

MOTOR TRADER Service Data No. 231

AUSTIN A40 and A50

1954-55 Models

Manufacturers : Austin Motor Co., Ltd., Longbridge Works, Birmingham

All rights reserved. This Service Data Sheet is compiled by the technical staff of MOTOR TRADER and BRITISH AUTOMOBILES OVERSEAS, and is checked by the vehicle manufacturers. It is the copyright of these journals, and may not be reproduced, in whole or in part, without permission.

THE new A40 1,200 c.c. Cambridge, which is also offered with an alternative engine of 1,500 c.c. (A50), was first introduced to the home market in the early part of 1954.

Bodywork is completely restyled on this model and it is a feature of production that integral construction is now employed, thus dispensing with the conventional chassis frame, but retaining a sub-frame for the mounting of major units.

These models are of new design, but incorporate certain mechanical features common to the previous G.S.4 chassis series. The engine block casting being of greater overall size permits of it being bored out to the capacity necessary for the alternative engine size, namely, 1,500 c.c., thus giving a consequent increase in power output. Transmission is taken through an hydraulically operated single dry plate clutch and synchromesh gearbox to a hypoid bevel type final drive of standardized B.M.C. pattern.

Identification of vehicles is by car and engine numbers. Car serials start at 000101, with the prefix G.S.5 for 1,200 c.c. models and H.S.5 for 1,500 c.c. models. Engine numbers start at 000101, with the prefix 2G for 1,200 c.c. engines and 1H for 1,500 c.c. engines. All these numbers and letters should be quoted in correspondence with the manufacturers or when ordering spare parts.

A range of special tools is marketed by the Austin Motor Co., Ltd., and they are designed to speed up some operations of repair work. A list of those considered essential is included in these pages and the tools mentioned may be obtained from the Austin Motor Co. or their agents.

All threads and hexagons with certain exceptions are of the "Unified" type.

ENGINE

Mounting

At front, bonded rubber sandwich blocks bolted to feet fitted to front suspension cross-member and to brackets attached to front engine plate.

At rear, engine/gearbox unit is carried in cradle-type mounting supported by a cross-member with rubber blocks bolted to abutment pads on gearbox rear extension casing.

Removal

Engine may be removed with or without gearbox but better to remove with gearbox as a complete unit. Removal may be effected by lifting upwards through



DISTINGUISHING FEATURES : Cambridge models marked a complete change of styling from the previous A40 models, with a wide grille, headlamps with a wide chrome bezel and a restyled boot

bonnet or downwards with front suspension. To take out unit upwards, drain coolant and remove radiator matrix and cross-member, drain oil from gearbox. Disconnect and remove battery and tray, remove flexible water hoses and clips, undoing heater hoses at bulkhead. Undo all pipes, wires and controls, and oil and water gauge leads on engine. Take off exhaust pipe at manifold flange and undo check strap on bell-housing when down pipe may be removed completely. Disconnect gear change selector control rod from large lever on gearbox, and change speed rod from smaller lever. Disconnect clutch operating linkage, undo operating cylinder and tie up out of the way. Remove handbrake control rod supporting bracket and unhook pull-off spring. Disconnect speedometer cable from gearbox and uncouple propeller shaft flanges drawing shaft out of gearbox extension. Support gearbox with jack and remove

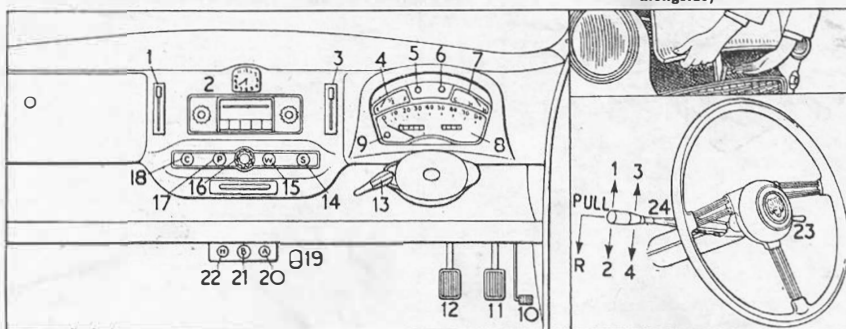
mounting cross-member, releasing stabilizing bar from gearbox lug. Take weight of engine on slings at lifting points on rocker cover, undo set pins at base of each front mounting plate, after which inner bolts securing rubber blocks may be released when engine may be drawn forwards and upwards clear of car. Removal facilitated if sling is arranged so that unit assumes an approximate angle of 30° from horizontal, front end uppermost.

Crankshaft

Three main bearings, thin wall, steel-backed, white metal-lined located by tabs in bearing caps. End float controlled by split thrust washers recessed either side of centre main bearing and retained by tabs in cap. Fit with oil grooves to crankshaft. No hand fitting permissible. Bearings may not be changed without removal of shaft. Flywheel spigot mounted and flange bolted to crankshaft

INSTRUMENTS, CONTROLS, GEAR POSITIONS & BONNET LOCK

- | | | |
|--------------------------------|----------------------------------|---|
| 1. Heater control | 11. Brake pedal | 21. Bonnet lock (pull, bonnet held by safety catch. Insert hand into bonnet opening as shown at top, right, and push back safety catch to open) |
| 2. Radio controls | 12. Clutch pedal | 22. Heater motor switch |
| 3. Heater air control | 13. Handbrake | 23. Direction indicator switch |
| 4. Fuel gauge | 14. Starter control | 24. Gear lever (positions shown alongside) |
| 5. Oil pressure warning light | 15. Screenwiper switch | |
| 6. Ignition warning light | 16. Lighting and ignition switch | |
| 7. Water temperature indicator | 17. Panel lamp switch | |
| 8. Speedometer | 18. Choke control | |
| 9. Main beam warning light | 19. Dipper switch | |
| 10. Accelerator | 20. Ventilator control | |



SPECIAL TOOLS	
	Part No.
ENGINE	
Crankshaft gear and pulley extractor ...	18 G 2
Crankshaft gear and pulley replacer ...	GT 1
Engine front cover locating bush ...	GT 3
Valve rocker bush replacer ...	18 G 226
Valve seat cutter (exhaust) ...	GT 25
Valve seat cutter (inlet) ...	18 G 174
Valve seat cutter pilot ...	GT 31
Main bearing cap extractor adaptor (rear main) ...	18 G 217
Main bearing cap extractor ...	GT 42
GEARBOX	
Clutch assembly jig ...	GT 99
Clutch centraliser ...	GT 39
First motion shaft assembly replacer ...	GT 4
Synchromesh assembly tool ...	18 G 222
Synchromesh assembly tool ...	18 G 223
FRONT AND REAR AXLE	
Differential bearing remover adaptors (use with GT 47 A) ...	18 G 219
Bevel pinion shaft flange wrench ...	GT 34
Bevel pinion setting gauge ...	GT 191
Hub extractor (basic tool) (various adaptors available) ...	18 G 220
Differential bearing replacer adaptor (use with GT 134) ...	18 G 221
Bevel pinion inner and outer bearing outer race remover and replacer adaptors (use with GT 166) ...	18 G 225
Differential bearing gauge plate (use with 18 G 191) ...	18 G 191A

BALL AND ROLLER BEARING DATA			
	Part No.	Int. dia., Ext. dia., Width (in or mm)	Type
GEARBOX:			
Third motion shaft centre	6K 128	$1\frac{1}{8} \times 2\frac{1}{8} \times 1\frac{1}{2}$ in	B
First motion shaft centre	6K 885	$1\frac{1}{8} \times 3 \times 1\frac{1}{2}$ in	B
REAR AXLE:			
Pinion bearing front	2K 7213	$1 \times 2.500 \times \frac{1}{2} \times \frac{1}{2}$ in	TR
Pinion bearing rear	6K 287	$1.25 \times 2.86 \times \frac{1}{2}$ in $\times 30$ mm	TR
Differential assembly:			
Hubs	2K 6544	$40 \times 80 \times 18$ mm	B
Hubs	2K 7477	$40 \times 80 \times 23$ mm	TR
FRONT AXLE:			
Front hub, inner	1G 4400	$1\frac{1}{2} \times 2\frac{1}{2} \times 1\frac{1}{2}$ in	B
Front hub, outer	1G 4401	$\frac{3}{4} \times 2 \times 1\frac{1}{2}$ in	B
Water pump	2A 457	$\frac{3}{4} \times 1\frac{1}{2} \times \frac{1}{2}$ in	B

by six bolts and nuts. Spigot bush, renewable, pressed into crankshaft end, shrunk on starter ring gear fitted. Timing sprocket keyed to front end of crankshaft by Woodruff key; aligning shim abuts against inner boss of sprocket. Renewable felt oil seal fitted into timing case cover. Dynamo and water pump drive pulley keyed to crankshaft by outer of two Woodruff keys, retained by starter dog screw. Sump sealing effected by composition gasket around flange and one square section seal at rear, along bottom of rear main bearing cap which forms lower half of collecting ring around oil return thread on crankshaft. A similar seal is fitted to the front main bearing cap.

Connecting Rods

Big ends offset, thin wall bearings, steel-backed, white metal-liners located by tabs in caps and connecting rod. No hand

GENERAL DATA			
Wheelbase	...	8ft 3 $\frac{1}{2}$ in	
Track: front	...	4ft 0 $\frac{1}{2}$ in	
rear	...	4ft 1 in	
Turning Circle	...	36ft 0 in	
Ground clearance	...	7 in	
Tyre size: front	...	5.60-15	
rear	...	5.60-15	
Overall length	...	13ft 6 $\frac{1}{2}$ in	
Overall width	...	5ft 1 $\frac{1}{2}$ in	
Overall height	...	5ft 1 $\frac{1}{2}$ in	
Net weight	...	20cwt 8lb	

fitting permissible. H-section rod split diagonally for removal upwards through cylinder bore. Oil bleed hole on longer side of bearing facing away from camshaft. Gudgeon pin bolt clamped in split small ends, clamp bolts towards camshaft.

Pistons

Aluminium alloy, dished crown, split skirted. When assembling, correct clearance of piston in bore measured at right angles to gudgeon pin on piston skirt is .0006-.0012 in. Fit with split skirt to non-thrust, camshaft side.

Top compression ring plain, second and third rings taper faced. When being assembled taper faced rings must be fitted with side marked "T," (top), uppermost. All rings including scraper fitted above gudgeon pin. Big ends will pass through bores, remove and assemble through top.

Camshaft

Double roller endless chain drive. Camshaft sprocket fitted with rubber tensioner rings, keyed by Woodruff key to shaft and retained by lock tab and nut. Camshaft runs in three white metal-lined steel backed bearing shells pressed into block. Endfloat controlled on front bearing. Dot punch marks indicate correct timing and must be together when crankshaft keyway is at T.D.C. and camshaft keyway at 1 o'clock.

Valves

Overhead non-interchangeable. Inlet larger than exhaust, split cone cotter fixing retained by spring clips. Rubber sealing rings with retainers on valve stems below collars. Valve guides plain, no shoulder, non-interchangeable, exhaust guides counterbored at bottom, and both types are countersunk at top. Guides should be pressed or driven in from top until they project $\frac{1}{8}$ in from machined surface of valve spring seat.

Tappets and Rockers

Shouldered barrel tappets sliding direct in crankcase. Access through opening in side. Bushed rockers all interchangeable, on shaft carried in four pillars, shaft located by stud and retained by lock plate in No. 4 pillar which is drilled for oil feed through drillings in head and cylinder block. Pair of rockers for each cylinder positioned on either side of pillar, located by separating springs between rockers of adjacent cylinders.

Push rods can be removed after adjustment has been slackened right off. Inner rockers can be pulled aside against separating springs. End rockers may be taken off after removal of split pin, plain washer and double coil spring washer. Note: Valve springs must be compressed before rockers can be pulled aside.

Lubrication

Hobourn-Eaton eccentric rotor pump flange bolted in recess at rear of cylinder block and driven by slotted shaft from skew gear at rear end of camshaft. Pump may be removed after taking off sump and pick-up strainer and three securing nuts. Pump body bolts to be undone after removal of assembly from engine to dismantle pump. Cylindrical gauze intake strainer in sump.

Cooling System

Pump and fan, thermostat in water outlet port on cylinder head. Pump spindle runs in two ball bearings and has renewable seal. Adjust fan belt until there is $\frac{1}{2}$ in play either way in vertical run of belt.

ENGINE DATA		
Type	O.H.V.	
	A40	A50
No. of cylinders	4	4
Bore $\times$ stroke: mm	65.5 $\times$ 89	73 $\times$ 89
in	2.578 $\times$ 3.5	2.875 $\times$ 3.5
Capacity: c.c.	1200	1500
cu. in.	73.17	90.8
R.A.C. rated h.p.	10.6	13.2
Max. b.h.p. at r.p.m.	42 @ 4500	50 @ 4400
Max. torque at r.p.m.	58 lb/ft @ 2400	70 lb/ft @ 2100
Compression ratio	7.2 : 1	7.2 : 1

CRANKSHAFT AND CON. RODS		
	Main bearings	Crankpins
Diameter	2.000-2.001 in	1.8759-1.8764 in
Length	1.375 in	1.000 in
Running clearance:		
main bearings	...	.0005-.002 in
big ends	...	.0001-.0016 in
End float: main bearings	...	.002-.003 in
big ends	...	.008-.012 in
Undersize:	...	.010, .020, .030, .040 in
Con. rod centres	...	6.498-6.502
No. of teeth on starter ring gear/pinion	...	120/9

PISTONS AND RINGS		
Clearance (skirt)	...	.0006-.0012 in
Oversizes	...	.010, .020, .030, .040 in
Weight without rings or pin	...	10 oz (approx.)
Gudgeon pin: diameter	...	.6869-.6871 in
fit in piston	...	Thumb push at 70°F clamped
fit in con. rod	...	
Compression		
No. of rings	3	1
Gap	.008-.012 in	.008-.012 in
Side clearance in grooves	.0015-.0035 in	.0016-.0036 in
Width of rings	.0771-.0781 in	.1552-.1562 in

CAMSHAFT			
	Front	Centre	Rear
Bearing journal: diameter	1.788-1.789 in	1.728-1.729 in	1.622-1.623 in
length	1 $\frac{3}{4}$ in	1 $\frac{3}{4}$ in	1 $\frac{1}{2}$ in
Bearing clearance	...	.001-.002 in	
End float	...	.003-.007 in	
Timing chain: pitch	...	$\frac{1}{2}$ in	
no. of links	...	52	

VALVES		
	Inlet	Exhaust
Head diameter	1.370-1.375 in	1.182-1.187 in
Stem diameter	.341-.342 in	.341-.342 in
Face-angle	45°	45°
Spring length:		
free	...	2 $\frac{1}{2}$ in
fitted	...	1 $\frac{3}{4}$ in
at load	...	77.5 $\pm$ 2 lb

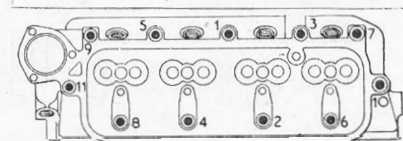


Diagram showing order of tightening of cylinder head nuts: note washers under nuts. Nos. 2, 4, 6 and 8 retain rocker shaft pillars. See also below

NUT TIGHTENING TORQUE DATA	
Cylinder head nuts	lb/ft 45
Main bearing stud nuts	77-80
Con. rod big end setscrews	35
Con. rod small end clamp screw	26
Flywheel bolts	35

TRANSMISSION

Clutch

Borg and Beck single dry plate, hydraulically operated. Sintered carbon thrust release bearing. Separate operating master cylinder on bulkhead. Slave cylinder positioned on bell-housing and connected to clutch operating lever. No adjustment of clutch pedal provided. Gearbox must be removed for access to clutch.

Gearbox

Four speed, synchromesh on 2nd, 3rd and top gears. Steering column lever remote control type. Propeller shaft sliding joint on mainshaft.

To Remove Gearbox.—Power unit may be removed as detailed in engine section, or gearbox may be extracted downwards after removal of rear mounting cradle and propeller shaft. To remove gearbox, unscrew bolts securing bell-housing and withdraw gearbox and rear extension.

To Dismantle Gearbox.—Remove rear power unit mounting from gearbox, and extract drain plug, also speedometer drive, bolts securing rear extension cover, and engine steady.

After removal of side cover, selector arm and change speed lever cross shafts can be withdrawn together with gate. Selector shafts, oil seals and felt washers may then be removed at operating lever side. To remove selector arm, tap out securing pin. Engagement lever is anchored in its pivot by one nut and bolt whilst pivot is cotted to cross shaft.

Removal of front cover is facilitated if selector rods are tapped forward, pushing cover away from casing. To extract selector rods and forks, use a soft metal drift, and tap each rod forward for a short distance and take out retaining keys after which rods may be driven out clear of gearbox, care being taken to retain

spring loaded ball plungers. Forks may then be extracted together with distance-piece fitted behind third speed fork. Tap out layshaft allowing cluster to rest on bottom of box. Unscrew retaining set-screw and remove reverse shaft and idler gear. Withdraw mainshaft assembly to rear, and withdraw 1st motion shaft and drive gear. Note 18 spigot needle rollers. Lift out layshaft gear cluster and two thrust washers.

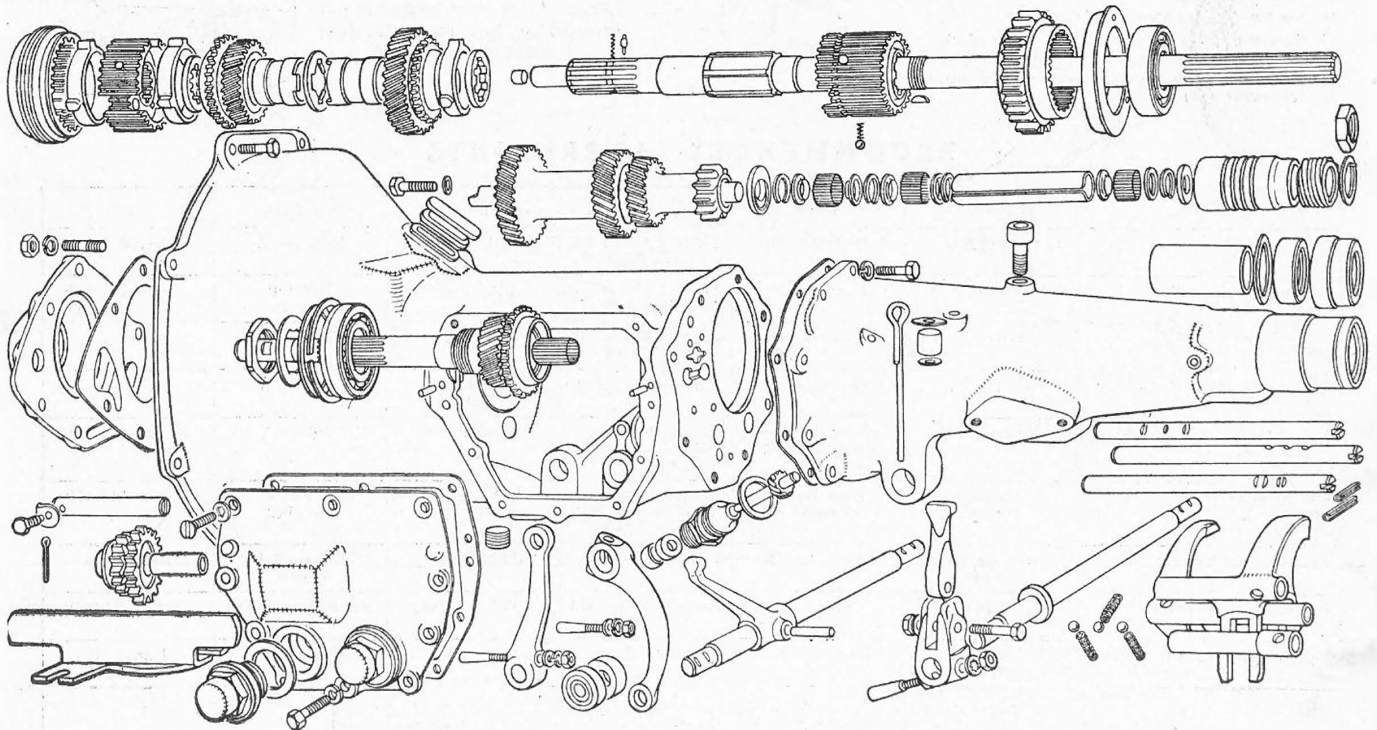
To dismantle mainshaft assembly, remove items in following order: baulk ring synchro sleeve and hub; second baulk ring. If and when synchro sleeve is removed from its hub, care should be taken to preserve three locating balls and springs. Press down third speed thrust washer locating peg, rotate splined washer to line up with those on shaft and remove washer. Take off 3rd speed gear and brass bush, also thrust washer to release 2nd speed gear, bush and baulk ring. Remove thrust washer from splined shaft and take off 2nd speed gear and hub. Take off rear retaining nut, washer and speedo drive gear and key together with distance-piece, from shaft. Take off bearing and its housing. Extract one circlip from laygear, push out bearing and distance tube assemblies (three needle races, two distance tubes equally spaced).

To Assemble Gearbox.—Reverse procedure of dismantling, noting following points: Layshaft—Fit circlip to innermost groove in gear, hold shaft vertically in vice, assemble a roller bearing on shaft against vice jaws and slide gear over shaft and bearing with largest gear downwards. Remove shaft from vice and push bearing into gear against circlip. Fit end roller bearing assembly and retaining circlip. Slide distance tube into other end of gear followed by other end bearing and circlip.

Mainshaft.—Assemble from front, locate internally splined thrust washer on front end of splines. Push longer brass

bush up to splines, dogs frontwards. Oil hole in bush must register with oil hole in shaft. Cutaway at front end of second (shorter) bush must line up with locating peg in shaft when dogs of two bushes and washer are engaged. Fit on 2nd speed baulk ring and gear on to bush plain side frontwards. Slide on brass thrust washer and shorter brass bush, lugs locating in thrust washers. Fit on 3rd speed gear, cone frontwards. Insert spring and plunger into hole in shaft, threading on front thrust washer depressing plunger through hole in 3rd gear cone, and turn washer to lock. Fit three springs and balls to top/3rd synchro assembly, and slide into position with two baulk rings. Following items to be assembled from rear: three balls and springs in second gear bush followed by synchro-hub; first speed gear, synchro-hub and baulk ring to splines on shaft. Press rear bearings into housing and fit to shaft. Push on distance sleeve, speedo drive gear and key, lock washer and nut. Replace selector forks and assemble rods together with spring and ball plungers. Refit in following order: first gear selector fork, and then locate 3rd and 4th selectors. Tap 3rd and 4th selector rod through casing and through fork until rod reaches its final position. Locate reverse fork and enter 1st and 2nd selector rod and reverse gear fork rod, through casing to their respective forks. Keyways in rod ends are offset and narrow face should be towards bottom when replacing.

With selector lever pinned to its shaft, and engagement lever cotted to its cross shaft, both shafts should be inserted in box, together with change speed gate, after having fitted oil seals and felt washers to each shaft. Replace side cover and ensure that all gaskets and washers are intact; if not renew. Refit front cover, speedometer drive, oil seal and rear cover and clutch operating yoke in that order.



Components of the gearbox and selector mechanism.

Propeller Shaft

Hardy-Spicer needle roller bearing universal joints. Reverse spline type sliding joint fitted between gearbox and front universal joint flange. Nipples provided for lubrication of joints.

Rear Axle

Three-quarter floating, hypoid bevel drive. Rear cover welded to banjo housing.

To remove axle from car, lift rear of car by slings on bumper brackets, remove wheels, disconnect propeller shaft rear end and shock absorbers. Take weight of axle on jack and disconnect brake rod at balance lever, and remove brake pipe lines from back plates. Remove rear and then front bolts of spring anchorages and take out "U" bolts. Draw out axle to rear clear of car. When reassembling, connect brake cable before releasing weight of axle, as cable tightens when weight is off springs.

Half-shafts (interchangeable) upset at outer ends to form flanges which register on wheel studs on hub flanges. Hubs run on ball bearings retained on axle tube ends by nuts with tab-washers. Lipped oil seal in hub behind bearing (lip to bearing), and spacer washer is fitted on outer side of bearing. If shaft is withdrawn, note paper gasket behind flange.

Bevel pinion shaft runs in taper roller bearings. Outer races pressed into final drive housing. Distance-piece between inner races, which are nipped up by driving flange nut. Shims between distance-piece and front bearing (.004-.012in available) regulate preload on bearings, which should give 14-16lb/in drag with oil seal fitted. No adjustment for pinion mesh without special tools and graded distance pieces.

Crown wheel spigoted on one-piece differential cage and retained by six set-screws. Differential side bevel gears run directly in cage, planet pinions have spherical washers.

Differential assembly carried in semi-thrust ball bearings in split housings. Thrust side of bearings must face outwards. Shims between differential cage and inner races of bearings for mesh adjustment. Adjust so that the crown wheel is just free without play, and backlash is as etched crown wheel (usually .006-.009in), then add shims to offside bearing to give .002in total preload. Differential assembly should then be light push fit in housing. Backlash must be not less than .006in.

CHASSIS

Brakes

Girling hydraulic. Two leading shoe front brakes with separate cylinder for each shoe. Rear brake cylinders carry also wedge expanders operated by handbrake through transverse rods from compensator on axle. Pistol-grip handbrake operates long lever through short cable. From lever, rod runs to relay lever near rear spring anchorage, connected to compensator by cable.

Snap cam adjustment for front brakes. Jack up car and tighten each adjuster (one for each shoe) until shoe touches drum, then back off until free.

Square ended adjusters for rear brakes. Tighten and back off two clicks, then apply brake hard to centralize shoes. No need to jack up rear wheels.

No separate adjustment for handbrake

Rear Springs

Semi-elliptic, Silentbloc bearings in spring eyes. Frame shackle brackets have flanged bronze bushes. Shackle pins tapered at one end and retained in plate by nut. Nut and locknut, with spring washer between, at other end should be tightened only enough to take up side play. Springs have zinc interleaves.

Front Suspension

Independent. Coil springs and double wishbone links. Inner ends of upper links pivoted on shock absorbers. Outer ends of upper links and inner ends of lower links rubber bushed. Outer ends of lower links have screwed bushes.

Hubs run on semi-thrust ball bearings, inner races separated by a solid distance-piece. Lipped oil seal pressed in behind inner bearing, lip to bearing. Bearings must be preloaded, screw nut finger tight. Check resistance of oil seal, then screw nut home until slightly more resistance to turning is felt. Bearings are now preloaded. Then go on tightening until split pin can be inserted in nearest hole.

Three-piece track rod, centre section supported between double drop arm and corresponding relay arm on opposite side, both arms held on taper serrated shafts by split pinned nuts.

Arms are same for right- or left-hand steering.

Ball joints are Thompson sealed type. In each section shanks of ball sockets are screwed left- and right-hand into tubes, and locked by locknuts. Outer section ball joints not interchangeable with centre section joints.

Relay arm shaft pivoted in bushed bracket bolted to frame, with three set-screws inserted from inside frame. Shaft has flange at top, which fits in recess in top of bracket, and works in two plain bushes. Retaining cap flange-bolted to top of bracket with joint washer.

Track adjustment must be made only on centre section of track rod. For methods of dismantling and overhaul procedure, readers are referred to Trader Service Data 193, which contains full details of this suspension layout.

Steering Gear

Bishop cam and lever. Provision made for adjustment of inner column and cam end float by shims between lower ball race cup and cover plate; mesh of peg in cam adjusted by grub screw and locknut in top cover.

Shock Absorbers

Armstrong hydraulic double acting piston type 159/10.RXP at front. Type DAS.9 KXP at rear, linked by anti-roll bar. No adjustment provided for or required. Top up with Armstrong fluid to bottom filler plug at intervals specified in maintenance chart.

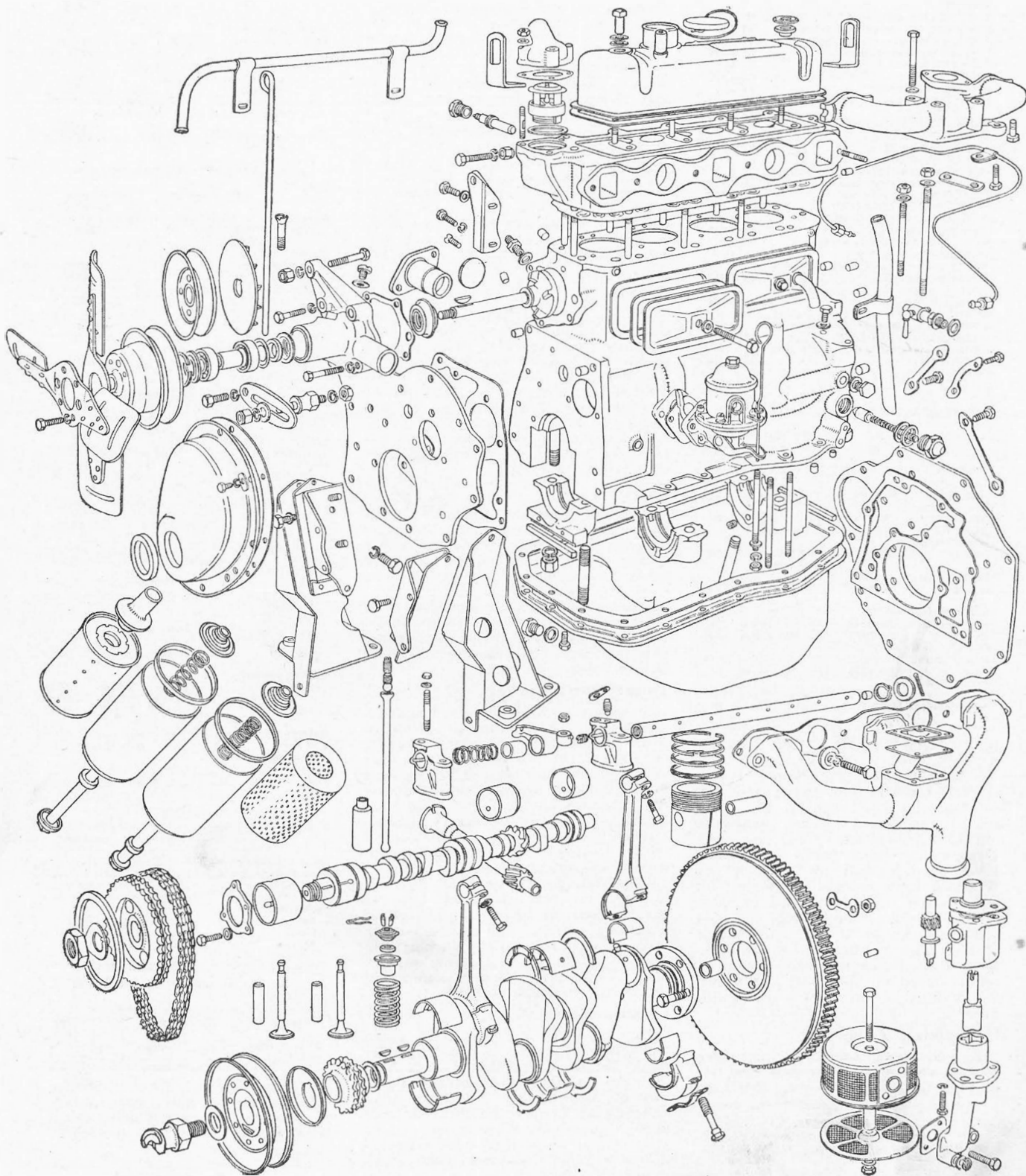
Body

To remove fascia panel, take off steering column covers and release panel clip holding column. Remove side fillets covering screen pillars and release starter pull cable at junction near bulkhead. Also release choke cable at carburettor and at junction on engine bulkhead bracket.

Facia panel may be drawn out after release of single screw at each top corner and hexagonal headed setpin at each lower corner, beneath panel. For complete removal of panel from car, speedometer cable, pipes and wires must be released from instruments. Access to instruments achieved by releasing two wing nuts.

CHASSIS DATA		
CLUTCH		
Make	Borg & Beck	
	A40	A50
Type	7½ A6 G	8 A6 G
Springs:		
no.	6	6
colour	Yellow	Yellow/black
free length	2.255	2.16
Centre springs:		
no.	4	6
colour	Maroon/ Lt. green	Black/ Lt. green
Linings:		
thickness	.130in	.125in
dia. ext.	7.23in	8.015in
dia. int.	5.005in	5.80in
GEARBOX		
Type	Synchronesh	
No. of forward speeds	4	
	A40	A50
Final ratios: 1st	20.22:1	19.233:1
2nd	12.31:1	11.714:1
3rd	7.64:1	7.26:1
4th	5.125:1	4.875:1
Rev.	26.44:1	25.150:1
PROPELLER SHAFT		
Make	Hardy Spicer	
Type	Needle roller bearing U.J.	
FINAL DRIVE		
Type	Hypoid ¾ floating	
Crownwheel/bevel pinion teeth	41/8*	
BRAKES		
Type	2 LS front; leading and trailing rear	
Drum diameter	9in	
Lining:		
length	8.65in	
width	1½in	
thickness	⅝ in	
No. of rivets per shoe	10†	
SPRINGS		
	Front	Rear
Length (eye centres, laden)		43in± ½in
Width (wire dia. of coils)	.520in	1½ in
No. of leaves (or coils)	8	6+3†
Free camber (length, coil)	10.4°-10.84in	4.8in
Loaded camber (length, coil) at load	7in± 1,072lb	½in± ½ neg.‡ 573lb
*A50—39/8. † or bonded ‡ Zinc interleaves.		
SHOCK ABSORBERS		
Make	Armstrong	
Type	Double acting piston	
Service	Replacement	
STEERING BOX		
Make	Bishop	
Type	Cam and lever	
Adjustments:	Shims	
column end float	Grubscrew and locknut	
cross shaft and float	Grubscrew and locknut	
mesh	Grubscrew and locknut	
FRONT-END SERVICE DATA		
Caster	1½°	
Camber	½°	
King pin inclination	7°	
Toe-in	0-½in	
Adjustments:	Nil	
caster	Nil	
camber	Nil	
toe-in	Screwed tie rod ends	

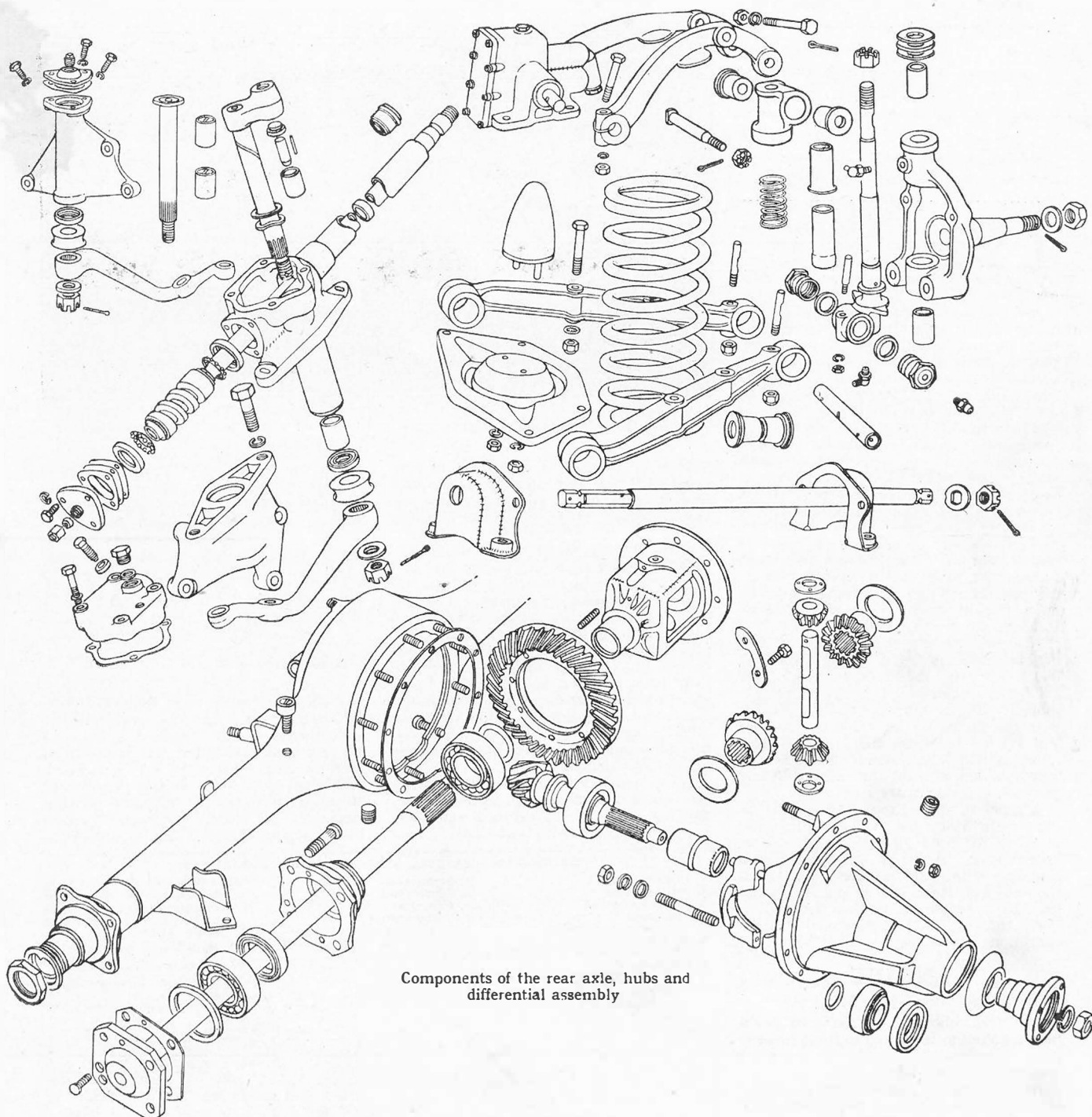
MOTOR TRADER Service Data No. 231 Austin A40 and A50



Components of the engine, showing cylinder block, head, sump, crankshaft, camshaft, timing drive, oil pump, valve train, piston and con. rod assembly, water pump, inlet manifold (top) and exhaust manifold (below) : note hot spot plate

Below left: shows arrangement of steering box and linkage. Extreme left shows idler box and arm

Below right, shows front suspension components with combined top wish-bone and shock absorber link, also stub axle arrangement



Components of the rear axle, hubs and differential assembly

TUNE-UP DATA

Firing order ...	1342	Cam angle ...	60° ± 3°
Tapet clearance: inlet ...	.015in	Contact spring tension	20-24 oz
exhaust ...	.015in	Contact set No.	420196
No. of flywheel teeth ...	120	Contact breaker gap	0.014-0.016in
Valve timing:		Condenser: capacity ...	0.2 mf
inlet opens ...	5° BTDC	min. insulation ...	3 megohms
inlet closes ...	45° ABDC	Plugs: make	Champion
exhaust opens ...	40° BBDC	type ...	N 8 B long reach*
exhaust closes ...	10° ATDC	size ...	14mm
Standard ignition timing	TDC (fully retarded)	gap ...	.020in
Location of timing mark	Timing cover pointer and dot mark		
	A40	A50	
Distributor: type & service No. ...	DM2 P4 40452	DM2 P4 40427	
Advance range (crank deg.); centrif. ...	12°-16°	32°-36°	
vacuum ...	22°-26°	14°-18°	
Advance starts (crank r.p.m.) ...	1050-1650	700-1100	
Max. advance (crank r.p.m.) ...	3400 r.p.m.	4200 r.p.m.	
		Carburettor: make ...	Zenith
		type ...	30 VIG 10
		Settings: Choke ...	25
		Main jet ...	67
		Compensating jet ...	95
		Pilot jet ...	50
		Air cleaner: make ...	AC
		type ...	Oil wet
		Fuel pump: make ...	AC
		type ...	"U"
		pressure ...	1 1/2-2 1/2 lb/sq in

* XN 8B if shortwave radio fitted.

ELECTRICAL TEST DATA

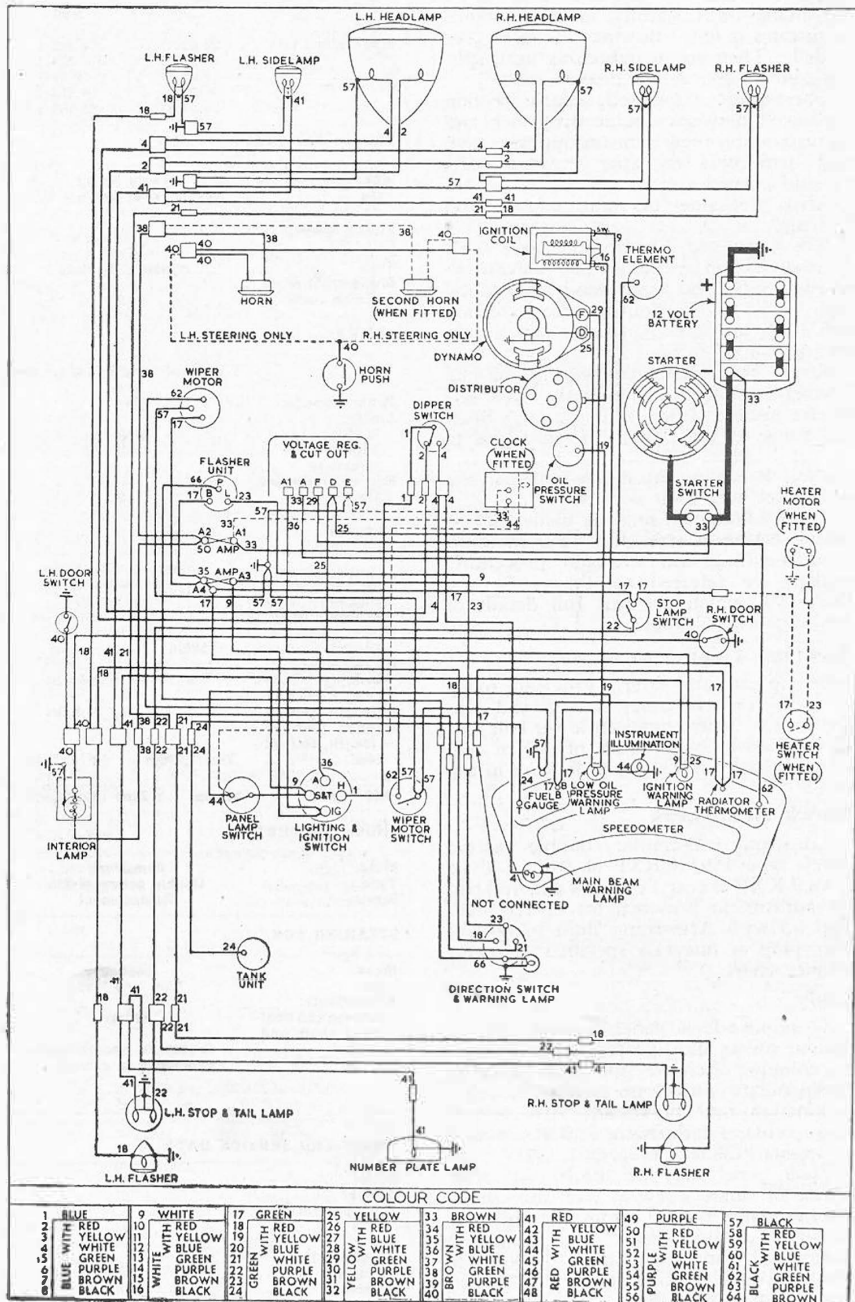
	Home	Export
Battery Model ...	GTW 7A/2	GTW 9A/2
Voltage ...	12	12
No. of plates ...	7	9
Capacity at 10 hour rate	38	51
Spec. gravity, fully charged:		
below 90°F ...	1.270-1.290	
above 90°F ...	1.210-1.230	
Dynamo model ...	C39 PV-2	
service no. ...	22258	
rotation (comm. end) anticlockwise		
cut-in volts at r.p.m.	13 volts at 1050-1200 r.p.m.	
output amps at r.p.m. ...	19 amps at 1900-2150 r.p.m. and 13 volts	
field resistance ...	6.1 ohms	
brush tension ...	15 oz	
Control Box model ...	RB 106-1	
service no. ...	37138	
cut-out:		
cut-in voltage ...	12.7-13.3	
cut-out voltage ...	8.5-10.0	
regulator voltage:		
10°C (50°F) ...	15.9-16.5	
20°C (68°F) ...	15.6-16.2	
30°C (86°F) ...	15.3-15.9	
40°C (104°F) ...	15.0-15.6	
Starter model ...	M 35 G/1	
service no. ...	25022	
rotation (comm. end) anticlockwise		
lock torque (lb.ft./amps-volts) ...	9.3 lb/ft @ 370-390 amps and 7.7-7.3 volts	
torque at 1,000 r.p.m. ...	4.9 lb/ft @ 250-270 amps and 9.3-8.9 volts	
brush tension ...	15-25 oz	
Coil model ...	LA 12	
service no. ...	45053	
stall current ...	3.75 amps	
running current ...	1.5 amps	

ADDITIONAL ELECTRICAL DATA Lucas Equipment

	Model	Service No.
Headlamps: R.H.D. ...	F700	51515
L.H.D. ...	F700	51516
Export ...		
Europe ...	F700	51517
Export ...		
France ...	F700 EF	51518
Side lamps: standard ...	516	52182
flasher ...	539	52213
Stop/tail lamps:		
standard ...	551	53332
flasher ...	539	52297
Number plate lamp ...	534	53348
Starter switch ...	ST 19/1	76423
Lighting and ignition switch ...	PRS 3	31459
Panel light switch ...	PS 7/2	31479
Heater switch ...	PS 7/2	31419
Stop lamp switch ...	HL 2	31082
Screenwiper switch ...	PS 7/2	31419
Flasher operating switch ...	SC 82	31530
Trafficator switch ...	SC 82	31464
Trafficators ...	SF 80	54044
Steering column control ...	CC 3	32929
Flasher unit ...	FL 3	53003
Dipper switch ...	FS 22/1	31284
Screenwiper ...	DR 2	75251
Fuse box ...	SF 6	33240
Horns: high note ...	WT 618	60947
low note ...	WT 618	60946

BULBS

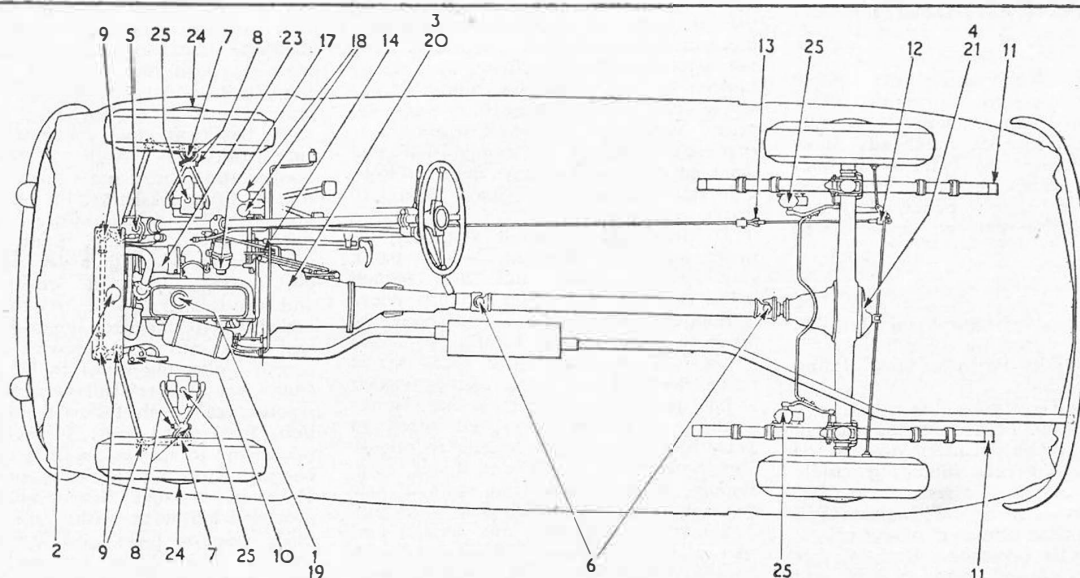
	Bulb No.	Volt- age	Watt- age	Cap
Headlamps:				
dip left ...	354	12	42/36	Prefocus
dip right ...	355	12	42/36	Prefocus
vertical dip ...	370	12	45/40	Prefocus
Side lamps:				
standard ...	222	12	4	M.C.C.
flasher ...	382	12	21	S.C.C.
Stop/tail lamps:				
standard ...	380	12	21/6	S.C.C.
flasher ...	382	12	21	S.C.C.
Number plate lamp ...	222	12	4	M.C.C.
Ignition and oil warning lamps	987	12	2.2	M.E.S.
Panel lamps ...	987	12	2.2	M.E.S.
Trafficators ...	256	12	3	Festoon
Beam and flasher warning lamps	987	12	2.2	M.E.S.



COLOUR CODE

1 BLUE	9 WHITE	17 GREEN	25 YELLOW	33 BROWN	41 RED	49 PURPLE	57 BLACK
2 RED	10 RED	18 RED	26 RED	34 RED	42 RED	50 RED	58 RED
3 YELLOW	11 YELLOW	19 YELLOW	27 YELLOW	35 YELLOW	43 YELLOW	51 YELLOW	59 YELLOW
4 WHITE	12 WHITE	20 WHITE	28 WHITE	36 WHITE	44 WHITE	52 WHITE	60 WHITE
5 BLUE	13 BLUE	21 BLUE	29 BLUE	37 BLUE	45 BLUE	53 BLUE	61 BLUE
6 GREEN	14 GREEN	22 GREEN	30 GREEN	38 GREEN	46 GREEN	54 GREEN	62 GREEN
7 PURPLE	15 PURPLE	23 PURPLE	31 PURPLE	39 PURPLE	47 PURPLE	55 PURPLE	63 PURPLE
8 BROWN	16 BROWN	24 BROWN	32 BROWN	40 BROWN	48 BROWN	56 BROWN	64 BROWN

Based on a wiring diagram supplied by Joseph Lucas, Ltd.



KEY TO MAINTENANCE DIAGRAM

DAILY

1. Engine sump } check level and top up
2. Radiator

EVERY 1,000 MILES (1,600 km)

3. Gearbox
4. Rear axle } top up
5. Steering box
6. Propeller shaft universal joints (2)
7. King pins (4)
8. Fulcrum pins (2)
9. Steering ball joints (6)
10. Steering idler (1)
11. Rear spring shackle pins (2)
12. Brake compensator
13. Handbrake pivot (1)
14. Handbrake (1)
15. Gear change joints
16. Carburettor controls and linkages
17. Distributor—oil auto advance shaft bearing and contact breaker pivot, grease cam
18. Brake fluid reservoir and clutch fluid reservoir—top up

EVERY 3,000 MILES (4,800 km)

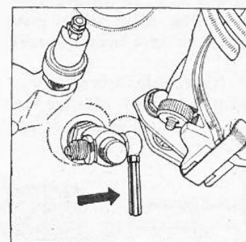
19. Engine sump—drain and refill

EVERY 6,000 MILES (9,600 km)

20. Gearbox } drain and refill
21. Rear axle }
22. Water pump—oil gun
23. Dynamo bearings—oil with S.A.E. 30 oil
24. Front hubs—repack with grease
25. Shock absorbers—check levels and top up

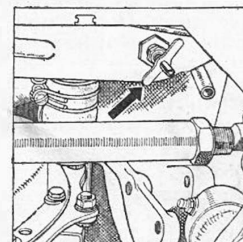
EVERY 9,000 MILES (15,000 km)

26. Oil filter—renew element (3H2909 or 3H2907)



DRAINING POINTS

Left: Cylinder block drain tap (closed) at off side beside the distributor. Right: Drain tap on bottom tank, seen from below. Note that heater is not drained by these taps, also that system is pressurized



FILL-UP DATA

	Pints	Litres
Engine sump ...	7*	4
Gearbox ...	4½	2.4
Rear axle ...	2	1.14
Cooling system ...	12	6.82
Fuel tank ...	8½ gall	39.75
Tyre pressures:		
front ...	24lb/sq. in	1.69 kg/cm²†
rear ...	26lb/sq. in	1.83 kg/cm²†
*Filter 1 pt (.57 litres). †Fully laden.		

RECOMMENDED LUBRICANTS

	Wakefield	Esso	B.P.	Duckham's	Vacuum	Shell
Home	Castrol XL	Essolube 30	Energol Motor Oil S.A.E.30	N.O.L. Thirty	Mobiloil A	X-100 30
Engine 32° to 10°F	Castrolite	Essolube 20	Energol Motor Oil S.A.E.20W	N.O.L. Twenty	Mobiloil Arctic	X-100 20/20W
Below 10°F	Castrol Z	Essolube 10	Energol Motor Oil S.A.E.10W	N.O.L. Ten	Mobiloil 10W	X-100 10W
Transmission	Castrol XL	Essolube 30	Energol S.A.E.30	N.O.L. Thirty	Mobiloil A	X-100 30
Rear axle and steering box (a)	Castrol Hypoy	Esso Expee Compound 90	Energol Transmission Oil EP S.A.E.90	Hypoid 90	Mobilube GX 90	Spirax 90 EP
Oil nipples (b)	Castrol Hipress	Esso Expee Compound 140	Energol Transmission Oil EP S.A.E.140	N.O.L. EPT 140	Mobilube GX 140	Spirax 140 EP
Front wheel hubs	Castrol Heavy	Esso Grease	Energol L3	IRB Grease	Mobil Hub Grease	Retinax A
Distributor, Oil can	Oilit	Handy Oil	Energol Motor Oil S.A.E.20W	N.O.L. Twenty	Mobil Handy Oil	X-100 20/20W
Upper cylinder lubrication	Castrollo	Esso U.C.L.	Energol U.C.L.	Adeoids	Mobil Upperlube	Donax U

(a) Rear axle and steering:—For temperatures below 10°F use S.A.E.30 hypoid lubricant.
 (b) Oil nipples:—For high temperature climates the grease as shown for hubs can be used.