



MARK III **PAXIT**

automatic
continuous loading
compression
refuse collection vehicles

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INTRODUCING

THE DENNIS PAXIT III AND PAXIT MAJOR III 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 27 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 III

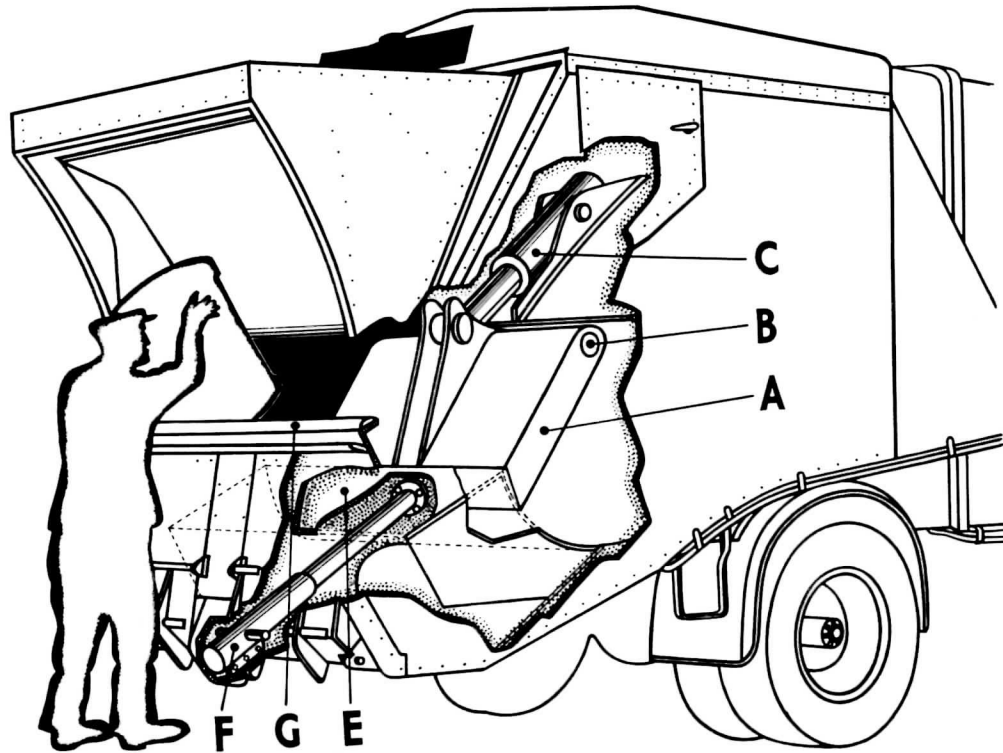
Wheelbase	12 ft. 4 in.
Capacity	18/25 cubic yards *
Compression thrust	31,000 lbs.
Turning circle	50 ft.
Standard tyre equipment	7.50 x 20 10 ply.
Gross vehicle running weight	23,000 lbs.

PAXIT MAJOR III

Wheelbase	14 ft. 5 in.
Capacity	22/30 cubic yards *
Compression thrust	35,000 lbs.
Turning circle	56 ft. 6 in.
Standard tyre equipment	8.25 x 20 12 ply.
Gross vehicle running weight	27,000 lbs.

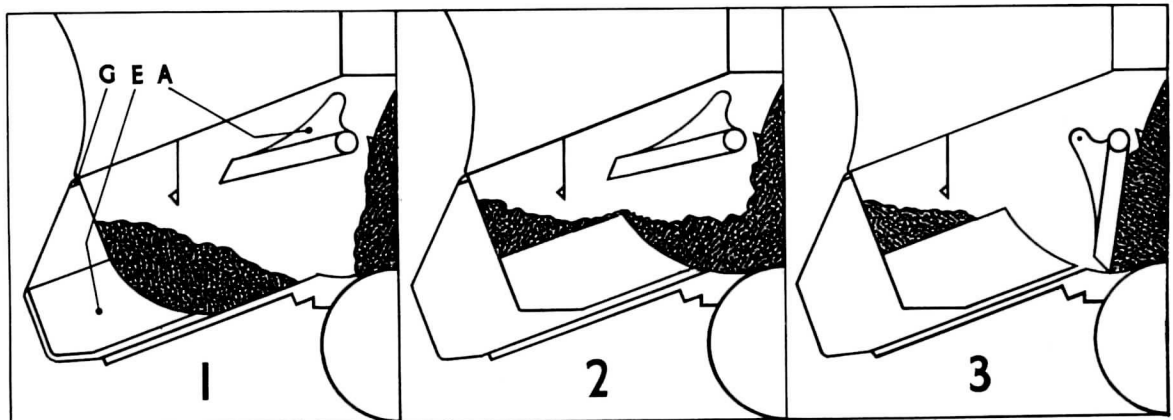
* Load will normally be between these figures depending on nature of refuse. With very light summer refuse figures of 30 cubic yards to 35 cubic yards respectively have been achieved.

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, and two-stage compression during loading, a high payload/unladen weight ratio is assured.



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 drawer E, actuated by double acting hydraulic ram F.



1. Refuse emptied from bins over rave rail G, falls to hopper floor.
2. Reciprocating drawer E, pushes refuse forward in hopper.
3. Swivel compression plate A, removes refuse from curved face of drawer, compressing refuse into body. Drawer E then retracts and refuse, which, in the meantime was emptied onto the top of the drawer, falls in front of the curved face and is then pushed forward as the cycle continues.

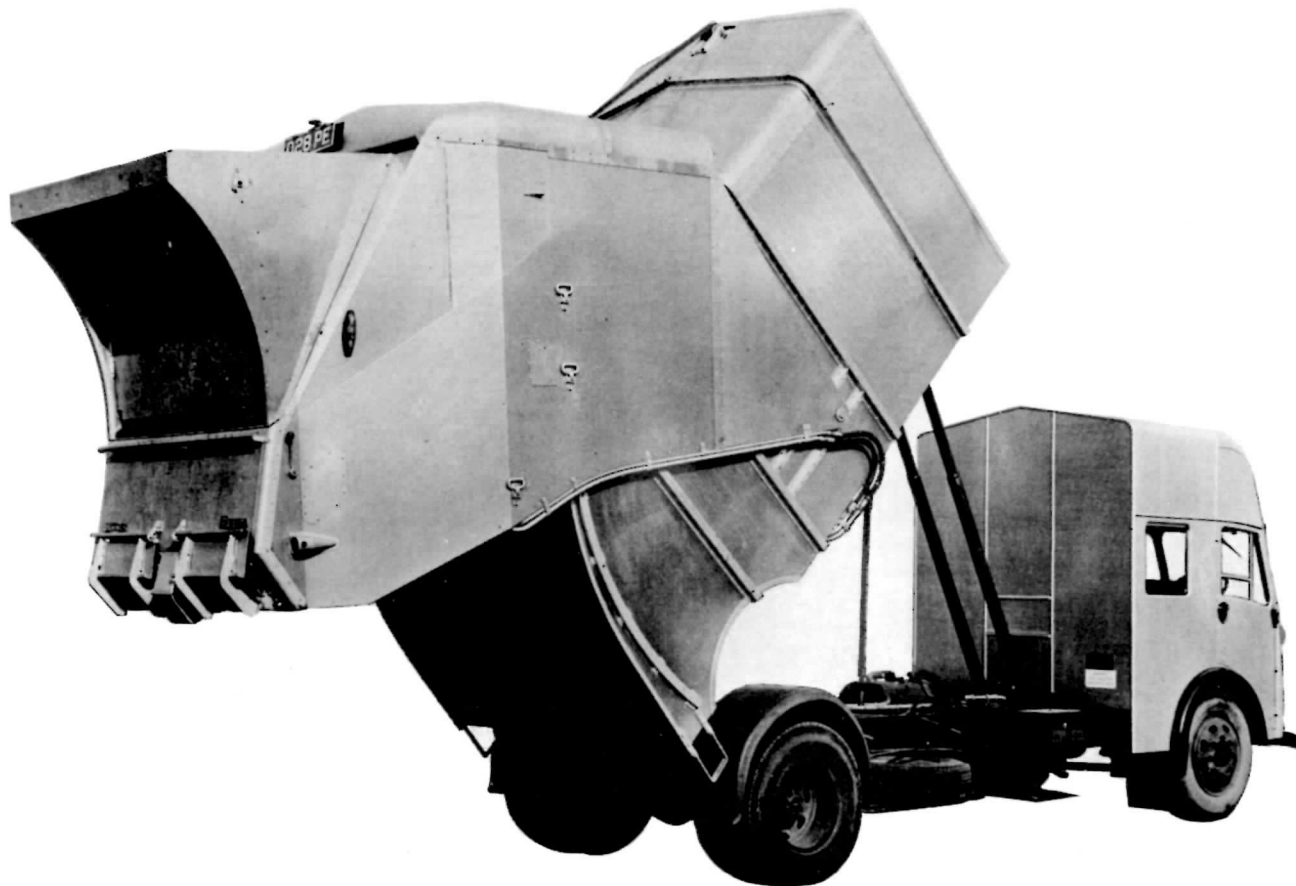
This sequence is maintained continuously throughout the loading period at four strokes per minute with the engine at idling speed. The slow movement of parts and steady engine speed ensures minimum noise during the loading operations, and minimum wear and tear. Refuse may be put into the rear hopper 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 plate 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.



To approach as nearly as possible to dust-free and litter-free loading with ordinary household bins, our engineers have developed a simple and effective glass fibre screen, pivoted at the top and moved by the action of emptying the bin. Use has been made of the air displacement to create an inward draught, at the time when the bin has just been discharged.

For loading trade refuse or bulky articles the screen may be retained in the fully open position by means of a simple lever on the left-hand side.

Attention is drawn to the low loading height, the good ground clearance and the large wheels and tyres. Riding steps and handrail are provided and the canopy affords weather protection.



The illustration above shows the Mk. III Paxit fully tipped at a 49° 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 canopy has a ground clearance of over 5 ft. 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.

AUTOMATIC PROTECTION OF LOADING MECHANISM

To ensure that the hydraulic mechanism is fully protected two automatic systems are employed. Firstly, a hydraulic pressure relief valve is fitted in the main pump circuit and secondly, which may be considered more important, to ensure that the continuous loading mechanism is not overspeeded, an electrical governor is fitted to the side power-take-off which drives the hydraulic pump. This electrical governor operates when the engine speed increases above 1,000 r.p.m. and is connected to a solenoid operated hydraulic valve which diverts the pump output direct to the oil reservoir.

The loading mechanism can be operated and collection continued whilst the vehicle is moving along the road, provided the engine revolutions are kept below 1,000 r.p.m. To ensure an easy gearchange at this low speed a separate electrical switch, operated by the movement of the clutch pedal, opens the valve described previously and allows the oil to return direct to the oil reservoir.



CAB

Modern frontal treatment, inset lamps, stout front bumpers, deep screens, twin windscreen wipers, twin 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.

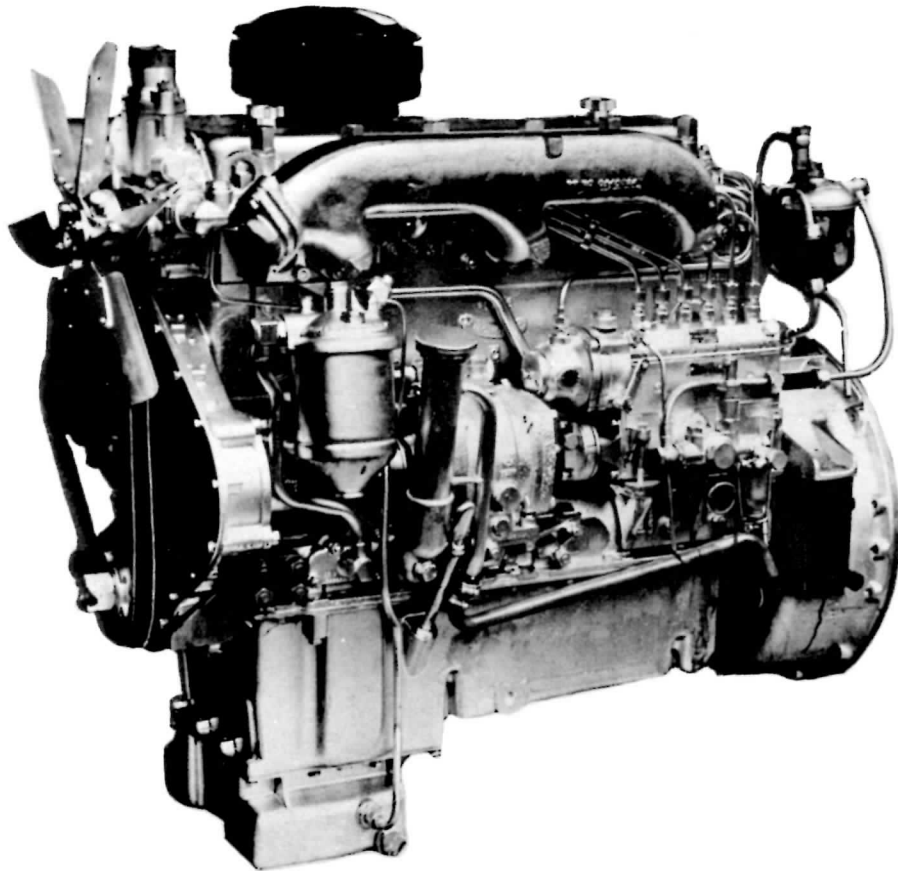
The cab can either be painted in your council colours or panelled in mottled aluminium which again does not need painting.

The councils lettering or crest is then usually painted on a plaque and secured to the cab door side panels. Chassis and wheels usually painted in a durable black finish.

SALVAGE

In addition to the storage space available over the rear hopper, there is a large salvage well in the roof of the streamlined crew cab. 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 available at extra cost.



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.

SPECIFICATION

ENGINE

Perkins P6, noted for its high performance and minimum need for attention, and backed by the maker's guarantee and comprehensive service facilities. Brief technical details are as follows:-

Bore and stroke 88.9 mm. x 127 mm. 6-cylinder of 4.73 litres total capacity developing 83 brake horse power at 2,400 r.p.m. Cromard cylinder liners and thermostat are incorporated to ensure maximum bore life. Crankshaft, big end and camshaft bearings are lubricated by pressure from a submerged oil pump.

The C.A.V. fuel injection pump is equipped with a pneumatic maximum speed governor, and fuel line has triple filtration.

CLUTCH

The clutch is a Dennis 13 $\frac{3}{4}$ in. diameter single plate unit of 184 sq. in. frictional area. It is equipped with an adjustable clutch brake to facilitate gear changing under all conditions.

GEARBOX

A heavy duty four speed unit of Dennis design and manufacture, operating by direct tooth engagement. Ratios: 4th 1:1, 3rd 1.74:1, 2nd 3.16:1, 1st 6.28:1, reverse 8.14:1.

PROPELLOR SHAFT

Fully balanced and in two section with needle roller bearing universal joints. Fitted with friction vibration damper.

REAR AXLE

A robust fully floating spiral bevel axle is adopted, designed to ensure low tooth loading on crown wheel and pinion. Driving and differential gears and halfshafts are replaceable without disturbance of the road wheels.

RADIATOR

A highly efficient cooling unit of integral construction, employing 'still' tube type element, mounted to cab under-structure with easily removable stone grille. External filler cap.

STEERING

A fully oil submerged unit of the worm and nut type, combines ease of steering with minimum wear and maintenance.

BRAKES

Of two leading shoe hydraulic type on all four wheels applied through external wheel cylinders. Hydraulic master cylinder is fitted with a separate reservoir. Foot pedal is adjustable and linkage is so designed as to be

direct and to gain in mechanical advantage as the pedal is depressed. 'Hydrovac' assistance is standard. Handbrake is cable operated and fully compensated.

SPRINGS

Semi-elliptical, laminated and shot peened for long life. See data sheet for dimensions. Paxit Major III machines have 'Metalastic' rubber spring aids mounted on brackets with a special chassis crossmember to avoid frame distortion when tipping.

FUEL TANK

Fabricated from lead coated sheet steel, the cylindrical fuel tank holds 20 gallons, complete with visual fuel gauge.

FRAME

The frame is constructed on the 'free flange' principle from alloy steel members of robust proportions and 'hat' section crossmembers assembled with fitted high tensile bolts with special strengthening strip on top and bottom frame flanges.

ELECTRICAL EQUIPMENT

As standard, the vehicle is fitted with a 12 volt compensated voltage charging, starting and lighting system; lead/acid battery. Equipment includes all legal lights externally with twin dipping and flush fitting head lamps, dash lamp, dynamo warning and interior cabin lights are also supplied. Flashing indicators front and rear (with special guard).

WHEELS AND TYRES

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

CAB

Coachbuilt framework of well seasoned ash panelled in aluminium alloy and part glass fibre. Spring mounted to avoid distortion when negotiating rough roads.

Fitted with three doors (two on the nearside for easy entrance and exit for loaders). All doors fitted with recessed handles and easy slide down windows. Two piece windscreen with twin wipers. Twin knock-round driving mirrors. Adjustable driver's seat, upholstered in vynide, seating accommodation on bench-type seats fitted with cushions of vynide for five men in addition to the driver. Interior surface of doors covered in vynide covered plywood. Chrome door handles and facia board and door window fillets of polished and varnished wood of best quality. Interior painted. Salvage well in roof of cab with spring access steps. Flush fitting head and side lamps. Bumper bar and front towing eye.

BODY

Body under-structure is all welded fabricated from steel longitudinal channel section of ample proportion and suitable welded steel angle outriggers, etc. Supported on chassis frame by well proportioned rubber feet (18 in. x 2½ in. x 1¼ in.). Front anchorage for twin telescopic hydraulic tipping rams by steel brackets. Rear pivot shaft 2¼ in. diameter solid drawn steel tube, built in and secured to vertical wall of chassis frame by special brackets and fitted high tensile bolts to give body maximum support on chassis frame when body is tipped. Rear body pivot brackets are of special cast U type to facilitate easy removal of body when maintenance is required.

For the body floor, front arch and all wearing parts of the hopper, special alloy steel plate is used, which achieves a 50% higher effective strength than ordinary mild steel and from four to six times its resistance to atmospheric corrosion.

Body sides and roof panelled in 12 and 14 gauge heat treated and toughened light aluminium alloy. All joints protected by zinc chromate paint to prevent electrolytic action.

LOADING HOPPER

Steel fabricated all welded of special design, panelled in 12 gauge heat treated and toughened light aluminium alloy with glass fibre roof. Secured to body by means of pivot pins and oil-less bushes on each side of body and elevated by means of high tensile chain automatically as body is tipped (no securing bolts or locking pins are necessary).

The continuous loading mechanism is driven by means of a Deri-sine pump from the power-take-off, directed to two double acting rams, one of which operates the swivel loader plate, and is secured by means of pivot pins to the specially designed frame work on the hopper outside the line of refuse. The second double acting ram operates the drawer, the purpose of which is the continual removal of refuse deposited over the rave rail, into the hopper to a position in which the swivel plate can move it into the main body. The synchronisation of these two double acting rams is by means of a piston valve. The system is protected by the main relief valve, which ensures ample safety to the hydraulic mechanism.

TIPPING GEAR

Power operated unit twin telescopic front tipping rams and fitted with automatic overload device.

HYDRAULICS

Power for the loading and twin front hydraulic tipping rams is provided by means of a Deri-sine cam type high pressure heavy duty pump driven by side power-take-off engaged from the driver's cab. This pump draws its oil supply from a large capacity reservoir mounted on the chassis frame and protected by a large filter fitted in the return to tank pipe, which ensures the oil is clean in the reservoir. A special type of relief valve is fitted to ensure the correct working pressure is not exceed and to afford protection to the hydraulic system. The control lever in the cab operates the control box situated on the offside of the chassis frame and ensures the easy selection of the hydraulic line involved. The hydraulic pipes are 7/8 in. i/d all steel solid drawn with the body and hopper pivots movement taken care of by high pressure flexible hoses.

PAINTING AND LETTERING

Owing to the fact that the body is panelled with a special heat treated aluminium alloy which is light, strong and resistant to corrosion, the bodywork is not normally painted. This means a considerable saving in repainting costs over the life of the vehicle. Alternatively, the cab is available with a mottled aluminium finish to match the body, or with a smooth aluminium panelling, painted and lettered to customer's requirement.

DIMENSIONS

	Paxit III	Major III
	ft. in.	ft. in.
Overall length of vehicle (including equipment)	25 10½	27 11½
Overall width of vehicle	7 4	7 4
Overall height (unladen)	10 5½	10 6
Wheelbase	12 4	14 5
Effective capacity cu. yd.	18/25	22/30
Loader ram thrust tons	14	16
Angle of tip	49°	49°
Height of loading rail (unladen)	4 7½	4 8½
Height of loading rail (laden)	4 4½	4 5½
Ground clearance under hopper (laden)	1 2	1 3
Clearance under hopper when tipped	5 1½	5 2½

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 foot or 3.2 cubic foot Dennis hinged lid bins.
2. Power operated dust-free loading equipment for bulk containers.
3. Hand-operated dustless loading equipment for 1.1 cubic foot hinged lid bins.
4. Salvage well in 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.

Quotations for vehicles including above features will be supplied on request.

The text and illustrations in this brochure are intended as a guide to typical specifications and are not to be regarded as binding in whole or in part. Quotations based on individual requirements will be gladly submitted.



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