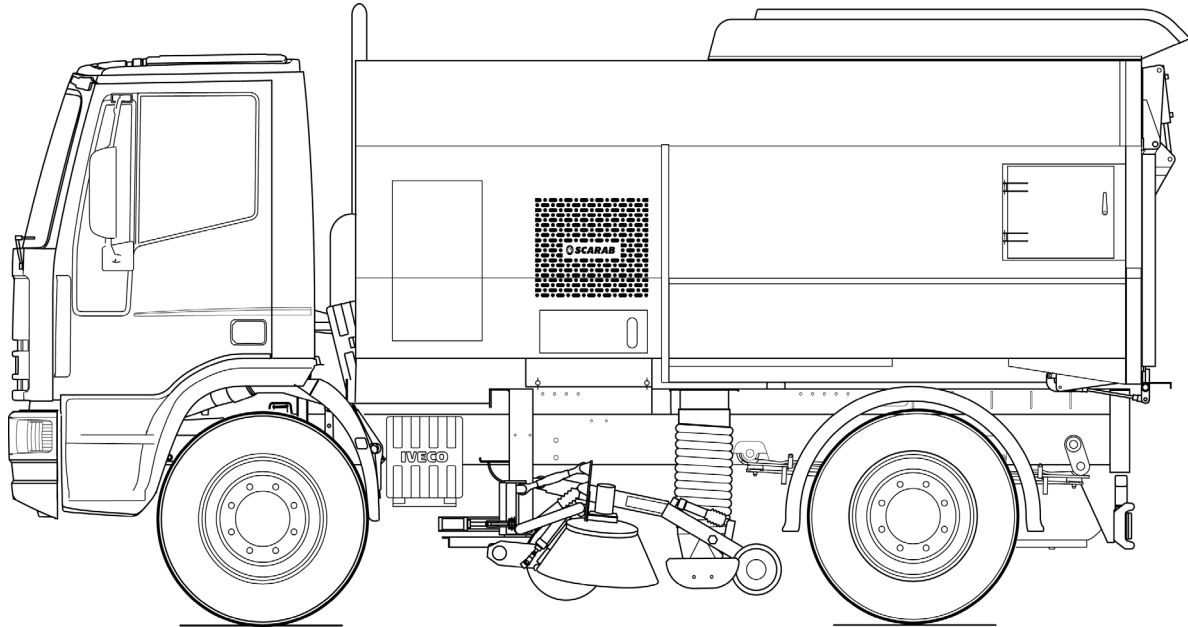




SCARAB SWEEPERS

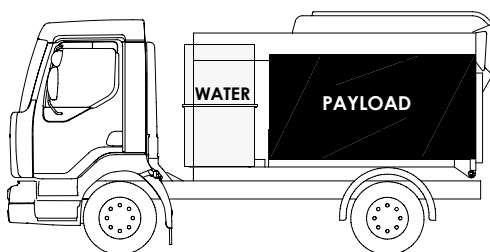
Technical Specification

Scarab Magnum Unidrive



The Scarab Unidrive System

Maintaining Scarab's well-proven and successful Single-Engine philosophy, Scarab's Magnum Unidrive utilises PTO-driven pumps to operate all hydraulic sweeper functions, while retaining the conventional chassis transmission, to produce a heavy-duty truck-mounted road sweeper that embodies all the advantages that Scarab users have come to expect as standard issue. Designed to cope with the most arduous of operating 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 the chassis engine, which conforms to the latest stringent emission legislation, significant **REDUCTIONS** in **EXHAUST EMISSIONS** and **FUEL CONSUMPTION**, can be achieved, making the Scarab Magnum Unidrive one of the most environmentally friendly, high performance truck-mounted road sweepers.

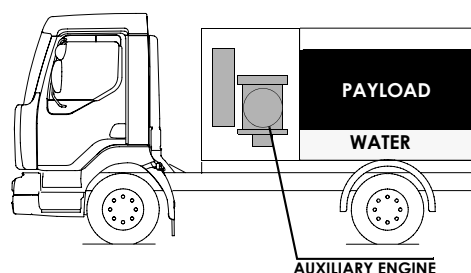


Scarab Magnum Unidrive Sweeper

- **Increased** hopper
- **Increased** payload
- **Simplified** drive system
- **Reduced** servicing and operating costs
- **Reduced** fuel consumption
- **Reduced** environmental impact

Typical Twin Engine Sweeper

- **Restricted** hopper
- **Restricted** payload
- **Complex** engine drive system
- **Higher** operating costs
- **Higher** fuel consumption
- **Reduced** road-speed control



SCARAB UNIDRIVE: Utilising the manual transmission of the chassis and the Scarab manufactured reduction gearbox in the drive-line, the Scarab Magnum Unidrive allows the driver to sweep at a wide range of sweeping speeds, dependent on sweeping conditions. Typical sweeping speeds range from 1.6 mph (2.6 m/h) upwards. A robust engine driven PTO supplies the power for suction fan and brushes.

For 6 speed chassis the Scarab pneumatically operated reduction gearbox is fitted to provide the required sweep speed range (from 0.8 mph/1.1 km/h). This is controlled from the main CANbus panel via motion sensors to prevent engagement when the vehicle is moving.

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 ft³/min (170 m³/min). Mounting the fan on the hopper top creates a virtually straight and highly efficient airflow from suction nozzle to fan, significantly reducing power requirements. There are two operating modes, standard for normal sweeping and boost, to increase suction power for very arduous conditions. When the optional overhead boom is fitted an additional boost speed is provided for even greater suction performance.

SUCTION NOZZLE: Of all-steel construction, the 740 mm wide suction nozzle is mounted in a trailed frame running on 250 mm diameter rubber tyred wheels. A 250 mm diameter suction hose connects the nozzle to the hopper. Easily replaced adjustable rubber flaps and a skid plate are used to form the nozzle inlet and the high suction performance makes feasible a flap to ground clearance of 25–30 mm resulting in a long flap life and less need for adjustment. Four manually adjustable water spray jets are fitted to the nozzle at 90° intervals to provide an internal dust suppression spray. Additional water injection nozzles are available when required. An optional 4-jet water boost bar can also be fitted in front of suction nozzle for use in extreme conditions. A tilting mechanism enables the nozzle to accommodate large objects or autumn leaf build-ups with ease.

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

WIDE SWEEP: 320 mm diameter quick-change 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. Three speed control (nominally 200 / 250 / 300 RPM). Optional brush pressure control is available if required.

HOPPER: 7.2 m³ Gross Hopper Volume* offering a 6.5 m³ Hopper Payload Volume*. Constructed entirely from corrosion and abrasion resistant stainless steel, the hopper is fitted with large access doors on either side and a reinforced rear door with heavy-duty seals. The rear door incorporates an automatic closure system which clamps the door at 3 points, for a watertight seal, and body-drain facility for removal of excess water.

All inlet tubes are fitted with automatic blanking flaps and an easy-to-clean swing-down filter screen is mounted in the top of the hopper immediately below the suction fan. A storage compartment is provided, located on right hand side of the body.

The hopper is tipped by means of a two-stage tipping ram facilitating rapid load discharge.

* Scarab hopper capacities are calculated in accordance with European Standard EN15429

HYDRAULIC SYSTEM: PTO driven 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 system's oil is cooled via a heat exchanger with hydraulically driven high-performance fan, ensuring optimum cooling under the most arduous working conditions and/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 consoles.

** An additional gear pump is added when required, according to need, with optional equipment fits

WATER PUMP: A self-priming pump fitted with suction filter and driven by a direct-drive hydraulic motor. Solenoid valves operated from the CANbus control panel direct water supply to the brushes and suction nozzles. Output is rated at 36 litres/minute @ 50 psi (3.5 bar).

WANDER HOSE: A lightweight flexible suction hose (4 m long x 150 mm diameter), complete with aluminium extension tube and adjustable handle for cleaning awkward areas or gullies. Quick release wander hose points are located at either side of the rear door. The hose can be used while sweeping or on its own for more powerful suction. Optional overhead or rear-mounted booms with aluminium or steel gully entry tube can be fitted if required.

HYDRAULIC TANK: Located adjacent to the oil cooler, 15 litre capacity, with 10 micron return filter, air breather, suction strainer, and sight glass with automatic low-level shut off.

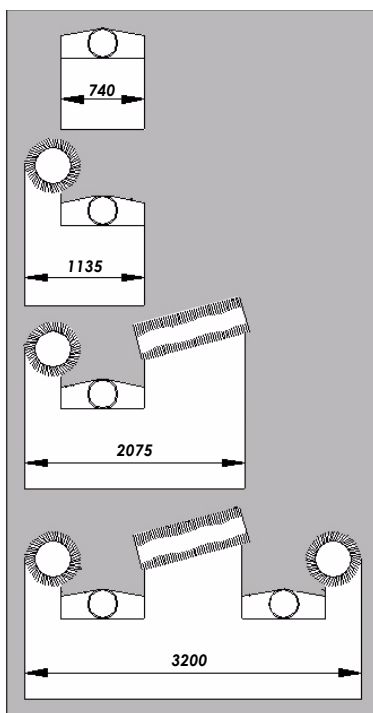
PNEUMATIC SYSTEM: The pneumatic system is connected to the vehicle auxiliary air supply, and is fitted with a pressure regulator, filter / water separator and pneumatic solenoid valves to control the side brush, wide sweep brush, suction nozzle, and gear change. The pneumatic valves are located for easy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

CANbus2 CONTROL: Scarab's tried and tested CANbus system, in service since 2003 has proved to be a successful and welcome innovation. **CANbus2** has been developed to take advantage of the latest chassis technology giving even greater control. A compact panel adjacent to the driver's seat contains all controls for operating the main sweeper functions. The panel also displays relevant operating data and provides system diagnostics and a fault-finding facility. An additional satellite control panel, for frequently used operations is mounted conveniently to hand.

WATER TANK: 1800 litre gross capacity manufactured from corrosion resistant glass reinforced plastic and fitted with a large lid, to facilitate cleaning, a sight glass with level indicator and suction strainers. Filling is by means of a hydrant connector with regulation air break, or alternatively through an optional hose pipe attachment.

PAINTING: Two pack system single colour, optional multi colour and sign-writing.

TYPICAL SWEEPING WIDTHS:



**SUCTION
NOZZLE
ONLY**

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.

**SUCTION NOZZLE
& SIDE BRUSH**

**SUCTION NOZZLE,
SIDE BRUSH
& WIDESWEEP**

**BOTH NOZZLES,
BOTH SIDE BRUSHES
& WIDESWEEP**

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

CHASSIS SUITABILITY:

The Scarab Magnum Unidrive can be mounted on a wide range of chassis.

OPTIONS:.

A comprehensive range of options is available for the Scarab Magnum, please contact the Scarab Sales Department for further information.

TYPICAL WEIGHT DATA:

SINGLE SWEEP CONFIGURATION		DUAL SWEEP CONFIGURATION	
Scarab Equipment Weight	2550 kg	Scarab Equipment Weight	2750 kg
Typical DAF FA LF 55-180** 15 tonne - 6 speed chassis	4235 kg*	Typical DAF FA LF 55-180 15 tonne - 6 speed chassis	4235 kg*
Typical DAF FA LF 55-220 15 tonne - 9 speed chassis	4265 kg	Typical DAF FA LF 55-220** 15 tonne - 9 speed chassis	4265 kg
Typical Iveco Tector ML 140E** 18K 14 tonne - 6 speed chassis	4454 kg*	Typical Iveco Tector ML 140E 18K 14 tonne - 6 speed chassis	4454 kg*
Typical Iveco Tector ML 150E 22K 15 tonne - 9 speed chassis	4340 kg*	Typical Iveco Tector ML 150E 22K 15 tonne - 9 speed chassis	4340 kg*
Typical Mercedes 1318K** 13.5 tonne - 6 speed	4202 kg*	Typical Mercedes 1318K 13.3 tonne - 6 speed	4202 kg*
Typical Mercedes 1318K** 13.5 tonne - 9 speed	4252 kg*	Typical Mercedes 1318K** 13.5 tonne - 9 speed	4252 kg*

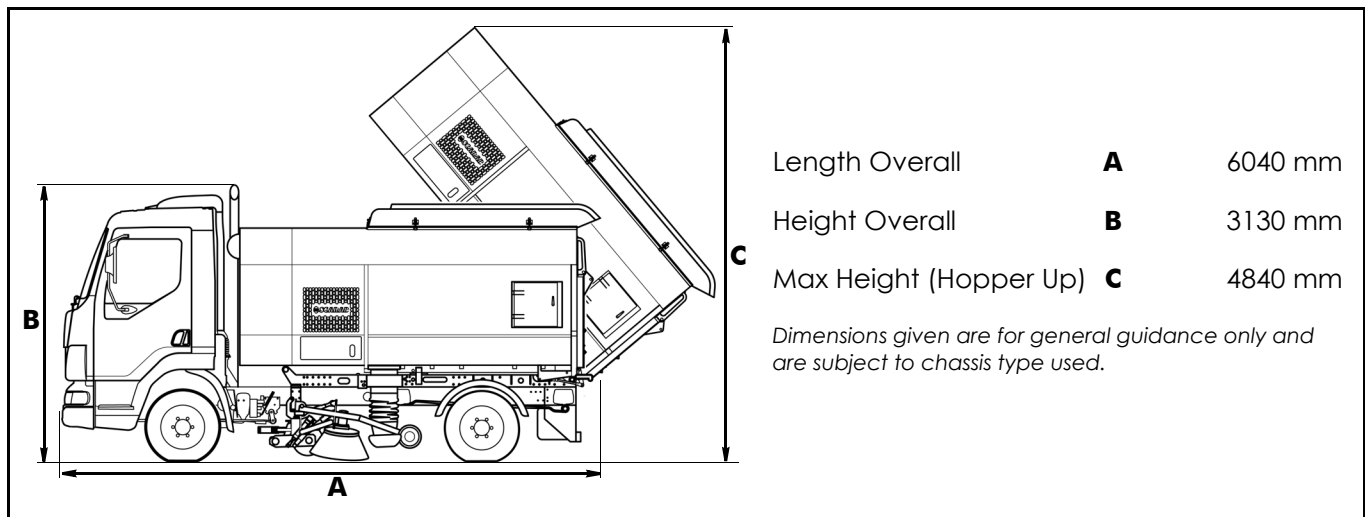
Single sweep configuration includes fixed widesweep. Dual Sweep configuration includes swivelling widesweep
 * Weights quoted were correct at time of publication and are subject to specification and manufacturers' tolerances
 ** Six-speed chassis are fitted with the Scarab reduction gearbox which is installed to provide the desired range of sweeping-speeds. For details of suitable chassis specifications please contact the Sales Department.

TYPICAL PAYLOAD BASED ON A DAF 15 TONNE x 6-SPEED CHASSIS

EQUIPMENT SPECIFICATION	PAYLOAD*
Single Sweep (including Wander Hose and Fixed Widesweep Brush)	8215 kg
Dual Sweep (inc. Wander Hose, Swivelling Widesweep & H-P Water Pump)	7965 kg

TYPICAL DIMENSIONAL DATA:

The following dimensional information is indicative only. For specific chassis related information please make contact with our Sales Department.



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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