

Leyland

Coaches



Leyland Tiger and Tiger 245

Britain's premium air suspended coach chassis





Tiger and Tiger 245



Tiger, the new high performance, air suspended coach chassis from Leyland Bus is already proving outstandingly popular with operators because of its performance, economy, reliability and outstanding ride comfort. Now there is an even more powerful Tiger available - Tiger 245 with 245 bhp for even greater hill climbing performance and meet the requirements of Tempo 100. Extra power - at no extra weight and with the same levels of economy and reliability.

Tiger, evolved from the famous Leopard and Reliance designs, is a premium quality chassis with the hallmarks which have made Leyland coaches Britain's most

popular choice for over sixty years: careful chassis design; excellent road holding; economy; flexible power; reliability and durability.

From the flat-topped, all-bolted chassis, through the proven TL11H engine, Pneumocyclic or ZF transmission and big Leyland 'S' cam brakes, Tiger is every inch a pedigree chassis, designed specifically to meet the requirements of the long distance coach operator whether he specialises in high quality excursions, inter-city express work or touring at home or abroad.

Just study the specification of Tiger and see the quality for yourself. Take the chassis - straight, flat topped and strong.

The perfect base for body mounting. The chassis is of all bolted construction and uses deep channel section side members. There is a mid wheelbase flitch, nine channel section cross members and nine outriggers.

The frame finishes behind the rear suspension mounting to allow body design freedom at the rear end. The whole chassis is corrosion protected for a minimum 15 year life.

Chassis are available to suit 12m or 11.3m overall length bodies.



The Tiger is powered by the new Leyland TL11H engine, a six cylinder, in-line, turbocharged, horizontal diesel. It has been developed from the successful 680/690 to provide outstanding performance with economy and reliability.

In Tiger the TL11H produces 218 bhp at 2100 rev/min - a lower rev level than the Leopard. And there is a massive torque back-up right across the speed range with maximum torque of 650 lbf ft at only 1300 rev/min - again considerably lower down the speed range than the Leopard. This flexibility of power is due to the design of the engine and the use of mild turbocharging, which not only increases power, but has major advantages in terms of reducing noise and emissions.

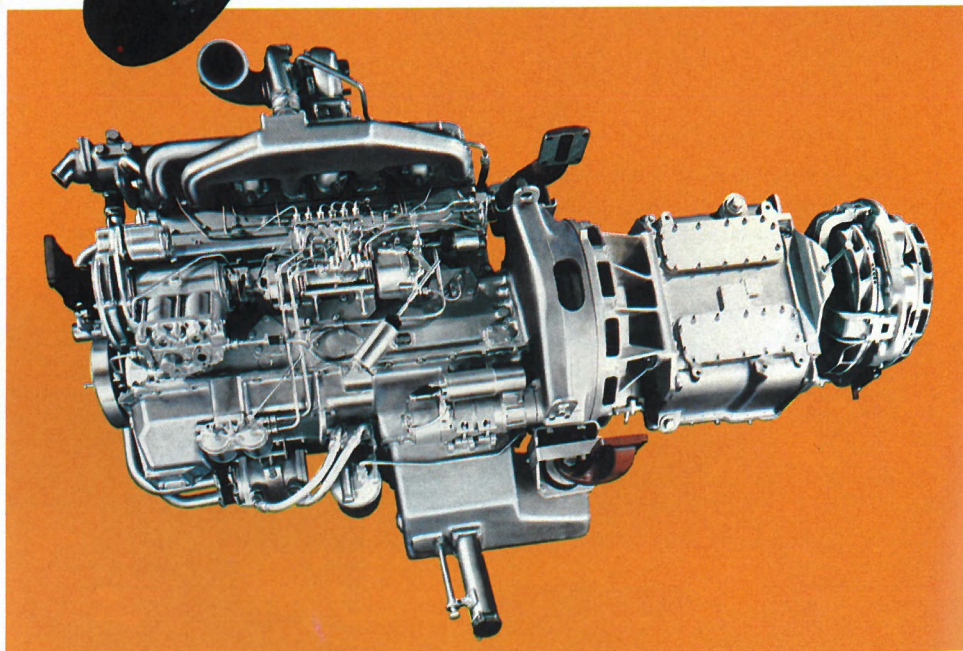
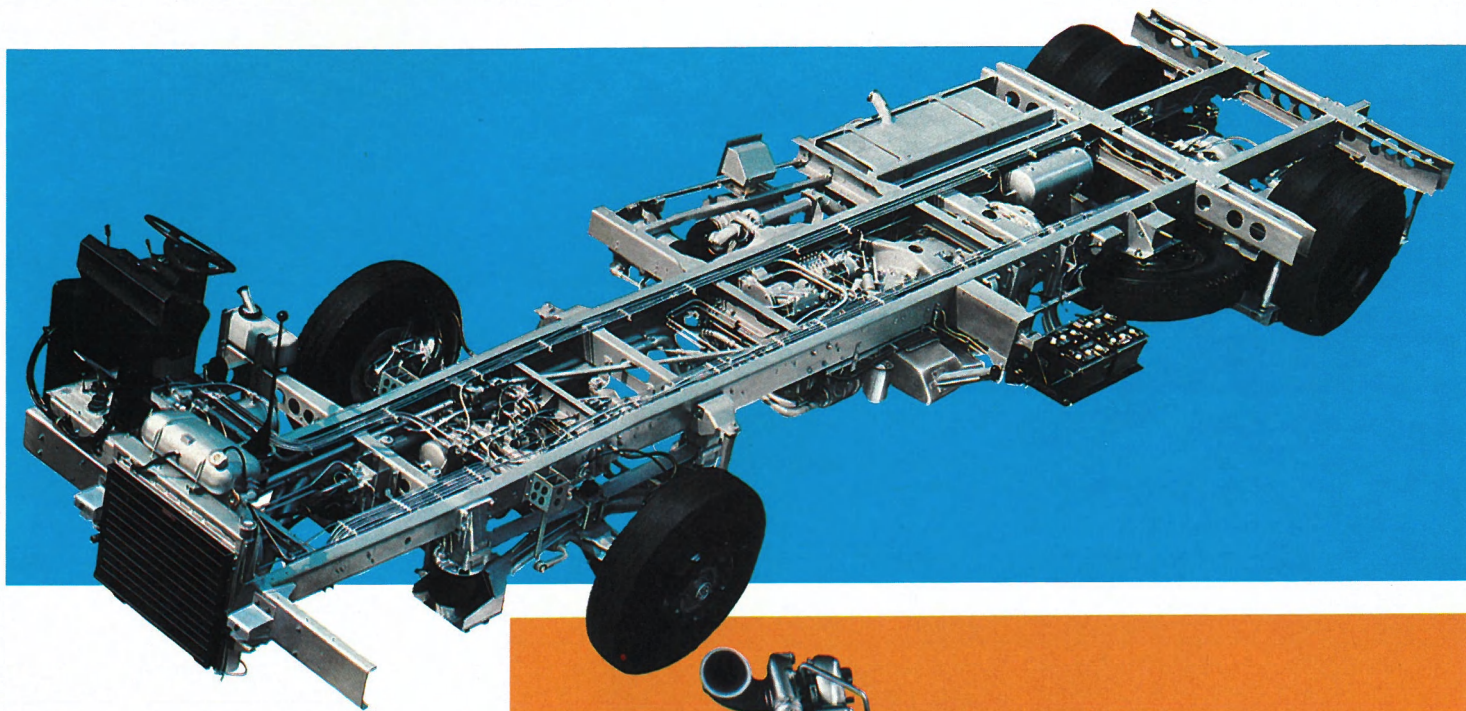
In Tiger 245 the same engine produces 245 bhp at only 2100 rev/min with a similarly impressive torque back up of 750 lbf ft at 1300 rev/min - more than meeting the Tempo 100 requirements.

The TL11H engine features F & M P76 fuel pump and Ambac 17mm injectors for economic fuelling at all speeds.

On the 218 bhp Tiger there is a choice of transmission, - Leyland Pneumocyclic or ZF manual. Tiger 245 is available only with ZF manual transmission.

The world-renowned Leyland Pneumocyclic gearbox has a fully charged 19in fluid coupling, five speeds and is available with close or wide ratios.

Tiger and Tiger 245



Control can be semi or fully automatic. Whatever the specification, Pneumocyclic reduces wear and tear on the engine, passengers and driver.

Manual transmission is the ZF S6-80 six speed unit operating through a Dana 14in twin plate clutch with automatic adjustment.

The front axle is a conventional I-beam unit of 6.25 ton capacity.

Rear axle is a spiral bevel, single reduction 10.8 ton capacity unit with ratio options to suit operators' requirements.

Tiger stops in its tracks - straight and true. Powerful Leyland 'S' cam and roller brakes are fitted to Tiger. The system is full air, dual circuit and meets EEC71/320, 75/524 and 79/489. A total of 756in² brake area is provided. The parking brake is spring operated on the

rear axle.

Automatic slack adjusters are fitted to all brakes.

Tiger glides on air on one of the finest air-suspension systems in the world. Developed originally for Leyland's sophisticated range of buses and coaches produced in Denmark it provides outstanding standards of ride comfort, handling and reliability. Each axle is

suspended by four low frequency air bags widely spaced to give maximum roll stability. The air bellows are mounted on two forged steel beams with 3.9in wide parabolic links for axle location and four telescopic units provide damping. The system is controlled for ride height, roll stability and wind-up by levelling and isolator valves. Both front and rear suspension beam and link assemblies are identical, 10in air bellows are used at the front and 12in at the rear. In addition an anti-roll bar is incorporated into the front axle for even greater roll stiffness.

Tiger keeps a cool head whatever the going, thanks to the massive 744in² four-row radiator with a hydraulically-driven thermostatically controlled fan. The system incorporates a large volume header tank with external filling access.

The system is lightly pressurized and designed to operate in the ambient band of +35°C to -20°C. A larger radiator for operating in ambients up to +46°C is also available.

Tiger uses a 24v electrical system with colour coded wiring. A main control box for all electrical functions is situated at the front beside the driver with access from outside the vehicle. In addition all engine bay interface connections are contained adjacent to the engine in a junction box which also houses the main cut-off switch. 135 amp/hr batteries are standard but 195 amp/hr batteries can also be specified. Standard alternator is 60 amp but a 100 amp alternator is also available.

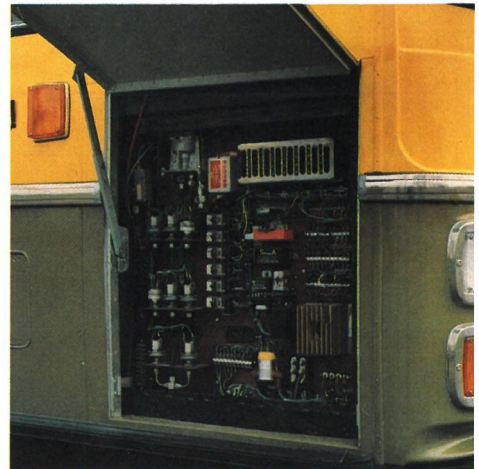
A gearbox mounted Telma Focal 155 retarder is available as a production option. When the Telma is fitted, 100 amp

alternator and 195 amp/hr batteries are standard.

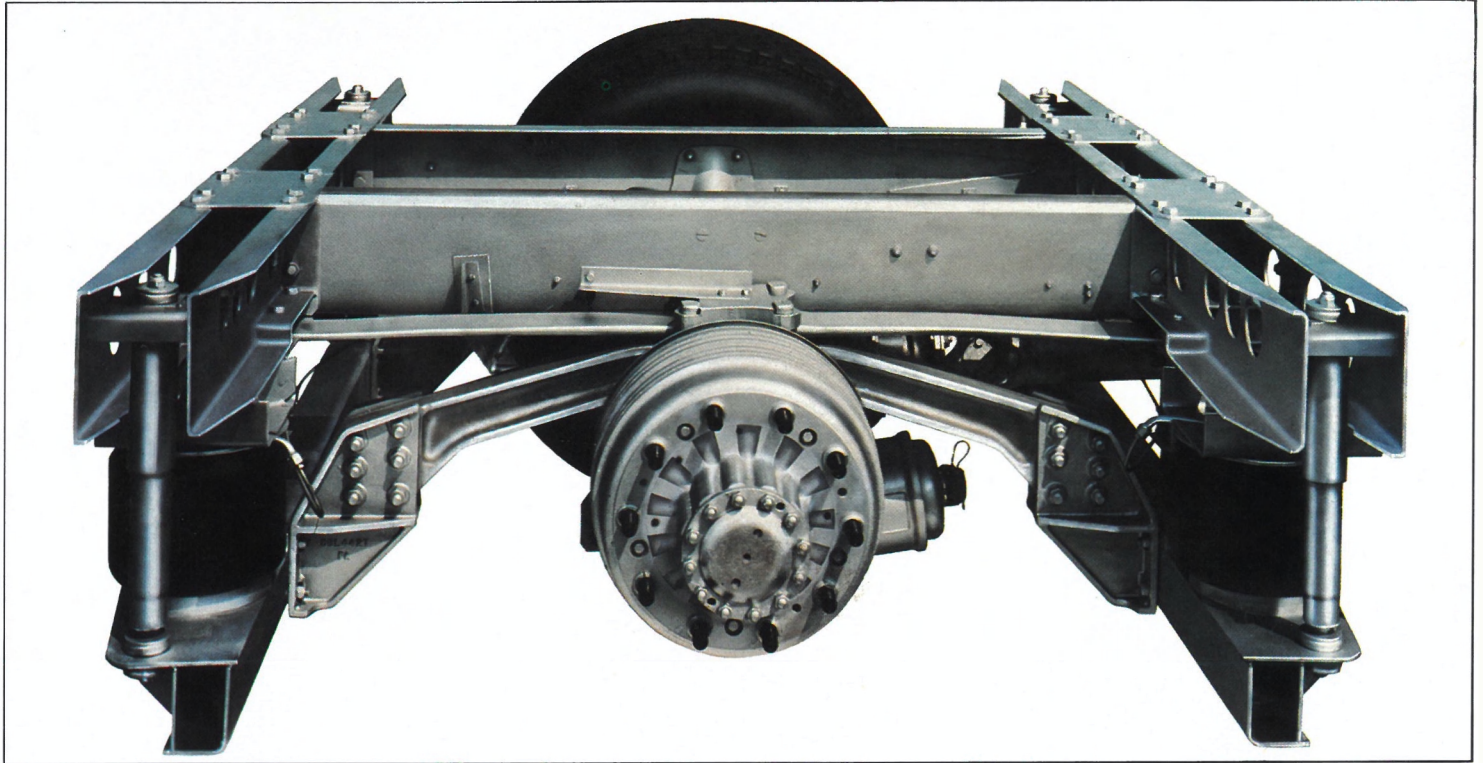
Tiger handles superbly and drivers love it. The whole driving environment has been ergonomically designed. It features clear instrumentation, non-confusing switches and prioritised controls. The steering wheel is only 18in diameter, and is cranked at an angle of 32° to the horizontal for driver comfort. The steering is powered, with 5½ turns lock to lock.

There is no need to keep topping up with Tiger. The miserly TL11H engine has superb fuel economy and the massive 88 gallon tank means miles and miles between fill-ups.

Standard wheel and tyre equipment on Tiger is 11 x 22.5 16 ply tyres on 7.5 inch rims with a 6in offset. Wheel and tyre



Tiger and Tiger 245

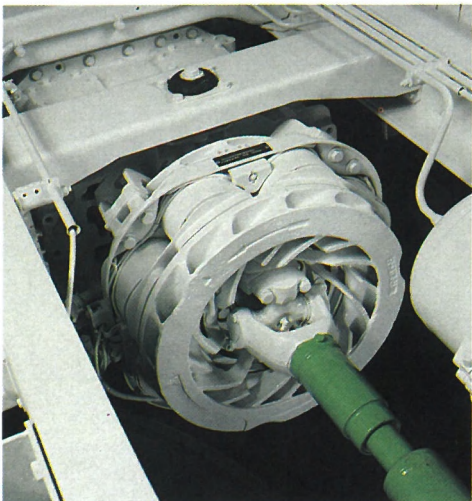




equipment can be varied to suit operating load/speed requirements. Wheels are spigot mounted to provide secure location and prevent stud fracture.

Tiger is also a highly suitable chassis for specialised vehicles used for carrying easily damaged equipment. Its superb shock-free suspension ensures safe transit for racehorses, antiques, musical instruments, computers etc. The low frame height, flat topped chassis and long deck length provide an ideal load carrying base for specialist bodywork.

Tiger - the best thing to happen to the coach industry for 20 years. A British chassis that beats the world.



Leyland Leopard

Britain's most popular premium leaf sprung chassis





Leyland Leopard has been Britain's most popular heavy duty leaf sprung premium coach chassis for many years. With its powerful unstressed engine and choice of automatic or manual transmission, the Leopard is highly regarded by operators throughout the world. The quality of Leopard, its outstanding reliability, longevity and ability to maintain market value are the measure by which all other coaches are judged.

The Leyland Leopard chassis is a well-proven design which has been developed to levels of outstanding reliability. A well-planned underfloor horizontal engine layout ensures balanced handling and a simplicity of design which, in turn, helps to ease maintenance. Noise and vibration are kept below and well away from the passenger area and this, together with a smooth ride ensures a pleasant and relaxed passenger environment.

Plenty of smooth, flexible power from the Leyland 680 engine, coupled with the choice of gearboxes and axle ratios, enables the Leopard to meet a wide range of operator requirements.

The semi-and fully-automatic gearboxes have been well proven in all kinds of operations. Such systems are ideal for coach use where the light and instant finger tip controls allow the driver to concentrate fully on the road ahead. For those who prefer a manual gearbox, the Leopard is also available with the proven ZF S6-80 unit.

The Leopard naturally has heavy-duty suspension as standard without compromising the ride comfort. This allows GVWs of up to 16.0 tons. In addition, high-floor bodies can be specified on either 11 or 12 metre models without alteration to the chassis.

More and more operators are finding that in today's arduous operating environment it pays to buy a heavy duty premium chassis - Leopard is the ideal vehicle for those operators not requiring the sophistication of the Tiger.

Leopard is powered by Leyland's well established 680 horizontal in-line diesel engine. Rated at 185 bhp at 2,200 rev/min, the 680 is designed to provide unstressed running and long unit life. The engine is a four stroke direct injection unit

Leopard

with spheroidal cavity combustion chambers in the piston crowns. A nitrided crankshaft ensures long life and regrinds are seldom necessary before 250,000 miles, even under the most arduous operating conditions.

The engine develops 545 lbf ft of torque at the low engine speed of 1200 rev/min. This gives a wide usable power band with plenty of reserve available for acceleration and hill-climbing. Above all, the 680 provides consistent and reliable high performance over long distances, and at economical rates of fuel consumption.

The cooling system features Leyland's no-loss venting system. The radiator is a detachable tube design with copper feed pipes and an integral cast aluminium cowl, while the fan is shaft-driven from a transfer gearbox at higher than engine speed.

A coolant level warning indicator and buzzer are fitted as standard.

Power from the 680 is put to work through Leyland's highly successful 5-speed wide-ratio Pneumocyclic unit with clutchless semi-automatic control.

In this unit, the direct air gear change is pedestal mounted to the driver's left. It is possible to specify a 5-speed close ratio gearbox, a steering column mounted electro-pneumatic gear change or fully automatic control (with close-ratio gearbox) as options.

Both 11 and 12 metre models are available with the highly regarded ZF S6-80 manual gearbox. The carefully chosen ratios give excellent gradeability and restart capabilities while ensuring maximum use of power with consequent good journey times on express and touring operations.

Matching the Leopard's power is an efficient dual-line primary braking system with a dual reservoir for front and rear brakes. This and the auxiliary reservoir are mounted safely under the driver's foot and feed the diaphragm actuators via stainless steel air lines. The foot valve is positioned behind the front crossmember. The system is fed by a gear driven high capacity compressor with an air intake silencer-filter.

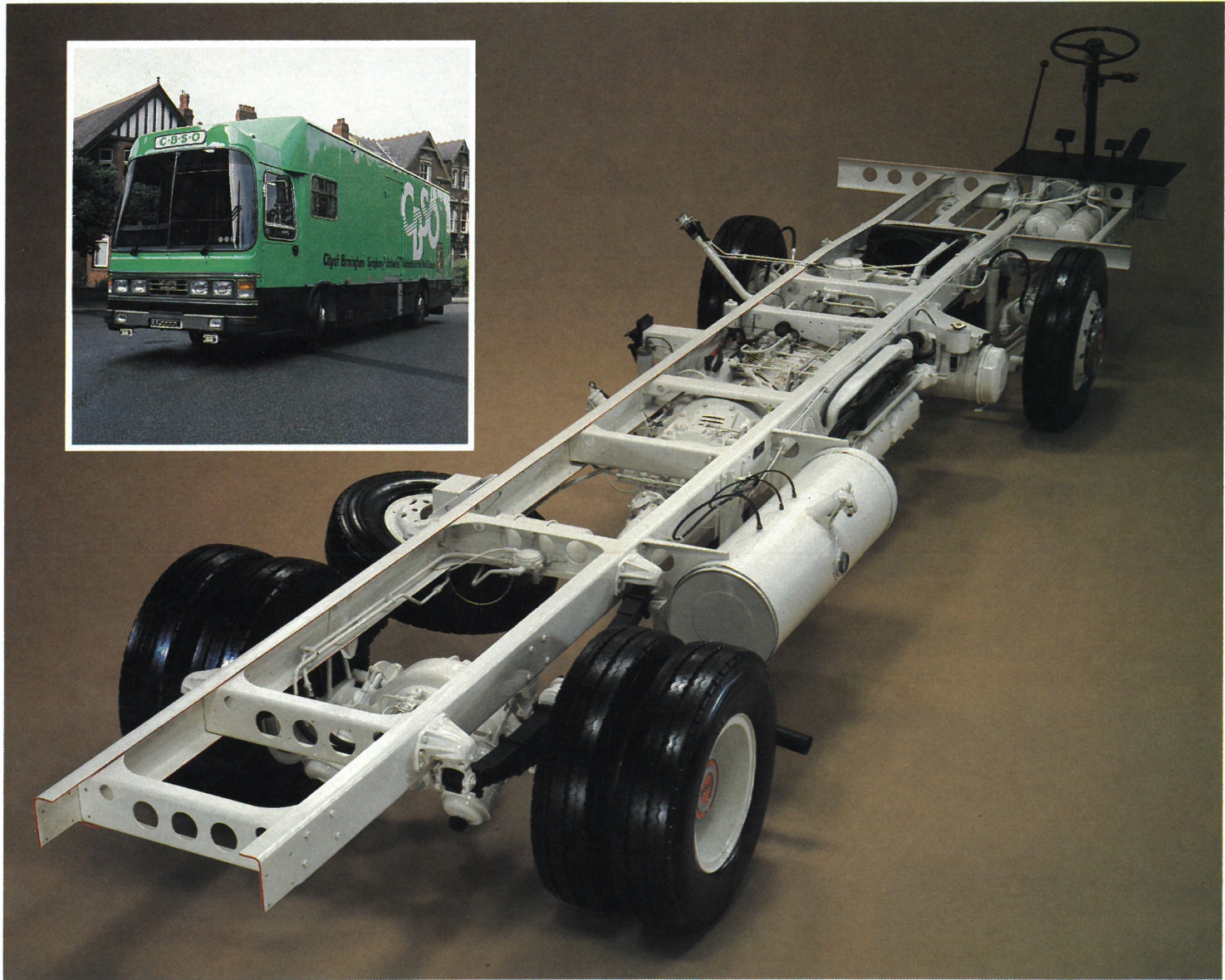
Another important safety feature is the spring parking brakes which operate on the driven axle.

The Leopard ride is a quality ride, for both passengers and driver. And the foundation of such comfort and safety is the Leopard's chassis frame and the tuned suspension.

The chassis is a parallel sided flat top frame which presents an unobstructed level surface to the bodybuilder. This chassis is flitched by a deep channel over the length of the engine/transmission bay and extending out to the full wheelbase. There is room at the rear of the chassis frame for coachbuilder fitment of a large rear luggage boot and space is provided for side-lockers as well.

Precise power assisted steering is a real asset for the driver and the type used on





the Leopard chassis is both efficient and highly regarded.

To cope with the heavy loading conditions encountered in modern coach operation both 11 and 12 metre Leopard chassis are now available with tuned heavy duty suspension as standard. On 11 metre vehicles this gives a GVW of 14.0 tons and on 12 metre vehicles, 16.0 tons. Semi-elliptic laminated leaf springs give a smooth ride and excellent road-holding. This care taken in locating the suspension

units means that the body roll is kept to an absolute minimum. Front shock absorbers are standard on all vehicles with rear units being additionally specified for 12 metre use.

The front axle on Leopard is the familiar Leyland I section alloy steel beam, rated at 5.5 tons for 11 metre vehicles and 6.0 tons for 12 metre vehicles. The spiral bevel rear axle is rated at 10.0 tons and operators will appreciate the wide choice of ratios available with this unit.

Leopard is also widely used for specialised load carrying vehicles where operators are looking for low loading height, flat floored bodywork, long deck length and manoeuvrability. The chassis is ideal for carrying delicate equipment - horses, musical instruments and antiques.

Leopard - Britain's most popular psv chassis 1980-1981.

LHS

Premium chassis for small coaches





The LHS 35-seater luxury coach chassis is both tried and proven. With the backing of Leyland's reputation for quality engineering and reliability the LHS continues to find favour with operators looking for improved durability and profit potential.

The LHS is the only purpose-designed 8.5 to 9.0 metre coach available in Britain and is therefore the clear answer for operators considering 35-seater luxury transport.

Although the concept of a 35-seater coach is nothing new, the LHS incorporates many features which reflect the very best in advanced Leyland design and engineering.

For example, the LHS is powered by the latest in Leyland 400 Series diesels, the tough and durable 401 engine, designed for top performance and long life at low revs. There is also plenty of spare capacity when it comes to loading. Though the LHS has a nominal GVW of 8.5 tons, axles are stressed to cope with 11.5 tons. The LHS chassis has a robust heavy duty frame which permits a front entrance and allows the engine to be mid-mounted horizontally. This assists handling and keeps noise and vibration away from the passenger area.

LHS, unlike many similar sized vehicles derived from larger chassis, was designed from the outset as the basis for 28 to 35 seat luxury vehicles. The 8.6 metre chassis provides a wheelbase of 150in and can accept full width bodies. It is robust, offering operators the opportunity to cope with small group travel requirements in heavy duty style.

There is plenty of space at the rear of the chassis for a luggage locker, while the centrally mounted engine and electrical ancillaries allow even more room at the sides of the frame for further lockers.

The chassis frame is flat-topped, providing a clear and level surface for the bodybuilder, and is built to the same sidemember and frame width dimensions as the Leyland Leopard.

Heavy duty axles, 4.4 ton at the front and 7.15 ton at the rear, are suspended on well-proven long semi-elliptic multiple leaf springs. They have been rated to give a comfortable ride and yet are robust enough to take the punishment of today's

LHS

strenuous operating conditions. Front and rear telescopic shock absorbers are fitted as standard.

The LHS braking system is very powerful for a vehicle of its size. A full air dual-line arrangement with a large air reservoir and an auxiliary air reservoir as standard. A heavy duty 15ft³/min compressor is fitted and the total brake lining area is 652in².

For parking purposes, spring brakes on the rear axle provide an effective area of 360in².

Manual recirculating ball and nut steering system provides the LHS with a tight 52ft turning circle, giving excellent manoeuvrability in congested streets or narrow roads. (Power steering optional).

The LHS has a heavy duty 24 volt insulated return electrical system as standard, together with 140 Ah batteries and twin 31 amp alternators.

The 401H diesel fitted to the LHS is mid-mounted horizontally, the best position for an engine in such a versatile and high quality chassis. This position provides for good weight distribution, balanced handling and low noise levels and presents the bodybuilder with a clear and level frame.

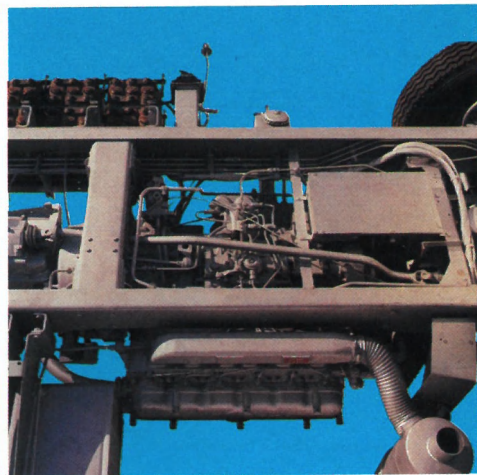
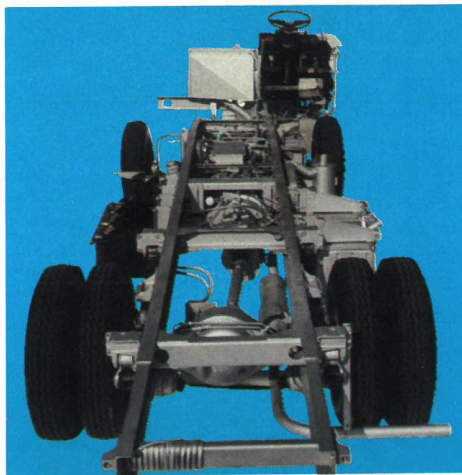
The Leyland 401H engine is a naturally-aspirated water cooled unit with direct fuel injection. Of 6.54 litres capacity the 401H diesel provides 138 bhp at only 2,600 rev/min. Excellent fuel consumption figures can be expected from this low-stressed engine. The quality injectors help to promote fuel economy and improve the control of smoke emissions.

Other features of the 401H engine are the monobloc crankcase and cylinder block, the nitride-toughened crankshaft, chrome flashed valve stems with stellite valve seats and alloy pistons with toroidal combustion chambers.

The cooling system is pressurised and pump circulated. It has a stack type radiator with a thermostatically controlled fan for optimum engine life, quick warm-up and improved fuel economy.

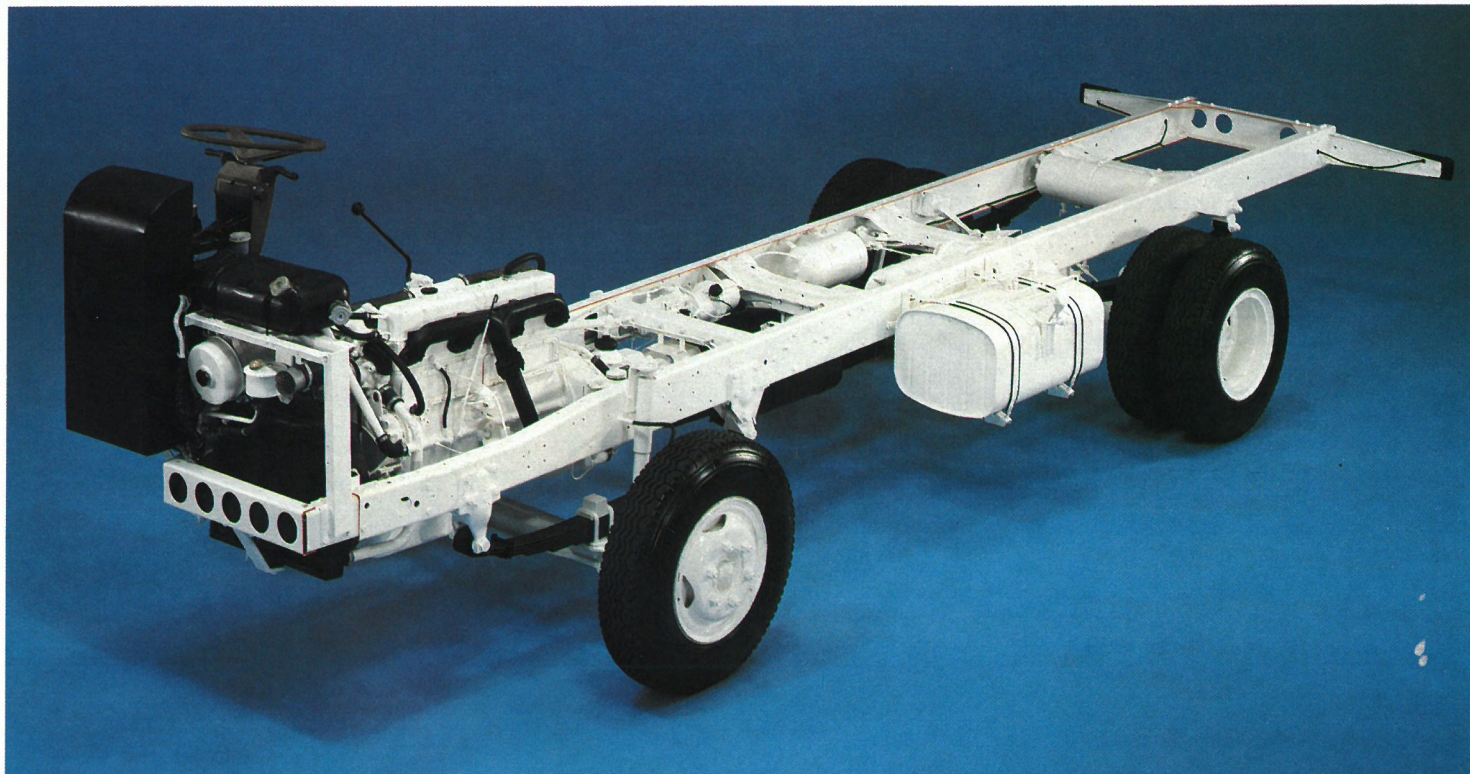
Power from the engine is put to work through a 15in servo-assisted single dry plate clutch to the proven Turner 5-speed overdrive gearbox.

LHS - the ideal small coach.



Leyland Cub

Lightweight small coach chassis



In today's difficult conditions, with ever rising fuel costs, there is a need for small PSV chassis built to provide passenger transport within the 23 to 33 seat range. The Cub is a highly versatile PSV chassis, with front entrance capability, built to the standards of excellence, reliability and safety that you expect from Leyland.

Leyland experience has produced a chassis for the Cub that has already covered millions of gruelling miles and the versatility and staying power of Leyland's 98 Series diesel range is legendary.

The Cub is designed to meet the requirements of a wide range of operators. Chassis, engine and option combinations make the Cub suitable for every role.

The Cub is a straightforward PSV chassis that performs the task of carrying passengers for the minimum capital cost.

Available in three wheelbases, all chassis provide for front entrance configurations. The wheelbase options of 132in, 151in, and 171in allow seating capacities in the 23 to 33 range.

Compared to competitive chassis which have long been available in the small coach market, the Leyland Cub offers many distinct advantages. For a start, the extended frame allows a front entrance and wide spaced front springs. Power steering option, comprehensive instrumentation, a large fuel tank and a steering column sited to offer an ideal driving position are features of Cub.

Many of the major advantages of the Leyland Cub arise from the deserved and acknowledged reputation of Leyland design and engineering. Leyland's policy of constant development and improvement ensures that vehicle strength, durability and reliability keep pace with the demands of operators and the increasingly strenuous conditions under which modern coaches have to work.

The Cub's strict adherence to PSV standards means that it will be welcome everywhere - from the start - as a civilised vehicle. All standards required of the chassis in this respect are met or exceeded.

The frame allows the bodybuilder to provide a primary exit of at least 21in wide

and permits a bodied rear overhang up to 60 per cent of the wheelbase. Steering geometry provides for a tight turning circle.

The exhaust discharges to the offside and is positioned to prevent fumes entering the vehicle. The exhaust pipe is fitted and shielded so that no inflammable material can be thrown upon it. Exhaust emission limits to the level of BS AU 141a 1971 are observed.

Like the exhaust and propeller shaft, all electrical apparatus circuits are shielded and guarded to prevent or contain hazards such as shock or the outbreak of fire. Further safety provisions include shackle stops and a fuel cut-off tap easily accessible from the outside of the vehicle.

Finally, noise. The Cub's rugged Leyland 98 Series engine produces the power needed but keeps within the required noise level of 89dB (A).

With a PSV chassis as adaptable as the Leyland Cub you would expect a matching choice of engine options. And you get them. The power unit fitted to the

Cub

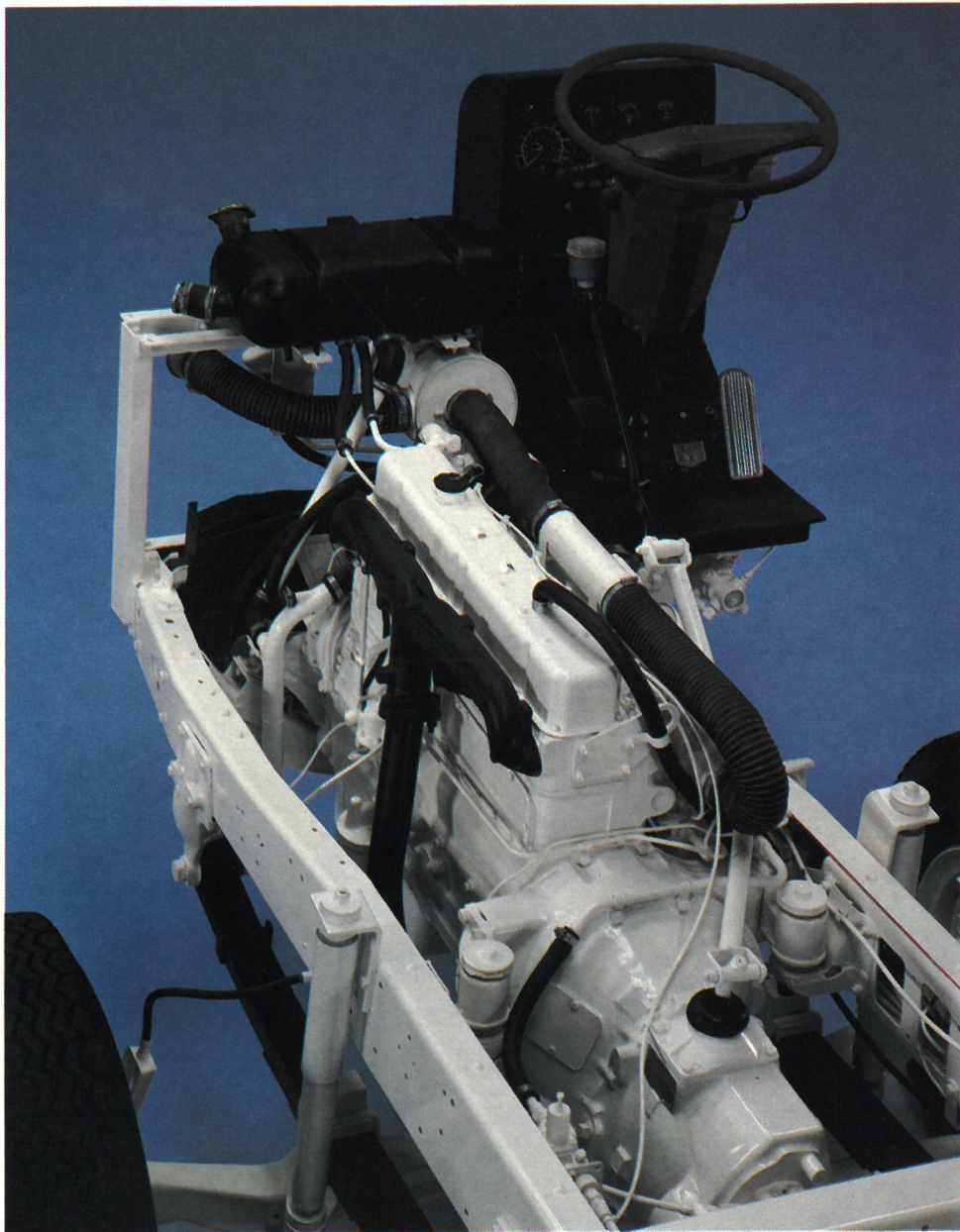
Leyland Cub comes from Leyland's 98 Series diesel engines, renowned for their proven reliability and economy. All Cubs are fitted as standard with the Leyland 6-98 NV which is a naturally aspirated 6-cylinder 5.65 litre unit, which produces 109 bhp net at 2,600 rev/min. This tough and reliable engine also produces 262 lbf ft of torque at 1,650 rev/min. A derated engine is the 6-98 DV which offers 91 bhp net at 2,600 rev/min and 230 lbf ft of torque at 1,400 rev/min. Both engines are the result of painstaking design and development at Leyland and proven performance in a wide range of applications. All 98 Series engines are fitted with chrome flash cylinder liners which give added durability and many thousands of miles of extra life to each engine. Re-designed pistons have been engineered to ensure top performance with minimal oil consumption.

Power from the Cub's engine is passed through a 13in single dry plate clutch unit to a Turner T5-200, overdrive 5-speed synchromesh gearbox.

The Cub's power is matched by an extremely strong frame, comprising pressed steel channel section sidemembers, and ladder type assembly with stiffening plates. The suspension is of the semi-elliptic spring type with rubber-bushed spring eyes. Shock absorbers are standard. The frame and suspension geometry provide a comfortable ride and excellent road-holding characteristics.

The Cub is also fitted with a well-proven air/hydraulic primary braking system on both axles. This provides powerful stopping ability with good driver control and low maintenance costs. A spring-type parking brake operates on the rear axle.

Leyland Cub - the low cost answer for small coaching duties.



Tiger Tiger245 Leopard LHS Cub

Leyland - means total product support

When you buy a Leyland Coach you have a lot going for you. Not only is the product carefully designed, engineered and manufactured, but it operates with maximum reliability and economy. But Leyland support goes much further - our aim is to give you service right from the start. Take buying your coach chassis - we have five regional offices at Bristol, London, Leeds, Glasgow and St. Helens - as well as at our HQ in Leyland where trained staff can assist you in deciding your precise requirement. Our coaches are distributed from five outlets owned by the country's leading dealers who generally have standard chassis in stock and can discuss trade-ins/finance etc.

After your coach has been bodied and before you take it from the bodybuilder we will have given it a thorough pre-delivery inspection. It is then eligible for a free 1000 mile service at any of our Coach

Service Centres and is backed by a one year unlimited mileage warranty.

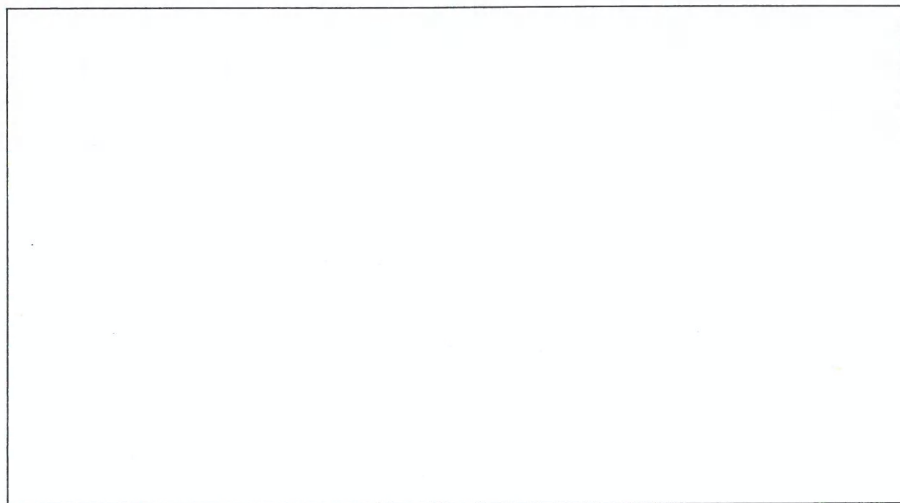
We have a comprehensive service back-up throughout the UK and Europe. In the UK we have five regional service engineers operating under our Coach Service Operation and 26 Coach Service Specialists strategically located on main coaching routes. Some of these, such as Nottingham, are our own facilities and others are widely respected independent companies specialising in service: but all have to conform to our stringent standards on facilities, equipment, trained staff, spares stock holding, recovery etc. We also run extensive training courses for your own mechanics on all the models, and associated vehicle systems.

Even the finest vehicle can break down and when it does you need help fast. Our service network is there to do just that. In addition we have Linkline, an emergency service whereby your driver has only to

ring Freefone 2353 and instantly we will set to work to sort the problem. If it is parts that are needed we have massive stocks at all our Service Centres and at our new computer controlled warehouse at Chorley. A 24 hour VOR back-up service is available if one of our service centres does not have the part you require.

Additionally we have a system for analysing vehicle expenditure - SAVE - which can be of great assistance to your fleet planning. We call the total support service we offer "Co-Driver" - it's there to assist you.

A comprehensive directory listing all our UK Coach Service Centres, distributors, regional sales, service and parts offices and European service contacts is freely available through any of our distributors, service specialists, regional offices or the Coach Service Department at Leyland.



Leyland

BUS

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