period	230°	230°	230°	252°	242°	268°	300°
Exhaust period	230°	252°	252°	252°	252°	268°	300°
Cam lift	.221"	.250"	.250"	.252"	.250"	.252"	.315"
Valve lift	.285"	.318"	.318"	.318"	.318"	.320"	.394"
Running clearance	.012"	.012"	.012"	.015"	.015"	.015"	.015"
Part Nos. with spider pump drive.	12A 1065 +	12G 726 +	AEG 522 AEG 537θ	AEG 567	AEG 542	-	AEG 529
Cam lobe width	3/8"	3/8"	1/2"	1/2"	1/2"		1/2"
Markings	-	-	-	AEG 567	AEG 543		AEG 530
	-	2 rings	-	-	1 ring		-

For identification see markings and cam lobe width. (3/8" = 9.5 mm., 1/2" = 12.7 mm.)

* Fitted from engine no. 9F-SA-Y/40006

θ Fitted to 1275 c.c. Midget and Sprite with engine prefix 12CC-

+ Fitted to automatic versions of Mini or 1100 (ADO 16)

N. B. See Mechanical Parts List of appropriate vehicle for full details of changepoints, etc.



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MODEL:

Mini Cooper 'S'

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Valve Rocker and Pushrod

A lighter forged valve rocker AEG 425 was fitted as standard from engine no. 9F-SA-Y 34540. Ensure that this is immediately above each valve stem if further lightening is carried out.

Check that the pushrods are straight and true, after which a small amount of material can be removed from the cup.

Fixed Jet Carburettors

For racing where cold starting can be done by hand, carburettors with fixed jets are available part no. AUD 165 for a pair. These are fitted with BG needles, and should be used with installation kit AJJ 3301 for R.H.D. cars or AJJ 3302 for L.H.D. cars.

Flywheel and Clutch

After engine no. 9F/SA/Y 42730, an improved crankshaft AEG 479 was fitted, and this may be used on earlier 1275 c.c. engines for competition use.

It is dangerous to lighten the standard cast iron flywheel, but the lighter steel flywheel AEG 421 is safe at high revolutions. A competition diaphragm clutch spring assembly AEG 481 is available, together with a bonded clutch driven plate 22G 247. The whole crankshaft, flywheel, clutch and damper assembly should be fully balanced separately and as a unit.

Brakes

Fit competition DS11 brake pad set 8G 8996 (1 off) together with the harder VG95 rear brake shoes 8G 8997 (2 off). Alternatively, the existing shoes may be relined using VG95 brake lining set 8G 8998 (1 off).

Sumpguard

A very substantial sumpguard as used by the works is available as a complete kit part no. AJJ 3320, including all necessary mounting plates and rubbers. This guard weighs 35 pounds and should not be confused with other guards already on the market. This item is for rally use ONLY. It is only available on special order.

Bonnet Straps

Competition leather securing straps are available. Order: - Retainer AHH 5517 (2 off), Strap - Buckle half AHH 5518 (1 off), and Strap - Tongue half AHH 5519 (1 off).



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Mini Cooper 'S'

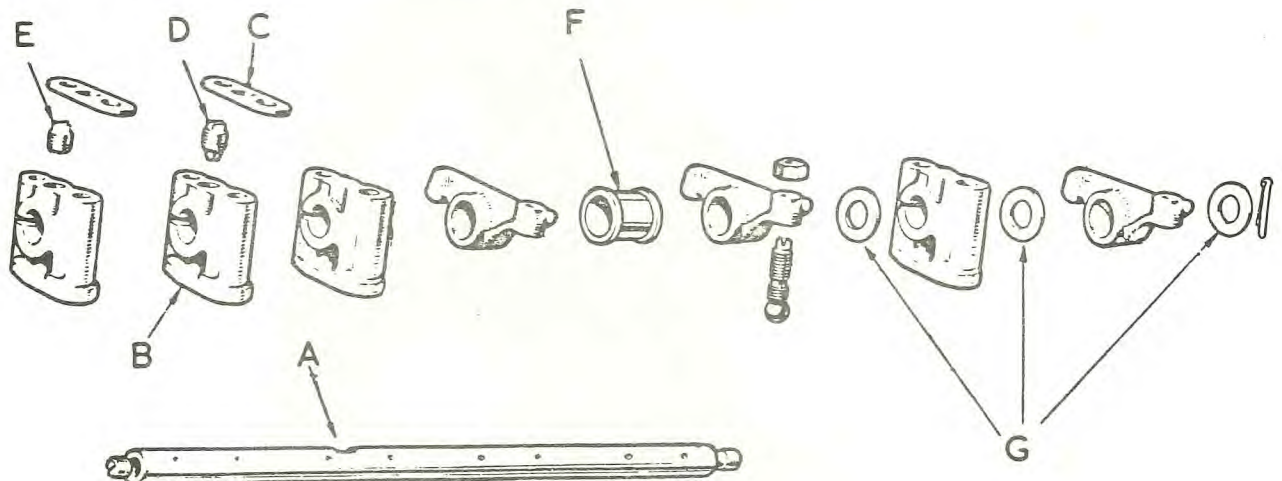
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A strengthened rocker shaft (A) part no. AEG 399 is now available, which requires an additional tapped pedestal (B) AEG 165, locking plate (C) 2A 515 and locating screw (D) 2A 258. The locating screw (E) in the rear pedestal should be cut off flush with the end of the thread, so that the oil feed to this pedestal is still maintained. The location is now maintained by the adjacent pedestal (B) which should line up with the repositioned hole in the new rocker shaft.



To reduce friction, the coil spring rocker spacers can be replaced by solid distance tubes (F) part no. AEG 392 (3 off) and spacing washers (G) AEG 168 (6 off). These should normally be either side of the end pedestals, but may be moved to ensure each rocker is immediately above the valve stem. The latest standard valve rockers AEG 425 can be further lightened by careful grinding and polishing.

Where the regulations permit running without a dynamo, use the standard water pump pulley 2A 601 and short fan belt part no. AEA 539.

For racing and prolonged high speed driving, it is essential to use the large capacity oil cooler ARO 9809, which is now fitted behind the grille as standard. A complete kit part no. AJJ 3309 has been prepared with full instructions for fitting to earlier cars.

Limited stocks of the flat top 3 ring piston AEG 190 (Std. and +.010" only) are still available, which are particularly suitable for racing because of the wider top land and reduced ring load. If oil consumption is important, the early scraper ring may be replaced by ring set 8G 2433, but this increases the friction losses slightly.



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MODEL: Austin Healey Sprite Mk. IV
MG Midget Mk. III 1275 c.c.

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As on previous models, a full range of B. M. C. Special Tuning parts have been prepared for this revised model.

The following list will be added to or amended as found necessary in the light of competition experience.

POWER UNIT

Camshaft - full race	AEG	529
- road and rally	AEG	542
Special hardened crankshaft	AEG	517
Flat top pistons	8G	2432
Cylinder head assembly - with large inlet valves	S/O	
1 1/2 " Twin S.U. carburettors	AUD	194
Installation kit for 1 1/2 " carburettors	AJJ	3304
Flare pipe for carburettors	AHT	10
Strengthened valve rocker shaft	AEG	399
Competition valve springs - inner	AEA	652
- outer	AEA	524
- locating collar	AEA	654
Deep type sump and oil pick up	AJJ	3324
Competition clutch cover assembly	AEG	546
Competition clutch driven plate	AEG	547
Twin branch exhaust manifold	AHT	11
Oil cooler kit complete	AJJ	3323
Close-ratio straight-cut gear set	AJJ	3319

CHASSIS

Wide rim (5 ") competition wire wheels	AHA	7573
Crown wheel and pinion 4.55:1 ratio	BTA	816
Crown wheel and pinion 3.727:1 ratio	BTA	535
Limited slip differential (alternatives)	BTA	881 or
	BTA	696
Lowered rear road springs	AHA	8272
Front suspension lowering kit	AJJ	3322
Competition shock absorbers, Front R. H.	AHA	6451
Competition shock absorbers, L. H.	AHA	6452
Adjustable rear shock absorbers, R. H.	AHA	7906
Adjustable rear shock absorbers, L. H.	AHA	7907
Anti-roll bar kit	AJJ	3314
Brake pad set (DS11)	AHT	16

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Close Ratio Gears

First Motion Shaft	1H 3297
Lay Gear	1H 3298
2nd Speed Gear	1H 3299
3rd Speed Gear	1H 3300

Rear Axle

Crown wheel & pinion 4.1:1 ratio, std. 1622	ATB 7240
Crown wheel & pinion 3.9:1 ratio, std. MGB	BTB 653
Crown wheel & pinion 4.5:1 ratio	88G 284
Crown wheel & pinion 4.3:1 ratio, std. 1500, 1600	88G 283
Crown wheel & pinion 4.8:1 ratio	ATB 7056

Suspension

Anti-roll Bar (Use with following parts)	AHH 5940
Frame Extension 1500 only	AHH 5924
Spring Pan 1500 only	AHH 5925
Wishbone Assy. - bottom R/H	AHH 5927
Wishbone Assy. - bottom L/H	AHH 5929
Link - anti-roll bar - R/H	AHH 5931
Link - anti-roll bar - L/H	AHH 5932
Bolt - link to roll bar	AHH 5941
Bush - anti-roll bar	AHH 5934
Housing Bush	AHH 5935

NOTE: Andrex dampers and anti-roll bar equipment not to be used simultaneously.

Shock absorber - front R/H (Andrex)	AHH 5609
Shock absorber - front L/H (Andrex)	AHH 5610
Competition shock absorber valve front	BHA 4135
Competition shock absorber valve rear	BHA 4136

Road Wheels

Wire wheel (60-spoke steel rim)	AHH 8001
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Miscellaneous

Bonnet Straps

Buckle half (2 off)

AHH 5518

Torque half (2 off)

AHH 5519

Retaining strap (4 off)

AHH 5517

Literature

Special Tuning Book MGA 1500 - 1600

AKD 819 - not available

SPECIFICATIONS FOR CAMSHAFTS

AEH 714

48G 184 (formerly part no. 1H 603)

In. opens 24^o B.T.D.C.
 In. closes 64^o A.B.D.C.
 Ex. opens 59^o B.B.D.C.
 Ex. closes 29^o A.T.D.C.
 Period 268^o
 Camlift 0.250"

In. opens 5^o B.T.D.C.
 In. closes 45^o A.B.D.C.
 Ex. opens 40^o B.B.D.C.
 Ex. closes 10^o A.T.D.C.
 Valve lift 0.322"