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# 2024 KIA EV9 (MV) Test Load Results San Bernardino, Ca.

2023.05.31 R.2  
GLOVIS AMERICA

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# TEST LOAD SUMMARY

## Data

**Purpose:** To assess rail and haulway truck carrier clearances on the all-new MY2024 Kia EV9 (MV)  
**Test Load Location:** San Bernardino, CA.  
**Carriers:** BNSF Railroad and Quality Car Shippers.

## Results

- **Rail:** Kia EV9 (MV) may be shipped on bi-level railcars. Autoflex and Multi-Max railcars may also be utilized in bi-level configuration only.
- **Standard tri-level railcars** are not an approved conveyance for the Kia EV9 (MV) shipment due to insufficient overhead railcar clearance.
- **Haulway:** Approved conveyance for the Kia EV9 (MV) with restrictions:
  - Upper trailer deck:** not approved on vehicle positions #1 and #2 on some trailers can exceed 13'.6" state vehicle height restrictions. Recommended not to use wheel pockets.
  - Lower trailer deck:** approved with restrictions on vehicle position #6 on some trailers does not meet undercarriage clearance (**2" minimum**) and insufficient overhead clearance (**4" minimum**). Driver side door has potential for damage when opening while in position #6.
- **Enclosed Trailer:** Approved conveyance for the Kia EV9 (MV) with restrictions
  - Upper trailer deck:** Approved for all upper trailer loading positions *with restrictions*. **Preferred for each vehicle to have their own table, recommended to not split tables**, if splitting then place a ratchet strap and tighten down the front of the table to the side anchor points of the trailer while the front of table 3 is tilted upward.
  - Lower trailer deck:** Approved for all lower trailer loading positions, overhead caution from tables, ensure sufficient overhead clearance (**4" minimum**) of the entire vehicle.

## Conclusion

MY2024 Kia EV9 (MV) Bi-levels are the authorized railcar conveyance and can be utilized without any known restrictions including roof rack PIO.

**Haulway:** Kia EV9 (MV)'s height is approximately 68.89" (1750 mm) without roof rails. This vehicle's overall vehicle height with/without roof rack rails can exceed 13'.6" cargo height causing limitations in the #1 headrack and #2 trailer positions. Recommended not to use the wheel pockets which may cause mudguard/undercarriage damages. Do not split tables in enclosed trailer, use ratchet strap to hold table 3 steady. Caution with vehicle's entire overhead clearance.

- **Rail and Truck requirement:** All GLOVIS technical bulletins, safety policies and procedures must be followed (5 MPH loading speed, 15 MPH on site, seat belt usage is mandatory)

# SUMMARY

Test Date: Wednesday, 05/31/2023

Conditions: Partly cloudy, 67° to 69° F

Test Location: San Bernardino, CA

KMA participants: Gahyun (Thomas) Baek, Sr. Port Quality Manger

GLOVIS: Bolo Cavanh - Rail Manager, Byron Alvarez - Quality & Damage Prevention Supervisor

## Test Vehicle:

2024 KIA EV9 (MV): VIN: PQ-000178 (GT Line)

## Specifications:

- 2 RWD, one motor RWD: Basic 76.1KWh with a 160-kilowatt battery (215Horse Power), Long range option 99.8 kWh (2 RWD, one motor)
- 4 WD has dual motors 99.8 kWh, output: 283 Kw(379HP)
- 4 WD GT has dual motors, which may have larger battery capacity

**Curb Weights:** Estimated: 5,737 lbs. (2602.25 kg)  
 Wheelbase: 122.047 in. (3100 mm)  
 Length: 197.244 in. (5010 mm)  
 Width: 77.953 in. (1980 mm)  
 Height: 68.898 in. (1750 mm)  
 Min. ground clearance: 7 in. (17.78 cm)  
 Wheels: 255/60/R19 (482.6 mm), 275/50/R20 (508 mm)  
 285/45/R21 (533.4 mm)

**Railcar:** Standard bi-level: TTGX 706116 A: 87 in. B: 94 in.

**Railcar:** Standard tri-level: Not an approved conveyance

**Truck Configuration:** - Extreme Transportation, VIN: 5E0AA16XPG704001, Peterbilt [night cab] with 2022 CX-09LSFA3 #99, Cottrell NextGen soft-tie strap, 80' trailer, Length - 45'6", Width -102". Tare weight 43,500 lbs. Driver: Mr. Ray Murro  
 - Extreme Transportation, VIN: 5E0AA1647PG714601, VAH Volvo [day cab] with 2022 CX-09LSFA3 #129, Cottrell NextGen soft-tie strap, 80' trailer, Length - 45'6", Width -102". Tare weight 43,500 lbs. Driver: Mr. Eric Contreras

Category		Standard	Long-range
Battery	Capacity (kWh)		
		76.1 kWh	99.8 kWh
Target estimated DTE (North America, 19")		223 mile (2WD)	300mile (2WD) / 270mile (AWD)
Target estimated DTE (EU standard, 19")		–	541km (2WD) / 497km (AWD)
Motor Align		2WD (Rear)	2WD (Rear), 4WD (Front+Rear)
Charging time		10~80% approx. 20 min	10~80% approx. 24 min

## Rail – Standard Bi-Level Recommendations (CV)

Chock Type	AAR Minimum Clearance	GLOVIS Recommendation	Recommendation *based on risk*	Results
Holden Grate Lock Chock	YES	YES	YES With or without Mudguards and Windguards	<ul style="list-style-type: none"> <li>Met AAR standards min. 2" between chock and body panels.</li> <li>Chock face plate is adjustable . <b>Recommend HIGH setting on front chocks, middle chocks and HIGH on rear chocks.</b> Rail loaders are to utilize the highest chock setting that will maintain a minimum of 2" clearance between the chock and any vehicle body panel or its components.</li> </ul>
Zeftek Sta-Put Chock	YES	YES	YES With or without Mudguards and Windguards	<ul style="list-style-type: none"> <li>Met AAR standards min. 2" between chock and body panels.</li> <li>Chock face plate is adjustable . <b>Recommend HIGH setting on front chocks, middle chocks and HIGH on rear chocks.</b> Rail loaders are to utilize the highest chock setting that will maintain a minimum of 2" clearance between the chock and any vehicle body panel or its components.</li> </ul>
Holden Grip Lock Chock	YES	YES	YES With or without Mudguards and Windguards	<ul style="list-style-type: none"> <li>Met AAR standards min. 2" between chock and body panels.</li> <li>Chock face plate is adjustable . <b>Recommend HIGH setting on front chocks, middle chocks and HIGH on rear chocks.</b> Rail loaders are to utilize the highest chock setting that will maintain a minimum of 2" clearance between the chock and any vehicle body panel or its components.</li> </ul>

# TRUCK – KIA EV9 (MV)

Position	Recommended	Notes
All upper trailer deck positions	YES (chop-top/day cab) NO (bubble top/sleeper cab)	<ul style="list-style-type: none"> <li>Upper trailer deck: <b>Not approved for all upper trailer loading positions</b>, vehicle positions <b>#1</b> and <b>#2</b> on some trailers can exceed U.S. FMSCA 13'6" or State 14' load height limitations based on vehicle location. Recommended not to use wheel pockets, chop-top truck doesn't need wheel pockets engaged to meet height regulations. Do not stack EV9s on positions #2 and #6.</li> </ul>
All lower trailer deck positions	YES (chop-top/day cab) NO (bubble top/sleeper cab)	<ul style="list-style-type: none"> <li>Lower trailer deck: <b>Not approved for all lower trailer loading positions</b>, restrictions on vehicle position <b>#6</b> on some trailers, it does not meet undercarriage clearance (2" minimum) and insufficient overhead clearance (4" minimum). Driver side door has potential for damage when opening while in position #6. Do not stack EV9s on positions #2 and #6.</li> </ul>
Additional Notes		



No issues with loading undercarriage clearance



Position #2 no issues with undercarriage clearance



No issues with angle ramp loading undercarriage clearance

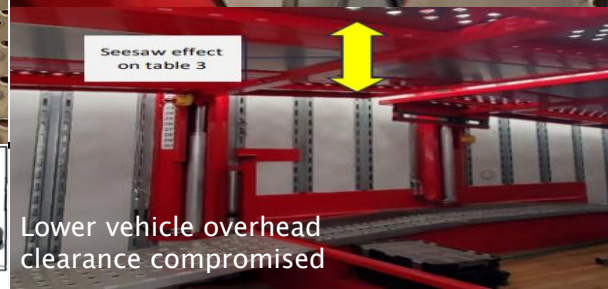
Do not stack EV9s on positions #2 and #6.

Driver side door has potential for damage on opening while in position #6



# ENCLOSED TRAILER – KIA EV9 (MV)

Position	Recommended	Notes
All upper trailer deck positions	YES	<ul style="list-style-type: none"> <li>Upper trailer deck: <b>Approved for all upper trailer loading positions with restrictions.</b> Preferred for each vehicle to have their own table, recommended to not split tables, if splitting then place a ratchet strap and tighten down the front of the table to the side anchor points of the trailer while the front of table 3 is tilted upward.</li> </ul>
All lower trailer deck positions	YES	<ul style="list-style-type: none"> <li>Lower trailer deck: <b>Approved for all lower trailer loading positions,</b> overhead caution from tables, ensure sufficient overhead clearance (4" minimum) of the entire vehicle.</li> </ul>
		<b>Additional Notes</b> <p>All KMA vehicles must be secured with soft-tie straps only. The use of chains and "R" hooks is strictly prohibited. Each tire must be strapped directly over the tread surface.</p> <ul style="list-style-type: none"> <li>No strap side pulls or wheel contact.</li> <li>Seatbelts must be worn at all times.</li> </ul>





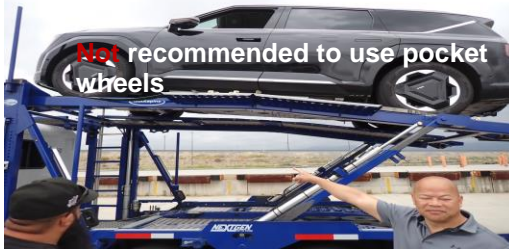
# TRUCK (Haulaway)



Not approved on vehicle positions #1 and #2 on some trailers



Position  
#1



Not approved on vehicle positions #1 and #2 on some trailers



Position  
#2



Not approved on vehicle positions #6 on some trailers



Position  
#6



Position  
#6



# TRUCK RESULTS

Driver Name	Truck Year/ Length/ Style	Trailer Model Number	Results	Spacing Front Fascia	Rear Bumper	Comments
Rey Murro	<b>Peterbilt (sleeper cab)</b> 2022 Cottrell 80' NextGen Quick Loader, soft-tie	CX-09LSFA3	The Cottrell NextGen open trailer can handle 6 vehicles the size and weight of the MY2024 Kia EV9 (MV).	Loading ramp: 5" – 5.5" (12.7 – 13.97cm)	5" – 5.5" (12.7– 13.97cm)	<ul style="list-style-type: none"> <li>• <b>Upper trailer deck:</b> Not approved on vehicle positions #1 and #2 can exceed 13'.6" state vehicle height restrictions. Recommended not to use wheel pockets.</li> <li>• <b>Lower trailer deck:</b> Not approved on vehicle position #6 on some trailers does not meet undercarriage clearance at rocker (2" minimum) and insufficient overhead clearance (4" minimum)</li> <li>• <b>Driver side door has potential for damage when opening while in position #6</b></li> </ul>
Eric Contreras	<b>VAH Volvo (chop-top)</b> 2022 Cottrell 80' NextGen Quick Loader, soft-tie	CX-09LSFA3	The Cottrell NextGen open trailer can handle 6 vehicles the size and weight of the MY2024 Kia EV9 (MV).	Loading ramp: 5" – 5.5" (12.7 – 13.97cm)	5" – 5.5" (12.7– 13.97cm)	<ul style="list-style-type: none"> <li>• <b>Upper trailer deck:</b> Approved for all upper trailer loading positions, if vehicle load height in trailer positions #1 through #5 do not exceed U.S. FMSCA 13'6" or State 14' load height limitations based on vehicle location.</li> <li>• <b>Lower trailer deck:</b> Approved for all lower trailer positions. Carriers must maintain a minimum of 2" undercarriage clearance and 4" (101.60 mm) space separation between upper deck and lower deck vehicles. Recommended not to use wheel pockets.</li> </ul>



## TRUCK SUMMARY – KIA EV9 (MV)

### MY2024 KIA EV9 (MV) Truck Test Load

A truck test load was conducted to verify if the **MY2024 KIA EV9 (MV)** with installed wind guards and mud guards met all the following KIA GLOVIS shipping requirements:

- 13'.6" to a 14' maximum load height
- 2" minimum undercarriage clearance
- 3" minimum bumper to bumper clearance
- 4" minimum overhead clearance

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**Extreme Truck Transportation – Truck #99** Static test load revealed transportation concerns were seen on the tractor trailer used for the EV9 truck test load, some tractor/trailer cab configurations could cause the EV9 (MV) to exceed the 13'.6" state vehicle height restrictions. The test vehicle when driven forward into the trailer's #1 headrack position with wheel pockets closed was recorded as being well over 13'.6". When the EV9 (MV) unit was backed into the #1 headrack position (standard shipping position) the vehicle's load height was recorded as being well over 13'.6", with wheel pockets open the vehicle's undercarriage to include but not limited to mudguards have high potential for damage. Lower trailer deck restrictions on vehicle position #6 on some trailers, does not meet undercarriage clearance at rocker (2" minimum) and insufficient overhead clearance (4" minimum).

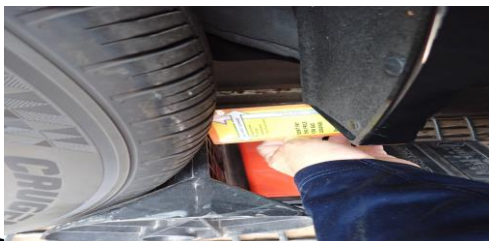
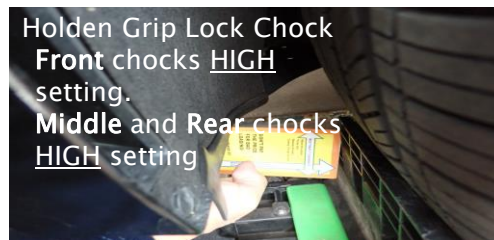
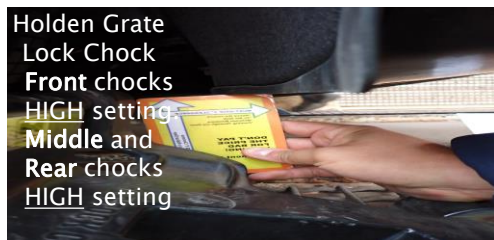
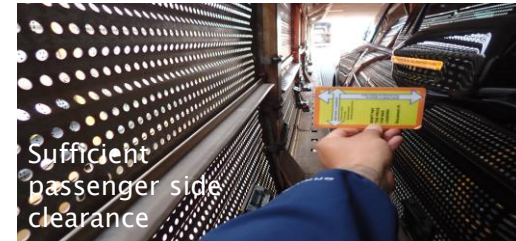
**Truck #129** Static test load revealed no transportation concerns were noted. Caution on position #6 Driver side door has potential for damage on opening while in position #6

Haulaway drivers need to maintain a minimum of 4" (10.16 cm) overhead space separation between upper and lower vehicles and check vehicle load heights for compliance with U.S. FMCSA and State load height limitations especially when handling mixed product loads. Not recommended to stack EV9 on position #2 and over position #6 together.

Sufficient lower clearance in the problematic break-over points at the rear tandem wheel area.

**Standard haulaway load factor: 6 vehicles based on Kia's estimated curb weight of 5,737 lbs. (2602.25 kg) and varying tractor/trailer weight, size and configuration.**

## Bi-Level Railcar



## RAIL SUMMARY – KIA EV9 (MV)

### MY2024 KIA EV9 (MV) Rail Test Load

A static rail test load was conducted to verify if the MY2024 KIA EV9 (MV) met the following GLOVIS and AAR shipping requirements:

- Adequate vehicle spacing on bi-level railcar ramp and door entrances.
- Not approved on tri-level and Automax railcars due to height clearance.
- ARR compliance with a minimum of 2" clearance between the chock and any vehicle component.
- ARR compliance with a minimum of 3" clearance between vehicle roof panel and railcar upper deck.

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### Conclusion:

Standard tri-level railcar: **Not an approved conveyance** – Due to insufficient overhead spacing

AutoMax railcar: **Not tested as rail car, is not an approved conveyance** – Due to insufficient overhead spacing

Autoflex and Multi-Max railcars: May be utilized ***provided they are set to bi-level configuration only. Chock settings would be similar to the Bi-level recommendations as referenced below.***

Test results concluded: Bi-level approved. Not approved on tri-level and Automax railcars

**Bi-level railcar number TTGX942420 A: 87" B: 94"**

Static test load results revealed that there were no bi-level railcar concerns with the MY2024 KIA EV9 (MV). There was adequate spacing from loading ramp to windguard and mudguard spacing, approximately 5" (12.7 cm). The Zeftek Sta-Put, Holden Grate Lock and Holden Grip Lock chocks were easily adjustable to properly accommodate all spacing requirements of the MY2024 KIA EV9 (MV). HIGH setting on the all chocks is recommended. All bi-level grate lock chock sets tested exceeded ARR requirement of a minimum of 2" (5.08 cm) clearance between the chock and any vehicle component. Standard bi-level railcars may be used with no restrictions.

**Bi level load factor: 1.0**



## Test Load Conclusion

### Recommendation:

Glovis claims department is requested to monitor and report any unusual transportation damage or claim patterns observed on the new MY2024 KIA EV9 (MV) through the end of December 2024 to the GLOVIS Vehicle Logistics Quality Control Supervisor and Claims departments.

**The MY2024 KIA EV9 (MV) should be considered a Bi-level vehicle for general rating purposes.  
Standard haulaway load factor: 6 vehicles, enclosed trailer: 4 vehicles**

