DENNIS

PAXIT & PAXIT MAJOR

MARK IIIa

automatic
continuous loading
compression
refuse collection vehicles

Dennis Brothers Ltd., Guildford

Publication No. NS.1001.

The following amendments have been made to the specifications contained in this brochure:–

Page	Para.	
3		Textile tyres are now fitted throughout.
7	Cab	The high cab roof containing a 30 cu. ft. salvage well and, a heater and demister unit are now standard equipment.
9	Gearbox	5-speed overdrive gearbox is now standard equipment.
	Electrical	Alternator is now standard equipment.

Special Notes

Re. Optional Extras	Delete 4 and 8. Add spare wheel carrier.
Drawings in back	Reference to salvage well contained in roof of bodywork. This is now discontinued.

INTRODUCING

THE DENNIS PAXIT IIIA AND PAXIT MAJOR IIIA AUTOMATIC
CONTINUOUS-LOADING REFUSE COLLECTORS

In these days of increasing mechanisation, it is fitting to consider how engineering developments can help in public cleansing. The following pages will show how the work of refuse collection may be made less arduous, less unpleasant and yet more speedy, efficient and economical, by careful and far-seeing vehicle design.

Over 30 years' experience with compression vehicles has gone into these machines, which are built throughout for municipal work, and backed by the Dennis guarantee and service.

Economy is achieved by high payloads, low unladen weight, rapid loading, minimum of attention in service and ease of maintenance. Special care has been taken to ensure quiet operation.

Vehicles put into service now are likely to be operational for the next ten years or more. Whatever the future may hold in the way of hand-loading or mechanised loading, dustless bins or bulk containers, these vehicles are ready.

We take this opportunity of expressing our thanks to the many users of Paxit vehicles for their co-operation over the last 15 years; the benefits of their experience, operational data and ideas have been embodied in these latest additions to the Dennis range of specialised vehicles.

DENNIS

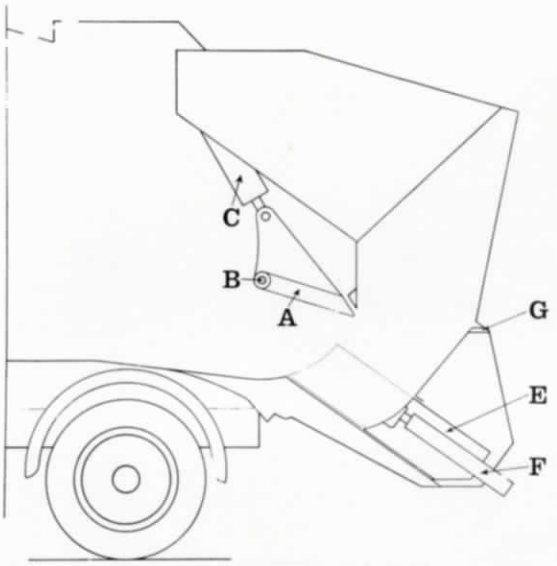
PAXIT IIIA

Wheelbase	12 ft. 4 in. (3759 mm.)
Capacity	25/40 cubic yards (19/30 cubic metres)
Compression thrust	62,000 lbs. (28,000 kilograms)
Turning circle	47 feet (14.3 metres)
Standard tyre equipment	7.50 x 20 12 ply steel cord
Gross vehicle running weight	25,000 lbs. (11.340 kilograms)
Optional tyre equipment	8.25 x 20 14 ply steel cord
Gross vehicle running weight	29,000 lbs (13,154 kilograms)

PAXIT MAJOR IIIA

Wheelbase	14 ft. 5 in. (4394 mm.)
Capacity	35/50 cubic yards (27/38 cubic metres)
Compression thrust	70,000 lbs. (31,000 kilograms)
Turning circle	55 feet (16.7 metres)
Standard tyre equipment	8.25 x 20 14 ply steel cord
Gross vehicle running weight	29,000 lbs. (13,154 kilograms)
Optional tyre equipment	9.00 x 20 steel cord
Gross vehicle running weight	31,360 lbs. (14,225 kilograms)

Only by high compression is it possible to achieve a consistently satisfactory payload with domestic refuse, the density of which is tending steadily to decrease; by the use of rustless aluminium alloys in body construction a high payload/unladen weight ratio is assured.
The two-stage compression system ensures rapid and positive clearance of refuse from the hopper, avoids any delay in discharging bins, and breaks down bulky items before compressing them into the body.



METHOD OF CONTINUOUS COMPRESSION LOADING

There are two moving parts:– Swivel compression plate A, secured at pivot B and actuated by double acting hydraulic ram C. Reciprocating inverted drawer E actuated by double acting hydraulic ram F.

1. Refuse emptied from bins over rave rail G, falls to hopper floor.

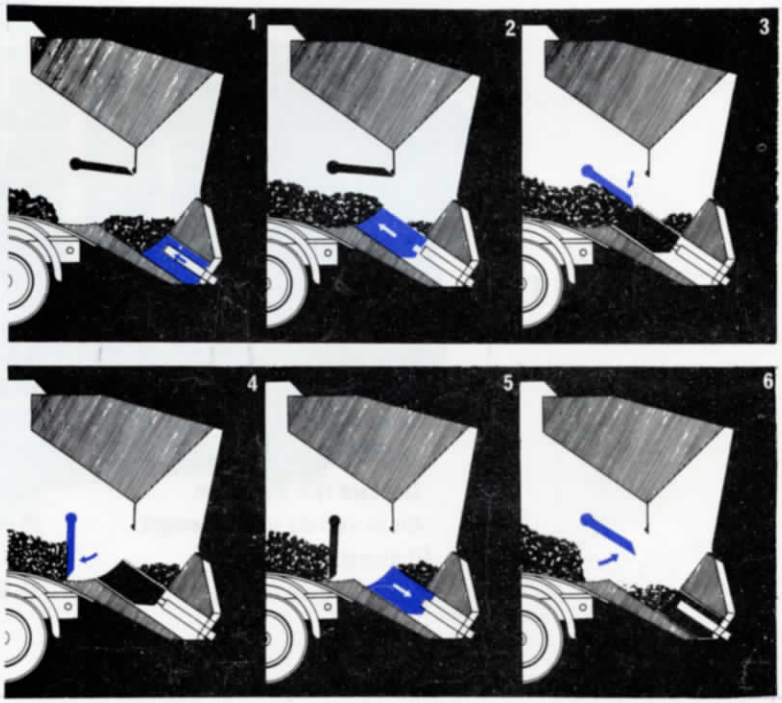
2. Reciprocating inverted drawer E, pushes refuse forward in hopper.

3. Swivel compression plate A, removes refuse from curved face of drawer.

4. Continuing forward movement compresses refuse into body.

5. Drawer E then retracts and refuse, which, in the meantime was emptied on to the top of the drawer, falls in front of the curved face.

6. The swivel compression plate also then retracts and another cycle is started as in diagram 1.



This sequence is maintained continuously throughout the loading period at four strokes per minute with the engine at idling speed. The slow movement of parts and steady engine speed ensures minimum noise during the loading operations, and minimum wear and tear. Refuse may be put into the rear hopper at any stage during the sequence. Should some incompressible object be so large or so positioned that the compression plate cannot complete its movement, a trip operates, the reciprocating drawer retracts and the pivot plate swings back to begin another cycle of operations. This has the effect of repositioning the object in the hopper and of "chewing up" the bulky items. No matter how quickly refuse is put into the hopper - whether by power operated dustless loading equipment or by hand, whether in scattered districts or in densely populated areas, whether kerbside collection or otherwise - the speed at which refuse is fed forward into the body is always adequate and there is no interruption in the work.

Attention is drawn to the low loading height, generous ground clearance, inset stop and tail lights, folding loaders' steps and the hand rail. The hinged fibre-glass flap can be used as a cover for the loading aperture or as a dust screen which is moved by the action of emptying a bin. Access to the large salvage well is by the folding ladder on the nearside.


GUILDFORD
CORPORATION
FPE 152B

The illustration opposite shows Mk. IIIA Paxit Major fully tipped at a 49^0 angle, with the twin rams in operation giving maximum stability whilst discharging. The hopper is automatically opened as the body is tipped and closed as the body is lowered and is controlled from the cab, making it unnecessary for the driver to leave his seat during the whole operation, representing a considerable time saving factor. There is a full width rear opening with no internal obstructions and the bottom of the hopper has a ground clearance of over 5 ft. (1525 mm.) when fully tipped giving complete clearance for disposal. When lowered the body is totally enclosed and remains so during the whole of the collection period.
Ample provision is made for the automatic protection of the hydraulic system to ensure that the loading mechanism can be operated and collection continued whilst the vehicle is moving along the road.

CAB

Modern frontal treatment, inset lamps, stout front bumpers, deep curved screen, powerful twin windscreen wipers, twin knock back driving mirrors, three full-length doors, with recessed door handles, seating for six men, tool locker, clothes hooks. Absence of crew door on offside prevents men stepping out into the traffic stream.

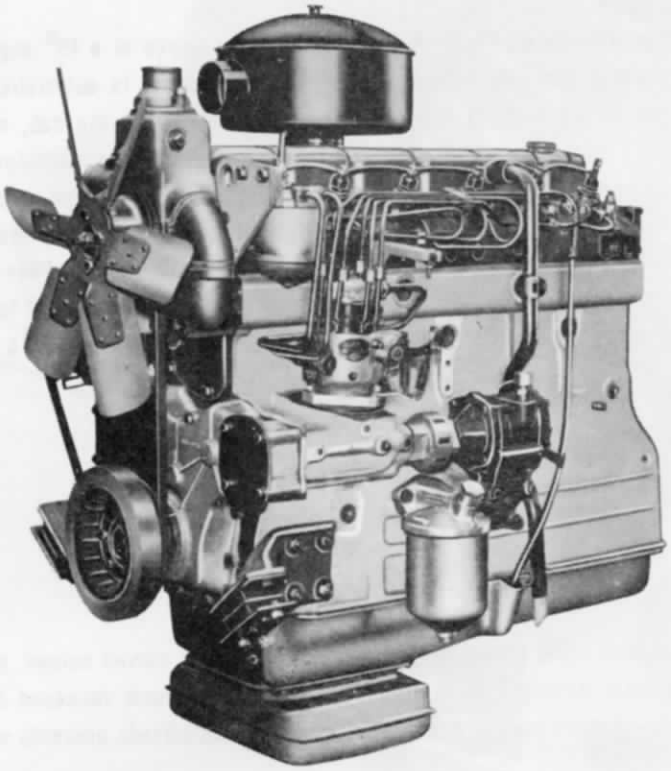
BODY FINISH

Body panelled with 12 gauge, heat treated toughened light aluminium alloy. Body frames of extruded hat section aluminium, this type of construction ensures a clean and durable finish that does not need painting and shows considerable saving over the life of the vehicle as repainting is not necessary. The cab is normally finished in scratch resistant mottled aluminium which again does not need painting; the Council's lettering and crest is painted on a plaque and secured to the cab door side panels.
Optionally, the cab can be panelled in smooth aluminium and fully painted to customer's requirements.

SALVAGE

In addition to the storage space of 60 cubic feet (1700 litres) capacity available over the rear hopper, a large salvage well of 30 cubic feet (850 litres) capacity can be provided in the roof of the crew cab as an optional extra. Ring steps provide a ready means of access, and integral design maintains the clean lines of the vehicle since the well is not externally visible.

Should still more space be needed for paper salvage, a well in the roof of the body, in addition to that in the cab, is also available as an optional extra.



POWER UNIT

The diesel engine is now generally accepted by local authorities as an efficient, trouble-free and economical power unit.

More than 1,000 authorities use Dennis Municipal vehicles, and of these over 400 have already adopted diesel power.

The number of councils using Paxit refuse collectors increases week by week, and in line with the current trend, we have made the diesel standard in this continuous loading model.

DENNIS PAXIT IIIa & PAXIT MAJOR IIIa

SPECIFICATION

Engine

Perkins 6.354, 6-cylinder diesel engine with distributor type fuel injection pump and hydraulic governor, backed by the maker's guarantee and comprehensive service facilities. Brief technical details as follows:–

Bore and stroke 3.7/8 in. (98.4 mm.) x 5 in. (127 mm.). Swept volume 354 cu. ins. (5.8 litres) developing 112 brake horse power at 2,800 r.p.m. Cromard cylinder liners and thermostat are incorporated to ensure maximum bore life.

Clutch

14 in. diameter single dry plate, spring centre plate and ball bearing release mechanism.

Gearbox

A heavy duty constant mesh 4-speed (5-speed optional) wide ratio unit of Dennis design and manufacture. Sliding dog engagement for all gears except 1st and reverse, selector mechanism built into main casing giving light and short motion at gear change knob.

Propeller Shaft

Fully balanced and in two sections with needle roller bearing universal joints and flexibly mounted centre bearing. Fitted with friction vibration damper.

Front Axle

I section alloy steel beam. Wheel loads taken through heavy duty swivel pin thrust embodying anti-friction P.T.F.E. faced pads.

Rear Axle

A robust fully floating spiral bevel unit of Dennis design and manufacture. Axle shafts can be withdrawn and the differential unit removed without disturbance of the road wheels.

Frame

The frame is constructed on the "free flange" principle from channel section pressed steel sidemembers of robust proportions. Crossmembers are of top-hat section for strength, assembled to sidemembers by means of fitted high tensile bolts.

Suspension

Semi-elliptical leaf springs front and rear; rubber spring aids are fitted at rear to reduce roll to minimum.

Brakes

Vacuum servo hydraulic type, two leading shoe brakes front and rear. Handbrake cable operated fully compensated system on rear brakes only.

Steering

Recirculatory ball type steering box giving very good steering characteristics. A 20 inch (508 mm.) diameter 3-spoke steering wheel is fitted.

Wheels & Tyres

Pressed steel disc wheels for eight-stud fixing are fitted with heavy duty tyres and spare

Cooling System

Pressurised system with 5 row flat tube radiator, water pump circulation controlled by thermostat and by-pass. Radiator mounted on cab foundation through the side columns. External filler cap.
Provision for cab heating as optional extra.

Electrical Equipment

The vehicle is fitted with a 12-volt compensated voltage charging, starting and lighting system. Flush fitting head, side and tail lamps, flashing indicators front and rear with protective guard.

Fuel Tank

The cylindrical fuel tank is fabricated from lead-coated sheet steel of 30 gallons (136 litres) capacity with electric fuel gauge.

Cab

Coachbuilt framework of well-seasoned ash, panelled in aluminium and part glass fibre. The cab foundation is of steel, welded and riveted construction, 6 point flexibly rubber mounted to chassis frame. The glass fibre front dash panel embodies detachable centre grille, giving access to the radiator and with the removable chassis front crossmember, facilitates removal of the engine when required.

Fitted with three doors, two on the nearside for easy entrance and exit of loaders, incorporating recessed chrome outer door handles and remote controlled inner door handles for reasons of safety, drop windows are fitted.

The large curved one-piece windscreen and windows are made from toughened safety glass. Twin knock-round driving mirrors and large twin screen wipers with powerful motor are fitted. Fully adjustable driver's seat upholstered in vyanide, seating accommodation on bench type seats fitted with cushion of vyanide for 5/6 men in addition to the driver. Interior surface of doors covered in vyanide covered plywood. Interior painted. Bumper bar and towing eye.

Body

The body floor is fabricated from steel sections and is of all welded construction; the body floor panels are heavy gauge corrosion and abrasion resistant steel plate. Body superstructure is constructed of fully heat treated non-corrosive aluminium alloy sheet and extruded sections riveted together.. All joints between dissimilar metals are protected by zinc chromate paint to prevent electrolytic erosion.

Loading Hopper

This is fabricated from steel sections and is of all-welded construction, jig built to ensure complete interchangeability. All external and non-wearing panels are of heat treated aluminium alloy riveted into position. Panels which come into contact with refuse and subject to wear are replaceable and made of heavy gauge corrosion and abrasion resistant steel plate. The hopper is attached to the body structure by means of pivot pins and is raised automatically when the body is tipped by means of a high tension multi-link chain which has an ample safety factor.

The 2-stage continuous loading mechanism comprises 2 double acting hydraulic rams, one of these operates the swivel loader plate and is anchored by means of pivot pins to the hopper structure well above the line of refuse.. The second double acting ram operates the inverted drawer, situated on the floor of the hopper. The purpose of this is the continual removal of refuse deposited over tha rave rail into the hopper to a position from which the swivel loader plate can feed the refuse into the body. The automatic synchronisation of these two double acting rams is by means of a piston valve. The compression system is protected from damage by a trip relief valve which automatically retracts the compression rams should an incompressible object become jammed in the compression mechanism. A manually operated reversing valve is also fitted on the tailboard as a safety measure. The whole hydraulic system is further protected by an over-riding relief valve.

Tipping Gear

Power operated unit with twin telescopic front rams to give stability during tipping.

Hydraulics

Power for the loading and tipping rams is provided by means of a Denison Deri vane type pump, driven by a universally jointed shaft from the gearbox power take-off and engaged by control situated adjacent to the driver's seat. Oil supply to the pump is made from a 26 gallon (118 litres) reservoir rubber mounted on the chassis frame; an aperture is provided in the nearside skirt of the body to enable the reservoir to be filled with the body in the running position. A filler filter is also fitted in the filler neck and a sight level indicator is fitted in the side of the reservoir. A control lever adjacent to the driver's seat ensures the easy selection of either the compression or tipping circuit. Large bore scaleless bright drawn steel tubing and heavy duty flexible hoses where necessary are used throughout the hydraulic system.

Painting

Owing to the fact that the body is panelled with heat-treated aluminium alloy, which is impervious to the elements, the bodywork is not normally painted.. This means a considerable saving in repaint costs over the life of the vehicle. The cab is panelled with a scratch resistant mottled aluminium finish to match the body and lettering requirements are painted on plaques which are screwed on to the cab doors. Alternatively, the cab may be finished with smooth aluminium panelling, fully painted and lettered to customers' requirements as an optional extra.

General Dimensions

	Paxit IIIA	Paxit Major IIIA
	ft. in.	ft. in.
Wheelbase	12 4 (3759 mm.)	14 5 (4394 mm.)
Overall length of vehicle (including equipment)	24 3¼ (7398 mm)	26 4¼ (8033 mm.)
Overall width	7 5 (2261 mm.)	7 5 (2261 mm.)
Overall height (unladen)	10 5½ (3188 mm.)	10 6 (3200 mm.)
Height of loading rail (unladen)	4 5½ (1359 mm.)	4 6 (1372 mm.)
Ground clearance under hopper (laden)	1 1½ (343 mm.)	1 2 (356 mm.)
Clearance under hopper when tipped	5 2 (1575 mm.)	5 3 (1600 mm.)
Minimum turning circle diameter	47 0 (14.3 metres)	55 0 (16.7 metres)
Minimum swept circle diameter	51 0 (15.5 metres)	59 0 (17.9 metres)
Minimum ground clearance	9 (228 mm.)	9.3/8 (238 mm.)
Approach angle	22°	22°
Departure angle	10°	10°
Effective capacity	25/40 cu. yds. 19/30 cu. metres	35/50 cu. yds. 27/38 cu. metres
Loader ram thrust	28 tons. (28,000 kilos)	31 tons. (31,000 kilos)
Angle of tip	49°	49°
Unladen weight for registration		

Dennis Brothers Limited **Guildford** **Surrey**

SPECIAL NOTE

The basic vehicle is designed so that the following optional features may be incorporated:–

1. Power operated dustless loading equipment for 2.5 cubic feet (70 litres) or 3.2 cubic feet (90 litres) Dennis hinged lid bins.

2. Power operated dust-free loading equipment for bulk containers.

3. Hand-operated dustless loading equipment for 1.1 cubic feet (31 litres) hinged lid bins.

4. Salvage well in cab and/or body roof.

5. Towing attachment for salvage trailer.

6. Automatic chassis lubrication.

7. Special tyres may be fitted to requirements.

8. Cab heater and windscreen demisters.

9. First aid and fire extinguishing equipment.

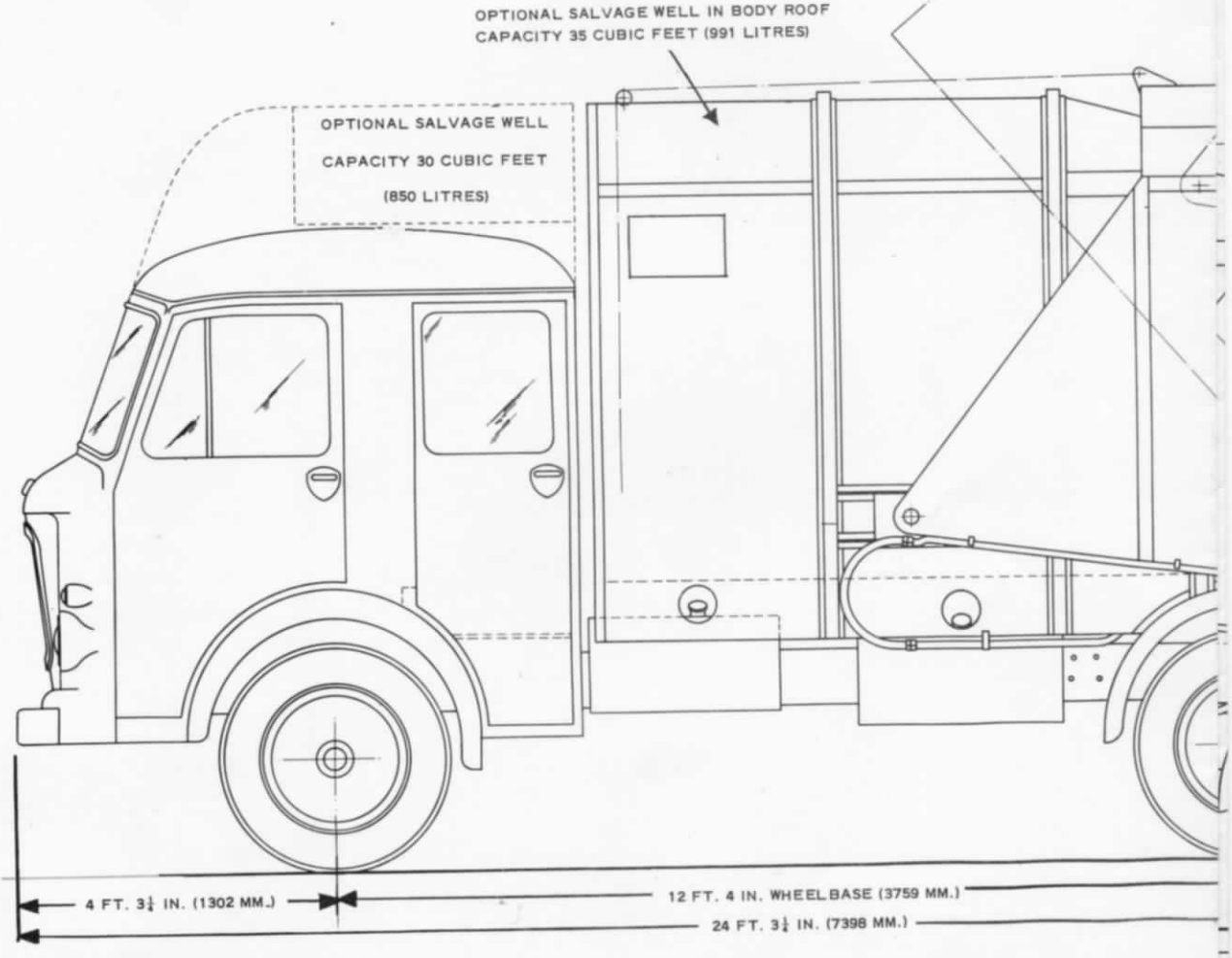
10. Hand washing unit.

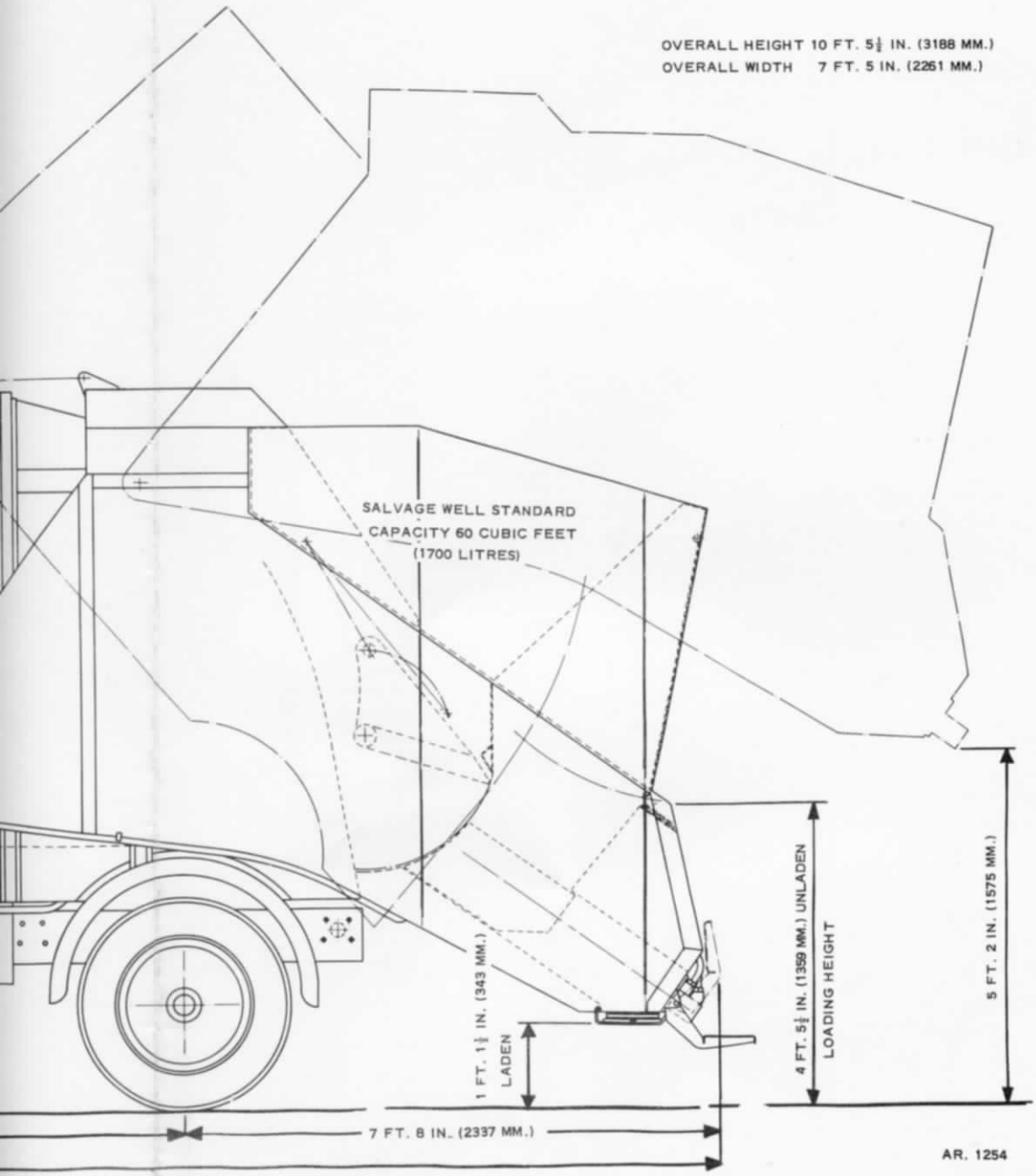
QUOTATIONS FOR VEHICLES INCLUDING ANY OF THE ABOVE FEATURES WILL BE SUPPLIED ON REQUEST.

PAXIT IIIA

Continuous Loading

Refuse Collection Vehicle




OVERALL HEIGHT 10 FT. 5½ IN. (3188 MM.)
OVERALL WIDTH 7 FT. 5 IN. (2261 MM.)
SALVAGE WELL STANDARD
CAPACITY 60 CUBIC FEET
(1700 LITRES)
1 FT. 1½ IN. (343 MM.)
LADEN
4 FT. 5½ IN. (1359 MM.) UNLADEN
LOADING HEIGHT
5 FT. 2 IN. (1575 MM.)
7 FT. 8 IN. (2337 MM.)

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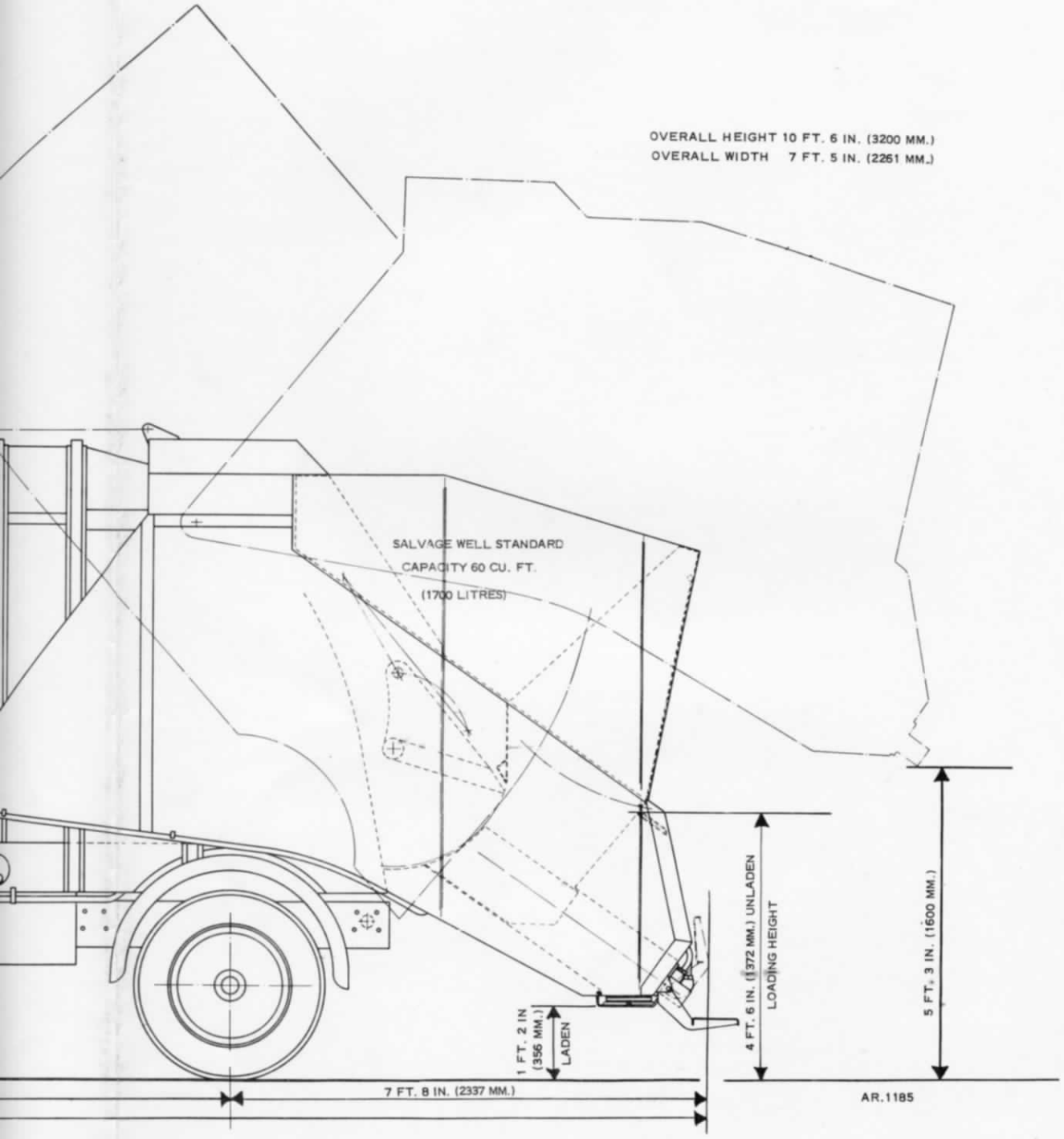
PAXIT MAJOR IIIA

Continuous Loading

Refuse Collection Vehicle


OVERALL HEIGHT 10 FT. 6 IN. (3200 MM.)
OVERALL WIDTH 7 FT. 5 IN. (2261 MM.)
SALVAGE WELL STANDARD
CAPACITY 60 CU. FT.
(1700 LITRES)
1 FT. 2 IN (356 MM.)
LADEN
4 FT. 6 IN. (1372 MM.) UNLADEN
LOADING HEIGHT
5 FT. 3 IN. (1600 MM.)
7 FT. 8 IN. (2337 MM.)
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