# MAX60

## High-speed airport road sweeper (ZZM5180TSL) Technical Specifications

# Menu

## 1 Overview

MAXA60 (vehicle model ZZM5180TSL) High-speed airport road sweeper is a fast cleaning vehicle developed by IKOM Machinery for highways, expressways, urban interchanges, and airports. It has fast cleaning speed, strong safety warning, reliable structure operation, and convenient maintenance. The effective operating speed can reach 60+Km/h, and the operating efficiency is four times that of existing sweepers. It is currently the fastest road sweeper in the world, suitable for various operating conditions such as high speed and heavy dust.

## 2 Main performance and features

Unique technical performance

 The effective operating speed can reach 60+Km/h, and the corresponding effective cleaning rate is ≥95%;

 Non-equal diameter three-suction structure, gradient setting;

 Large wide working surface, four sweeping discs with equal width configuration, effective cleaning width up to 3800mm;

 High-efficiency fan, efficiency ≥75%;

 Suspended rear closed unloading door, high reliability sealing;

 Energy-saving management system, stepless speed regulation hydraulic system drives the fan to provide fan working speed under different working conditions;

 Self-balancing buffer suction nozzle traction system, safe and stable.

### 2.1 Vehicle performance

 Operation mode: Combine suction and sweeping, wet dust removal to clean the road surface and remove heavy dust. The central four-sweeping disc + rear roller sweeper achieves full coverage of 3800mm cleaning width. There is a blowing outlet on each side of the middle facing the ground, and the wind speed reaches 100m/s. It can achieve large-area ground cleaning and drying;

 Auxiliary power system: The auxiliary engine (National III) provides surging power for operation, ensuring stable and smooth operation;

 Hydraulic stepless speed regulation system: A closed adaptive stepless speed regulation hydraulic system is used to drive a high-efficiency centrifugal fan;

 Large-diameter three-suction port: The garbage suction adopts a three-suction port structure with a nozzle width of 2300mm;

 The nozzle has a built-in horizontal rolling sweep, and the horizontal rolling sweep ground contact pressure is adjustable, which improves the cleaning efficiency while reducing the wear of the brush bristles;

 Active obstacle avoidance function, the side sweep device has automatic obstacle avoidance protection and automatic reset function;

 The sweeping disc operation speed is variable, and high, medium and low operation speeds can be selected according to different working conditions;

 Hydraulic standby system, an auxiliary hydraulic system of the power element of the chassis power take-off, when the auxiliary engine is stopped, the chassis power take-off can be used to realize the dump bin tipping unloading, nozzle lifting, and high-pressure water pump driving;

 Large-capacity garbage bin (effective volume 5$m^3$) and water tank (3.5 $m^3$), suitable for long-distance continuous operation;

 The water tank adopts stainless steel molded water tank;

 Spray nozzles are set on the edges of the four sweeping discs to suppress dust during operation. At the same time, spray nozzles are set in the three suction pipes on the suction nozzle. The wet dust removal method is carried out through the water curtain to clean the air carrying dust;

 The water channel has a rapid drainage function and is equipped with a quick-plug high-pressure air interface to quickly drain the water in the pipe to prevent the water channel components from freezing and cracking in winter;

 It is equipped with a high-pressure flushing water pump and a high-pressure spray gun self-cleaning system to clean the vehicle itself and other equipment;

 The operation panel is a 7-inch color touch screen, which can realize "one-button" operation and display the main operation parameters;

 The rear of the vehicle is equipped with a flashing arrow indicator light, which strongly prompts the passing vehicle through sound, light and color to improve the active safety of the operating vehicle. The whole vehicle is equipped with a display to monitor the vehicle operation through the left, right and rear cameras

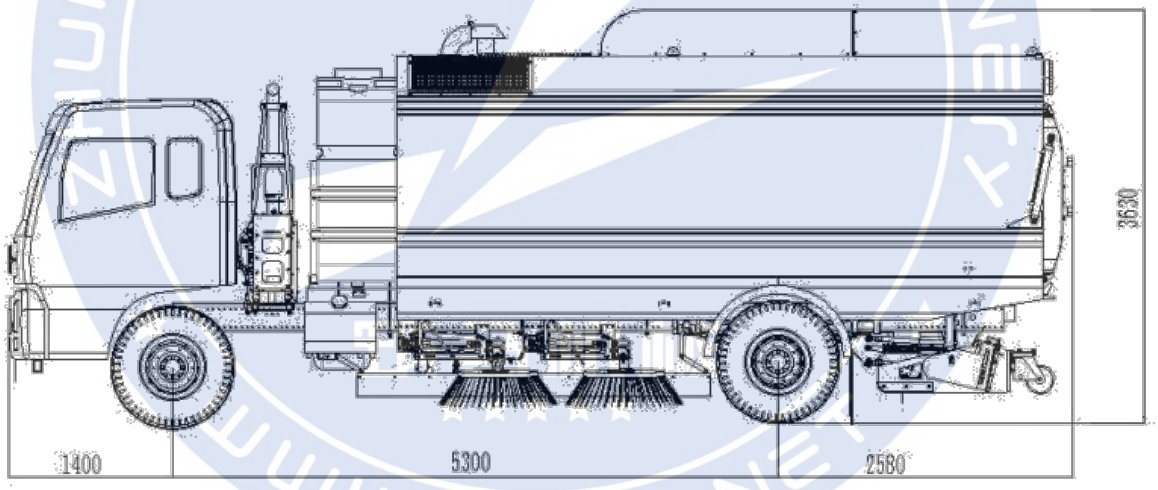
## Main technical parameters and components

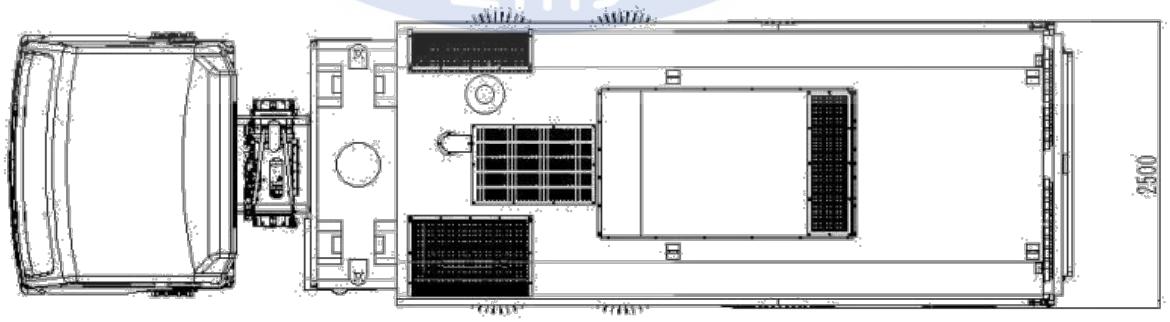
| S/N | Name | | Parameter |
|---|---|---|---|
| 1 | **Chassis** | Model | ZZM5180TSL |
| | | Dimension | 9200×2500×3650mm |
| | | GVW | 18000kg |
| | | Kerb Mass | 12805kg |
| | | Loading Weight<br>Chassi Model | 5000kg<br>DFH1180EX8（Euro III） |
| | | Chaiss Engine mode | B190.33 |
| | | Engine power | 190HP |
| | | Wheelbase | 5300mm |
| | | Max. speed | 89km/h |
| 3 | Auxiliary engine | | QSB6.7-C260（Euro 3） |
| 4 | **Trash Bin** | Geometric volume of trash bin | 12m³Stainless steel |
| | | Effective volume of trash bin | 5m³ |
| 5 | **Water tank** | Front +Rear capacity | （2.5+1）m³ |
| 6 | **Sweep Device** | Max. sweep width | 3800mm |
| | | Fan Drive | Variable speed hydraulic motor |
| | | Sweep disc | 2+2 |
| 7 | **Suction nozzle device** | Nozzle bar width | 2300mm |
| | | Nozzles quantity | 3 |
| | | Nozzles diameter | 220mm |
| 8 | **Sweeping capability** | Working speed | 5--60+（Km/h） |
| | | Sweep efficiency | ≥92% |
| | | Maximum cleaning garbage particle size | ≤110mm，specific gravity≤2 |
| | | Maximum cleaning capacity | 228000 ㎡/h |
| 10 | **Control system** | LCD | 7 寸 |
| | | Operation mode: | Touch screen + physical switch |
| | | Control mode: | Centralized control in the cab |
| 11 | Monitoring display | | Left, right and rear three-camera monitoring |
| 12 | Safety warning | | Combination flashing arrow light |
| 13 | **Spray dust suppression system** | Pressure | 4Mpa |
| | | Reel | 20m（Flushing hose） |
| 14 | **Optional parts** | Front roof warning light | 1.2M warning light + alarm + microphone |
| | | Rear prompt LED screen | 2000mm×500mm |
| | | Magnetic device | 2400MM wide (clearing metal parts on the ground) |
| 15 | Scope of application | Suitable for operations on hard and flat roads, the specific gravity of the suction object is below 2 | |

## 1. 1 **Key Parts**

| S/N | Name | Brand & Original |
|---|---|---|
| 1 | Auxiliary engine | Cummins |
| 2 | Blower | Germany |
| 3 | Piston pump | Germany |
| 4 | Piston motor | Germany |
| 5 | Control system main parts | Germany |
| 6 | Drive motor | Denmark |
| 7 | Hydraulic valve | Taiwan |

## 4 Over dimension **mm**



## 5 Product appearance



MAX-60
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6 Statement

Our company follows the principle of sustainable development and we reserve the right to continuously improve our products. Continuous improvement of relevant content will be made without further notice.
This product specification will be automatically invalidated after Zhejiang Zhuma Engineering Equipment Machinery Manufacturing Co., Ltd. releases the corresponding new version of the specification.

Appendix

Zhu Ma Machinery patents cited in this product
1. "Sweeping device in high-speed road sweeper--Patent No. 201910261901.9"
2. "Pre-sweeping device for high-speed road sweeper--Patent No. 201910320100.5"
3. "A high-efficiency suction mechanism in a high-speed road sweeper--Patent No. 201920436979.5"
4. "A suction mechanism for a double suction chamber sweeper--Patent No. 201920436979.5"
5. "A cleaning device in a high-speed sweeper--Patent No. 201920437102.8"
6. "A connecting mechanism for a high-speed sweeper suction nozzle--Patent No. 201920437529.3"
7. "A rolling sweeping adjustment mechanism in a high-speed sweeper--Patent No. 201920437530.0》
8. "A high-speed sweeper front cleaning device--Patent No. 201920543215.6"
9. "A left-right swing mechanism in a high-speed sweeper front cleaning device--Patent No. 201920543409.6"
10. "A translation mechanism in a high-speed sweeper front cleaning device--Patent No. 201920543589.8"
11. "A cleaning mechanism in a high-speed sweeper front cleaning device--Patent No. 201920545895.5"
12. "A high-speed sweeper front cleaning device up and down swing mechanism--Patent No. 201920545955.3"

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