

Product Specifications



A7000

Regenerative Air Power Sweeper



Competitive Advantages of the Schwarze A7000

The Schwarze model A7000 is a heavy duty, chassis-mounted, regenerative air sweeper with an 8.4 cubic yard hopper. Its basic design has had over 15 years of successful operation throughout the United States and around the world. As one of the largest, most powerful air sweepers in existence, the Schwarze A7000 is an ideal choice for use in a wide range of demanding road sweeping applications.

The A7000's blower system generates a high velocity air column that is propelled into the top of the sweeping head through a 14 inch blast tube. The air is first pressurized in the upper chamber of the sweeping head, then expelled into the head's lower

chamber through what is called a 'blast orifice.' This is a slot in the sweeping head that forces the air against the pavement at an angle, creating a 'peeling' or 'knifing' effect. This high volume air blast loosens the debris from the pavement surface, then transports it across the width of the sweeping head and lifts it into the containment hopper via a 14 inch suction tube. This highly efficient system ensures that even hard-to-reach particles hidden within pavement cracks and irregularities are removed.

This includes a significant amount of the 'PM-10 fines' known to contain a high percentage of heavy metals and other pollutants. That's why the A7000 has been certified as 'Rule 1186 Compliant' by the South Coast Air Quality Management District, one of southern California's leading state environmental agencies.



To assure debris transfer with minimal fugitive dust escapement, double-belted curtains on the front and rear of the sweeping head contain the circulating air flow. This prevents dirty, debris-laden air from entering into the atmosphere as fugitive dust particles.

The Schwarze A7000 picks up more of the micron-sized contaminants that accumulate on roads and streets. Recent studies emphasize the importance of removing these PM-10 'fines' due to the large amount of non-point source pollutants they contribute to America's storm-water runoff stream.

Using the regenerative air Schwarze A7000 sweeper results in a cleaner street and a cleaner environment.

The model A7000 has several industry-leading features that position it at the head of its class. These include Schwarze's patent-pending *WhisperWheel*SM fan system, which lets Schwarze air sweepers run over 70% quieter and with less fuel consumption. The A7000 also includes the Schwarze *Sweeps-In-Reverse*SM sweeping head, which allows it to operate equally well in both forward and reverse directions.

In addition to the model A7000, Schwarze Industries offers a variety of other air and mechanical broom sweepers for municipal, contracting and parking area applications. There is also a sweeper designed specifically for airport runways, and Schwarze Industries manufactures the most effective pavement cleaners in existence, the Schwarze EV-series of particulate management machines. These efficiently remove standard and small-micron pavement debris, need no water for dust suppression, and filter exhaust to 2.5 microns – 1/28 the width of a human hair.

The Schwarze Industries Team is known around the world for manufacturing efficient, dependable, and easy-to-operate pavement sweepers, then backing them with the best customer service in the industry.





Commercial Chassis –

Schwarze A7000 sweepers are mounted on standard production, commercial chassis that meet OSHA requirements for ride and comfort, and have a proven track record in safety and reliability. Commercial chassis mounting allows A7000 sweepers to travel at normal highway speeds, which saves time and allows more actual sweeping per shift. A minimal parts supply needs to be kept in stock by owners, since parts and service are readily available at local commercial chassis distributors. The entire unit is much easier to work on than a sweeper mounted on a ‘purpose-built’ chassis. Often, the A7000 can even be mounted on a chassis that’s currently utilized in the owner’s fleet, so that operator training and other costs may be reduced. The added familiarity and comfort of a standard production chassis also contributes to a higher level of productivity by the operator.



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Auxiliary Engine –

The A7000’s sweeping components – hydraulic, dust control, and blower systems – are powered by a 115 horsepower, turbocharged, John Deere Powertech® auxiliary engine. This powerful auxiliary engine allows the A7000 to be operated at a lower rpm than most competitors. When combined with the efficiency and quiet operation of **Schwarze’s exclusive, patent-pending WhisperWheelSM** blower system, this factor reduces operating noise level and increases expected engine life. To ensure a cleaner supply of air, the auxiliary engine has a 2-stage, dry type air filter with a centrifugal precleaner, and the air intake is positioned at the top of the sweeper.



A 3-point automatic shutdown system eliminates the potential for engine damage due to low coolant level, high coolant temperature or low oil pressure. These factors help ensure a long service life for the Schwarze A7000’s John Deere auxiliary engine.

Hydraulic System –

The A7000’s hydraulic system features a direct drive, gear-driven pump. This allows the A7000 to perform one-pass sweeping even under extreme conditions. And, to ensure hydraulic system protection, a preset bypass relief valve is built-in.



Standard operation produces a fluid flow rate of 6.5 gallons per minute. The large 25 gallon hydraulic reservoir has a 12,500 BTU cooler, which decreases oil temperature and extends the life of the hydraulic pumps, torque motors, hoses and fluid.

Standard on the A7000 is a 12 volt backup hydraulic system. This has several important environmental and safety benefits. In areas where fugitive dust containment is a concern, the 12 volt hydraulic system may be used to lower the sweeping head prior to starting the auxiliary engine, as well as to raise the head when sweeping is finished. The 12 volt backup hydraulics may also be used to dump the hopper.

By utilizing these features, Schwarze A7000 operators are able to minimize the dangers caused by the output of fugitive dust and flying debris.

In the event a primary hydraulic system failure occurs, the A7000’s 12 volt backup hydraulic system also allows the sweeping head and gutter brooms to be raised so the truck can be driven.

Gutter Brooms –

The A7000’s vertical, steel-digger gutter brooms measure 44 inches in diameter and are driven hydraulically. Their free-floating design allows them to follow the contour of the pavement and gutter, while a spring impact protection system enables an inward swing of the broom(s) when an immovable object is encountered. These features help to



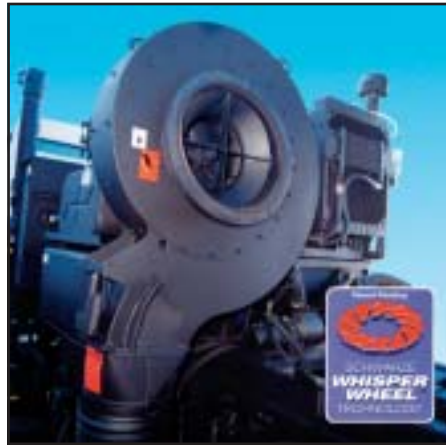
eliminate excessive wear, and prevent the possibility of gutter broom breakage due to striking an obstacle.

The use of two gutter brooms extends the total sweeping width of the A7000 to 138 inches. For improved sweeping performance, simple controls in the cab provide a full range of broom adjustment. The A7000's optional, in-cab, adjustable broom tilt allows thorough sweeping of gutters located below pavement height. **Schwarze's industry-leading Gutter Broom Extension OverrideSM (GEOSM) system** enables the brooms to scrub directly in front of the sweeping head. This 'inboard agitation' by the steel gutter brooms removes an increased amount of compacted material from the roadway. The Schwarze GEOSM system ensures excellent transfer of debris to the suction tube even in very heavy debris conditions.



ability. Airflow has been increased by 7%, and 20% less energy is necessary to operate the fan. Perhaps most importantly, **the improvement in fan design has reduced ambient sweeper noise by over 70%**. This allows the A7000 to retain its sweeping ability at lower, quieter engine speeds, while delivering significant fuel savings.

For a longer service life, the fan housing is constructed of 3/16 inch, T-42 Steel with an easily replaceable rubber lining. The A7000 is equipped with an air flow adjustment system so it can accommodate variations



between light and heavy sweeping conditions. Connecting the fan system to the sweeping head are 14 inch diameter blast and suction tubes constructed of wire-reinforced, 3/8 inch thick molded rubber. To help ensure long fan life, the blast air goes through a self-dumping dust separator prior to reentering the fan housing.



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Sweeping Head –

The Schwarze sweeping head design is one of the keys to the A7000's superior sweeping ability. A choice of two sweeping heads is offered on the A7000 model. Excellent sweeping performance is provided by the



standard head, which features dual air chambers and an angled blast orifice. As the airstream enters the sweeping head's upper chamber it is compressed, and then forced into the lower chamber across the entire head width. Because the blast orifice is angled, it creates an even distribution of the air blast across the head. The sweeping head's angled design also provides an increasing amount of space for the debris as it's collected into the airstream and moved toward the intake tube. This 'across-the-head' sweeping ability contributes to the superior performance of Schwarze A-series sweepers.

Schwarze Industries' Patented* Mechani-Pneumatic PowerhoodSM

For handling extremely heavy debris and specialty applications, the A7000 may be optionally outfitted with Schwarze's industry-leading **Mechani-Pneumatic PowerhoodSM**

This patented innovation is a broom-assist pickup head designed with a simple, common sense addition: An angled, windrowing broom is



positioned *ahead of* the air blast to thoroughly brush the pavement surface. This broom-forward head design is ideal for loosening debris and moving it across the head. The 66 inch long, 12 inch diameter broom transfers debris toward the 14 inch suction tube, leaving the finer materials for the high pressure blast orifice.



The **Mechani-Pneumatic PowerhoodSM** option puts the A7000 in direct competition with mechanical broom sweepers for most sweeping applications. However, the A7000 is more economical to operate and provides superior removal of the PM-10 fines that are targeted as pollutants by the EPA and other agencies.

* Patent number 5,884,359

3 The Schwarze-Exclusive WhisperWheelSM

Schwarze Industries' exclusive, patent-pending **WhisperWheelSM** design utilizes the most advanced steel blower fan system in the pavement sweeping industry.

The **WhisperWheelSM** system, which was introduced in 1998, enhances the A7000's already impressive pickup

Both Schwarze A7000 sweeping heads are spring-balanced and measure 90 inches in length by 36 inches wide. Each is equipped with double-wide carbide drag shoes which have a 2 year/2000 hour limited warranty. The increased height of Schwarze sweeping heads provides significant advantages over competitive models because it allows bulky debris, such as dry leaves, to be picked up more efficiently.

Both of the A7000 sweeping heads incorporate Schwarze's exclusive Sweeps-In-ReverseSM capability. Being able to sweep while backing up saves time, and allows operators to maintain precise control of the sweeping operation. Reverse sweeping also provides environmental and safety benefits, since fugitive dust emissions are substantially reduced as a result of the sweeping head maintaining a secure seal when the sweeper is reversed.



Hopper –

The A7000 hopper features an 8.4 cubic yard volumetric capacity. This large size requires less dumping,

thereby maximizing sweeping time. The A7000's construction is of durable 10 gauge steel further reinforced for additional strength.



To provide fast and complete unloading, the A7000's hopper door is full height, full width, and unlatches and opens hydraulically. These features make interior hopper maintenance easier and safer for the operator. To ensure a quick, stable dumping operation, twin cylinders safely raise the hopper to a 53 degree angle. Use of 4" by 16" cylinders has reduced the standard dump cycle by 35%. The dumping operation may be controlled from either inside or outside of the cab.

Large inspection doors are located on both sides of the A7000's hopper. These doors provide an easy way to manually load debris that is too large to be picked up through the suction hose. They also provide convenient access for hopper inspection and cleaning. An optional hopper drain hose located behind the dump door allows water to empty out, leaving

more space for solid debris. As an aid to easy and thorough hopper cleanout, Schwarze's **Hopper DelugeSM** internal washdown system is also available as an option. For those who insist on maximum hopper life, Schwarze also offers its **Four Point ProtectionSM** package. This consists of a stainless steel debris hopper with an extra durable interior coating. The exterior is first covered with a two-part urethane primer. Then, a two-part urethane top coat of Dupont Imron[®] 5000 is added.



Dust Suppression and Water System –

Larger debris particles are separated from the airstream by the Schwarze-exclusive sawtooth dust separation screen. Its design ensures efficient air



flow and reduced plugging. The A7000's self-dumping dust separator then uses the centrifugal action of the fan to eject most smaller particles from the regenerative air flow. Finally, the finest dust is removed from the airstream by the A7000's

water-based dust suppression system. This features in-cab controls, with 11 water nozzles located as follows: 5 on the sweeping head, 2 at each gutter broom, and 2 inside the hopper. A spray bar is also available for the front bumper. Water is stored in a 250-gallon polyethylene tank. Another 220- or 350- gallon water tank may be added to sweepers mounted on a cabover chassis. Water pressure is supplied by a hydraulically-driven pump. For operator convenience, an in-cab indicator light signals when the water supply is becoming depleted, and an automatic shutoff eliminates the risk of damaging the pump due to running dry. Refilling the water tank is quick and convenient using the A7000's 25 foot fill hose, with its quick-detach NST hydrant coupling. A standard washdown hose makes it possible to clean the screens, as well as the blast and suction tubes, on the jobsite.

Control/Instrument Panel –

The Schwarze A7000's user-friendly control panel features circuit breakers (instead of fuses) for ease of resetting.



All controls are easy to reach from both the standard and optional operating positions, feature internationally recognized symbols and are well lit for nighttime use. The panel has individual rocker switches



for the safety lights, optional controls and each sweeper function. The panel also includes a tachometer, an hourmeter and gauges for water temperature and oil pressure.

Auxiliary Hand Hose –



An optional, rear-mounted auxiliary hand hose is available for the A7000. It's ideal for catch basin cleanout, or for any other application where

debris is inaccessible to the sweeping head. The optional hand hose has an eight inch diameter, and extends a full twelve and a half feet. This makes



it great for a wide range of remote cleaning applications. The auxiliary hose, with its optional hydraulic controls for the hose's support boom and a four foot extension tube, makes the A7000 one of the most versatile and cost-effective pieces of cleaning equipment in the marketplace.



Schwarze A7000 Equipment

STANDARD EQUIPMENT:

- Schwarze-Exclusive, Patent-Pending *WhisperWheel*SM Fan System
- Noise Reduction Shroud
- Sweeps-In-Reverse*SM Sweeping System
- DC Auxiliary Hydraulic Pump
- Hopper-Mounted Amber Strobe Light with Limb Guard
- High Level Brake Light
- Amber Flashing Warning Lights
- Rear Flood Lights
- 3 Point Automatic Auxiliary Engine Shutdown System
- Washdown System
- Hydrant Wrench
- Fire Extinguisher
- Backup Alarm
- Resettable Circuit Breakers
- Road Flare Kit

OPTIONAL EQUIPMENT:

- Patented* Mechani-Pneumatic Powerhood*SM (Broom Assist Head)
- Single or Dual Gutter Brooms
- In-Cab Tilt Control for Gutter Brooms
- Gutter Broom Extension Override*SM (*GEO*SM) System
- Twin Remote Cameras with In-Cab Video Monitor
- Dual Steering
- Sound Suppression System
- Cab-Mounted Barlight Beacon
- Safety Beacon with Limb Guard
- Spray Bar for Front Bumper, Hopper
- Hopper Deluge*SM (Hopper Washdown System)
- Extra 220- or 350-Gallon Polyethylene Water Tank (Cabover only)
- Hopper Drain System
- 8" Auxiliary Hand Hose
- 4 Point Protection*SM (Stainless Steel Hopper Package)
- Magnet Bar
- Spare Tire and Wheel
- Spare Parts Package
- Special Paint for Sweeper and Chassis
- Hydraulic or Spring System for Hand Hose
- Other Options Available



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* Patent number 5,884,359

Schwarze A7000 Specifications

SWEEPING PATH:

Pickup head only 90" (2,286 mm)
 Pickup head and one gutter broom 114" (2,896 mm)
 Pickup head and two gutter brooms ... 138" (3,505 mm)

CHASSIS:

Mounts on various chassis to meet requirements.

SWEeper BODY:

Construction Welded 10-gauge steel plate with
 3/16" steel hopper floor
 Safety Prop Dual steel bars located under body

INSTRUMENTATION:

Sweeper Engine Tachometer, hourmeter, voltmeter,
 temperature gauge and oil pressure gauge

STANDARD ENGINE:

Model / Type 4045T/ In-line 4 cylinder
 Aspiration Turbocharged diesel
 Manufacturer John Deere
 Displacement 276 cu. in. (4.5 L)
 Brake Horsepower 115 (86 kW) @ 2,500 rpm
 Torque 291 ft-lb (395 Nm) @ 1,400 rpm
 Air Cleaner Sy-Klone® centrifugal precleaner; dry-type
 with dual safety elements and restriction indicator
 Oil Filter Full-flow/Spin-on
 Stroke 5.00" (127 mm)
 Bore 4.19" (106 mm)
 Compression Ratio 17.0 to 1
 Safety Shutdown Three point; automatic
 Throttle Control Electronic

ELECTRICAL SYSTEM:

Voltage 12 Volt
 Sweeper Engine Alternator 65 Amperes

DUST CONTROL SYSTEM:

Type High pressure/ Low volume
 Water Tank Capacity 250 gallons (946 liter)
 Tank Construction Polyethylene
 Filter 200 mesh, cleanable
 Fill Diameter 2.5" (63.5 mm)
 Fill Hose 25 foot (7620 mm)
 Controls Electric; in-cab

BLOWER SYSTEM:

Drive Direct via a 5 groove, banded power belt
 Construction T-42 steel
 Housing Lining Bolt-in corded rubber
 Mounting 2 regreaseable sealed bearings
 Vacuum Enhancer For heavy/ light material

PICKUP HEAD:

Type Dual chambered full-width blast orifice
 Operating Direction Forward and reverse
 Suspension Adjustable spring balanced
 Length 90" (2,286 mm)
 Pressure Hose Diameter 14" (355.6 mm)
 Suction Hose Diameter 14" (355.6 mm)
 Hose Construction 3/8" (9.5 mm)
 wire-reinforced molded rubber
 Head Area 3,240 sq. in. (20,903 cm²)
 Controls Hydraulic raise and lower
 Skids Double wide tungsten carbide
 Construction Abrasion-resistant steel
 inlet and outlet transitions

HYDRAULIC SYSTEM:

Pump Capacity 6.5 gpm@1800 rpm (24.6 L/min.)
 Drive Direct gear
 Maximum Pressure 2,500 PSI (173 bar.)
 Reservoir 25 gallons (94 liters)
 Filter 10 micron, spin-on
 Protection Pressure relief valve
 Controls Electro-hydraulic

AUXILIARY HYDRAULIC SYSTEM:

Type Gear type, driven by electric motor
 Function Raise/lower hopper, open/close
 hopper door, raise brooms and pickup head

DEBRIS HOPPER:

Volumetric Capacity 8.4 cu. yds. (6.42 m³)
 Dump Angle 53°
 Floor Angle 3°
 Dust Separator Self-cleaning centrifugal
 Lifting Twin hydraulic cylinders
 Hopper Dump Door Open/close/lock hydraulically
 Inspection Doors 1 on each side of hopper

SIDE BROOMS:

Type Vertical steel digger
 Location Right and left, forward of pickup head
 Diameter 44" (1,118 mm)
 Drive Hydraulic torque motor
 Suspension Torque-sensing spring
 Wear Adjustment Automatic
 Pressure Manual
 Speed Variable, non-reversing
 Segments 5 each side, disposable,
 tempered steel wire filled
 Tilt Angle Adjustment Manual

PAINT:

One coat of sealer/primer and two coats of DuPont
 Imron 5000® polyurethane in standard white color.

WARRANTY:

The Schwarze A7000 sweeper is guaranteed to be free
 from defects due to faulty materials and/or workman-
 ship for a period of 12 months, or 1200 hours. Liability
 is limited to replacement of defective parts at factory
 or authorized dealer. The standard warranties of
 chassis and sweeper engine manufacturers shall apply.



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Website: www.schwarze.com
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"New Ideas From The Company That's Sweeping The Earth"™

Note: Specifications are subject to change without notice.

Other Schwarze Models Available



The Schwarze A4000 – No CDL Required

- 4.3 cubic yard hopper capacity (67" dump)
- Environmentally-friendly regenerative air
- Patent-pending *WhisperWheel*SM fan system
- *Gutter Broom Extension Override*SM (GEOSM)
- Schwarze *Sweeps-in-Reverse*SM capability
- 130-gallon capacity dust suppression system



The Schwarze M5000 – America's Millings Leader

- 5 cubic yard high dumping hopper
- *Gutter Broom Extension Override*SM (GEOSM)
- Center-loading elevator system
- Full-floating main broom
- Commercial chassis mounting
- Unsurpassed sweeper for milling cleanup



The Schwarze EV-series – Top Choice for NPDES and Environmental Compliance

- Rated #1 sweeping system by many independent studies
- Pavement cleaning to 2.5 microns
- Secure containment and offload
- Ideal for toxic material cleanup
- Two models available
- Lifetime fan warranty
- Positively-pressurized cab (EV1 only)
- Patented fan, pickup and filter cleaning system
- Highly effective, 100% waterless dust suppression system



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M6000TE
Twin Engine



M6000SE
Single Engine

The Schwarze M6000 – Mechanical Broom Excellence

- Choice of single or dual engine design!
- 5 cubic yard hopper—Proven sweeping system
- Variable-height side dump from 16" to 11' 6"
- Forward-facing, digger-type curb brooms
- Squeegee-type elevator system



The Schwarze A8000 – Variable High Dumping

- Environmentally-friendly regenerative air
- Based on the A7000's proven sweeping technology
- 115 hp John Deere diesel auxiliary engine
- 5.8 cubic yard capacity debris hopper
- Operator-controlled dumping between 36" to 116"
- Optional dual gutter brooms with optional tilt
- Schwarze-exclusive *WhisperWheel*SM fan system
- *Gutter Broom Extension Override*SM (GEOSM)
- Schwarze *Sweeps-in-Reverse*SM system
- Cabover or conventional mounting
- Optional 440-gallon dust suppression system
- Many innovative standard features and options



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