

# SINOTRUK LOGISTICS CASE ANALYSIS

Strategic Vertical Transport Solution for Automotive Manufacturing

## 1. Industry Pain Points

### Logistics Bottlenecks

Traditional manufacturing plants often struggle with slow material flow between levels, leading to production idle time and increased labor costs.

### Structural Constraints

Modifying old factory floors for deep pits is expensive, risky, and often prohibited by geological or architectural limitations.

### Heavy Part Instability

Automotive components like engines and chassis frames require high-stability platforms to prevent tilting during vertical travel.

## 2. Specific Customer Needs (Sinotruk)

- **High Load Integrity:** Consistent 1,000kg load support across a large 3x3m surface area.
- **Minimal Civil Impact:** A solution requiring less than 250mm of pit depth to avoid foundation damage.

- **Through-Loading Flow:** Ability to load and unload from opposite sides (貫通) to facilitate linear production flow.
- **Durability:** 24/7 operational reliability for high-frequency truck manufacturing schedules.

### 3. Our Technical Solution

We implemented a **Dual-Cylinder / 4-Rail (125H Steel)** architecture. This configuration provides the necessary leverage and balance to handle the oversized 3000mm platform without structural deflection.

#### Key Innovation: Shallow Pit Adaptation

By utilizing a customized low-profile cylinder base and high-strength 125H guide rails, we achieved full functionality with only a 200mm pit, saving the client significant time and construction budget.

### 4. Technical Data Summary

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|----------------|--|
| Project Client | Sinotruk Jinan Truck Manufacturing Co., Ltd. |
| Lifting Travel | 4,010 mm                                     |
| Platform Size  | 3,000 x 3,000 mm                             |
| Structure      | Dual-Cylinder, 125H Rail, 4-Column           |
| Power Unit     | 4.0kW High-Torque Pump Station               |
| Floor Entry    | Through-Entry (3000mm Access)                |

## 5. Frequently Asked Questions (FAQ)

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**Q: Why is 125H steel used instead of standard channels?**

*A: 125H steel offers superior torsional rigidity, which is critical for wide platforms (3m+) to ensure the carriage remains level even if the load is slightly off-center.*

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**Q: What maintenance is required for the dual-cylinder system?**

*A: We recommend a visual inspection of the chains and lubrication of the guide rails every 1.5 months, with a full hydraulic fluid check annually.*

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**Q: Can the pit depth be further reduced?**

*A: 200mm is our optimized minimum for this load/travel combo. Reducing it further would require a ramp, which might affect forklift accessibility.*

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**Q: How do you ensure safety if a chain breaks?**

*A: The system includes 12# safety synchronization ropes and a burst-valve system in the hydraulic lines to prevent rapid descent.*

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