# The specialist range

S9000 – S14000

Beam

# The specialist range

Based in Denmark, Beam manufactures a range of high performance sweeping, cleaning and high pressure washing equipment which is sold via our worldwide distribution network. Each machine is tailored to individual customer requirements from a range of modular options.

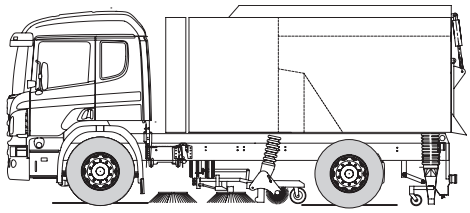
## Modular options

- Hoppers – From 9m³ up to 14m³. Normal steel or stainless steel type 1.4301 (304)
- Power packs – Auxiliary engine or Hydrostatic
- Sweepgear options – Centre brushes, channel brushes, side sliding units, rotatilt functions, etc.
- High pressure water systems – Standard systems up to 300 bar and flows up to 200 litres with a vast array of spray bar options
- Front equipment – Fixed, pivoting and side sliding front brushes, scraper bars, tunnel washing equipment, detergent spray bars, etc.
- Full width suction – between or behind the rear axle
- Additional options – Autolube systems, cameras, fuel tanks, rear and top mounted wanderhoses

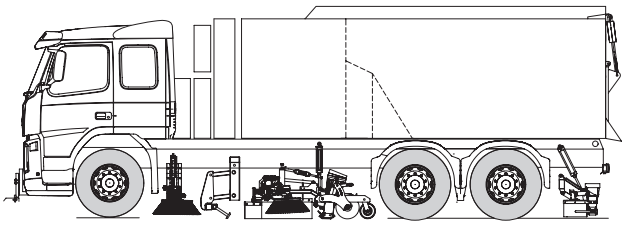
## Hopper modules

With a choice of materials and capacities, the hopper is the starting point for the sweeper specification. Each hopper is made up of 3 primary parts – the engine cowl, the hopper body and the integral water tanks. Other features include, a rear screen shaker, inspection hatch ladder, beacons, single colour paint finish on the exterior of the hopper, dirt inlet to the hopper via replaceable rubber coated wear plates, marker lights, marker boards and the safety prop.

**Hopper modules:**



| S9000 | |
|---|---|
| Voided air volume: | 9m³ |
| Typical chassis GVW: | 18 tonne |
| Typical chassis layout: | 4x2 |
| Water volume standard: | 2900 litres |
| Water volume with rear suction: | 2500 litres |



| S14000 | |
|---|---|
| Voided air volume: | 14m³ |
| Typical chassis GVW: | 26 tonne |
| Typical chassis layout: | 6x2*4 |
| Water volume standard: | 4500 litres |
| Water volume with rear suction: | 4100 litres |

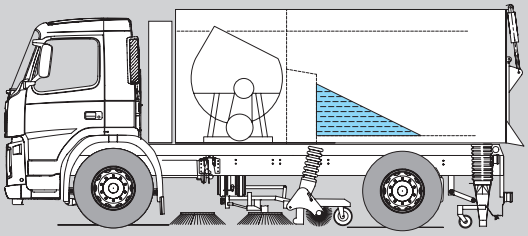
## Water tank modules

The S range has 2 linked water tanks located either side of the hopper for optimum weight distribution and balance. An additional water tank inside the hopper can be either 600 or 1000 litres and an external water tank can be installed between the cab and the hopper. Tanks can be produced from normal steel (internally painted with a special marine coating) or stainless steel, type 1.4301 (304).

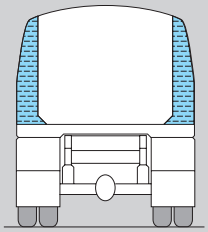
| Model | Additional water tanks (litres) | | | | |
|---|---|---|---|---|---|
| | In hopper (See note 1) | | Behind cab (See note 2) | | |
| S9000 | 600 | 1000 | 1100 | 1500 | 2000 |
| S14000 | 600 | 1000 | 1100 | 1500 | 2000 |
| Dimension 'a' (mm) | | | 315 | 450 | 650 |

Notes

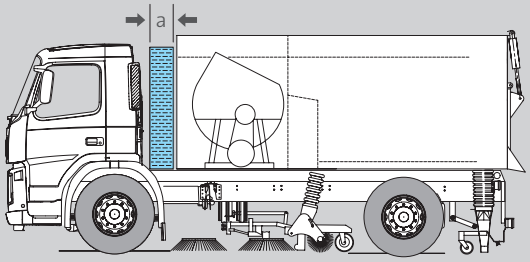
1. In hopper water tanks reduce voided volume
2. A weight calculation is required to ensure axles are not overloaded



Additional tanks in hopper (600 or 1000 litre)



Standard tanks

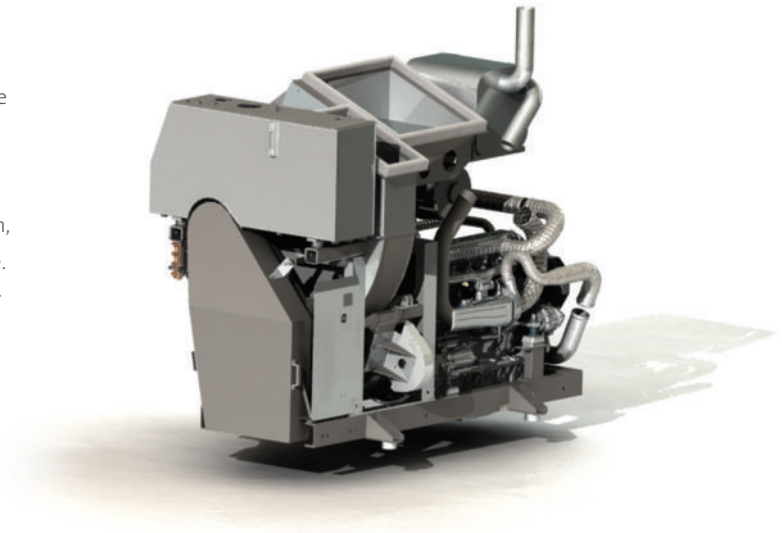



Additional tanks between cab and hopper

## Power pack modules

The power pack uses a choice of Auxiliary engines with power ratings up to 210kW. Power is transmitted to the dynamically balanced fan via a belt drive system and fluid flywheel. The S range is designed to deliver exceptional performance at very low engine rpm keeping noise and fuel consumption to a minimum.

Hydrostatic transmission – for ultimate speed control from 0 km/h, we offer hydrostatic transmissions, driven from the chassis engine. These transmissions can also be used to power the entire sweeper and washer functions from the chassis engine.



Note:

Typical operating speed for normal sweeping is 1200 rpm.

| | 4 cylinder – 129kW | 6 cylinder – 210kW |
|---|---|---|
| Capacity (cc): | 4250 | 7700 |
| Operating revs (RPM): | 900 – 1800 | 900 – 1900 |
| Power output (kW @ RPM): | 130 @ 2200 | 210 @ 2200 |
| Max torque (Nm): | 675 | 1150 |
| Fuel consumption (l/hour): | 5 – 18 | 7 – 20 |

Side sliding brush unit

Rear high pressure V-jets

## Sweep gear options

Designed to withstand the most arduous conditions, we offer a wide range of sweeping equipment to suit all application needs. Below are example layouts although most machines are designed and built to customers' specific requirements.

| Fan impeller | Brush unit trunking diameter | Brush unit nozzle width |
|---|---|---|
| Standard | 275mm | 600mm |
| High capacity | 300mm | 750mm |

### Channel brush

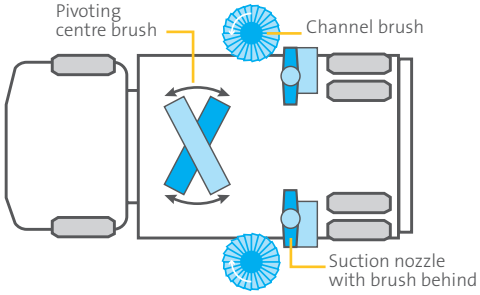
Channel brushes feature trailing arms that minimise the risk of damage on collision with kerbs or other obstructions.

### Brush behind

The brush sits immediately behind the nozzle to enable rapid pick up at very low auxiliary engine rpm, reducing both fuel cost and noise.

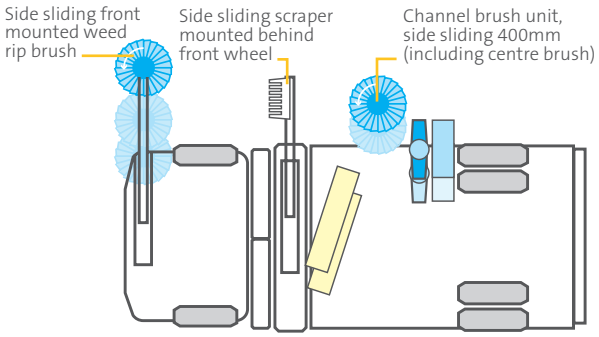
### S9000

Conventional sweep gear configuration



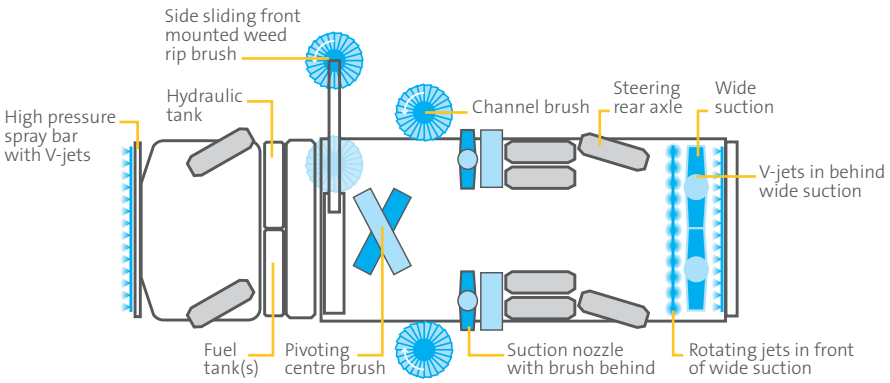

### S9000

Heavy duty multi-task sweep gear configuration




### S14000

Heavy duty construction type sweep gear configuration



## Side sliding brush unit

The channel brush and nozzle extend up to 400mm enabling the machine to keep away from the edges of a freshly laid surface.

## Rotatilt function

The Rotatilt function of the channel brush precisely angles the brush both laterally and longitudinally.

## Simple scraper

Mounted behind the front wheel, the simple scraper lifts compacted mud and debris from the surface.

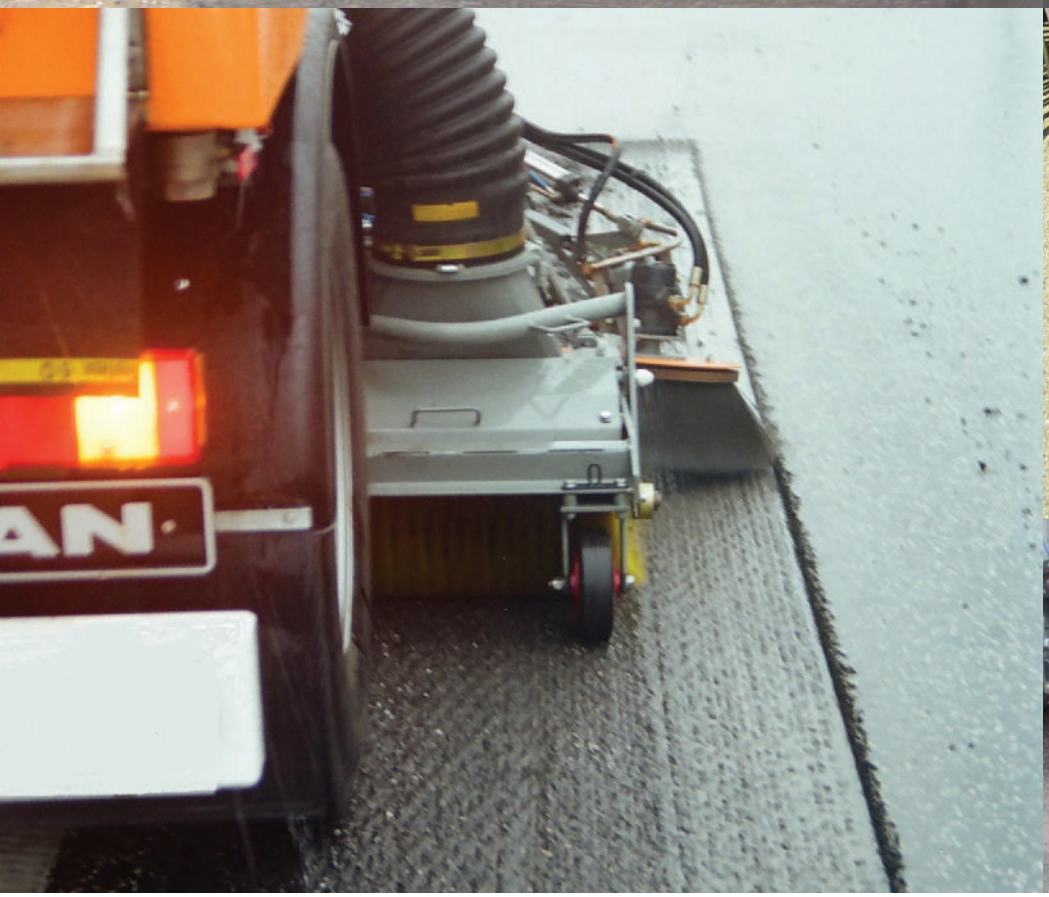
**Far Left**
Trailing arm channel brush

**Left**
Brush behind suction nozzle

**Below left**
Side sliding brush unit

**Below**
Channel brush rotatilt function

**Bottom**
Simple scraper behind front wheel



## Full width scraper

A full width scraper under the body of the chassis.

## Edge cutter

Edge cutter cutting back encroaching verge, maintaining road width and preventing surface damage.

## Pivoting roller brush

The front mounted roller brush is ideal for brushing freshly milled asphalt onto the unmilled section. It can also be used for brushing snow.

## Weed rip brush

For tough jobs a weed rip brush, 750mm side sliding (can also be interchanged with the edge cutter).

## 1100mm dia. front mounted brush

For the ultimate in reach and flexibility, the front mounted 1100mm brush (1100mm side sliding).

**Far left**
Full width scraper bar

**Left**
Edge cutter and plough

**Bottom left**
Front mounted pivoting roller brush

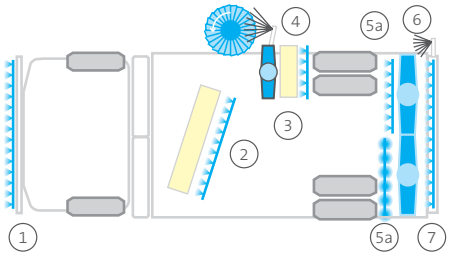
**Below**
Side sliding brush unit with weed rip brush

**Bottom**
1100mm diameter side sliding front brush

# High pressure water system modules

A wide range of high pressure systems is available up to 300bar @ 100 l/min. Water may be applied to the road surface through a selection of spray bars via either V jets or, for deep cleansing, rotary jets.

| System | Pump type | Minimum engine size |
|---|---|---|
| 140 bar @ 47 l/min | Membrane | 129 kW |
| 150 bar @ 106 l/min | Piston | 129 kW |
| 200 bar @ 106 l/min | Piston | 129 kW |
| 250 bar @ 110 l/min | Piston | 210 kW |
| 300 bar @ 110 l/min | Piston | 210 kW |
| 240 bar @ 172 l/min | Piston | 210 kW |
| 400 bar @ 50 l/min | Piston | 210 kW |
| 600 bar @ 50 l/min | Piston | 210 kW |




| Ref | Spray bar position |
|---|---|
| 1 | Front mounted, fixed |
| 1 | Front mounted, manual pivot |
| 1 | Front mounted, pneumatic pivot |
| 2 | Behind wide sweep brush |
| 3 | Behind suction nozzle with V-jets |
| 4 | Behind channel brush with V-jet |
| 5a | In front of wide suction with V-jets |
| 5b | In front of wide suction with rotating jets |
| 6 | To the side of the wide suction with V-jets |
| 7 | Behind wide suction with V-jets |

Note: Wide suction can be mounted between axles as well as behind rear axle

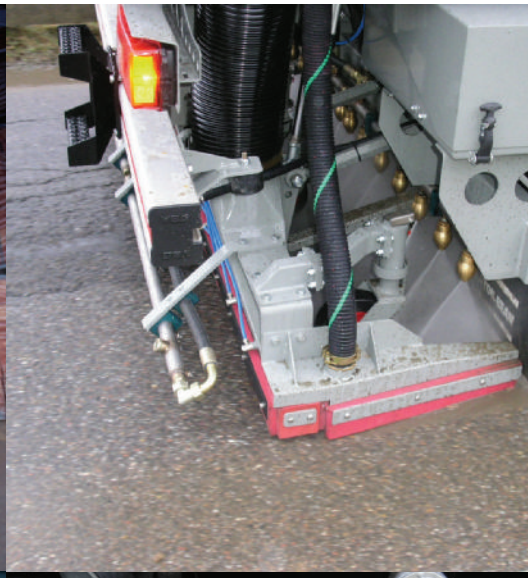
**Far left**
Rear spray bar. V-jets behind wide suction

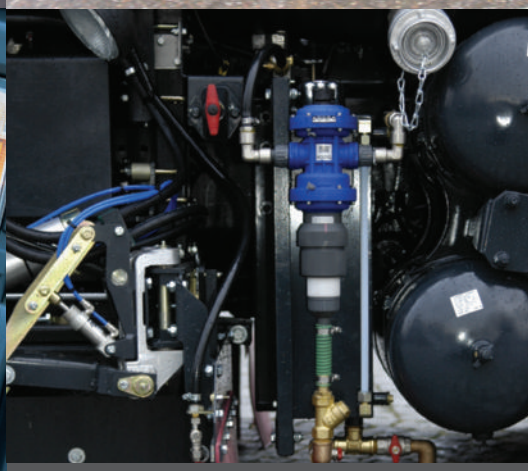
**Left**
Rotary jets. Powerful rotary jets for deep cleaning

**Below left**
Front spray bar. High pressure front spray bar options

**Below**
Side jets. High pressure jet gets into the very edge

**Bottom**
Channel brush spray bar. Channel brush spray jet cleans right into the kerb edge





**Above left**
Full width rear suction

**Top**
Side suction

**Left**
Front mounted detergent spray bar

**Above**
Variable dosing system

## Detergent options

Detergent system options for grease and oil spill removal. Front mounted detergent spray bar for stand-alone dispersal. Variable dosing system to control the dilution of the detergent by mixing with water.

## Full width suction nozzle

Rear or mid mounted, the full width suction unit features two articulated rubber-lined nozzles which, in combination with a choice of high pressure water systems, offers optimum surface cleansing increasing surface friction levels and providing safer driving conditions. Side suction pods minimise the spill of water.

## In-cab control systems

The sweeping controls are located in the cab.

**Far left**
Standard control panel

**Left**
Integrated controls are an optional extra

## Wanderhoses

There are nine different wanderhose options mounted either at the rear or on top of the vehicle – ideal for clearing out gulleys at the edge of the runways or taxiways or for tough to reach areas.

**Far left**
Top mounted wanderhose

**Left**
Rear mounted wanderhose

## The Beam Rotorcleaning system

As an alternative to full width rear suction and spray bars, Beam offers a rear mounted Rotorcleaning system. The Rotorcleaner achieves superior results using lower volumes of water. It operates at 60 to 80 litres per minute compared to the traditional 100 litres per minute. This reduces the costs of fuel, waste disposal, refilling and allows for better utilisation (more on-station time). This system is equally valuable when used in road maintenance, construction, industrial site cleaning, and aircraft parking stand cleaning.

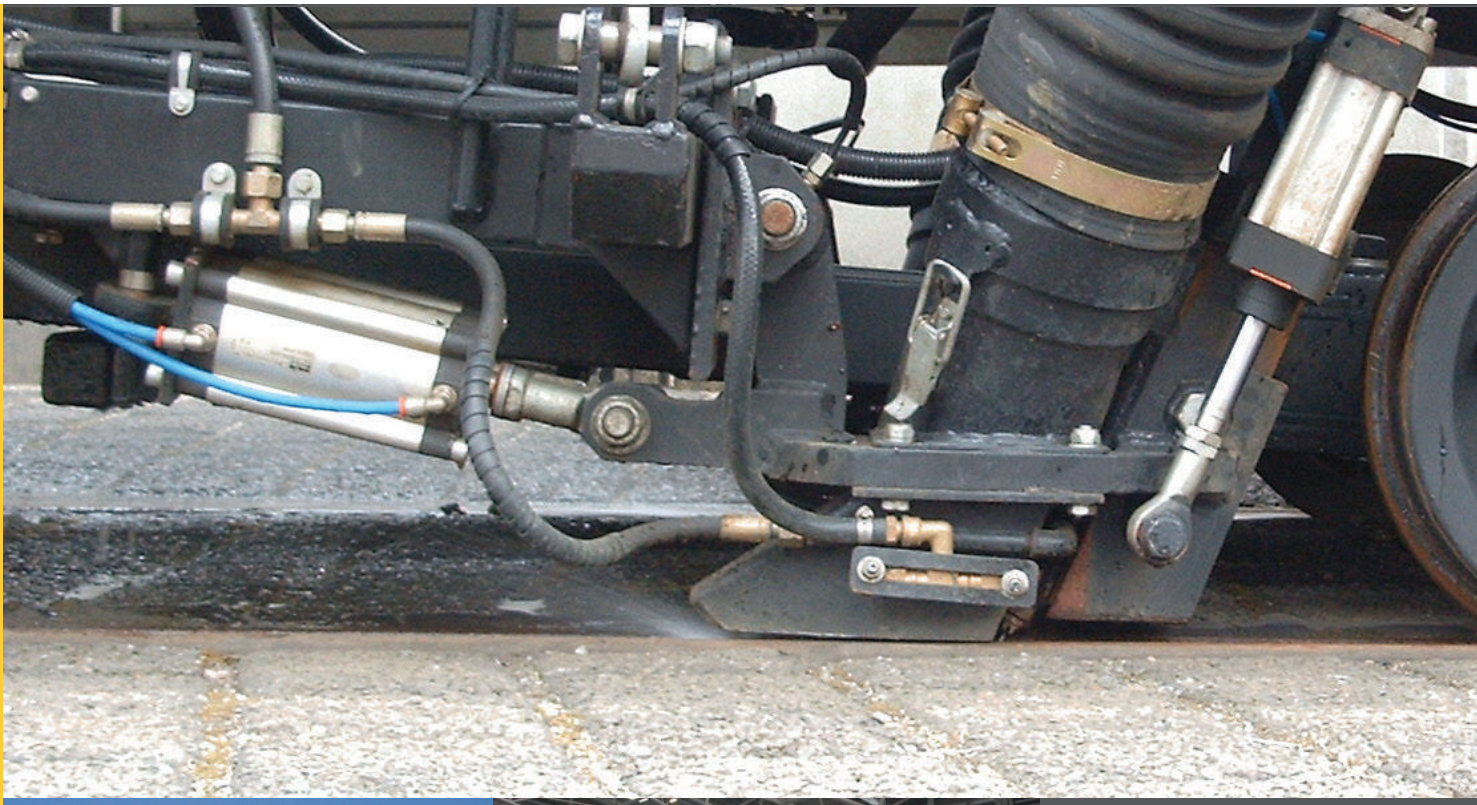
The system is rear mounted, it uses 4 rotating spray bars covering the full width of the truck and full width suction. It is completely enclosed ensuring no water seepage and a high vacuum that collects all water and waste. It can be used with a range of high pressure pumps from 100 to 600 bar.

Note: only compatible with 9 and 14 cubic hoppers.

**Top left**
Rotorcleaner system

**Top right**
Side view of system

**Bottom left and right**
Before and after on mud road



**Above**
Tram track cleaner

**Far left**
Recycling machine

**Left**
Hot water system

# Special solutions

## Tram-track cleaning

Tram tracks collect leaves, dirt and grease. The tram track cleaner scrapes out the compacted debris, jet cleans with high pressure water, vacuums the waste into the hopper and then lubricates the track. The sweep gear can be made to be demountable.

## Recycling system

We have developed a system to re-cycle water used in high pressure washers. Special separators, working tanks and high pressure pumps enable machines to operate continuously for 4, 6 or even 8 hours. This offers a huge saving in time, fuel and waste charges.

## Our focus is always

- Cost effectiveness – single operator solutions
- Safety – machine operation from protected position in cab
- Environmentally friendly – low operating engine speed means less fuel consumption and lower noise levels

## Line removal

Replacing the expensive and slow, ultra-high pressure water and the environmentally damaging thermal lance method, the line remover grinds away the painted surface.

## Tunnel washing

Front mounted tunnel washing robotic arm uses high pressure water, combined with V-jet or rotating jet spray bars and/or brush systems to wash tunnel walls, ceilings, road signs, crash barriers and central reservation walls. It has a 7m cleaning arc and 3-axis rotation. With the added benefit of being part of a sweeper, it cleans up after itself too.

## Front mounted edge cutter

Mounted at the front, the edge cutter can side slide by 750mm to allow the truck to clear overhanging trees. For cutting back encroaching verges.

**Left below**
Line removal machine

**Below top**
Tunnel washer with spray bar options or rotary brush

**Below center**
Tunnel washer with brush system

**Below bottom**
Front mounted edge cutter

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