

# GAS ENGINE YMZ-53414 CNG



YMZ

EURO 5

## ECONOMY, ECOLOGY, EFFICIENCY

modern, high-tech YMZ-530 CNG engines  
to be installed on promising vehicles of environmental class 5

- Original engine design was developed together with world's leading company Westport, an internationally recognized leader in natural gas engines production
- High technical and economic performance on a level with the best foreign analogues ensures the effective vehicle operation
- Gas equipment components are by leading specialized suppliers
- Level of operating costs is by 40-50% lower as compared with diesel versions

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# TECHNICAL SPECIFICATIONS OF YMZ-53414 CNG

Basic model and versions	YMZ-53414	YMZ-53424	YMZ-53444
Bore and Stroke, mm	105 x 128		
Displacement, l	4,43		
Arrangement and number of cylinders	L4		
Rated power gross, kW (hp)	125 (170)	110 (150)	110 (150)
Net power (UN Regulations No. 85), kW (hp)	124 (168,5)	109 (148,5)	109,5 (148,5)
Rated speed, min <sup>-1</sup>	2300		
Max. torque, gross, Nm (kgf·m)	590 (60)	590 (60)	493 (50,3)
Speed at max. torque, min <sup>-1</sup>	1200-1600	1200-1600	1200-2100
Minimum specific gas consumption, g/kW·h (norm.m <sup>3</sup> /kW·h)	179 (0,266)	179 (0,266)	179 (0,266)
Burning oil consumption, % from fuel consumption	0,1	0,1	0,1
Fuel supply system	of common rail type by Westport		
Vehicle overhauls life, km of operation	buses - 700 000 trucks - 900 000	700 000	700 000
Weight, kg	460	460	460
Applicability	buses PAZ, KAVZ trucks MAZ	buses PAZ	trucks medium-duty "GAZon Next", MAZ

## Engine type

4-cylinder gas engine (CNG) of the YMZ-530 family, 4-stroke, in-line cylinders, spark ignition, liquid-cooled, turbocharged with supercharged air cooling in air-to-air exchanger installed on the vehicle  
Compression ratio is 12

## Design features

- gas supply system of YMZ-530 CNG by Westport – of common rail type, with distributed electronic injection
- original components: pressure regulator, ramp (common rail), gas measuring device, low pressure gas filter, high pressure filter, piping, low pressure filter, pressure regulator valve
- gas supply control system by Westport – microprocessor-based, control unit WP-580
- ignition system by Federal Mogul includes spark plug inserts by Westport, spark plugs by Bosch, ignition coils by Marshall

## Ecology

Emissions comply with environmental class 5 – UN Regulations No. 49-05B2 (G) - Euro 5

## Fuel

Compressed natural gas (Methane) NG-H/NG-L/NG-HL

To achieve the environmental class Euro-5 and higher technical and economic parameters the following are applied:

- EGR system (exhaust gas recirculation) and a catalyst
- upgraded turbocharging system with a turbocharger by Borg Warner or by "Turbotechnika"



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