

**Limora Zentrallager**

Industriepark Nord 21  
 D - 53567 Buchholz  
 Tel: +49 (0) 26 83 - 97 99 0  
 E-Mail: Limora@Limora.com  
 Internet: www.Limora.com

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**Fitting Instruction**

Unique design removes lost motion, giving instant throttle response, adjustable pedal travel and the relationship of the aluminium billet pedal plate to the brake pedal can be customised.



Full patent now granted

There are major problems with the original equipment throttle pedal assembly and rod linkage system. The basic design already has several areas of substantial lost motion in transmitting accelerator pedal pressure through to the carburettor levers, before taking into account the excessive wear that also occurs :

- The end of the pedal lever can travel up to 20mm before it engages with the linkage lever
- The pedal and linkage levers, and another bush, rotate on a 5/16" bolt. The assembly is unstable and quickly induces further wear.
- The ball end joints and lever swivel trees also have substantial lost motion, even when new.
- Additionally the original organ pedal throttle assembly is extremely flimsy
- The organ pedal design with its extremely restricted leg room and pendant bar makes for a difficult and cramped driving position and restricts heel and toe-ing.

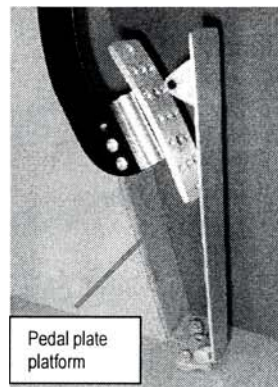
**Solution not just a gable conversion, but a complete system from throttle pedal to carburettor spindle**

**Transform throttle reponse and improve driving position**

- The accelerator organ pedal is replaced by the new Man-

goletsi cast aluminium throttle pedestal with a heavy duty steel lever with an adjustable aluminium billet pedal plate and adjustable pedal position.

- The standard organ pedal is nearly vertical, whereas the Mangoletsi billet pedal plate is angled. Therefore the point of contact of your foot with the pedal plate is further away, giving 1 to 1 1/2 inches more leg room.
- The position of the lever, the travel and angle can be adjusted to improve the contact area of the pedal with the foot to achieve heeling and toe-ing. It works in conjunction with the standard brake and clutch levers. Further improved leg room can be achieved by the fitting of a spacer and altering the length of the push rod on the brake and clutch pedals to match the throttle pedal plate.



OE organ pedal plate position (throttle closed)

Full of unique design features with every construction detail combining to give highly responsive low speed running and delivery of smooth power. The new cast throttle pedestal replicates the original exterior style with the addition of a cast arm which holds the outer cables - photo shows heat insulating tubing.

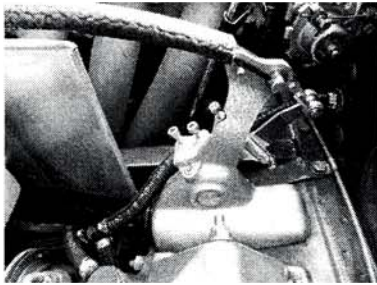
The pedestal is fitted with 22mm oilite bushes, which carry a solid flanged cross-shaft that passes through a sleeve attached to the pendant throttle pedal lever and linkage lever. The side thrust of the shaft is controlled by 2 precision shims. There is zero lost motion between the pedal lever and carburettor linkage. The curved aluminium billet pedal plate is fully adjustable with its matrix of attachment holes - height, laterally and angle to foot.

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Mangoletsi heavy duty pedal assembly position (throttle closed)

**Throttle pedal travel set-up**

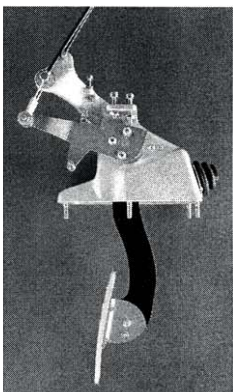
The pedal linkage lever is controlled by an adjustable stop for the fully open position and another stop for fully closed.

These two stops also control the distance of the throttle pedal plate from the pedal plate platform.

Oilite bushed swivels attach the inner cables to the linkage lever. The outer cable carriers are fitted into a bushed swivel to reduce friction on the inner cable, and the outer cables (nylon lined) are supported to stop cable sag. The cables, even when tightly coiled (for demonstration purposes), offer no noticeable resistance to the virtually friction free installation.

Why twin cables? To obtain the full and long term benefits of the linkage, twin cables make a significant contribution.

If you pull a lever with a cable clamp only from one side, it is trying to twist the lever on its shaft, giving wear and reduced sensitivity. Twin cables share the load evenly, giving balanced rotational force in the oilite bushes and much reduced wear and a smoother operation. There is also the bonus of having a spare cable. The secret of a responsive engine is the systematic attention to detail to ensure all the components perform to their optimum

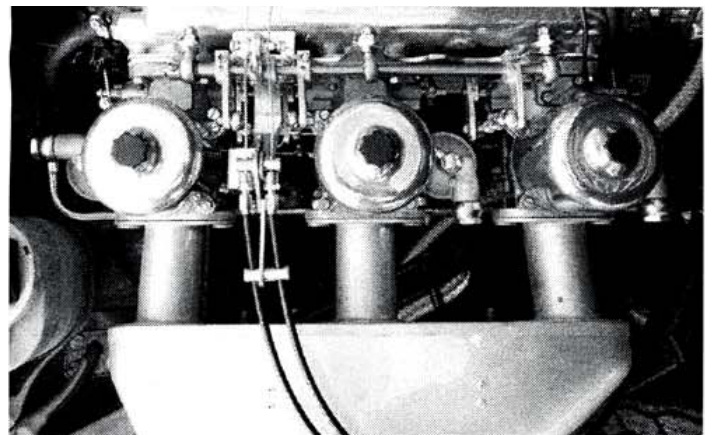


**Sliding set-up linkage system**

The Mangoletsi linkage system is designed and engineered as a complete throttle control system from pedal to carburetors.

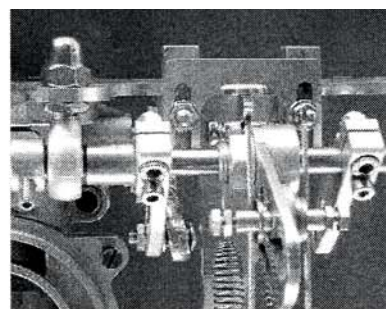
For immediate throttle response-

Most ball joints have inherent end float, and normally rose joint spherical bearings are very stiff to rotate. Mangoletsi use aircraft standard rose joints, which rotate smoothly with zero end float. These, and oilite bushes, are the heart of the system.



The main stainless steel operating cross-shaft runs in 3 rose joints, for minimum deflection, and friction free rotation. The multi-hole linkage billet levers are clamped and also permanently located with screws in countersunk holes on to the cross-shaft, all at the same angle. A left/right hand threaded hexagon adjusting bar connects the rose joints to the levers. The slotted main operating lever is bolted in to the cross-shaft.

The 3 rose joints, cross-shaft and levers come assembled on the linkage plate.



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'Sliding set-up' - absolute simplicity NOW FULL Y PATENTED

**Pedal Travel** Slide cable clamp assembly along lever slots until the desired throttle's fully open and fully closed positions achieved - tighten

**Spring tension** Slide spring/cable carrier assembly until a good balance between idle shut off and pedal feel is obtained - tighten.

**Linkage stop** Having set the above, adjust the full throttle sliding stop on the linkage bracket and lock it in position when the lever strikes it with the throttles fully open

**Idle Speed balance** Just rotate each hex rose joint assembly to fully close throttle plate, then open up the carburettor idle adjuster with 2 1/2 turns of screw.

All rotating components run in replaceable oilite bushes for long life and smooth operation.

**The kit arrives in 4 pre-assembled packs ready for fitting**

The majority of the time and work required for installation involves the removal of the redundant throttle pedestal and throttle linkage, plus the original SU carburettors and their subsequent re-fitting.

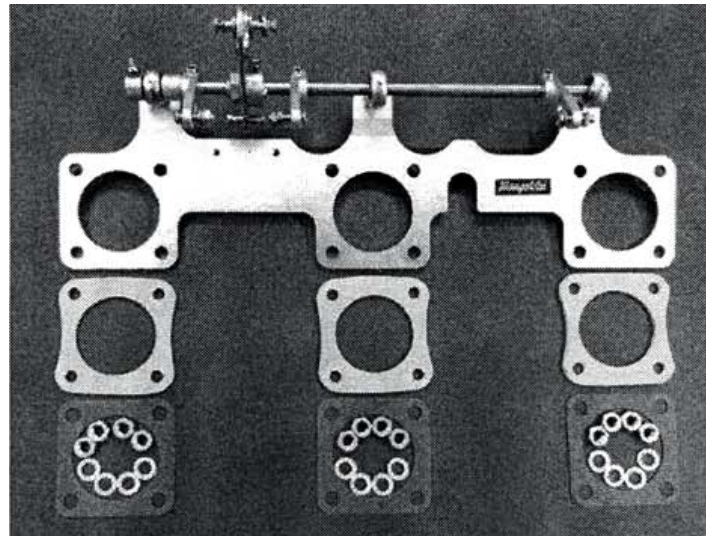
**Contents**

Pack A  
 Linkage plate assembled

With cross shaft and aluminium billet levers.  
 Main operating lever with sliding clamp plate for twin cable clamp attached.  
 Fitting kit- insulators, gaskets, nuts, shake-proof washers.

**Fitting notes**

Pack A  
 Fit new insulator blocks; Next the plate assembly; Then thin gasket  
 Replace carburettors  
 Tighten up with nuts and shake-proof washers



**Contents**

Pack B  
 Pre-Assembled SU levers

With correctly positioned spacers and hex rose joint assemblies;  
 1 x shaft spacer washer  
 1 x set up jig plate

**Fitting notes**

Pack B  
 3 Lever packs - push on to shafts - as instructions PS. also  
 4 Allen keys Spares of useful hardware



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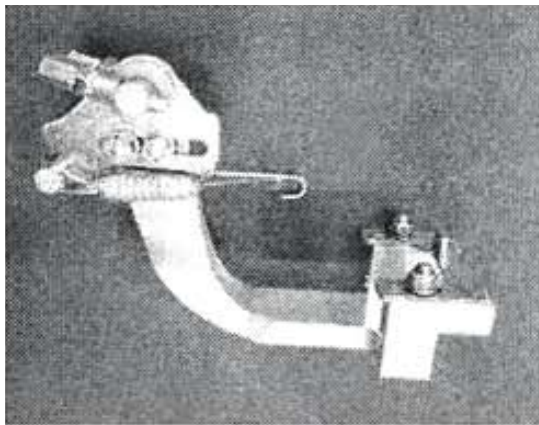
Pack C  
Aluminium billet bracket

Fitted with sliding spring carrier with springs  
Sliding pedal stop plate  
Cable support plate and bar with instructions

**Fitting notes**

Pack C

2 x bolts fixes it onto plate.  
Set up instructions



**Contents**

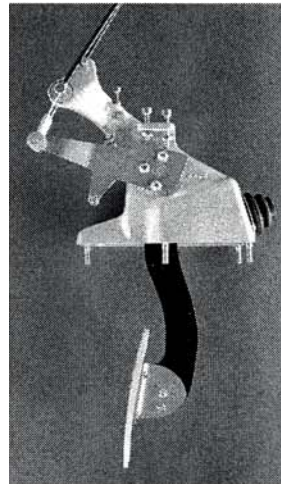
Pack D  
Throttle pedestal assembly

Assembled with inner cables attached.  
Studs, bolt and gasket fitted.  
Heavy duty throttle Pedal lever  
Aluminium billet pedal plate and 90 degree mounting plate  
(packed separately to preserve finish)  
Steering column gaiter pack

**Fitting notes**

Pack D

Pedestal inserts into footwell as a direct replacement for the standard pedestal.  
Bolt-on aluminium billet pedal plate assembly  
Connect cables to linkage bracket.  
Fit steering column gaiter



The start up pedal travel is pre-set at the throttle pedestal end.

**Step by step installation guide**

(With thanks to Jim Patten of Jaguar World Magazine)

**Please read all instructions thoroughly before starting.**

Please note that most nuts, bolts, washers, Allen socket bolts, etc., are stainless steel, metric. The small studs are 5mm and 6mm. The carburettor main fixing studs are 5/16 UNC/UNF. It has been necessary to use metric as the available Imperial fastenings are now so limited and very few available in stainless steel that it is impossible to source Imperial hardware that enables a neat and professional product to be designed and built. Four metric Allen keys are supplied- 2 are special long series for ease of access. You will require 7, 8, 10 & 13mm metric and 1/2" spanners.

**Dismantling original components**

Remove the air filter assembly and filter box. Release fuel pipes - do not lose conical filters inside the float chamber. Flip off linkage securing clips. Remove all carburettor appendages, vacuum pipe, choke cable etc. for re-fitting.

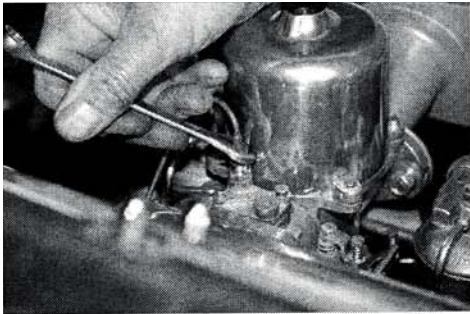


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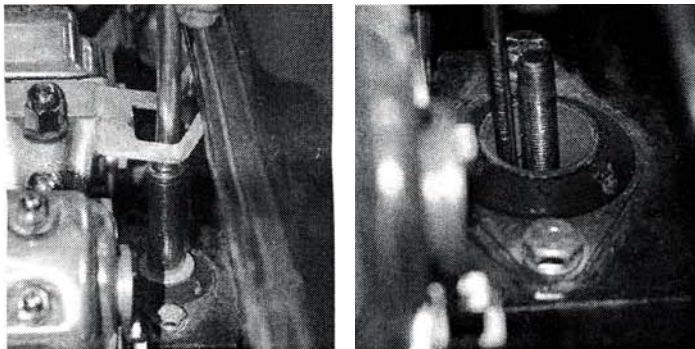


For the carburettor nearest the bulkhead to clear the master cylinder, jack up the engine. To allow this, the engine stabiliser has to be slackened off. Remove the top nut and washer.

Then wind the lock plate down as far as possible. Position a piece of wood beneath the engine and lift.

For easier access, mark and remove the 3 dash pots.

With all restrictions removed from the carburettors, undo the nuts. Remove the 3 carburettors - it can be easier to remove them still assembled on the air cleaner connector plate. Remove the 3 standard SU throttle activating levers.



Remove old linkage from the bulkhead and manifold. - if left in situ unattached, the components are likely to rattle RE-ASSEMBLY- The installation instructions are very detailed to enable you to fully understand the system.

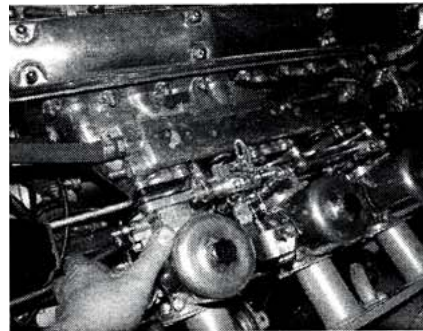
However all major components come fully assembled and mainly pre-set, which greatly simplifies the work.

Bolt CNC billet linkage/spring carrier bracket to linkage plate. Discard old insulator Clean all faces. Fit the new carburettor 3mm thick insulator. Next fit the pre-assembled linkage plate, then the thin gasket.

In preparation for installing the new linkage, reposition cen-

tre carburettor float chamber.

The packaging of the linkage between the centre and front carburettors is tight. Slacken 4 retaining screws. Pull the float chamber towards the filter flange as far as it will go and re-tighten.



There is considerable clearance in the carburettor bolt holes, allowing misalignment. When refitting the carburettor bodies, place a straight edge across the 3 SU bodies. If they are not flat, when tightening up the nuts re-align as necessary, otherwise the carburettor spindles will not be in line. Refit the original spring carriers. Do not connect the original springs at this stage.

**Connecting the SU levers to the 3 spindles – 3 pre-assembled packs**

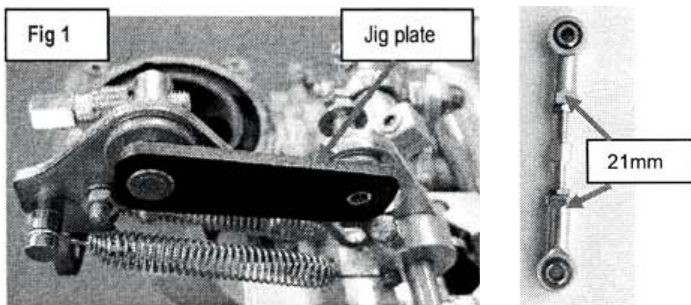
SU LINKAGE JIG PLATE The linkage is locked to establish a fixed datum for positioning the clamp on levers identically to each SU carburettor to ensure they all open and close simultaneously. A master hex rose joint assembly with a fixed gap of 21 mm between the bodies of the rose joints is first fitted to the rear carburettor. Ensure all 3 carburettor idle screws are backed off.

The sliding inner cable carrier clamp plate is pre-fixed at top of slot. With twin springs connected, loosen the 2 nuts lok-

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king the sliding spring carrier and push the assembly hard towards the engine - tighten nuts. Push sliding stop plate away from botiom of lever. Push jig plate on to both bars (Fig 1)



NO	REAR CARBURETTOR	JIG PLATE FITTED	NOTES
1	Push 5/16 washer/spacer over SU shaft		
2	Push on <b>SU lever</b> hex rose joint assembly – don't tighten		First check pre-assembled (1 washer between joint and lever)
3	Bolt top rose joint to <b>outer hole of upper lever</b> Fig 2		<b>NB: Ensure 1 x 5mm washer between top rose joint and lever to avoid lever fouling. Button head bolt orientated as Fig 2</b>
4	Tighten <b>up SU lever</b> , holding carburettor <b>throttle stop fully open</b> . Then tighten Allen screw very firmly (Allen key supplied). Tighten 4mm grub screw firmly (Allen key supplied), do not over-tighten. Do not use Loctite on the grub screws- It may make them impossible to remove		When carburettor shaft is rotated, ensure that the washer is not nipped, but keep lever as close as possible. Due to varying machining tolerances on the manifold, carburettors, etc., there may still be slight misalignment between the top and bottom levers. This is not critical to 1 or 2mm as the rose joint balls will accommodate it
	<b>FRONT CARBURETTOR</b>	<b>JIG PLATE FITTED</b>	
5	Do not fit any 5/16 spacer washer on SU shaft		
6	Push on <b>SU lever</b> hex rose joint assembly – don't tighten		Pre-assembled (1 washer between joint and lever)
7	Bolt top rose joint to outer hole of upper lever		Gap <b>initially</b> pre-set at 21mm between rose joints <b>NB: Ensure 1 x 5mm washer between top rose joint and lever to avoid lever fouling. Button head bolt orientated as Fig 3</b>
8	Tighten <b>up SU lever</b> – as operation 4 above Hold throttle fully open		<b>Except – push lever tight</b> against the fixed brass pedal stop on the SU shaft – then tighten
9	Undo the LH and RH locknuts by 2-3mm each		<b>Do not turn hex bar yet</b>
	<b>CENTRE CARBURETTOR</b>	<b>JIG PLATE FITTED</b>	<b>REPEAT AS FRONT CARBURETTOR</b>
10	Repeat as front carburettor – Nos. 5,6,7,8, 9		<b>NB: Ensure 1 x 5mm washer between top rose joint and lever to avoid lever fouling. Button head bolt orientated as Fig 2</b>
11		<b>REMOVE JIG PLATE</b>	Refit cable adjuster. Refit cable clamp bolt, locknut and 2 washers – ready to connect cables.
	<b>PREPARATION - FINAL THROTTLE PLATE SETTINGS</b>		
12	Work on front carburettor		<b>Always hold rear throttle plate fully closed very firmly</b>
13	Now reduce rose joint gap to 17mm approx.		Wind hex clockwise
14	Next re- wind hex anticlockwise until it locks out as throttle plate fully closes Tighten locknuts		<b>Double check that it is not trying to open rear throttle plate.</b> Both throttle plates must close simultaneously - adjust as below.
15	Repeat procedure for centre carburettor		
	<b>Never alter 21mm setting of the hex rose joint assembly on rear carburettor if you dismantle the carburettors later.</b>		

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### Final setting for simultaneous throttle plate closing

It is essential to check that all 3 throttles close simultaneously. Turn the hex bar anticlockwise on front and centre to open rose joint centres. Gently turn the hex bar (with a starting gap of 17mm and locknuts loose) as required until it is light with the throttle plate open and the original brass SU throttle stop is against the casting.

Re-check, through the dash pot opening, that all 3 throttle plates fully close. Repeat until you are satisfied. If not, check the levers have not slipped, and then readjust the hex bar until the throttle plate is closed and the bar goes solid. Finally tighten the 2 hex bar lock nuts. The SU lever and hex rose joint are pre-assembled and packaged for each carburetor. This ensures the rose joint is on the correct side of the lever in the third hole from the end, and has the 5mm washer fitted, and the button head bolt on the correct side. Check the linkage is clear of any obstructions. Adjust if necessary- see Figs. 2 & 3.

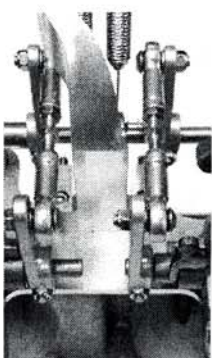


Fig 2 - Rear & centre carb



Fig 3 - Front carb.

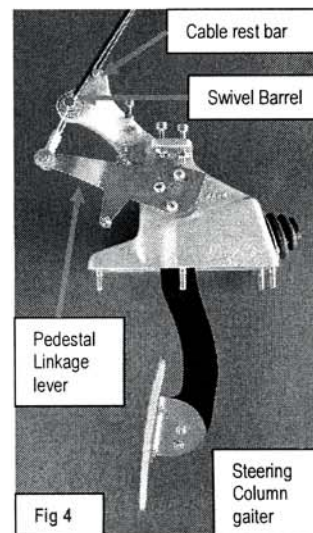
### Fitting the new throttle pedal assembly

The steering column has to be withdrawn. Remove the original throttle pedestal casting and lever assembly. Remove the original organ pedal from the floor. Fit new steering column gaiter, supplied.

With the new gasket fit the Mangoletsi throttle pedestal assembly. The fully open and fully closed stops on the throttle pedestal are pre-set to give you the datum position for finalising the installation of the pedestal and linkage assembly. Re-fit the steering column.

### Connecting cables from pedestal assembly to linkage

The throttle pedestal assembly comes with the inner cables attached via swivelling oilite bushes to the end of the pedestal linkage lever (Fig 4). Pass the inner cables through the swivel barrel and the outer cables. Insert the outer cables into the sockets in the swivel barrel, ensuring there is a 10mm washer on each side between the cable and the bronze bush. Pass the 2 cable assemblies over the cable rest bar.



### CABLE RUN AROUND THE FRONT OF THE ENGINE TO THE CARBURETTORS.

**The cables will run very smoothly: - with smooth curves - no tight bends - the fewer fixing points the better.**

1. Keep as much cable behind the heat shield as possible consistent with a smooth bend from the throttle pedestal
2. Tie wrap, loosely, to the chassis tube as cables swoop down to the steering rack.
3. Lay the cables on top of the steering rack - do not tie-wrap until cables are fixed all the way to the manifold linkage bracket.
4. Clip loosely as high as possible (as shown) on the mud shield to maintain the smooth curve
5. Now back to the steering rack - check all routing to get the smoothest flow - let the centre of the cable curve project over the rack - keep the bend as open as possible and tie-wrap, very loosely, with only one tie-wrap.

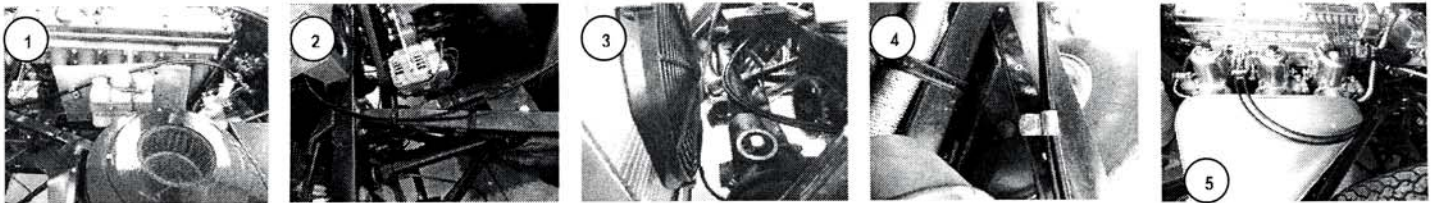
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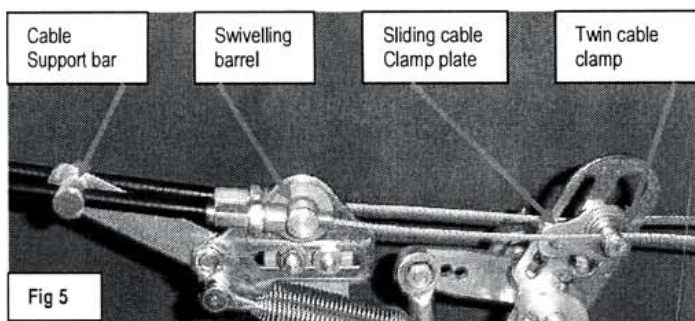
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6. NOTE: If high under bonnet temperatures occur due to high ambient temperature and/or extra heat generated by tubular exhaust manifolds, this can adversely affect the cables. There are two answers: One is to fit a length of heat resistant tubing over the pair of cables up to the approach to the steering rack, or bolt on an extra piece of insulation on the heat shield.

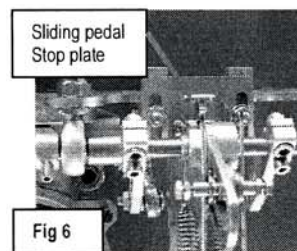


**Connecting cables to main operating lever**

Ensure all 3 idle screws are backed off. Pass the 2 inner cables through the cable support bar, through the cable adjusters and swivelling barrel (Fig 5) At the same time feed outer cables through the cable support bar and into the sockets on the cable adjusters. Cable adjusters should be wound in to the swivelling barrel until the bronze bush just makes contact with it. The inner cables pass through the two small holes in the twin cable clamp, which rotates in the sliding cable clamp plate. Ensure that 2 x 6mm washers are placed on each side between the inner cables and the bronze bush



Check the twin springs on the new linkage assembly are connected. The sliding pedal stop plate (Fig 6) should still be wound away from the lever- its position will be fixed during the final carburettor set-up. On the pedestal casting, the outer cables should now be tie wrapped to the cable rest bar.



**Introduction to the settings and adjustments for pedal plate position and travel**

The original very short travel organ pedal cannot be adjusted for smooth and progressive opening of the throttles.

Due to the patented design of the Mangoletsi linkage, very precise adjustments can be made to the geometry of the whole linkage system. This enables the restricted cable travel at the pedal end to translate to a progressive and slower rate of opening of the carburettor throttle plates, normally only associated with a long pedal travel.

This gives greatly improved sensitivity and throttle response.

The LHD organ pedal platform, which is positioned a considerable distance from the end of the footwell, substantially reduces leg room. Also the near vertical position of the standard organ pedal plate pushes your whole foot further back



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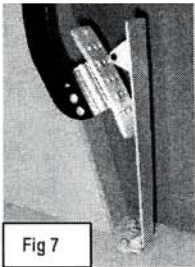
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towards you - see Fig 7

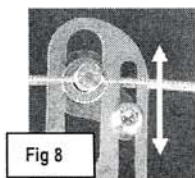
The Mangoletsi short stroke LHD pedal assembly, with its facility to adjust the angle of the pedal plate to match the natural angle of your foot, enables you to place the top of your foot closer to the platform, thus substantially improving driving position and leg room, compared with the standard organ pedal



Fit the adjustable billet pedal plate. The billet pedal plate has 2 main functions:

1. The angle of the plate at full throttle can be adjusted to finish parallel with the platform, optimising leg room
2. The position of the plate can be moved laterally and vertically in relation to the brake pedal for heel and toe-ing.

The sliding cable clamp plate is used to take up the slack in the twin cables. In the first place this is used for the initial set-up to establish the relationship of the pedal plate to the platform. The cable clamp plate must now be fixed at 16mm (See Fig 9 Gap B) measured from the top of the operating lever along the centre line of the long slot to the top of the clamp plate.

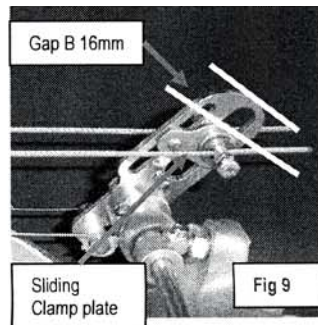


Loosen the button head Allen screw to adjust the position of the cable clamp plate. Allow the cables to move through the holes. Then slide the cable clamp plate up or down the slot (See Fig 8) to 16mm from the top. Tighten the clamp plate Allen screw, ensuring that the 5mm serrated washer is fitted between the screw head and the slotted lever.

Re-check the 16mm setting. The linkage assembly is now set on the manifold at a good starting point, from which you

may need to make adjustments. Later this sliding clamp plate is used to match the cable travel to set the fully open and closed throttle positions Cable Support bar - Slacken bolt and hold main operating lever between fully open and fully closed throttle positions.

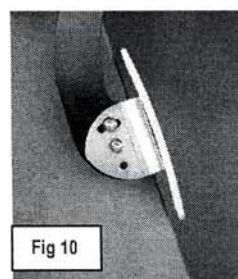
Align cables through the swivelling cable adjusters to the twin cable clamp in a smooth line midway between the fully open and fully closed throttle positions - tighten bolt.



The linkage has been pre-set on the throttle pedestal as shown on our factory rig (Fig 10) to set the full throttle position of the back of the billet pedal plate at 10mm from the bare metal platform. As the pedal travel on the standard LHD cars is so restricted, every millimetre counts. As body shells and platform coverings may differ, there will be variations from car to car. There are 3 options to gain valuable leg room

1. Remove the carpet on the platform and any insulation under it and replace with thin rubber.
2. Remove any insulation, whilst still retaining the carpet.
3. Retain the original carpet, and slightly reduce the potential gains in leg room.

As the platform is an immovable part of the transmission tunnel, the objective is to get the back of the billet pedal plate parallel as close as possible to the platform, thus maximising leg room. See Fig 10



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To obtain the maximum leg room at full throttle, the back of the billet pedal plate should just touch the carpet without compressing it or be no more than 2mm away. If this is the case, with the factory settings, as supplied, on both your throttle pedestal and manifold linkage, it is not necessary to re-set the throttle pedal position - skip this section.

If the carpet has been removed and replaced by rubber, this will result in one of two scenarios:

1. Variations in chassis build etc may bring the back of the pedal plate closer to the rubber - say to within 3mm, gaining leg room and pedal travel. If this is the case it is not necessary to re-set the throttle pedal position. Skip this section.
2. The standard settings should show a gap of approximately 9-10mm from the back of the pedal plate to the rubber on the platform, i.e. the approximate additional leg room gained by removing the carpet.

In this case, you should re-set open and closed throttle pedal positions to change the gap between the pedal plate and rubber on the platform. This will gain extra leg room by setting the gap between the back of the pedal plate and the rubber to 3mm at fully open throttle.

**Factory set settings for pedal position and travel**

The pre-set pedestal and linkage system gives you a good start and then enables you to fine-tune the pedal and linkage system to the Driver's personal requirements - , pedal position, height, travel, feel, etc. When you have become familiar with the throttle pedal system, you will find it easy to work out your own combinations for adjusting the position of the pedal plate and travel. We have established a set of standard settings, which will give you a good starting point, and will always give a datum setting to go back to should you choose to customise the car to your personal requirements.

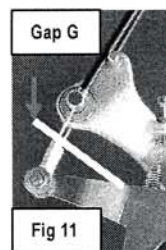
NOTE - Whenever pedal stops are changed, Gap G (Fig 11) between the casting and the end of the cable attachment should never be less than 3mm (1/8 in)

Gap A closed -16mm: Gap A open- 48mm This gives cable travel of 32mm ( Fig 12)

Gap B - Cable clamp plate is supplied at the top of the linkage lever to datum lever setting.

Note - afterwards this must be re-set to 16mm to complete the linkage set-up Linkage cross shaft billet levers - outer end (no.1) hole SU billet lever - Rose joint in 3rd hole from

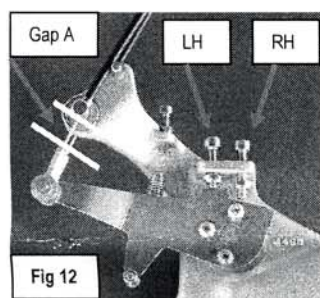
outer end Master hex rose joint assembly on rear carburettor- 21mm is the datum dimension for all setting up. This should never be changed. It may be necessary to alter the centres of the rose joints on the centre and front carburettors to achieve simultaneous throttle plate closing



TO RE-SET THROTTLE PEDAL POSITION - IF NECESSARY- due to variations in carpet thickness, car build, etc. it may be necessary to alter the factory setting to suit your particular car - IF SO:

FULLY OPEN POSITION - Work only on the rear carburettor. Disconnect the centre and front top rose joints from the 2 levers on the linkage cross bar. Ensure all 3 idle screws are backed off and inner cables are loose in the twin cable clamp.

Back off LH and RH pedal travel stop bolts. Manually push down pedestal linkage lever, whilst simultaneously winding down LH stop bolt to reach the desired full throttle position of the pedal plate in relation to the platform. This will hold it in position whilst you tighten down the RH pedal travel stop bolt, which is the permanent full throttle stop. The Allen screw stop bolt should be held very firmly in place whilst tightening the lock nut. Push hard on the pedal plate to simulate the pressure of your foot. Re-check you have the desired gap between pedal plate and rubber/carpet Manually pull the main operating lever (Fig 13) to fully open the throttle, whilst pulling the 2 inner cables through the twin cable clamp. Nip up both cables firmly finger tight- do not over-tighten. To ensure fully open position, take up any slack with cable adjusters.



**Limora Zentrallager**

Industriepark Nord 21  
 D - 53567 Buchholz  
 Tel: +49 (0) 26 83 - 97 99 0  
 E-Mail: Limora@Limora.com  
 Internet: www.Limora.com

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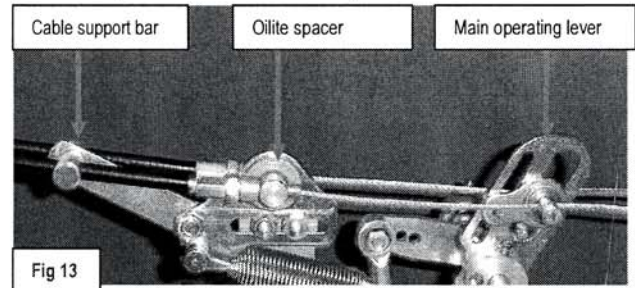
**FULLY CLOSED POSTION.** Back off LH pedal stop until throttle fully closed. Hold the end of the linkage lever firmly in place whilst retightening LH pedal stop locknut. Wind cable adjusters back into the swivel barrel. Undo twin cable clamp screws, pull through excess slack, leaving about 1 mm of free play - rising heat can tighten up a linkage system. Retighten screws. Ensure that the pedal plate is still parallel to the platform at full throttle - if not, re-adjust.

Check the throttles fully open and fully close - if not, loosen the inner cable clamp bolts to allow the cables to move through the hole. Then slide the cable clamp plate up or down the slot whilst pulling the cable taut, until the clamp plate position just tightens the cable. Tighten the clamp plate Allen screw, ensuring that the 5mm serrated washer is fitted between the screw and the slotted lever. Tighten twin cable bolt. You may have to work this procedure several times to achieve your ideal fully closed and fully open throttle positions.

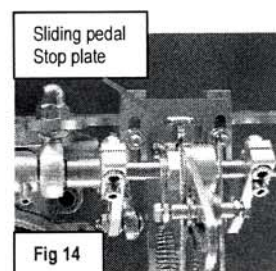
Reconnect centre and front carburettors, ensuring the rose joint assembly is bolted to the outside hole on the rear cross shaft lever with 5mm washer fitted between, and the lower rose joint is still fitted in the third hole from the end of the SU lever, again with 5mm washer fitted in between. Check procedures Fig 2 and re-check all throttle plates fully close simultaneously.

**To complete the installation**

1. Refit the 3 original SU pull off springs.
2. Loosen nuts on spring carrier to re-set the tension of the twin linkage pull off springs. The inner cables must be slack. slide the spring carrier until the desired pedal feel is achieved - tighten up. Re-tighten inner cables and take out slack in the outer cables with the outer cable adjusters. - keep repeating procedure until the pedal feel is OK
3. If there is any end float in the outer cables, unscrew the cable adjusters to remove it. Tighten up oilite spacer to the swivel barrel with the staytite nuts. Do not over-tighten as it can slightly crush the oilite spacers (Fig 13) to the point that the swivel barrel will not rotate freely. Back off the nut slightly if this occurs.
4. With the throttle pedal in the fully open position hard against the RH pedal stop bolt (Fig 12), slide in the sliding pedalstop plate (Fig 14) until it strikes the bottom of the main operating lever - tighten nuts. **IMPORTANT:** This protects the carburettors, linkage and cables from taking the full pressure of the foot and causing damage and should be adjusted whenever changes are made to the settings.



5. On the throttle pedestal adjust the single spring on the pedestal linkage lever to ensure that it closes properly against the LH pedal stop bolt.
6. The excess length on the inner cables should not be shortened, as any adjustments that you make to pedal travel etc., require different lengths of inner cable. If it is cut, it splays out and is difficult to refit through the hole.
7. When cable adjustments finished, double check tightness of cable clamps and all the various locking nuts. When finally tightening the twin cable clamp, always leave a small amount of slack (up to 1 mm) in the inner cables. To avoid damage to the inner cable, be careful not to over-tighten.



Finally check that all the throttle plates fully open and fully close. Also ensure that all the levers operate without contacting the body of the rose joint. The levers and rose joint assembly should have a 5mm washer fitted between them as standard. If the rose joint and the lever attached to the carburettor touch as the throttle is opened, fit an additional 5mm washer (a very small gap is OK.)

**Set the balance to the carburettors**

Now that all the throttle plates fully close simultaneously into the carburettor bore, the tick-over speed can be set by opening each idle air screw by about 2 1/2 turns to give around 800 RPM. This is a positive starting point from which to carry out all the rest of the normal carburettor fine tuning procedures.

**Limora Zentrallager**

Industriepark Nord 21  
 D - 53567 Buchholz  
 Tel: +49 (0) 26 83 - 97 99 0  
 E-Mail: [Limora@Limora.com](mailto:Limora@Limora.com)  
 Internet: [www.Limora.com](http://www.Limora.com)

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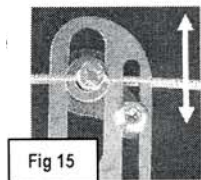
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ROAD TEST THE CAR to assess any changes in the pedal set up that you wish to make.

**TO RE-SET THE PEDAL TRAVEL, IF REQUIRED.**

If you require a more progressive part throttle rate of opening for improved response at lower speeds, you can achieve this with a longer cable travel, measured from the platform. This brings your foot closer towards you at closed throttle.

Leave the RH pedal stop in position. Wind away the threaded stop bolt clear of the bottom of the main operating lever. Loosen the inner cables. Fully wind in cable adjusters. Take a measurement from the platform to the back of pedal plate, measured on the centre line of the 3 middle holes in the plate at 90 degrees to the platform. Wind out the LH pedal stop to increase this gap by 10mm. Re-tighten pedal stop bolt locknut. Loosen cable clamp plate ( Fig 15) and slide it up or down the slots whilst pulling the slack out of the cables through the clamp to find a position where the pedal plate is firmly held in the new upper position at closed throttle. Re-tighten clamp plate and cables as previously described. Check you have fully open and fully closed throttle positions. This may have to be repeated once or twice to synchronise the correct height of the clamp plate with the length of the cables. Finally firmly tighten cables in the twin cable clamp, ensuring the 2 washers on each side are placed between the cables and the bronze bush in the sliding cable clamp. Nip up 2 locknuts.



If there is any end float in the outer cables, unscrew the cable adjusters to remove it. Tighten up oilite spacer to the swivel barrel with the staytite nuts. Do not over-tighten as it can slightly crush the oilite spacers (Fig 13) to the point that the swivel barrel will not rotate freely. Back off the nut slightly if this occurs. With the throttle pedal in the fully open position hard against the RH pedal stop bolt, wind in the threaded stop bolt (Fig 13) until it strikes the bottom of the main operating lever - tighten nuts. **IMPORTANT:** This protects the carburetors, linkage and cables from taking the full pressure of the foot and causing damage and should be adjusted whenever changes are made to the settings.

On the throttle pedestal adjust the single spring on the pedal linkage lever to ensure that it closes properly against the LH pedal stop bolt. When cable adjustments finished, double check tightness of cable clamps and all the various locking nuts. When finally tightening the twin cable clamp, always leave a small amount of slack (up to 1mm) in the inner cables. To avoid damage to the inner cable, be careful not to over-tighten.

ROAD TEST and check whether the 10mm extra pedal travel meets your requirements - if necessary re-adjust accordingly as above.

**Throttle pedal lever and billet pedal plate adjustment**

The Mangoletsi throttle pedestal assembly gives zerolost motion. The rugged adjustable throttle pedal system significantly improves the driver's control and comfort. These 3 components can be arranged to customise:



- Length of pedal travel
- Lateral relationship with brake pedal and throttle pedal plate height for heel and toe-ing.
- The angle of contact of the driver's foot with the billet pedal plate and the brake pedal.

See options belows

**Lateral positioning of the 90 degree mounting bracket and billet pedal plate**

The 90 degree bracket can be positioned on the throttle pedal lever in several ways. After setting up pedal travel stops for closed and fully open throttle positions, assess 90 deg. bracket and billet pedal plate in relation to pedal lever for the best set-up in respect of brake pedal and side of platform.

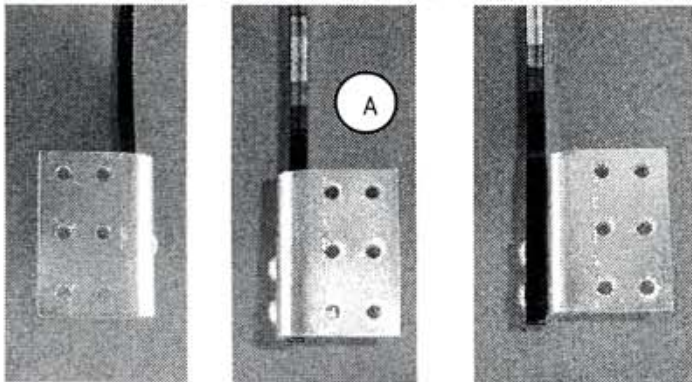
A good starting point is as photo A. Attach 90 degree bracket to lever through the centre hole. Second bolt passes through radial slot on the bracket and through top lever hole. Bolt up gently using the centre bolt so that the bracket and pedal plate can just be turned to obtain the correct pedal plate angle.

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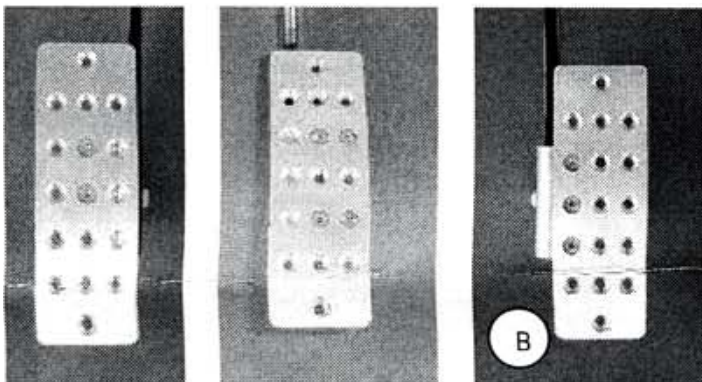
Industriepark Nord 21  
D - 53567 Buchholz  
Tel: +49 (0) 26 83 - 97 99 0  
E-Mail: Limora@Limora.com  
Internet: www.Limora.com

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With the combination of options for mounting 90 degree bracket and the matrix of holes on the billet pedal plate, the plate can be positioned exactly as required, laterally and vertically. You can now experiment with the positioning of the billet pedal plate. The recommended starting point is as shown in B. Keep the 3 pedal plate fixing screws close to the pedal lever to clear the platform, to obtain maximum pedal travel.



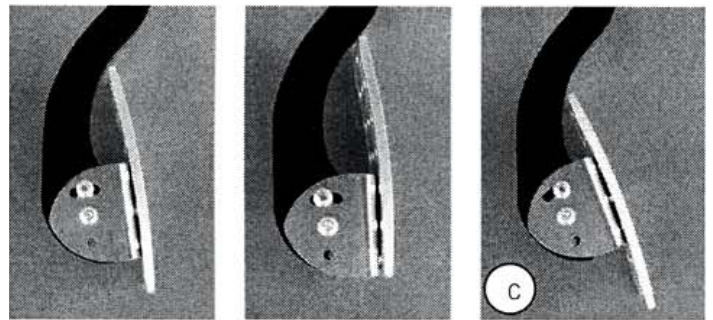
## Height and angles of billet pedal plate

The photographs are further examples of how to use the billet pedal plate and the 90 degree mounting bracket. To obtain a comfortable position for your foot, you can adjust the height of the pedal plate up or down, if required, and, for heel and toe-ing, position it laterally in relation to the brake pedal and the side of the footwell - see above.

Pedal plate fixing - starting point C  
Slacken clamp bolt in radial slot in 90 degree bracket, and rotate the pedal plate and bracket around the centre bolt. Assess the best angle of the throttle pedal plate to your foot-

at the same time considering the angle in relation to the platform so that the point of contact at the top of the pedal plate with the platform does not push the pedal plate back too far towards you. Tighten up very firmly the top and centre bolts on the 90 degree bracket, ensuring that the serrated lock washers are under both button head bolts.

As space is tight, and you are conducting several Operations, re-check that the final position meets all your requirements.



## Pedal position

With the ability to adjust the throttle pedal to the optimum position, further significant gains in driver comfort, leg room and control can be achieved by shortening the brake pedal push rod and fitting a spacer to the clutch pedal.

## Cable repair

The excess length on the inner cables should not be shortened. If cut, it splays out and is difficult to refit through the hole. If a cable does become frayed in many cases a satisfactory repair can be carried out if the damage is not too serious. The inner cable is made from a considerable number of very fine strands for the best flexibility and strength. For a satisfactory result the strands must all be the same length and should not be trimmed. The most successful product to use is FUTURE GLUE from the originators of superglue. CAUTION: wear rubber gloves. Apply a drop of glue to the last 2-3mm of the strands and quickly rotate the strands together in the direction of the winding of the strands between thumb and forefinger with considerable pressure. The strands must be tightly compacted, or they will not fit through the holes in the cable clamp.

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Industriepark Nord 21  
 D - 53567 Buchholz  
 Tel: +49 (0) 26 83 - 97 99 0  
 E-Mail: [Limora@Limora.com](mailto:Limora@Limora.com)  
 Internet: [www.Limora.com](http://www.Limora.com)

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**Classic style air filters**

It should be realised that not all aftermarket filters necessarily give improvements - sometimes the reverse, particularly they can affect the torque and drivability.

The combined expertise of Mangoletsi and leading filter manufacturers ITG has resulted in a very attractive filter that blends with the classic styling of the car and gives a 10-12 HP increase in power. Most importantly there is no loss of torque which occurs with many aftermarket filters as losses are incurred when the three long runner pipes from the SU to the plenum are discarded.

Another major benefit is that the design of the plenum styled filter significantly dampens the noise normally associated with aftermarket/sports filters. A set of AO SU needles is available. It is essential that the fuelling is properly set up after fitting the filters, preferably on a rolling road.

The combination of the SU throttle pedestal and patented manifold linkage assembly gives superb throttle response and driveability which makes the car feel quicker. However, by adding a real gain in power from the new air filter, the whole package gives remarkable value for money for a kit that transforms the car.

