COMMER 2-3 TON 'SUPERPOISE' MODEL

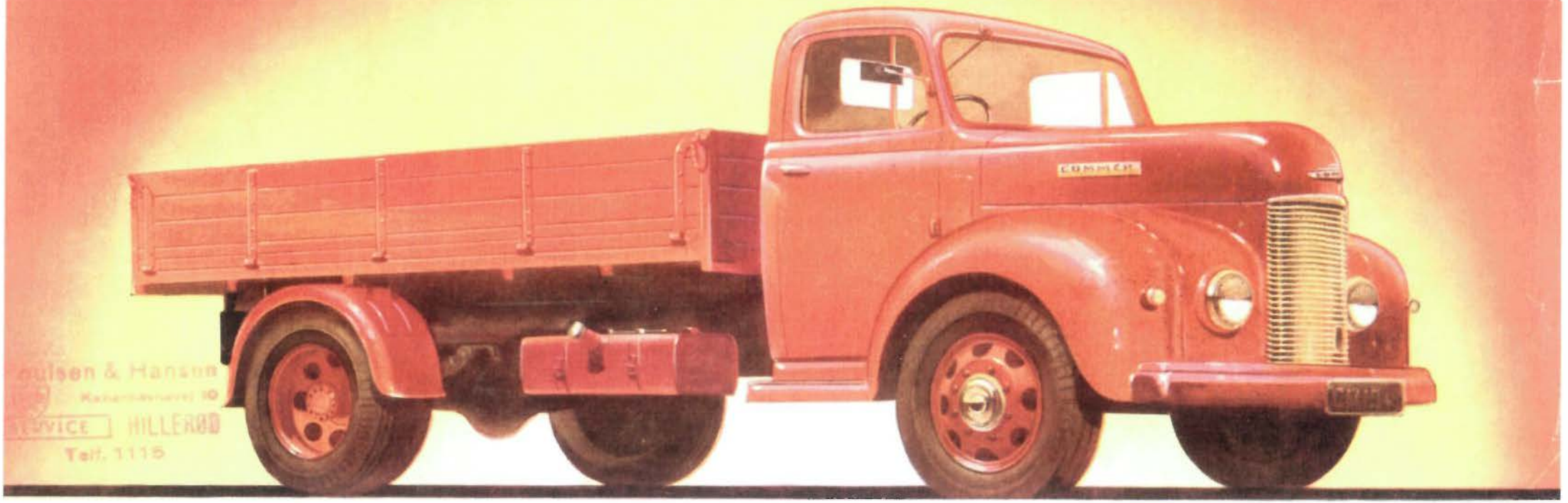
incorporating a six-cylinder o.h.v. engine developing 85 b.h.p.

MAXIMUM GROSS VEHICLE WEIGHT RATING

12,000 LB.—5450 KG.

(with approved tyre equipment)

Types T.222 & T.255



LEADING THE FIELD IN ITS CLASS

Designed to the highest standards of commercial vehicle engineering and styled in the modern manner, the " Superpoise " 2-3 tonner, by virtue of the forward positioning of engine, offers exceptional body-space, balanced load distribution, improved visibility, and superb driver comfort.

Specification includes an entirely new long life six-cylinder o.h.v. engine developing 85 b.h.p.—one giving lively acceleration and affords greatly improved vehicle performance characteristics—a four-speed gearbox with helical gears, top and third ; a strengthened deep section frame of high tensile steel ; more powerful two-leading-shoe hydraulic brakes requiring infrequent adjustment ; and an all-steel ' comfort ' cab which will command the attention of every man at the wheel. Incidentally a patented mounting of cab, wings, radiator and bonnet relieves these components from all distortion, thus obviating the possibility of breakages when travelling over bad roads.

The fitting of wide base rims not only increases tyre life but together with progressive springs with ' shotpeened ' leaves gives greatly improved riding qualities. This model is available with alternative wheelbases of 122 in. (3.099 m.) and 155 in. (3.937 m.)—the former extremely popular as a hydraulic dump truck, the latter for general freight transport. From a careful study of the comprehensive specification within, the prospective purchaser cannot but realise that here is amazing value ; a model which offers the finest real commercial vehicle investment in its class.

1952

A PRODUCT OF THE ROOTES GROUP

FEATURES OF 2-3 TON "SUPERPOISE" MODEL

"SUPERPOISE" cab position gives maximum body length with correct load distribution, thereby ensuring ease of control and minimum tyre wear.

Patented "DIAFLEX" mounting relieves cab, wings, bonnet and radiator from all distortion.

Powerful hydraulic brakes of the two-leading-shoe type, with increased liner area, have braking power directly proportioned to pedal pressure for maximum efficiency with minimum effort.

FOR ENGINE ECONOMY

Entirely new, more powerful o.h.v. six-cylinder engine developing 85 b.h.p. ensures greatly improved vehicle performance characteristics with lively acceleration.

Counterweighted seven bearing crankshaft, dynamically and statically balanced, with overlapping diameters of main and crankpin bearings, for great strength and smooth running.

"Solex" downdraught easy-start carburettor with 'hotspot' induction manifold for greatest fuel economy.

Completely automatic ignition control with correct spark setting for all loads and engine speeds reduces fuel consumption.

Thermostatic control of engine temperature gives rapid 'warm-up,' obtains maximum fuel economy and prevents excessive cylinder-bore wear.

Precision type micro-babbitt lined steel shell bearings for long engine life.

Special 'T' slot alloy pistons reduce cylinder wear and oil consumption to a minimum.

Special iron alloy flywheel reduces clutch wear to a minimum.

Automatic timing-chain damper.

FOR CAB COMFORT

All-steel safety 'comfort' cab, with insulated roof available as an extra.

Adjustable wide vision one-piece windscreen.

Full opening wide vision winding windows.

Self-closing doors, front hinged to assist reversing operations.

Double skin structure of engine recess in scuttle obviates overheating of cab.

Two large scuttle ventilators for perfect cab ventilation.

Deeply sprung full-width cushions and back squab. Cushions divided to give access to battery and tools.

Two full-depth dash pockets for log books, delivery sheets, etc.

Correctly positioned interior roof light.

Centrally placed instrument panel with 5 in. (127 mm.) dials, indirectly illuminated, relieves driver from all interior glare.

Metric reading instruments available when required.

Organ type accelerator pedal contributes to driving comfort.

Finger-light self-centring steering with perfectly placed controls.

FOR OPERATING AND MAINTENANCE ECONOMY

Improved deep-sectioned wide-flanged chassis frames of high tensile steel with six cross-members on long chassis and five cross-members on short chassis.

Flexible three-point rubber-mounted engine.

Greatly improved engine accessibility by virtue of overhead valve arrangement.

Heavy-duty four-speed helical 'silent-third' gearbox for ease of change and noiseless operation.

Provision on gearbox for two power driven attachments.

Independently mounted radiator with five row core, and captive pressurized filler cap, relieved of all distortion and insulated from road shock.

Battery of 12 volt 64 amp. hour capacity ensures ease of starting. Compensated voltage control dynamo automatically adjusts output to load, so preventing damage to battery.

Standardised electrical system for ease of replacement.

Cast brake drums for maximum performance and long life.

Wide base rims for increased tyre life and improved riding qualities.

Improved rear axle embodies straddle mounted pinion, correctly supported crown wheel with overload thrust pad, and fully floating large diameter drive shafts.

High deflection progressive springing of increased capacity, with 'shot-peened' leaves, for correct riding under all loads.

Heavy alloy steel 'I' section front axle beam, with self-adjusting track rod ends.

Tubular propeller shafts strengthened and universal joints enlarged to meet increased engine power.

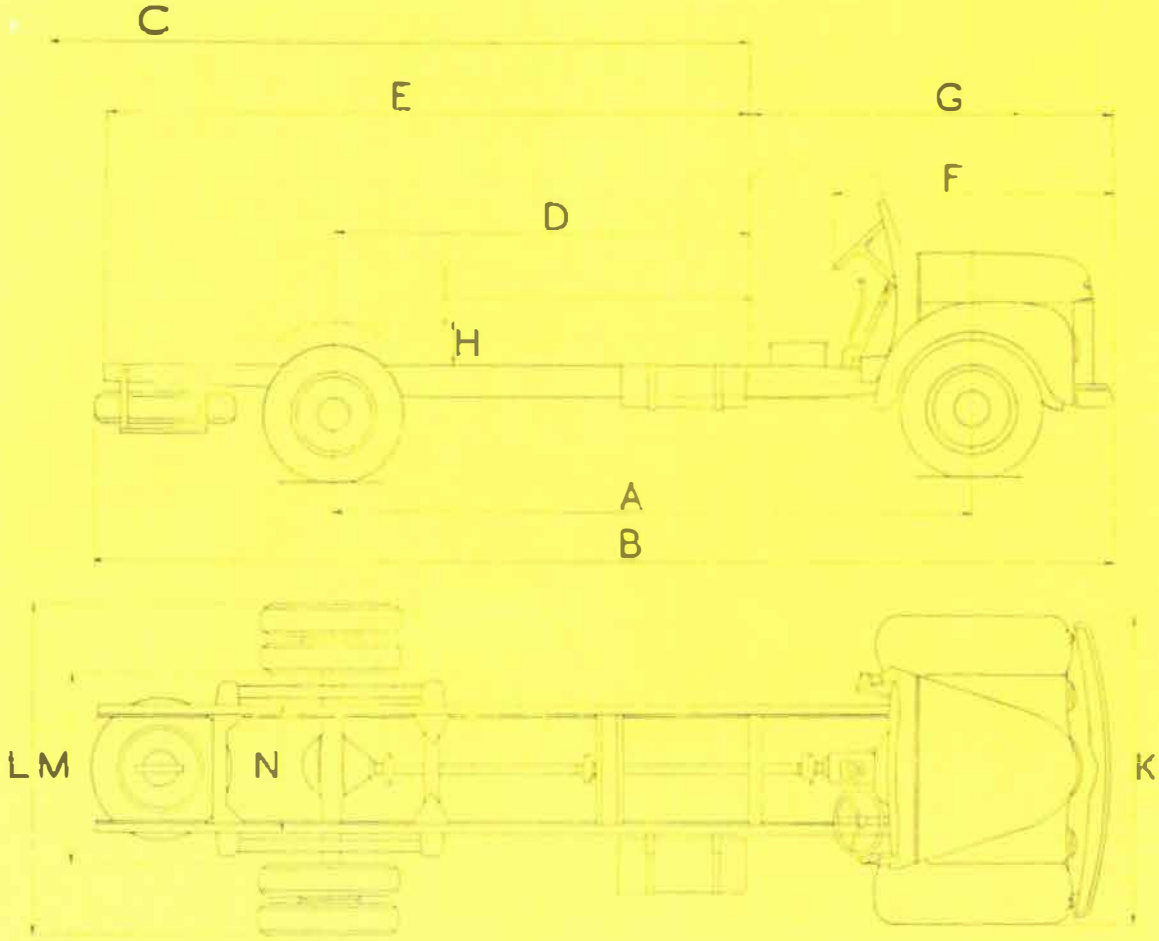
Ventilated dry-plate clutch, 11 in. (280 mm.) diameter.

Alternative rear axle ratios available.

Alternative wheelbases available.

Range of tyre options to suit all operating conditions.

STANDARD CHASSIS DIMENSIONS AND WEIGHTS



Model	A	B	C	D	E	F	G	H	K	L	M	N
Short Wheelbase	122" 3.099m.	205½" 5.221m.	125⅛" 3.179m.	64⅛" 1.629m.	103¾" 2.635m.	73" 1.85m.	95¾" 2.432m.	10⅜" 263mm.	80" 2.032m.	81⅜" 2.067m.	49⅝" 1.261m.	33⅛" 841mm.
Long Wheelbase	155" 3,937m.	245" 6,223m.	174⅛" 4.435m.	97⅛" 2.467m.	149¼" 3.791m.	73" 1.85m.	95¾" 2.432m.	10⅜" 263mm.	80" 2.032m.	81⅜" 2.067m.	49⅝" 1.261m.	33⅛" 841mm.

ABRIDGED PARTICULARS

Engine	Six-cylinder 85 b.h.p. (Rating 29.4 h.p.)
Bore	88.9 mm. (3.5 in.)
Stroke	111.13 mm. (4.375 in.)
Maximum Torque	200 lb. ft. (27.6 kg.m.)

Gear	Ratios: Gearbox	Ratios: Overall	Speed at 2,500 r.p.m.: m.p.h.	Speed at 2,500 r.p.m.: k.p.h.
Top ...	Direct	5.42 to 1	45½	73.2
Third ...	1.788 to 1	9.69 to 1	25½	41.0
Second ...	3.366 to 1	18.24 to 1	13½	21.7
First ...	6.414 to 1	34.76 to 1	7	11.2
Reverse ...	8.246 to 1	44.69 to 1	5½	8.8

	Short Wheelbase Type T.222 122 in. (3.099 m.)	Long Wheelbase Type T.255 155 in. (3.937 m.)
Wheeltracks :		
Front (at ground)	66⅜ in. (1.685 m.)	66⅜ in. (1.685 m.)
Rear	65½ in. (1.664 m.)	65½ in. (1.664 m.)
Turning circle (approx.) ...	456 in. (11.58 m.)	564 in. (14.32 m.)
Overall length of chassis	205½ in. (5.221 m.)	245 in. (6.223 m.)
Overall width of chassis ...	81⅜ in. (2.067 m.)	
Maximum available bodyspace ...	125⅛ in. (3.179 m.)	174⅛ in. (4.435 m.)
Standard tyre size	6.50—20 6 ply rating, dual rear	
Ground clearance (under rear axle, laden)	9 in. (229 mm.)	
Frame height at rear (laden) ...	27⅛ in. (689 mm.)	
Fuel tank capacity	16 Imperial gallons (73 litres)	
Chassis weight (less fuel) ...	3808 lb. (1727 kg.)	3920 lb. (1778 kg.)
Allowance for these items ...	364 lb. (165 kg.)	
Weight of standard cab	392 lb. (178 kg.)	
Maximum permissible gross laden weight of vehicle, with approved tyre equipment (see Schedule on back page) ...	12,000 lb. (5,450 kg.)	

It should be noted that for bodybuilding purposes special bodybuilders' drawings are available on request.

CHASSIS SPECIFICATION

ENGINE. Six-cylinder overhead valve unit, 88.9 mm. (3.5 in.) bore by 111.13 mm. (4.375 in.) stroke with a displacement of 4,139 c.c. (252.6 cu. in.). Rated at 29.4 h.p. it develops 85 b.h.p. at 3,100 r.p.m., has a maximum torque of 200 lb. ft. (27.6 kg.m.) at 1,200 r.p.m., whilst B.M.E.P. is 120 lb. sq. in. (8.44 kg. sq. cm.). CYLINDER BLOCK and CRANKCASE form a compact one-piece casting embodying full length water jackets. "LO-EX" 'T' SLOT ALLOY PISTONS have two compression rings one of which is chromo plated, and one oil control ring. High efficiency detachable CYLINDER HEAD with machined combustion chambers embodies inlet and exhaust valves in renewable guides, whilst rockers are actuated by push rods and barrel type tappets from a four bearing CAMSHAFT. CONNECTING RODS, steel stampings of "I" section, have lead bronze bushes accommodating large diameter floating type gudgeon pins, and micro-babbitt lined steel shell bearings, whilst the rigid counterweighted CRANKSHAFT, supported in seven micro-babbitt lined steel shell bearings, provides drive by an automatically adjusted double roller chain for the camshaft, which incorporates a spiral gear for oil pump and distributor drive and an eccentric to operate the mechanical fuel pump. Water pump, fan and dynamo are belt driven from the crankshaft. LUBRICATION is by means of a large capacity high pressure gear pump, which supplies oil to all crankshaft and camshaft bearings, and through drilled connecting rods to gudgeon pin bushes. Intermittent pressure feed is directed on to cylinder walls via connecting rod big-ends and from the rear camshaft bearing to overhead valve gear, whilst the timing chain is fed through a metered jet in the front main bearing supply duct. A floating intake oil filter ensures delivery of clean oil to the pump, provision also being made for effective oil filtration on the pressure side of the system. CARBURETTOR of the "Solex" 35 mm. downdraught type is fed by an "AC" fuel pump from a 16 Imperial gallon (73 litres) tank. Performance and economy are assisted by a scientifically designed manifold with exhaust heated 'hot spot.' Carburettor air intake is fitted with a large capacity OIL BATH AIR CLEANER. IGNITION is by high voltage coil and distributor with fully automatic control, and 14 mm. wide gap sparking plugs. COOLING is maintained by a centrifugal pump and 18 in. (457 mm.) six-bladed, fully-cowled fan which give vigorous water and air flow through a high efficiency radiator fitted with pressurited cap, whilst temperature is controlled by a thermostat giving unrestricted circulation at 185° to 192° F. (85° to 89° C.). The pump incorporates a self adjusting water seal whilst fan and pump spindle runs on sealed ball bearings. Capacity of water system is 34 tmperial pints (19.3 litres).

CLUTCH AND GEARBOX. An enclosed 11 in. (280 mm.) ventilated, single dry-plate clutch is used with a special iron-alloy flywheel. It requires no lubrication or internal adjustment, and transmits power to a four-speed gearbox with silent helical gears on top and third. Short stiff shafts carry special alloy-steel gears on ball and roller bearings in a compact cast-iron case. Two six-bolt facings for power-driven attachments are provided and a speedometer drive is also incorporated. Complete power unit is carried in the frame on three special rubber mountings.

TRANSMISSION. Through balanced tubular propeller shafts supported by a rigid-type ball bearing in a spherical, rubber-encased housing from a box-section steel cross member. "Layrub" cushioned-drive universal joints assure smooth running and need no lubrication. A single shaft, without centre bearing, is fitted on the 122 in. (3.099 m.) wheelbase model.

REAR AXLE. Spiral bevel driven unit with a 50-ton tensile pressed steel casmg. Straddle-mounted pinion and crown wheel with four-pin bevel-type differential is an easily removable unit, running on large adjustable and accessible taper roller bearings. Thrust pad behind the crown wheel checks movement due to shock loads. Fully floating flanged axle shafts in fatigue-resisting steel take the drive to the road-wheel hubs which are mounted on large taper roller bearings. Standard ratio is 5.42 to 1 with an alternative of 6.00 to 1 for severe operating conditions and use with largo diameter single rear tyres.

FRONT AXLE AND STEERING. Axle bed is an "I" section, high tensile steel drop forging, with robust stub axles on large-diameter swivel pins carrying the road-wheel hubs on taper roller bearings. Drag link is a drop forging, tubular tie rod has self-adjusting ends, and all levers are of heat-treated steel. Worm and wheel steering is light and accurate in action.

FRAME AND SPRINGS. Side members with a maximum section of 8 in. x 2⅞ in. (203 x 65 mm.) top flange, 3 in. (76 mm.) bottom flange x ¾ in. (6 mm.) thick in 38/46 ton high tensile steel and six cross members [five on 122 in. (3,099 m.) wheelbase model] form an exceptionally rigid structure. Long semi-elliptic springs of silico manganese steel have renewable bushes, the rear springs being of the progressive type anchored by inclined "U" bolts. Front springs are 42 in. long by 2¼ in. wide (1.067 m. x 57 mm.) and those at the rear 46 in. long by 2½ in. wide 11.168 m. x 64 mm.).

BRAKES. "Girling" two-leading-shoe brakes, applied by pedal through hydraulic cylinder, operate on all four wheels; hand lever operating the rear brakes only by direct mechanical means. Cast-alloy brake drums are employed and the system assures maximum braking efficiency with minimum pedal effort. Front brakes are 14 in. diameter by 2½ in. wide (356 x 64 mm.) and the rear brakes 14 in. diameter by 3½ in. wide (356 x 89 mm.). Total liner area: 328 sq. in. (2,117 sq. cm.).

CHASSIS LUBRICATION. Oil-gun system is employed for all working parts. Nipples are of the hexagon-head type.

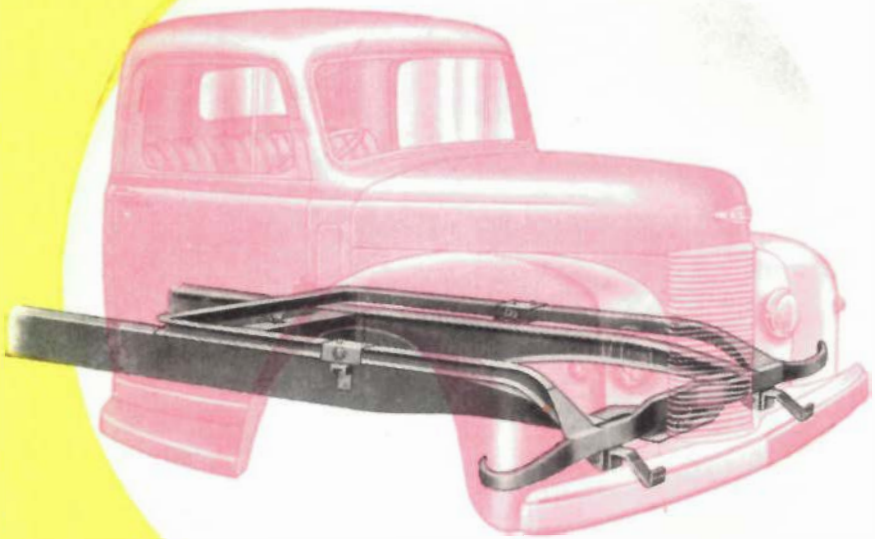
WHEELS AND TYRES. Steel disc wheels, with B5.0—20 rims. 4.40 in. offset, are each secured by 8 conically seated ⅞ in. B.S.F. nuts. 6.50-20-6-ply rating tyres, dual rear and spare, are standard equipment. A spare-wheel carrier is provided. For maximum load and other alternative tyre equipment see back page.

ELECTRICAL EQUIPMENT. Positive earth system includos a "Lucas" 12 volt fan-ventilated, compensated voltage control dynamo and flange-mounted inboard "Lucas" starter with spring type drive. The battery is of 64 ampere hours capacity on a 10-hour rating. Powerful non-glare headlights, with 42/36-watt bulbs, and the side lights are recessed in front wings. Double-filament type headlight bulbs are pre-focused, with controlling switch on steering column. Tail light, brake pedal operated 'stop' light with hydraulic-type switch, and electric horn are also included.

INSTRUMENT PANEL. Handsome 'floodlit' unit accommodates speedometer and mileage recorder, together with a single instrument containing ammeter, electric fuel gauge and oil pressure gauge. Panel lighting switch, ignition switch and warning light, lighting switchboard, controls for self-starting carburettor, starter, and hand throttle are also incorporated. Metric reading instruments available where required.

GENERAL EQUIPMENT. Pressed-steel scuttle dash with screen posts, front wings, bumper bar, chromium front wheel hub caps, jack and handle, wheel brace, tyre lever, oil gun, detachable starting handle, full kit of tools, and front and rear number plates are standard equipment. Windscreen wiper, licence holder, mirror and cab step boards are also included when driver's cab is supplied.

LEFT HAND DRIVE. Steering wheel and pedal controls arranged to suit right hand rule of the road when required.



PATENTED "DIAFLEX"

A UNIQUE SYSTEM OF MOUNTING RADIATOR, WINGS, BONNET, SCUTTLE, AND CAB AS FITTED TO ALL "SUPERPOISE" MODELS

It is a well-known fact that a chassis frame structure is not rigid, and in spite of numerous attempts to ensure complete rigidity by the fitting of cross-bracing, tubular members closely spaced, and even box section side members, only local rigidity can be obtained, and the frame as a whole always has a tendency to flex when a vehicle is driven over uneven ground. This has the effect in particular of stressing the whole of the front end of the vehicle and causing relative movement between component parts, radiator, wings, bonnet, scuttle and cab, with the result that cab doors will not open and shut freely, wings are stressed and split, radiator is strained or damaged and the bonnet rides to and fro on radiator and scuttle supports.

The patent "Diaflex" mounting obviates the whole of these troubles. With either front wheel driven up a ramp 18 in. (457 mm.) high no distortion whatsoever occurs to the superstructure. The design is such that the superstructure carrying radiator, wings, bonnet, scuttle and cab is mounted on the chassis frame at four points: on the centre line of chassis immediately under the radiator; at two points—one on either side member—on the line of the scuttle and back of wings; and on the centre line of the chassis at the back of the cab—the whole comprising a diamond-shaped mounting.

On a frame under distortion the effect is to control the relative movement of the superstructure on the main frame so that it occurs in one plane only, i.e. across the frame on the line of the scuttle. Any frame movement taking place along this line is imparted to the superstructure as a whole in relation to level ground, the diamond-mounted sub-frame pivoting freely on its longitudinal axis.

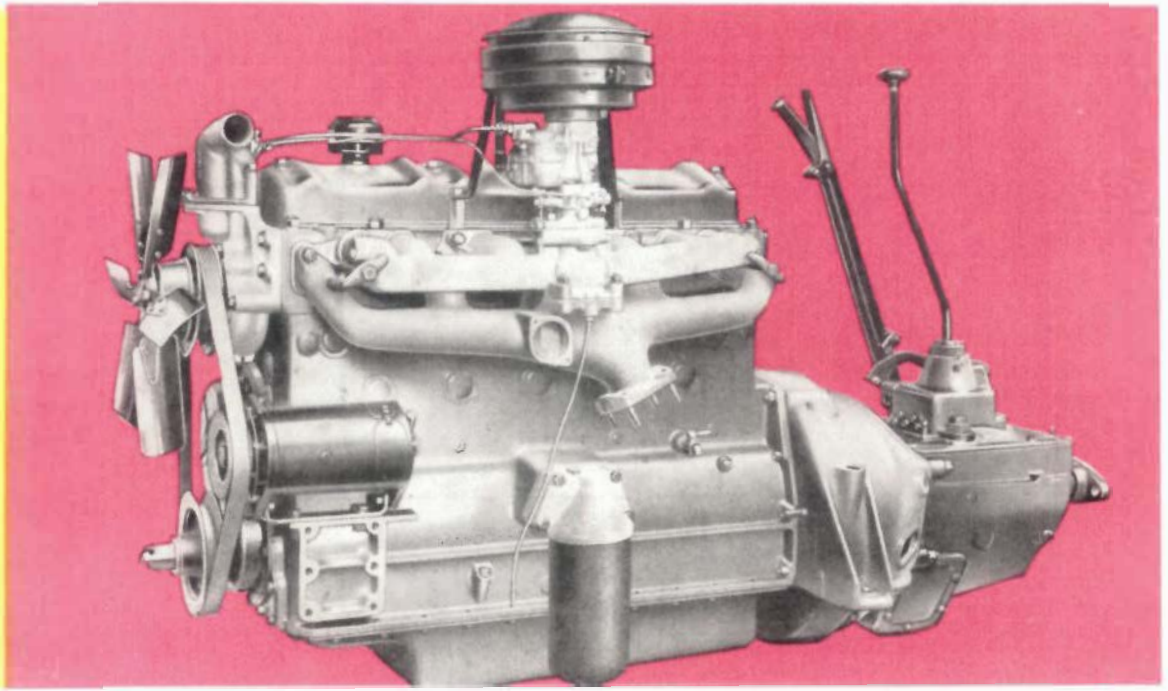
Another important advantage is that the engine is three-point mounted in the frame in such a way that the two rear supports are also on the line of the scuttle and back of wings, with the front support adjacent to the front pivot of the superstructure. This has the effect of controlling the movement of engine—including water pipes, controls, etc.—in perfect harmony with the superstructure itself.

SIX CYL. O.H.V. POWER UNIT

DEVELOPING 85 B.H.P.

When we acclaimed the famous Commer 80 b.h.p. six-cylinder unit which powered the earlier "Superpoise" series as the world's best truck engine, it was no vain boast, for in the hands of users in a wide variety of trades it has more than proved its worth. Retaining all the proved qualities of reliability and economy, plus a substantial increase in horsepower and a very marked increase in 'pulling power'—or as the engineers say, in 'maximum torque'—its successor is an entirely new unit with overhead valves, a feature which will be welcomed by maintenance staffs and one which much of the improved performance is due, although modern manifolding design and carburation have also helped to secure advantages without increasing the fuel consumption. Smooth running is conferred by the sturdy seven-bearing crankshaft with its four integrally forged balance weights and overlapping diameters of main and crankpin bearings, whilst full pressure lubrication by a very large capacity gear pump effectively flushes all bearing surfaces, dissipates heat, and is an important factor in resisting wear. Special attention given to details of the cooling system ensures that water from the high output centrifugal pump is directed by a distribution pipe in the cylinder head to essentially hot areas such as exhaust ports and sparking plugs bosses, whilst rapid 'warm up' is assured by means of a bellows type thermostat.

Marked similarity of many of the new engine features to those used in the successful Commer 'under-floor' engine introduced over three years ago will be noted; experience having justified their inclusion in this modern power plant, which, together with clutch and gearbox, is carried in the chassis frame by means of a flexible three-point rubber mounting; this to absorb any trace of vibration at its source.



RECOMMENDED TYRE EQUIPMENT

The equipment for Gross Vehicle Weights up to the Maximum Rating is shown below. These G.V.W.s are based on the Tyre Load Ratings and Inflation Pressures recommended for Overseas Service by the British Society of Motor Manufacturers & Traders and the Tire and Rim Association Inc. of the U.S.A.

G.V.W.s for Single Rear Tyre Equipment are based on Table ML-I of the current Tire and Rim Association Year Book for service on "Improved or Maintained Unpaved Roads" at a maximum speed of 30 m.p.h. (48 k.p.h.).

Tyre Size	Wheel Size (Inches) Width - Diameter - Offset	Maximum Gross Vehicle Weight Pounds Kilogrammes
Dual Rear		
Standard 6.50—20 6 ply rating	B5.0—20—4.4	10,200—4,650
6.50—20 8 ply rating	B5.0—20—4.4	11,700—5,300
Maximum Load 7.00—20 8 ply rating	B5.0—20—4.4	12,000—5,450
Single Rear		
Front 7.00—20 8 ply rating	B5.0—20—4.4	12,000—5,450
Rear 9.00—20 10 ply rating	6.00—20—Central Nave	
Spare as Front		

Remember that "**Oversize Tyres** pay better than **Oversize Loads.**"

EXPORT **ROOTES** DIVISION

DEVONSHIRE HOUSE, PICCADILLY, LONDON, W.1

Rootes Group Regional Representatives

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