

*Product Specifications*



# A4000

Regenerative Air Power Sweeper



# Competitive Advantages of the Schwarze A4000

The Schwarze model A4000 is a chassis-mounted, regenerative air sweeper with a 4.3 cubic yard capacity. Although introduced as a member of the Schwarze regenerative air family in 1998, the A4000's basic design has had over 10 years of successful operation throughout the United States and around the world. Because of its relatively compact size, the Schwarze A4000 offers great maneuverability and requires no Commercial Drivers License for operation. With its exceptional sweeping ability and environmentally-friendly regenerative air design, the Schwarze A4000 is an ideal choice for use in a wide variety of demanding pavement sweeping applications.

The A4000's patent-pending *Whisper-Wheel*<sup>SM</sup> blower system funnels a high velocity of air through a 12 inch blast tube and into the top of the sweeping head. The air becomes pressurized in the upper chamber of the sweeping head before being propelled into the lower chamber of the head through what is called a 'blast orifice.' This design feature consists of a slot in the sweeping head that forces the air against the pavement at an angle, creating a 'peeling' effect that efficiently loosens debris from the

pavement surface. The debris is then transported across the width of the sweeping head, where it's lifted into the containment hopper via a 12 inch suction tube. This highly efficient system ensures the removal of hard-to-reach particles hidden deep within pavement cracks and irregularities.

To ensure 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 system prevents dirty, debris-laden air from entering the atmosphere as fugitive dust.

In contrast to mechanical broom sweepers, the Schwarze A4000 collects and retains the micron-sized contaminants that accumulate on roads and streets. Recent studies emphasize removal of these fines, called 'PM-10s', because of the non-point source pollutants—including heavy metals—they contribute to the stormwater runoff stream. For that reason, PM-10 material is now targeted for removal under the US EPA's Clean Air Act and Clean Water Act. California's South Coast Air Quality Management District (AQMD) has certified the A4000 as efficient in the pickup and removal of these small-micron, PM-10 particles.



**Using the regenerative air Schwarze A4000 sweeper results in cleaner pavement and a cleaner environment.**

The Schwarze model A4000 features several industry-leading innovations that position it at the head of its class. These include Schwarze's patent-pending *WhisperWheel*<sup>SM</sup> fan system, which allows Schwarze air sweepers to operate 70% quieter, with 20% less fuel consumption. The A4000 also includes the Schwarze *Sweeps-in-Reverse*<sup>SM</sup> sweeping head, which allows the sweeper to operate equally well whether going in forward or reverse.

In addition to the A4000 regenerative air sweeper, Schwarze Industries offers a variety of air and mechanical broom sweeper models designed for municipal, contracting and parking area applications, as well as a sweeper designed specifically for airport runways. Schwarze Industries also manufactures the most effective pavement cleaners in existence, the Schwarze EV-series particulate management machines. The EV-series sweepers need no water for dust suppression, and efficiently remove standard pavement debris in addition to particulates as small as 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, while backing them with the best customer service in the industry.





### Commercial Chassis –

Schwarze A4000 sweepers are mounted on standard production, commercial chassis that meet OSHA requirements for ride and comfort, and have a proven track record for safety and reliability. Commercial chassis mounting allows A4000 sweepers to travel at normal highway speeds, which saves time and allows more actual sweeping per shift. Routine and preventive maintenance are much easier than on a sweeper mounted on a ‘purpose-built’ chassis. Parts and service are readily available at local commercial chassis distributors, so the sweeper requires only a minimal on-hand parts supply. Because the A4000 is often mounted on a chassis that is the same as, or similar to, those currently utilized in the owner’s fleet, operator training and other costs may be reduced. The added familiarity of a standard production chassis also contributes to a higher level of operator comfort and productivity.



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### Auxiliary Engine –

The A4000’s sweeping components – hydraulic, dust control and blower systems – are powered by an 80.5 horsepower Perkins auxiliary engine. This engine allows the A4000 to be operated effectively at a lower rpm than most competitors in its class. This capability, combined with the efficiency and quiet operation of Schwarze’s exclusive, patent-pending *WhisperWheel*<sup>SM</sup> blower system, dramatically reduces the sweeper’s operating noise level and increases expected engine life.



To maintain a clean supply of intake air, the A4000 is outfitted with a 2-stage, dry-type air filter that includes a Sy-Klone<sup>®</sup> centrifugal precleaner. A three-point automatic shutdown system eliminates the potential for engine damage due to high coolant temperature, low coolant level or low oil pressure. These features help ensure a long service life for the A4000’s auxiliary engine.

### Hydraulic System –

The A4000’s hydraulic system is run by a direct drive, gear-driven pump. This powerful system enables the A4000’s gutter brooms to perform

one-pass sweeping even in heavy debris conditions. To provide hydraulic protection, the system also includes a built-in bypass

relief. Standard operation produces a fluid flow rate of 6.5 gallons per minute. The 16 gallon hydraulic reservoir has a 12,500 BTU cooler. By decreasing the oil temperature, these features extend the life of the hydraulic pumps, torque motors, hoses and fittings.

An optional 12 volt backup hydraulic system is offered for the A4000. This provides several important safety and environmental 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 after the auxiliary engine has been turned off.

In the event of a failure of the primary hydraulic system, the 12 volt backup hydraulics may be used to raise the sweeping head and gutter brooms so the truck can be driven.

The 12 volt backup hydraulics may also be used to dump the hopper. By dumping using the 12 volt hydraulic system, rather than the auxiliary engine, A4000 operators are able to minimize the output of fugitive dust and flying debris.



### Gutter Brooms –

The A4000’s vertical, steel-digger gutter brooms measure 39 inches in diameter and are hydraulically driven. Their free-floating design allows them to follow the contour of the pavement and gutter, while a spring impact protection system enables the brooms to swing inward whenever an immovable object is encountered. These features prevent the gutter brooms from breaking due to striking an obstacle, as well as help eliminate excessive wear.



**Schwarze’s industry-leading *Gutter Broom Extension Override*<sup>SM</sup> (*GEO*<sup>SM</sup>) system enables the brooms to scrub directly in front of the head.**

This 'inboard sweeping ability' of the steel gutter brooms provides increased removal of compacted material from the roadway. **The GEO<sup>SM</sup> system ensures excellent transfer of debris to the suction head even in very heavy debris conditions.** The use of two gutter brooms extends the A4000's total sweeping width to 120 inches. Simple, in-cab controls offer a full range of broom adjustments for improved sweeping performance. The optional cab-operated broom tilt feature even allows thorough sweeping of irregular gutters located below pavement height.

### The Schwarze-Exclusive *WhisperWheel*<sup>SM</sup>

Schwarze Industries' exclusive, patent-pending *WhisperWheel*<sup>SM</sup> design utilizes the most advanced steel blower fan system in the pavement sweeping industry.

The *WhisperWheel*<sup>SM</sup> system, introduced by Schwarze Industries in 1998, has significantly enhanced the already impressive pickup ability of Schwarze air sweepers.



**Compared to the 1997 Schwarze A-series models, airflow has been increased by 7%, blower fan operation requires 20% less energy, and ambient sweeper noise has been reduced by over 70%.**

Compared to other competitive sweepers in its class, the A4000 will handle comparable debris – at a significantly quieter decibel level and lower engine speed – while using less fuel. A Schwarze air sweeper, equipped with the industry-leading *WhisperWheel*<sup>SM</sup> fan system, is the leading choice wherever sweeper noise is a concern.

For longer service life, the fan housing is constructed of 3/16 inch, abrasion-resistant steel, and has a replaceable rubber liner. The A4000 is equipped with an air flow adjustment system to maximize debris removal in both light and heavy sweeping conditions.

The fan system is connected to the sweeping head via 12 inch diameter blast and suction tubes constructed of wire-reinforced, 3/8 inch thick molded rubber. To assure long fan life, the blast air goes through a self-dumping dust separator prior to re-entering the fan housing.

### Sweeping Head –

The Schwarze A4000's sweeping head is spring-balanced, and measures 80 inches in length by 26 inches in width. It is equipped with double-wide carbide drag shoes that have a two year/2000 hour limited warranty. The A4000's sweeping head features dual air chambers and a full width blast orifice.

Schwarze Industries' unique engineering design allows sweeping power to be distributed evenly across the entire head width. First, the airstream is pressurized as it enters the sweeping head's upper chamber. Then, with increased velocity, the powerful air stream enters the lower chamber and is propelled across the width of the head. The resulting high-powered air blast literally scours the pavement surface clean as it transports debris across the sweeping head to the suction tube and then up into the containment hopper.

Another advantage of the Schwarze sweeping head design is its added height. This feature allows for more efficient pickup and containment of bulky debris. The combination of extra height and 'across-the-head' sweeping ability contributes to the superior performance of Schwarze's entire A-series sweeper line.

**The A4000's sweeping head design also incorporates Schwarze's *Sweeps-In-Reverse*<sup>SM</sup> capability.**

Over time, all sweepers will miss debris. However, with some brands of air sweepers, if the operator forgets to raise the sweeping head prior to backing up, expensive damage to the sweeper may occur. Some manufacturers offer a 'fail-safe' device designed to automatically pick up their sweeping head when the chassis is put into reverse. Unfortunately, when the pickup head on an air sweeper is raised



while the auxiliary engine is running, the debris underneath it is propelled toward nearby bystanders, parked cars, etc. This creates serious safety, liability and environmental hazards.

With most brands of air sweepers, the operator has three choices when

debris is missed: leave the material on the ground, conduct a three-point turn in order to go back over it, or go around the

entire block to re-sweep a small area. Schwarze air sweepers, because of their unique *Sweeps-In-Reverse*<sup>SM</sup> design, operate equally well in forward and reverse.

When Schwarze air sweepers back up, the sweeping head remains securely sealed to the pavement. The ability to perform backup sweeping – which is a Schwarze Industries' hallmark – allows operators of Schwarze air sweepers to retain precise control over the sweeping operation.

This feature makes the A4000 more economical to operate and decreases liability by reducing fugitive dust.



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The A4000's *Sweeps-In-Reverse*<sup>SM</sup> head design maximizes the sweeper's ability to pick up and contain small-micron fines. This means there is far less chance of emitting small-micron fugitive dust during sweeping, or of having rocks and other material blow out from under the sweeper.

Being able to sweep while traveling backward provides important environmental and safety advantages. Over the sweeper's lifetime, it also saves a considerable amount of time – and money. Quite simply, it's a better design.



## Hopper –

The A4000 hopper features a 4.3 cubic yard volumetric capacity and is constructed of durable, 10-gauge steel that is further reinforced.

**For those who insist on maximum hopper life, Schwarze also offers its *Four Point Protection*<sup>SM</sup> package.** This option consists of a stainless steel hopper with a special interior coating. The exterior is also covered with a two-part urethane primer prior to the addition of a two-part topcoat of Dupont Imron<sup>®</sup> 5000.



To provide quick and complete unloading of debris, the A4000's hopper dump door is full height and full width. This makes interior hopper maintenance easier and safer to perform.



To ensure a quick, stable dumping operation, twin cylinders safely raise the hopper to an angle of 88 degrees. The dumping operation is controlled hydraulically via switches located inside the cab. Another advantage of the Schwarze A4000 is its 67-inch dump height. This allows operators the option of dumping into a container rather than directly onto the ground.

Large inspection doors are located on either side of the A4000's hopper. These doors provide an easy way to manually load debris that is too large to be picked up by the sweeping head, and they also provide a convenient access for hopper inspection and cleaning.

## Dust Suppression and Water System –

The dust suppression system design on the A4000 ensures efficient air flow and reduced plugging. Larger particles are first separated from the airstream by the dust separation screen. Next, a self-dumping dust separator – designed using advanced computer flow modeling – removes smaller particles from the regenerative air system. Finally, to assure the longest possible fan life, the finest dust particles are removed by the A4000's optional, water-based dust suppression system.

A hydraulic pump powers the A4000's dust suppression system. To eliminate the risk of damaging the pump due to running out of water, it is equipped with an automatic shutoff. For balanced weight and extra noise reduction, water is stored in twin 65 gallon polyethylene tanks positioned on either side of the auxiliary engine.



A washdown hose is provided so the A4000's screens, as well as its blast and suction tubes, may be cleaned right on the jobsite.

The dust suppression system features in-cab controls, with 12 water nozzles located as follows: 4 on the sweeping head, 2 at each gutter broom, and 4 inside the hopper. For operator convenience, an in-cab indicator light signals when the water supply is becoming depleted. Refilling the water tank is quick and convenient using the A4000's 25-foot fill hose, with its quick-detach NST hydrant coupling. If desired, an additional spray bar is also available for the hopper and the front bumper.



## Auxiliary Hand Hose –

An optional, side-mounted auxiliary hand hose is available for the A4000. This hose is ideal for light catch basin cleanout, picking up remote debris piles, or any other applications requiring removal of material inaccessible to the sweeping head. The optional hand hose is 5 inches in diameter and extends a full 12 feet, making it an excellent addition for a wide range of remote cleaning applications.

# Schwarze A4000 Equipment

## STANDARD EQUIPMENT:

- Schwarze-Exclusive, Patent-Pending *WhisperWheel*<sup>SM</sup> Fan System
- Sweeps-In-Reverse*<sup>SM</sup> Backup Sweeping Ability
- High Level Brake Light
- 3-Point Automatic Auxiliary Engine Shutdown System
- Fire Extinguisher
- Backup Alarm
- Resettable Circuit Breakers
- Road Flare Kit

## OPTIONAL EQUIPMENT:

- Single or Dual Gutter Brooms
- In-Cab Tilt Control for Gutter Brooms
- Gutter Broom Extension Override*<sup>SM</sup> (*GEO*<sup>SM</sup>) System
- Twin Remote Cameras With In-Cab Video Monitor
- 12 Volt DC Auxiliary Hydraulic Pump
- HushKit*<sup>SM</sup> Noise Suppression Shroud
- Cab-Mounted Barlight Beacon
- Safety Beacon With Limb Guard
- Dust Suppression and Washdown System
- Additional Spray Bar for Front Bumper
- Additional Spray Bar for Hopper
- Front Bumper-Mounted Magnet Bar
- 5" Auxiliary Hand Hose
- Spare Tire and Wheel
- Spare Parts Package
- Four Point Protection*<sup>SM</sup> (Stainless Steel Hopper Package)
- Special Paint for Sweeper and Chassis
- Other Options Available



*Monitor the curblane or behind the sweeper.*

## Control/Instrument Panel –

The user-friendly control panel on the Schwarze A4000 features circuit breakers (instead of fuses) for ease of resetting. All controls are easy to reach from the standard or optional dual steering operating positions. Controls are well lighted for nighttime use, and feature internationally recognized symbols. The panel has individual rocker switches for safety lights, optional controls and each sweeper function. The panel also includes an hourmeter, tachometer and gauges for water temperature and oil pressure.

## Tool Boxes –

Two handy tool boxes, complete with lockable doors, are located on either side of the A4000's rear fenders. These tool boxes are large enough to easily hold such items as a backpack blower, sweeper adjustment tools, lunches, etc.

The interior wall of each toolbox has connecting tubes for storage of long items such as brooms and rakes. The A4000's dual tool boxes allow the operator to maintain a less cluttered in-cab environment, resulting in a cleaner, safer working space.



## Dual Camera System –

To provide increased operational safety, the Schwarze A4000 may be outfitted with a dual camera monitoring system.

The A4000's dual remote cameras provide an extra measure of safety and convenience, and are an excellent technological alternative to a dual steering option. Images are displayed on a conveniently-sized monitor positioned inside the cab.

During normal sweeping operations, a side-mounted gutter broom camera allows the operator to view the curb area without losing concentration or line of sight toward the front of the vehicle. A second sturdy, weather-proof camera focuses on the area directly behind the sweeper. When the sweeper's reverse gear is engaged, whether to back up or for operation in the Schwarze *Sweeps-In-Reverse*<sup>SM</sup> mode, the view automatically switches to the rear-mounted camera.



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# Schwarze A4000 Specifications

## AUXILIARY ENGINE:

**Model / Type** ..... 704.30T/4-cycle  
**Manufacturer** ..... Perkins  
**Number of Cylinders** ..... 4  
**Displacement** ..... 2999 cm (183 cu. in.)  
**Horsepower** ..... 80.5 @ 2600 rpm  
**Cooling System** ..... Liquid-cooled  
**Safety Shutdown** ..... 3-point automatic  
**Fuel** ..... Diesel  
**Oil Filter** ..... Full-flow; spin-on  
**Air Filter** .... Dual element, dry-type filter with restriction indicator and Sy-Klone® centrifugal pre-cleaner

## DEBRIS HOPPER:

**Volumetric Capacity** ..... 4.3 cu. yds. (3.3 m<sup>3</sup>)  
**Construction** ..... 10-gauge steel  
**Type of Dumping** ..... Hydraulic  
**Inspection Doors** ..... 1 on each side of hopper  
**Type and Location of Controls** ..... Electric; in-cab  
**Dumping Height** ..... 67" (1702 mm)  
**Dumping Tilt Angle** ..... 88°  
**Interior Coating** ..... Durable coating  
**Exterior Coating** ..... Zinc primer; urethane

## BLOWER SYSTEM:

**Type** ..... *Whisper Wheel*<sup>SM</sup> centrifugal  
**Drive** ..... Banded 3V, 5-groove belt  
**Speed** ..... 2600 rpm  
**Diameter** ..... 30" (762 mm)  
**Construction** ..... Welded abrasion-resistant steel  
**Housing Liner** ..... Bolt-in corded rubber  
**Mounting** ..... 2 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** ..... 80" (2032 mm)  
**Blast Hose Diameter** ..... 12" (305 mm)  
**Suction Hose Diameter** ..... 12" (305 mm)  
**Hose Construction** ..... Reinforced molded rubber  
**Head Area** ..... 2080" (13,419)  
**Controls** ..... Hydraulic raise and lower  
**Skids** ..... Double row tungsten carbide

## DUST CONTROL SYSTEM:

**Type** ..... High pressure /low volume  
**Water Tank Capacity** ..... 130 gallons (492 L)  
**Tank Construction** ..... Removable polyethylene  
**Fill Diameter** ..... 2.5" (63.5 mm) NST  
**Controls** ..... Electric; in-cab

## GUTTER BROOMS:

**Type** ..... Vertical steel digger  
**Diameter** ..... 39" (990.6 mm)  
**Drive** ..... Hydraulic torque motor  
**Speed** ..... Variable  
**Gutter Broom Extension Override**<sup>SM</sup> (*GEO*<sup>SM</sup>) ..... Optional  
**Segments** ..... 4 on each side; disposable; tempered steel wire-filled  
**Tilt Angle Adjustment (optional)** ..... Electric; in-cab

## HYDRAULIC SYSTEM:

**Type** ..... Fixed displacement gear  
**Fluid Capacity** ..... 16 gallons  
**Drive** ..... Direct gear  
**Filter** ..... 10 micron; spin-on  
**Strainer** ..... 80 mesh

## CHASSIS ENGINE:

**Model / Type** ..... 4HE1-TC /4-cycle  
**Manufacturer** ..... Isuzu  
**Number of Cylinders** ..... 4  
**Displacement** ..... 290 cu. in. (4.75 L)  
**Bore** ..... 4.02" (102.1 mm)  
**Stroke** ..... 4.65" (118.11 mm)  
**Fuel** ..... Diesel  
**Oil Filter** ..... Full flow; spin-on  
**Air Filter** ..... Dry type; heavy duty  
**Standard GVWR** ..... 14,500 lbs. (6,577 kgs)  
**Optional GVWR** ..... 17,950 lbs. (8,142 kgs)

## ELECTRICAL SYSTEM:

**Starter** ..... 12 volt  
**Alternator** ..... 12 volt; 80 Amp  
**Battery** ..... 2 @ 12 volt; 750 CCA each  
**Controls** ..... Back lit  
**Circuit Breakers on Sweeper** ..... Resettable type

## TIRES AND WHEELS:

**Type** ..... (6) Tubeless steel-belted radials  
**Tire Size** ..... 235/85 R16  
**Wheels** ..... One piece steel construction

## BRAKES:

**Service** ..... Hydraulic with vacuum booster  
**Exhaust Brake** ..... Vacuum-operated  
**Parking** ..... Mechanical expanding drum

## STEERING:

**Type** ..... Integral power  
**Ratio** ..... 20.9-to-1

## CAB:

**Type** ..... Cabover engine design  
**Engine Access** ..... 45° full tilt  
**Construction** ..... Steel  
**Color** ..... White

## TRANSMISSION:

**Type** ..... 450-LE; 4-speed automatic

## WARRANTY:

The Schwarze A4000 sweeper is guaranteed to be free from defects due to faulty materials and/or workmanship for a period of 12 months, or 1000 hours. Liability is limited to the replacement of defective parts at the factory or an authorized dealer. The standard warranties of chassis and sweeper engine manufacturers shall apply.



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Email: [support@schwarze.com](mailto:support@schwarze.com)

Note: Specifications are subject to change without notice.

"New Ideas From the Company That's Sweeping The Earth"<sup>SM</sup>

# Other Schwarze Models Available

## The Schwarze A7000 – America's Performance Leader



- 8.4 cubic yard capacity debris hopper
- 115 hp John Deere diesel auxiliary engine
- Optional dual gutter brooms with optional tilt
- Optional *Gutter Broom Extension Override*<sup>SM</sup> (GEO<sup>SM</sup>)
- Patent-pending *WhisperWheel*<sup>SM</sup> fan system
- Environmentally-friendly regenerative air
- Schwarze *Sweeps-in-Reverse*<sup>SM</sup> capability
- Standard 250-gallon water system (Additional 220- or 350-gallon tank optional)
- Cabover or conventional mounting

## 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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## The Schwarze M5000 – America's Millings Leader



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



**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*<sup>SM</sup> fan system
- *Gutter Broom Extension Override*<sup>SM</sup> (GEO<sup>SM</sup>)
- Schwarze *Sweeps-in-Reverse*<sup>SM</sup> system
- Cabover or conventional mounting
- Optional 600-gallon dust suppression system
- Many innovative standard features and options



Your Authorized Schwarze Dealer

**"New Ideas From The Company That's Sweeping The Earth"<sup>SM</sup>**