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Truck Cab - Torsion-Type Tilting and Locking Mechanism

汽车驾驶室 扭杆式翻转及锁止机构

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Annex:

References, names and dates of implementation of 42 automotive industry standards

No.	Standard reference	Standard name	Standard reference being substituted	Date of implementation
250	QC/T 776-2017	Motor caravan	QC/T 776-2007	2017-07-01
251	QC/T 1051-2017	Coach car		2017-07-01
252	QC/T 1052-2017	Communication vehicle		2017-07-01
253	QC/T 1053-2017	Concrete spraying vehicle		2017-07-01
254	QC/T 1054-2017	Tunnel cleaning vehicle		2017-07-01
255	QC/T 1055-2017	Drainage and rescue vehicle		2017-07-01
256	QC/T 218-2017	Technical specifications for steering column upper combined switch of automobile	QC/T 218-1996	2017-07-01
257	QC/T 1056-2017	Technical requirements and test methods for automotive dual clutch automatic transmission assembly		2017-07-01
258	QC/T 245-2017	Technical specifications for isolated plant of compressed-natural-gas (CNG) automobile	QC/T 245-2002	2017-07-01
259	QC/T 247-2017	Technical specifications for isolated plant of liquefied petroleum gas	QC/T 247-2002	2017-07-01
260	QC/T 1057-2017	Car snow chains		2017-07-01
261	QC/T 1058-2017	Car fingerprint identification device		2017-07-01

273	QC/T 1060-2017	Automotive hexagonal flower flange bolts		2017-07-01
274	QC/T 1061-2017	Road transport lightweight fuel tank vehicle anti-overflow system		2017-07-01
275	QC/T 1062-2017	Road transport lightweight fuel tank vehicle unloading valve		2017-07-01
276	QC/T 1063-2017	Road transport lightweight fuel tank vehicle oil and gas recovery components		2017-07-01
277	QC/T 1064-2017	Road transport flammable liquid dangerous goods tank vehicle - breathing valve		2017-07-01
278	QC/T 1065-2017	Road transport flammable liquid dangerous goods tank vehicle - manhole cover		2017-07-01
279	QC/T 789-2017	Performance requirements and bench test methods of automobile electric vortex retarder assembly	QC/T 789-2007	2017-07-01
280	QC/T 316-2017	Bench test methods of fatigue strength for automobile service brake	QC/T 316-1999	2017-07-01
281	QC/T 201-2017	Nylon pipe joint size for automobile air brake	QC/T 201-1995	2017-07-01
282	QC/T 1066-2017	Performance requirements of cable assembly for vehicle parking brakes and bench test method		2017-07-01

Truck Cab - Torsion-Type Tilting and Locking Mechanism

1 Scope

This Standard specifies the terms and definitions, requirements, test methods, inspection rules, marking, package, transportation and storage for the truck cab – torsion-type tilting and locking mechanism.

This Standard is applicable to the truck cab – torsion-type tilting and locking mechanism.

2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this document.

GB/T 1771 Paints and Varnishes – Determination of Resistance to Neutral Salt Spray

GB/T 10125 Corrosion Tests in Artificial Atmospheres - Salt Spray Tests

QC/T 518 Tightening Torque for Automotive Threaded Fastener

3 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

3.1 Cab tilting mechanism

The mechanism that allows the cab to be turned over, held in a specific position, and returned to the original position during maintenance of the engine compartment.

3.2 Torsion bar cab tilting mechanism

The cab tilting mechanism taking the torsion bar as the energy storage element; and is divided into single torsion bar cab tilting mechanism and double torsion bar cab tilting

mechanism must not have abnormal noise.

4.1.3 After the locking mechanism is unlocked, the cab is not allowed to automatically turn to the maximum opening position of the cab without relying on external force (the limit stay bar is fully open).

4.1.4 After the stay bar is released from the limit, the cab shall not fall automatically without relying on external force.

4.1.5 The position for the operating device of cab tilting mechanism and cab locking mechanism shall be easy to operate.

4.1.6 The cab locking mechanism shall be equipped with anti-misoperation device.

4.1.7 The vehicle shall be able to lock the cab firmly and reliably under normal driving and emergency braking conditions.

4.1.8 Under the locking state, the positioning in the direction of the side, front and rear of the cab shall be correct, firm, and reliable.

4.1.9 The easy-to-see parts near the cab tilting and operating mechanism shall have the textual instructions and safety warnings for the proper use of the operating mechanism.

4.1.10 The cab tilting mechanism shall be equipped with stay bar; when tilting and staying, the stay bar shall have the safety protection device. When the tilting angle reaches the design requirements, it can self-lock. The cab tilting angle shall be no less than 0° and no more than 40°.

4.1.11 The adjustment and maintenance of the cab tilting mechanism and cab locking mechanism shall be carried out as per the instruction manual of the product.

4.1.12 The cab tilting mechanism and cab lock mechanism shall be numbered or coded; and shall be traceable.

4.1.13 The rotary pair of each connection mechanism shall be flexible and free of sticking.

4.1.14 Tightening torque of bolt connection parts, except for special provisions, shall conform to the provisions of QC/T 518.

4.2 Performance requirements

4.2.1 The locking strength shall meet the following requirements:

--- After testing as per 5.3.1, the safety lock hook shall be free of cracks and deformation;

5 Test Methods

5.1 Test site

5.1.1 The site for parking the test vehicle shall be horizontal, solid and flat.

5.1.2 The front end of the cab shall reserve sufficient space for tilting.

5.2 Vehicle state

5.2.1 The vehicle state shall meet the technical condition requirements proposed by the manufacturer against such type of vehicle.

5.2.2 Before test, the vehicle shall be stopped stably; while the cab shall remain the exit-factory state.

5.3 Measurement of locking strength

5.3.1 Install the operating mechanism on the test bench; hang the 2000N weight block on the safety lock hook; after standing for 100h, dismantle and measure.

5.3.2 Install the operating mechanism on the test bench; hang the 5000N weight block on the safety lock hook; after standing for 100h, dismantle and measure.

5.4 Operating force for tilting and resetting

5.4.1 Test instrument and device

Force gauge: range of 500N; accuracy level of ±5%.

5.4.2 Method

5.4.2.1 Measurement for operating force of tilting

After unlocking, slowly raise the cab to a static balance; connect the force gauge to the tilting handle; push the tilting handle through the force gauge slowly and perpendicularly to the handle (tangentially along the center of the rotation) till the cab is tilted to the support position; the maximum value displayed by the force gauge during the tilting process is the operating force of such tilting.

5.4.2.2 Measurement for operating force of resetting

After self-unlocking of the stay bar, slowly fall the cab to a static balance; connect the force gauge to the tilting handle; push the tilting handle through the force gauge slowly and perpendicularly to the handle (tangentially along the center of the rotation) till the cab is tilted to the locking position (hooked by the safety locking hook); the maximum value displayed by the force gauge during the falling process is the operating force of

6 Inspection Rules

6.1 Exit-factory inspection

6.1.1 The product shall be carried out exit-factory inspection according to the specified items; only after passing the inspection can the product leave the factory or store in the warehouse.

6.1.2 The exit-factory inspection items shall be 4.1.1, 4.1.13.

6.1.3 Randomly take 1~2 sets of products from the same batch to carry out exit-factory inspection; if one of the inspection items is unqualified, then such batch of products shall be judged to be unqualified.

6.2 Type inspection

6.2.1 The type inspection items can refer to Table 1. In one of the following cases, the type inspection shall be carried out:

a) When new products are finalized, or old products are transfer for production;

b) When there are significant changes in the product process, structure or materials that may influence the product performance after the formal production;

c) When production is restored after 1-year shutdown;

d) When the normal production reaches 1 year;

e) When the national quality supervision agency proposes the requirements for the type inspection.

6.2.2 The type inspection shall randomly take sample from the same batch of products that have passed the exit-factory inspection; the sampling quantity is 1 set.

6.2.3 If there is one inspection item result does not meet the requirements of this Standard, then take double samples from such batch of products for reinspection. If there is still an unqualified item in the reinspection results, then such batch of products shall be judged to be unqualified.

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