

# Metso

Sintering and pelletizing services

## Pallet cars for sintering and pelletizing plants



Metso has been the world's leading provider for iron ore sintering and pelletizing from the beginning of this technology. Our pallet cars have proven a superior service life, ensure reliable and safe operation and the highest process performance and availability.

#### Proven experience

Metso has designed and delivered more than 30 straight grate pelletizing plants and 20 sinter plants in the last 20 years.

Our experience has resulted in an unparalleled sintering and pelletizing process know-how as a technology leader with an in-house R&D center, engineering and manufacturing control from a single source.

The continuous development of pallet cars for new plant projects worldwide as well as the related global supply base lead to the highest performance for the total cost of ownership, maintainability and availability.

Our comprehensive offering includes pallet cars and spare part packages that can be tailored to customer requirements.

- Center and end castings
- Bearings and pressure rollers
- Complete roller sets
- Grate bars
- Sidewalls
- Sealing elements
- Front plates

To reduce traveling grate system wear, maintenance and spare part costs, it is imperative that all pallet cars are perfectly uniform with the main components of the drive and tipping station gear rims and curved rails, as well as the run and side rails.

As the OEM supplier, we deliver all key spare parts and support with expert services, including inspections and the traveling grate alignment.



#### Benefits

- Proven robust design for reliable operation, long service life and minimum total cost of ownership.
- Technology leadership with more than 25,000 pallet cars delivered in the last 50 years
- Customized solutions to meet specific customer process requirements
- Leading process and engineering expertise coupled with global supply capabilities
- Life cycle services, including new complete pallet cars, spare parts, inspections and maintenance

# Pallet cars for pelletizing

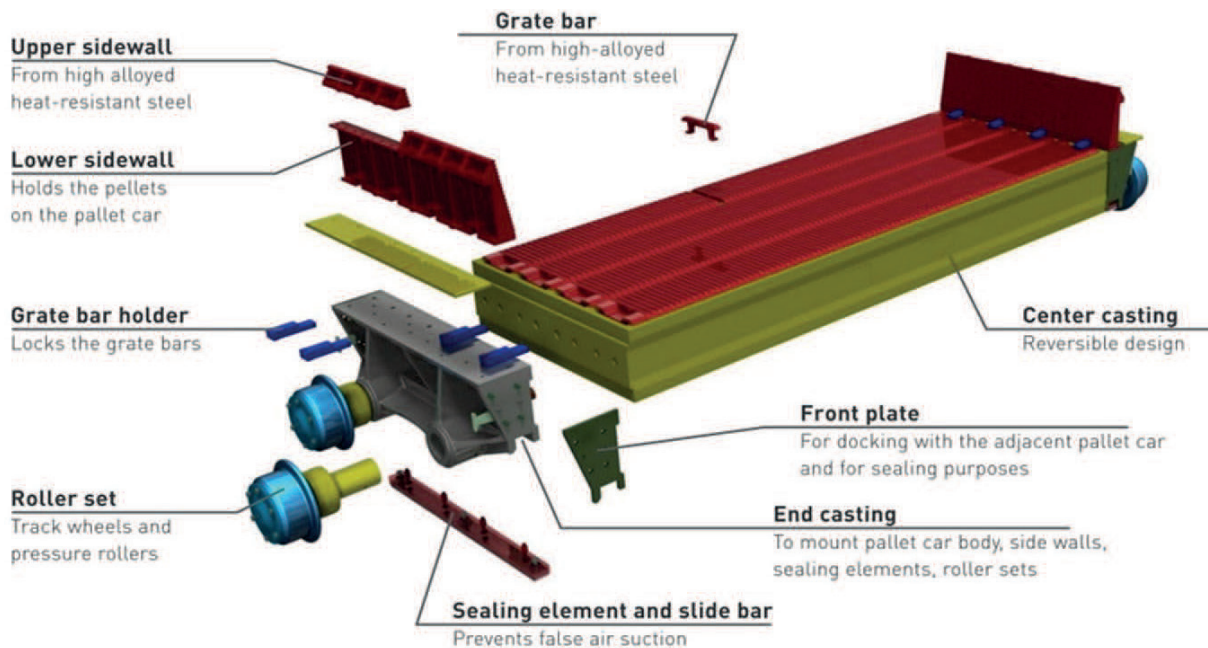
Metso pallet cars for pelletizing feature a three-piece body design of cast steel for an extended lifetime. The center and end castings where the roller sets and the side walls are mounted are joined with bolts. The center casting is symmetrical and can be reversed for extended use. The roller set and sealing elements are designed for reliable operation and low maintenance.

The split sidewall design allows for an exchange of the high-alloyed upper sidewall, which is exposed to hood temperatures up to 1,350°C. Pellet bed heights up to 550 mm can be achieved.

The grate bar design is further improved for long service life and low pressure drop. The material of the spring-loaded sealing elements is selected to optimally match with the traveling grate machine slide rails.

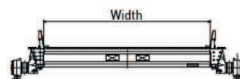


Metso pallet cars are used in pelletizing furnaces with reaction areas from 180 to 816 m<sup>2</sup> and with a grate factor of up to 28 tons of pellets per day and m<sup>2</sup> for hematite and 40 tons per day and m<sup>2</sup> for magnetite ores.



#### Standard dimensions

Width [m]	3.0	3.5	4.0
Length [m]	1.5	1.5	1.5



## Flexible service solutions

Beside the standard features of our pallet cars, Metso has solutions for the cars and the single components to suit your existing equipment, your budget and your specific performance requirements.

- Center casting: standard, medium, heavy-duty
- Straight or pre-bend with camber
- End casting: standard or heavy duty
- Rollers: roller bearings, bushings
- Wheels: cartridge or tapered bearings
- Lower seal: standard or cartridge seal
- End plate: closed or open
- Greasing: sealed for life or external
- Side walls: 50/50 split or 80/20 split
- Butt end, "pellet lock" design
- Grate bars: standard or heavy design, special design fit to existing center casting
- Locking bars: lower or upper inside wall

# Pallet cars for sintering

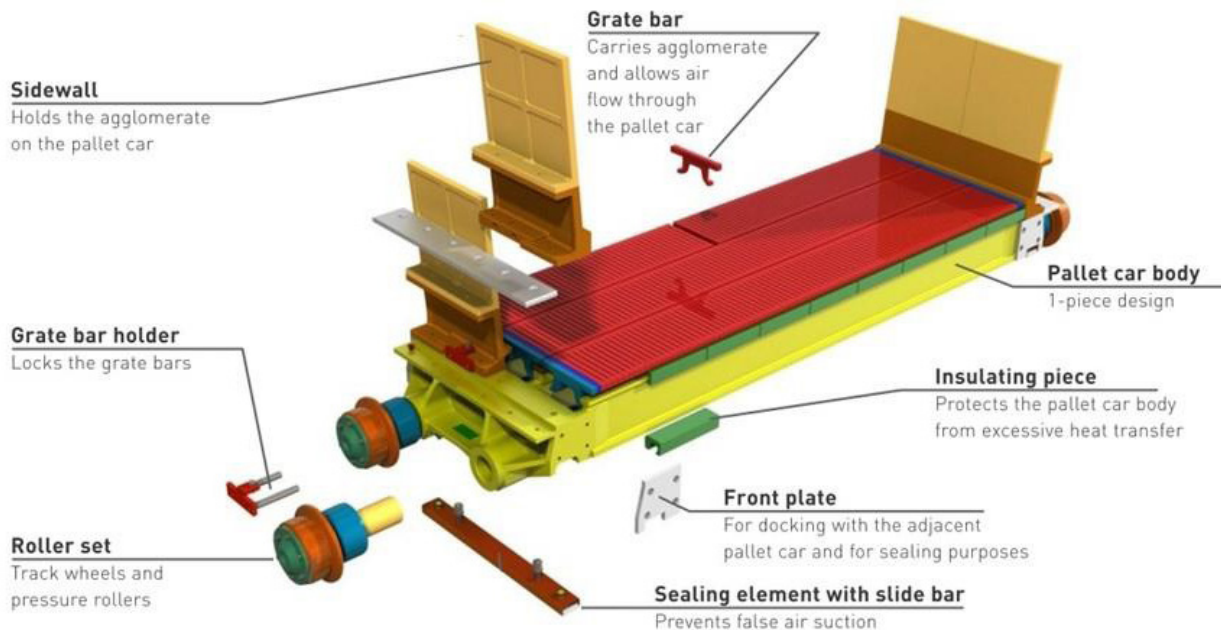
Metso pallet cars for sintering feature a one-piece body design of nodular cast iron for enhanced cost efficiency. Suspendable insulating pieces protect the pallet car from excessive heat transfer and reduce the body temperature by 100-150° C.

Track wheels and pressure rollers are equipped with anti-friction bearings and seals that make lubrication during operation unnecessary. Bearing designs that allow for frequent re-lubrication are also available.

The wear-resistant, spring-loaded sealing elements with two component material slide bars prevent false air suction between the pallet car and wind boxes.

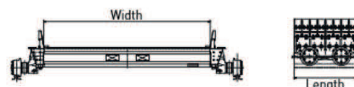


The easy to maintain sidewalls ensure that the feedstock remains on the pallet car. Our pallet cars are used in sintering machines with reaction areas up to 600 m<sup>2</sup>, with a grate factor of up to 45 tons of sinter per day and m<sup>2</sup>. Sinter bed heights up to 730 mm can be achieved.



Standard dimensions

Width [m]	3.0	3.5	4.0
Length [m]	1.5	1.5	1.5



## Flexible service solutions

Metso provides quality parts globally with excellent delivery times. We offer comprehensive quality standards for pallet cars we deliver.

- Heat treatment for pallet car castings
- Casting toughened for stress relief
- Test bars for each pallet car casting are kept for reference
- Micrographs are checked
- Dye-penetration and magnetic particle testing to detect surface cracks
- Ultrasonic tests
- Determination of all mechanical and chemical analyses is recorded
- Hardness tests will be carried out on different points of the pallet body

# Additional services for pallet cars

As a market leader in sintering and pelletizing plants since the inception of these technologies, Metso has continuously developed products to improve the performance and longevity of our process equipment.

## Inspections and alignment services



Inspections by our certified experts provide a clear understanding of your current equipment condition, maintenance needs, upgrade suggestions, spare parts requirements and operation improvement recommendations.

The information collected is used to assess planning, management or execution of alignment services for the straight grate to restore the process performance and extend the lifetime of the entire grate system and components.

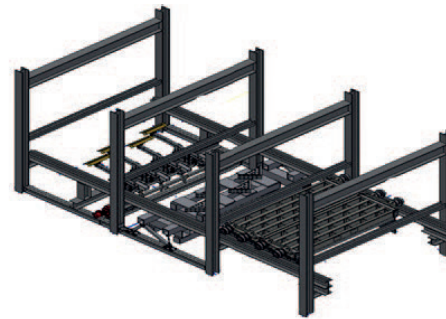
## Modernizations of pallet cars and complete fleets



After decades of operation, pallet cars display wear and start to impact plant performance and energy consumption. Maintenance needs compromise plant availability, production and increase costs. We offer the replacement of customized pallet cars with an improved state-of-the-art design.

Our modernizations will restore your operational performance and traveling grate availability while reducing your spare parts inventory and maintenance costs.

## Grate bar rapping device



Our proprietary equipment consists of two modules:

- Grate bar scraper device to remove residue from grate bars
- Grate bar rapping device to loosen and remove pellets and fines between the grate bars

The device can also be delivered on a removable carrier for easier maintenance, even during operation. Retrofits are hassle-free and improve process performance, maintenance and the lifetime of your equipment

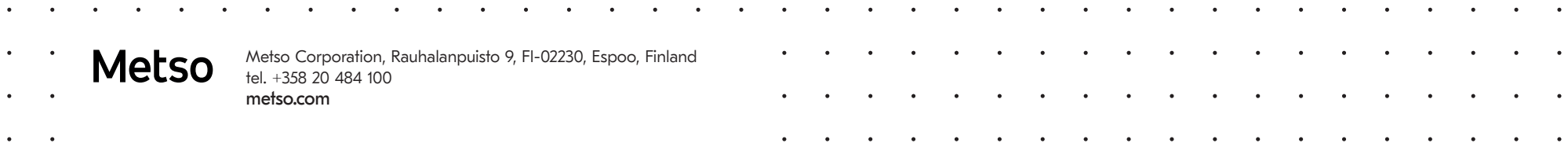
## Pallet car condition monitoring



The condition of the pallet cars is crucial for plant availability, process performance and maintenance costs.

Accurate, real-time data is provided regarding the condition of the pallet cars during operation with clear criteria for service intervals using a condition monitoring system. This system was developed to include a pallet car identification system using optical cameras or RFID and a sag monitoring for the pallet bodies with contactless sensors.

Metso is a frontrunner in providing sustainable technologies, end-to-end solutions and services for the aggregates, minerals processing and metals refining industries globally. By helping our customers increase their productivity, improve their energy and water efficiency and environmental performance with our process and product expertise, we are the **partner for positive change**.



**Metso**

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