



Manoeuvrable MAN chassis for street cleaning

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At IFAT 2014 for use as a road sweeper MAN is showing a Euro VI chassis specifically for these purposes from the TGM vehicle series.

In technical terms road sweepers are far from ordinary vehicles. Slow speed when sweeping, compactness plus manoeuvrability, and large add-on units attached to the side of the frame and beneath the chassis are all striking differences from other kinds of commercial vehicle.

Operators also expect a typical road speed of about 80 km/h to move between different points of use. To clean streets, squares and the like sweepers drive very slowly at less than 3 km/h. With a manual gear change MAN vehicles can operate at a sweeping speed of 2.7 km/h. Integration of a step-down transmission in the power train enables speeds between 0.9 km/h in first gear and 2.2 km/h in fourth gear.

When it comes to the driver's seat operators prefer righthand steering where traffic drives on the right to give a driver the best possible visibility of kerbs. The extent to which the side windows of MAN cabs can be dropped plus the wide-span mirrors on both sides support them in their work.

On the chassis of all MAN series it is possible to implement differently sized road sweeper bodies of between four and eight cubic meters capacity. For the biggest market segment – double-axle road sweepers capable of holding six or seven cubic meters – MAN offers an appropriate chassis from the TGM series with a very short wheelbase and C-scale driver's cab. Road sweepers need plenty of space on the frame, between axles as well as ample ground clearance for roller brooms, whisk brooms and suction devices, so this version of the MAN TGM comes with larger 22.5-inch tyreing. Extensive modifications are necessary on the chassis to create the necessary space for the road sweeper body. MAN supplies bodywork producers with all required setups and interfaces.

At the IFAT show MAN is presenting the Euro VI version of MAN TGM 18.290 with a gross vehicle weight of 18 tonnes. A wheelbase of 3575 mm available straight ex works guarantees optimum manoeuvrability. For this kind of application MAN recommends air suspension on the rear axle to

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produce a constant driving level. Then the height of brooms and suction duct need not track with the load to maintain the same level above the road surface.

Introduction of more sophisticated Euro VI exhaust technology as of December 31, 2013 places extra demands on bodywork producers. Despite the increased space need for this exhaust system, MAN has repositioned all chassis structural parts so that the MAN TGM will still support bodywork for up to seven cubic meters of road sweeping capacity. Modifications include shifting the exhaust system, the battery box and the air tank away from the frame to an assembly carrier directly behind the cab. Extra to this, specially shaped aluminium diesel tanks holding 160 or 200 liters can be placed on the rear of the vehicle. Air vanes under the radiator and engine prevent any swirling of dust when the cooling fan turns on.

Hydrostatic drive for sweeping system and vehicle

An increasing number of operators do away with installing a separate drive motor for sweeping and suction. Instead they opt for a hydraulic system that draws its driving energy from the vehicle engine. In technical terms most bodywork producers solve that by drawing power from the takeoff at the flywheel or gearing end.

As an extra to the familiar road sweeper chassis the interface for a hydrostatic drive is presented. This can be operated over the power takeoff at the gearing end. That enables optimum matching of speed when sweeping. When driving out to and returning from a road sweeping assignment, the driver can make use of the convenient, automated MAN TipMatic gear change.

In ecological terms, doing away with an extra motor in the body that produces noise and exhaust gas, as well as limiting payload, is an ideal solution. In the vehicle set up for the MAN exhibition booth together with Faun Viajet, a hydrostatic drive works in place of the engine for sweeping operation. The MAN engine drives the hydraulic system over a power takeoff. On the one hand this powers the functions of the bodywork. Plus it drives an oil pressure motor integrated in the drive train that acts on the drive shaft and drives the rear axle.