The
The

NORBA
NORBA

System
System

Refuse Collection Vehicles
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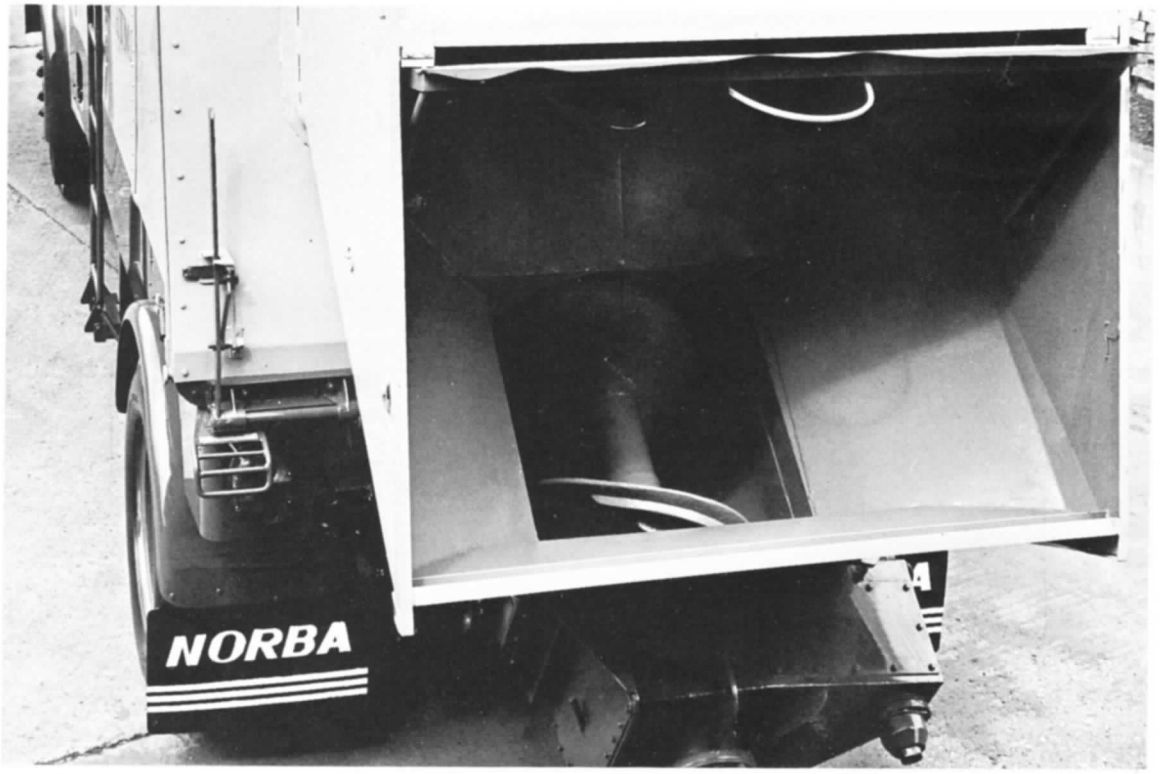
The NORBA system



The Norba system of refuse collection is now in daily operation with both large and small authorities throughout the country. The system is proving itself in the handling of both trade and domestic refuse, to be the most advanced and efficient method of refuse collection available to Local Authorities.

The extremely high compression of refuse in the vehicle body (compression ratio up to 4 :1) is made possible by the use of a powerful feed screw. The feed screw rotates slowly in a trough at the base of the loading hopper, compressing the refuse against a wear plate and forcing it into the vehicle body. The feed screw and wear plate are manufactured from a special steel of high durability, though in the event of excess wear are easily replaceable. The drive to the feed screw is mechanical, via the engine Power-take-off to the feed screw gearbox, giving a final screw speed of approximately 18 r.p.m.

The Norba system can be built onto all proprietary makes of chassis, for example, Dennis, Ford, Karrier, Bedford and B.M.C. With refuse capacities ranging from 35 to 60 cubic yards. A variety of wheelbases is available down to a 124" short wheelbase model, that offers particular advantages when operating in a confined space.

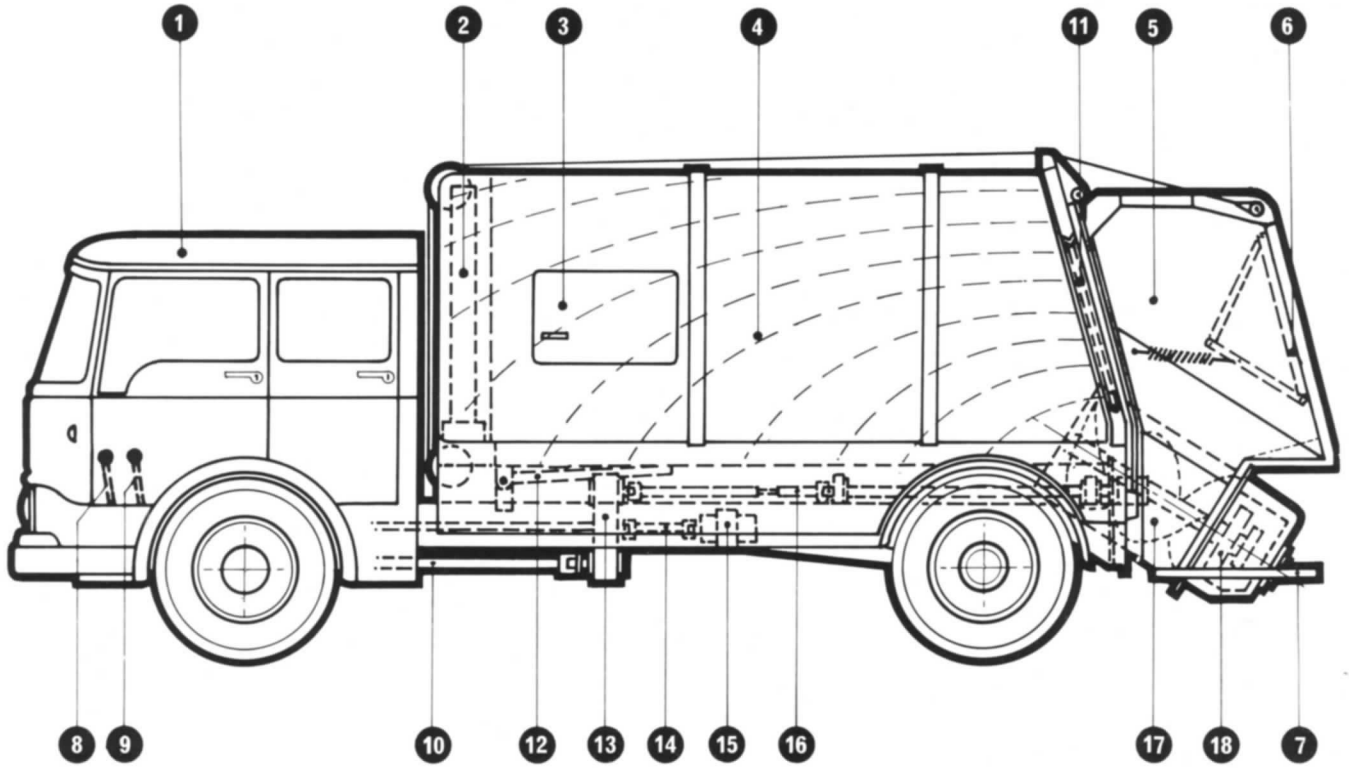
There are many safety devices built into the Norba system. The main ones being : A torque overload shear pin, to protect the screw and its drive ; Body and hopper props to support body when in the tipped position.

The NORBA system offers

the following advantages

- ✻ **Extremely high compression:**
- ✻ **Speed of loading:**
- ✻ **Minimum maintenance:**
- ✻ **Semi pulverisation:**
- ✻ **Heavier payload:**
- ✻ **Ease of loading:**
- ✻ **High density:**
- ✻ **Fewer journeys to tip:**
- ✻ **Robust construction:**
- ✻ **Quality engineering:**
- ✻ **Handles all types of refuse:**
- ✻ **Rapid after sales service:**

The NORBA system



CURVED DOTTED LINES INDICATE COMPRESSION PATTERN

1. Crew cab, Driver + Six.
2. Hydraulic tipping jack.
3. Sliding access door.
4. Refuse container.
5. Manual loading hopper.
6. Hopper door.
7. Loading step.
8. Oil pump control.
9. Feed screw control.
10. Power take-off.
11. Hopper prop.
12. Body prop.
13. Intermediate gearbox.
14. Oil pump drive.
15. Oil pump.
16. Feed screw gearbox drive.
17. Feed screw.
18. Feed screw gearbox.

Vehicle with body in tipped position.

Vehicle with body in travelling position.

The NORBA system

The Norba system can now be offered with an AUTOMATIC BIN HOIST. Designed for use by Local Authorities who operate large bin collections from blocks of flats and other combined refuse collection schemes that utilise large bins.
The photograph on the left shows a Norba vehicle with the bin in the tipped position. The availability of the automatic bin hoist although only recently introduced, has been undergoing severe trials in daily use with local authorities in different parts of the country, the operation of which has proved highly successful.

Note. Norba vehicles fitted with the Mobile Automatic Container Hoist, (M.A.C.H.) can still be used for the manual loading of household refuse, paper sacks and special coilection.

The photograph on the right shows a vehicle with the bin in the loading position. The lifting of the bin to the emptying position is actuated by a hydraulic ram. The oil supply for operating the ram is taken from the main oil pump, that operates the hydraulic tipping ram for the vehicle body. The control lever for the bin lifting device is situated externally at the rear of the vehicle. Operation of the system is both safe and simple, the bin being securely clamped throughout the whole process.

The bin hoist system can be adapted to handle a wide variety of bin shapes and sizes, of both round, square and rectangular section.

The Norba system has proved itself to be ideal for the handling of paper sacks and vehicles can be supplied with ample storage space for paper sack distribution.

Type ND.35S.
The NORBA system with a 35 cu. yd. body mounted on a Dennis chassis.
Length : 20′ 8″.
Width : 7′ 4″.
Height : 9′ 9″.
Tipped height : 15′ 6″.
Wheelbase : 124″.
Turning circle : 42′ 9″.
Engine : Perkins 6.354 diesel 112 b.h.p. @ 2800 r.p.m.
Gearbox : 5 speed.

NORBA—DENNIS

Type ND.35L.
The NORBA system with a 35 cu. yd. body mounted on a Dennis chassis.
Length : 22′ 4″.
Width : 7′ 4″.
Height : 9′ 9″.
Tipped height : 15′ 6″.
Wheelbase : 144″.
Turning circle : 45′ 10″.
Engine : Perkins 6.354 diesel 112 b.h.p. @ 2800 r.p.m.
Gearbox : 5 speed.

NORBA—DENNIS

Type ND.50.
The NORBA system with a 50 cu. yd. body mounted on a Dennis chassis.
Length : 24′ 5″.
Width : 7′ 4″.
Height : 9′ 9″.
Tipped height : 16′ 6″.
Wheelbase : 169″.
Turning circle : 52′ 6″.
Engine : Perkins 6.354 diesel 112 b.h.p. @ 2800 r.p.m.
Gearbox : 5 speed.

Type NB.35.
The NORBA system with a 35 cu. yd. body mounted on a Bedford chassis.
Length : 23′ 9″.
Width : 7′ 2½″.
Height : 9′ 9″.
Tipped height : 15′ 6″.
Wheelbase : 151″.
Turning circle : 49′ 4″.
Engine : Bedford 381 cu. in. diesel 123 b.h.p. @ 2800 r.p.m.
Gearbox : 5 speed.

NORBA—BEDFORD

Type NB.60.
The NORBA system with a 60 cu. yd. body mounted on a Bedford chassis.
Length : 25′ 3″.
Width : 7′ 6″.
Height : 10′ 2″.
Tipped height : 17′ 3″.
Wheelbase : 174″.
Turning circle : 55′ 6″.
Engine : Bedford 466 cu. in. diesel 145 b.h.p. @ 2800 r.p.m.
Gearbox : 5 speed.

NORBA—KARRIER

Type NK.50.
The NORBA system with a 50 cu. yd. body mounted on a Karrier chassis.
Length : 23′ 1″.
Width : 7′ 5″.
Height : 9′ 9″.
Tipped height : 16′ 6″.
Wheelbase : 162″.
Turning circle : 60′.
Engine : Perkins 6.354 diesel 112 b.h.p. @ 2800 r.p.m. or Rootes 3D.215., 135 b.h.p.
Gearbox : 5 speed.

Type NK.60.
The NORBA system with a 60 cu. yd. body mounted on a Karrier chassis.
Length : 24′ 7″.
Width : 7′ 11½″.
Height : 10′ 2″.
Tipped height : 17′.
Wheelbase : 176″.
Turning circle : 61′.
Engine : Rootes 3D.215., 135 b.h.p. @ 2400 r.p.m.
Gearbox : 5 speed.

NORBA—KARRIER

Type NF.35.
The NORBA system with a 35 cu. yd. body mounted on a Ford chassis.
Length : 22′ 9″.
Width : 7′ 5″.
Height : 9′ 9″.
Tipped height : 15′ 6″.
Wheelbase : 156″.
Turning circle : 54′ 6″.
Engine : 360 cu. in. diesel 128 b.h.p. @ 2800 r.p.m.
Gearbox : 5 speed.

NORBA—FORD

Type NF.50.
The NORBA system with a 50 cu. yd. body mounted on a Ford chassis.
Length : 25′.
Width : 7′ 5″ or 7′ 10″.
Height : 9′ 9″.
Tipped height : 16′ 6″.
Wheelbase : 182″.
Turning circle : 61′ 6″.
Engine : 360 cu. in. diesel 128 b.h.p. @ 2800 r.p.m.
Gearbox : 5 speed.

The city of Stoke-on-Trent operate 11 Norba vehicles.

NORBA

operators say

Mr. R. J. Lawrence, M.I.P.C., M.R.S.H. Director of public cleansing for the County Borough of Southend-on-Sea, says: 'Excellent payloads are being achieved in our Norba vehicles'.

Mr. John McPherson. Cleansing superintendent for the Borough of Airdrie, says: 'We have had the Norba vehicle for some months now and its performance has been excellent, particularly in the handling of paper sacks'.

W. P. Shewell, M.I.C.E. M.I. Mun.E. A.M.T.P.I. Engineer & Surveyor for the London Borough of Harrow. Says 'we have found our NORBA vehicles completely satisfactory'.

Mr. Crawford, M.Inst.P.C. Director of public cleansing for the County Borough of Blackpool, says: 'Loading hopper capacity is constantly provided by the continuous action of the screw'.

Mr. N. Hawkins, M.A.P.H.I. Chief Public Health Inspector for Clacton Urban District Council. Says 'Norba more than lives up to its reputation'.

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