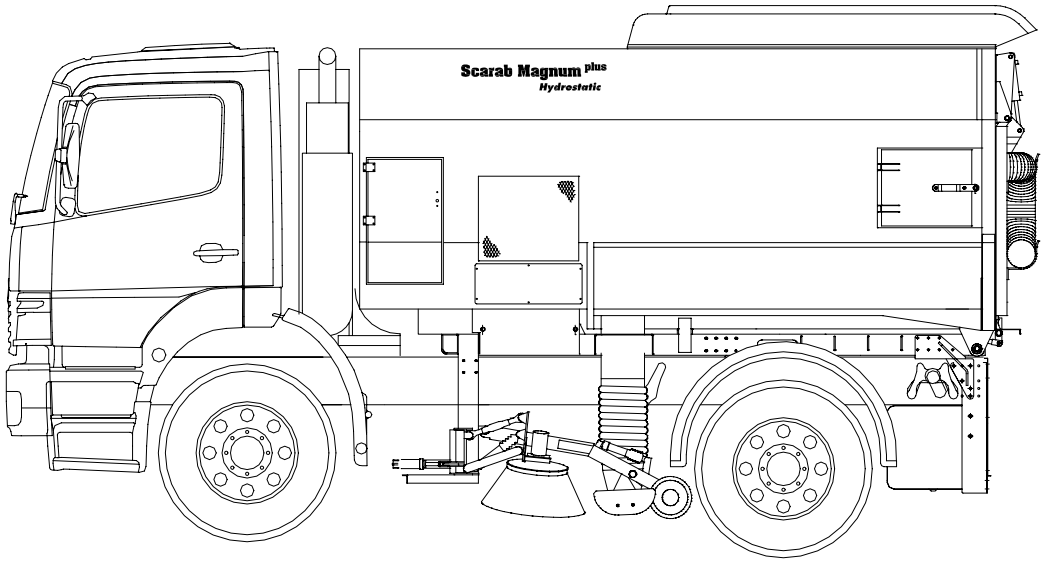
Technical Specification

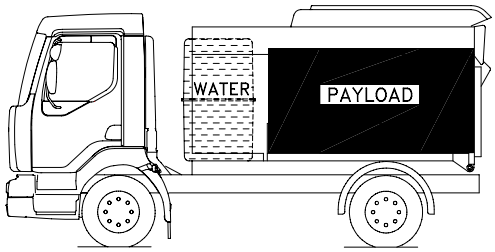
SCARAB SWEEPERS

Scarab Magnum ^{plus} ***Hydrostatic***



The Scarab Hydrostatic System

This advanced and well proven 'single engined' concept of Heavy Duty truck mounted Road Sweeping Vehicles, incorporates the latest technology of ***Scarab Hydrostatic*** *Transmission and Hydraulic systems. The unique system operates the driveline transmission, suction fan, sweeping brushes, and auxiliary services when sweeping. All Scarab Hydrostatic sweepers are designed to deal with the most arduous conditions. The Scarab System provides the operator with a machine offering the* ***LARGEST PAYLOAD*** *and* ***LARGEST HOPPER VOLUME*** *commensurate with a given chassis size and type, together with a minimum of moving parts for reduced servicing. By utilising just the chassis engine, which conforms to the latest stringent emission legislation, gives the operator massively* ***REDUCED EXHAUST POLLUTION*** *and* ***LOWER FUEL CONSUMPTION****, making the Scarab system one of the most environmentally friendly, high performance truck mounted road sweepers.*

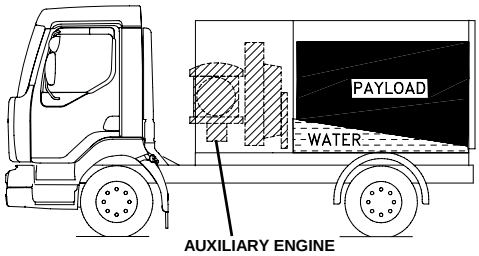


Scarab Magnum ^{plus} Hydrostatic Sweeper

- ***Increased*** *hopper*
- ***Increased*** *payload*
- ***Simplified*** *drive system*
- ***Reduced*** *operating costs*
- ***Reduced*** *fuel consumption*

Twin Engine Sweeper

- ***Restricted*** *hopper*
- ***Restricted*** *payload*
- ***Complex*** *engine drive system*
- ***Higher*** *operating costs*
- ***Higher*** *fuel consumption*



***HYDROSTATIC TRANSMISSION**: Scarab's unique hydrostatic gearbox unit is the heart of the Scarab Magnum **plus** sweeper. Fitted into the driveline of the vehicle between gearbox and rear axle, the Scarab transmission provides direct drive for the sweeper to be driven to site as a conventional vehicle. It can then to be engaged for sweeping, allowing the vehicle to be driven hydrostatically. The Scarab hydrostatic system gives all the advantages of infinitely variable speed control to optimise sweeping, without the need for slipping and wearing the clutch and brakes, to control speed on hills or to change gear for reversing,. The vehicle engine need only be running at approx. 1200 RPM ensuring a longer operating life.*

The Scarab hydrostatic gearbox is fitted with pneumatic gear-change, operated from the control panel, which is interlinked to prevent engagement when the vehicle is moving. The hydrostatic drive pumps and motors are controlled electronically by a single throttle pedal giving infinite control of the vehicle speed from zero up to 15 - 20 mph (20 - 30 kph), and a minimum hill climb gradient of 1 in 5 fully laden. The gearbox also drives the hydraulic pumps for the suction fan and brush system and the entire system is fully protected from abuse both electronically and hydraulically.

The use of Scarab's unique hydrostatic drive provides operators with a vehicle that can be driven to site conventionally, but when sweeping the driver has finite single-pedal control of vehicle speed and braking. Forward and reverse selection is by means of a single lever. This results in a significant reduction in those operator fatigue levels, associated with the frequent use of clutch, brake, and gearbox necessitated by thew older auxiliary engined sweepers.

***SUCTION FAN**: The suction fan is mounted on the hopper top, driven by a direct drive axial piston hydraulic motor with a normal operating speed of 2000 RPM. The dynamically balanced 900 mm diameter fan is a very efficient multi-blade centrifugal unit, giving a nominal airflow of 6000 cu ft/min (170 cu m/min). Mounting the fan on the hopper top creates a virtually straight airflow from suction nozzle to fan, making the Scarab Magnum **Plus** extremely efficient and significantly reduces power requirements. There are two operating modes, **standard** for normal sweeping and **boost,** which increases the suction power by 30%, for very arduous conditions.*

***SUCTION NOZZLE**: Rugged steel construction mounted in a trailed frame with 250 mm diameter rubber tyred wheels and is connected to the hopper with a 250 mm diameter suction hose. The suction nozzle is 840 mm wide, fitted with easily replaced adjustable rubber flaps and skid plate. Flap to ground clearance is 25 – 30 mm resulting in very long flap life and infrequent adjustment. The suction nozzle is fitted with 4 manually adjustable water spray jets. Additional water injection nozzles are available when required. An optional 5 jet water boost bar can be fitted in front of suction nozzle for extreme conditions. The Suction nozzle tilts to allow large objects or autumn leaf build-ups etc. to be swept successfully.*

***SIDE BRUSH:** 650 mm diameter steel tined brush with direct drive hydraulic motor, fitted with trailed linkage, kick back protection, pneumatic ram for in/out control, fully adjustable setting for brush angle, three speed control 100 / 125 / 150 RPM. Optional brush pressure control is available if required. A work light is fitted to assist operation in low light conditions.*

***WIDE SWEEP:** 400 mm diameter polypropylene segments with direct drive hydraulic motor, fully floating with shock absorbers to prevent bounce, fitted with trailed linkage to ensure parallel, even brush wear, and three-speed control 100 / 125 / 150 RPM. Optional brush pressure control is available if required.*

***WATER PUMP:** Twin diaphragm self-priming water pump fitted with suction filter, driven by direct drive motor. Solenoid valves operated from the control console provide water spray to the brushes and suction nozzle. Output is rated at 36 litres per minute @ 50psi (3.5 bar).*

***WANDER HOSE:** Lightweight flexible 4 metre long suction hose of 150 mm diameter. Complete with aluminium extension tube and adjustable handle for cleaning awkward areas or gullies. Quick release wanderhose points are located at either side of the rear door. The wander hose can be used simultaneously with sweeping or on its own for more powerful s*

***HOPPER: 8.2 cu. m. Gross hopper volume** hopper offering a 7.5 cubic metre payload capacity, totally constructed from corrosion and abrasion resistant stainless steel including hopper top and fan case. Fitted with **large access doors on each side of hopper** and a two-stage tipping ram for rapid load discharge. Reinforced rear door, with heavy-duty sealing, incorporates automatic closure, clamping the door at 3 points for watertight seal. Inlet tubes (single or dual sweep) fitted with auto-blanking flaps. Two drain hoses are located in the rear door at alternate heights for*

removal of excess water. Hopper fitted with easy-to-clean filter screen. Storage compartment located on right hand side.

ACCESS DOORS: *Large doors fitted each side of the hopper for hand loading bulky items.*

HYDRAULIC SYSTEM: *Two pumps deliver the hydraulic power. The first, an axial piston pump with automatic control of output and pressure, drives the suction fan. It is controlled by an electric valve, which adjusts the output to provide normal and boost suction fan speeds. The second, a gear pump, provides power to brush motors and hydraulic rams. The hydraulic system is piped in zinc plated steel tubing, where practical, and is protected by 10-micron filters to ensure long component-life. The oil is cooled via a heat exchanger with hydraulically driven high performance fan, ensuring optimum cooling under the most arduous working conditions or high ambient temperatures. The hydraulic control valves are located for easy servicing in a protected compartment, all services being operated from the cab mounted control console.*

HYDRAULIC TANK: *Located adjacent to the oil cooler, 15 litre capacity, with 10 micron return filter, air breather, suction strainer, and sight glass.*

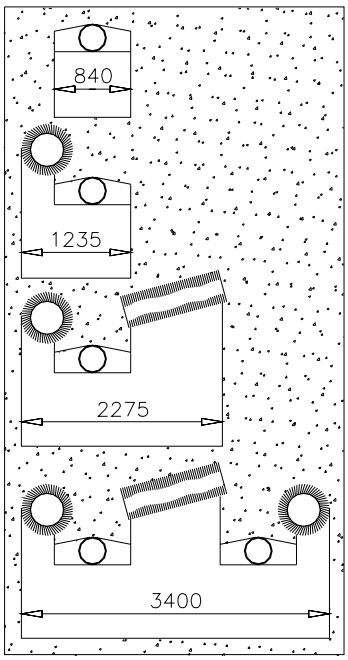
PNEUMATIC SYSTEM: *The pneumatic system is connected to the vehicle auxiliary air supply, and incorporates a pressure regulator, filter / water separator and solenoid valves to control the side brush, wide sweep, suction nozzle, and gear change. The pneumatic valves are located for easy servicing in a protected compartment.*

CANbus CONTROL CONSOLE: *An ergonomically designed panel adjacent to the driver's seat containing all controls for operating suction fan, brushes, hopper, work lights, water sprays. The panel is also capable of displaying operating data such as Fan speed, Distance and Hours Swept and automatically performs self-diagnostics on all sweeping functions each time it is powered up. An additional satellite control box for frequently used operations is mounted conveniently to hand.*

WATER TANK: *1800 litre gross water capacity manufactured from corrosion resistant glass reinforced plastic and fitted with a large lid to facilitate cleaning. Filling is achieved by means of a hydrant connection with regulation air break, or alternatively by means of hosepipe via tank lid. The tank is fitted with a clear sight glass with level indicator and suction strainers for the water pumps. (An optional 2500 litre stainless steel tank is available on selected chassis)*

PAINTING: *Two pack system single colour, optional multicolour and sign writing.*

SWEEPING WIDTHS:



NOZZLE ONLY

NOZZLE AND SIDE BRUSH

NOZZLE, SIDE BRUSH AND WIDE SWEEP

BOTH NOZZLES, BOTH SIDE BRUSH & WIDESWEEP

The suction nozzle, side brush and wide sweep brush can be raised or lowered independently of each other. This provides various sweeping patterns to suit differing road conditions.

*On dual sweep machines the Scarab Magnum **plus** has the **option** of operating with both side brushes and nozzles simultaneously to give an unrivalled sweeping width.*

SCARAB EQUIPMENT WEIGHTS:

Single Sweep *2900 kg*

Dual Sweep *3100 kg*

Weights given are for standard specification, without options and are subject to tolerance.

CHASSIS SUITABILITY:

*The **Scarab Magnum** **plus** **Hydrostatic** can be mounted on a range of chassis including DAF, Iveco, Mercedes, Volvo, & Renault. For details of these and other suitable chassis specifications please contact the Sales Department.*

TYPICAL CHASSIS WEIGHTS:

Chassis weights vary depending on specification but are typically in the region of 5,400kg. For further details contact the Sales Department.

OPTIONS:

Dual sweep with swivel widesweep brush.

Simultaneous left and right hand brush, nozzle and wide sweep operation giving an unrivalled 3.4 metre swept width.

Video camera to offside brush and/or rear of sweeper.

Rear mounted overhead boom.

2500 litre water tank (Dependent upon chassis specification)

High volume water pump 30 litres per minute @ 100 bar with 13 metres of hose on retractable hose reel and hand lance. Front mounted stainless steel spray bar with 11 nozzles covering an area 2 m wide.

High pressure / High volume water pump 59 litres per minute @ 250 bar with 13 metres of hose on retractable hose reel and hand lance.

Full width rear suction nozzle assembly with tilting nozzles and spray bars.

Pressure control for side brush / brushes and wide sweep brush.

Centralised lubrication system, either manual or automatic.

Detergent injection kit for the hand lance for difficult cleaning operations.

Hydrant, Standpipe, Key and 3 m of 2 inch (50 mm) lay-flat hose.

Extra or alternative beacons, e.g. Xenon.

Work lights.

Fire extinguisher.

Other options and operator specific requirements available upon request.

***Scarab Sweepers** are dedicated to continuous product development and as such we reserve the right to change this specification without prior notice.*

To ensure latest information contact Sales Department

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