Continuous Loading Refuse Collectors

KARRIER

12/35 yd.³ (9.2/26.7 m.³) model VC7
15/45 yd.³ (11.5/34.4 m.³) model VC7
16/50 yd.³ (12.2/38.2 m.³) model VC8 and CE8
19/60 yd.³ (14.5/45.9 m.³) model VC8 and CE8
22/70 yd.³ (16.8/53.5 m.³) model CE16

Musketeer

Impeller Loading Models

The Karrier range of Musketeer continuous impeller loading refuse collectors has built up an enviable reputation for efficiency and reliability in a particularly demanding sector of municipal transport. Much of this success stems from the fact that these vehicles have been engineered specifically for municipal applications and are not merely adaptations of mass produced trucks. Each is designed and built to withstand continuous operation in arduous conditions over a long period.

Five models are produced with respective air space volumes of 12, 15, 16, 19 and 22 yd.³ (9.2, 11.5, 12.2, 14.5 and 16.8 m.³). These are capable of accepting 35, 45, 50, 60 and 70 yd.³ (26.7, 34.4, 38.2, 45.9 and 53.5 m.³) respectively of normal uncompacted refuse, enabling the Musketeer range to cater for a variety of city and urban needs.

Loading and compaction of the refuse is achieved by a mechanically operated spiral impeller as described in greater detail overleaf.

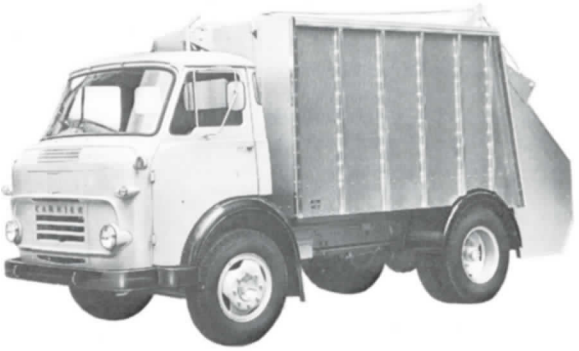
The bodywork on tipping models, built by Glover, Webb & Liversidge, is of robust aluminium alloy construction to keep the unladen weight to the minimum. The bodies on horizontal discharge models are of all steel construction to withstand the force of high compaction loading. The comfortable and spacious all-steel cab provides seating for up to seven people. On the 22/70 model a coach-built crew cab is standard equipment.

Standard engines for the Musketeer series are the well-proven Perkins D6.354, installed bhp 98, and 6.354.2, installed bhp 113, six-cylinder in-line diesels and TS3 121.5 installed bhp two-stroke horizontally opposed piston diesel. The Perkins 98 bhp unit is standard fitment on the 12/35 and 15/45, 112 bhp is standard on 16/50, 19/60, and TC model on VC8 chassis, whereas the TS3 is standard on 16/50, 19/60 and TC model on CE8 chassis, and the 22/70 model. Each power unit is fitted with an alternator to ensure an adequate charging rate in

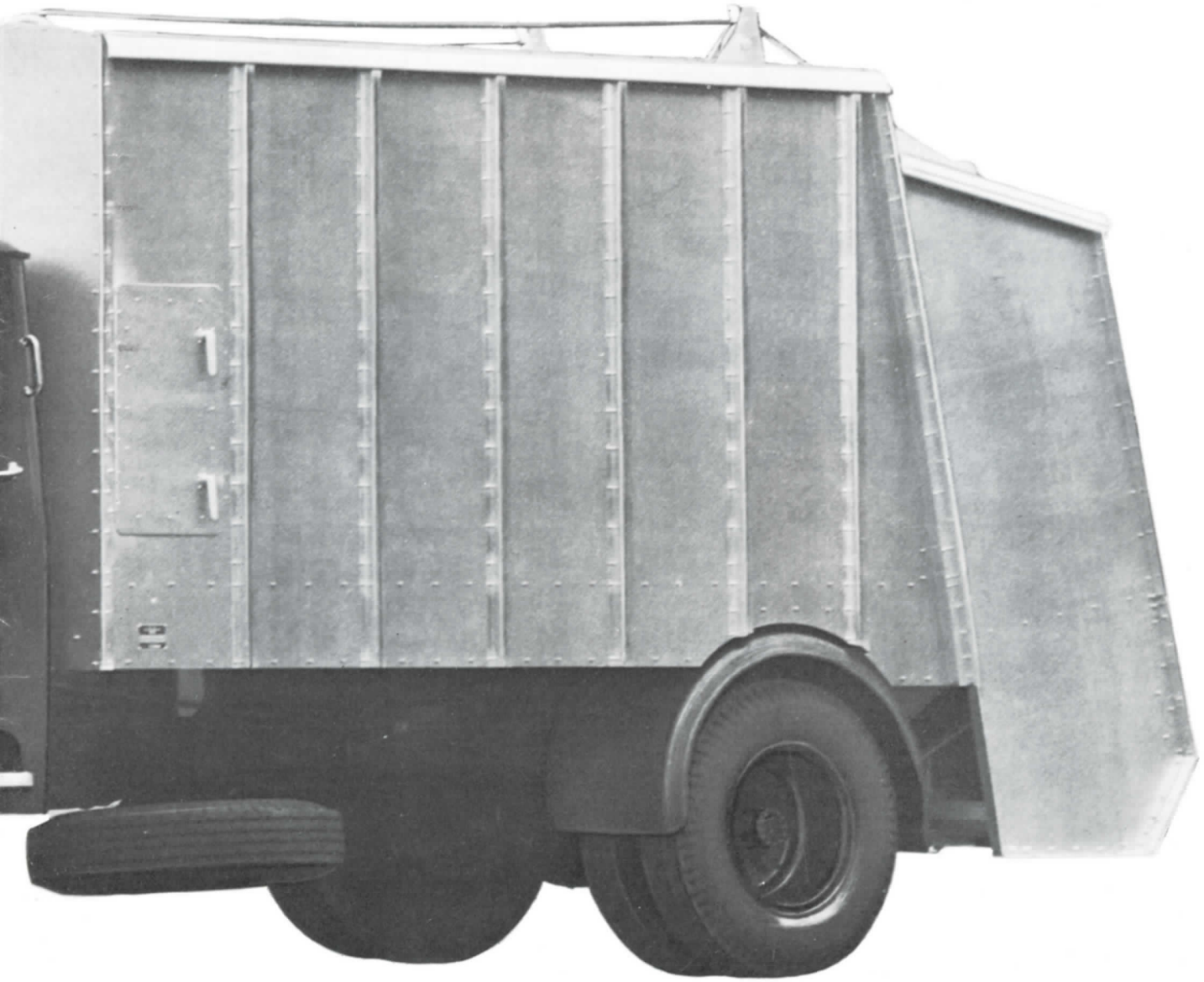
stop-start conditions. The transmission system includes a five-speed synchromesh gearbox and single or two-speed rear axle.

Special attention has been paid to the braking system, the efficiency of which is well in excess of U.K. statutory requirements. Two different systems are employed on the various models, a hydraulic divided line system with air assistance or a full-air dual-circuit system incorporating a hand-controlled secondary and positive lock parking brake system.

Good manoeuvrability is essential for municipal work. All Musketeer models have been designed to provide easy steering, compact turning circles and a high degree of manoeuvrability, while power assistance makes light work of driving the 22/70 model.



This popular range of Musketeer models include the 12/35 yd³ illustrated right, available with either single or crew cab, and illustrated above the 16/50 yd³ model whilst below the highly popular 19/60 yd³ model.



High-density impeller loading

Refuse is dumped into a hopper at the rear of the vehicle and is carried forward through a tunnel into the container body by a continuously rotating helical impeller. This loading action compresses the refuse at the same time and keeps the hopper cleared irrespective of the rate at which it is filled.

To discharge the refuse the complete body is tipped by a front-mounted hydraulic ram. The upper edge of the loading hopper assembly is hinged to the rear of the body and is lifted clear by a pulley and cable arrangement to allow unobstructed discharge. A warning device is fitted to indicate that tipping is in progress.

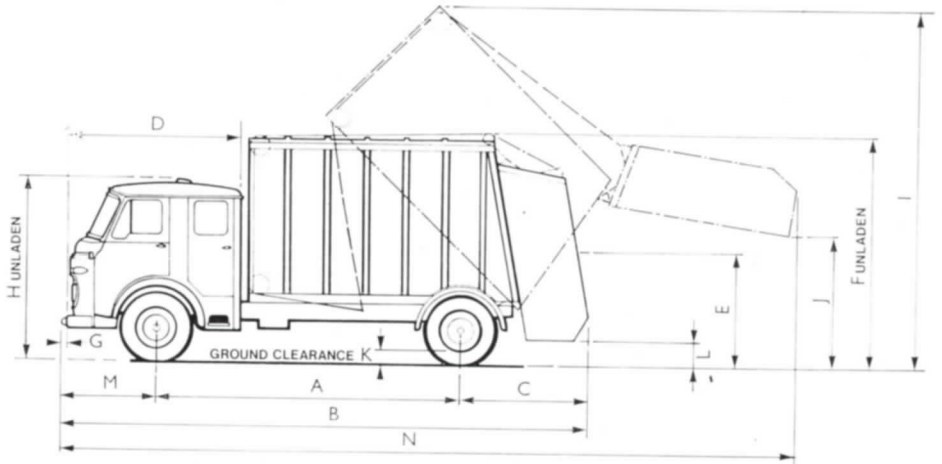
Horizontal discharge models

Model type	VC7 single cab	VC7 double cab	VC7 double cab	VC8 and CE8	VC8 and CE8	VC8 and CE8	VC8 and CE8	CE16	CE16
Body space	12/35	12/35	15/45	16/50 Horizontal discharge	16/50	19/60 Horizontal discharge	19/60	22/70 Horizontal discharge	22/70
A	115 in. (2·921 m.)	141 in. (3·581 m.)	141 in. (3·581 m.)	141 in. (3·581 m.)	141 in. (3·581 m.)	162 in. (4·115 m.)	162 in. (4·115 m.)	176 in. (4·461 m.)	176 in. (4·461 m.)
B	234½ in. (5·956 m.)	260¼ in. (6·610 m.)	265¾ in. (6·750 m.)	268⅜ in. (6·824 m.)	258 in. (6·553 m.)	289 in. (7·341 m.)	285 in. (7·239 m.)	303⅛ in. (7·699 m.)	298⅜ in. (7·588 m.)
C	68⅜ in. (1·746 m.)	68⅜ in. (1·746 m.)	74 in. (1·879 m.)	77 in. (1·956 m.)	66¼ in. (1·633 m.)	77 in. (1·956 m.)	72¼ in. (1·839 m.)	77 in. (1·956 m.)	73 in. (1·854 m.)
D	72⅜ in. (1·847 m.)	94½ in. (2·391 m.)	94½ in. (2·394 m.)	94 1/16 in. (2·389 m.)	94 1/16 in. (2·389 m.)	94 1/16 in. (2·389 m.)	94 1/16 in. (2·389 m.)	97⅛ in. (2·467 m.)	97⅛ in. (2·467 m.)
E	54 in. (1·372 m.)	54 in. (1·372 m.)	53 in. (1·346 m.)	53 in. (1·346 m.)	53 in. (1·346 m.)	53 in. (1·346 m.)	53 in. (1·346 m.)	57 in. (1·448 m.)	55 in. (1·397 m.)
F	119 in. (3·023 m.)	119 in. (3·023 m.)	125 in. (3·175 m.)	127 in. (3·226 m.)	134 in. (3·404 m.)	127 in. (3·226 m.)	134 in. (3·404 m.)	131 in. (3·327 m.)	138 in. (3·505 m.)
G	2⅜ in. (60·3 mm.)	2⅜ in. (60·3 mm.)	2⅜ in. (60·3 mm.)	2⅜ in. (60·3 mm.)	2⅜ in. (60·3 mm.)	2⅜ in. (60·3 mm.)	2⅜ in. (60·3 mm.)	2⅜ in. (60·3 mm.)	2⅜ in. (60·3 mm.)
H	94 in. (2·389 m.)	94 in. (2·389 m.)	94 in. (2·389 m.)	99 5/16 in. (2·521 m.)	99 5/16 in. (2·521 m.)	99 5/16 in. (2·521 m.)	99 5/16 in. (2·521 m.)	118 in. (2·997 m.)	118 in. (2·997 m.)
I	169 in. (4·293 m.)	169 in. (4·293 m.)	180 in. (4·572 m.)	159 in. (4·039 m.)	185 in. (4·699 m.)	159 in. (4·039 m.)	198 in. (5·029 m.)	163 in. (4·140 m.)	209 in. (5·308 m.)
J	78 in. (1·981 m.)	78 in. (1·981 m.)	78 in. (1·981 m.)	103 in. (2·616 m.)	93 in. (2·362 m.)	103 in. (2·616 m.)	93 in. (2·362 m.)	106 in. (2·692 m.)	95 in. (2·413 m.)
K	7¾ in. (197 mm.)	7¾ in. (197 mm.)	7¾ in. (197 mm.)	9 1/16 in. (246 mm.)	9 1/16 in. (246 mm.)	9 1/16 in. (246 mm.)	9 1/16 in. (246 mm.)	8⅝ in. (219 mm.)	8⅝ in. (219 mm.)
L	13 in. (330 mm.)	13 in. (330 mm.)	13 in. (330 mm.)	15 in. (381 mm.)	17 in. (431 mm.)	15 in. (381 mm.)	17 in. (431 mm.)	17 in. (431 mm.)	16⅜ in. (416 mm.)
M	50⅜ in. (1·289 m.)	50⅜ in. (1·289 m.)	50⅜ in. (1·289 m.)	60⅜ in. (1·289 m.)	50⅜ in. (1·289 m.)	50⅜ in. (1·289 m.)	50⅜ in. (1·289 m.)	50⅛ in. (1·273 m.)	50⅛ in. (1·273 m.)
N	334 in. (8·483 m.)	360 in. (9·144 m.)	372 in. (9·408 m.)	319 in. (8·102 m.)	372 in. (9·449 m.)	340 in. (8·636 m.)	399 in. (10·135 m.)	354½ in. (9·004 m.)	413⅜ in. (11·303 m.)
Overall width	90 in. (2·286 m.)	90 in. (2·286 m.)	93 in. (2·362 m.)	93 in. (2·362 m.)	92 in. (2·337 m.)	93 in. (2·362 m.)	92 in. (2·337 m.)	94 in. (2·388 m.)	94⅜ in. (2·407 m.)
Width inside body	85 in. (2·159 m.)	85 in. (2·159 m.)	87 in (2·210 m.)	84 in. (2·134 m.)	87 in. (2·210 m.)	84 in. (2·134 m.)	87 in. (2·210 m.)	86 in. (2·184 m.)	91 in. (2·311 m.)
Turning circle	44 ft. (13·411 m.)	49 ft. 6 in. (15·087 m.)	49 ft. 6 in. (15·087)m.	54 ft. (16·459 m.)	54 ft. (16·459 m.)	60 ft. (18·288 m.)	60 ft. (18·288 m.)	61 ft. (18·593 m.)	61 ft. (18·593 m.)

A horizontal discharge version of the Musketeer 19/60 has been developed to overcome the problem of tipping on poor sites, where hard standing is not available and the chassis may therefore be subjected to damaging strain or distortion when unloading. The horizontal discharge system has advantages also for disposal plants at which headroom is limited.

Loading of the horizontal discharge model is carried out with the same type of helical impeller system as is used on the tipping versions. A major difference is that a higher degree of compaction is achieved by the action of the discharge pressure plate, which reacts against the loading pressure and moves progressively forward until the container body is full. To withstand the increased pressure a rugged all-steel body has been adopted, zinc-coated to resist corrosion.

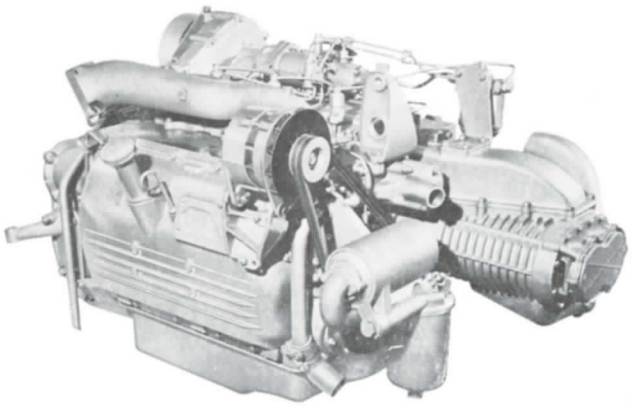
To discharge the refuse the rear hopper is lifted out of the way by twin hydraulic rams and the load is forcibly ejected by the hydraulically operated pressure plate. In this way, clean and very rapid unloading is attained.



Optional extras

A wide range of additional equipment is produced so that all Musketeer models can be tailored to satisfy individual needs. These extras include such items as salvage racks, towing attachments, loading steps, sack hooks and skip cradles.

Economical diesel power



Three thrifty diesel engines provide ample power to keep big loads moving. The Perkins six-cylinder in-line units develop up to 113 installed bhp and the TS3 diesel (illustrated) produces 121.5 installed bhp, with high economy and performance.

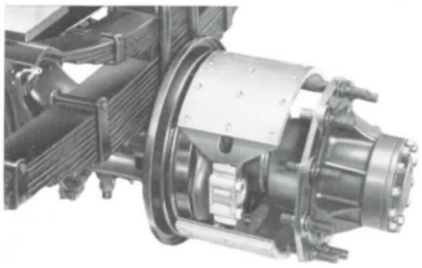
A total production equivalent to more than seven million brake-horsepower as well as 6 years' operating experience have proved to the full the long-term reliability of the TS3 engine. Its compact dimensions allow good cross-cab accessibility and its two-cycle opposed-piston design provides a high power output with smoothness from only 3.5 litres displacement without recourse to high crankshaft speeds.

Pressure charging ensures thorough scavenging of the cylinders and complete combustion of the fuel at all engine speeds, resulting in a high thermal efficiency and

Design for maximum efficiency

■ Continuous power-assisted steering for easy manoeuvring and minimum driver fatigue.

outstanding fuel economy. In this way the TS3 squeezes more mileage than you would expect from every gallon of fuel.



Safe, efficient braking

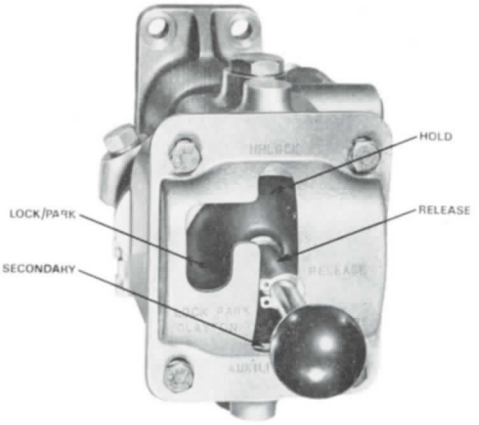
Powerful brakes for powerful vehicles ensure the safe, prompt stopping power that is so essential for the increased loads and speeds of modern municipal operation. Three different systems are employed, designed to meet all known UK statutory requirements.

An air-hydraulic divided line system is fitted on VC and CE chassis and full-air dual-circuit on the CE16. Full-air brakes are available as an option on VC8 and CE8 models. All systems promote two vital aspects of transport operation – safety on the road and confidence behind the wheel.

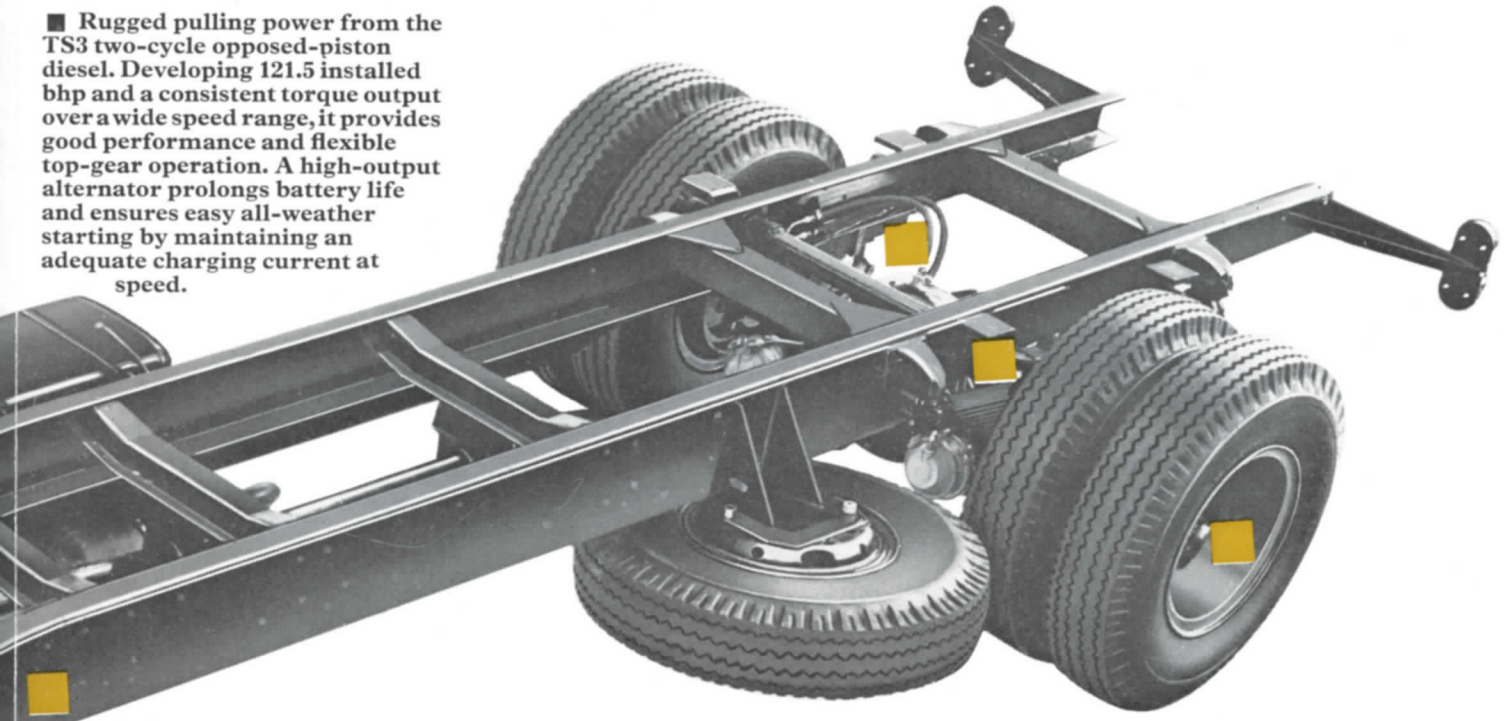
Combined secondary/parking valve

On CE16 chassis a convenient push-pull control valve applies and releases the park and secondary brake system, which has its own separate air pressure circuit. When the secondary brake is applied, the auxiliary brake chamber diaphragm on the front and rear axles is brought into operation for quick, safe stopping. When the valve is in the park position, a wedge type mechanical lock holds the auxiliary diaphragm in the applied position.

The 'hold' position on the valve enables the driver to maintain positive control when pulling away on a gradient.



■ Rugged pulling power from the TS3 two-cycle opposed-piston diesel. Developing 121.5 installed bhp and a consistent torque output over a wide speed range, it provides good performance and flexible top-gear operation. A high-output alternator prolongs battery life and ensures easy all-weather starting by maintaining an adequate charging current at speed.



■ Comfort for the crew and good front end stability are afforded by hydraulic shock absorbers.

■ Smooth and reliable stopping power stems from a full-air dual-circuit braking system.

■ Five-speed gearbox with synchromesh on the top four gears for easy, crash-free changes.

■ Standard spiral-bevel single-speed rear axle of heavy-duty design to withstand continuous stop-start operation. Two-speed axle available as an option.

■ Heavy-duty front axle of exceptional strength for maximum loading.

■ Tough, flitch-plated chassis frame of carbon manganese steel. Crossmembers of top hat section provide great torsional strength.

■ Generously dimensioned rear springs with a high degree of resilience offer high load capacity with a smooth, stable ride. Integral helpers adjust the spring rate to the load.

■ Heavy duty, ten-stud wheels help to give maximum traction in all conditions of load.

Illustrated here is the Musketeer 22/70 chassis. The many features shown and many other mechanical refinements demonstrate the high engineering standards that help to give many years of reliable and efficient operating life.

Musketeer TC

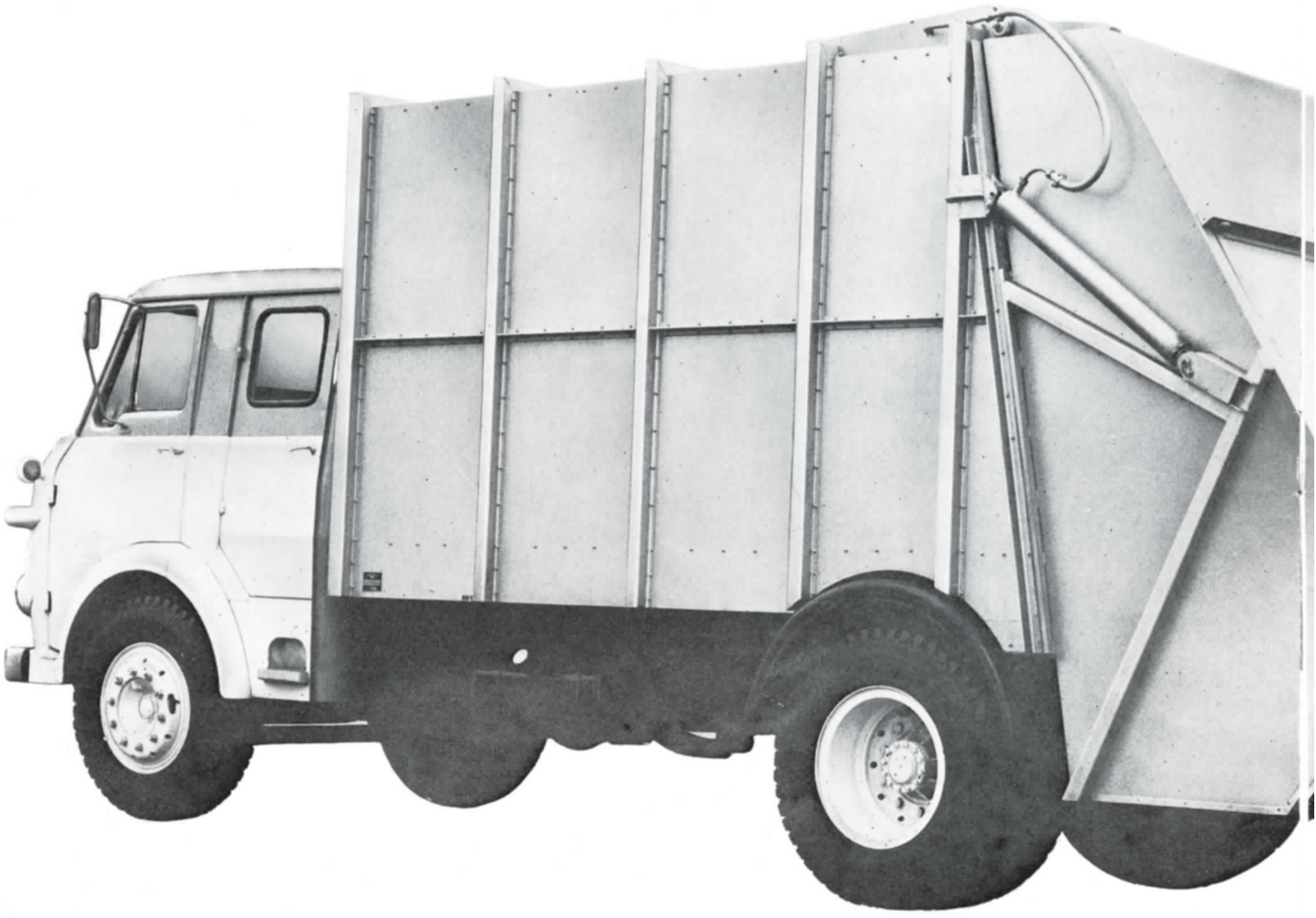
Twin Compression Model

For the fastest possible operation the Musketeer is also available with this super-efficient twin compressor body. A development of the single-screw model, it features a very large loading hopper with two screw impellers which ensure a continuous high-speed loading action over the whole hopper area.

Horizontal discharge by hydraulic ram makes the twin-compression Musketeer suitable for any type of disposal site. And it also assists in achieving a high degree of compaction by reacting against the loading pressure, moving progressively forward until the container body is full.

The impeller screws, driven by a heavy-duty double reduction worm gearbox at the rear of the canopy, are easily removable for repair or replacement. The only moving parts in contact with the refuse are effectively sealed from dust by three seals and require no attention. Drive from the engine is by power take-off from the vehicle gearbox through an overload clutch, isolating the mechanism from damage through jamming. Provision is made for hand reversing of the impellers if the need should arise.

An emergency engine stop push-button is provided adjacent to the loading hopper. Restarting of the engine can only be done



Binmaster

Model	Body Capacity
Binmaster VC8	18/45 yd.^{3} (13.8/34.4 m.^{3})

Horizontal discharge Model

from the driver's cab, as further insurance against accident.

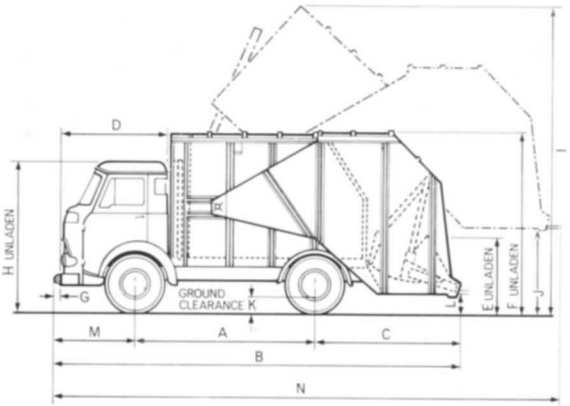
The Musketeer TC, like the single-screw model, is available with either the six-cylinder Perkins 6.354.2 diesel engine or the TS3 horizontally opposed piston diesel. It embodies all the qualities of reliability, manoeuvrability and safety which characterise the other models in the series.

For unbeatable performance, faster loading, greater compression and super-efficient turnround in municipal refuse collection the twin-compression Musketeer has no equal.

Horizontal discharge model

The Binmaster 18/45 with horizontal discharge, for use at disposal areas where hard standing is not available for tipping or where height restrictions have to be observed. Loaded refuse is compressed against a discharge pressure plate which moves forward progressively as loading continues to ensure consistent compaction throughout the load. To withstand the high pressures involved, the vehicle is fitted with an all-steel body which is zinc-coated to resist corrosion.

Refuse is discharged rapidly and cleanly by forcing the load through the rear opening by means of the hydraulically actuated pressure plate, after the loading hopper has been lifted clear by twin hydraulic rams.



VC8 Model

DIMENSIONS BINMASTER MODEL

Body capacity*	18 cu. yd. (13·762 cu. m.)	**F**	124 in. (3·150 m.)	**L**	—
A	141 in. (3·581 m.)	**G**	2⅜ in. (60·3 mm.)	**M**	50¾ in. (1·289 m.)
B	300 in. (7·645 m.)	**H**	99 7/16 in. (2·516 m.)	**N**	351 in. (8·915 m.)
C	78 in. (1·981 m.)	**I**	159 in. (4·039 m.)	**Overall width**	94 in. (2·388 m.)
D	68⅜ in. (1·74 m.)	**J**	—	**Width inside body**	85 in. (2·159 m.)
E (unladen)	52 in. (1·321 m.)	**K**	9 11/16 in. (246 mm.)	**Turning circle**	54 ft. (16·46 m.)

* Figures given refer to average uncompressed refuse.

SPECIFICATIONS

Model application (Municipal)		VC7	VC8	VC8	CE8	CE16
Body type		Musketeer 12/35 – 115 in. Musketeer 12/35 – 141 in. Musketeer 15/45 – 141 in.	18/45 Binmaster – 141 in. (3·581 m.) w.b. (1) Musketeer 16/50 – 141 in. (3·581 m.) w.b. Musketeer 19/60 – 162 in. (4·115 m.) w.b.	Musketeer T.C.	Musketeer 16/50 – 141 in. (3·581 m.) w.b. Musketeer 19/60 – 162 in. (4·115 m.) w.b.)	Musketeer 22/70
Plated Gross Vehicle Weight		12 tons (12192 kg.)	13 tons (13208 kg.)	13 tons (13208 kg.)	13 tons (13208 kg.)	16 tons (16256 kg.)
Wheelbase and cab application		115 in. (2·921 m.) Single cab (12/35 only) 141 in. (3·581 m.) – double cab	141 in. (3·581 m.) – double cab (2) 162 in. (4·115 m.) – double cab	141 in. (3·581 m.) – double cab (2) 162 in. (4·115 m.) – double cab	141 in. (3·581 m.) – double cab 162 in. (4·115 m.) – double cab	176 in. (4·460 m.) Coach built double cab
Axle, front	Capacity	8,400 lb. (3810 kg.)	9,520 lb. (4318 kg.)	9,520 lb. (4318 kg.)	9,520 lb. (4318 kg.)	14,400 lb. (6532 kg.)
Axle, rear	Type	Single-speed, spiral bevel	Single-speed, spiral bevel	Single-speed, spiral bevel	Single-speed, spiral bevel	Single-speed, spiral bevel
	Capacity	19,100 lb. (8664 kg.)	20,160 lb. (9144 kg.)	22,400 lb. (10160 kg.)	20,160 lb. (9144 kg.)	22,400 lb. (10160 kg.)
	Ratios	Refer to Rear Axle Availability and Ratios data				
Brakes	Type Service brake	Two-leading-shoe Hydraulic divided line system with air assistance	Two-leading-shoe Hydraulic divided line system with air assistance	Fixed cam sliding-shoe Full air, dual circuit system	Two-leading-shoe Hydraulic divided line with air assistance	Fixed cam, sliding-shoe Full air, dual circuit system
	Total lining area	578 sq. in. (3698 sq. cm.)	627 sq. in. (4040 sq. cm.)	844 sq. in. (5445 sq. cm.)	627 sq. in. (4,040 sq. cm.)	844 sq. in. (5,445 sq. cm.)
	Size, front	15¼ in. × 4¼ in. (387 mm. × 108 mm.)	15½ in. × 5 in. (394 mm. × 127 mm.)	15½ in. × 6 in. (394 mm. × 152 mm.)	15½ in. × 5 in. (394 mm. × 127 mm.)	15½ in. × 6 in. (394 mm. × 152 mm.)
	rear	15½ in. × 6 in. (394 mm. × 152·4 mm.)	15½ in. × 6 in. (394 mm. × 152·4 mm.)	15½ in. × 8 in. (394 mm. × 203 mm.)	15½ in. × 6 in. (394 mm. × 152·4 mm.)	15½ in. × 8 in. (394 mm. × 203 mm.)
	Park brake	Mechanical to rear wheels	Power assisted to rear wheels	Air actuated positive mechanical lock to rear wheels	Power assisted to rear wheels	Air actuated positive mechanical lock to rear wheels
Clutch	Type and actuation	Single dry-plate, mechanical	Single dry-plate, hydraulic	Single dry-plate, hydraulic	Single dry-plate, hydraulic	Single dry-plate, hydraulic
	Diameter	13 in. (330 mm.)	13 in. (330 mm.)	13 in. (330 mm.)	14 in. (355 mm.)	14 in. (355 mm.)
Electrical	Voltage	12 volt, neg. earth return	12 volt, neg. earth return	12 volt, neg. earth return	12 volt, neg. earth return	12 volt, neg earth return
	Battery capacity	115 amp./hr. @ 10 hr. rate	115 amp./hr. @ 10 hr. rate	115 amp./hr. @ 10 hr. rate	115 amp./hr. @ 10 hr. rate	115 amp./hr. @ 10 hr. rate
	Starter motor	Co-axial	Co-axial	Co-axial	Co-axial	Co-axial
	Alternator – max. output	35 amp.	35 amp.	35 amp.	35 amp.	35 amp.
Engine		Refer to Engine Availability data.				
Frame	Material	Carbon manganese steel	Carbon manganese steel	Carbon manganese steel	Carbon manganese steel	Carbon managnese steel
	Construction	Bolted and riveted ladder type	Bolted and riveted ladder type	Bolted and riveted ladder type	Bolted and riveted ladder type	Bolted and riveted ladder type with internal flitch
	Dimensions	$9\frac{11}{16}$ in. × ¼ in. × $2\frac{15}{16}$ in. (246 × 6·35 × 74·6 mm.)	9¾ in. × $\frac{9}{32}$ in. × 2⅝ in. top, $3\frac{1}{16}$ in. bottom (248 × 7·1 × 66·7 mm, top, 77·8 mm. bottom)	9¾ in. × $\frac{9}{32}$ in. × 2⅝ in. top, $3\frac{1}{16}$ in. bottom (248 × 7·1 × 66·7 mm. top, 77·8 mm. bottom)	9¾ in. × $\frac{9}{32}$ in. × 2⅝ in. top, $3\frac{1}{16}$ in. bottom (248 × 7·1 × 66·7 mm. top, 77·8 mm. bottom)	9¾ in. × $\frac{9}{32}$ in. × 2⅝ in. top, $3\frac{1}{16}$ in. bottom (248 × 7·1 × 66·7 mm. top, 77·8 mm. bottom) (excl. flitch)
	No. of cross-members	Five	Five – 141 in. (3·581 m.) w.b. Six – 162 in. (4·115 m.) w.b.	Five – 141 in. (3·581 m.) w.b. Six – 162 in. (4·115 m.) w.b.	Five – 141 in. (3·581 m.) w.b. Six – 162 in. (4·115 m.) w.b.	Six
Fuel tank	Capacity	16 galls. (72·7 litres)	16 galls. (72·7 litres)	16 galls. (72·7 litres)	16 galls. (72·7 litres)	16 galls. (72·7 litres)
Gearbox	Type	Four-speed, synchromesh Five-speed, synchromesh (Musketeer 12/35)	Five-speed, synchromesh	Five-speed, synchromesh	Five-speed, synchromesh	Five-speed, synchromesh
	Ratios	Gearbox Availability and Ratios data.				
	Power take-off opening	Two S.M.M.T./S.A.E. type six-bolt fixings	Two S.M.M.T./S.A.E. type six-bolt fixings	Two layshaft type six-bolt fixings	Two S.M.M.T./S.A.E. type six-bolt fixings	Two S.M.M.T./S.A.E. type six-bolt fixings
Springs, front	Type	Semi-elliptic	Semi-elliptic	Semi-elliptic	Semi-elliptic	Semi-elliptic
	Capacity at ground	4,200 lb. (1905 kg.) each	4,480 lb. (2032 kg.) each	4,480 lb. (2032 kg.) each	4,480 lb. (2032 kg.) each	6,720 lb. (3048 kg.) each
	Dimensions	57½ in. × 3 in. (1·459 m. × 76·2 mm.)	57½ in. × 3 in. (1·459 m. × 76·2 mm.)	57½ in. × 3 in. (1·459 m. × 76·2 mm.)	57½ in. × 3 in. (1·459 m. × 76·2 mm.)	57½ in. × 3 in. (1·459 m. × 76·2 mm.)
	No. of leaves	Nine	Nine	Nine	Nine	Eleven
	Total thickness	3⅝ in. (92 mm.) (excluding packing)	$3\frac{21}{32}$ in. (92·8 mm.) (excluding packing)	$3\frac{21}{32}$ in. (92·8 mm.) (excluding packing)	$3\frac{21}{32}$ in. (92·8 mm.) (excluding packing)	$4\frac{13}{16}$ in. (122 mm.) (excluding packing)
Springs, rear	Type	Semi-elliptic	Semi-elliptic	Semi-elliptic	Semi-elliptic	Semi-elliptic
	Capacity at ground	9,553 lb. (4333 kg.) each	10,080 lb. (4572 kg.) each	10,080 lb. (4572 kg.) each	10,080 lb. (4572 kg.) each	11,200 lb. (5080 kg.) each
	Dimensions–main	60 in.* × 2½ in. (1·525 m. × 63·5 mm.)	54 in. × 3 in. (1·372 m. × 76·2 mm.)	54 in. × 3 in. (1·372 m. × 76·2 mm.)	54 in. × 3 in. (1·372 m. × 76·2 mm.)	54 in. × 3½ in. (1·372 m. × 88·9 mm.)
	helper	36 in. × 2½ in. (914 mm. × 63·5 mm.)	36 in. × 3 in. (914 mm. × 76·2 mm.)	36 in. × 3 in. (914 mm. × 76·2 mm.)	36 in. × 3 in. (914 mm. × 76·2 mm.)	36 in. × 3½ in. (914 mm. × 88·9 mm.)
	No. of leaves–main	Ten	Thirteen	Thirteen	Thirteen	Eleven
	helper	Five	Six	Six	Six	Seven
	Total thickness	7½ in. (190·5 mm.) (excluding packing)	$6\frac{1}{16}$ in. (154 mm.) (excluding packing)	$6\frac{1}{16}$ in. (154 mm.) (excluding packing)	$6\frac{1}{16}$ in. (154 mm.) (excluding packing)	$5\frac{3}{16}$ in. (131·7 mm.) (excluding packing)
Steering	Type and ratio	Cam and peg, 24·5 : 1	Cam and peg, 24·5 : 1	Cam and peg, 24·5 : 1	Cam and peg, 24·5 : 1	Power assisted cam and peg, 24·5 : 1
Wheels	Size and type	B6·0 × 20, three-piece	B7·0 × 20, three-piece	B7·0 × 20, three-piece	B7·0 × 20, three-piece	B7·5 × 20, three-piece
	Studs	Eight, ⅞ in. B.S.F.	Ten, ⅞ in. B.S.F.	Ten, ⅞ in. B.S.F.	Ten, ⅞ in. B.S.F.	Ten, ⅞ in. B.S.F.
Tyres	Size	8·25–20, 14PR, twin rear and spare	9·00–20, 14PR, twin rear and spare	9·00–20, 14PR, twin rear and spare	9·00–20, 14PF, twin rear and spare	10·00–20, 16PR, twin rear and spare

(1) Single cab on 18/45 Binmaster.

* Musketeer 12/35 fitted with special 45 in. rear springs – no helper springs.

REAR AXLE AVAILABILITY AND RATIOS

Body type	Model application	Engine type	Wheel equipment	Single-speed axles		Two-speed axles		
				Ratio	Capacity	Ratios	Type	Capacity
Musketeer 12/35 Musketeer 15/45	VC7	6.354 diesel	20 in. (508 mm.)	5·857 : 1	19,100 lb. (8664 kg.)	5·14/7·15 : 1	16200	20,160 lb. (9144 kg.)
Binmaster 18/45 (4) Musketeer 16/50 Musketeer 19/60	VC8	6.354 diesel	20 in. (508 mm.)	5·857 : 1	20,160 lb. (9144 kg.)	5·14/7·15 : 1	16200	20,160 lb. (9144 kg.)
						5·14/7·02 : 1	18200	24,000 lb. (10886 kg.)
Musketeer TC				6·50 : 1				
Musketeer 16/50 Musketeer 19/60	CE8	TS3 diesel	20 in. (508 mm.)	5·125 : 1 (std.) 4·667 : 1 (opt.)	20,160 lb. (9144 kg.)	5·14/7·15 : 1	16200	20,160 lb. (9144 kg.)
						5·14/7·02 : 1	18200	22,400 lb. (10160 kg.)
Musketeer 22/70	CE16	TS3 diesel	20 in. (508 mm.)	6·5 : 1	24,000 lb. (10886 kg.)	5·57/7·6 : 1	18200	22,400 lb. (10160 kg.)

ENGINE AVAILABILITY

Body type	Model application	Availability	Engine details			
			Type	Displacement	B.H.P. (2)	Max. torque
Musketeer 12/35 Musketeer 15/45	VC7	Standard	D6.354 six-cylinder in-line diesel	354 cu. in. (5·8 litres)	98 @ 2,800 r.p.m.	254 lb. ft. (35·12 kg. m.) @ 1,250 r.p.m.
Binmaster 18/45 (3) (4) Musketeer 16/50 Musketeer 19/60 Musketeer TC	VC8	Standard	6.354·2 six-cylinder in-line diesel	354 cu. in. (5·8 litres)	113 @ 2,800 r.p.m.	260 lb. ft. (36·0 kg. m.) @ 1,350 r.p.m.
Musketeer TC Musketeer 16/50 Musketeer 19/60	CE8	Standard	TS3 three-cylinder opposed piston diesel	215 cu. in. (3·52 litres)	121·5 @ 2,400 r.p.m.	318 lb. ft. (46·25 kg. m.) @ 1,300 r.p.m.
Musketeer 22/70	CE16	Standard			120 @ 2,400 r.p.m.	

(2) Net installed output to BSAU 141a : 1971.

GEARBOX AVAILABILITY AND RATIOS

Body type	Model application	Gearbox type and No. of speeds (3)	Availability	First speed	Second speed	Third speed	Fourth speed	Fifth speed	Reverse
Musketeer 12/35 Musketeer 15/45	VC7	Synchromesh five-speed	Standard	7·497 : 1	3·983 : 1	2·555 : 1	1·59 : 1	Direct	7·573 : 1
Binmaster 18/45	Binmaster VC8 (4)		Standard						
Musketeer 16/50	VC8, CE8		Standard						
Musketeer 19/60 Musketeer TC	VC8, CE8		Standard						
Musketeer 22/70	CE16		Standard						

(3) On all gearboxes first gear application is by sliding mesh.

(4) When two-speed axle Type 18200 is specified full air brakes are mandatory.

OPTIONAL EXTRA EQUIPMENT – MUSKETEER MODELS

Equipment	Musketeer 12/35 and 15/45	Musketeer 16/50		Musketeer 19/60 Musketeer 19/60 T-C		Musketeer 22/70
	VC7	VC8	CE8	VC8	CE8	CE16
Two-speed axle, Type 16200 (5)	X	X	X	X	X	Not available
Two-speed axle, Type 18200 (5)	Not avail.	X	X	X	X	X
Power assisted steering	X	X	X	X	X	Std.
Full air brakes (6)	Not avail.	X	X	X	X	Std.
Additional seat for double cab	X	X	Std.	X	Std.	Std.
Additional door for double cab	X	X	X	X	X	Not available
Upturned exhaust	Std.	Std.	Std.	Std.	Std.	Std.
Cab roof salvage rack and ladder	X	X	X	X	X	Not available
Rubber wear wings	X	X	X	X	X	X
Rear loading steps and grab rail	X	X	X	X	X	X
Hand washing equipment (double cab)	X	X	X	X	X	X
Bin lifting equipment (7)	Not avail.	X	X	X	X	X
Towing attachment	X	X	X	X	X	X
Spare wheel carrier	X	X	X	X	X	X
Emergency engine stop	Std.	Std.	Std.	Std.	Std.	Std.

(5) For capacity and ratios refer to Rear Axle Availability and Ratios data.
(6) Standard on TC model.
(7) Not available on TC model.

OPTIONAL EXTRA EQUIPMENT – BINMASTER MODEL

Equipment	18/45 Binmaster
	VC8
Five-speed synchromesh gearbox	Standard
Two-speed axle, Type 16200 (5)	X
Two-speed axle, Type 18200 (5)	X
Power assisted steering	X
Full air brakes	X
Additional seat for single or double cab	X
Cab roof salvage rack and ladder	X
Rubber rear wings	X
Bin lifting equipment	Standard
Upturned exhaust	Standard
Towing attachment	X
Spare wheel carrier on body	X

(5) For capacity and ratios refer to Rear Axle Availability and Ratios data.

WHEEL/TYRE EQUIPMENT AND WEIGHT DATA

Body type	Cab type	W/base		Wheel and tyre equipment			Plated front axle weight		Plated rear axle weight		Plated G.V.W. (Municipal)		Kerb weight (approx.) (9)	
		in.	m.	Tyre equipment(8)	Availability	Wheel data	tons	kg.	tons	kg.	tons	kg.	cwt.	kg.
VC7 Models														
Musketeer 12/35	Single	115	2·921	8·25–20, 14PR	Standard	B6·0 × 20, 3-piece, 8-stud	3·75	3810	8·5	8686	12·0	12192	111	5638
Musketeer 12/35	Double	141	3·581	8·25–20, 14PR	Standard	B6·0 × 20, 3-piece, 8-stud	3·75	3810	8·5	8686	12·0	12880	115	5842
Musketeer 15/45	Double	141	3·581	8·25–20, 14PR	Standard	B6·0 × 20, 3-piece, 8-stud	3·75	3810	8·5	8686	12·0	12880	117	5944
VC8 Models														
Binmaster 18/45	Single	141	3·581	9·00–20, 14PR	Standard	B7·0 × 20, 3-piece, 10-stud	4·25	4318	9·0	9144	13·0	13208	154	7824
VC8 Models														
Musketeer 16/50	Double	141	3·581	9·00–20, 14PR	Standard	B7·0 × 20, 3-piece, 10-stud	4·25	4318	9·0	9144	13·0	13208	123	6249
Musketeer 19/60 Musketeer TC	Double	162	4·115	9·00–20, 14PR	Standard	B7·0 × 20, 3-piece, 10-stud	4·25 6·0	4318 6097	9·0 10·0	9144 10160	13·0 13·5	13208 13716	125 146	6350 7417
CE8 Models														
Musketeer 16/50	Double	141	3·581	9·00–20, 14PR	Standard	B7·0 × 20, 3-piece, 10-stud	4·25	4318	9·0	9144	13·0	13208	125	6350
Musketeer 19/60 Musketeer TC	Double	162	4·115	9·00–20, 14PR	Standard	B7·0 × 20, 3-piece, 10-stud	4·25	4318	9·0	9144	13·0	13208	127	6451
CE16 Model														
Musketeer 22/70	Double	176	4·468	10·00–20, 16PR	Standard	B7·5 × 20, 3-piece, 10-stud	6·0	6097	10·0	10160	16·0	16256	156	7915
Musketeer 22/70	Double	176	4·468	11·00–20, 16PR	Optional extra	B7·5 × 20, 3-piece, 10-stud	6·0	6097	10·0	10160	16·0	16256	156¾	8423

(8) Equivalent radial ply tyres available. (9) Kerb Weights include fuel, water, spare wheel.

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