Leyland

Special Tuning

for the

1275 GT and COOPER S

C-AKD 5096

This Tuning Booklet has been written to cover all aspects of tuning for the 1275 GT and Mini Cooper 'S'. The engines fitted to these cars are tuned to a fairly high degree in standard form, but further power can be obtained at the expense of some tractability at lower speeds.

It must be clearly understood, that, whereas it is a simple matter to increase the power output of the engine, the increase in power must inevitably carry with it the tendency to reduce reliability. It is for this reason that the OwnerService Statement on a new 1275 GT expressly excludes any tuning beyond Pluspac A as described in this booklet, but super tuning does not necessarily make the 1275 GT hopelessly unreliable. In fact, it may be assumed that it will be at least as reliable as other cars of a similar performance.

This booklet is laid out to give details for progressively increasing the power. With the above ideas firmly established, you should select the simpliest tuning methods which will give the performance required.

In certain countries noise and air pollution regulations are in force. The Company does not therefore accept responsibility for any increase in the existing noise or exhaust fume level of the car, which may result after super tuning has been carried out. In countries with special regulations, modifications to the car may prohibit its use on the public highway.

International competitive events are run under rules agreed by the F.I.A. which limit modifications for certain groups or categories. As soon as improvements are incorporated into production or become available as special parts, the necessary steps are taken to have these parts approved for competition and included in the homologation forms. North American countries have their own separate rules.

Whilst every care is taken, no responsibility can be accepted for ensuring that any specifications or modifications comply with the F.I.A. Regulations or homologation forms. Copies of the forms of recognition can be purchased from the R.A.C., Motor Sport Division, 31 Belgrave Square, London SW1X 8QH, who will also be able to advise on eligibility of modified cars. Lithographed copies of the actual form, but without the R.A.C. embossed stamp, are available from Leyland ST., these may not be acceptable by scrutineers in case of dispute.

Mini Cooper 'S'	-	Form 5028	-	Lithographed copy	C-AKD 7955
1275 GT	-	Form 5405	-	Lithographed copy	AMK 3320

All special parts are available worldwide through Leyland ST Distributors/Stockists.

WORKSHOP MANUAL

A comprehensive Workshop Manual Part No. AKD 4935 is available and should be used in conjunction with this booklet.

Tuning for road use can be varied to suit individual requirements but the following stages of tune are recommended.

PLUSPAC 'A' - STN 0022

For a mild tune Pluspac 'A' should be fitted. The Pac contains twin 32% SU carburettors, polished inlet manifold, free flow exhaust manifold, air cleaners, plus all the required fitting nuts and bolts, pipes and brackets with detailed instructions.

The new car warranty is not effected by the addition of this Pac.

Ignition timing 10° B.T.D.C. static, 14° B.T.D.C. stroboscopic at 1000 RPM.

PLUSPAC 'B' - STN 0023

The 'B' Pac contains the parts as supplied in the 'A' Pac STN 0022 plus sparking plugs, adaptors, gaskets and a polished gas flowed 19cc cylinder head which increases the compression ratio to 9.5:1 approximately. Detailed fitting instructions are included.

Ignition timing 8° B.T.D.C. static, 13° B.T.D.C. stroboscopic at 1000 RPM.

PLUSPAC 'S' - STN 0024

This Pluspac has been developed to increase the performance of the standard 1275 GT to equal the Cooper 'S' which is no longer in production.

The parts are not as in the 'A' or 'B' Pacs, as to obtain the increase in performance required a large valved polished gas flowed cylinder head is used which raises the compression ratio to 9.5:1 with a competition exhaust manifold, an additional 38% SU carburettor, a twin inlet manifold, Cooper 'S' distributor plus all the nuts, bolts, brackets and adaptors required. Detailed fitting instructions are included.

Performance figures are by permission of 'Motor' and were obtained on a car with 13" road wheels. Figures may vary for later cars with 12" road wheels or Dersvo tyres.

M.P.H.	KPH	STD 1275 GT	STD COOPER 'S'	1275 GT 'S' Kit
0 - 30	48	4.3 secs	3.5 secs	3.3 secs
0 - 40	64	6.4 "	6.0 "	4.8 "
0 - 50	80	9.8 "	8.2 "	7.2 "
0 - 60	96	14.2 "	11.2 "	10.0 "
0 - 70	112	20.8 "	15.4 "	14.0 "
0 - 80	128	34.3 "	23.4 "	20.7 "
0 - 90	144	-	34.7 "	32.7 "

Tuning for road use can be varied to suit individual requirements but great care must be taken in selecting individual parts to ensure that the final kit is not a haphazard mass of incompatible parts.

Leyland ST engine Pluspacshave been developed and throughly tested by BL engineers to achieve improved acceleration, top speed,and at times,improved steady speed fuel consumption, still maintaining engine reliability.

Pluspac 'A' STN 0022

For a mild road tune Pluspac 'A' should be fitted to give the increase in performance as shown overleaf.

The Pac contains twin 32mm (1.25") S.U. carburetters with inlet manifold, three branch exhaust manifold, air cleaner plus all the required fitting nuts and bolts, pipes and brackets. Included in each Pac are detailed fitting instructions.

The manufacturers new car Warranty is not effected by the addition of this kit.

Ignition timing 8° B.T.D.C. static, 13° B.T.D.C. stroboscopic at 1000 R.P.M. with vacuum pipe disconnected.

Pluspac 'B' STN 0124

The 'B' Pac contains twin 38mm S.U. carburetters, special inlet manifold and air cleaners, plus all the parts in the 'A' Pac including the detailed fitting instructions. Performance is increased throughout the speed range, the 0 - 70 MPH time is reduced by 8.98 seconds from the standard car and the steady speed fuel consumption improved.

Pluspac 'S' STN 0024

This GT 'S' Pluspac is the ultimate stage of road tune if the power unit reliability and safety features of the suspension and brakes are to be maintained.

The parts contained in the kit are the same as the 'B' Pac with the addition of a large valve cylinder head, sparking plugs and gaskets, again detailed instructions for fitting are included.

An average road speed performance acceleration increase of approx. 31% makes the 1275GT S one of the fastest small cars available 0 - 70 MPH in 16.97 seconds

Full performance details and fuel consumption are given overleaf.

SU INLET MANIFOLD (5 Port Cylinder Head)

When fitting twin 38mm or 45mm SU HS type carburettors alloy inlet manifold C-AEG 489 should be used. Care should be taken to ensure the ports on the manifold line up exactly to the ports on the cylinder head and when being used in Group 1 competition are to the sizes stated in the homologation form.

For increased velocity of fuel mixture the manifold may be internally polished when the regulations allow hand finishing.

This manifold is supplied in carburettor installation kits C-AJJ 4001 and C-AJJ 4040.

WEBER INLET MANIFOLD (8 Port Cylinder Head)

A two piece alloy manifold to take twin 45 DCOE Weber carburettors is available under Part No. C-AHT 507. It will be necessary however to obtain suitable studs, carburettor linkage and gaskets in order to fit the manifolds.

5 PORT CYLINDER HEAD & BLOCK

Remove all frazes from the combustion chamber and ports, but leave the locating sleeves in place when matching the manifold ports. Raise the compression ratio by machining the head face. Removing 0.012" (.305mm) reduces the capacity by approximately 1cc.

A special polished cylinder head complete with large inlet valves is available Part No. C-AHT 221. This has inlet valves 37.3mm (1.464"), exhaust valves 29.243mm (1.156"), and combustion chamber capacity 16.4cc. When fitting to the 999cc unit (970 bored +0.040") the compression ratio will be 12.8:1 with flat top pistons. On the 1275 unit with dished pistons C-AJJ 3377 it will be 11.4:1. On a 1293cc unit (1275cc bored +0.020") to obtain a compression ratio of 12.5:1 using dished pistons it is necessary to machine the cylinder block face to within 0.010" (.254mm) of the piston crowns at T.D.C. Use head gasket C-AHT 188 in all cases and ensure that there are no burrs at the base of the head studs. Special head washers C-AHT 288 (contains 10) are available to prevent any possibility of the head lifting with a high compression ratio.

5 PORT POLISHED CYLINDER HEADS

Part Number	Combustion Chamber Capacity	Valve Head Diameter & Part Number		Valve Springs		Spring Load (lbs)	
		Inlet	Exhaust	Inner	Outer	Inner	Outer
C-AHT 134	18/19.5cc	1.307" 33.2mm 12G 941	1.156" 29.4mm 12G 1322	12G 1137	12G 1136	25	51
C-AHT 221	16.4cc	1.464" 37.3mm C-AHT 55	1.156" 29.4mm 12G 1322	C-AEA 652	C-AEA 524	63	117
C-AHT 222	16.4cc	1.401" 35.6mm C-AEG 544	1.156" 29.4mm 12G 1322	C-AEA 652	C-AEA 524	63	117
C-AHT 463	19 cc	1.401" 35.6mm C-AEG 544	1.156" 29.4mm 12G 1322	AEA 768	AEA 767	46	94

SU CARBURETTOR (5 Port Cylinder Head)

Acceleration is greatly improved by fitting twin 38% SU carburettors, C-AUD 640 using the installation kit C-AJJ 4040. Both carburettors and installation kit will fit right and left hand drive cars.

These carburettors are fitted with blue springs, quick lift dampers and No. 7 needles AUC 1006. It may be necessary,depending on the vehicles engine specification, to change the carburettor needle in order to obtain the correct mixture setting.

970 cc	Camshaft C-AEA 648	CP4	Needle	Part No.	AUD 1118
1071cc	" "	MME	"	" "	AUD 1265
1275cc	" "	BG	"	" "	AUD 1067
1275cc	Standard Camshaft	7	"	" "	AUD 1006

Use flare pipes C-AHT 247 to reduce turbulence at the carburettor intake, or for dusty conditions fit pancake type air cleaners C-AHT 210.

Further power can be obtained by fitting HS6 carburettors C-AUD 641, together with installation kit C-AJJ 4001. These 45% carburettors should be used with large valve head C-AHT 221 and one of the race or sprint camshafts. Flare pipes C-AJJ 7209 are available to fit these large carburettors.

On a 1293cc full tuned unit, with the rally exhaust system C-ARA 334 use KW needles AUD 1247 or with the race side exhaust C-AHT 290 use RR needles AUD 1494.

WEBER CARBURETTOR (5 Port Cylinder Head)

Alternative to fitting twin 45% SU carburettors, a single twin choke 45 D.C.O.E. carburettor part number C-AHT 143 can be fitted. The carburettor is supplied with the best settings for a race tuned 1293cc car. Variations in camshafts, cylinder heads etc., may require slightly different jets.

The carburettor should be fitted to manifold C-AHT 113 which is included in complete installation kit C-AJJ 3360, which also contains special accelerator cable C-AHT 85.

AMAL CARBURETTOR (Alloy 8 Port Cylinder Head)

Four Amal carburettors of 33% choke size are supplied in kit part number C-AJJ 4083. These carburettors are modified to operate with a petrol line pressure of 2½ lbs/ins. obtained with an electrical fuel pump. Individual castalloy inlet manifolds plus all the throttle linkages and gaskets are included in the kit.

If a servo is used in conjunction with this conversion, an adaptor should be fitted into one of the inlet manifolds and should be connected to a vacuum tank and not directly to the servo unit.

Full fitting instructions are supplied with each kit.

SU INLET MANIFOLD (5 Port Cylinder Head)

Fit fitting twin 38% or 45% SU HS type carburetters an alloy inlet manifold part number C-AEG 489 is available. For increased velocity of fuel mixture this manifold may be internally polished. Care should be taken in order to make sure the ports on the manifold mate exactly to the ports on the cylinder head. This manifold is supplied in the installation kits Part Nos. C-AJJ 4040 and C-AJJ 4001.

WEBER INLET MANIFOLD (8 Port Cylinder Head)

A two piece alloy manifold to take twin 45 DCOE Weber carburetters is available under Part No. C-AHT 507. It will be necessary however to obtain suitable studs, carburetter linkage and gaskets in order to fit the manifolds.

5 PORT CYLINDER HEAD & BLOCK

Remove all frazes from the combustion chamber and ports, but leave the locating sleeves in place when matching the manifold ports. Raise the compression ratio by machining the head face. Removing 0.012" (.305%) reduces the capacity by approximately 1cc.

A special polished cylinder head complete with large inlet valves is available Part No. C-AHT 221. This has inlet valves 37.3% (1.464"), exhaust valves 29.243% (1.1515"), and combustion chamber capacity 16.4cc. When fitting to the 999cc unit (970 bored +0.040") the compression ratio will be 12.8:1 with flat top pistons. On the 1275 unit with dished pistons C-AJJ 3377 it will be 11.4:1. On a 1293cc unit (1275cc bored +0.020") to obtain a compression ratio of 12.5:1 using dished pistons it is necessary to machine the cylinder block face to within 0.010" (.254%) of the piston crowns at T.D.C. Use head gasket C-AHT 188 in all cases and ensure that there are no burrs at the base of the head studs. Special head washers C-AHT 288 (contains 10) are available to prevent any possibility of the head lifting with a high compression ratio.

5 PORT POLISHED CYLINDER HEADS

Part No.	Combustion Chamber Capacity	Valve Head Diameter Part Number		Valve Springs		Spring Load (lbs)	
		Inlet	Exhaust	Inner	Outer	Inner	Outer
C-AHT 134	18/19.5cc	1.307" 33.2% 12G 941	1.156" 29.4% 12G 1322	12G 1137	12G 1136	25	51
C-AHT 221	16.4cc	1.464" 37.3% C-AHT 55	1.156" 29.4% 12G 1322	* C-AEA 652	* C-AEA 524	63	117
C-AHT 222	16.4cc	1.401" 35.6% AEG 592	1.156" 29.4% 12G 1322	* C-AEA 652	* C-AEA 524	63	117
C-AHT 463	19 cc	1.401" 35.6% AEG 592	1.156" 29.4% 12G 1322	AEA 768	AEA 767	46	94

VALVE SPRINGS

Standard valve springs will avoid undue load on the valve gear, but competition springs, inner C-AEA 652, outer C-AEA 524 will increase valve crash speed to approximately 8400 r.p.m. when the full race or sprint camshafts are used. Lightening the valve gear will also raise the valve crash speed.

* The locating collar Part No. C-AEA 654 is essential to stop the springs becoming coil bound.

SU carburetter (5 Port Cylinder Head)

Acceleration is greatly improved by fitting twin 38mm SU carburetters, C-AUD 640 using the installation kit C-AJJ 4040. Both carburetters and installation kit will fit right and left hand drive cars.

These carburetters are fitted with blue springs, quick lift dampers and No. 7 needles AUC 1006. It may be necessary, depending on the vehicles engine specification, to change the carburetter needle in order to obtain the correct mixture setting.

970cc	Camshaft C-AEA 648	CP4 Needle	Part No.	AUD 1118
1071cc	" "	MME "	" "	AUD 1265
1275cc	" C-AEA 648/AEG 529	BG "	" "	AUD 1067
1275cc	Standard Camshaft	7 " Fixed	" "	AUD 1006
1275cc	" "	AAR " Swing	" "	CUD 1015

Use flare pipes C-AHT 247 to reduce turbulence at the carburetter intake, or for dusty conditions fit air cleaners.

Further power can be obtained by fitting HS6 carburetters C-AHT 641, together with installation kit C-AJJ 4001. These 45mm carburetters should be used with large valve head C-AHT 221 and one of the race or sprint camshafts. Flare pipes C-AHT 392 are available to fit these large carburetters.

On a 1293cc full tuned unit, with the rally exhaust system C-ARA 334 use KW needles AUD 1247 or with the race side exhaust C-AHT 290 use RR needles AUD 1494.

WEBER CARBURETTER (5 Port Cylinder Head)

Alternative to fitting twin 45mm SU carburetters, a single twin choke 45 DCOE carburetter Part No. C-AHT 143 can be fitted. The carburetter is supplied with the best settings for a race tuned 1293cc car. Variations in camshafts, cylinder heads etc., may require slightly different jets.

The carburetter should be fitted to manifold STR 0435 which is included in complete installation kit STN 0079, which also contains special accelerator cable C-AHT 85.

AMAL CARBURETTER (Alloy 8 Port Cylinder Head)

Four Amal carburetters of 33mm choke size are supplied in kit part number C-AJJ 4083. These carburetters are modified to operate with a petrol line pressure of 2½ lbs/ins., obtained with an electrical fuel pump. Individual cast alloy inlet manifolds plus all the throttle linkages and gaskets are included in the kit.

If a servo is used in conjunction with this conversion, an adaptor should be fitted into one of the inlet manifolds and should be connected to a vacuum tank and not directly to the servo unit.

Full fitting instructions are supplied with each kit.

SU INLET MANIFOLD (5 Port Cylinder Head)

When fitting twin 38mm or 45mm SU HS type carburettors alloy inlet manifold C-AEG 489 should be used. Care should be taken to ensure the ports on the manifold line up exactly to the ports on the cylinder head and when being used in Group 1 competition are to the sizes stated in the homologation form.

For increased velocity of fuel mixture the manifold may be internally polished when the regulations allow hand finishing.

This manifold is supplied in carburettor installation kits C-AJJ 4001 and C-AJJ 4040.

WEBER INLET MANIFOLD (8 Port Cylinder Head)

A two piece alloy manifold to take twin 45 DCOE Weber carburettors is available under Part No. C-AHT 507. It will be necessary however to obtain suitable studs, carburettor linkage and gaskets in order to fit the manifolds.

5 PORT CYLINDER HEAD & BLOCK

Remove all frazes from the combustion chamber and ports, but leave the locating sleeves in place when matching the manifold ports. Raise the compression ratio by machining the head face. Removing 0.012" (.305mm) reduces the capacity by approximately 1cc.

A special polished cylinder head complete with large inlet valves is available Part No. C-AHT 221. This has inlet valves 37.3mm (1.464"), exhaust valves 29.243mm (1.156"), and combustion chamber capacity 16.4cc. When fitting to the 999cc unit (970 bored +0.040") the compression ratio will be 12.8:1 with flat top pistons. On the 1275 unit with dished pistons C-AJJ 3377 it will be 11.4:1. On a 1293cc unit (1275cc bored +0.020") to obtain a compression ratio of 12.5:1 using dished pistons it is necessary to machine the cylinder block face to within 0.010" (.254mm) of the piston crowns at T.D.C. Use head gasket C-AHT 188 in all cases and ensure that there are no burrs at the base of the head studs. Special head washers C-AHT 288 (contains 10) are available to prevent any possibility of the head lifting with a high compression ratio.

5 PORT POLISHED CYLINDER HEADS

Part Number	Combustion Chamber Capacity	Valve Head Diameter & Part Number		Valve Springs		Spring Load (lbs)	
		Inlet	Exhaust	Inner	Outer	Inner	Outer
C-AHT 134	18/19.5cc	1.307" 33.2mm 12G 941	1.156" 29.4mm 12G 1322	12G 1137	12G 1136	25	51
C-AHT 221	16.4cc	1.464" 37.3mm C-AHT 55	1.156" 29.4mm 12G 1322	C-AEA 652	C-AEA 524	63	117
C-AHT 222	16.4cc	1.401" 35.6mm C-AEG 544	1.156" 29.4mm 12G 1322	C-AEA 652	C-AEA 524	63	117
C-AHT 463	19 cc	1.401" 35.6mm C-AEG 544	1.156" 29.4mm 12G 1322	AEA 768	AEA 767	46	94

8 PORT CYLINDER HEAD - ALUMINIUM

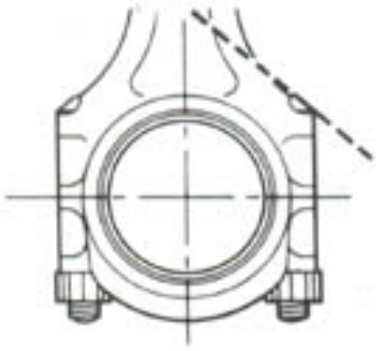
The 8 port aluminium cylinder head is supplied under Part No. C-AJJ 4064 complete with additional rocker pedestal, valves, 200lb. valve springs, caps, cotters, studs, inlet and exhaust gaskets, but is not assembled. It is fitted with inlet valves 35.6% (1.4") dia. C-AHT 376 and exhaust valves 30.8% (1.215") dia.C-AHT 377.

The head is purposely left to enable advanced ideas on combustion chamber shape and finish to be incorporated or undertaken by specialists to suit the particular requirement of the engine. The average need is a nominal combustion chamber volume of about 13cc after super finishing the valves and grinding them in.

As there is this tolerance in the head capacity the distance the piston is required down the bore for a given compression ratio has to be calculated.

For maximum power the compression ratio should be 12.5:1. On a 1293cc unit using pistons C-AJJ 3377 and a head capacity of 13cc the distance from the cylinder block face to the piston crown should be 1.016% (0.040"). For every 1cc variation in the combustion chamber the piston crown should be 0.254% (0.010") up or down the bore i.e. a 14cc head capacity requires the piston to be 0.762% (0.030") down bore or for a 12cc head capacity the piston should be 1.27% (0.050") down bore. The cylinder block face or piston crown has to be machined to obtain the required measurement. The maximum amount that can be machined from the crown of piston C-AJJ 3377 is 1.58% (0.62").

Use head gasket C-AHT 188 in all cases and ensure there are no burrs at the base of the head studs.



CONNECTING ROD

Owing to the 8 port head having a non standard valve sequence, number 2 and 4 connecting rods may foul the camshaft. To overcome this the top edge of the connecting rod big end of the head of the bolt should be chamfered as shown.

VALVE GUIDES

5 Port Cylinder Head

Hidural valve guides are fitted to cylinder heads C-AHT 463, C-AHT 222 and C-AHT 221. Replacement guides are available in sets under Part No. C-AJJ 4037.

8 Port Cylinder Head

The alloy 8 port cylinder head is fitted with hidural valve guides, inlet C-AHT 364 exhaust C-AHT 365. Replacement guides are available in standard size or 0.025% (+0.001"), 0.101% (+0.004") and 0.127% (+0.005") oversize and should be ordered by adding the size in inches as a suffix to the part number.

COMPRESSION RATIO

The compression ratio can be raised to a suggested maximum of 12.5:1 but such a high ratio is only compatible with special camshafts and a strengthened engine and therefore should only be used on a competition unit.

For road use 10:1 should be a maximum which will give good increase in performance but retain reliability.

Machining .3% (0.012") approximately from the cylinder head face is equal to a reduction of 1cc in the combustion chamber volume.

When calculating the amount to be removed from the head face, the piston dish, thickness of head gasket and clearance between the pistons at T.D.C. and block face has to be taken into consideration. As a guidance 1cc can be added to the clearance volume for every .254% (.010") the piston is down the cylinder bore.

Cylinder head gasket C-AHT 188 should always be used which is equivalent to 3.4cc when compressed as fitted, which should be soaked in water first.

The formula for calculating compression ratio is: $CR = \frac{VS + VC}{VC}$

where VS = Swept volume, VC = Clearance volume.

PISTONS/CYLINDER BLOCK

Piston Set No.	Piston Dish	Cylinder Head Capacity — Compression Ratio (1275cc Unit)		
		21.4cc	19cc	16.4cc
C-AJJ 3377	6.6 cc	9.75:1	10.6:1	11.4:1
C-AJJ 3382	Flat Top	12.0:1	13.0:1	Not suitable
8G 2546	11.0cc (Std."GT")	8.8:1	9.5:1	10:1
8G 2434	6.6cc (Std. "S")	9.75:1	10.6:1	11.4:1

Competition forged pistons C-AJJ 3377 are available .50% (+.020") and 1.01% (+.040"). When ordering, the required oversize should be indicated by suffix 23 or 43 respectively.

To obtain a compression ratio of 12.5:1 using .50% (+.020") dished pistons C-AJJ 337723 it is necessary to machine the cylinder block face to within .254% (.010") of the piston crown at T.D.C. when using a 16.4cc 5 port cylinder head as on Sheet A - 4.

With an alloy 8 port cylinder head C-AJJ 4064 fitted the distance from the cylinder block face to the piston crown should be 1.016% (0.040") with a combustion chamber capacity of 13cc.

Flat top competition forged pistons are also available in .50% (+.020") and 1.01% (+.040") oversize.

FLYWHEEL & CLUTCH

It is dangerous to lighten the standard cast iron flywheel but the special light steel flywheel C-AEG 619 (91bs. 6ozs - 4.2 kg) is safe at high revolutions. The lightened clutch pressure plate C-AHT 230 should be fitted at the same time. Use the competition diaphram clutch spring assembly C-AEG 481, together with bonded clutch driven plate C-AHT 349 for rallying or road use with a tuned unit, C-22G 247 for race, rally or rallycross, or solid plate C-AHT 596 for race only.

The crankshaft, flywheel, clutch assembly and damper should be fully balanced separately and then as a rotating unit.

EXHAUST MANIFOLD AND SYSTEM

For road tuning fit the free flow manifold C-AEG 365 on the 1275cc unit. The standard Cooper 'S' exhaust system is quite satisfactory for power and should be fitted on a tuned 1275 GT for road use.

Manifold C-AEG 432 should be fitted on the 970cc and 1071cc engines when using 5 port cylinder heads.

The large bore manifold C-AHT 343 is more suited for rallying which should be coupled to the super rally exhaust system C-ARA 334 which is fully shielded and has an upswept tail pipe. The system has been developed over years of rallying with the works Minis.

A straight through side exhaust system C-AHT 290 should be used for racing with the competition 3 into 1 manifold STR 0332. With the Leyland 8 port cylinder head, special exhaust manifold C-AHT 343 is required which should be fitted with special gasket C-AHT 380.

OIL COOLER

For competition use and prolonged high speed driving, oil cooler kit C-AJJ 4030 should be fitted to the 1275 GT

Oil Cooler ARO 9809 (13 row) was fitted standard on the Cooper 'S' and can be used for competition with heavy duty pipes C-AHT 3 and C-AHT 4.

The oil radiator and pipes are available as a complete kit part number C-AJJ 3309.

A larger 16 row cooler ARO 9875 is available for competition use when modifications to the grille, to provide adequate clearance, are permitted.

PRIMARY GEAR

Primary gear set C-AEA 3239 is available with a steel backed bush to prevent breakage during competition use, and should be assembled with just a smear of engine oil. The special bushes are line bored in position therefore are not available separately.

CAMSHAFT AND OIL PUMPS

1275 GT Road Use

For improved performance when the car is used for road work, camshaft C-AEG 567 gives the best improvement in mid-range performance without effecting low speed tractability.

Timing: I.O. - 16° BTDC : I.C. - 56° ABDC : E.O. - 51° BBDC : E.C. - 21° ATDC.

Cooper 'S' Road Use

The standard 'S' camshaft gives good performance for normal road use, but an increase in mid-range and top end performance can be achieved by fitting camshaft C-AEA 731.

Timing: I.O. - 24° BTDC : I.C. - 64° ABDC : E.O. - 59° BBDC : E.C. - 29° ATDC.

1275 GT Race and Rally

Camshaft C-AEA 800 the ultimate in road tuning can be used for a mild rally tune, but if further power is required and a loss in tractability acceptable camshafts C-AEG 643 or C-AEG 529 can be used.

For long distance racing camshaft C-AEG 529 is most suited,but for shorter races C-AEG 597 can be used,or for absolute maximum power at sprint meetings use camshaft C-AEG 595.

Timing:

C-AEA 800 I.O. - 24° BTDC : I.C. - 64° ABDC : E.O. - 59° BBDC : E.C. - 29° ATDC
C-AEG 643 I.O. - 34° BTDC : I.C. - 74° ABDC : E.O. - 69° BBDC : E.C. - 39° ATDC
C-AEG 529 I.O. - 50° BTDC : I.C. - 70° ABDC : E.O. - 75° BBDC : E.C. - 45° ATDC
C-AEG 597 I.O. - 60° BTDC : I.C. - 80° ABDC : E.O. - 75° BBDC : E.C. - 45° ATDC
C-AEG 595 I.O. - 60° BTDC : I.C. - 80° ABDC : E.O. - 85° BBDC : E.C. - 55° ATDC

Cooper 'S' Race and Rally

Camshaft C-AEA 648 which has a pin drive for the oil pump, gives good top end power but with a loss in tractability at low r.p.m.

For short races fit camshaft C-AEG 597 and for sprints fit camshaft C-AEG 595. Both these camshafts require modifications to the cylinder block in order to fit the flange driven oil pump 12G 1128. Two additional bolts HBN 0412 have to be fitted to the rear of the cylinder block which has to be drilled 5.15% (13/64") and tapped 6.35% (¼" UNF). A new gasket 12G 730 and lockwashers 12G 2097 and 12G 2098 should be used.

Timing:

C-AEA 648 I.O. - 50° BTDC : I.C.-70° ABDC : E.O. - 75° BBDC : E.C. - 45° ATDC

8 Port Cylinder Head

The 8 port cylinder head valve sequence differs from the conventional cylinder head, therefore special camshafts have to be used. Two camshafts with different timings are available, For Rallycross and Rallying C-AEG 636 is recommended, and for Racing C-AEG 599. Both these camshafts have spider type oil pump drives.

Timing:

C-AEG 636 I.O. - 50° BTDC : I.C. - 70° ABDC : E.O. - 75° BBDC : E.C. 45° ATDC
C-AEG 599 I.O. - 60° BTDC : I.C. - 80° ABDC : E.O. - 85° BBDC : E.C. 55° ATDC

ROCKER SHAFT ASSEMBLY

A strengthened rocker shaft AEG 399 was fitted on late Cooper 'S' engines and is standard on all 1275 GT units, the early engines may be identified by the locating screw in the end pedestal. To fit the latest shaft, three new drilled pedestals 12G 1926 and a new tapped pedestal 12G 1927 will be required. Ensure that one of pedestals 12G 1927 lines up with both the oil drilling in the cylinder head and in the rocker shaft.

To reduce friction, the coil spring rocker spacers can be replaced by solid distance tubes Part No. C-AEG 392 (3 off) and washers AEG 168 (6 off). The washers should normally be either side of the end pedestals, but may be moved to ensure each rocker is immediately above the valve stem. It may be necessary to machine the side of some pedestals to get the rocker central, but the correct order of assembly must then be maintained. The latest standard valve rockers 12G 1221 can be further lightened by careful grinding at the sides only so that the strength is not reduced.

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

A complete rocker shaft assembly fitted with special high lift rocker arms is available and will give a further improvement to performance. This part C-AHT 436 is advised only for full race engines.

LIGHTENED TAPPETS AND SPROCKETS

By lightening the valve operating mechanism, the valve bounce period may be raised, this will not necessarily give an increase in brake horse power but will extend the same horse power to a higher R.P.M. This is sometimes desirable on a competition unit enabling a lower gear to be retained still maintaining the same speed with increased power for acceleration.

Specially machined tuftrided tappets C-AEA 579 and a lightened steel camshaft driving sprocket C-AEA 578 are available. Note that this sprocket is not suitable for the 'B' series engines as the camshaft timing would be incorrect. This also applies to the standard steel crankshaft sprocket AEA 696.

CRANKSHAFT PULLEY LOCKING

When fitting the crankshaft pulley, care should be taken that the keyway is a good fit to the key. After fully tightening the large securing bolt a special locking plate C-AHT 146 should be fitted by means of the damper screws to lock this bolt. This is not suitable for the one piece Pulley, but is designed for separate pulley and damper.

DYNAMO

To avoid damage to the dynamo at high speed, it is advisable to fit a larger dynamo pulley C-AEA 535 together with longer fan belt C-AEA 756. The Coil should be remounted upright on the wing panel at the rear of the engine to reduce the load on the dynamo brackets. Where regulations permit running without a dynamo, use standard water pump pulley and short fan belt C-AEA 539.

For rallying a spare fan belt of the correct type can be clipped around the water pump and timing cover for a quick changeover if one breaks during competition.

ALTERNATIVE GEARBOX RATIOS

Alternative gearbox ratios are available for units with 3 speed synchromesh gearboxes OR 4 speed versions, but different parts are required.

3 SPEED SYNCHROMESH

	Std.Ratio (helical)	Close Ratio (spur)
1st & Rev. ratios	3.200	2.573
2nd gear ratio	1.916	1.722
3rd gear ratio	1.357	1.255
Kit Part No.	-	C-AJJ 3371
1st Motion Shaft	See	C-22G 1048
2nd Speed Gear	Std.	C-22G 1049
3rd Speed Gear	Parts	C-22G 1050
Laygear	List	C-22G 1047
1st Motion Shaft	20 teeth	22 teeth
2nd Speed Gear	28 teeth	28 teeth
3rd Speed Gear	24 teeth	24 teeth
Laygear teeth	26,23,19,13	23,20,17,13

The close ratio spur cut gear kit Part No. C-AJJ 3371 contains a stronger layshaft 22A 1371 for competition use. Ensure all other parts are in good condition and the correct 1st gear 22A 1021 is fitted.

NOTE: When assembling spur-cut gears, reverse the dismantling procedure but fit the 1st Motion Shaft from inside gearbox WITHOUT its ball race. Engage 2nd Gear before fitting assembled mainshaft from inside gearbox WITHOUT its ball race. Close the first motion shaft and mainshaft together, ensuring the spigot bearing is in position, and lower the assembly on to the selectors. Fit ball race to both shafts.

4 SPEED SYNCHROMESH GEARBOXES

The 1275 GT and later Mk.III Cooper 'S' models are already fitted with close ratio helical gears.

For competition use, a close ratio spur cut gear set is available, Kit Part No. C-AJJ 4014. Complete transmission assemblies can be interchanged so ensure the correct parts are ordered for the appropriate gearbox.

RATIOS	STANDARD C.R.(HELICAL)	CLOSE RATIO (SPUR)	PART NO.
Reverse	3.35:1	2.69:1	- C-22A 1736
1st	3.3 :1	2.54:1	- C-22A 1735
2nd	2.07:1	1.73:1	- C-22A 1734
3rd	1.35:1	1.25:1	- C-22A 1733
1st Motion Shaft	18 teeth	19 teeth	- C-22A 1732
Laygear	31,26,21,18	29,25,22,19	- C-22A 1737

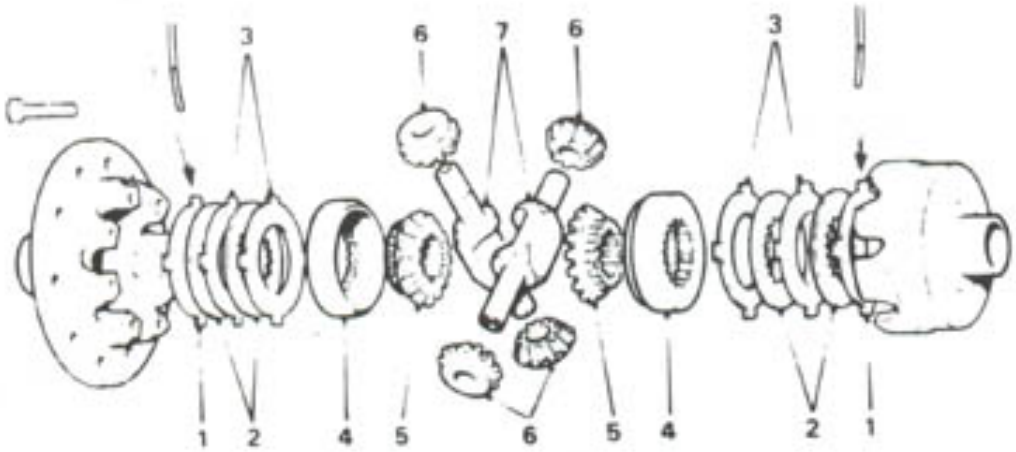
Close ratio gears will not fit latest rod gear change transmissions.

POWR-LOK DIFFERENTIAL

Differential Kit C-AJJ 3387 will only fit cars prior to the introduction of rod gearchange and with needle roller drive shafts, and flange couplings. (See the appropriate Parts Lists or Micro film for the relevant changepoints). Cars with rubber drive shaft couplings can be converted by using the following standard parts:-

Description	Part No.	Qty
End Cover	22G 419	2
Gasket - End Cover	22A 1611	2
Seal - Output Flange	13H 4691	2
Drive Shaft Assy - RH - Cooper 'S'/1275 GT	21A 1857	1
Drive Shaft Assy - LH - Cooper 'S'/1275 GT	21A 1858	1

Dismantling of the differential is not recommended by the manufacturers unless the necessary knowledge and equipment is available. The slip torque is set between 85-110 lbs ft. (11.8 - 15.2 kg.m) and it is possible to alter this by fitting the clutch friction plates in different positions, but no responsibility can be accepted for the resultant action. The alternatives are fitting two friction plates No. 2 or No. 3 side by side or reversing the No. 2 Belleville friction plate. New screws must always be used and should be assembled with Green Locktite and tightened to a torque of 35lbs ft. (4.8 kg.m).



Replacement parts are available to special order as follows:-

Description	Part No.	Qty	Illustration No.
Screw	C-AHT 585	8	-
Side Gear Revacycle	C-AHT 586	2	5
Side Gear Ring	C-AHT 587	2	4
Pinion Mate Revacycle	C-AHT 588	4	6
Clutch Friction Plate	C-AHT 589	4	3
Clutch Friction Disc	C-AHT 590	4	2
Clutch Friction Belleville	C-AHT 591	2	1
Pinion Mate cross shaft	C-AHT 592	2	7

See tuning sheet A - 12 for details of alternative final drive gears available.

ALTERNATIVE FINAL DRIVE GEARS

With the large selection of final drive ratios available it is possible to obtain a combination suitable for most competition purposes. Cars fitted with Limited Slip Differential C-AJJ 3387 as detailed on sheet A - 11 require a special final drive gear which should be used with the conventional pinion.

RATIO	NUMBER OF TEETH	WHEEL PART NO.	PINION PART NO.	LIMITED SLIP DIFF WHEEL. PART NO.	COLOUR CODE
3.444	18/62	22A 411	22A 413	C-BTA 1250	PLAIN
3.647	17/62	22G 940	22A 399	C-BTA 1247	RED
3.765	17/64	22A 401	22A 399	C-BTA 1248	WHITE
3.938	16/63	C-22G 340	C-22G 69	C-BTA 1252	BLACK
4.133	15/62	22G 101	22G 99	C-BTA 1246	GREEN
4.267	15/64	C-22G 370	22G 99	C-BTA 1251	BLUE
4.35	15/65	C-22G 443	22G 99	C-BTA 1249	GRAY

When the final drive ratio is changed on a road or rally car the accuracy of the speedometer and odometer will be affected, this should be recalibrated by the manufacturers agents to suit the new road speed/gearbox speed ratio. See Sheet A-21 for information on wheel revs per mile for various tyres which has to be considered when the choice of final drive is made.

SUSPENSION MODIFICATIONS

Cone Rubber Type

For cars running at the normal trim height competition adjustable shock absorbers are available for front, Part No. C-AHT 282 and rear C-AHT 283.

If the car is to be lowered, a maximum of 7.9% (0.312") may be removed from both the front and the rear struts, but modified shock absorbers C-AHT 284 front and C-AHT 285 rear must be fitted, to ensure that the shock absorber and mounting brackets are not strained. It is essential to move the brake pipe away from the top of the rear suspension arm, to prevent this being damaged by contact with the rear bump stops.

Hydrolastic Type Suspension

There have been changes in production on cars with Hydrolastic suspension, and it is advisable to use the late Cooper 'S' suspension for normal rally use. The Parts Micro Film show when the latest Helper Spring 21A 1806 and Rear Strut 21A 1805 (24.76 cm 9¾" long) were fitted. Early cars must have these fitted at the same time as Front Displacer 21A 2012 and Rear Displacer 21A 2014 are fitted.

Alternative Hydrolastic Units

	EARLY CARS		LATE CARS	
	Marking	Part No.	Marking	Part No.
Normal - front	NIL	21A 1477	1 orange or green	21A 1804 or 2008
Normal - rear	NIL	21A 1703	1 orange or green	21A 1804 or 2008
Stiff - F. & R.	1 yellow band	C-21A 1705*	2 orange bands	21A 1811
Hard - front	1 red band	C-21A 1819*	1 blue or silver	21A 1872 or 2012
Hard - rear	2 red bands	C-21A 1821*	2 blue or silver	21A 1874 or 2014

After fitting new displacer units take great care that they are located properly and ensure that the ball sockets do not become displaced at the start of pressurising. Take the pressure up to 400lb/sq.in., (28.1 kg.cm^2) and wait at least 20 minutes for vehicle to settle before reducing to the correct running pressure of 263 lb/sq.in., (18.41 kg.cm^2) for early cars or 282 lb/sq.in. (19.74 kg/cm^2) for cars with the latest struts, etc. The maximum pressure for rallying with the latest displacers is 300 lb/sq.in. (21.0 kg.cm^2).

Front Bump Stop Kits

For serious rally use, Front Bump Stop Kits C-AJJ 4007 are available to provide progressive stiffening of the front suspension. For most events the fitting of both front and rear kits will avoid the need to change the hydrolastic units to Silver or Red. Only the Cooper 'S'/1275 GT were fitted with these hard units as standard.

Shock Absorbers for Hydrolastic

Hydrolastic units incorporate internal dampers, but for certain types of rally use, shock absorbers can be fitted to the front using the parts in Shock Absorber Kit C-AJJ 3362

* Parts no longer available; use later parts with new rear strut and helpor springs.

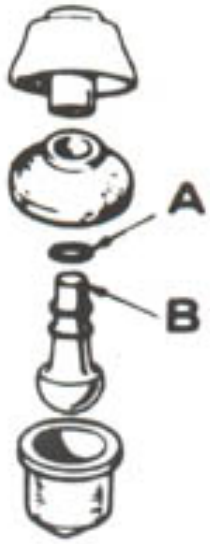
Rear Bump Stops (Hydrolastic cars only)

Fitting Rear Bump Stop Kit, Part No. C-AJJ 3313 will control the nose-up attitude on fierce acceleration, and will improve the handling of the car when the rear is heavily laden. Check radius arm bearings for excessive wear.

Raising Ride Height

If the front loading is especially heavy (due to fitting additional lamps, sump guard etc.,) packing washers can be used providing the drive shafts remain horizontal. Excessive packing of the displacer struts can be dangerous and under no circumstances should a washer thicker than 3.81% (0.150") be fitted. Spacers shown 'A' are available as follows:-

1.27% (0.050") thick - Part No. 21A 356
2.03% (0.080") thick - Part No. 21A 463
2.54% (0.100") thick - Part No. AJH 5322
3.81% (0.150") thick - Part No. 21A 1845



Cars should not normally be run with pressure exceeding 21 kg/cm^2 (300 lb/sq.in.) but to compensate for extra weight on the front i.e. sump guard and extra lamps, it is satisfactory to fit stronger rear helper springs 21A 1806 to early cars. As well as affecting the handling, damage will result if the car is driven whilst making continual contact with the rebound stops.

Lowering Ride Height

For circuit racing on relatively smooth tracks, the suspension may be lowered by machining accurately 5.1% (0.2") from the front displacer pistons, and 7.6% (0.3") from the rear displacer strut. Before refitting these parts, it is ESSENTIAL to see that the ball sockets 'B' still seat properly, if necessary by filing or drilling to clear any ridges. Do not use the standard rear bump buffers, but if the parts in kit Part No. C-AJJ 3313 are considered to provide too much resistance, bump stops 21A 1728 R.H. and 21A 1729 L.H. may be used with special securing screws and washers. It is essential to pack the rebound stops to compensate for the lowering of the car to ensure suspension movement is controlled. Fit rear anti-roll bar and the Silver and Double Silver displacers to late cars, together with rear struts 21A 1805 and helper springs 21A 1806. Excessive lowering and negative camber can damage drive shafts.

After allowing the new displacer units to settle as explained on Sheet A-13, the pressure can be lowered until the car is just clear of the bump stops. Note that the car will settle lower when the fluid is cold, and DO NOT use pressures less than 15.5 kg/cm^2 (220 lb/sq.in.) It does not matter if the pressures are uneven from side to side.

Rear Anti Roll Bar

To increase roll stiffness and oversteer, fit anti-roll bar kit C-AJJ 4009 which has rubber bushes to prevent damage during rough rallies.

Adjustable Tie Rods

The castor angle of the front wheels can be varied by fitting Tie Rod Adjuster 21A 1092. The existing tie rod should be cut off 347.7% (13.687") from the centre of the bolt holes in the fork, and then threaded 44.5% (1¾") using ½" UNF dia.

This should only be carried out when reliable equipment is available to check the steering geometry, and when adequate knowledge is available as to the results. The correct castor angle is 3°, but this should not be varied by more than + or - 2°. An adjustment in length of 2.5% (0.10") corresponds to 1° variation. Shorten tie rod to increase castor angle, and lengthen to decrease. Carefully retrack front wheels afterwards.

Negative Camber

The camber angle on production cars can vary from 1° positive to 3° positive, but longer bottom Suspension Arms are available as a pair C-AJJ 3364 to alter the car to a nominal 1½° negative camber. When fitting these special bottom arms it is essential to secure a plate 3.2% (⅛") thick 25% x 38% (1" x 1½") underneath the rebound platform of the top suspension arms. Fix these by drilling and tapping two small holes in each arm to take countersunk screws through the plates. The screws should then be peened over to prevent them coming out.

Brakes

Fit competition DS11 brake pad set C-8G 8996 (1 off) together with the harder VG 95 rear brake shoes C-8G 8997 (2 off). Alternatively, the existing shoes may be relined using VG 95 brake lining set C-8G 8998 (1 off). Check that all brake pipes are in good condition and cannot chafe. Check the hoses are not twisted or starting to perish. For rally use, a light coil spring can be fitted over the hoses to protect them from stones. The disc shield should be partially cut away to provide maximum ventilation, and handbrake protector plates C-AHT 212 RH, C-AHT 213 LH, should be fitted to the rear back plates.

For serious competition work, and on all group V cars, Dual Braking Systems must be installed. This ensures that if a brake fluid leakage occurs, the front or rear brakes will still function separately. Duel Braking Kit C-AJJ 3388 contains a master cylinder together with the necessary pipe and instructions for installation.

Only Lockheed Series II, or Castrol Green Disc Brake Fluid should be used in these cars for bleeding or topping-up.

Accelerator Cable

An improved accelerator cable C-AHT 85 has been developed for smooth operation under arduous rally conditions. It will fit all the Mini range with S.U. Weber or Amal carburetters.

Fog and Spot Lamp Mounting

Additional driving lamps can be mounted in front of the grille without restricting the accessability of the distributor, fan belt and oil filter by using special brackets, C-AJJ 3329 for the Mini or C-AHT 312 for the Clubman type body. However, current Road Traffic regulations must be studied by the owner before fitting more than two lamps to these brackets.

One or two extra lamps can be separately mounted using Pivoting Lamp Bracket C-AJJ 3318 for each lamp,which hinges forward to give access to the grille.

Fuel Pump

When regulations permit, fit a twin electrical petrol pump which can replace the existing pump, or be moved inside the boot and re-piped. Use dual pump kit C-AJJ 4015, but ensure that all connections are in perfect condition and that the pipes cannot chafe anywhere. See the parts micro film for details of the twin fuel tank if this is not already fitted. The F.I.A. regulations should be studied regarding the position of the pump.

Oil Pick-up Pipe

In order to reduce the chance of loss of oil pressure due to surge, a modified Oil Pick-up C-AHT 54 should be fitted. This is suitable for all Mini 3 speed and early 4 speed synchromesh manual gearboxes and is ideal for use in driving tests, rallies, autocrosses and for racing. It is not suitable for the current rod gear change transmissions.

Oil Cooler Cover

An oil cooler is essential for competition or very fast road use, but for normal use in the winter it is beneficial to keep the oil from becoming overcooled. Cover C-AHT 181 is designed to fit the oil coolers supplied in Kits C-AJJ 3339 Cooper 'S' or C-AJJ 4030 1275GT.

Extra Radiator

For particularly hot conditions highly tuned engines may require an additional radiator which can be fitted in front of the dynamo. Kit C-AJJ 4011 contains a specially designed radiator, parts and instructions for fitting.

Perspex Windows

Perspex Window Sets C-AJJ 3363 are available for Mk.I or Mk.II Mini bodies. The perspex back-light C-AHT 148 fits direct to the Mk.II aperture including the Clubman and GT bodies, but a paper template is supplied to convert this to suit the Mk.I aperture. The template should be placed on the OUTSIDE of the perspex and the surplus trimmed off. The perspex Quarter light fits direct into cars without the Deluxe hinged quarter light using new rubber surrounds. These parts will NOT fit the latest bodies with wind up windows.

Lightweight Panels

Glassfibre panels for the Mini Clubman and 1275GT bodies are available to special order, bare and unpainted.

Door RH	C-AHT 336	Door LH	C-AHT 337
Boot Lid	C-AHT 338	Bonnet	C-AHT 339

Wheels

Magnesium alloy wheels are recommended for race and rally use, since these are considerably lighter and stronger than pressed steel wheels.

The 4½" x 10" wheels C-21A 1968 (5 off) are used for rallying with Wheel Nut set C-AJJ 3327, which contains 18 wheel nuts and various balance weights.

For racing, the wider 5½" x 10" wheel C-21A 2132 is used with Wheel Nut set C-AJJ 3361. These wheels come outside the bearing centres so they are not approved for normal road use. Although heavy duty taper roller bearings are used in the hubs, a close check should be kept for signs of excessive wheel bearing wear.

Under no circumstances should the recommended wheel nut torque, 43 lb.ft. (5.94 kg/m) be exceeded.

It is not possible to fit the 10" wheels to late cars which have 12" wheels as standard fitment, owing to the larger brakes.

Wing Extensions

Regulations for road vehicles in most countries require that the bodywork should cover the wheels above a line passing through the hub. Nearly all competition rules and regulations also stipulate this.

For 4½" wheels, use either C-AJJ 3316 on the original Cooper 'S' body or C-AJJ 4019 on the 1275GT body.

For 5½" wheels, use either C-AJJ 3353 on the Cooper 'S' or C-AJJ 4020 on the 1275GT body.

Wing extensions C-AJJ 3316, C-AJJ 3353, C-AJJ 4019 and C-AJJ 4020 are homologated.

Sumpguard

A very substantial sumpguard as used by the works team is available as a complete kit Part No. C-AJJ 3320 including all necessary mounting plates and rubbers. The guard which will reduce the ground clearance weighs 35 lb (16 kg).

Bonnet Retaining Pins

The pins available under Part No. C-AJJ 4046 are designed to eliminate any possibility of the bonnet flying open during competition conditions.

The pins have an easy operation, therefore reducing the time involved in opening the bonnet. All cars competing in International competition events must have a supplementary locking device for the engine bonnet.

Bonnet Securing Strap

Strap set C-AJJ 3381 can be used as an alternative to the bonnet pins as their basic functions are the same. The straps can also be used as additional locking for the boot.

Sparking Plugs, Coil & H.T. Connections

Champion N64Y (C-37H 4208) are suitable for rally work or fast road use. For racing use N60Y (C-37H 2148), N62R (C-37H 2149) or N57R (C-27H 5982) which are harder (a cooler running plug).

In order to ensure a really positive connection to the plugs, angled rubber connectors C-AHT 265 which seal very tightly onto the plugs should be fitted. A 6ft length of special H.T. cable is available to Part No. C-AHT 266 for use with these connectors and screw-in coils. With an 8 port cylinder head, straight rubber connectors C-AHT 661 should be used.

Current HA12 coils are fitted with push-on spade terminals. and push-in H.T. connection which are not positive enough for severe rally use. HA12 coil C-AHT 269 has screw-on terminals and H.T. connection. Waterproof H.T. kit C-AJJ 4010 contains 4 angled connectors C-AHT 265, a length of H.T. cable C-AHT 266, competition coil C-AHT 269 and a coil cover BG 727.

On the 8 port head 10M sparking plugs are used. It is good practice to warm up a highly tuned race engine with hotter plugs to assist in bringing the engine up to its proper operating temperature as rapidly as possible. This will also stop oil fouling of the race plugs. The warm up plugs should be removed before practice otherwise this could destroy an expensive unit.

The following chart gives 10M plug recommendations.

Heat Range	Part No.	Type
Hot	C-AHT 412	Champion G.63
	C-AHT 435	" G.59R
Cold	C-AHT 413	" G.56R

The plug reach and cylinder head boss depth may vary. It is therefore recommended that the plugs are installed and checked for fit before the head is fitted. A plug that does not extend the full threaded length of the plug boss can cause hot spots and decrease the compression ratio. A plug that extends beyond the length of the plug boss can also cause hot spots and possibly interfere with the pistons and spoil the gas flow of the combustion chamber. In some cases a change to another plug reach may rectify the problem or shims can be used to ensure a correct depth fit.

All 10M sparking plugs mentioned are 19.05M (.700") reach. The plug gap for both hot and cold plugs should be 0.30M - 0.35M (0.012" - 0.014").

Master Switch

The fitting of a master switch in the main battery lead is compulsory in most forms of motor sport. A suitable switch is available under part number C-AHT 623 and as a safety feature should be fitted on all competition cars.

Roll-over Bars

The basic purpose of a roll-over bar is to protect the driver and navigator if the car turns over or is involved in a serious accident. This purpose should always be borne in mind and it is recommended that a front cage is always fitted with the compulsory roll-over bar.

It is compulsory to fit a safety roll bar or cage for all circuit speed events. For rallies, hill climbs and slaloms, the fitting is compulsory for Group 2 and 5 cars and optional for Group 1, but check any supplementary regulations.

Appendix J of the F.I.A. International Sporting Code defines the technical specification of roll-over bars to which the following conform.

Rallying Groups 1 & 2 STR 0047 as figure 1.

Racing Groups 1 & 2 STR 0048 as figure 2.

Race & Rally Group 5 - Special order only as figure 2.

Front Cage (use with either bar) STR 0237.

FIG. 1

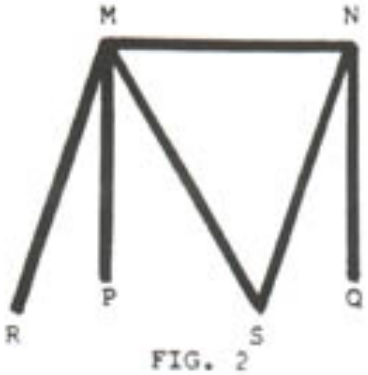


FIG. 2

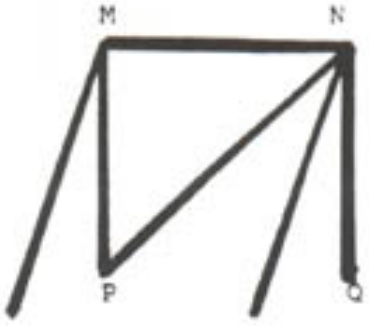


FIG. 3

Fig. 2 Fitting of a diagonal strut is compulsory. The various authorised alternatives are M.Q., M.S., N.P., N.R.

Fig. 3 Fitting of a diagonal strut is compulsory. The two authorised alternatives are M.Q., and N.P.

The attachment points of the struts of the main roll bar hoop on the body must be locally reinforced, suitable steel plates for this are supplied with each bar together with required nuts and bolts.

For more detailed information on roll-over bars and their fitment see Article 253 (section e) of F.I.A. Appendix J.

Leyland ST

Data

Model 1275GT/COOPER 'S' **Sheet** A - 20 **Issue** 1

This chart gives details of camshafts that can be fitted to the 1275cc unit.

1275 GT

Part Numbers	AEG 522	C-AEG 567	C-AEA 800	C-AEG 643	C-AEG 529	C-AEG 537	C-AEG 595	6 PORT HEAD	
Markings	-	AEG 568	3 rings	707/1473	AEG 530	AEG 594	AEG 596	C-AEG 636	C-AEG 599
Recommended Use	1275 GT	Road	Road Rally	Rally	Race	Sprint	S.per Sprint	AEG 637 Rally	AEG 600 Race
Inlet opens BTDC	* 5°	* 16°	* 24°	* 34°	* 52°	* 62°	* 62°	* 50°	* 60°
Inlet closes ABDC	45°	56°	64°	74°	92°	80°	82°	90°	80°
Exhaust opens BBDC	51°	51°	59°	69°	92°	78°	82°	75°	85°
Exhaust closes ATDC	21°	21°	29°	39°	47°	47°	49°	45°	55°
Inlet period	230°	252°	268°	288°	324°	322°	324°	320°	320°
Exhaust period	252°	252°	268°	288°	324°	307°	324°	300°	320°
Cam lift nominal	.250"	.250"	.252"	.306"	.315"	.315"	.315"	.315"	.315"
Valve lift nominal	.318"	.318"	.320"	.388"	.394"	.394"	.394"	.394"	.394"
Running clearance	.012" (.30%)	.011" (.30%)	.015" (.30%)	.015" (.30%)	.015" (.30%)	.015" (.30%)	.015" (.30%)	.015" (.30%)	.011" (.30%)

COOPER 'S'

Part Numbers	AEG 148	AEG 510	C-AEA 731	C-AEA 648
Markings	-	1 ring	3 rings	AEA 649
Recommended Use	Early Cooper 'S'	Cooper 'S'	Road	Rally Race
Inlet opens BTDC	* 5°	* 12°	* 24°	* 50°
Inlet closes ABDC	45°	50°	64°	70°
Exhaust opens BBDC	51°	51°	59°	75°
Exhaust closes ATDC	21°	21°	29°	45°
Inlet period	230°	242°	268°	300°
Exhaust period	252°	252°	268°	300°
Cam lift nominal	.250"	.250"	.252"	.315"
Valve lift nominal	.318"	.318"	.320"	.394"
Running clearance	.012" (.30%)	.011" (.30%)	.015" (.30%)	.015" (.30%)

* For checking, set rocker clearance to .019" (.48%)

* For checking, set rocker clearance to .016" (.40%)

TYRES

The choice of a suitable final drive should be made considering the road speed in direct and intermediate gears which varies for different tyres.

The table indicates the wheel revolutions per mile for various tyre sizes, from this the vehicle speed per 1000 engine revolutions per minute can be calculated using the formula:

$$\text{MPH/1000 RPM} = \frac{60000}{AXB} \quad \text{or KPH/1000 RPM} = \frac{96.500}{AXB}$$

where A = Final drive ratio : 1

B = Wheel revolutions per mile

This formula gives the speed in direct top gear only, but the equivalent road speed in any intermediate gear can be calculated by dividing this by the gearbox gear ratio.

Tyre size and type (Dunlop)		Wheel revs per mile at 30 MPH	Tread width Inch	%
165/70 HR 10	SP Super	1059	4.2	107
145-10	SP Sport	1059	5.7	144
145-10	SP 44	1080	5.7	144
500 L10	R7	1053	4.7	119
500 L10	CR65	1053	4.7	119
500 510	CR70	1053	4.7	119
520-10	D75	1074	5.5	139
520-10	MS Type 564	1059	4.8	122
150/500-10	CR81	1040	6.0	152
185/500-10	CR81	1040	7.2	183
160/490-10	Slick	1055	6.3	160
450/700-10	CR8	1075	5.6	142
520-12	D75	972	5.7	144
145-12	SP Sport	980	5.9	150
175/70-12	SP Sport	968	6.9	175
175 SR 12	SP44	959	5.8	147
150/500-12	CR84 Mk.II	1013	6.2	157
450 L-12	CR65	962	4.7	119

For further technical information contact the tyre manufacturers direct. Competition Centre, Dunlop Limited, Fort Dunlop, Erdington, Birmingham B24 9QT.

Any change in the tyre size and final drive ratio will affect the accuracy of the speedometer and odometer which should be recalibrated by the instrument manufacturer.

LEYLAND CARS MINI CHALLENGE

The challenge is being run in three classes, 850cc, 1000cc and 1275cc. Vehicle regulations for the 1275GT class are as follows.

Modifications will be restricted to those allowed under Appendix J Group I. Cars must conform at all times with these provisions except for the following amendments and clarifications.

POWER UNIT:

(a) The standard head casting may be modified in respect of polishing, balancing and machining of combustion chambers, ports, and face only. The capacity of the combustion chambers is free. Larger valves or inclination of the valves is not permitted.

(b) Valve springs are free.

(c) Camshaft, part number C-AEG 529 may be fitted.

(d) Standard crankshaft only. Balancing, lightening and surface treatments are permitted.

(e) The use of a single 45 DCOE Weber carburetter or twin SU carburetters up to 45% diameter is permitted. The inlet manifold is free.

(f) Exhaust manifold and exhaust system is free.

(g) The fitting of an engine oil cooler is permitted within the periphery of the bodywork.

(h) Oil baffles and modified oil pick-ups are permitted.

(j) Crankshaft oil feed may be modified (cross drilled).

(k) Any Leyland Cars standard manufactured flywheel may be fitted.

(l) A competition clutch C-AEG 481 and race centre plate C-22G 247 may be fitted.

(m) Connecting rod bolt material is free.

GENERAL:

(a) Spare wheel and tool kit need not be carried.

(b) The generator may not be changed and must remain operative.

(c) Shock absorbers free subject to their fitting on original mountings.

(d) Bumpers and overiders may not be removed.

(e) A fuel tank complying with F.I.A. Specification FT3 within a metal container of at least 18 swg may be fitted in the luggage compartment. If such a tank is fitted the normal tank must remain in situ.

(f) The minimum total weight of cars as they cross the finishing line will be 1460lbs (662 kgs). No tolerance will be granted.

(g) Drivers seat free.

(h) No part of the car should touch the ground when one of its tyres is deflated.

(j) The front camber may be altered by the use of Leyland ST suspension parts.

Cont'd....

LEYLAND CARS MINI CHALLENGE (cont'd)

WHEELS:

The following production wheels are permitted:-

(a) Standard 10 inch x 4½ inch.

(b) Standard 12 inch x 4½ inch.

(c) Denova 12 inch.

TYRES:

The choice of tyre must be made from those listed in Article 2 of the 1976 RAC Tyre Regulations, published in the Motor Sport Year Book, as being eligible for Production Car Racing. Before practice or race, any tyre must have a minimum tread depth of 1 millimetre over the entire tread pattern.

SAFETY:

(a) The fitting and use of at least four strap three point safety harness is mandatory.

(b) The fitting of an F.I.A. roll cage in conformity with the design specification No. 6 of Appendix J Article 253 (e) is mandatory.

(c) A fire extinguisher of at least 5 kgs entinguishant capacity or twin 2½ kgs capacity must be carried.

(d) The fitting of an external battery cut-out in conformity with Appendix J is mandatory.

(e) Seats must not hinge and must be modified so as to prevent their doing so.

(f) The fuel filler must be integral with the fuel tank.

(g) Steering locks must be rendered inoperative.

(h) Existing bonnet release mechanism and boot lid locks must be rendered inoperative and positive external means of fastening bonnet and boot must be fitted.

(j) The car must comply with RAC Vehicle Regulations, except where amended above.

For further details of the Challenge refer to the official booklet issued by Leyland ST.

SPECIAL TUNING DATA

Issued by: BRITISH LEYLAND SPECIAL TUNING DEPARTMENT
ABINGDON-ON-THAMES · BERKSHIRE · ENGLAND

Model 998cc POWER UNIT (11:1 Full Race) **Sheet** D - 6 **Issue** 5

The following is a suggested specification for a full race power unit for under 1000cc class events. Power output should be 85/90 B.H.P. at 7,300 RPM.

Description	Part No.	Qty
Pistons	C-AJJ 4039	1 set
Connecting Rods	C-AJJ 4035	1 set
Large Valve Cylinder head 16.4cc	C-AHT 222	
Camshaft, Full Race	C-AEA 648	
Crankshaft, Competition	C-AEG 601	
Carburetters (twin 1½" SU)	C-AUD 224	1 Pr
Installation Kit	C-AJJ 4040	
Exhaust Manifold	C-AEG 432	
Cam Followers (lightened)	C-AEG 579	8 off
Flywheel, Ultra-light	C-AEG 619	
Clutch Assembly	GCC 103	
Clutch Driven Plate	C-22G 247	
Clutch Pressure Plate (lightened)	C-AHT 230	
Duplex Timing Chain Kit	C-AJJ 3325	
Crankshaft Locking Plate	C-AHT 146	
Oil Pump Pick-up Pipe	C-AHT 54	
Accelerator Cable	C-AHT 85	
Cylinder Head Gasket	C-AHT 188	
Sparking Plugs N60Y	C-37H 2148	4 off
Fan Blade	C- 2A 997	2 off
Gears (Straight cut) (4 speed synchro)	C-AJJ 4014	
Thermostat Blanking Sleeve	C-AJJ 4012	
Water Pump	12G 1771	
Bottom Water Hose	12A 1550	
Dynamo Pulley	C-AEA 535	
Distributor	C-27H 7766	
Limited Slip Differential	C-AJJ 3387	
Final Drive Gear (See Sheet A-10)	(To choice)	

The special pistons C-AJJ 4039 require a special set of rods C-AJJ 4035 with interference fit gudgeon pins. Fitting these is quite involved, but instructions are supplied with the pistons.

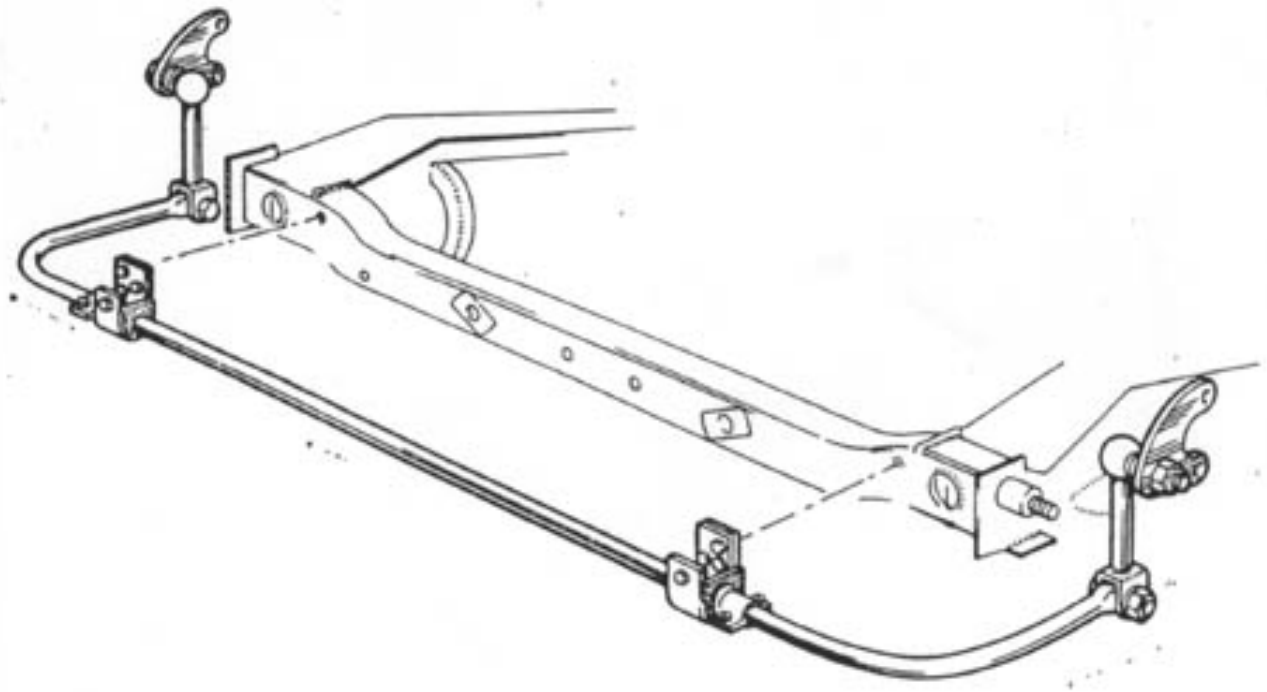
It will be necessary to undercut the cylinder block .150" (3.8%) deep, 1.26" (32%) diameter to allow the exhaust valve full travel. The machining should be done from the valve guide centre, to give a minimum lift and diametric clearance of 1/16" (1.59%). A modified block can be ordered specially machined from Abingdon. The centre main bearing cap should be supported with a 7/16" (11.1125%) thick steel plate and longer studs.

Set static ignition timing to approximately 2° B.T.D.C. and fit B.G. carburetter needles AUD 1067 in place of the A.M. needles fitted to the carburetters. Both these settings may be varied for individual engines, but the distributor vacuum unit is not connected.

LITHOGRAPHED IN ENGLAND

REAR ANTI-ROLL BAR

For all forms of competition to increase the roll stiffness and induce oversteer, fit Rear Anti-roll Bar Kit C-AJJ 4009.



Wheels

Reverse rim 4½" steel wheels C-AHT 182 suitable for the Mini and Clubman are available. These wheels can be used on the 850 Mini in the Leyland Cars National Mini Challenge.

When wide wheels are fitted it is legally necessary to extend the bodywork to cover them by fitting wing extensions as supplied under Part No. C-AJJ 3316 for the Mini body or C-AJJ 4019 for the Clubman body.

If even wider wheels are used for competition, Wing Extensions STN 0071 should be fitted. Wide wheels increase the load on the hub bearings which should be checked regularly for signs of excessive wear. The fitting of wheel spacers more than 3.2% (⅛") thick is not approved. Do not exceed the wheel nut torque of 42 lb ft. (5.8 kg.m)

SPECIAL TUNING DATA

Model GENERAL

Sheet Y - 5 **Issue** 4

TOWING INFORMATION

Stability with Hydrolastic Comfort

The special progressive Rear Bump Stop Kits originally designed for the severe stresses of international car rallies will help to support the extra weight on the rear when towing or carrying heavy loads, yet be unobtrusive when driving without the weight. They should not be confused with certain other assistors currently on the market.

Model	Part No.
1800 range	C-AJJ 3355
1100 and 1300 range	C-AJJ 3386
Mini (Hydrolastic only)	C-AJJ 3313
Austin Maxi Mk.I	C-AJJ 4024
Austin Maxi 1500 Mk.II and 1750	C-AJJ 4061

Marina Rear Suspension

Stiffer (163 lb/ins) 6 leaf rear road springs will raise the car slightly for additional loads and are available to Part No. C-AHT 499 (2 off), which require new 'U' bolts C-AHT 600 (4 off). Adjustable shock absorbers available to Part No. C-AHT 458 (2 off), which can also be used with the standard road springs if stiffer damping alone is required.

Adequate Cooling

Your car radiator will be able to cope with the additional load if maintained in good condition, but to keep your oil temperature at the best level an oil cooler is strongly recommended. Once again these have been fully tested under extreme conditions of car rallying and will ensure that your oil will withstand the increased loading.

Model	Part No.
1800 Morris, Wolseley and Austin	C-AJJ 3337
1100 and 1300 range	C-AJJ 3384
Mini, Mini Cooper and 'S'	C-AJJ 3309
Mini Clubman and 1275 GT	C-AJJ 4030
Austin Maxi	C-AJJ 4021
Marina 1.3	C-AJJ 4077
Marina 1.8	C-AJJ 4073
Austin Allegro 1100 and 1300	C-AJJ 4114
Austin Allegro 1500 and 1750	C-AJJ 4113

More Pulling Power without affecting the Warranty

Single carburetter models do not give such high speed performance as twin carburetter models, but their low speed pulling power can be made much better by fitting British Leyland Stage I Tuning Kits. These consist of either a polished fully assembled cylinder head, and in most cases a complete new free flow exhaust system, or a twin carburetter conversion.

The value of these kits is enhanced by the fact that the new car warranty is NOT affected when they alone are fitted. All the relative part numbers are listed on Data Sheet Y - 1 Issue 4 onwards.

Details of maximum recommended towing weights, roof rack loadings and total weights appear on Special Tuning Leaflet TL 1.

SPECIAL TUNING DATA

Issued by: BRITISH LEYLAND SPECIAL TUNING DEPARTMENT
ABINGDON-ON-THAMES · BERKSHIRE · ENGLAND

Model GENERAL **Sheet** Z - 3 **Issue** 8

Overheating

Assuming that the cylinder head gasket is not leaking due to distortion and that the correct sparking plugs, ignition timing and mixture are being used, check the running temperature with an accurately graduated gauge. Note the boiling points under pressure - 5 lb/sq.in. 226°F, 71b/sq.in. 232°F, 13 lb/sq.in. 246°F and refer to the pressure on the cap. If excessive temperatures are confirmed, possible caused may be found amongst the following paragraphs, but overheating in traffic can often be prevented by opening the water valve and running the heater so that this acts as an extra radiator.

Examine bottom hose on 'A' series engines in case heater outlet portion protrudes into the main bore. Cut off surplus with a sharp knife or replace if there is any sign of flaking. The water pump should be checked to ensure clearance between vane and body is no more than .020 to .030 in (.508 to .762 %). The water pump intake bore should be as large as possible and the grinding of a slight taper into the bore will also assist flow. Ensure fan belt tension is adequate. A larger water pump 12G 1771 was fitted to the late Cooper 'S' models and the 1275GT, this may be fitted to earlier models after grinding away part of the block casting to clear the pump rotor. A new bottom hose 12A 1550 MUST be fitted at the same time.

If existing thermostat is working correctly, it may be better to fit colder operating one, such as 13H 3727 (74°C, 165°F). When thermostat is removed altogether it is essential to blank thermostat bypass, using sleeve in kit C-AJJ 4012. On 'A' series engines, the bypass connection between head and water pump may be sealed

After continual use in dusty conditions, the radiator core may become partially blocked with leaves and insects. This can be cleared by compressed air or a jet of water used in the opposite direction to normal air flow.

Obstructions to air flow, such as badges, extra lights and rally plates can all cause overheating, and should obviously be reduced as much as possible. If a sump guard is fitted, it is essential to use a large capacity oil cooler, and this is also desirable for competition or motorway use. On the Mini range use a cooler such as that contained in kit C-AJJ 3309. On the Clubman range use kit C-AJJ 4030. Full details for oil cooler installations are shown on the M.G.B. MIDGET and SPRITE parts micro film but a larger one is available part number C-ARO 9875 for the M.G.B. and ARO 9809 can be fitted to the MIDGET and SPRITE.

On the Mini Cooper 'S' the radiator efficiency was improved by changing from 13 gills per inch (25.4 %) to 16 gills per inch (25.4 %). This may be checked by counting vertically the number of horizontal fins in a given height of the radiator core. The latest Part No. ARA 2064 MUST be used with the correct cap ARA 2161 and improved top hose 12G 1164 on the 'S' only. This same radiator and cap can also be used on the Mini Cooper, but top hose 12G 104 must be used. For very severe conditions, an auxiliary radiator may be fitted to the Mini range using Kit C-AJJ 4011

For the Mini range, 6 bladed fan 2A 998 Stiffener 2A 803 are the most efficient for cooling. The 11 bladed Plastic Fan 12G 1305 is quietest, but for racing 1 or 2 bladed Fan C-2A 997 may be used with stiffener 2A 803.

The latest thermostat Part Nos. are as follows:-

13H 3727 (74°C, 165°F), 13H 4070 (82°C, 180°F), 13H 4964 (88°C, 192°F).

SPECIAL TUNING DATA

Issued by: BRITISH LEYLAND SPECIAL TUNING DEPARTMENT
ABINGDON-ON-THAMES · BERKSHIRE · ENGLAND

Model GENERAL **Sheet** 2 - 5 **Issue** 1

The following chart shows Piston Dimensions for 'A' Series engines.

Part No.	12A 187 C-2A 946	12A 145	12A 280	12A 120	12A 673	12G 303	12G 306	12A 674
Bore	2·478"	2·478"	2·478"	2·478"	2·543"	2·543"	2·543"	2·543"
Pin Dia.	0·625"	0·625"	0·625"	0·625"	0·625"	0·625"	0·625"	0·625"
Compression Ht.	1·339"	1·339"	1·339"	1·495"	1·345"	1·194"	1·194"	1·366"
Piston Height	2·592"	2·592"	2·592"	2·718"		2·288"	2·288"	1·616"
Rings	4	4	4	4	4	4	4	4
Crown @	Flat	4·2cc	2·79cc	·87cc	5·69cc	6·9cc	2·46cc	R2·16cc
O/S Available	+010" +020" +030" +040"	+010" +020" +030" +040"	+010" +020" +030" +040"	+010" +020" +030" +040"	+010" +020"	+010" +020"	+010" +020"	+010" +020"
Std. use (b)	9CG	9C	9CG L/C	848 Mini	998 Elf-Mini Hornet	ADO 16 AMW MGB-L/C	ADO 16 MGB 1098cc	998cc Cooper
Connecting Rods (c)	2A 654 2A 656	2A 654 2A 656	2A 654 2A 656	2A 654 2A 656	12G 123- 12G 126	12G 123- 12G 126	12G 123- 12G 126	12G 123- 12G 126
Comment (d)	C	C	C	C	Sp, Ff	Sd, Ff	Ff	Ff

Part No.	C-AEA 639	C-AEA 637	C-AEA 711	BG 2432 C-AEG 043	BG 2434	BG 2546	BG 2545
Bore	2·538"	2·538"	2·667"	2·780"	2·780"	2·780"	2·780"
Pin Dia.	0·687"	0·687"	0·687"	·813"	·813"	·813"	·813"
Compression Ht.	1·400"	1·400"	1·339"	1·495"	1·495"	1·495"	1·495"
Piston Height	2·152"	2·152"	2·092"	2·310"	2·310"	2·745"	2·745"
Rings	3	4	3	4 (e)	4	4	4
Crown (a)	3·55cc R	3·5cc R	Flat	Flat	6·6	11·13	15·8
O/S	Nil	Nil	Nil	See (e)	+010 +020	+010 +020	+010 +020
Std use (b)	F	F	F	970cc 'S'	'S' 1071/1275	12cc	12cc
Connecting Rods (c)	C-AEA 620 C-AEA 621	C-AEA 620 C-AEA 621	C-AEA 706 C-AEA 709	12G 176	12G 176	AEG 520	AEG 520
Comment	Sd, I	Sd, I	Sd, I	I	Sd, I	Sd, I	Sd, I

(a) D = Dish, followed by approx. capacity of dish
Flat = pistons have flat tops
R = Raised, followed by approx. capacity of dome

(b) Engine Prefix or car type, ADO 16 is 1100/1300 range
FJ is Formula Junior
S is Cooper 'S'
12cc is Sprite/Midget

(c) Connecting rods are handed, two off each required. One Part No. indicates four identical rods.

(d) Sd means solid skirt, Sp split skirt piston, Ff means fully floating gudgeon pin, C means clamp type gudgeon pin, I means interference fit gudgeon pin requiring special tool

(e) BG 2432 available +.010" & .020" C-AEG 043 is only +040"
3 ring piston C-AEG 190 available Std size only
12G 176 and AEG 520 are interchangeable as sets, having identical dimensions

PLUSPARTS & PLUSPACS

Description	Part No.	Qty/Car
BODYWORK		
Bonnet securing strap set	C-AJJ 3381	1
Wing extension kit, 4½" wheels	C-AJJ 3316A	1
Wing extension kit, 5½" wheels	C-AJJ 3353	1
Wing extension kit, 4½" wheels (1275 GT)	C-AJJ 4019	1
Pivoting single lamp bracket	C-AJJ 3318	2
Rigid 2-lamp mounting bar	C-AJJ 3329	1
Rigid 2-lamp mounting bar (1275 GT)	C-AHT 312	1
Dash panels, R.H.D.	C-AJJ 3330	1
Dash panels, L.H.D.	C-AJJ 3331	1
Perspex window set	C-AJJ 3363	1
Door R.H. - glass fibre	C-AHT 336	1
Door L.H. - glass fibre	C-AHT 337	1
Boot lid - glass fibre	C-AHT 338	1
Bonnet - glass fibre	C-AHT 339	1
Scottish rally sump guard kit	C-AJJ 3320	1
Tachometer, 3" scuttle mounting	C-37H 2889	1
Instrument pea light	C-AHT 396	1
Bonnet pin set kit	C-AJJ 4046	1
Roll-over bar - racing Group 1 and 2	STR 0048	1
Roll-over bar - rally Group 1 and 2	STR 0047	1
Roll-over bar front cage	STR 0237	1
BRAKES		
DS11 brake pad set (10" wheels)	C- 8G 8996	1
DS11 Brake pad set (12" wheels)	C-AHT 16	1
VG95 brake shoes	C- 8G 8997	2
VG95 linings and rivets	C- 8G 8998	1
Dual master cylinder kit	C-AJJ 3388	1
Disc brake conversion set, R.H.D.	C-AJJ 4029	1
Brake protector plate R.H. - rear	C-AHT 212	1
Brake protector plate L.H. - rear	C-AHT 213	1
SUSPENSION		
Shock absorber kit, Hydrolastic cars	C-AJJ 3362	1
Rear bump stop kit, Hydrolastic only	C-AJJ 3313	1
Front bump stop kit	C-AJJ 4007	1
Anti-roll bar kit	C-AJJ 4009	1
Negative amber kit, front	C-AJJ 3364	1
Shock absorber front,adjustable normal	C-AHT 282	2
Shock absorber, rear, adjustable normal	C-AHT 283	2
Shock absorber, front,adjustable lowered	C-AHT 284	2
Shock absorber, rear, adjustable lowered	C-AHT 285	2
PISTONS		
Pistons, high compression, 4 ring flat top, +.040"	C-AEG 043043	4
Pistons, flat top forged, +.020", +.040"	C-AJJ 3382	1
Pistons, dished top forged, +.020", +.040"	C-AJJ 3377	1
Piston ring set +.020" - +.040"	C-AJJ 4045	1
Piston- forged flat top 73.5%	STR 0310	4

continued on Sheet Aa - 2

PLUSPARTS & PLUSPACS

Description	Part No.	Qty/Car
CYLINDER HEAD		
Head, polished, complete (21cc)	C-AHT 87	1
Head, polished complete (21.5cc)	STR 0068	1
Head, polished, complete (19cc)	C-AHT 134	1
Head, polished, complete (16.4cc)	C-AHT 222	1
Head, polished, complete (19cc)	C-AHT 463	1
Head, large valve full race (16.4cc)	C-AHT 221	1
Head, 8 port aluminium	C-AJJ 4064	1
Head gasket	C-AHT 188	1
Head washer set, discs	C-AHT 288	1
CAMSHAFT		
Camshaft, road/rally (pin oil pump drive)	C-AEA 731	1
Camshaft, race (pin oil pump drive)	C-AEA 648	1
Camshaft, sprint	C-AEG 597	1
Camshaft, super sprint	C-AEG 595	1
Camshaft, road	C-AEG 567	1
Camshaft, road/rally	C-AEA 800	1
Camshaft, rally	C-AEG 643	1
Camshaft, race	C-AEG 529	1
Camshaft (8 port head)	C-AEG 636	1
Camshaft (8 port head)	C-AEG 599	1
VALVE GEAR		
Camshaft sprocket, lightened steel	C-AEG 578	1
Valve spring, outer heavy	C-AEA 524	8
Valve spring, inner heavy	C-AEA 652	8
Locating collar	C-AEA 654	8
Spacer, valve rocker	C-AEG 392	3
Screw, tappet adjusting, lengthened	C-AEA 692	8
Lightened tappet	C-AEG 579	8
Duplex timing chain kit	C-AJJ 3325	1
Inlet valve, 1.401" (35.6%)	C-AEG 544	4
Inlet valve, 1.307" (33.2%)	C-AEG 569	4
Inlet valve, 1.464" (37.6%)	C-AHT 55	4
Hidural valve guide set (5 port head)	C-AJJ 4037	1
High lift lightweight rocker assembly	C-AHT 436	1
Valve spring - outer (8 port head)	C-AHT 367	8
Valve spring - inner (8 port head)	C-AHT 366	8
Inlet valve (8 port head)	C-AHT 376	4
Exhaust valve (8 port head)	C-AHT 377	4
Hidural exhaust valve guide (8 port head)	C-AHT 365	4
Hidural inlet valve guide (8 port head)	C-AHT 364	4
Valve spring seat (8 port head)	C-AHT 378	8
End pedestal (8 port head)	C-AHT 381	2
MANIFOLD AND EXHAUST		
Manifold, exhaust - rally	C-AEG 365	1
'Y' piece (manifold C-AEG 365)	C-AHT 310	1
Rally exhaust system	C-ARA 334	1
Race exhaust system, large bore	C-AHT 290	1
Manifold, exhaust - large bore - race	C-AHT 289	1
Manifold - exhaust - 3 into 1 - race	STR 0332	1
Manifold, exhaust (8 port head)	C-AHT 343	1
Manifold gasket (8 port head)	C-AHT 380	1

continued on Sheet Aa - 3

PLUSPARTS & PLUSPACS

Description	Part No.	Qty/Car
EXHAUST MANIFOLD AND SYSTEM		
Road exhaust manifold - for twin carbs	C-AHT 543	1
Manifold, exhaust - race - rally	C-AHT 289	1
Silencer Mini Challenge	STR 0564	1
Race exhaust system, large bore	C-AHT 290	1
Manifold, exhaust - 3 into 1 - race	STR 0332	1
Manifold, exhaust - (8 port head)	C-AHT 343	1
Manifold gasket (8 port head)	C-AHT 380	1
ENGINE PLUSPACS (1275GT)		
Pluspac 'A'	STN 0022	
Pluspac 'B'	STN 0023	
Pluspac 'S'	STN 0024	
CLUTCH, FLYWHEEL AND CRANKSHAFT		
Competition diaphragm spring assembly	C-AEG 481	1
Clutch, driven plate, Rally/Race	C-22G 247	1
Clutch driven plate, Road/Rally	C-AHT 349	1
Clutch driven plate - solid - Race only	C-AHT 596	1
Lightened clutch pressure plate	C-AHT 230	1
Light steel flywheel	~~C-AEG 649~~	~~1~~
Locking plate, crankshaft pulley	C-AHT 146	1
Tuftrided connecting rod bolt (Cooper 'S')	STR 0288	8
Tuftrided connecting rod bolt (1275 GT)	STR 0317	8
Main bearing, nut set	C-AJJ 4013	1
Primary gear	C-AEA 3239	1
INLET MANIFOLDS AND CARBURETTERS		
Inlet Manifold single Weber	~~STR 0435~~	~~1~~
Inlet Manifold, twin Webers (alloy head)	C-AHT 507	1
Inlet Manifold, twin Webers (iron head)	C-AHT 382	1
Inlet Manifold, HS4 or HS6 S.U. carburettors	C-AEG 489	1
Carburetters, twin 1½" S.U. HS4	C-AUD 709	1
Installation kit - HS4 1½" carburetters	C-AJJ 4040	1
Air cleaner, 1½" carburetters	C-AHT 210	2
Air cleaner, twin 1½" carburetters	C-AHT 562	1
Carburetter float chamber extension, 1½" carbs	C-AHT 180	2
Bolt, carburetter float chamber extension	C-AHT 321	2
Alloy Flared intake pipes, 1½" carburetters	C-AHT 247	2
Carburetter, Weber 45 DCOE	C-AHT 143	1
Installation kit, Weber carburetters	STN 0079	1
Carburetters, twin 1¾" S.U. HS6	C-AUD 641	1
Installation kit, 1¾" S.U. carburetters	C-AJJ 4001	1
Flare pipe, 1¾" carburetters	C-AHT 392	2
Accelerator cable	C-AHT 85	1
4 Amal carburetter kit (8 port head)	C-AJJ 4083	1
OIL COOLER		
Oil cooler kit - Cooper 'S' - 13 row	C-AJJ 3309	1
Oil cooler kit - 1275 GT - 13 row	C-AJJ 4030	1
Oil cooler - 7 row	C-ARA 205	1
Oil cooler - 16 row	C-ARO 9875	1
Oil pump pick-up - anti surge	C-AHT 54	1
Oil cooler cover	STR 0157	1

PLUSPARTS & PLUSPACS

Description	Part No.	Qty/Car
ENGINE PLUSPACS (1275 GT)		
Pluspac 'A'	STN 0022	
Pluspac 'B'	STN 0023	
Pluspac 'S'	STN 0024	
CLUTCH, FLYWHEEL AND CRANKSHAFT		
Competition diaphragm spring assembly	C-AEG 481	1
Clutch, driven plate, Rally/Race	C-22G 247	1
Clutch driven plate, Road/Rally	C-AHT 349	1
Clutch driven plate - solid - Race only	C-AHT 596	1
Lightened clutch pressure plate	C-AHT 230	1
Crankshaft - tuftrided cross drilled (1275 GT)	STR 0285	1
Light steel flywheel	C-AEG 619	1
Locking plate, crankshaft pulley	C-AHT 146	1
Tuftrided connecting rod bolt (Cooper 'S')	STR 0288	8
Tuftrided connecting rod bolt (1275 GT)	STR 0317	8
Main bearing, nut set	C-AJJ 4013	1
Primary gear	C-AEA 3239	1
INLET MANIFOLDS AND CARBURETTERS		
Inlet manifold, twin Webers (alloy head)	C-AHT 507	1
Inlet manifold, twin Webers (iron head)	C-AHT 382	1
Inlet manifold, HS4 or HS6 carburetters	C-AEG 489	1
Carburetters, twin 1½" SU HS4	C-AUD 709	1
Installation kit - HS4 1½" carburetters	C-AJJ 4040	1
Air cleaner, 1½" carburetters	C-AHT 210	2
Carburetter float chamber extension, 1½" carbs	C-AHT 180	2
Bolt, carburetter float chamber extension	C-AHT 321	2
Flared intake pipes, 1½" carburetters, alloy	C-AHT 247	2
Carburetter, Weber 45 DCOE	C-AHT 143	1
Installation kit, Weber carburetters	C-AJJ 3360	1
Carburetters, twin 1¾" SU HS6	C-AUD 641	1
Installation kit, 1¾" SU carburetters	C-AJJ 4001	1
Flare pipe, 1¾" carburetters	C-AHT 392	2
Cable - accelerator	C-AHT 85	1
4 Amal carburetter kit (8 port head)	C-AJJ 4083	1
OIL COOLER		
Oil cooler kit - Cooper 'S' - 13 row	C-AJJ 3309	1
Oil cooler kit - 1275 GT - 13 row	C-AJJ 4030	1
Oil cooler - 7 row	C-ARA 205	1
Oil cooler - 16 row	C-ARO 9875	1
Oil Pump pick-up pipe - anti surge	C-AHT 54	1
Oil cooler cover	C-AHT 181	1
WATER COOLING SYSTEM		
Additional radiator kit	C-AJJ 4011	1
Thermostat blanking sleeve kit	C-AJJ 4012	1
FAN AND PULLEY		
Pulley, reduced speed	C-AEA 535	1
Fan belt, for pulley C-AEA 535	C-AEA 756	1
Fan belt, short, for use less dynamo/alternator	C-AEA 539	1
2 bladed fan	C- 2A 997	1

continued on Sheet Aa - 4

PLUSPARTS & PLUSPACS

Description	Part No.	Qty/Car
GEARBOX		
Close ratio gear kit, straight-cut 3-speed only	C-AJJ 3371	1
Close ratio gear kit, straight-cut all synchromesh	C-AJJ 4014	1
Gearbox mounting kit, pre-rod change	C-AJJ 4094	1
FINAL DRIVES AND DIFFERENTIALS		
Powr-Lok diff kit, needle-roller drive shafts	C-AJJ 3387	1
Wheel, 3.938:1 ratio	C-22G 340	1
Pinion, 3.938:1 ratio	C-22G 69	1
Wheel, 3.267:1 ratio (use pinion 22G 99)	C-22G 370	1
Wheel, 4.35:1 ratio (use pinion 22G 99)	C-22G 443	1
Wheel, 3.44:1 ratio (use pinion 22A 413)	C-BTA 1250	1
Wheel, 3.65:1 ratio (use pinion 22A 399)	C-BTA 1247	1
Wheel, 3.76:1 ratio (use pinion 22A 399)	C-BTA 1248	1
Wheel, 3.93:1 ratio (use pinion C-22G 69)	C-BTA 1252	1
Wheel, 4.13:1 ratio (use pinion 22G 99)	C-BTA 1246	1
Wheel, 4.26:1 ratio (use pinion 22G 99)	C-BTA 1251	1
Wheel, 4.35:1 ratio (use pinion 22G 99)	C-BTA 1249	1
IGNITION		
Sparking plugs, Champion N64Y (14%)	C-37H 4208	4
Sparking plugs, Champion N62R (14%)	C-37H 2149	4
Sparking plugs, Champion N57R (14%)	C-27H 5982	4
Sparking plugs, Champion N60Y (14%)	C-37H 2148	4
Sparking plugs, Champion G63 (10%)	C-AHT 412	4
Sparking plugs, Champion G56 (10%)	C-AHT 413	4
Sparking plugs, Champion G59R (10%)	C-AHT 435	4
High tension Pac	C-AJJ 4010	1
Rubber plug connector (angled)	C-AHT 265	4
Rubber plug connector (straight)	C-AHT 661	4
Dual fuel pump kit	C-AJJ 4015	1
Switch, master cut out	C-AHT 623	1
INSIGNIA		
Leyland ST sticker, 9" x 6"	STR 0121	
Leyland ST sticker, 16" x 3"	STR 0122	
Leyland ST sticker, 4" x 3"	STR 0123	
British Leyland symbol 6" x 6"	STR 0124	
Windscreen decal Leyland ST	STR 0111	
Windscreen decal Leyland Cars	STR 0236	
Windscreen decal, British Leyland	STR 0112	
Windscreen decal, Morris	STR 0113	
Windscreen decal, Austin	STR 0114	
Windscreen decal, Mini	STR 0116	
Leyland ST woven badge	STR 0100	
British Leyland motif kit	C-AJJ 4099	
British Leyland 3" motif kit	C-AJJ 4055	
R.A.C. Recognition form - Cooper 'S' (litho copy)	C-AKD 7955	
R.A.C. Recognition form - 1275 GT " "	AKM 3320	

continued on Sheet Aa - 5

PLUSPARTS & PLUSPACS

Description	Part No.	Qty/Car
INSIGNIA (Cont'd)		
Blue Leyland ST rally jacket		
Extra small 36"	STR 0158	
Small 38"	C-AHT 352	
Medium 40"	C-AHT 353	
Large 42"	C-AHT 354	
Extra large 44"	C-AHT 355	
Orange race jacket		
Extra small 36"	STR 0070	
Small 38"	STR 0071	
Medium 40"	STR 0072	
Large 42"	STR 0073	
Extra large 44"	STR 0074	
T Shirts (motif - Leyland ST)		
Small	STR 0130	
Medium	STR 0129	
Large	STR 0128	
T Shirts (motif - Bigger pair of Carbs from Leyland ST)		
Small	STR 0133	
Medium	STR 0132	
Large	STR 0131	
Leyland ST tie	STR 0138	
Leyland ST key fob	STR 0159	
7" - 9" Fog & Driving lamp covers with Leyland Cars symbol	STR 0308	

Leyland

Fitting Instructions

1275 GT PLUSPAC 'A'

STN 0022

Fit studs (4 off) into inlet manifold flange.

Assemble the carburetters on to the inlet manifold in the following sequence. Gasket, heat shield, gasket, spacer gasket and carburetter. Assemble the throttle rod and choke rod with their levers before fitting both carburetters on to the inlet manifold. Fit the two 'P' clips for the petrol pipe to the top stud of each carburetter. Fit the return spring arms to the bottom two studs and tighten all four fixings with the nuts and shakeproof washers supplied.

Remove the standard carburetter complete with inlet/exhaust manifold. Remove the exhaust system.

Fit the new exhaust manifold gasket ensuring all the old gasket is removed. Fit the 3 branch exhaust manifold.

Place four large washers on the cylinder head studs and just start the nuts. Insert the two location rings into the inlet manifold and fit to the cylinder head and fully tighten all manifold nuts.

Fit the new petrol pipe supplied to the fuel pump and connect up to the front carburetter, using the short sections of rubber petrol hose and the 'T' piece supplied.

Fit the throttle abutment bracket to the inlet manifold with the course threaded bolt supplied.

Fit both the blanking plugs supplied, the plug having the tapped hole to the centre of the manifold. Cars fitted with a servo should fit the original adaptor into the modified plug. For non servo cars the copper covered plug should be fitted into this tapped hole.

With the breather hoses supplied connect up the outlet pipe on the carburetter body to the breathers on the flywheel housing and the front timing cover. Connect up the original throttle and choke cables.

On later cars it will be necessary to re-position the fuse box by 2" to the RH side of the vehicle. The electric screen washer motor will also r quired re-positioning by dropping it 2" down on its original fixing panel. These modifications are in order to obtain sufficient clearance from the air cleaner box.

Fit the two alloy elbows to the carburetters using the gaskets and course threaded bolts supplied.

Fit the exhaust manifold steady clip to the original bracket on the gearbox.

Fit the adaptor flange onto thte exhaust manffold and clip in position.

In order to utilise the standard exhaust system, the front section should be cut off. Measure 32.5" (82.5cm) forward from the front end of the first silencer and cut through. Due to dimension differences with various exhaust system make sure sufficient pipe is left to fit into the adaptor before finally cutting through.

Check alignment and tighten all exhaust clips. Fill carburetter dash pots with 20 SAE oil.

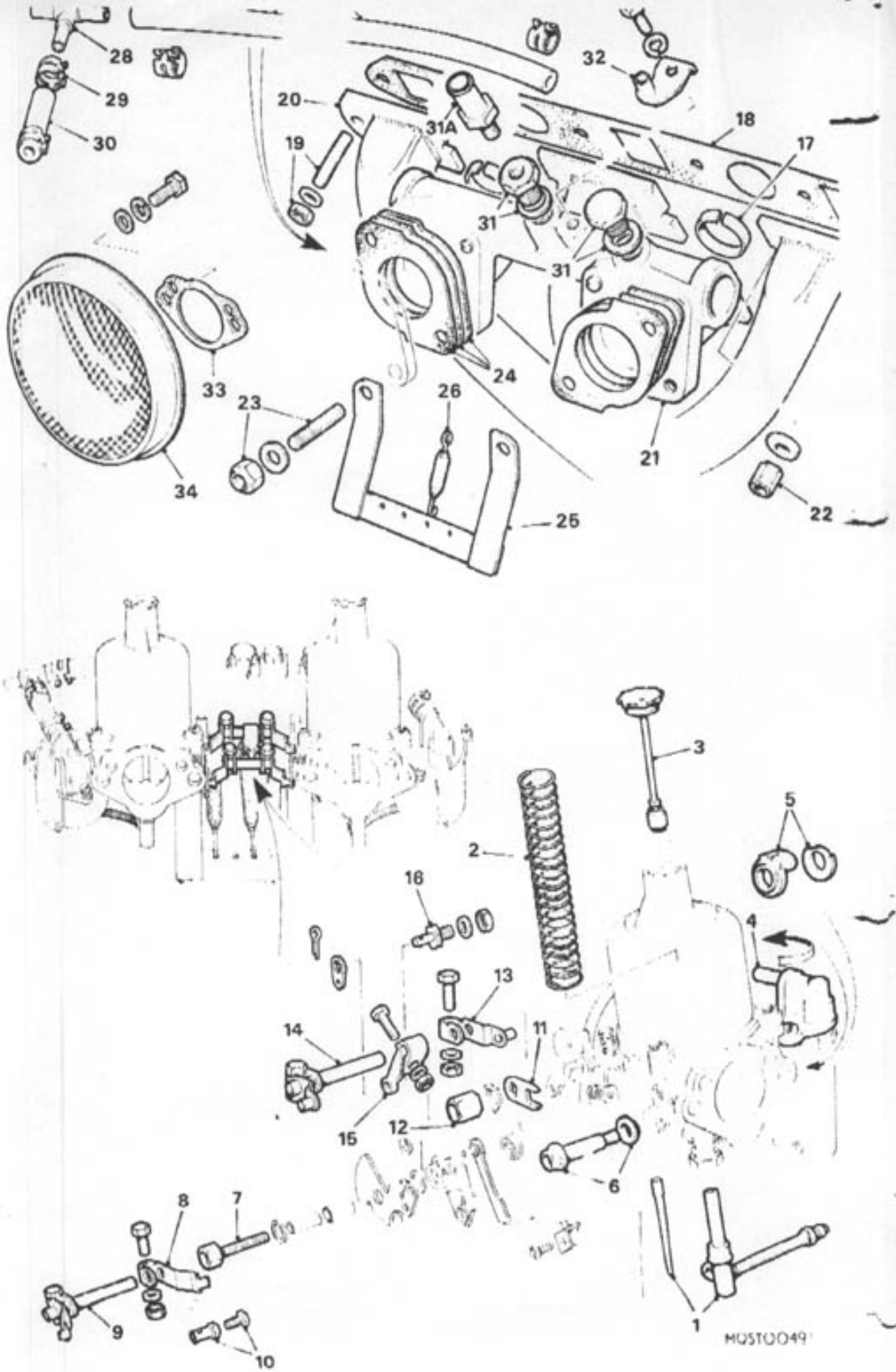
Run engine until normal temperature is achieved and adjust carburation.

LEYLAND ST
BRITISH LEYLAND UK LIMITED
ABINGDON, OXON, OX14 1AU

STN 0022

Contents:

Part No.	Description	Qty
AEG 347	Manifold Inlet	1
C-AHT 543	Manifold Exhaust	1
C-AHT 560	Adaptor Exhaust	1
C-AHT 106	Clip Exhaust	1
C-AHT 131	Clip Exhaust	1
1G 2624	Joint	6
STR 0729	Studs	4
STR 0726	Insulation blocks	2
STR 0725	Heat shield RH	1
12G 682	Heat Shield LH	1
FNZ 206	Nuts	4
AUD 327	Carburetters	1 Pr
C-AHT 426	Throttle Rod (2¼")	2
AUE 86	Lever	2
AUE 87	Lever	2
AUC 1196	Lever	1
ACC 5062	Trunnion	1
AEH 810	Washer copper	1
FNZ 204	Nut	1
PWZ 203	Washer (plain)	1
ZPS 0305	Split pin	1
AHA 6367	Trunnion	1
53K 3503	Screw, trunnion	1
12H 889	'T' piece	1
C-AHT 625	Petrol pipe (1¾")	2
C-AHT 625	Petrol pipe (13")	1
STR 0731	Petrol tube (steel)	1
PWZ 105	Washer	1
ADP 210	Adaptor plug	1
51K 3811	Washer copper	2
AEG 349	Throttle bracket	1
C-AHT 2	Anchor bracket	2
AEC 2075	Throttle springs	3
GEG 601	Joint Manifold	1
C-AHT 624	Clip	2
PWZ 104	Washer, plain	2
LWZ 204	Washer spring	2
53K 128	Bolt	1
FNZ 103	Nut	1
LWZ 203	Washer - spring	1
AAA 649	Bracket trunnion	1
12G 297	'O' ring (manifold)	2
12G 2294	Air Cleaner assy	1
ACA 8014	Joint - air cleaner	2
SH 50581	Bolt - elbow	4
STR 0078	Clip - exh. manifold	1
LWZ 205	Washer, spring	4
ADP 210A	Adaptor (servo)	1
SH 504051	Bolt	1
12A 1735	Hose	1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Leyland

Fitting Instructions

1275GT 'S' PERFORMANCE KIT

STN 0024

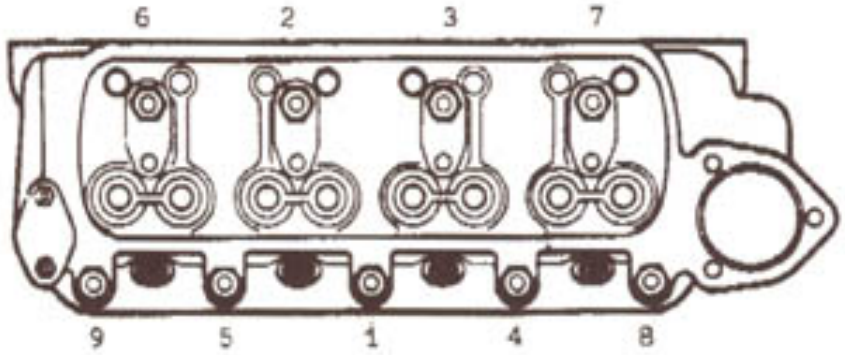
Disconnect battery terminals, drain water into clean container if filled with antifreeze. Removal of the bonnet will give greater access if required.

Remove the valve rocker cover, air cleaner, carburetter controls, unclip the exhaust down pipe from the manifold. Slacken the water by-pass hose clip. Remove the top radiator hose, also the top radiator bracket.

Undo the cylinder head and rocker shaft nuts and remove the shaft assembly, lift out the push rods taking care not to lift the base tappets at the same time. The cylinder head can now be removed. Lift the cylinder head gasket. Thoroughly clean the cylinder block face. Scrape the carbon from the face of the piston crown, leaving a ring of carbon approximately $\frac{1}{4}$" around the periphery of each piston.

Remove the exhaust system complete. Place in position the free flow exhaust manifold. It may prove necessary to disconnect the engine stabiliser enabling the engine to move forward assisting fitment of the manifold.

Fit the cylinder head gasket marked TOP & FRONT. DO NOT USE SEALING COMPOUND OR GREASE. Fit the by-pass hose adaptor to the new cylinder head. Checking that the new cylinder head face is clean, lower the head into position ensuring that the by-pass hose locates correctly. Fully slacken the tappet adjusting screws, refit the push rods and rocker gear. Tighten rocker shaft nuts to 25lb.ft. (3.4 kg.m) and cylinder head nut 50 - 52lb.ft. (6.8 kg.m) torque in the order shown below.



Fit N64Y sparking plugs, adjust tappets to .015" (.4mm) oil valve stems. Replace rocker cover and fit label provided to rocker cover.

Place the manifold gasket over the respective studs, locate the manifold in position, fit the two outer short brass nuts finger tight.

Connect the top radiator hose, radiator bracket and tighten by-pass hose clips.

Secure inlet manifold in a vice, fit plugs and washer, if a brake servo is fitted fit the drilled adaptor in centre location.

Screw the four studs into manifold. Place six gaskets over the studs (three per side).

If the vehicle is to be used for fast road use remove the AAA needles and fit the ABH. Retain AAA for competition.

Position the carburetters on the inlet manifold, locate the linkage as shown in the diagram, ensuring that the rod with lever is fitted nearest the manifold.

With the operating rods correctly aligned, fit spring washer and nut to both top studs, over the bottom studs, spring return bracket, spring washer and nuts. Fit three throttle return springs.

Locate the complete assembly on the cylinder head studs, check that the manifold is correctly located over 'O' springs.

Tighten the inlet manifold into position. The two long nuts should be fitted to the centre two studs. Check and tighten all linkages etc. Fit the longest petrol pipe 17" between the left hand float and 'T' piece, clip into position over top studs. (See diagram). Fit petrol feed pipe.

Fit throttle cable bracket. Fit throttle cable through bracket and locate in trunnion.

Refit choke cable through original location in carburetter and locate with pin.

Cut the front section of the exhaust system off 82.53 c/m (32.5") forward from the front end of the first silencer. Slide adaptor into position on the exhaust manifold, refit the modified exhaust system, check alignment, tighten clips and brackets.

Fit air cleaners with gaskets and four bolts supplied.

Reconnect battery, refill cooling system, start engine, tune carbs with the engine at normal temperature. Check and adjust ignition timing 5° BTDC static. After road test retorque cylinder head and adjust valve clearance etc.

Mark position of the lugs on the 'S' motif on to the boot lid beneath the handle and drill through 4.7mm dia (0.187"). Fit plastic fixing plugs and press motif into position.

LEYLAND S.T.
B L CARS LIMITED
ABINGDON, OXON
OX14 1AU

Issue 1

Contents:-

Part No.	Description	Qty
C-AHT 463	Cylinder Head	1
C-AHT 543	Exhaust Manifold	1
C-AEG 489	Inlet Manifold	1
C-AUD 709	Carburetters	1 pr
CUD 1031	ABH Needle	2
C-37H 4208	N64Y Spark Plugs	4
12H 889	'T' Piece	1
AEC 2075	Return Spring	3
AUC 1501	Lever	1
AEH 810	Washer	1
ACC 5062	Trunnion	1
AAA 649	Washer	1
ADP 210	Plug	1
1B 3664	Washer	2
UKC 3793	Clip	6
C-AHT 624	'P' Clip	2
C-AHT 625	Petrol Pipe 3"	1
C-AHT 625	Petrol Pipe 17"	1
12G 297	Ferrule	2
AUE 481	Throttle Rod Assy	2
ADP 210A	Plug	1
PWZ 105	Washer	4
LWZ 205	Washer	8
AEC 2083	Gasket	6
12G 2125	Gasket	2
GEG 1140	Gasket Set	1
FNZ 204	Nut	1
PWZ 103	Washer	1
ZPS 0305	Split Pin	1
53K 128	Screw	1
LWZ 203	Washer	1
FNZ 103	Nut	1
C-AHT 641	Return Spring Bracket	1
FNZ 205	Nut	4
SH 504051	Screw	1
LWZ 204	Washer	1
AEG 349	Abutment Bracket	1
C-AHT 210	Air Cleaner	2
HZS 507	Screw	4
13H 217	Plastic Ferrule	2
C-AHT 85	Throttle Cable	1
CHS 2511	Stud	4
C-AHT 560	Adaptor Exhaust Manifold	1
C-AHT 106	Clip Exhaust	1
C-AHT 131	Clip Exhaust	1
CZD 2063	'S' Motif	1
154934	Adaptor (Breather Pipe)	2
51K 1177	Nut	2
17H 2644	Servo Adaptor	1
STR 0078	Exhaust Manifold Clamp	1
STR 0731	Petrol Pipe (steel)	1
N.S.P.	Rocker Cover Label	1