



THE AUTOMOBILE ASSOCIATION
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10 OCT 1967
TECHNICAL

Pakamatic

NEW SERIES

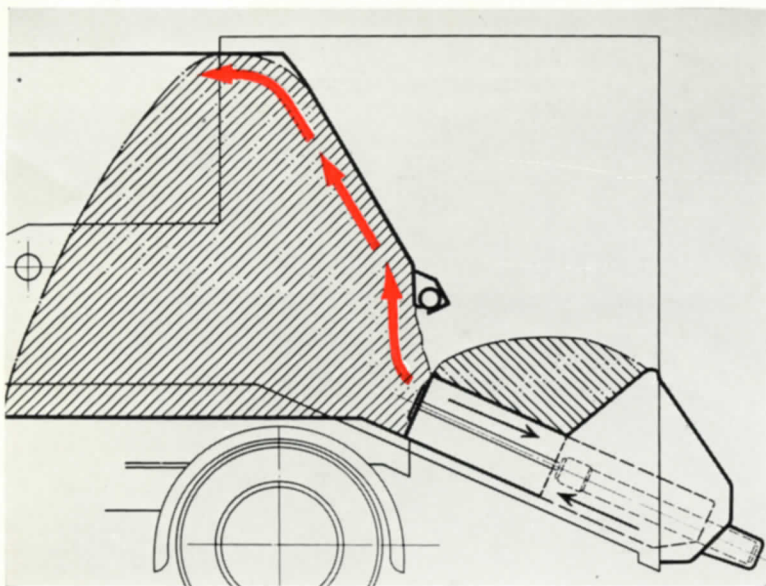


COMPRESSION

Refuse Collector

CAPACITY 35 CU. YARDS

MAXIMUM COMPRESSION by Direct Thrust



Refuse is continuously fed into the body in small quantities under very high pressure from the reciprocating packer unit which at maximum thrust of 30,000 lbs. exerts a pressure of 40 lbs. per square inch over the loading face. This can only be achieved by the full force of the compressing ram being applied in a forward direction, as distinct from a swinging-plate motion.

The RED Arrows indicate the direction in which refuse is loaded into the body.

SIMPLICITY A Single Moving Component

Only the outer surfaces of the packer unit are in contact with the refuse, ALL hydraulic gear being totally enclosed and foolproof in operation. The loading cycle continues without interruption, the packer unit being mechanically coupled to the control valve, and is entirely free of complicated synchronising or switching devices.



CAPACITY 35 CUBIC YARDS

This volume of uncompressed refuse is loaded into an air space of 14 cubic yards by a progressive increase in the pressure applied which ensures that maximum compaction is obtained and the body completely filled. This is based on a refuse density of approx. 2½ cwts. per cu. yard and with lighter materials the volume loaded is proportionately increased due to greater compression.

Reproduced here is an unretouched photograph taken with the loading hopper removed during actual service trials. This very clearly shows the extent to which the body is filled and the high degree of compression of the refuse.

Modern Conditions Demand Revised Refuse Collection Techniques
FOR HIGHEST EFFICIENCY AND LOWEST COSTS

THE  **Pakamatic** has no Equal

EASY METHOD OF LOADING

The full width loading hopper permits at least two men to speedily discharge their bins at the same time without the strain of trimming, by virtue of the clear space always available. A rave height of 4 ft. 6 in. further reduces manual effort and operator fatigue.



HYGIENE The large-capacity hopper is well enclosed, thus reducing dust emission to a minimum, but for those Authorities that demand an even higher standard, the SD patented compressed-air shutters can be fitted which completely seal the rear of the hopper.

CLEAN AND RAPID DISCHARGE

The load is discharged by rear tipping, the hopper being raised by means of side arms, rigidly anchored to extremely robust outriggers built on to the chassis main frames and by this exclusive method not only is the rear of the body left completely unobstructed for the refuse to fall clear, but also the arms act as very powerful stabilisers to steady the body at the extreme width. This is a most important feature when operating on open tipping sites. The 50° angle of tip ensures the free movement of the highly compacted load and the entire process of discharging can be completed in a matter of minutes.



The excellent visibility of driver when reversing is an example of the attention which has been given to every detail of design in relation to the specific requirements of Refuse Collection.

“Specially Designed for Municipal Service”

SIMPLY DEFINED

FEATURE REQUIRED TO MEET CONDITIONS OF SERVICE

Powerful, flexible and economical power unit.

Robust clutch for constant stop-and-start work.

Heavy-duty gear box and easy gear change to reduce driver fatigue. Close ratio gears to meet all road and tipping site requirements.

Driving axle of high quality and ample reserve with specially selected overall ratio.

Powerful brakes for instant stopping power.

Chassis frames constructed and braced with cross-members to withstand the highest stresses when traversing uneven ground.

Smallest possible turning circle for operating in congested streets, narrow roads and cul-de-sacs.

Complete safety when tipping to discharge load. High tipping angle.

Large diameter wheels and tyre equipment of adequate capacity.

Well-styled driver's cab with maximum visibility and comfortable accommodation for driver and full crew. Four doors for easy entry and exit. Full complement of electrical equipment and instruments. Radiator blind and thermometer.

Built-in reliability for round-the-clock service, long life and lowest operating costs.

PROVISION MADE IN SD PAKAMATIC WITH “TZ” TYPE CHASSIS

Perkins Six-354 Diesel Engine. Fitted with Cromard cylinder liners. Develops 106 b.h.p. at 2,400 r.p.m.

14 in. dia. Borg & Beck Clutch with large frictional area. Ball bearing release.

Five-speed unit with constant mesh on all gears except first. Direct mounted gear change lever.

Heavy construction spiral bevel type. Capacity 7.75 tons. Ratio 6.166 to 1.

Hydraulic actuation assisted by air-pressure servo. Lining area 550 sq. in.

Manganese steel frame pressings $8\frac{1}{16}$ in. \times 3 in. \times $\frac{1}{4}$ in. section, reinforced. All-bolted assembly of cross-members of high torsional value.

Exceptionally wide angle steering lock. Turning radius 22 ft. 9 in. to outer tyre. Swept circle of complete vehicle only 49 ft.

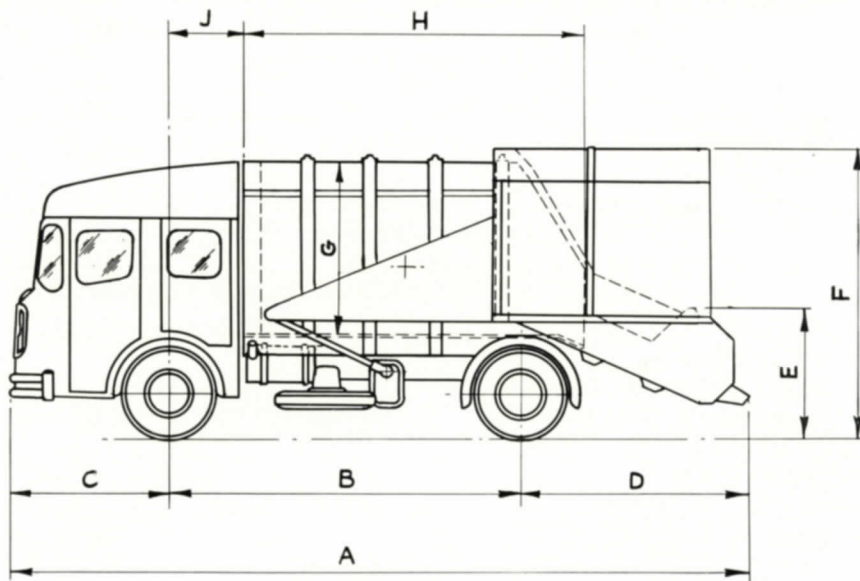
Heavy-duty rear trunnion brackets and outriggers to provide three-point stability with front tipping ram. Angle of tip 50° .

Tyre size 8.25 \times 20 \times 12 ply giving wide bearing surface for tip work.



Carefully selected and well-proven components throughout backed by an unrivalled Guarantee and After-Sales service.

DATA AND DIMENSIONS

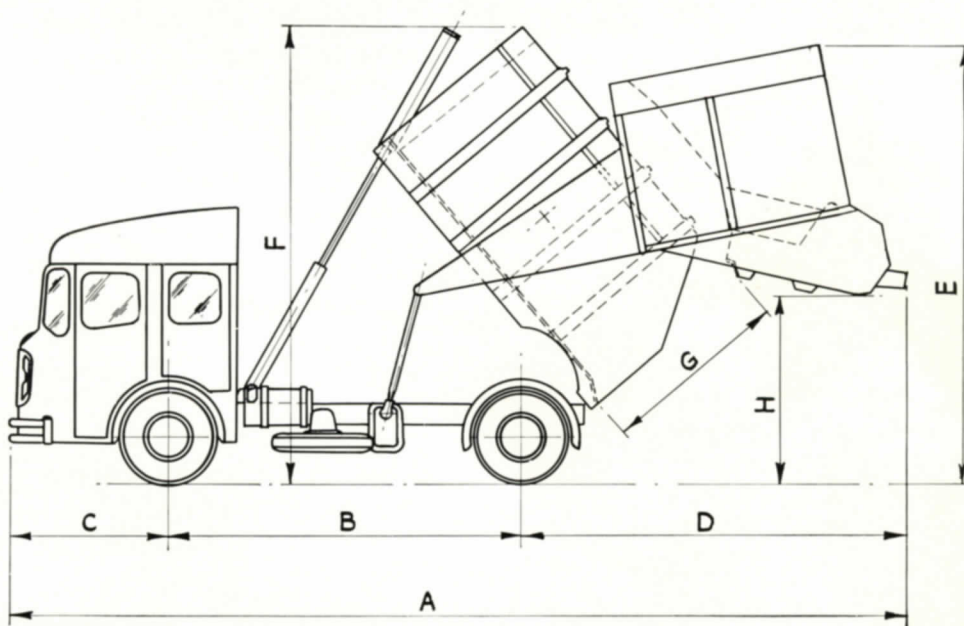


Body inside width,
6 ft. 4 in.

Body air space,
14 cubic yards.

Capacity—35 cubic
yards of refuse with
a density of approxi-
mately 2.5 cwts. per
cubic yard.

A	B	C	D	E	F	G	H	J
Overall Length	Wheel Base	Front Overhang	Rear Overhang	Hopper Load Rail	Overall Height	Body Inside Height	Overall Inside Body	Body Front to Front Axle
24' 6 $\frac{1}{8}$ "	11' 9"	5' 3 $\frac{1}{8}$ "	7' 6"	4' 4 $\frac{1}{2}$ "	9' 5 $\frac{1}{2}$ "	5' 9"	11' 4 $\frac{1}{8}$ "	2' 5"



Vehicle Overall Width	A Overall Length	B Wheel Base	C Front Overhang	D Rear Overhang	E Hopper Height	F Body Height	G Discharge Aperture	H Hopper Clearance
7' 6"	29' 7 $\frac{1}{8}$ "	11' 9"	5' 3 $\frac{1}{8}$ "	12' 7 $\frac{1}{2}$ "	13' 1 $\frac{1}{2}$ "	15' 2 $\frac{1}{2}$ "	6' 2"	5' 8 $\frac{1}{2}$ "

Turning circle to outer tyre, 45 ft. 6 ins. Turning circle (complete vehicle), 49 ft.

Unladen weight: 6 tons 10 cwts. 0 qrs.

SPECIFICATION

(subject to alteration without notice)

SD PAKAMATIC COMPRESSION REFUSE COLLECTOR EMBODYING "TZ" TYPE CHASSIS AND CAB

ENGINE: PERKINS SIX 354 DIESEL 6-cylinder, 4-stroke, direct injection. Bore 3.875 in. Stroke 5 in. Cubic capacity 354 cu. in. (5.8 litres). Develops 106 b.h.p. at 2,400 governed speed. **CYLINDER BLOCK AND CRANKCASE** integrally cast in high-duty iron, the sides of the cylinder block extending below the crankshaft centre line to form a stiffening skirt. Dry type, renewable, pressed in 'Cromard' liners are fitted. **CYLINDER HEAD** of high-duty cast iron is secured to the cylinder block by high tensile steel studs and nuts, the joint being made by a copper, steel and asbestos gasket. The renewable valve guides are of cast iron. **CRANKSHAFT** of chrome-molybdenum steel forging induction hardened and carried in seven main bearings. A crankshaft vibration damper is fitted on the front face of the crankshaft pulley. **PISTONS** are of high silicon aluminium alloy with a toroidal cavity in the crown, each is fitted with three compression rings (top ring chromium-plated) and two oil-control scraper rings. **LUBRICATION:** Oil is supplied under pressure by an eccentric rotor type pump, secured to the cylinder block and driven through a serrated extension of the fuel pump worm gear wheel. The oil is delivered through a full-flow filter, incorporating a by-pass delivery relief valve. **INJECTION EQUIPMENT:** A fuel injection pump of the distributor type is driven by worm and wormwheel from the auxiliary shaft, which is extended to drive the air compressor. The fuel pump incorporates an automatic advance and retard in addition to an hydraulic governor. A diaphragm-type fuel lift pump, equipped for hand priming supplies fuel to the injection pump at a constant pressure. A replaceable paper element fuel filter with large filtering area is mounted on the left-hand side of the cylinder head for accessibility. **AIR CLEANER:** An efficient oil-bath air cleaner is fitted on the induction manifold. **COLD STARTING:** A 'Thermostat' heater is fitted to the induction for easy starting. **COOLING SYSTEM:** A centrifugal water pump at front of engine is driven by vee belt which also drives a 4-bladed fan of 18 in. dia. and **DYNAMO.**

GEAR BOX Assembled with engine and clutch in complete unit. Five forward speeds and one reverse. 1st- and 2nd-speed gears are wide-faced straight-toothed. The 3rd-, 4th- and 5th-speed gears have helical gears for quiet running. All gears are of case-hardened nickel-chrome steel and all forward gears except first, are in constant mesh.

RATIOS:	
1st gear	7 to 1
2nd gear	3.91 to 1
3rd gear	2.571 to 1
4th gear	1.575 to 1
5th gear	Direct
Reverse	7.23 to 1

The gear-change lever is turret mounted on the gear box. A power take-off for the hydraulic pump is driven from the reverse shaft.

CLUTCH 14-in. dia. dry-plate Borg & Beck with low unit pressure on linings, ball-bearing release, hydraulic operation and external lubrication.

RADIATOR Flat-tube type with integral tanks and concealed filter. Pressurised water system. A thermometer is provided in the instrument panel to enable driver to control water temperature.

TRANSMISSION Through balanced tubular propeller shafts supported by spherical centre bearing mounted on rubber bushes. Hardy Spicer heavy-duty needle-roller bearings are incorporated throughout and a sliding shaft in the rear section.

REAR AXLE Static load capacity at ground of 7.75 tons. Spiral bevel wheel and pinion of heavy construction with fully floating axle shafts 1.875 dia. Ratio 6:166 to 1.

FRONT AXLE Axle bed is 'I' section alloy-steel stamping 3½ in. deep by 2½ in. wide carrying stub axles 2½ dia. of highest grade steel stampings with hardened steel swivel pins.

STEERING Burman recirculating ball type having a 23 to 1 ratio in straight ahead position. Spring type 21 in. dia. steering wheel. Steering rod ball ends have case-hardened ball pins and pads with automatic adjustment. Ball pins cannot become detached from sockets.

BRAKES Air pressure hydraulic actuation. Girling wedge type on all wheels. Front brake shoes 15½ in. dia. x 4½ in. wide. Rear brake shoes 15½ in. dia. x 5 in. wide. Total lining area 550 sq. in. Handbrake lever operates rear wheel brakes through mechanical linkage. All brakes are independently adjustable, the system provides maximum braking efficiency with minimum pedal pressure. Air pressure obtained by a single cylinder compressor fitted to engine.

CHASSIS FRAME AND ENGINE MOUNTING Manganese steel frame pressings 8½ in. deep x ½ in. thick x 3 in. flanges. Frame and all cross-members of all bolted construction. Frame cross-members are top-hat or tubular section having a high torsional value. Gear box is removable without disturbing the gear box rear cross-member. Front tubular cross-member incorporates engine front mounting brackets which accommodate rubber sandwich mountings. Rear engine mountings incorporate conical rubber torque and vibration dampers in brackets attached directly to main frame.

ROAD SPRINGS Semi-elliptic front and rear. Front and rear springs 48 in. centres x 3 in. wide. All spring leaves are shot peened on tension side. Spring deflection in conjunction with rubber spring aids ensure a comfortable ride under all loading conditions and reduce roll to an absolute minimum. Springs mounted on hardened pins fitted with lubrication nipples.

FUEL TANK 16 Imperial gallons capacity attached to chassis frame on the nearside.

WHEELS AND TYRES Pressed steel disc three-piece type wheels. Rim size 6.0 x 20. Rim offset 5.1 in. 8 wheel studs ½ in. dia. Tyres 8.25 x 20 x 12 ply. Spare wheel carrier fitted on the offside of chassis.

ELECTRICAL SYSTEM 12-volt positive earth voltage control system. Axial type starter motor. Dynamo 25 amp. max. continuous output with low cut-in speed. Two 6-volt batteries 120 amp./hr. capacity, the batteries being located on the offside of the chassis and fitted with a hinged guard cover. Two flat-beam dipping headlamps built into panel. Two side lamps and flashing direction indicators front and rear, twin stop/tail lamps and reflectors. Electric horn and twin windscreen wipers, the nearside being located at the lower edge of the windscreen.

INSTRUMENT PANEL Built into fascia board and removable for adjustment and maintenance. Speedometer with mileage recorder, oil-pressure gauge, air-pressure gauge, ammeter, water temperature gauge, switches for lights and starter. Horn, flashing indicator switch and dipper on separate arm secured to steering column.

DRIVER'S CAB Modern styling, achieved by a combination of fibre-glass and coachbuilt construction giving a minimum swept circle. Four wide doors with drop windows. Cab mounted on a steel and aluminium foundation with six-point flexible rubber mounting to the main chassis. The engine bonnet top is in fibre-glass secured to the floor by rubber fasteners, giving extremely good access to the engine. Low, extra wide steps coupled with position of doors and seats gives easy entry and the floor is of non-slip aluminium tread plate. The deep wrap-round windscreen with twin screen wipers provides exceptional visibility. The driver's seat is fully adjustable. Tool boxes are provided beneath front and rear loaders' seats. Ventilators are fitted in the bulkhead.

CAB HEATER Provision is made for the fitting of a cab heater and windscreen demister, which is available as a standard extra.

FRONT BUMPER A heavy-duty front bumper is securely bolted to the chassis and so arranged that it can be easily removed.

TOWING EYES Two brackets are provided on front of chassis, and bolted direct to and in line with chassis frame.

CHASSIS LUBRICATION By grouped nipple system and oil-gun nipples.

ACCESSORIES Spare wheel and tyre, number plates, full kit of tools, hydraulic jack, licence holder and tool box.

HYDRAULIC SYSTEM High-efficiency 9-cylinder swash-plate type pump of heavy duty construction, driven by universally jointed shaft from the gear box power take-off and engaged by control situated conveniently to the driver's seat, provides oil pressure supply for both body compressing mechanism and tipping gear. Selector valve controlled from the cab is mounted integrally with a 12 gal. capacity oil supply tank positioned accessibly between chassis frame members and the entire hydraulic circuit is constructed with a minimum of components and pipe work. Double-acting compressing ram is controlled automatically at the rate of six cycles per minute. Manual control at the hopper is provided for use if demanded by loading conditions. Large-capacity filters are fitted in the system with a magnetic rod in the supply tank to collect metallic foreign matter and protect pump and valves. Pressure gauge in cab. Triple expansion ram in pocket at front of body is employed for tipping to discharge.

Large-bore weldless steel tubing and heavy-duty flexible hoses are used throughout.

BODY AND LOADING HOPPER Body floor is of all-welded construction made from heavy-gauge rust-proof abrasion-resisting steel plate. Body superstructure is of fully heat-treated non-corrodible aluminium-alloy sheets stiffened by extruded top-hat section of heat-treated aluminium-alloy pressings. The complete body shell is of all-riveted construction, with all overlapping joints running longitudinally to provide a smooth interior.

Hopper side arms are of all-steel welded construction with outer panels of heat-treated aluminium-alloy. The loading enclosure is constructed of heat-treated aluminium-alloy, on an angle-iron framework. The hopper frame is of all-welded construction and all components which come into contact with the refuse are made from heavy-gauge abrasion-resisting rust-proof steel. The hopper rear panel is constructed of aluminium-alloy on a steel framework and is readily detachable as a complete unit for maintenance of compressing mechanism.

Twin folding rear steps of aluminium-alloy tread plate are provided.

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