

Airport Technology



Airport engineering by Schmidt: because safety and efficiency belong together.

Airports require careful and responsible specialists for its challenging transport sector. Schmidt has been developing innovative technology for over 95 years with the whole transport operation in mind. We guarantee our airport customers the best technology and the highest level of safety and efficiency around the clock, whatever the weather, due to our wealth of expertise.

Shanghai, Moscow, Dubai, Stockholm, Frankfurt... Schmidt's first rate skills in problem-solving are in demand across the world.

Problem-solving, our main concern is to make customised solutions available for particular conditions and requirements. Our service comprises of a range of products and experience that one could only expect from a world-leading company.

We produce flexible accessory equipment to be inserted as well as building machines. We develop modular exchangeable swap body systems, and design and create high-performance specialised vehicles. We show just how capable we are through our comprehensive consultation and training expertise in our workshops, in how we train our drivers and in our after-sales service which is there to ensure safety and efficiency. Schmidt provides premium solutions for every possible detail.

Innovative technology for greater efficiency and higher standards in quality so that you can sit back and relax.

We rely on quality when we manufacture components. We place particular value on producing hard-wearing and long-lasting products. We are always striving to make environmental sustainability as the standard in our processes and materials. Efficient quality management saves resources and lowers costs. We take care that only parts and materials are used, which come from suppliers who wholeheartedly share our high standards.

Schmidt: Reliable from the roots up and your best partner for achieving all your goals.

Schmidt has been a permanent part of the Aebi Schmidt Group since 2007 after a joint resolution made by equivalent partner companies whose aim and practice it is to combine first class expertise with products that are equally first class.

It is becoming more imperative for airports to place safety and efficiency together. You will find us to be a company that has set its sights clearly on the future and which has already assigned standards to many technical industries. Trust a partner who can change current challenges into safe precision landing procedures.

More modularity, more system, more efficiency. Combine our cleaning expertise alongside our winter technology.

Cleaning is highly important for maintaining safety on take-off and landing runways. Schmidt also provides a diverse range of products for this sector which reliably increase the efficiency and safety of your airport. When you combine our winter maintenance technology with our cleaning technology in particular, there is seamless interaction between man and machine using a standard control panel, for example. This is an advantage which keeps on paying throughout the year.

Whether you want to sweep away dirt, de-icer, liquids or FOD, our machines take care of all your cleaning needs.

The AS990 achieves the perfect road sweeping result by covering a large area and enabling safe transport routes across the whole airport area at the same time. The AS990 has been especially designed to guard against FODs (Foreign Object Damages) on take-off and landing runways, that is, potential damage caused to aircraft through flung objects.

There can also be danger due to escaped liquids, such as oil.

The AS990 provides a suitable solution in the ASC990 model for carrying out special and basic cleaning on transport routes and aircraft parking positions

Maximum security is a question of technology. Schmidt provides you with the correct answer.

Our answer to these dangers is to provide high performance machines, magnets, special brushes, rollers and suction fans in different combinations, for different operations. We commit to offering you our professional expertise so that you are never left alone with your questions in any situation. We are happy to provide consultation.



Mounted road sweeper AS990 - Mount

The flexible mounted road sweeper, the AS990, provides an uncompromised cleaning, whatever the challenge.

The AS990 is a high performance and flexible machine that works reliably. Whether it is solid materials, or liquids, the AS990 collects everything during its operation.

	AS990
Operating speed	Up to 40 km/h
Transportation speed	Up to 80 km/ h
Hopper capacity	9.5m ³
Suction width	2,300 mm
Liquid suction unit	2,500 mm
Sweeping width of disc bru	ush 3,500 mm
Water tank	2,000 (optional 3,000 /4,100)
Auxiliary engine	
DC OM 906 LA	EuroMot IIIA / 205kW
DC OM 926 LA	EuroMot IIIB / 210 kW

Advantages of the AS990

- Multi-functional, all year round use by mounting a snow plough or by using the blast nozzles.
- Optimal axel load distribution.
- Large ground coverage thanks to an optimal sweeper speed.

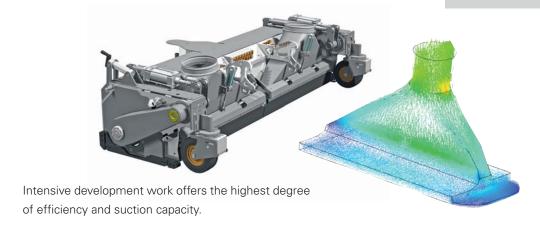
The machine cleans large areas of ground quickly during one operation cycle using two disc brushes (optional) mounted at the rear of the sweeper unit and by using high performance suction fans. With its blast nozzles and the rear mounted standard sweeping unit (or the optional liquid suction unit which can be mounted quickly) the AS990 is the optimal solution that can be used all year round. The machine has the option to be fitted with a PMB 2400 magnet bar, with a front mounted sweeping machine or with a snowplough.

SHS rear suction unit with end-to-end cross brush on suction nozzle, sweeping width of 2,300 mm -optional quick change.

For both suction ducts a cross brush is inserted which reaches across the whole sweeping width to make the sweeping process quicker. A possible working speed of up to 40 km/h can be reached.

Chassis

All current truck chassis with the correct specifications are suitable for the unit to be mounted. The universal frame is fitted according to the manufacturer's mounting guidelines.





Reliable CAN controls

- Customisations can be easily adapted to the system.
- All functions are operable through the control panel in the driver's cab.
- Relevant machine information is shown on the colour display.
- Symbols are used to make viewing quick and operation intuitive.

Mounted road sweeper AS990 - Mount

Large hopper capacity, 9.5 m³ total

A generously proportioned dirt hopper for large quantities of debris (hopper capacity complies with DIN EN 15429 / 7.4 m³). In our standard model, the hopper bottom is made of stainless steel. The dirt hopper is tilted to 52° using hydraulics which allows safe emptying. The engine does not have to be switched on for the hopper to be tilted.

Separate 2,000 I water tank made from polyethylene (PE)

The water tank is mounted between the driver's cab and the auxiliary motor to reduce the noise and is fitted with suction fans. It is easily accessible through a cleaning opening. Optionally an additional water tank with a capacity of 2,000 I can be ordered.



Optional Fittings

1. Blast nozzles on the left and right

For cleaning during summer and winter. A blast nozzle both underneath and at the side of the truck allows increased blasting power and optimal cleaning. Also available with a pneumatic height adjuster.

2. Disc brushes on the left and right

For cleaning curb stones or for increasing the sweeping width. Pneumatic brush ground pressure control and swivel pressure. Water spray nozzles mounted to make dust bind together.

3. Extendible suction nozzles on the left and right

Two suction nozzles on the left and right mounted in front of the rear axle. The suction width increases by 500 mm as a result. Both suction nozzles can be used simultaneously, if so desired. The suction nozzles are controlled using pneumatics and can be adjusted sideways to 320 mm. Suction is possible when the suction nozzle is moved out or in. The integrated water spray nozzles facilitate dust binding.





Mounted road sweeper - Suction- / Sweeping unit

SHS rear suction unit

A cross brush which reaches across the whole of the sweeping width has been added to both suction nozzles to speed up the sweeping process (mechanical sweeping). A possible working speed of up to 40 km/h can be reached.

The sweeping unit is mounted using a flexible independent lifting device on the chassis. This enables that the machine is aligned at an optimal angle to the ground during the sweeping process. The high performance retractable castor wheels guide the suction unit steadily over the road surface.

A coupling link can be optionally included so that the sweeping unit and the liquids suction unit can be quickly changed which allows for easy maintenance and control. It takes no longer than 10 minutes to change if rear mounted.

SHS Rear mount suction unit features

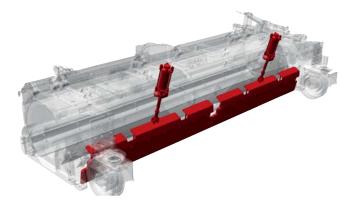
- Symmetrical weight distribution
- Rolling brushes can be lifted up when going over barriers or obstacles (rubber bumper)
- Easily accessible cable inspection chamber
- Water nozzles can be changed quickly using a plug-in coupling
- Quick and easy to change brushes using the telescopic tube
- The sweeping level can be continuously adjusted from outside
- Central sweeping level system which uses a colour scale to show if there is any abrasion.

The standard model has a 'debris flap' fitted to the suction vehicle. The pneumatic debris flap can be operated from the driver's cab to collect large debris.



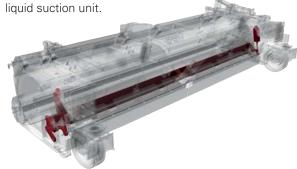
For a premium sweeping process:

- Two suction nozzles: width 2 x 1,150 mm. The suction nozzles are built to optimise uptake and the interior is coated with high performance vulcanised rubber as standard to reduce friction and produce less debris.
- Brushes are behind the suction nozzle, diameter 400 mm; length 2,300 mm
- Direct operation of the brushes using a hydraulic motor.
- Integrated debris flap.
- Total unit set on 3 castor wheels achieves that the machine is optimally aligned with the ground. The castor wheels are swivel-mounted and fitted with a medium return spring.
- Rear suction unit is automatically lifted up when reversing.
- Brushes can be changed in 10 minutes.



The SHS rear mount suction unit can be optionally fitted with a **liquid flap**. When the liquid flap is activated the cross brushes are lifted up behind the suction nozzle and a flap is lowered to improve liquid take-up. Liquids can be taken up without using the cross brushes which reduces wear considerably.

The optionally fitted liquid flap, however, does not achieve the same high standards as our liquid suction unit



Mounted road sweeper - Suction- / Sweeping unit

Liquid suction unit

The liquid suction unit is specially designed to take up liquids such as water or deicer/glycol without difficulty.

- Two suction nozzles: width: 2 x 1,250 mm. The suction nozzles are built to optimise uptake and the interior is coated with high performance vulcanised rubber as standard to reduce friction and wear.
- A central hinge enables that the machine is at an optimal angel to the ground on uneven or sloping terrain (e.g. aircraft parking positions)
- The whole system is guided on 6 castor wheels. The wheels are swivel-mounted and enable optimal alignment and guidance with the ground.
- Rear suction unit is automatically lifted up when reversing.

Liquid suction unit features:

- Takes up liquids up to 100% effective
- Takes up glycols effectively 96 to 99%
- Rear mount available or can be mounted between the axles.
 Dual mount model also available.



Using the optional quick change system, the SHS rear mount suction unit can be exchanged for a liquid suction unit without tools and in just a few minutes. The dual version model is also available as an option (mounted between the axles and as a rear mount)





Standard rear mounted suction unit



Liquid suction unit (mounted between the axles)



Liquid suction unit (rear mount)



Dual Version: Standard rear mount suction unit (rear mount) and liquid suction unit (mounted between the axles)

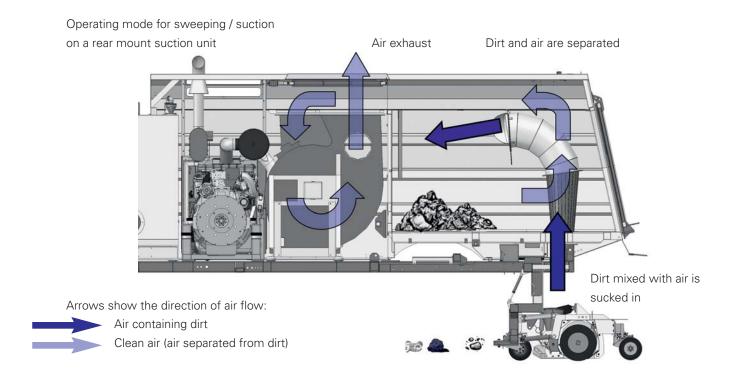
"The optimal recommended configuration":

Magnet bar / Disc brushes / Blast nozzles / Rear mounted suction unit.





Mounted road sweeper - Hopper



A convincing suction process using a high free flow

For large amounts of debris

The bottom of the hopper is made of stainless steel as standard. As an additional option the hopper walls and rear flap or the rear flap only can also be made of stainless steel.

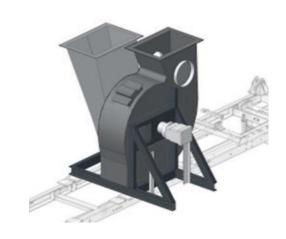
Free flow	32,000 m³/h
Max. hydrostatic head under pressure	1,070 mm
Max. revolution speed	3,300 U/min
Drive	hydrostatic

- 2,000l water tank made from polyethylene rust free Option: 2,000 I water tank (please note wheel base)
- Hydraulics activated water pumps. max. 37 I/min dry run protected
- Feature suitable for winter: whole water tank system automatically emptied (anti-freeze feature)
- Water nozzles at front of suction unit in suction nozzle and suction pipe, as well as on disc brushes make dust bind together.

Hydraulic suction fan system

The suction capacity can be adjusted according to the degree of pollution. A speed sensor is built into the hydraulic system which monitors how the suction fan is functioning.

The suction fan can be continuously adjusted. The revolution speed is controlled by hydraulics and can be adjusted accordingly using the control panel. Unlike conventional fan and toothed belts maintenance is not required. The fan wheel and the casing surface are made from wear-resistant metal.

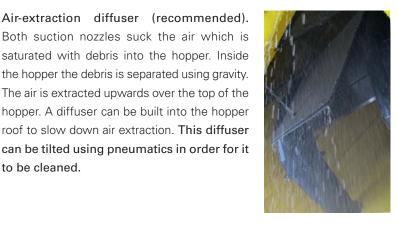


Mounted road sweeper - Hopper

The hopper can be tipped using a separate remote control which is attached to the unit via a flexible cable. The handheld control panel is wrapped in water-proof packaging. The hopper can be tipped without starting the engine.

- Large total hopper capacity: 9.5 m³
- Net capacity complies with DIN EN 15429: 7.4 m^3

Both suction nozzles suck the air which is saturated with debris into the hopper. Inside the hopper the debris is separated using gravity. The air is extracted upwards over the top of the hopper. A diffuser can be built into the hopper roof to slow down air extraction. This diffuser





to be cleaned.



Easier servicing

- For servicing and training purposes, it is possible to attach the control unit directly onto the electrical control box.
- •The centrally installed electrics and electronics, which are protectively encased, offer easy access for maintenance and servicing.

Water drain nozzle on the rear flap

If necessary, this allows excess water or de-icer to be drained off.

Rear view monitor (optional)

A camera can be mounted onto the hopper flap. It is automatically turned on as soon as the vehicle is put into reverse gear. The picture is displayed on the control unit screen.

Special design for cleaning parking positions ASC990

The ASC990 in operation

The ASC990 cleans aircraft parking positions by using a mixture of detergent and water. The spraying bar situated in front of the disc brushes wets the dirty area using cleaning emulsion before the disc brushes get to work by roughening the surface. The loosened material is then taken up into the hopper via the rear sweeping unit. The cleaning of parking positions version is particularly suited to carrying out essential cleaning on transport routes as well as taking up oil, for example.

	ASC990
Hopper capacity	9.5 m ³
Water tank	3,000
Detergent tank	700
Disc brushes	Ø 1,200 mm
Standard sweeping/suction width	2,300 mm
Optional swivel-mounted disc brushes	3,500 mm
Operating speed	up to 40 km/h
Transport speed	up to 80 km/h
Ground coverage	up to 140,000 m ² /h

ASC990 construction

The ASC990 can be mounted onto lots of current models with the appropriate specifications. The ASC990 is a self-contained machine that is based on the AS990 as far as is possible.

Large total hopper capacity: 9,5 m³

The dirt hopper is generous in its dimensions to allow for large quantities of debris (hopper capacity complies with DIN EN 15429 / 7.4 m³). The bottom of the hopper is made from stainless steel as standard. The dirt hopper can be tipped to 52° using hydraulics which allows proper emptying. The hopper can be tilted without starting the engine.

ASC990 features

- Large disc brushes
- Enlarged water tank
- Detergent unit as standard
- Large volume detergent-/ cleaning liquid tank

	AS990	ASC990
Chassis wheel base		
(recommended /depends on mounts)	approx. 4,500 mm	Approx. 4,800 mm
Water tank	2,000 litres	3,000 litres
Detergent tank	Unavailable	700 litres
Combined detergent	unavailable	Two spray bars with 6 spray
and water spray bar		nozzles each mounted in front of
		the disc brushes
Disc brushes opt	tional (Ø 1,000 mm)	The disc brushes lie flat on the
		ground and operate over the entire
		width of the truck (approx.
		2,400mm)

Special design for cleaning parking positions ASC990

Modular construction

The SHS rear mount suction unit with integrated brushes, rear liquid suction unit or a liquid suction unit between the axles. Option: dual version (liquid and rear suction unit between the axles).

Most of the options that are available for the AS990 are also available for the ASC990.









High pressure cleaning system using rotating nozzles

An efficient high pressure cleaning bar can be mounted onto the front of the liquid suction unit and can operate at up to 200 bars and 70 l/min. This can deep clean a surface width of approximately 2.4 m while sucking away water and dirt at the same time. The ASC990's cleaning performance is improved even more with this added option.



Parking position cleaner

6 water nozzles and 6 detergent nozzles are positioned in front of the disc brushes. The water nozzles are filled using hydraulic operated water pumps (max. 10 bar/37 l/min). The detergent nozzles are filled using a separate pump.

The disc brushes rub the cleaning emulsion (made from water and detergent) into the surface.

Optional equipment

Handheld suction hose

For cleaning gullies, water channels etc. Mounted onto the hopper's rear flap. Hose diameter: 200 mm. Control unit is fixed onto the handheld suction hose.

Hose reel with cleaning hose

For a rough cleaning after emptying. 10 metre long hose pipe with attachable nozzle. Water pressure at 10 bar / 37 l/min using a hydraulics operated water pump which automatically turns itself off when there is no water.

Foam marker

There is the option to mount a foam marker onto the right and left side of the sweeping unit so that the operator knows which surfaces have been swept, therefore avoiding going over the same surface twice.

Auxiliary engine

- Driving engine complies with modern technology-Mercedes Benz OM 926 LA, 6 cylinder.
 Emissions comply with EuroMot IIIB
- Mercedes Benz OM 906 LA, 6 cylinder, Emissions comply with EuroMot IIIA
- Environmentally friendly according to the latest emissions standards.

Cold start mechanism

The cold start mechanism facilitates that the auxiliary engine starts at temperatures below -20°C, and even in the harshest operating conditions.

Chassis

All current truck chassis with the correct specifications are suitable for the unit to be mounted. The universal frame is fitted according to the manufacturer's mounting guidelines.











Modular fittings

PMB 2400

The mounted magnet bar picks up magnetic objects, so ensuring safety on start and landing runways. It is balanced by two castor wheels and is designed to be mounted quickly onto the vehicle mounting plate.

	PMB 2400
Operating width	2,400 mm
Field density	300 Gauss at 100 mm
	Distance from ground
Lifting and lowering	hydraulic

VKS 4.2-34-H

A robust sweeping brush to sweep away large amounts of pollution and snow or slush. The castor wheels can be adjusted in height and have pneumatic tyres to apply the right pressure on contact with the surface and to clean more efficiently

	VKS 4.2-34-H
Brush diameter	800 mm
Brush length	3,400 mm
Sweeping width (26°)	ca. 3,055 mm
Drive (of vehicle)	hydraulic

Snow ploughs

	Tarron / MS 48.1	Tarron / MS 48.1N	Tarron / MS 56.1	Tarron / MS 56.1N
Plough height left and right	1,550 mm	1,330 mm	1,550 mm	1,330 mm
Plough height middle	1,420 mm	1,200 mm	1,420 mm	1,200 mm
Length of cutting edge	4,800 mm	4,800 mm	5,600 mm	5,600 mm
Clearing width at (32°)	4,070 mm	4,070 mm	4,750 mm	4,750 mm
Weight approx.	1,660 kg	1,590 kg	1,840 kg	1,750 kg

N = reduced plough height

Different types available e.g.: SNK, Tarron / MS-plough

	SNK 34	SNK 37
Snow plough height	1,180 mm	1,180 mm
Length of cutting edge	3,400 mm	3,700 mm
Clearing width at 30°	2,940 mm	3,180 mm
Weight approx.	505 kg	560 kg
Cutting edge segments	5	5









Schmidt Services

Schmidt Services:

Comprehensive and as much as you want

Good service is not just an empty promise; it has to be proved through experience, and especially in individual situations. You can decide whether to make use of Schmidt's general services or our TLC service programme.

Our unique service programme, 'Total Lifetime Care' (TLC), is key to allowing our services to properly suit your individual needs. With 'Total Lifetime Care' you will receive a comprehensive warranty for replacement parts which includes their supply. Schmidt efficiently manages replacement part supply all over the world and currently has over 96,000 replacement parts in stock. Take advantage of our emergency service, tailored maintenance contracts, professional employee training courses and so much more. We are always ready and willing to advise you!



Schmidt's services are also able to offer tailored problem solving expertise from problem analysis to product manufacture.

Schmidt not only delivers high performance machines but is also an innovative partner and a forward-looking idea provider. Working closely in cooperation with our customers is key to providing solutions which can help solve unique problems efficiently and optimise how work is delegated at airports.

The range of services that we provide includes help with the diverse technical potential that our machines provide, such as logistics concerning snow clearing or de-icing, as well as how to organise the clearing process efficiently. This is all done with financial and safety factors in mind, as well as environmental aspects. Come and trust our experience in airport services from around the globe and benefit from our flair for progressive development and our new range of services.

Schmidt provides first class service all over the world

Our international supplier and service network is certified and guarantees a global, constantly reliable service. Our employees are available to answer all of your questions, as are our onsite supplies all over the world. We look forward to meeting you!





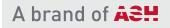
	AS990	ASC990
Mount		
Hopper capacity approx.	9.5 m³	9.5 m³
Hopper tipping angle	52°	52°
Length of mount approx.	5,910 mm	6,490 mm
Height approx.	2,380 mm	2,380 mm
Water tank volume approx.	2,000 l	Water tank 3,000 l Detergent tank 700 l
Drive / auxiliary engine		
Mercedes Benz OM 906 LA ; EuroMot III A	205 kW @ 2200 rpm 6.37 l cubic capacity 6 cylinder, 1100 Nm	205 kW @ 2200 rpm 6.37 l cubic capacity 6 cylinder, 1100 Nm
Mercedes Benz OM 926 LA ; EuroMot III B	210 kW @ 2200 U/min 7,2 I cubic capacity 6 cylinder, 1120 Nm	210 kW @ 2200 U/min 7,2 I cubic capacity 6 cylinder, 1120 Nm

Sweep & suction unit		
Rear suction unit (with integ. brushes)		
Rear liquid suction unit	To be selected	To be selected
Rear liquid suction unit between axles	10 be selected	To be selected
Dual version (between axles liquid & rear suction unit)	Option	Option
Quick change mechanism for rear suction unit	Option	Option
Side extendable suction nozzles between axles	Option	Option
Suction nozzle (inside)	Diameter 250 mm	Diameter 250 mm
Width of suction nozzle on rear suction unit	2 x 1,150 mm	2 x 1,150 mm
Width of suction nozzle on fluid suction unit	2 x 1,250 mm	2 x 1,250 mm
Brushes on rear suction unit, revolutions approx.	max. 550 rpm	max. 550 rpm
Disc brushes	Option	Standard
Disc brush diameter / revolutions approx.	Diameter 1,000 max. 120 rpm	Diameter 1,200 max. 120 rpm
Brush bristles	Steel or plastic	Steel or plastic
Rear suction unit	2,300 mm	2,300 mm
Width of suction nozzle on liquid suction unit	2,500 mm	2,500 mm
Water installation		
Water tank volume approx.	2,000	3,000
Detergent tank (at ASC 990)	-	700
Water spray nozzles	4 in suction unit	4 in suction unit
	2 in suction tube	2 in suction tube
	7 on spray bar	7 on spray bar
	(2 on each disc brush)	(2 on each disc brush)
Water spray bar + cleaning fluid spray bar (detergent)		6 water nozzle
in front of disc brushes (only ASC990)		6 detergent nozzle
Water pump (hydromotor drive)	Max. approx. 10 bars/37 l/min	Max. approx. 10 bars/37 l/min
Cleaning hose / hosing mechanism	6 m hose with nozzle	6 m hose with nozzle
Blast nozzle		
Free flow approx.	32,000 m³/h	32,000 m³/h
Vacuum max. approx.	1,070 mmWS (0.105 bars)	1,070 mmWS (0.105 bars)
Revolutions max. approx.	3,300 rpm	3,300 rpm
Drive	Hydraulic motor	Hydraulic motor
Suction fan	Option	Option
Blower direction	Left or right	Left or right
	also underneath truck	also underneath truck
Air speed approx. (nozzle outlet)	85 m/s	85 m/s

Speed		
Transport (dependent from chassis)	Up to 90 km/h	Up to 90 km/h
Sweeping non-stop/short-term operation	Up to 25 km/h / up to 40 km/h	Up to 25 km/h / up to 40 km/h

Recommended chassis (example)		
Gross vehicle weight	18 – 20 t	18 – 20 t
Wheelbase approx.	≥ 4,500 mm	≥ 4,800 mm
Frame overhang (behind rear axle)	1,500 mm	1,500 mm
Example vehicle specifications		
Length approx.	8,250 mm	8,550 mm
Width approx.	2,500 mm	2,500 mm
Height approx.	3,360 mm	3,360 mm
Overhang approx.	2,230 mm	2,230 mm
Weight of mount approx. (basic configuration)	6,000 kg	7,000 kg
Payload approx.	6,300 kg (with 18t chassis)	5,300 kg (with 18t chassis)
Example truck chassis	Mercedes-Benz Axor 1824	

Mercedes-Benz Axor 1824
Mercedes-Benz Antos and Arocs
MANTGM 18.250
MANTGS 18.320
IVECO 180E28



Aebi Schmidt Holding AG
Marketing and Communication



Scan and experience the ASH Group on YouTube

Technical specifications subject to change. Photographs are not binding.

www.aebi-schmidt.com

We will be happy to help you!

Status 08/2015 Copyright ② Aebi Schmidt Holding AG. All rights reserved. Errors and amendments excepted.