

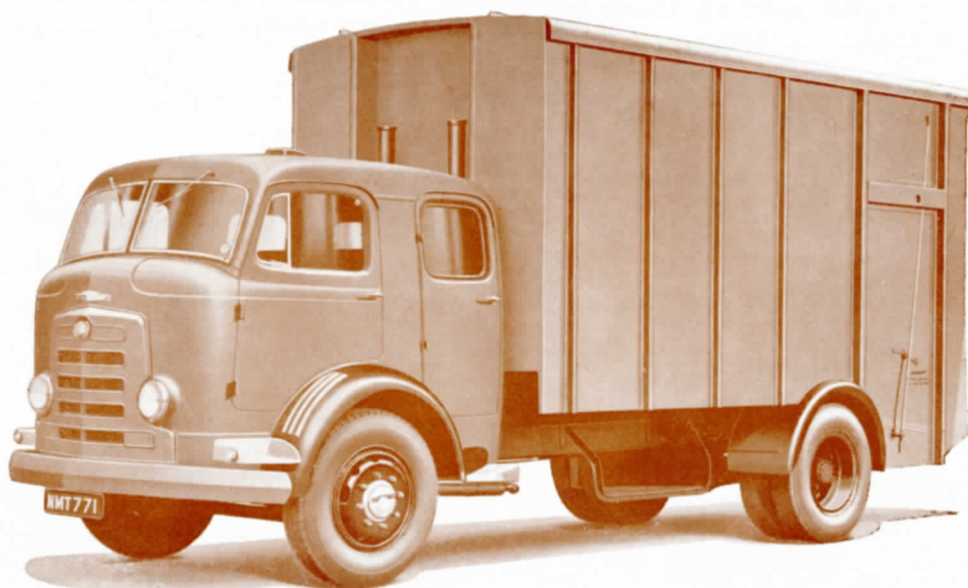
“Karrier-Transport”

Loadmaster

COMPRESSING REFUSE COLLECTOR

20-25 CU. YD. (15.29-19.11 CU. M.) CAPACITY

WITH PETROL OR DIESEL ENGINE



More refuse removed - - - Fewer journeys to tip

OUTSTANDING FEATURES OF THE

“Karrier-Transport”

Loadmaster

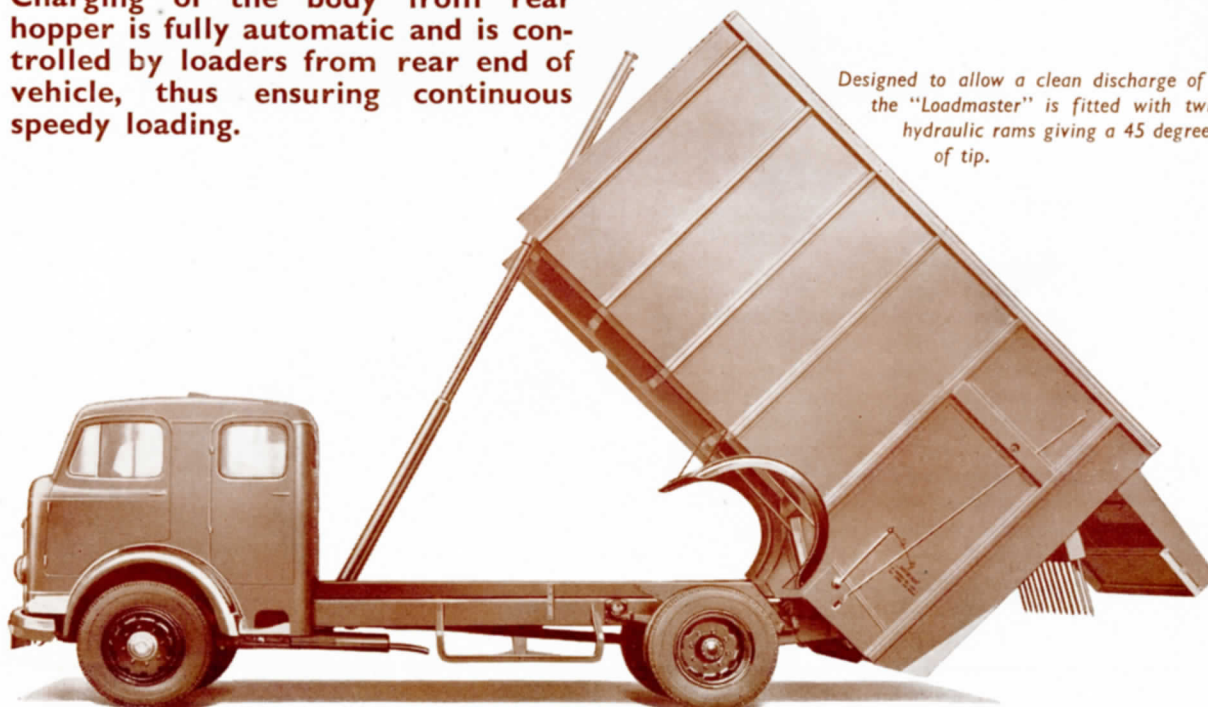
COMPRESSING REFUSE COLLECTOR

The “Loadmaster”—powered by a fully proved o.h.v. petrol engine with long life porous chrome cylinder bores or the new ‘TS3’ diesel engine—is an advanced design of refuse collection vehicle, the principal features of which include:—

- Really large capacity . . . 20 cubic yards (15.29 cu. m.) actual physical volume, excluding the loading hopper . . . capable of containing 25 cubic yards (19.11 cu. m.) or more of refuse when compressed.
- Safe, easy ground loading from the rear into a capacious hopper.
- Charging of the body from rear hopper is fully automatic and is controlled by loaders from rear end of vehicle, thus ensuring continuous speedy loading.

- Simple and foolproof operation.
- Body and loading hopper are constructed of aluminium alloy, giving strength with lightness. The hopper is lined with steel wearing plates for long life.
- The comfortable and well proportioned all-steel cab affords seating accommodation for a crew of seven.
- A really hygienic machine which will cut costs, increase the speed of collection and reduce the fatigue of loaders.

Designed to allow a clean discharge of refuse, the “Loadmaster” is fitted with twin type hydraulic rams giving a 45 degrees angle of tip.



BODYWORK DETAILS

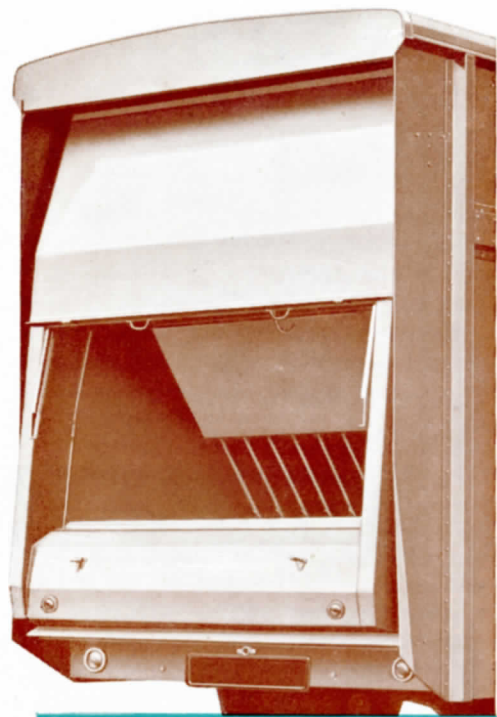
Bodywork of the "Loadmaster" consists of a refuse container of advanced design embodying a new automatic compression device ; one which is capable of packing an infinitely greater weight of material than its actual capacity of 20 cu. yd. (15.29 cu. m.)—excluding hopper—indicates.

A rectangular container of corrosion resisting alloy, constructed to withstand maximum compressive stress, incorporates a large rear loading hopper and a compressing door of welded steel swinging from a horizontal axis near the top of the body. To prevent spillage during compression, a rising panel is fitted to the pressure door, which also embodies scraper plates forming a seal. A retaining panel forward of the pressure door is hinged on the same axis and is fitted with retractable prongs, designed to retain compressed refuse while the hopper is in loading position and to retract during compressing operations to allow free passage of refuse to the body interior. Two large-diameter rams operate the pressure door and one small ram the retaining panel. During tipping operations the main rams raise the two doors which, by means of an ingenious double axis pivot, are lifted clear to the top of the container, thus ensuring a clean tip.

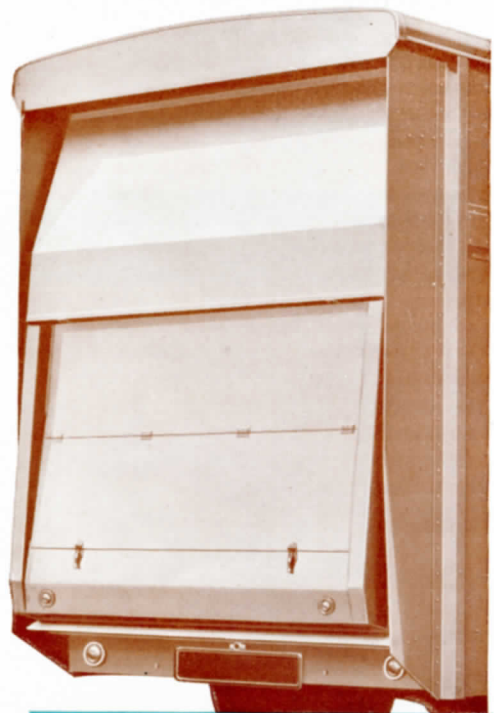
Power for the hydraulic system is provided by means of a high pressure pump driven from a power take-off on the gearbox and fed from a ten-gallon oil reservoir under the cab floor. A selector valve, controlled by the driver, directs oil flow either to compressing mechanism or tipping gear, whilst an automatic sequence valve, under the control of loaders at the rear of the machine, directs compression operations. A feature of the system is that oil directed to compressing rams circulates at no appreciable pressure until the operating lever is pulled by one of the loaders. An automatic sequence valve is thus released and the cycle of compressing operations commences, hydraulic pressure being always determined by the degree of resistance, up to a pre-set maximum.

Whenever this maximum is reached, the compressing door automatically returns to its loading position and where this occurs without the door having travelled full distance it serves as an indication that the container is full of packed refuse.

Whilst the foregoing sequence of operations appears to be somewhat complicated, the loading and compressing method employed on the "Loadmaster" is, in point of fact, the easiest and quickest yet devised, and it is endowed with an additional advantage inasmuch as dust nuisance is to a large extent overcome.



View through pressure door showing loading hopper and retractable retaining prongs

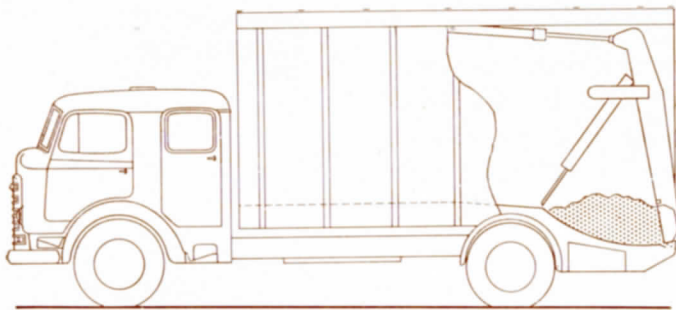


A further view showing the folding transit dust covers in closed position

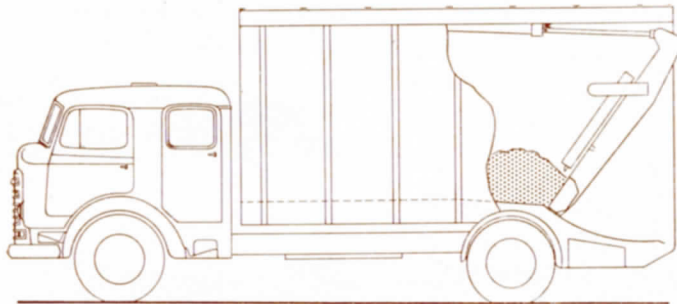
OPERATI

At the start of collection the driver en
high pressure pump is driven and circu
appreciable pressure.

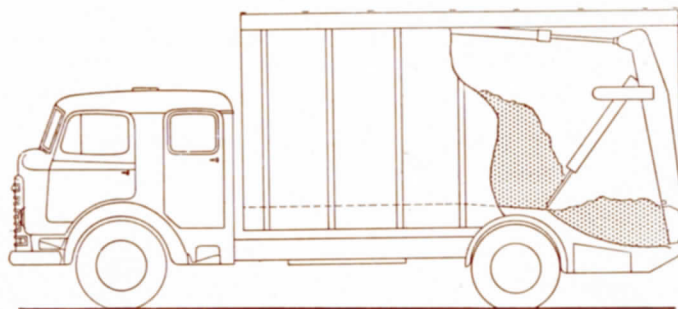
COLLECTION The hopper in th
has a capacity of between 23 and 30 cubic
is carried out at the rear of the vehicle, t
to loaders, a loading height of 46½ in.
easy loading.



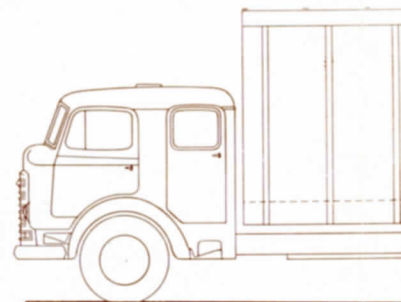
"Loadmaster" body empty, with refuse in rear hopper.



Refuse from hopper transferred to body by compressing door.



Panel prongs retain loaded refuse whilst hopper is reloaded.



Full load packed tightly by c

ING PROCESS IN BRIEF

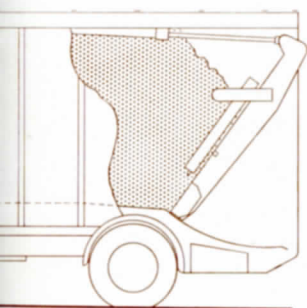
engages the power take-off so that the circulates oil through the controller at no

in the down-swept portion of the body cubic feet (0.65 and 0.85 cu. m.). Loading e, thus avoiding the possibility of accident in. (1.181 m.) from the ground ensuring

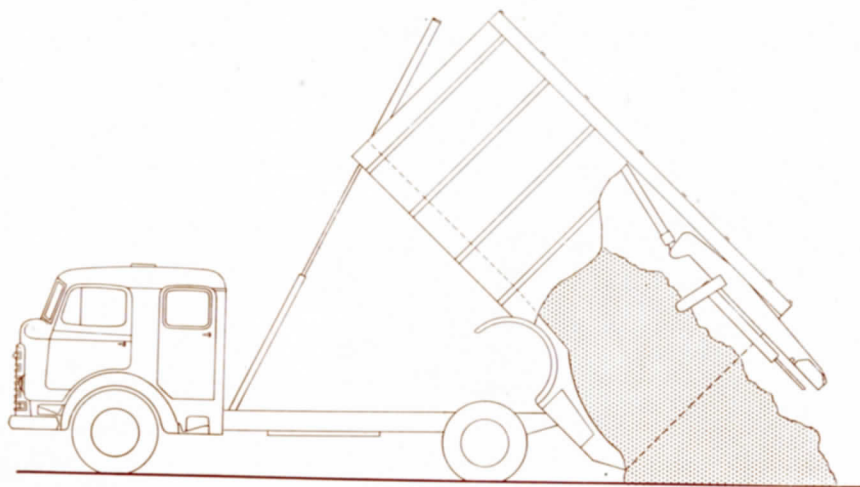
opper has been loaded, the simple action amp in the driver's compartment and at cle of operations by means of which the ing door swings forward pushing the oves an auxiliary panel lifts to increase spillage. During the forward movement ng panel rise and so increase the opening he end of the travel of the compressing ding back the refuse, the door returns scends to the loading position. The tinguished and the hydraulic recciable pressure; thus the mplished the complete cycle

of operations, which have taken between 10 and 20 seconds, and the vehicle is ready for further loading of the hopper. This cycle of operations is carried out, preferably, during the movement of the vehicle from one stopping place to the next so that no loading time is lost. It should be noted that a safety device limits the pressure which can be applied to the refuse to a fixed maximum. When the pressure of the door reaches this maximum, the controller automatically returns the door to loading position. It is impossible to interfere with this safety device; the compression being made and measured by the resistance to the introduction of each successive new charge of refuse, and in this manner the load is strongly compressed throughout.

DISCHARGING On reaching the destructor works or tipping site, the vehicle can be backed straight into position; no preliminary unlocking of doors or other mechanism being necessary. Tipping is controlled from the driver's seat, both the compression door and the retaining panel being released automatically, and lifted into a horizontal position during the operation. The angle of tip is 45 degrees, the special type of tipping gear being designed to avoid unnecessary strain upon the chassis.



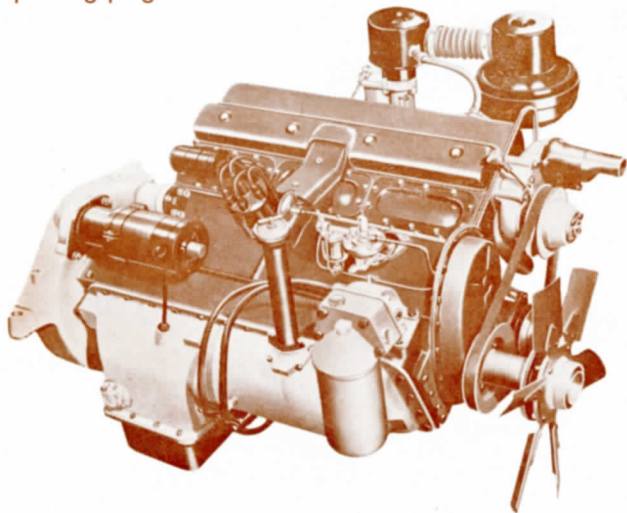
compressing door.



Load discharged cleanly and quickly at tip.

ABRIDGED CHASSIS SPECIFICATION

PETROL ENGINE Six-cylinder o.h.v., with 3.75 in. (95.25 mm.) bore, 4.375 in. (111.13 mm.) stroke and displacement of 4,750 c.c. Rated at 33.8 h.p. it develops 109 b.h.p. at 3,000 r.p.m. and maximum torque of 230 lb. ft. (31.79 Kg. m.) at 1,200 r.p.m. which is equal to a B.M.E.P. of 120 lb. per sq. in. (8.43 Kg. per sq. cm.). **CYLINDER BLOCK** and **CRANKCASE** are a compact one-piece casting with cylinders set at an angle of 66° to the vertical. Cylinder barrels are completely jacketed, whilst porous chrome bores—"Van der Horst" patent—give phenomenal life. "T" slot pistons of "Lo-Ex" alloy with two compression and one oil control ring above gudgeon pin and one plain ring, replaceable by oil control ring after long mileage, below the pin. Machined combustion chambers in **CYLINDER HEAD** have separate valve ports. Inlet valves of silicon chromium steel, sealed against oil loss, and exhaust valves of austenitic steel in renewable guides are operated by rocker arms through push rods and barrel type **TAPPETS** from four bearing **CAMSHAFT**. **CONNECTING RODS**, of 'H' section steel stamping have micro-babbitt lined steel shell crankpin bearings and seven-bearing **CRANKSHAFT** is counterweighted for smooth running. A large gear type pump maintains complete high pressure **LUBRICATION** through drilled crankshaft to crankpins and drilled connecting rod webs to gudgeon pin bushes. **CARBURETTOR**, 40 mm. "Solex" downdraught type, with easy starting device and oil bath air cleaner, is fed from a 24-Imperial gallon (109 litres) fuel tank. **IGNITION** system includes high voltage coil, automatically controlled distributor incorporating built-in suppression equipment and long-reach 14 mm. sparking plugs.



The powerful Karrier o.h.v. petrol engine which incorporates the very latest technical developments and is designed to give prolonged service with maximum economy.

DIESEL ENGINE Three-cylinder, horizontal, direction-injection, two stroke unit with two opposed pistons per cylinder. With a 3.25 in. (82.55 mm.) bore and a 4 in. (101.6 mm.) stroke, the engine has a capacity of 199 cu. in. (3261 c.c.). Developing 105 b.h.p. at 2,400 r.p.m., it has a maximum torque of 270 lb. ft. (37.33 Kg. m.) at 1,200 r.p.m. which is equal to B.M.E.P. of 102 lb. per sq. in. (7.17 Kg. per sq. cm.). The special hot-crown pistons are connected to a common crankshaft, lying centrally below the cylinders, by a rocker arm and a pair of connecting rods; one secured to a piston and the other to the crankshaft. **CYLINDER BLOCK** and **CRANKCASE** form a single compact iron casting embodying cast iron wet cylinder barrels sealed by flexible metallic lips ground on the outer diameter, thus dispensing with joints and rubber rings. The alloy steel drop forged **CRANKSHAFT** is fully balanced and revolves in four thin wall steel backed babbitt lined main bearings. Combustion takes place between the two pistons, and the cylinders have inlet ports at one end of the bores and exhaust ports at the opposite end. The design of the engine is based on a principle credited to Michel Kadenacy, which involves the opening of the inlet orifice at the moment when the rapidly outflowing column has been formed and a suction effect is exerted at the inlet port. In addition, a "Roots" type "Wade" **BLOWER** supplies air at a low pressure to the air chest in the cylinder block. The **FUEL INJECTION** pump is a "C.A.V." unit with pneumatic governor, and also embodies the mechanical fuel lift pump. The single hole injectors operate at 140 atmospheres. Complete high pressure **LUBRICATION** is maintained by a large gear type pump. A floating intake oil filter ensures delivery of clean oil to the pump, and a large full-flow filter is embodied in the pressure side of the system. Sump capacity, 28-Imperial pints (15.91 litres). A 24-Imperial gallon (109 litres) fuel tank is mounted on the chassis frame and the fuel is thoroughly filtered by a water trap, paper type "C.A.V." full-flow filter and built-in filter in the fuel injection pump itself. Efficient **COOLING** is maintained by a centrifugal pump, in conjunction with a large diameter cowled fan. A by-pass thermostat regulates engine heat and gives unrestricted circulation at 85°-89°C. A small aluminium two-stroke **EXHAUSTER** maintains vacuum in a reservoir mounted on the chassis frame.

CLUTCH AND GEARBOX The enclosed ventilated 12 in. (305 mm.) single dry plate clutch (13 in. (330 mm.) on diesel model) requires no lubrication or internal adjustment. Four speed synchromesh gear box, with helical teeth for constant mesh, third and second speed gears, embodies speedometer drive from mainshaft and two standard S.A.E./S.M.M.T. six-bolt facings for power driven attachments. Engine, clutch and gearbox form single unit which is three-point rubber mounted.

TRANSMISSION Through balanced tubular propeller shafts with "Layrub" cushioned drive universal joints.

REAR AXLE Improved spiral bevel unit in an exceptionally robust pressed steel casing. A bronze thrust pad behind crown wheel checks movement due to shock loads. Fully floating flanged axle shafts take the drive to road wheel hubs. Standard ratios: 7.20 to 1 for petrol model and 5.125 to 1 for diesel model.

FRONT AXLE AND STEERING Axle bed is an 'I' section high tensile steel forging, robust stub axles being carried on large diameter inclined king pins. High efficiency steering unit with 20 in. (508 mm.) steering wheel.

FRAME AND SPRINGS Deep reinforced side members of high duty steel, braced by seven cross-members, carry reverse cambered semi-elliptic springs of silicon-manganese steel to give increased strength under load. Front springs are 48 in. (1.219 m.) long by 2 $\frac{3}{4}$ in. (70 mm.) wide; rear springs are 54 in. (1.372 m.) long by 3 in. (76 mm.) wide.

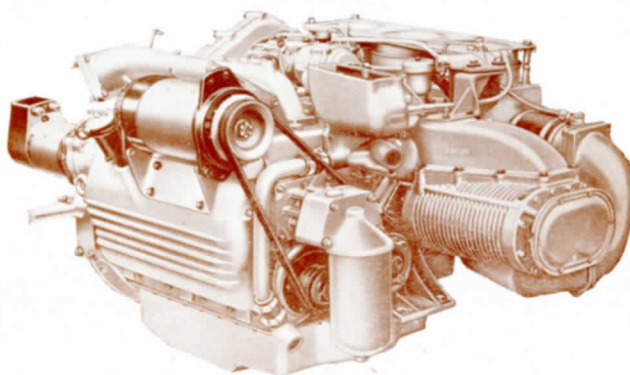
BRAKES Powerful hydraulic two-leading-shoe brakes—rear of the both direction type—operate in cast drums. A 6 $\frac{3}{8}$ in. (175 mm.) vacuum servo is fitted in conjunction with a vacuum reservoir and brake dimensions are: front, 16 in. (406 mm.) dia. by 3 in. (76 mm.) wide; rear, 15 $\frac{1}{4}$ in. (387 mm.) dia. by 5 in. (127 mm.) wide for petrol model, and 15 $\frac{1}{2}$ in. (393 mm.) dia. by 6 in. (152 mm.) wide for diesel model.

CHASSIS LUBRICATION Hydraulic oil gun nipples, suitable for hand gun or high pressure systems, are fitted to all working parts.

WHEELS AND TYRES Pierced steel disc two-piece wheels, with B6.0-20 rims, 5.10 in. offset, are fitted with "India" 8.25-20 12 ply tyres. Spare wheel and tyre supplied on substantial carrier amidships.

ELECTRICAL EQUIPMENT Positive earth system includes a 12-volt fan-ventilated, compensated voltage control dynamo. An inboard "Lucas" starter with spring-type drive and a 12 volt battery of 64 amp. hour capacity is fitted on petrol model, whilst a "C.A.V." axial starter and two 6 volt batteries of 115 amp. hour are included on diesel model; 42/36-watt headlamps; side lamps in front step plates; twin tail lights and 'stop' signals, separate number plate lamp, and twin 3 in. rubber framed reflectors are incorporated.

INSTRUMENT PANEL Indirectly illuminated, embodies speedometer with mileage recorder, two combined instruments, one with oil pressure gauge and thermometer, and one with vacuum gauge and electric fuel gauge, which on petrol model also registers engine oil level; (diesel model has engine blower gauge); lighting switches; starter (and carburettor controls for petrol model). Wiring connections are through multi-pin plug. Metric reading instruments are available when required.

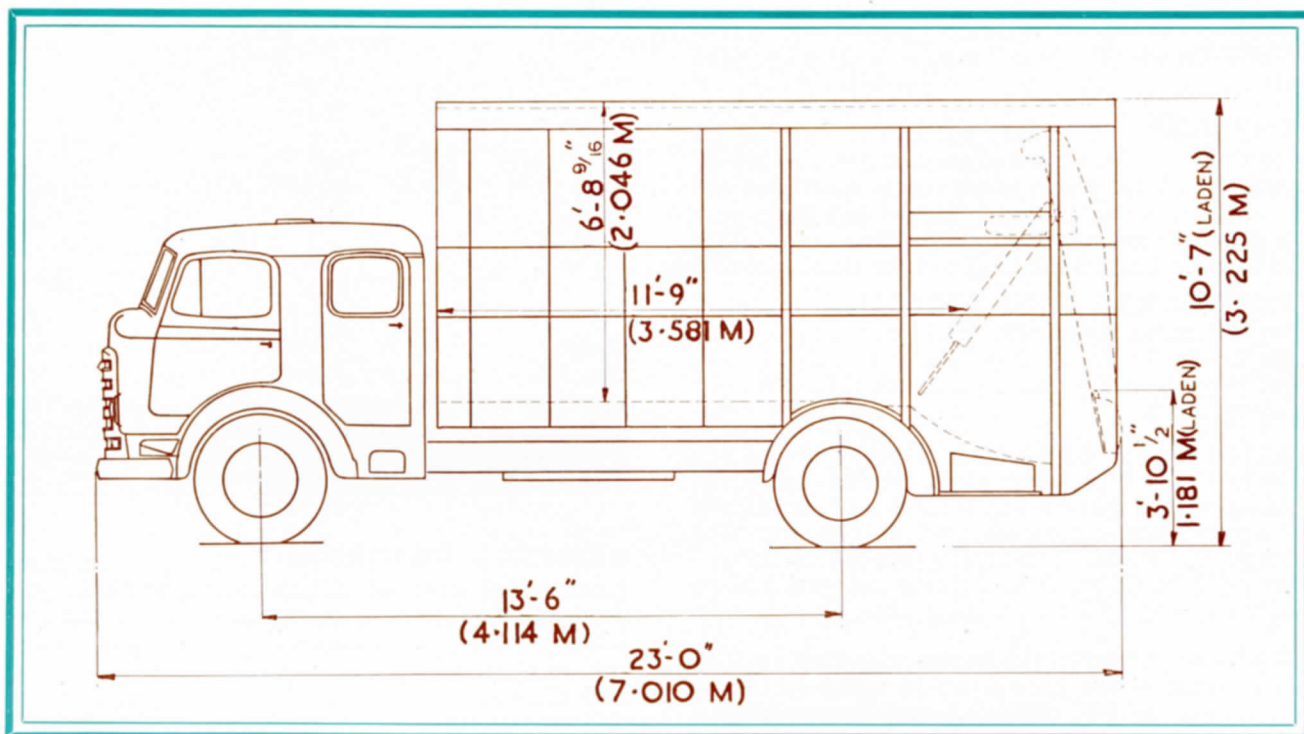


The outstanding 'TS3' diesel engine which has a high power-weight ratio, excellent fuel economy and reliability coupled with a simple maintenance schedule.

GENERAL EQUIPMENT Bumper bar, chromium plated front wheel hub covers, hydraulic jack and handle, wheelbrace, tyre lever, oil gun (detachable starting handle, petrol model only), kit of tools, front and rear number plates, and front towing loop at nearside, etc.

DRIVER'S CAB With a distinguished modern appearance, the full forward cab of all steel construction seats seven persons in comfort. The seats are well upholstered in 'P.V.C.' leathercloth and correctly shaped, those at the front being readily removable for access to the engine, whilst that at the rear can be folded back to provide room for equipment; all interior metalwork is painted to match the general colour scheme. Easy entry to the front seat is afforded through 35 in. (889 mm.) self-closing front-hinged doors, set well forward and provided with convenient steps. A further two doors give access to the rear of the cab; the forward doors have swivelling quarter lights with handle controlled full opening drop windows and the rear doors have fixed lights; all the doors can be locked. All controls are carefully positioned to ensure maximum driving comfort with minimum fatigue. Ideal driving conditions are further assisted by easily visible instruments, wide vision two-piece screen of laminated safety glass (all other cab windows being of toughened safety glass), with dual electric screen wipers and controlled interior temperature. Two ventilators deliver air from the radiator grille to the driver's and passengers' feet. Two large pockets are built into the facia and a 6-watt roof light gives adequate illumination for servicing the engine. Two driving mirrors, two rubber floor mats with felt underlay, and a licence holder are supplied with the cab, which is supported on the frame by four large rubber mountings. On diesel model a special insulating blanket is fitted between engine covers and front seat.

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



LEADING DIMENSIONS

Length inside body	... ..	141 in. (3.581 m.)	Overall length of vehicle	... ..	276 in. (7.010 m.)
Width inside body	... ..	82½ in. (2.102 m.)	Overall width of vehicle	... ..	90 in. (2.286 m.)
Height inside body	... ..	80 7/16 in. (2.046 m.)	Overall height of vehicle (laden)	... ..	127 in. (3.225 m.)
Width of rear opening	... ..	72½ in. (1.848 m.)	Overall height of vehicle (tipped)	... ..	206½ in. (5.245 m.)
Loading line (from ground)	... ..	46½ in. (1.181 m.)	Capacity of body (less hopper)	... ..	20 cu. yd. (15.29 cu. m.)

ABRIDGED PARTICULARS

	PETROL				' TS3 ' DIESEL			
	Six-cylinder semi-horizontal o.h.v. 109 b.h.p. Rating 33.8 h.p.				Direct injection two stroke opposed piston horizontal diesel engine 105 b.h.p.			
Bore	3.75 in. (95.25 mm.)	... ..	... ..	3.25 in. (82.55 mm.)	... ..	... ..	... ..
Stroke	4.375 in. (111.13 mm.)	... ..	... ..	4.0 in. (101.6 mm.)	... ..	... ..	... ..
Maximum Torque	230 lb. ft. (31.79 kg. m.)	... ..	... ..	270 lb. ft. (37.33 kg. m.)	... ..	... ..	... ..
Gear ratios :								
		Petrol		Diesel				
		Gearbox	Overall	Speed	Overall	Speed		
				m.p.h. k.p.h.		m.p.h. k.p.h.		
Top	Direct	7.20 to 1	45½ 73.2	5.125 to 1	51 82.0		
Third	1.838 to 1	13.23 to 1	24½ 39.7	9.42 to 1	27½ 44.6		
Second	3.478 to 1	25.04 to 1	13 20.9	17.83 to 1	14½ 23.5		
First	7.227 to 1	52.03 to 1	6½ 10.1	37.01 to 1	7 11.3		
Reverse	8.431 to 1	60.70 to 1	5½ 8.6	43.21 to 1	6 9.7		

NOTE :—Road speeds taken at peak h.p. or governed speed of engine, i.e. petrol—3,000 r.p.m. ; ' TS3 ' diesel—2,400 r.p.m.

Wheelbase	... ..	162 in. (4.114 m.)	Tyre size	... ..	8.25—20-12 ply
Wheeltrack :			Fuel tank capacity	... ..	24 Imperial gallons (103 litres)
Front (at ground)	... ..	72½ (1.846 m.)	Approx. Chassis weight, petrol (less fuel, water and spare wheel)	... ..	5630 lb. (2554 kg.)
Rear	... ..	67 in. (1.702 m.)	Allowance for fuel, water and spare wheel	... ..	455 lb. (207 kg.)
Turning circle (approx.)	... ..	55 ft. 0 in. (16.76 m.)	Approx. Chassis weight, diesel (less fuel, water and spare wheel)	... ..	6080 lb. (2758 kg.)
Overall width of chassis (over front axle)	... ..	88 in. (2.235 m.)	Allowance for fuel, water and spare wheel	... ..	470 lb. (213 kg.)
Ground clearance (under rear axle laden)	9 1/2 in. (230 mm.)			
Frame height at rear (laden)	31 in. (787 mm.)			

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ROOTES

DIVISION



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