

RENOWN

The new low-height
double-deck bus chassis



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THE RENOWN—A LOW-HEIGHT double-deck bus chassis which retains central gangways in both saloons and has many new and original features—is A.E.C.'s latest addition to its comprehensive range of passenger chassis.

The chassis layout is designed to provide the necessary low height without sacrifice of the comfort and convenience which is provided by bodywork based on normal height A.E.C. chassis.

The frame members are downswept and—in conjunction with a rear air suspension system and a rear axle assembly which has its casing below hub height—provide single level floors with a conventional single step front entrance.

The rear axle is a compact double reduction spiral bevel/spur gear unit. The suspension system uses leaf springs at the front and air bellows at the rear. The air suspension automatically adjusts itself to load variations and ensures that the overall height remains constant at all times—as well as providing exceptional riding qualities.

The "Renown" is equipped with the A.E.C. AV590 diesel engine which develops 140 b.h.p. at 1,800 r.p.m. Alternative transmission systems are available: a 4-speed synchromesh gearbox or Monocontrol semi-automatic transmission. The chassis, with synchromesh transmission, is also suitable for rear entrance bodies.

TYPE NUMBERS

- 3B2RA Monocontrol Transmission
- 3B3RA Synchromesh Transmission



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AV 590 DIESEL ENGINE

POWER — ECONOMY — RELIABILITY

DIESEL ENGINE

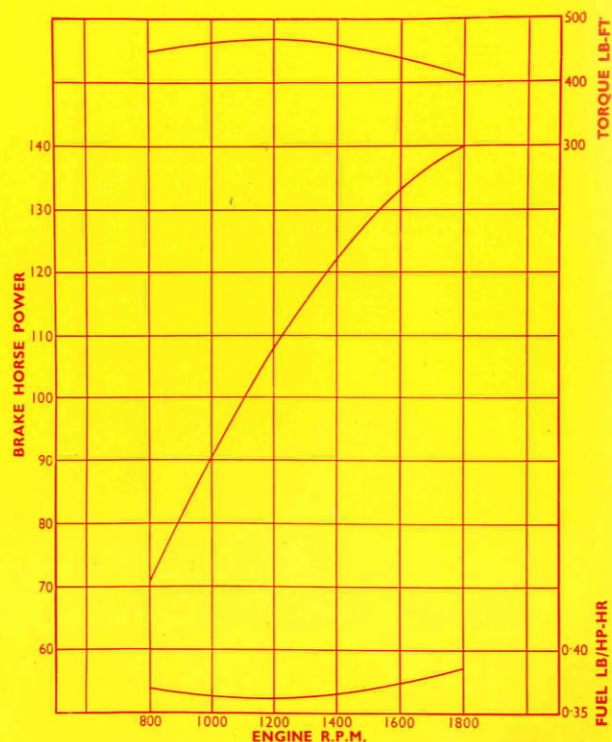
Power, economy and reliability—these are the outstanding characteristics of the AV590 6-cylinder direct injection vertical diesel engine. The AV590 has a bore of 120 mm. (4.72 in.), a stroke of 142 mm. (5.59 in.), a capacity of 588 cu. in. (9,636 cu. cm.) and develops 140 b.h.p. at 1,800 r.p.m.; maximum torque 470 Lb.-ft. at 1,100 r.p.m.

Years of research and development have gone into perfecting the A.E.C. combustion system, which utilizes open toroidal combustion chambers in the piston crowns and multi-hole fuel injectors to produce the high output and maintained high torque which mean rapid acceleration and hill climbing, together with the high efficiency leading to outstanding fuel economy.

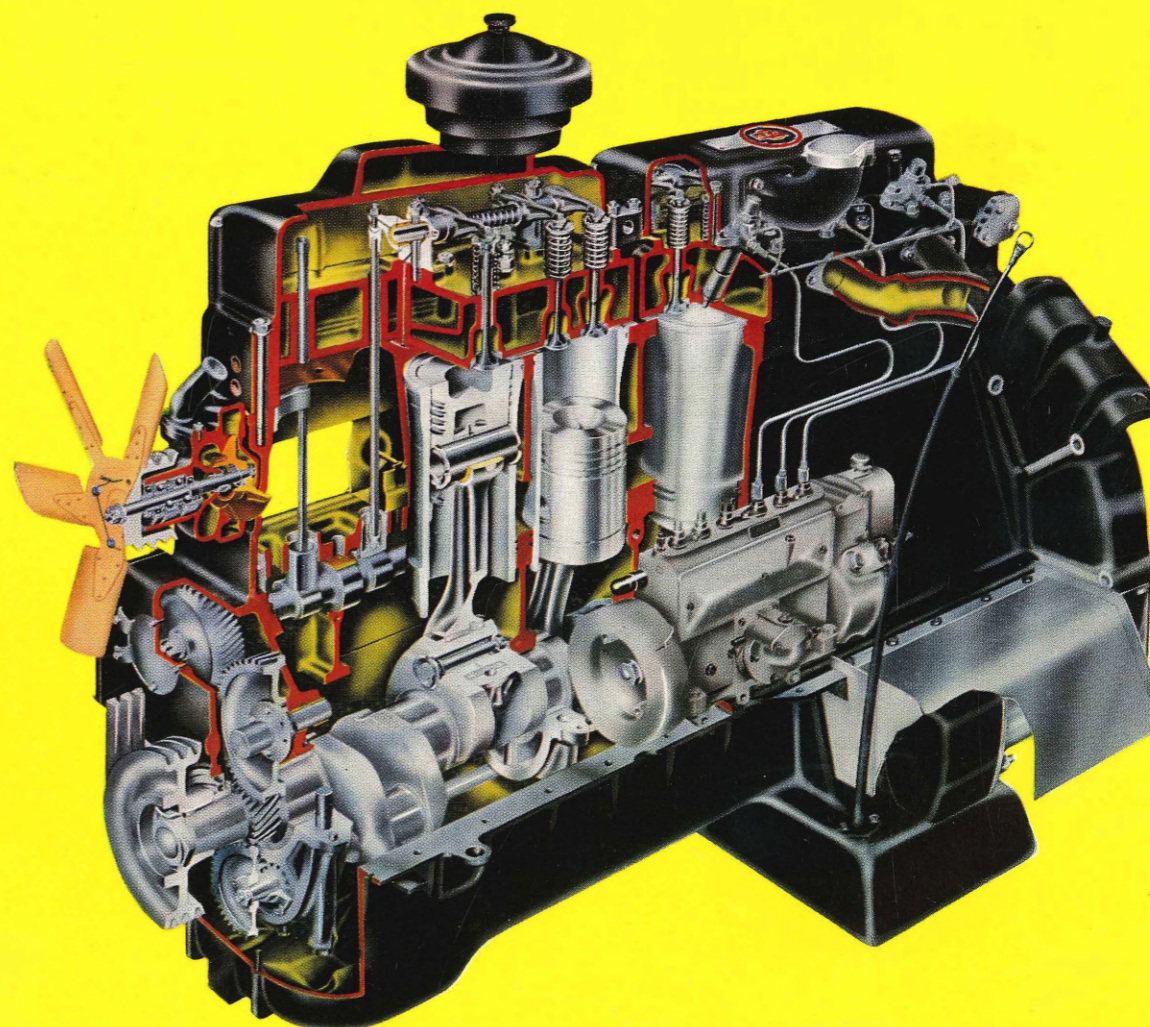
Reliability stems from the seven-bearing crankshaft with exceptionally large bearing areas, chromium plated valve stems, stellite faced valve seatings and inserted hard iron seats. Maintenance is facilitated by conveniently accessible components and easily renewable wet cylinder liners.

Rubber units at the front and rear provide flexible engine mountings for smooth running and freedom from vibration.

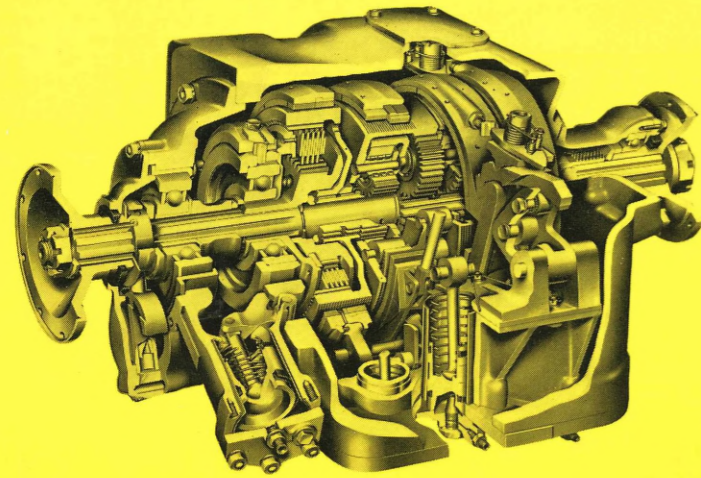
- ▶ Cylinder heads cover three cylinders and have renewable valve guides and alloy-iron valve seat inserts.
- ▶ Silicon-chrome exhaust valves and manganese-molybdenum inlet valves—both having chromium plated stems and stellite seats.
- ▶ Masked inlet valves to induce swirl in combustion chambers.
- ▶ Straight sided offset toroidal combustion chamber in each piston crown.
- ▶ Aluminium alloy pistons with Alfin bonded inserts, three compression and two scraper rings. Top pressure rings chromium plated.
- ▶ Renewable push-fit wet cylinder liners with external ceramic coating and honed bores.
- ▶ Alloy cast iron camshaft with gentle approach ramps for quiet operation.
- ▶ Large gauze suction strainer used in conjunction with full flow paper-element oil filter.
- ▶ Heat treated alloy steel seven-bearing crankshaft with bored-out journals.
- ▶ Thin shell reticular aluminium-tin main and big-end bearings.
- ▶ Extra rigid one-piece cast iron cylinder block/crankcase casting.
- ▶ In-line fuel injection pump with mechanical governor.
- ▶ Unified threads throughout.



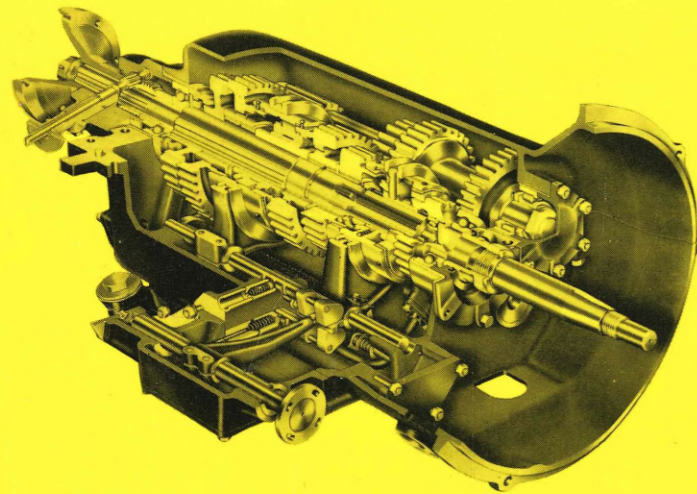
Curves show performance under temperature and pressure conditions of 60°F. (15°C.) and 29.92 in. (760 mm.) Hg.



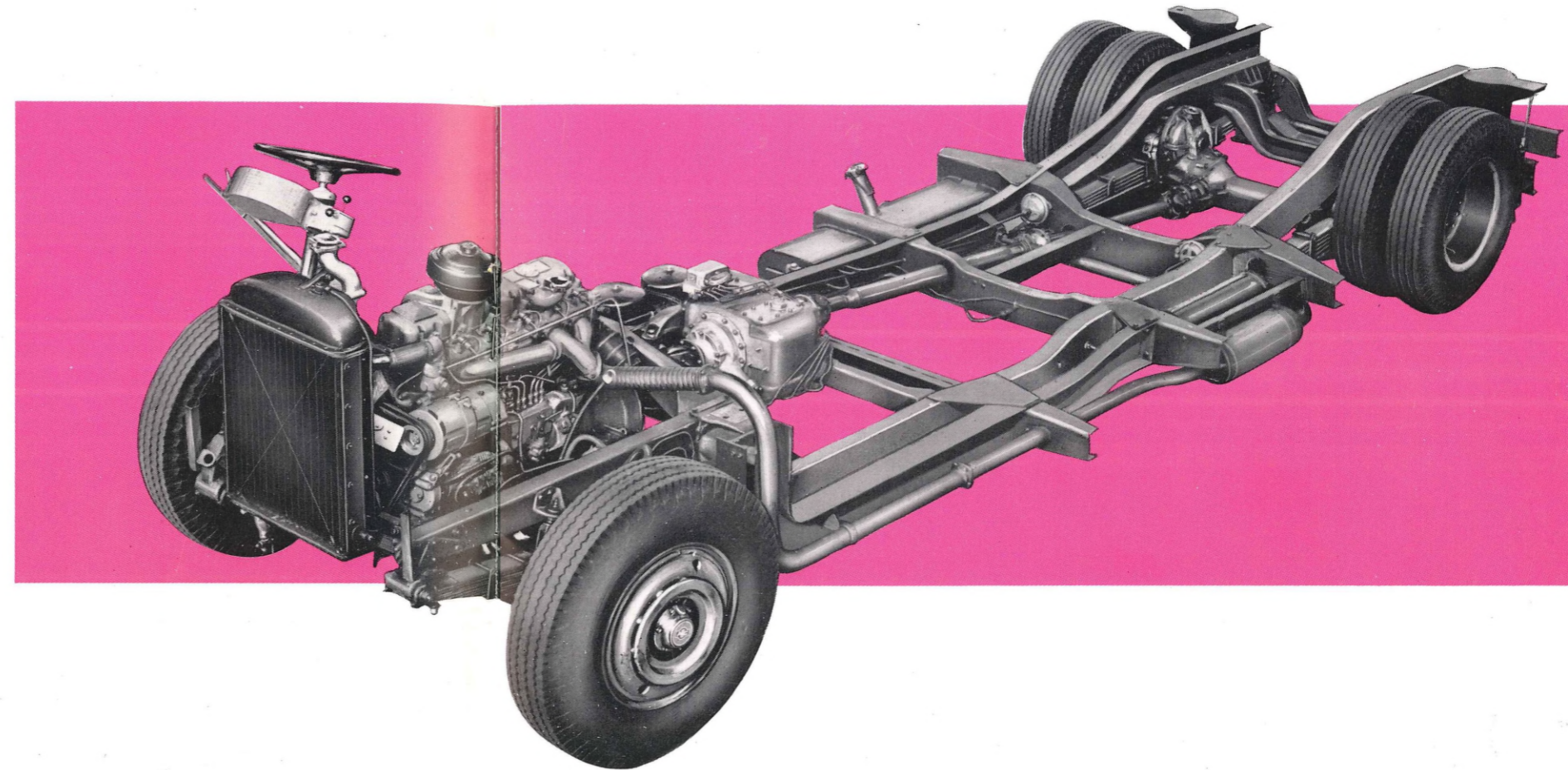
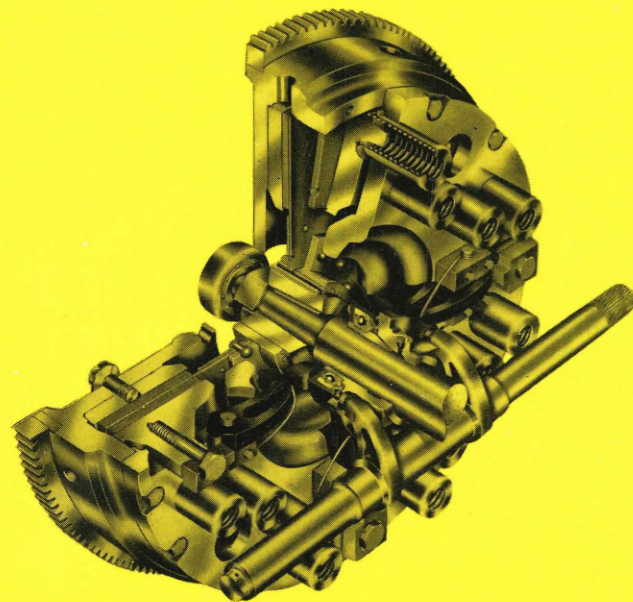
features of the **RENOWN**



Monocontrol Transmission
Ratios: 1st, 4.28:1; 2nd, 2.42:1; 3rd, 1.59:1;
4th, 1:1; reverse, 5.98:1.



Four-speed Synchromesh Gearbox
Ratios: 1st, 4.64:1; 2nd, 2.54:1; 3rd, 1.65:1;
4th, 1:1; reverse, 4.13:1.



MONOCONTROL TRANSMISSION

Monocontrol Transmission provides two-pedal control and is particularly suitable for very dense traffic conditions. The system incorporates a fluid flywheel and an air operated, direct-acting, 4 speed epicyclic gearbox (Wilson patents). The flywheel is designed to give minimum drag at idling speed with negligible slip at working speeds; the action is fully reversible and enables the engine to be used as a brake.

SYNCHROMESH TRANSMISSION

The robust four-speed gearbox has synchromesh engagement on all forward speeds. The gears are of the straight spur type with the profiles ground to ensure silent operation. The gearbox

is unit-mounted with the engine and a hydraulically operated 15 $\frac{7}{8}$ in. dia. single dry plate clutch transmits the drive. Gear selection is by a remote control, ball type lever connected to the gearbox via a universally jointed tube.

ELECTRICAL EQUIPMENT

The 24-volt D.C. insulated return starting and lighting equipment ensures continued reliability under the most arduous conditions. Lead-acid batteries of 174 amp-hr. capacity are supplied and a battery cut-off switch is incorporated. A.C. generating equipment can be supplied.

INSTRUMENTS

The instrument panel is mounted on the steering column and incorporates a speedometer, oil and

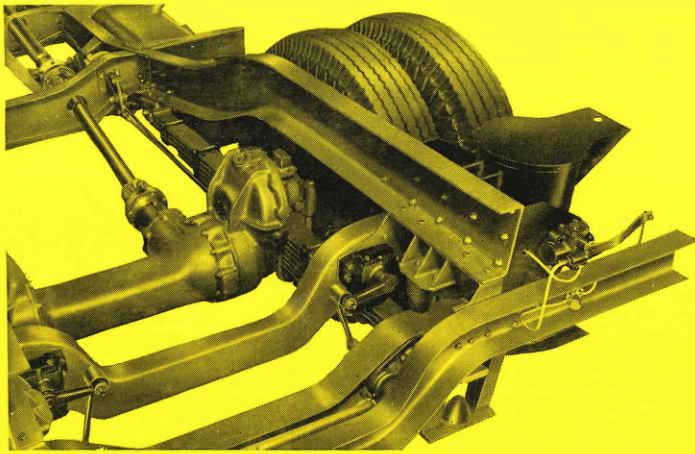
air pressure gauges, water temperature gauge, ammeter and rheostatic switch for indirect panel illumination. A horn push, direction indicator switch and dip switch are mounted on an arm extending from the panel.

WHEELS AND TYRES

Standard wheel and tyre equipment is: front, 11.00-20, 14 ply on B7.5 discs; rear, 9.00-20, 12-ply tyres on B6.5 discs.

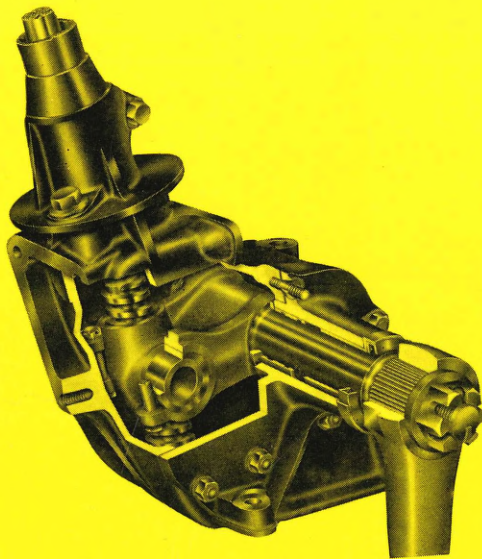
FUEL SYSTEM

The 35 gallon fuel tank is fitted with a magnetic contents gauge and a quick release, captive, filler cap. Fuel is supplied through a single paper element filter.



SUSPENSION

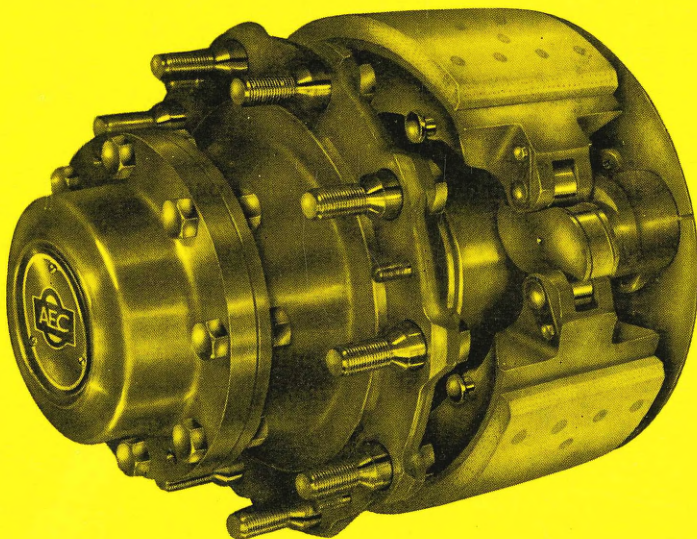
Front suspension is by 4 in. wide semi-elliptic leaf springs. Full air rear suspension is used. The axle is carried on trailing laminated radius arms which can twist with wheel movement and increase the roll stiffness of the suspension. The three-convolution bellows suspension units are fitted between a transverse member, joining the radius arms behind the axle, and outboard housings on the upswept chassis frame. A Panhard rod between this member and a chassis cross-member provides lateral location. Arm type hydraulic dampers are fitted. Air is supplied through a diverter valve and separate reservoir. Levelling valves maintain a constant height.



STEERING AND FRONT AXLE

The A.E.C. worm and nut steering ensures effort-free positive steering with a high degree of manoeuvrability and complete freedom from adjustment. Vertical thrust is absorbed by a ball bearing which is rubber mounted to absorb shock loading.

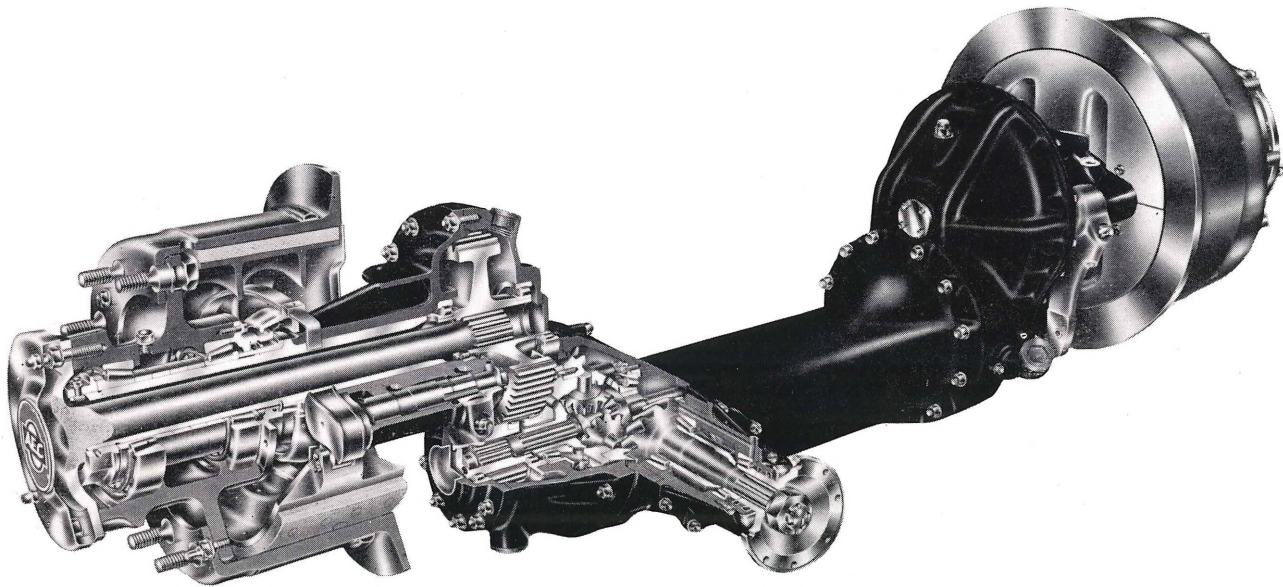
The robust front axle is a forged steel 'I' section beam with integrally formed spring pads. The $2\frac{9}{16}$ in. dia. stub axles have cold rolled fillet radii for extra fatigue resistance. Thrust is taken by hardened and ground steel buttons.



BRAKES

The air brakes, have entirely separate front and rear circuits. The $4\frac{3}{4}$ in. wide front and $7\frac{3}{4}$ in. wide rear shoes, with $\frac{3}{4}$ in. thick linings, are expanded in exceptionally rigid $15\frac{1}{2}$ in. dia. drums by 'S' cams and rollers. Exceptional ease of adjustment is provided by worm and wheel slack adjusters and the drums can be removed without disturbing the hubs when access to the brake shoes is required. A triple pawl ratchet handbrake is fitted.

Air for braking is supplied by a twin-cylinder compressor to two frame-mounted reservoirs through an unloader valve. Remotely mounted twin footbrake valves are fitted. An electrically operated exhaust brake can be supplied.



REAR AXLE

The offset drive double reduction rear axle has a dropped centre portion with secondary reduction gear housings at each end containing spur gears which transmit the drive to the hubs through short axle shafts. The right-hand side housing contains the spiral bevel primary reduction gears and differential assembly. The hubs run on taper roller bearings and are carried on stub tubes extending from the reduction gear half-casings.

Ratios: 6.2:1; 5.75:1 or 5.35:1.

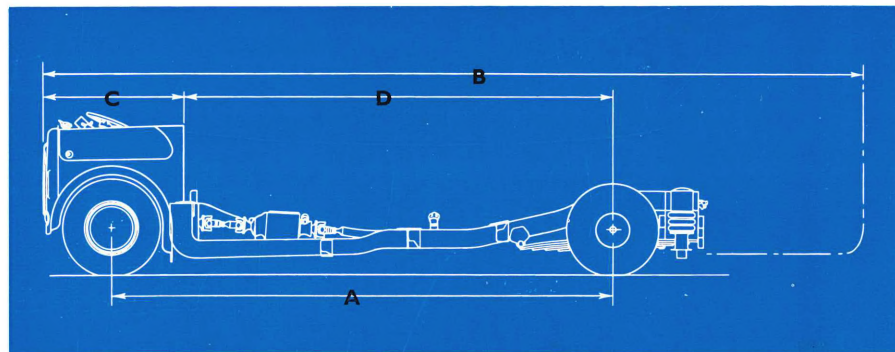
CHASSIS FRAME

The frame is of bolted construction with channel section side and crossmembers and outriggers. The sidemembers are dropped between the axles to provide a very low floor whilst the left-hand member is further dropped to provide a low entrance doorway. The frame has continuous members from front to rear, a design feature which avoids twisting strain on the connecting joints. All joints are generously fish plated. Average frame depth 8 in., thickness $\frac{5}{16}$ in.

LOAD RATINGS

The "Renown" is sprung for laden weights of $5\frac{1}{2}$ tons on the front axle and $8\frac{1}{2}$ tons on the rear axle.

MAJOR DIMENSIONS



Model	Typical seating capacity	A Wheelbase		B Overall length		C Structure dimension		D Bulkhead to axle		Nominal overall width	Turning circle	Estimated kerb weight			
		ft.	in.	ft.	in.	ft.	in.	ft.	in.			ft.	in.	lb	kg
3B2RA	71-75	18	3½	30	0	5	2½	15	7½	8	0	66	5	8	0
3B3RA		18	3½	30	0								5	6	0

Kerb weight is weight of chassis complete with fuel, oil, and water. Chassis are suitable for bodies up to 8 ft. 2½ in. wide.



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The low overall height "Renown", with its 75 seat body, retains the attractive features and dignified appearance of similar Park Royal bodies used for normal height double-deck buses. The single step front entrance is fitted with concertina-type driver-controlled doors.

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