



TATRA IS THE SOLUTION

JAMAL



tatra.cz





TATRA IS THE SOLUTION



WHY TATRA?



- It drives through places, where others sink
- Extreme toughness of frame extends superstructure durability
- Operation in the hardest terrains and extreme climate conditions
- Fastest in hard terrain
- Directly air-cooled TATRA ON AIR™ engines
- Easy servicing
- Vehicle tailored to customers' needs

The TATRA trucks are a result of creative brilliance and working skills of the best designers and workers in the field. Combination of clear visionary thoughts and avid hearts led to the TATRA's vehicle concept that went down in the history of automobile industry and design. The backbone frame with independently suspended swinging half-axes together with the directly air-cooled, highly reliable and powerful engine and the combined suspension system with mechanical springs and air bellows ensure such driving qualities that cannot be offered by any other vehicle.

All-wheel drive requires more parts than the usual chassis design; it brings, however, an incomparably higher number of advantages when driving through hard terrain and difficult conditions.

Simply said, TATRA trucks have a backbone to withstand any challenge. Having power literally in every wheel, any driving problem becomes superable. Their ability to drive through hard terrain and their reliability is so famous that the oilmen in the Far East Siberia have erected a monument to them. As far as known, it is the only monument in the world built in honour of a truck by its customers and users.

During the recent years TATRA has significantly decreased the level of harmful emissions in exhaust gases. Modern, while still original, the directly air-cooled ON AIR™ engines are very environmentally friendly.

The bonneted cab version offers increased safety and comfort for the driver and crew in case of servicing under difficult climate conditions directly on field.

Those are the main reasons to buy TATRA trucks.



PASSABILITY



- The best vehicle for hard terrain
- The most successful brand among Dakar Rally trucks
- Backbone frame
- Independently suspended half-axes
- All-wheel drive with wheel reduction possibility
- Axle and inter-axle differential lock

The chassis with a central backbone tube is a world unique design. It was created by TATRA more than 80 years ago, and since then it has proved to be excellent in difficult operating conditions on every continent. The vehicles have successfully conquered almost every type of terrain in the world.

The central tube connected with the welded frame via crossbeams represents an extremely tough bearing system of the vehicle, which has noticeably better torsional and bending stiffness compared to a classical frame concept. Technical sources mention values of 5 - 10 times higher torsional stiffness and up to 5 times higher bending stiffness compared to vehicles of a classical concept.

The high stiffness of bearing structure crucially influences driving qualities, and frame and superstructure load capacity. The bending stiffness improves particularly vehicle stability and driving comfort. The torsional stiffness, on the other hand, increases stability and manoeuvrability of the vehicle

– high transverse stability when driving through curves, on the roads with transverse sloped and in jagged terrain. It provably reduces the welded frame and superstructure strain, which allows simpler mounting of superstructures. Particularly the user spending less on superstructure maintenance will appreciate their high durability, which is, especially in case of more complex superstructures, multiplied several times.

The high stiffness of the chassis load-carrying structure in connection with the independently suspended swinging half-axes allows for up to 30 % higher off-road driving speed compared to vehicles of a classical concept while still preserving the driving comfort.

The bonneted cab follows the successful ranges of previous years, and was actually requested by customers. It provably contributes to safety and thanks to the position of seats behind the front axle also allows higher average speeds when driving off-road.







VARIABILITY



- Air-cooled TATRA ON AIR™ engines
- Liquid-cooled engines of worldwide brands
- EURO 2, EURO 3, EURO 4 and EURO 5 emission specifications
- Both manual and automatic transmission
- PTO clutch engagement, transmission and auxiliary transmission
- Bonneted cab
- Right-hand or left-hand steering

First of all, TATRA trucks mean security and reliability. Long time proved and carefully tested designs of individual units offer guarantees that simply count. TATRA is well known for its directly air-cooled engines, which never overheat and never freeze. TATRA is also a producer of the only directly air-cooled EURO 5 engine in the world.

The only directly air-cooled EURO 5 engine in the world, TATRA ON AIR™, produces 7.5 times fewer solid particles and 3.5 times fewer nitrogen oxides compared with the T3B-928-TM EURO 2 engine of 1995 while having its maximum output increased by 27.5 % and its torque increased by 33.8 %.

Directly air-cooled V8 engine in output ranges of 280kW and 325kW with maximum torque of 1,800 Nm and 2,100 Nm works equally well, efficiently and reliably both in Siberia with extreme temperatures below -50 °C and in deserts with temperatures exceeding +50 °C.

The unique TATRA winter package preheats fuel and the engine block itself in the area under all cylinder heads. The elaborated concept prevents the engine block from possible cracking when operating in extreme frost.

The three-seat bonneted cab with flat flooring offers enough space and working comfort for the driver and co-driver in every situation.





ECOLOGY

- Directly air-cooled TATRA ON AIR™ engine
- 7.5 times reduced emissions of solid particulates
- 3.5 times reduced emissions of nitrogen oxides
- Maximum output increased by 27.5 %
- Torque increased by 33.8 %

Since 1995 to present, the original directly air-cooled TATRA ON AIR™ engines have had their emissions of solid particulates reduced 7.5 times, and emissions of nitrogen oxides 3.5 times at their maximum engine output increased by 27.5 % and maximum torque increased by 33.8 %.

The TATRA, a.s. company is the only producer in the world able to offer its own directly air-cooled engines with mechanical fuel injection complying with the EURO 5 emission standards. According to many experts, it was not possible to build a directly air-cooled engine with mechanical fuel injection that would meet the EURO 4 standards. TATRA has not only built such an engine but it has even reached the EURO 5 standards as well.

The engine's advantages are the high rate of reliability, guaranteed high-quality engine function in extremely low or high temperatures, simple engine implementation and easy servicing resulting in lower operating costs. In terms of fuel consumption, the engines are fully comparable with others.

The directly air-cooled engine production itself - thanks to the absence of liquid coolant system - is significantly more environmentally friendly by emitting less greenhouse gases (e.g. CO₂).





SPECIALIZATION





- One-way tipper superstructures
- Chassis for specialized superstructure assembly
- Working machine with extreme payload
- Capability to produce any vehicle tailored to customers' needs

The T 163 model range is a vehicle designed primarily for heavy construction operation on extensive construction sites, in quarries, surface mines and a lot of other places where the working conditions make the usage of common trucks impossible. Straight from the production line, there are various versions available for you - one-way tippers, a working machine with dumper tipping superstructure and chassis suitable for further modifications.

Part of the T 163 model range is a so-called working machine, which is certified - when loaded - to operate off public roads only. The massive tipper with a dump superstructure of 14 m³ is designed to operate in extremely mining

and muddy terrain. The vehicle is equipped with 12.00 R24 tires, double-mounted on the rear axles.

Original version of a working machine is the Máša variant. Special washers on frame crossbeams raise the bodywork by 35 mm so that the necessary space for the lock of high and massive wheels can be achieved. On the front axle, the 16.00 R20 tires are used; on rear axles, there are 24.00 R21 tires, single-mounted. The total weight of this three-axle vehicle - together with the payload of 24 tons - is 40 tons. The vehicle is capable of ordinary operation at temperatures falling down to -40 °C.





SIMPLICITY

Thanks to the elaborated and reliable chassis and engine designs, complying with all modern criteria, no complicated diagnostics equipment is needed to carry out any regular or emergency TATRA vehicle servicing. TATRA vehicles are, in fact, possible to be repaired anytime and anywhere. They commonly operate at places far away from civilisation, where drivers often have to deal with the vehicle repair on their own.

All the design groups of chassis and engine are produced with high durability in mind. The individual components of the driving system are placed inside the central backbone tube, which noticeably protects them against weather inclemency, negative aspects of the operation and human intervention.

The design of individual groups takes into account the high coefficient of demand for operation safety, corresponding

with the extreme use in the hardest terrains. Simplicity and directness are the necessary conditions to reach the high rate of durability. Till today there can be seen TATRA vehicles being in operation for more than 30 years.

Of course, the high durability of the vehicles influences the economical side of their operation. The fact that TATRA endures more and longer can be already seen on the lease installments. You pay less, and still your vehicle has a higher residual value compared with all the other brands.

Sensible approach and helpfulness towards customers are projected even into the design of the main parts of the vehicle and engine. Original spare parts are available at all authorised services.

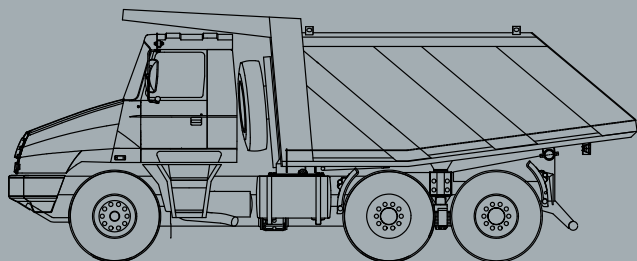
- Mechanical injection pump
- Directly air-cooled engines
- Driving system protected by central backbone tube
- Simple diagnostics
- Lower servicing costs



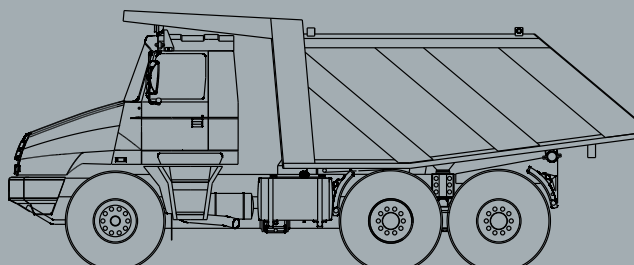
SPECIFICATIONS



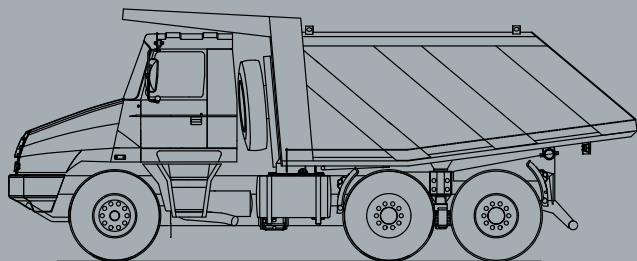
Engine	Eight-cylinder, V-type, air-cooled TATRA engine with direct fuel injection - mechanical pump, turbocharged with cooling of charging air, meeting all EURO 2 to EURO 5 (SCR) emission limits
Clutch	Single-plate clutch with membrane spring, controlled hydraulically, with pneumatic booster - TATRA MFZ1x430
Transmission	Fourteen-speed TATRA 14 TS 210 L transmission, ten-speed TATRA 10 TS 180 transmission
Auxiliary transmission	Two-speed, changeable at standstill or while driving
P. T. O.	From the clutch, transmission, auxiliary transmission
Steering	Left-hand or right-hand steering with monoblock powersteering
Axles	Independent swinging, independently suspended, with the axle and inter-axle differential locks, all wheel drive with disengageable front axle drive
Axle design	SK4 without reduction gears in wheels, SK8 with reduction gears in wheels, SKT with heavy reduction gears in wheels. Basic version without reduction gears in wheel hubs, gear ratio 3.385, with reduction gear in wheel hubs - light duty with gear ratio 2.714/2.333 and heavy duty with gear ratio 3.385/2.333
Drive type	6x6, 6x4
Tires	22.5", 20.00", 21.00"
Discs	22.5 x 9.00" or 22.5 x 11.00"
Brakes	With the wedge-shaped PERROT expander, automatic shoe setting, ABS and AZR. Brake devices are fitted with noise dampers. Service brake - two-circuit, overpressure, acting on all axle wheels. Emergency - spring brake, acting on rear axle wheels in relation to the trailer braking system. Parking - spring brake, acting on rear axle wheels. Relief - engine brake.
Suspension	Front axle - torsion bars and telescopic shock absorbers Rear axles - conventional leaf spring up to 11.5 tons per axle - combined King Frame - light duty up to 11.5 t per axle - heavy duty up to 15 t per axle, special combination up to 16.5 t per axle (with heavy reduction gears in wheel hubs)
Tank	220 l, 320 l or 420 l
Maximum speed	85 km/h with speed limiter
Cab	Bonneted, all-metal, short, two-seated, round windshield, flat floor, bonnet made of solid laminate, folding forwards, telescopic struts. The cab can be fitted with engine-dependent heating and independent diesel heater and A/C.
Equipment	Basic version - digital tachograph, tinted windows, C.I.E.B. or GRAMMER seats, pollen filter Optional equipment - DIAVIA heating and A/C unit, engine-independent heater
Vehicle configuration	T 163 legislation, working machine, Masha working machine



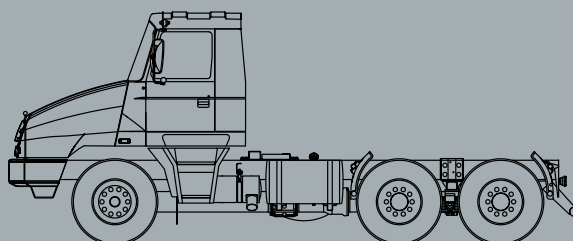
dumper with heavy reduction gears in wheels, 6x6



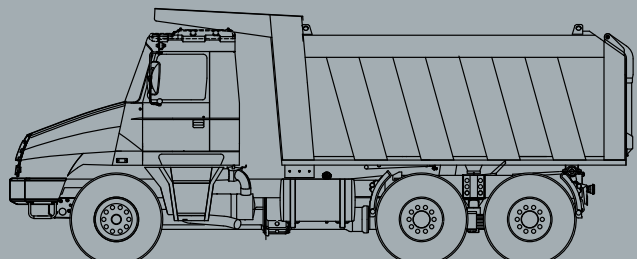
dumper with light reduction gears in wheels, 6x6



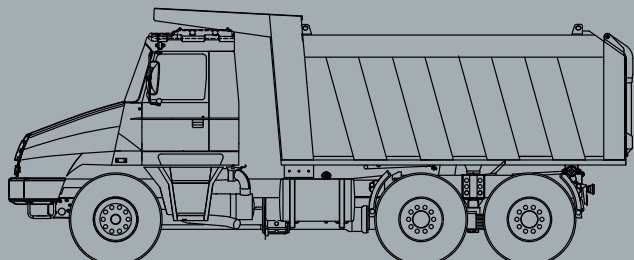
working machine "Masha", 6x6



chassis without reduction gears in wheels, 6x6



single-sided tipper with light reduction gears in wheels, 6x4



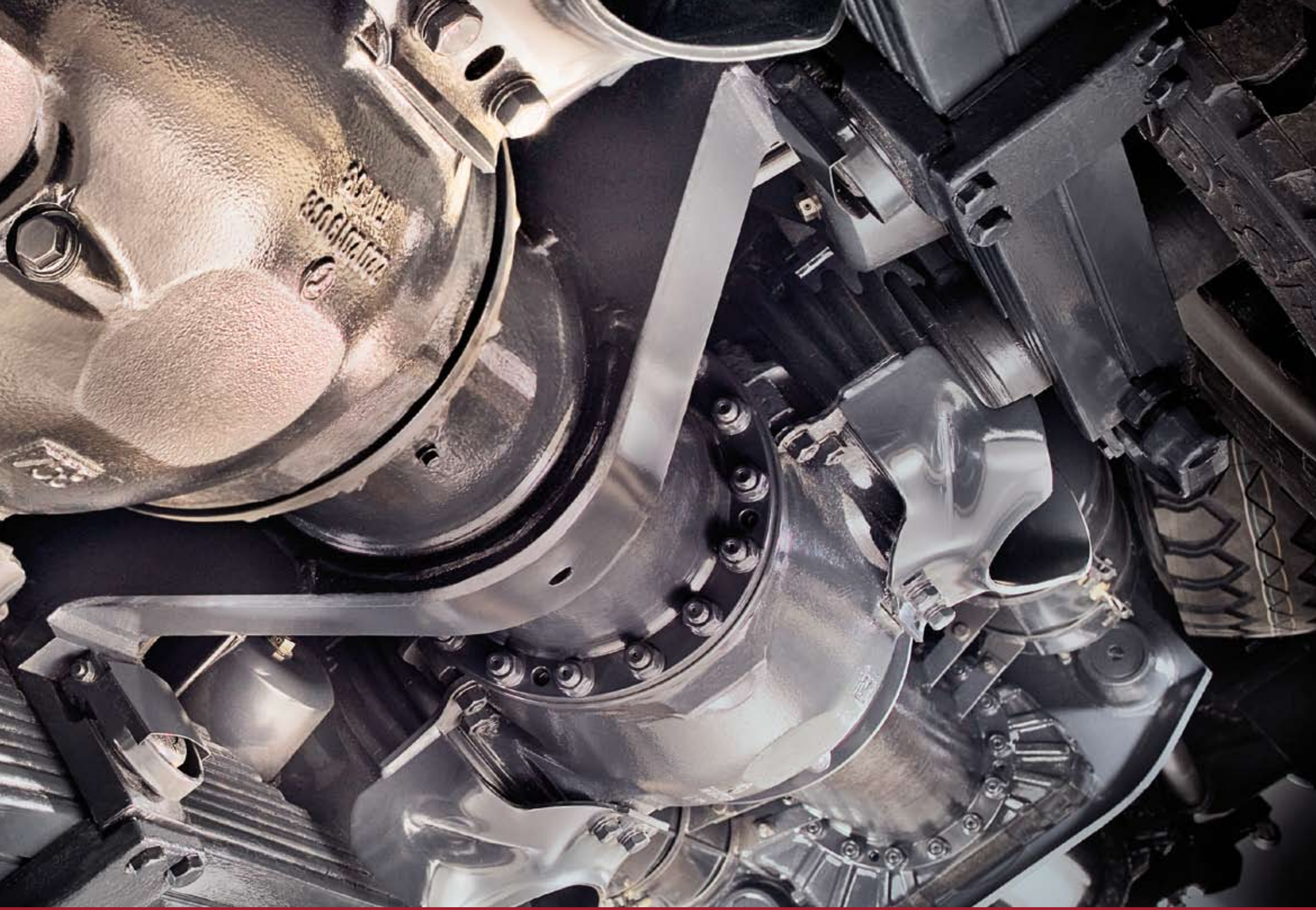
single-sided tipper with heavy reduction gears in wheels, 6x6





TATRA IS THE SOLUTION







TATRA, a. s.
Areál Tatry 1450/1, 742 21 Kopřivnice, Czech Republic, web: tatra.cz
tel.: +420 556 491 111, fax: +420 556 492 050, e-mail: jamal@tatra.cz

tatra.cz