Prüfbericht-Nr.: *Test Report No.:*	**50041065 001 Part I of III**	**Auftrags-Nr.:** *Order No.:*	154149891	Seite 1 von 11 *Page 1 of 11*
Kunden-Referenz-Nr.: *Client Reference No.:*	N/A	**Auftragsdatum:** *Order date:*	19.02.2016	
Auftraggeber: *Client:*	Liftsmart			
Prüfgegenstand: *Test item:*	Rough Terrain Forklift Truck			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	LS-RT30, LS-RT35			
Auftrags-Inhalt: *Order content:*	Type Test			
Prüfgrundlage: *Test specification:*	Annex I of 2006/42/EC the: "Essential health and health and safety requirements relating to the design and construction of machinery"			

Wareneingangsdatum: *Date of receipt:*	30.03.2016
Prüfmuster-Nr.: *Test sample No.:*	L7AF00002, L7AF00004
Prüfzeitraum: *Testing period:*	30.03.2016 - 30.03.2016
Ort der Prüfung: *Place of testing:*	As client
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shanghai) Co., Ltd
Prüfergebnis*: *Test result*:*	Pass

geprüft von / *tested by*:

2016.04.27 Lv Jun / PE

Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

kontrolliert von / *reviewed by*:

27.04.2016 Jinbiao. Shang / Reviewer
27.04.2016 Ming Shen / TC

Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

Sonstiges / *Other*:
This report is only valid in its full version: Part I of III, Part II of III and Part III of III.

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the test item at delivery:* Prüfmuster vollständig und unbeschädigt *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

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Verwendete Meßgeräte/Prüfmittel/Equipmentlist

Prüfmittel/Equipment	Gerätenummer/ Ident.-Nummer Barcode-Nummer Equipment number	nächste *Kalibrierung/Überwachung next calibration/surveillance*
Balance	SCS-80 150 t	08.04.2017
Electron-stopwatch	J9-2II H013	06.01.2017
Tubular Measuring Force Apparatus	KL-50 P024	06.01.2017
Human Vibration Analyzer	4447 R101	27.07.2016
Sound level meter	2240 R115	29.05.2016
Unitest High-Voltage Tester	9030 Unitest E013	06.01.2017
Unitest Machinery Tester	9032 Unitest E019	06.01.2017
Steel Tape	None L852	14.12.2016
Autocar & tractor Synthesizer	CTM-2002C Z751	19.02.2017

Description of the machine

The trucks under tests are diesel engine powered rough terrain forklift truck with sit on operation.

LS-RT30 and LS-RT35 are the same except their counterweight. So all the tests are carried out on LS-RT35.

Type	LS-RT30	LS-RT35
Series number	L7AF00002	L7AF00004
Lift height (m)	3	3
Rated capacity (t)	3.0	3.5
Load center distance (mm)	500	500
Service weight (kg)	5120	5380
Engine type	Cummins QSF2.8T3NA49	Cummins QSF2.8T3NA49
Rated power (kW)	36.5	36.5
Rated speed (min-1)	2500	2500

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Abschnitt ***Clause***	**Anforderung / *Requirement*** **2006/42/EC Annex I**	**Umsetzung durch Abschnitt der Norm, anderes:** ***Implementation by clause of standard*, other:**
1.	Grundlegende Sicherheits- und Gesundheitsschutzanforderungen *Essential health and safety requirements*	
1.1.	Allgemeines *General remarks*	
1.1.1.	Begriffsbestimmungen *Definitions*	Informative paragraph
1.1.2.	Grundsätze für die Integration der Sicherheit *Principles of safety integration*	Comply with EN ISO 3691-1
1.1.3.	Materialien und Produkte *Materials and products*	Machines are of benign construction. Information regarding oil and electrolyte provided in the manual.
1.1.4.	Beleuchtung *Lighting*	See test report EN ISO 3691-1 clause 4.10.
1.1.5.	Konstruktion der Maschine im Hinblick auf die Handhabung *Design of machinery to facilitate its handling*	Machine movable, components can be easily moved by standard lifting gear. Relevant information provided in the user manual. See test report EN ISO 3691-1 clause 4.11.5.
1.1.6.	Ergonomie *Ergonomics*	Considered. Refer to test report EN ISO 3691-1 clause 4.4.4.1, 4.7 and 4.11, and EN 16307-1 clause 4.7 and 4.8.
1.1.7.	Bedienungsplätze *Operating positions*	Refer to test report EN ISO 3691-1 clause 4.7 and 4.11, and EN 16307-1 clause 4.8
1.1.8.	Sitze *Seating*	Ride on machine, no additional seat, and operator seat comply with EN ISO 3691-1 clause 4.7.4 and EN 16307-1 clause 4.8.
1.2.	Steuerungen und Befehlseinrichtungen *Control systems*	
1.2.1.	Sicherheit und Zuverlässigkeit von Steuerungen *Safety and reliability of control system*	Comply with EN ISO 3691-1 clause 4.4, operation handles and pedals are arranged as using custom. In case of fail of control circuit logic or circuits, the steering system, braking system and load system remain under control in safe conditions. Refer to test report EN 1175-2 clause 5.3 and EN ISO 3691-1 clause 4.4.
1.2.2.	Stellteile *Control devices*	Refer to test report EN ISO 3691-1 clause 4.2, 4.3 and 4.4. Danger zone is visible to operator for forward operation, acoustic and visual warning signal provided for backward operation. There is only one operating position, Refer to test report EN ISO 3691-1 clause 4.10.
1.2.3.	Ingangsetzen *Starting*	Refer to test report EN ISO 3691-1 clause 4.2.
1.2.4.	Stillsetzen *Stopping*	
1.2.4.1.	Normales Stillsetzen *Normal stop*	Tilting and lifting controls are hold-to-run, service brake and parking brake are also provided. Key switch is provided to switch off the machine. Refer to test report EN ISO 3691-1 clause 4.3.
1.2.4.2.	Betriebsbedingtes Stillsetzen *Operational Stop*	No such device
1.2.4.3.	Stillsetzen im Notfall *Emergency stop*	Internal combustion engine powered machine. Stopping the engine can stop all the dangerous movement. The emergency stop button is not required according to EN 1175-2.
1.2.4.4.	Gesamtheit von Maschinen *Assembly of machinery*	Not applicable
1.2.5.	Wahl der Steuerungs- und Betriebsarten *Selection of control or operating modes*	No mode selection.

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Abschnitt ***Clause***	**Anforderung / *Requirement*** **2006/42/EC Annex I**	**Umsetzung durch Abschnitt der Norm, anderes:** ***Implementation by clause of standard*, other:**
1.2.6.	Störung der Energieversorgung *Failure of the power supply*	In case of failure of power supply, steering system and braking systems will still be under control and the lift truck can hold the rated the load. The static test was performed and fulfills the requirement. Refer to EN ISO 3691-1 clause 4.3.2 and 4.4.3.2.
1.3.	Schutzmassnahmen gegen mechanische Gefährdungen *Protection against mechanical hazards*	
1.3.1.	Risiko des Verlusts der Standsicherheit Risk of loss of *stability*	Refer to test report EN ISO 3691-1 clause 4.8.
1.3.2.	Bruchrisiko beim Betrieb *Risk of break-up during operation*	Refer to test report EN ISO 3691-1 clause 5 for structural test. Type and frequency of inspection and maintenance are indicated in instruction manual. Mechanical strength of pipes used in hydraulic system is enough for the carrying pressure. See also test report EN ISO 3691-1 clause 4.6.4.
1.3.3.	Risiken durch herabfallende oder herausgeschleuderte Gegenstände *Risk due to falling or ejected objects*	Operator's overhead guard provided, see test report EN ISO 3691-1 clause 4.9.1.
1.3.4.	Risiken durch Oberflächen, Kanten und Ecken *Risk due to surfaces, edges or angles*	User accessible parts are well rounded.
1.3.5.	Risiken durch mehrfach kombinierte Maschinen *Risks related to combined machinery*	Not applicable to the product
1.3.6.	Risiken durch Änderung der Verwendungsbedingungen *Risks related to variations in operating conditions*	Truck with different travelling speed is controlled safely and reliably.
1.3.7.	Risiken durch bewegliche Teile *Risk related to moving parts*	Moving parts guarded, also refer to test report EN ISO 3691-1 clause 4.7.7.
1.3.8.	Wahl der Schutzeinrichtungen gegen Risiken durch bewegliche Teile *Choice of protection against risks arising from moving parts*	Fixed guards and lockable moving guards are provided
1.3.8.1.	Bewegliche Teile der Kraftübertragung *Moving transmission parts*	Fixed guards and lockable moving guards are provided
1.3.8.2.	Bewegliche Teile, die am Arbeitsprozess beteiligt sind *Moving parts involved in the process*	Fixed guards and lockable moving guards are provided
1.3.9.	Risiko unkontrollierter Bewegungen *Risks of uncontrolled movements*	Braking system provided. Refer to test report EN ISO 3691-1 clause 4.3. Throttle valves are installed in the bottom of the lifting cylinder, so lowering speed caused by leakage fulfill EN ISO 3691-1 clause 4.6.3.
1.4.	Anforderungen an Schutzeinrichtungen *Required characteristics of guards and protective devices*	
1.4.1.	Allgemeine Anforderungen General requirements	The guards and protection devices provided conform to the above-mentioned requirements. Refer to test report EN ISO 3691-1
1.4.2.	Besondere Anforderungen an trennende Schutzeinrichtungen *Special requirements for guards*	
1.4.2.1.	Feststehende trennende Schutzeinrichtungen *Fixed guards*	Fixed guards provided to moving parts, Refer to test report EN ISO 3691-1 clause 4.9
1.4.2.2.	Bewegliche trennende Schutzeinrichtungen mit Verriegelung *Interlocking movable guards*	Not applicable
1.4.2.3.	Zugangsbeschränkende verstellbare	Not applicable

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Abschnitt ***Clause***	**Anforderung / *Requirement*** **2006/42/EC Annex I**	**Umsetzung durch Abschnitt der Norm, anderes:** ***Implementation by clause of standard*** **, other:**
	Schutzeinrichtungen *Adjustable guards restricting access*	
1.4.3.	Besondere Anforderungen an nichttrennende Schutzeinrichtungen *Special requirements for protective devices*	Not applicable
1.5.	Risiken durch sonstige Gefährdungen *Risks due to other hazards*	
1.5.1.	Elektrische Energieversorgung *Electricity supply*	See test report EN 1175-2.
1.5.2.	Statische Elektrizität *Static electricity*	Considered.
1.5.3.	Nichtelektrische Energieversorgung *Energy supply other than electricity*	Diesel engine powered machines. Fulfill the requirements
1.5.4.	Montagefehler *Errors of fitting*	All relevant fittings are marked with the identifications and pressure rating.
1.5.5.	Extreme Temperaturen *Extreme temperatures*	The exhaust pipes within the reach of the operator are well protected. The operator cannot touch the high temperature parts. The fuel tank is also protected from exhaust pipe.
1.5.6.	Brand *Fire*	Overcurrent protection provided in the electric circuit, and the battery chamber is well ventilated. The fuel system fulfills the requirement of EN ISO 3691-1 clause 4.5.2
1.5.7.	Explosion *Explosion*	The machine is not designed to operate in a potentially explosive atmosphere. Batteries are placed well ventilated.
1.5.8.	Lärm *Noise*	Considered in design
1.5.9.	Vibrationen *Vibrations*	Considered in design
1.5.10.	Strahlung *Radiation*	The electrical equipment used is not expected to generate radiation to a dangerous extend.
1.5.11.	Strahlung von außen *External radiation*	Covered by EMC-Directive.
1.5.12.	Laserstrahlung *Laser equipment*	No source of laser radiation provided or used by the machine.
1.5.13.	Emission gefährlicher [Werk]stoffe und Substanzen *Emissions of hazardous materials and substances*	Oil inside of the device, complete covered. Hazards of H_2 emission when charging the batteries are low because the battery container is well ventilated. Engine exhaust is away from operator
1.5.14.	Risiko, in einer Maschine eingeschlossen zu werden *Risk of being trapped in a machine*	No such hazard.
1.5.15.	Ausrutsch-, Stolper-, und Sturzrisiko *Risk of slipping, tripping or falling*	See test report EN ISO 3691-1 clause 4.7.2.
1.5.16.	Blitzschlag *Lightning*	No such hazard, relevant information provided in the user manual.
1.6.	Instandhaltung *Maintenance*	
1.6.1.	Wartung der Maschine *Machinery maintenance*	All adjustment and maintenance must be performed with the machine at standstill.
1.6.2.	Zugang zu den Bedienungsständen und den Eingriffspunkten für die Instandhaltung *Access to operating positions and servicing points*	Access to each operating position and service points easily possible.
1.6.3.	Trennung von Energiequellen *Isolation of energy sources*	Engine and battery can be switched off
1.6.4.	Eingriffe des Bedienungspersonals *Operator intervention*	Operator intervention is limited to changing the oil, hydraulic hose and some maintenance described in the user manual.

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Abschnitt ***Clause***	**Anforderung / *Requirement*** **2006/42/EC Annex I**	**Umsetzung durch Abschnitt der Norm, anderes:** ***Implementation by clause of standard*, other:**
1.6.5.	Reinigung innen liegender Maschinenteile *Cleaning of internal parts*	Can be cleaned easily
1.7.	Informationen *Information*	
1.7.1.	Informationen und Warnhinweise an der Maschine *Information and warnings on the machinery*	Warning symbols provided on the machine. Fulfill the requirements.
1.7.1.1.	Informationen und Informationseinrichtungen *Information and information devices*	Relevant information is provided unambiguously and easily understood.
1.7.1.2.	Warneinrichtungen *Warning devices*	Acoustic and visual signal provided.
1.7.2.	Warnung vor Restrisiken *Warning of residual risks*	Warning label provided.
1.7.3.	Kennzeichnung der Maschinen Auf jeder Maschine müssen ~~mindestens folgende Angaben~~ erkennbar, deutlich lesbar und dauerhaft angebracht sein: - Firmenname und Anschrift des Herstellers (...) - Bezeichnung der Maschine - CE-Kennzeichnung (siehe Anhang III) - Baureihen- oder Typbezeichnung - Gegebenenfalls Seriennummer - Baujahr (...) Es ist untersagt, bei der Anbringung der CE-Kennzeichnung das Baujahr der Maschine vor- oder nachzudatieren. Ist die Maschine für den Einsatz in explosionsgefährdeter Umgebung konstruiert und gebaut, muss sie einen entsprechenden Hinweis tragen. Je nach Beschaffenheit müssen auf der Maschine ebenfalls alle für die Sicherheit bei der Verwendung wesentlichen Hinweise angebracht sein. (...) Muss ein Maschinenteil während der Benutzung mit Hebezeugen gehandhabt werden, so ist sein Gewicht leserlich, dauerhaft und eindeutig anzugeben. *Marking of machinery* *All machinery must be marked visibly, legibly and indelibly with the following minimum particulars:* *- name and address of the manufacturer (...)* *- designation of the machinery* *- the CE marking (see Annex III)* *- designation of series or type* *- Serial no., if any* *- year of construction (...)* *It is prohibited to pre-date or post-date the machinery when affixing*	Required information provided on the label.

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Abschnitt ***Clause***	**Anforderung / *Requirement*** **2006/42/EC Annex I**	**Umsetzung durch Abschnitt der Norm, anderes:** ***Implementation by clause of standard*, other:**
	the CE marking. Furthermore, machinery designed and constructed for use in a potentially explosive atmosphere must be marked accordingly. Machinery must also bear full information relevant to its type and essential for safe use.(…) Where a machine part must be handled during use with lifting equipment, its mass must be indicated legibly, indelibly and unambiguously.	
1.7.4.	Betriebsanleitung Jeder Maschine muss eine Betriebsanleitung in der oder den Amtssprachen der Gemeinschaft des Mitgliedstaats beiliegen, in dem die Maschine in Verkehr gebracht und/oder in Betrieb genommen wird. Die der Maschine beiliegende Betriebsanleitung muss eine „Originalbetriebsanleitung" oder eine „Übersetzung der Originalbetriebsanleitung" sein; im letzteren Fall ist der Übersetzung die Originalbetriebsanleitung beizufügen. Abweichend von den vorstehenden Bestimmungen kann die Wartungsanleitung, die zur Verwendung durch Fachpersonal bestimmt ist, in nur einer Sprache abgefasst werden (…). *Instructions* *All machinery must be accompanied by instructions in the official Community language or languages of the Member State in which it is placed on the market (…). The instructions accompanying the machinery must be either 'Original instructions' or a 'Translation of the original instructions', in which case the translation must be accompanied by the original instructions. By way of exception, the maintenance instructions intended for use by specialised personnel may be supplied in only one Community language (…).*	Relevant information provided in the manual. Manual in English provided, also declaration that manual will be translated to local language where the machine will be used provided.
1.7.4.1.	Allgemeine Grundsätze für die Abfassung der Betriebsanleitung *General principles for the drafting of instructions*	Met the requirement Original instruction is English, also declaration that manual will be translated to local language where the machine will be used provided. The words "original instruction" has been marked on the user manual.
1.7.4.2.	Inhalt der Betriebsanleitung *Contents of the instructions*	Met the requirement
1.7.4.3.	Verkaufsprospekte *Sales literature*	Considered
2.	Zusätzliche grundlegende Sicherheits- und Gesundheitsschutzanforderungen an bestimmte Maschinengattungen	

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Abschnitt ***Clause***	**Anforderung / *Requirement*** **2006/42/EC Annex I**	**Umsetzung durch Abschnitt der Norm, anderes:** ***Implementation by clause of standard*, other:**
	Supplementary essential health and safety requirements for certain categories of machinery	
2.1.	Nahrungsmittelmaschinen und Maschinen für kosmetische oder pharmazeutische Erzeugnisse *Foodstuffs machinery and machinery for cosmetics or pharmaceutical products*	
2.1.1.	Allgemeines *General*	Not applicable
2.1.2.	Betriebsanleitung *Instructions*	Not applicable
2.2.	Handgehaltene und/oder handgeführte tragbare Maschinen *Portable hand-held and/or hand-guided machinery*	
2.2.1.	Allgemeines *General*	Not applicable
2.2.1.1.	Betriebsanleitung *Instructions*	Not applicable
2.2.2.	Tragbare Befestigungsgeräte und andere Schussgeräte *Portable fixing and other impact machinery*	
2.2.2.1.	Allgemeines *General*	Not applicable
2.2.2.2.	Betriebsanleitung *Instructions*	Not applicable
2.3.	Maschinen zur Bearbeitung von Holz und von Werkstoffen mit ähnlichen physikalischen Eigenschaften *Machinery for working wood and material with similar physical characteristics*	Not applicable
3.	Zusätzliche grundlegende Sicherheits- und Gesundheitsschutzanforderungen zur Ausschaltung der Gefährdungen, die von der Beweglichkeit von Maschinen ausgehen *Supplementary essential health and safety requirements to offset hazards due to the mobility of machinery*	
3.1.	Allgemeines *General*	
3.1.1.	Begriffsbestimmungen *Definitions*	Considered.
3.2.	Bedienerplätze *Work positions*	
3.2.1.	Fahrerplatz *Driving position*	See also test report EN ISO 3691-1 clause 4.7 and 4.11.1.
3.2.2.	Sitze *Seating*	See test report EN ISO 3691-1 clause 4.7.4.
3.2.3.	Plätze für andere Personen *Positions for other persons*	No operators other than the driver are to be transported by the machinery.
3.3.	Steuerung *Control systems*	Refer to test report EN ISO 3691-1 clause 4.2, 4.3 and 4.4
3.3.1.	Stellteile *Control devices*	Pedals are slip-resistant. See also test report EN ISO 3691-1 clause 4.4.
3.3.2.	Ingangsetzen / Verfahren *Starting / moving*	See test report EN ISO 3691-1 clause 4.2.
3.3.3.	Stillsetzen / Bremsen *Traveling function*	See test report EN ISO 3691-1 clause 4.2 and 4.3.
3.3.4.	Verfahren mitgängergeführter Maschinen *Movement of pedestrian-controlled machinery*	Not applicable
3.3.5.	Störung des Steuerkreises *Control circuit failure*	See test report EN ISO 3691-1 clause 4.4 and EN 1175-2 clause 5.3
3.4.	Schutzmaßnahmen gegen mechanische Gefährdungen *Protection against mechanical hazards*	

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Abschnitt ***Clause***	**Anforderung / *Requirement*** **2006/42/EC Annex I**	**Umsetzung durch Abschnitt der Norm, anderes:** ***Implementation by clause of standard*, other:**
3.4.1.	Unkontrollierte Bewegungen *Uncontrolled movements*	Machine can only be moved intentionally, uncontrolled move not possible, see test report EN ISO 3691-1 clause 4.2.2. For stability see test report EN ISO 3691-1 clause 4.8.
3.4.2.	Bewegliche Übertragungselemente *Moving transmission parts*	Fixed guards and lockable movable guard are provided to moving parts
3.4.3.	Überrollen und Umkippen *Roll-over and tip-over*	Stability is tested. Relevant information is provided on the machine and mentioned in the user manual.
3.4.4.	Herabfallende Gegenstände *Falling objects*	Refer to test report EN ISO 3691-1 clause 4.9.1.
3.4.5.	Zugänge *Means of access*	Refer to test report EN ISO 3691-1 clause 4.7.2.
3.4.6.	Anhängevorrichtungen *Towing devices*	Towing points provided and marked.
3.4.7.	Kraftübertragung zwischen einer selbstfahrenden Maschine (oder einer Zugmaschine) und einer angetriebenen Maschine *Transmission of power between self-propelled machinery (or tractor) and recipient machinery*	None
3.5.	Schutzmaßnahmen gegen sonstige Gefährdungen *Protection against other hazards*	
3.5.1.	Batterien *Batteries*	Refer to test report EN 1175-2 clause 5.1
3.5.2.	Brand *Fire*	Relevant information provided in the user manual.
3.5.3.	Emission von gefährlichen Stoffen *Emissions of hazardous substances*	Hazards of H_2 emission when charging the batteries is low because the battery container is well ventilated. Exhaust pipe is directed to the opposite side of the operator's position.
3.6.	Informationen und Angaben *Information and indications*	
3.6.1.	Zeichen, Signaleinrichtungen und Warnhinweise *Signs, signals and warnings*	See test report EN ISO 3691-1 clause 4.4.7 and 4.9.3.
3.6.2.	Kennzeichnung *Marking*	Relevant information provided on the label.
3.6.3.	Betriebsanleitung *Instructions*	
3.6.3.1.	Vibrationen *Vibrations*	Relevant information provided in the manual.
3.6.3.2.	Mehrere Verwendungsmöglichkeiten *Multiple uses*	Not applicable
4.	Zusätzliche grundlegende Sicherheits- und Gesundheitsschutzanforderungen zur Ausschaltung der durch Hebevorgänge bedingten Gefährdungen *Supplementary essential health and safety requirements to offset hazards due to lifting operations*	
4.1.	Allgemeines *General*	
4.1.1.	Begriffsbestimmungen *Definitions*	Informative paragraph
4.1.2.	Schutzmaßnahmen gegen mechanische Gefährdungen *Protection against mechanical hazards*	
4.1.2.1.	Risiken durch mangelnde Standsicherheit *Risk due to lack stability*	See test report EN ISO 3691-1 clause 4.8.

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Abschnitt ***Clause***	**Anforderung / *Requirement*** **2006/42/EC Annex I**	**Umsetzung durch Abschnitt der Norm, anderes:** ***Implementation by clause of standard*, other:**
4.1.2.2.	An Führungen oder auf Laufbahnen fahrende Maschinen *Machinery running on guide rails and rail tracks*	Not applicable
4.1.2.3.	Festigkeit *Mechanical strength*	See test report EN ISO 3691-1 clause 4.6 and 5.
4.1.2.4.	Rollen, Trommeln, Scheiben, Seile und Ketten *Pulleys, drums, wheels, ropes and chains*	See test report EN ISO 3691-1 clause 4.6.1. The chain cannot run away from the pulley because the distance between the out edge of the pulley flange and mast is smaller than the height of the chain.
4.1.2.5.	Lastaufnahmemittel und ihre Bauteile *Lifting accessories and their components*	Not applicable
4.1.2.6.	Bewegungsbegrenzung *Control of movements*	See test report EN ISO 3691-1 clause 4.4.
4.1.2.7.	Bewegungen von Lasten während der Benutzung *Movements of loads during handling*	See test report EN ISO 3691-1 clause 4.10.
4.1.2.8.	Maschinen, die feste Ladesstellen anfahren *Machinery serving fixed landings*	
4.1.2.8.1.	Bewegungen des Lastträgers *Movements of the carrier*	Not applicable
4.1.2.8.2.	Zugang zum Lastträger *Access to the carrier*	Not applicable
4.1.2.8.3.	Risiken durch Kontakt mit dem bewegten Lastträger *Risks due to contact with the moving carrier*	Not applicable
4.1.2.8.4.	Risiken durch vom Lastträger herabstürzende Lasten *Risk due to the load falling off the carrier*	Not applicable
4.1.2.8.5.	Ladestellen *Landings*	Not applicable
4.1.3.	Zwecktauglichkeit *Fitness for purpose*	Considered
4.2.	Anforderungen an Maschinen, die nicht durch menschliche Kraft angetrieben werden *Requirements for machinery whose power source is other than manual effort*	
4.2.1.	Bewegungssteuerung *Control of movements*	Comply with 3.2.1.
4.2.2.	Belastungsbegrenzung *Loading control*	Flow regulator valve provided, it's not possible to overload the machine greater than 125% rated load.
4.2.3	Seilgeführte Einrichtungen *Installations guided by ropes*	Not applicable
4.3.	Informationen und Kennzeichnung *Information and Markings*	
4.3.1.	Ketten, Seile und Gurte *Chains, ropes and webbing*	Chain is an assembly of the lift truck.

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2006/42/EC Anhang zu / *annex of* Test Report No.: 50041065 001 Part I of III		
Abschnitt ***Clause***	**Anforderung / *Requirement*** **2006/42/EC Annex I**	**Umsetzung durch Abschnitt der Norm, anderes:** ***Implementation by clause of standard*, other:**
4.3.2.	Lastaufnahmemittel *Lifting accessoires*	Not applicable
4.3.3.	Maschinen zum Heben von Lasten *Lifting machinery*	Nominal load provided on label.
4.4.	Betriebsanleitung *Instructions*	
4.4.1.	Lastaufnahmemittel *Lifting accessoires*	Not applicable
4.4.2.	Maschinen zum Heben von Lasten *Lifting Machinery*	Relevant information provided in manual.

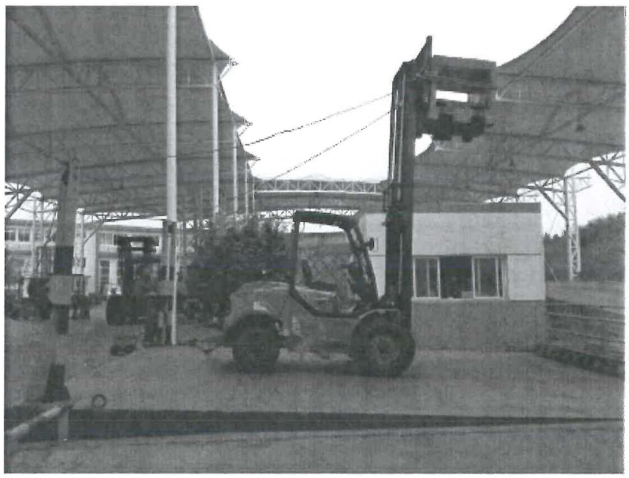
Verschiedenes / *Miscellaneous*:

None

End of Test Report 50041065 001 Part I of III

Prüfbericht-Nr.: *Test Report No.:*	**50041065 001 Part II of III**	**Auftrags-Nr.:** *Order No.:*	154149891	Seite 1 von 47 *Page 1 of 47*
Kunden-Referenz-Nr.: *Client Reference No.:*	N/A	**Auftragsdatum:** *Order date:*	19.02.2016	
Auftraggeber: *Client:*	Liftsmart			
Prüfgegenstand: *Test item:*	Rough Terrain Forklift Truck			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	LS-RT30, LS-RT35			
Auftrags-Inhalt: *Order content:*	Type Test			
Prüfgrundlage: *Test specification:*	EN ISO 3691-1:2015 EN 16307-1:2013+A1:2015			

Wareneingangsdatum: *Date of receipt:*	30.03.2016
Prüfmuster-Nr.: *Test sample No.:*	L7AF00002, L7AF00004
Prüfzeitraum: *Testing period:*	30.03.2016 - 30.03.2016
Ort der Prüfung: *Place of testing:*	As client
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shanghai) Co., Ltd
Prüfergebnis*: *Test result*:*	Pass



geprüft von / *tested by*:

2016.04.27 / PE

Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

kontrolliert von / *reviewed by*:

27.04.2016 Jinbiao. Zhang / Reviewer

27.04.2016 / TC

Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

Sonstiges / *Other*:
This report is only valid in its full version: Part I of III, Part II of III and Part III of III.

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

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Clause	Requirement	Remarks - Results	Verdict
1	**Scope**	Informative paragraph.	-
2	**Normative References**	Informative paragraph.	-
3	**Terms and definitions**	Informative paragraph.	-
4	**Safety requirements and/or protective measures**		P
4.1	**General**		P
4.1.1	**Overall requirements**		P
	The truck shall comply with the safety requirements and/or protective measures of this clause. In addition, the truck shall be designed according to the principles of ISO 12100 for relevant but not significant hazards which are not dealt with by this document.	Considered.	P
4.1.2	**Normal climatic conditions**		P
	For truck operation, the following climatic conditions apply: -Average ambient temperature for continuous duty: +25°C -maximum ambient temperature, short term(up to 1h): +40°C, -lowest ambient temperature for trucks intended for use in normal indoor conditions: +5°C; -lowest ambient temperature for trucks intended for use in normal outdoor conditions: -20°C -altitude: up to 2000 m.	Considered and mentioned in the user manual.	P
4.1.3	**Normal operating conditions**		P
	Normal operating conditions are the following: - driving (travelling and lifting) on substantially firm, smooth, level and prepared surfaces- the surface conditions on which the truck is designed to operate shall be specified in the instruction handbook (see 6.2); -driving with the horizontal load centre of gravity approximately on the longitudinal centre plane of the truck; -travelling with the mast or fork arms tilted backwards, where applicable, and the load in the lowered (travel) position. If the above is not sufficient to allow the conditions for stability of a particular truck type to be specified, then the operating conditions shall be according to the International Standards referenced for stability in 4.8.	Considered in the test.	P
4.1.4	**Electrical requirements**		P
	Electrical requirements are subject to regional requirements. See ISO/TS 3691-7:2011 and ISO/TS 3691-8.	Refer to test report EN 1175-2.	P
4.1.5	**Edges or angles**		P

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Clause	Requirement	Remarks - Results	Verdict
	There shall be no sharp edges or angles posing a hazard in the area of the operator in the normal operating position or in the area of access and egress during normal operation and daily checks.	In the area of access and egress no sharp edges or angles.	P
4.1.6	**Stored energy components**		N/A
	Components which store energy and that would cause a risk during removal or disassembly, e.g. hydraulic accumulator or spring-applied brakes, shall be provided with a means to release the energy before removal or disassembly.	No stored energy component.	N/A
4.2	**Starting/moving**		P
4.2.1	**Unauthorized starting**		P
	Trucks shall be provided with a device (e.g. key, code, magnetic card) which prevents starting without its use. Such devices for pedestrian-controlled and rider-controlled trucks manufactured by the same manufacturer shall not be interchangeable between the two truck types. Where devices, e.g. magnetic cards, are destined for an individual operator, one device may be used on both truck types but shall not allow starting by unauthorized persons.	Key switch provided and are not interchangeable.	P
4.2.2	**Unintended movement and inadvertent activation**		P
	Truck movement from the holding position, other than by actuation of the controls by the operator, due to drift or creep (e.g. by leakage), shall be avoided.	Considered.	P
4.2.2.1	**Parking brakes**		P
	A parking brake complying with 4.3.1 shall be provided. For sit-on rider trucks, the parking brake system should be manually operable by hand or foot from the normal operating position or automatically applied by leaving the normal operating position. Trucks with only non-automatically applied parking brake(s) shall have a warning to the operator to apply the brakes before leaving the truck. Failure of the control system of an automatically applied parking brake shall be indicated to the operator.	Ok, see also clause 4.3.1 The parking brake system is manually applied by hand in the normal operating position. Seat switch is provided with buzzer alarm to fulfill the requirement.	P
4.2.2.2	**Internal-combustion-engine powered trucks**		P
	Internal-combustion-engine powered trucks shall be fitted with a device which prevents the engine being started while the transmission is engaged.	Neutral position switch is provided. The truck can be started only when the travel controller on the neutral position.	P
4.2.2.3	**Travel controls**		P
	Travel controls on internal-combustion-engine powered trucks shall be so arranged that on level ground the truck will not move from rest until the transmission has	The truck can move only when the transmission is engaged.	P

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Clause	Requirement	Remarks - Results	Verdict
	been engaged.		
4.2.2.4	**Powered travel movement**		P
	Powered travel movement of the truck with a ride-on operator shall be possible only if the operator is in the normal operating position. Powered travel shall not occur automatically when the operator returns to the normal operating position without an additional operation, e.g. by requiring a resetting of the direction control or reactivation of the speed control.	Seat switch provided. The truck can travel, only when the operator returns to the seat and reset the direction control device.	P
4.2.2.5	**Manual gearbox and manually operated clutch pedal**		N/A
	A truck with an automotive-type manual gearbox and manually operated clutch pedal satisfies the requirements of 4.2.2.2 and 4.2.2.4.	Without automotive type manual gearbox and manually operated clutch pedal.	N/A
4.2.3	**Travel speed**		N/A
4.2.3.1	**Pedestrian-controlled trucks**		N/A
	Single-speed pedestrian-controlled trucks operating on level ground shall not exceed a travel speed of 4 km/h and an acceleration of 0,5 m/s^2 and shall be designed for low-lift only. Variable-speed pedestrian-controlled trucks operating on level ground shall be controllable by the operator to be aligned with their walking speed. The maximum speed is subject to regional requirements, additional to the requirements of this part of ISO 3691. See ISO/TS 3691-7:2011 and ISO/TS 3691-8.	Sit on machine, not pedestrian controlled truck.	N/A
4.2.3.2	**Stand-on trucks and pedestrian-controlled trucks with foldable platform**		N/A
	The maximum speed on level ground of stand-on trucks and pedestrian-controlled trucks fitted with a foldable platform when the operator is on the platform is subject to regional requirements, additional to the requirements of this part of ISO 3691. See ISO/TS 3691-7:2011 and ISO/TS 3691-8. For trucks with a foldable operator platform, see 4.7.3.3. For trucks with stand-on options, see 4.7.3.2 and 4.7.3.4.	Not stand-on truck and pedestrian-controlled truck.	N/A
4.2.3.3	**Travel with mast raised**		N/A
	Travel with mast raised is subject to regional requirements. See ISO/TS 3691-8.	Travelling with mast raised is not allowed.	N/A
4.3	**Brakes**		P
4.3.1	**General**		P

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Clause	Requirement	Remarks - Results	Verdict
	All industrial trucks shall be designed with service and parking brakes. Brakes shall comply with ISO 6292. The parking brake shall be equipped with a system preventing unintentional release. The parking brake force shall be applied by mechanical means. Braking requirements are subject to regional requirements, additional to the requirements of this part of ISO 3691. See ISO/TS 3691-7:2011 and ISO/TS 3691-8.	All the machines have service and parking brake. A locking device is on the top of the parking brake handle. The parking brake can be released only when pressing the button on the top of the handle. The brakes can be operated by means of independent system. Parking brake can be operated by hand and service brake can be operated by pedal. The operating force is within the limitation as defined in the ISO 6292 table 1. All the control components have sufficient strength also defined in ISO 6292 table 1. Parking brake and service brake act on the brake drum on the inner side of the both front wheels All the tests were conducted according to ISO 6292. The stopping distance tests with rated load were conducted. All the machines can be held on 15% slope only with parking brake.	P
4.3.2	**Failure of energy supply to service brake**		P
	Failure of the energy supply to the service brake shall not result in a total loss of braking and shall enable a controlled stop.	When the failure of the energy supply to the service brake, the operator can stop the machine through parking brake system.	P
4.3.3	**Stand-on and pedestrian-controlled trucks**		N/A
	Stand-on and pedestrian-controlled trucks shall be equipped with a brake system that will automatically engage upon release of the brake actuating control by the operator. This system may serve as the service and parking brake.	Sit on truck.	N/A
4.4	**Manual control actuators**		P
4.4.1	**General**		P
4.4.1.1	**Consistency with the truck motions**		P

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Clause	Requirement	Remarks - Results	Verdict
	Movement of these controls shall be consistent with the motions of the truck being operated, wherever practicable. They shall be confined within the plan view outline of the truck or tiller.	Comply with the requirements.	P
4.4.1.2	**Multiple operators**		N/A
	If additional operating positions are fitted, e.g. for more than one operator, the operation of these controls shall only be possible from one operating position at a time, excepting the emergency disconnect switch, which shall be operable from all positions.	No additional operating position.	N/A
4.4.1.3	**Multiple operating positions**		N/A
	If more than one operating position is fitted for a single operator, the use of the controls for one of these operating positions shall preclude the use of the controls of another operating position. The exception to this is the emergency disconnect switch, which shall be operable from all positions.	No additional operating position.	N/A
4.4.2	**Travel and braking controls**		P
4.4.2.1	**General**		P
	The motion of the speed operating control shall be so designed that an increase in the movement of the control increases the travel speed. When the control is released, it shall return to the neutral position of the control actuator.	Pedal operated speed control, further depress the pedal increase the travel speed. When pedal released, it returns to the neutral position. Foot pedal brake and hand brake provided.	P
4.4.2.2	**Sit-on trucks**		P
	Trucks with pedal-operated travel and braking controls shall comply with ISO 21281.	Accelerator pedal, service brake pedal and inching pedal are provided and arranged from right to left. Checked according to ISO 21281, result is OK. The brake pedal and accelerator pedal is located to the right of the seat longitudinal axis, and inching pedal on the left side. The accelerator pedal is located to the right of the brake pedal, depress the pedal increase the speed, releasing the pedal provides retardation of travel speed. When the inching pedal is depressed, it will disengage	P

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Clause	Requirement	Remarks - Results	Verdict
		the transmission, and slow down the truck.	
4.4.2.3	**Stand-on trucks**		N/A
	The requirements for travel and braking controls for a stand-on truck are as follows. a) Travel control functions -Where a tiller is used, it shall be fitted with control devices for travel direction and speed. -Where a steering wheel or similar control is used, the controls for travel direction and speed shall be positioned in close proximity to the steering control. The service brake function shall be engaged -automatically when the tiller is released, if operated by the tiller, -automatically when the travel-control is released, if operated by the travel-control, -automatically when releasing the pedal, if the brake function is foot-operated, -when activating the hand actuator, if the brake function is hand-operated. b) Trucks with elevating operator platform up to 1 200 mm Means shall be provided to prevent travel while the platform is elevated more than 500 mm, unless the controls are elevated with the platform.	Sit on truck.	N/A
4.4.2.4	**Pedestrian-controlled trucks**		N/A
	The requirements for pedestrian-controlled trucks are as follows. a) The tiller shall be fitted with control devices for travel direction and speed. b) When the tiller is released, it shall automatically return to its upper rest position, cut off traction power in the travel direction and engage the brake. c) When the tiller is in its lowered position, the traction power in the travel direction shall be cut off and the brake shall be engaged. d) The tiller shall be fitted with a device to energize the direction of travel away from the operator until pressure on the device is relieved, or that stops the truck by applying the brakes, if the head of the tiller in its operating position comes into contact with a solid body (e.g. the operator's body).	Sit on truck.	N/A
4.4.2.5	**Differential locking**		P

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Clause	Requirement	Remarks - Results	Verdict
	It shall be possible to unlock the differential when the truck is moving. For trucks fitted with a pedal-operated differential lock, depression of the pedal shall lock the differential and shall be released when releasing the pedal.	The unlocking device is controlled automatically	P
4.4.2.6	**Additional operation from outside the truck**		N/A
	If travel control from outside the truck is provided for the operator of sit-on or stand-on trucks and tractors, when operated from the outside the travel speed shall be limited to 6 km/h. These controls may be attached to the truck or a remote control may be provided, and the operating system shall be made operable by means of a separate switch or automatically when the operator leaves the normal operating position. a) General 1) If the control actuator is released, the drive unit shall switch off automatically and the brake shall be engaged automatically. Simultaneous operation from the operating positions shall be excluded. 2) Controls fitted at the outside of the truck shall be secured against unintentional activation. b) Additional requirements for cable-connected remote controls 1) The length and layout of the cables shall allow the operator to operate from outside of the area of hazard of the truck and have visibility of the path of travel. It shall not be possible for the cable to become entangled with the wheels. 2) On a portable control panel, the control elements, with the exception of the emergency stop, shall be guarded against unintentional operation. The portable control panel shall be fitted with an emergency stop device in accordance with ISO 13850. c) Additional requirements for cableless control 1) The transmission range shall be adequate to allow the operator to operate from outside the area of hazards of the truck and have visibility in the path of travel. 2) On the portable control panel, the control elements for operation, with the exception of the emergency stop, shall be guarded against unintentional operation. 3) The reliability level shall be at least 10^{-9} and the Hamming distance shall be 2. The remote control shall be in accordance with ISO 13849-1, performance level (PL) c. 4) The truck shall automatically stop when outside of the operator's direct view (90°) and/or out of range of the remote control. 5) No control interference shall be possible when more	No additional operation from outside the truck.	N/A

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Clause	Requirement	Remarks - Results	Verdict
	than one truck is operating under remote control at the same time.		
	d) Additional requirements for trucks with trailer coupling 1) The controls (e.g. rear touch device) shall be arranged so that the operator does not have to step between the truck and the trailer in order to operate them. 2) The rear touch device shall be secured against unintentional operation. 3) During operation of the rear touch device, the travel speed of the truck shall not exceed 2,5 km/h.	No additional operation from outside the truck.	N/A
4.4.2.7	**Additional operation from alongside pedestrian-controlled and stand-on trucks (coasting)**		N/A
	The additional operation of pedestrian-controlled and stand-on trucks while the operator is walking alongside the truck shall only be possible with the truck's fork arms trailing. The additional operation of such trucks while the operator is walking alongside the truck, and the use of low-lift order-picking trucks provided with a system that allows for operation while walking alongside the truck, are subject to regional requirements, additional to the requirements of this part of ISO 3691. See ISO/TS 3691-7:2011 and ISO/TS 3691-8.	Sit on machine.	N/A
4.4.3	**Steering controls**		P
4.4.3.1	**Steering direction**		P
	The following applies. a) For stand-on or sit-on trucks, when travelling in the forward direction, clockwise rotation of the steering wheel, or equivalent movement of the steering control, shall steer the truck to the right.	When driving forward, clockwise rotation of the steering wheel turn the truck to the right.	P
	b) For trucks with an operator control position rotatable by more than 90°, or having duplicated control positions, in order to facilitate the operator facing in the opposite direction, clockwise rotation of the steering wheel, or equivalent movement of the steering control, shall steer the truck to the right as viewed from the new position- i.e. the steering control sense is reversed beyond 90° to facilitate the operator facing in the opposite direction.	Operator position cannot be rotated.	N/A
	c) Trucks with continuous 360° steering- i.e. the steering/drive wheel can move through 360° to propel the truck in the direction selected by the steering control-shall operate in the same sense as a), above, when travelling in the forward direction.	The steering wheel cannot move through 360°.	N/A
	d) For pedestrian-operated trucks fitted with a tiller, when travelling in the forward direction, clockwise movement of the tiller shall steer the truck to the right.	Sit on truck.	N/A

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Clause	Requirement	Remarks - Results	Verdict
	e) Exceptionally, when requested by the user, end-control trucks may be equipped with "reverse steering"- i.e. clockwise rotation of the steering control will steer the truck to the left. Such trucks should be clearly identified.	Without "Reverse Steering".	N/A
4.4.3.2	**Failure of power supply**		P
	In the event of an interruption of the power supplied to the steering system (including a dead motor or engine), it shall be possible to maintain the path being steered until the truck is brought to a controlled stop.	The steering system can be controlled by mechanical means, which can keep the steering system under control until the truck is brought to a controlled stop.	P
4.4.4	**Load-handling controls**		P
4.4.4.1	**Controls**		P
	Controls shall return to the neutral position when released and stop the corresponding load movement. When single levers are used to control a function on trucks other than reach trucks with retractable mast or forks, the lever closest to the operator shall control lifting and lowering, the second closest lever should control the tilt function, the third closest lever should control the side shift and the fourth closest lever should be for auxiliary functions. When single levers are used to control a function on trucks other than reach trucks with a retractable mast or forks, the lever closest to the operator shall control lifting and lowering, the second closest lever should control the displacement of the mast or forks, the third closest lever should control the tilt function, the fourth closest lever should control side shift and the fifth closest lever should be for auxiliary functions. Trucks equipped with attachments which hold the load by power (e.g. paper clamp) shall feature control(s) with a secondary action to prevent unintentional release of the load.	When released, load controls will return to neutral position automatically, stopping all load movement. The arrangement of the control handles is the same as the requirements.	P
4.4.4.2	**Manual-lift systems**		N/A

Table 1 — Levers or handle-type controls with single operation, sequence of location and direction of movement

Function (listed in sequence of location)	Direction of movement	
	Motion of load or equipment	Predominant motion of operator's hand when actuating control handle while facing load
Hoist	Up	Rearward or up
	Down	Forward or down
Reach	Retract	Rearward
	Extend	Forward
Tilt	Rearward	Rearward or up
	Forward	Forward or down
Side shift	Right	Rearward or up
	Left	Forward or down
Push–pull	Rearward	Rearward
	Forward	Forward
Rotate laterally	Clockwise	Rearward or up
	Counter clockwise	Forward or down
Rotate longitudinally	Rearward	Rearward or up
	Forward	Forward or down
Load stabilizer	Down	Rearward or up
	Up	Forward or down
Fork position	Together	Rearward or up
	Apart	Forward or down
Grip	Engage	Rearward or up
	Release	Forward or down
Truck stabilizer	Raise	Rearward or up
	Lower	Forward or down
Clamp	Clamp	Rearward or up
	Release	Forward or down

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Clause	Requirement	Remarks - Results	Verdict
	The hand power forces and the layout of controls of manually operated lifting systems shall comply with ISO 3691-5.	Hydraulic system is used.	N/A
4.4.5	**Multi-function controls**		N/A
	Where a control is designed and constructed to perform more than one function, each separate function shall be clearly marked. Each control function shall return to the neutral position when released and stop the corresponding load movement.	No such controls	N/A
4.4.6	**Controls for automated functions**		N/A
	The controls for automated functions shall comply with ISO 24134.	No automated function.	N/A
4.4.7	**Marking**		P
	Graphic symbols used for marking controls shall comply with 6.3.1.4.	Graphic symbols are marked on the controls.	P
4.5	**Power systems and accessories**		P
4.5.1	**Exhaust and cooling systems**		P
4.5.1.1	**Exhaust systems**		P
	The exhaust system shall be designed in accordance with 4.7.6 and such that engine exhaust is directed away from the operator position. Materials used in the vicinity of exhaust systems shall be non-flammable and shall be chosen and protected such that they are not adversely affected by heat from the exhaust system.	The direction of exhaust pipe is opposite to the operator.	P
4.5.1.2	**Cooling systems**		P
	The air flow through the cooling system shall be arranged so as to avoid discomfort to the operator.	Far away from the operator's position.	P
4.5.2	**Fuel tank**		P
4.5.2.1	**Tank isolation**		P
	If a fuel tank is within or adjacent to the engine compartment and excessively high temperatures can occur, the tank and/or filling arrangement shall be isolated from the electrical and exhaust systems by suitable protection, e.g. a separate enclosure or baffles. The tank location and facilities for filling shall be such that spillage or leakage will not drain into the engine or operator's compartment or onto electrical or exhaust system parts.	The fuel tank and filling opening are out of the engine's compartment and far away from the high temperature parts of the engine and operator's position. So the spillage and leakage cannot drain into the engine or operator's compartment or onto electrical or exhaust system parts.	P
4.5.2.2	**Fuel spillage**		P
	Fuel spillage shall not be possible under normal operating conditions.	Fulfill the requirement.	P
4.5.3	**Access to engine and other compartments**		P
4.5.3.1	**Engine covers**		P

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Clause	Requirement	Remarks - Results	Verdict
	An enclosed engine compartment shall satisfy fan guarding requirements when the manufacturer's recommended routine maintenance is performed with the engine off. If a fan can start (e.g. temperature switch) when the engine is off, the fan shall be guarded. A safety warning sign shall be provided, and included in the instruction handbook (see 6.2). Warnings shall comply with 6.3.3.4. Access from underneath is considered guarded if the access ground clearance is less than 600 mm between the underside of the truck and level ground.	The engine compartment guard is locked by key switch.	P
4.5.3.2	**Unintentional closure**		P
	Where unintentional closure could cause injury, access covers (i.e. traction battery or engine covers) shall be provided with means for preventing unintentional closure. Those means shall be permanently affixed to the truck or stored in a safe place on the truck.	The engine cover can only be opened by key, and supported by air spring when in the open position.	P
4.5.4	**Liquefied petroleum gas (LPG)-powered trucks**	Diesel engine powered machine, no LPG.	N/A
4.5.4.1	**Containers**		N/A
	The following applies to the containers of trucks powered by LPG. a) LPG containers shall be either permanently fixed to the truck or removable. b) When LPG containers are removable, their fastenings shall permit easy handling and checking of the installation after the exchange of containers. c) Removable LPG containers that incorporate a pressure-relief valve shall be so positioned on the truck that the pressure-relief valve opening is always in communication with the vapour space at the top of the container. This may be accomplished, for example, by an indexing pin which positions the container when the container is properly installed. d) LPG containers shall be securely mounted to the truck to prevent movement. Fastening shall withstand static loading of four times the filled container weight in any direction without permanent visible deformation. e) LPG containers shall be fitted on the truck such that exposure to abrasion, shock and the corrosive action of the products handled by the truck is reduced. f) LPG containers and their connections shall be installed such that there are no projections outside the plan view outline of the truck. g) If LPG containers are installed in a compartment, this compartment shall have permanent openings at the bottom. The total surface area of these ventilation openings shall be at least 200 cm^2 allowing adequate ventilation to outside the truck.		N/A

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Clause	Requirement	Remarks - Results	Verdict
	h) If an additional LPG container is carried on the truck, it shall be secured in the same manner as the main container. i) LPG containers, whether fixed or removable, shall be equipped with a device to prevent unintentional emission of gas or liquid, e.g. in the case of a pipe system failure. This does not apply to pressure-relief valves. j) Pipe fittings and accessories on LPG containers shall be protected against mechanical damage when used as specified by the manufacturer. k) The fuel take-off on the LPG container shall be equipped with an easily and quickly accessible manually operated valve. The position and method of operation of this valve shall be clearly marked on the valve handle or on the outside of the truck near the valve. l) The fuel take-off shall be in a liquid form, unless the LPG container and engine are specially equipped for a direct vapour withdrawal. m) Permanently mounted LPG containers to be filled by the user shall be fitted with the following: 1) a pressure-relief valve connected to the vapour space of the container that, when fitted inside the compartments of trucks, shall have the discharge side of the relief valve piped to the atmosphere away from the operator and that shall comply with 4.5.4.3 d); 2) an 80 % fill stop valve; 3) maximum liquid level devices suitable for the LPG in use, indicating the maximum product level and which shall not vent to the atmosphere. n) LPG containers shall be positioned such that they are not exposed to the damaging effects of heat, particularly heat from the engine or the exhaust system. If it is necessary to fit a heat shield, this shall not inhibit ventilation.		
4.5.4.2	**Piping**		N/A
	The following applies to the piping used on trucks powered by LPG. a) Connecting piping and all associated parts shall be easily accessible, protected against excessive heat radiation, damage and wear, and shall be flexible enough to withstand vibration and deformation in service, as follows: -piping shall be so arranged that damage or leaks are easily detectable and that checks and maintenance can be carried out; -piping shall be installed such that it cannot be damaged by any excessive heat radiation from hot		N/A

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Clause	Requirement	Remarks - Results	Verdict
	parts of the truck; -fully rigid pipes shall not be used for connecting the container to equipment on the engine; -piping shall be so arranged that there are no projections outside the plan view outline of the truck. b) Pressure hoses operating above 1 bar 3) shall be supported at least every 500 mm. Rigid pipes shall be supported at least every 600 mm. c) Hoses, pipes and all connections operating at pressures above 1 bar shall be suitable for a working pressure of 25 bar and shall withstand without bursting a test pressure of 75 bar. Hoses, pipes and all connections operating below 1 bar shall withstand without bursting a test pressure of five times the maximum working pressure. d) Pressure shall not exceed the working pressure rating of components in any section of pipe work containing LPG in liquid form between two shut-off valves that are closed; a pressure-relief valve, for example, or other suitable means, may be used if necessary. e) Aluminium piping shall not be used. f) Hoses shall be as short as practical. g) Pressure unions and joints operating above 1 bar shall be made of metal, except for any constrained sealing washers.		
4.5.4.3	**Equipment**		N/A
	The following applies to the equipment used on trucks powered by LPG. a) The supply of gas shall be automatically cut off when the engine stops, irrespective of whether or not the ignition system has been switched off. b) For multi-fuel applications, the system shall be designed to avoid the possibility of LPG entering any other fuel container and to shut off each fuel source before the alternative one is opened. c) If the truck is equipped with two or more containers to supply fuel, they shall be connected via a multi-way valve or other suitable means, so that LPG can only be drawn from one container at a time. The use of two or more containers at the same time shall not be possible. d) Pressure-relief valves or liquid-level indicators shall be installed such that they cannot discharge in the direction of the operator or onto truck components that could be a source of ignition. e) If corrosion of a part would interfere with its proper functioning, that part shall be provided with a corrosion-resistant protective coating.		N/A

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Clause	Requirement	Remarks - Results	Verdict
	f) All fuel system components shall be firmly secured to the truck. g) Pressure-reducing valves shall be readily accessible for inspection and maintenance. h) The engine compartment shall be designed in accordance with 4.5.4.1 g), in order to avoid any LPG accumulation.		
4.5.4.4	**Regional requirements**		N/A
	LPG-powered trucks are subject to regional requirements, additional to the requirements of this part of ISO 3691. See ISO/TS 3691-8.		N/A
4.6	**Systems for lifting and tilting**		P
4.6.1	**Lift chains**		P
	The truck or mast manufacturer shall have on record a certificate from the chain manufacturer giving the breaking load of the chains used. When the lifting mechanism includes a chain or chains, the truck manufacturer shall only use leaf or roller chains. These shall provide a minimum factor, 1 , when supporting the maximum capacity load and assuming no friction in the mast structure, which is given by the following equation: $K_1 = (L_c \times n)/(R + w)$ where K_1 is the safety factor of the lifting mechanism; L_c is the minimum breaking load for new chain; n is the number of chains; R is the maximum load capacity of the truck; w is the dead weight of the lifting mechanism supported by the chains. The K1 factor is subject to regional requirements, additional to the requirements of this part of ISO 3691. See ISO/TS 3691-7:2011 and ISO/TS 3691-8. Pulley diameters shall be in accordance with the chain manufacturer's instructions.	Relevant information is provided by the manufacturer. The safety factor of the chain refers to the report EN 16307-1	P
4.6.2	**Mechanical lifting systems**		P
4.6.2.1	**General**		P
	The lifting system shall comply with the requirements of 4.6.3.3.	Refer to clause 4.6.3.3.	P
4.6.2.2	**Failure of lifting/lowering mechanism**		P
	In the event of failure of a single lifting/lowering part of the mechanism (e.g. gearwheel, chainwheel or spindle), it shall not cause the elevated load or operator's platform to descend uncontrolled.	Dynamic, static and function tests have been conducted. Fulfill the requirements.	P
4.6.2.3	**Lowering speed**		P
	The lowering speed of the lifting mechanism with its rated load shall not exceed 0,6 m/s.	Refer to clause 4.6.3.3.	P

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Clause	Requirement	Remarks - Results	Verdict
4.6.3	**Hydraulic lifting and tilting systems**		P
4.6.3.1	**Hydraulic lifting systems**		P
	The hydraulic lifting system shall be designed such that, with the hydraulic fluid at normal operating temperature, the mast substantially vertical and carrying rated capacity load, the descent of the load caused by internal leakage in the first 10 min shall not exceed -100 mm for trucks up to and including 10 000 kg rated capacity, -200 mm for trucks over 10 000 kg rated capacity.	CPCD35-XW43E-RT: 84 mm	P
4.6.3.2	**Lowering speed limitation**		P
	A device shall be incorporated in the lift circuit which, in the event of a failure of the hydraulic circuit-excluding the hydraulic lift cylinder(s)-shall restrict the rate of descent of the lifting mechanism with its rated load to 0,6 m/s maximum. The device shall be fitted directly at the lifting cylinder(s).	Proof valves are installed on the bottom of the each lift cylinder directly. The descent speed: CPCD35-XW43E-RT: 0.46 m/s The lowering speed in the event of a failure of the hydraulic circuit is lower than 0.6 m/s	P
4.6.3.3	**Limitation of stroke**		P
	The lift assembly shall be fitted with a positive means to prevent over-travel. In addition, positive means (e.g. mechanical stop) shall be provided to prevent the fork carrier and moving elements of the mast structure from unintentionally disengaging from the upper end of the mast.	The over-travel cannot take place, because of the length of the hydraulic cylinder and the chain. A metal block is welded on the top of the mast, which can also limit the travel position. The movement of the fork carrier and moving elements are limited by the mast frame by rail and bolt.	P
4.6.3.4	**Hydraulic tilting systems**		P
	The internal leakage rate of the complete hydraulic tilting system (i.e. cylinder, valve, etc.), with the oil at normal operating temperature, shall allow no more than 5° forward movement of the mast in 10 min from the vertical mast position, when the rated load is at a height of 2 500 mm or, in the case of trucks with lift heights less than 2 500 mm, at their maximum lift height. The average tilting speed allowed by internal leaks shall not exceed 0.5°/min for trucks with a maximum forward tilt of less than 5°	Inclination after 10 min CPCD35-XW43E-RT: 1.3°	P
4.6.3.5	**Mast tilt and carriage isolation**		P

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Clause	Requirement	Remarks - Results	Verdict
	For ride-on trucks, mast tilt and carriage movement shall not be possible through operation of the primary load-handling control when the operator is not in the normal operating position. Isolation of attachment movement is subject to regional requirements, additional to the requirements of this part of ISO 3691. See ISO/TS 3691-7:2011.	An electromagnetic valve is installed on the hydraulic system, which is actuated by seat switch. When the operator leaves the seat, all the movement cannot take place through the primary control, including lifting, lowering, tilting, side shift as well as traveling.	P
4.6.4	**Hydraulic systems**		P
4.6.4.1	**Hydraulic circuits**		P
	Hoses, piping and connections subjected to internal pressure shall be capable of withstanding, without bursting or permanent deformation, a pressure equal to at least three times the operating pressure. Pipes and hoses shall be located and, if necessary, restrained, so that deterioration, sharp edges and other damage-causing sources are minimized.	Hoses, piping and connections can subject without bursting a pressure equal to at least three times the operating pressure. All pipes that within 1m to the operator are covered.	P
4.6.4.2	**Pressure controls**		P
	All hydraulic systems shall include a device which prevents the pressure in the system from exceeding a preset level. The device shall be so designed and fitted that unintentional loosening or adjustment is avoided and so that a tool or key is required to alter the pressure setting.	One pressure release valve provided, and it will be actuated when overload below1.25 times rated load. It can only be adjusted by tools.	P
4.6.4.3	**Failure of energy supply to hydraulic circuits**		P
	In the case of a fault or interruption of the supply of energy, the design of the hydraulic system shall be such that it does not allow any uncontrolled motion of equipment or attachment.	Shutoff valves are installed. In the case of a fault of the energy, the load will not fall down immediately.	P
4.6.4.4	**Fluid purification**		P
	The hydraulic system(s) shall be protected against the risk of contamination of the hydraulic fluid, e.g. by means of magnet(s) or filter(s).	Oil filter provided in the hydraulic circuit.	P
4.6.5	**Load-handling and -stacking attachments**		P
4.6.5.1	**Unintentional displacement or detachment**		P
	Means shall be provided to prevent the unintentional lateral displacement or unintentional detachment of attachments from the truck. Movement of the attachment and its parts shall be mechanically limited at the extreme positions.	Fork arms are fixed on the fork carrier by pins and lateral displacement is limited by backrest extension. Fork carrier is fixed on the chain by bolt and cannot lateral move by rail.	P
4.6.5.2	**Malfunction in the power supply system**		N/A

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Clause	Requirement	Remarks - Results	Verdict
	Attachments that hold the load by power shall be designed such that the maximum load they are intended to handle is automatically retained for at least 10 min when the truck's manual controls are in the neutral position or in the event of a malfunction in the power supply system for the attachment.	No such attachments.	N/A
4.6.5.3	**Hydraulic system for attachment**		N/A
	If an attachment has its own separate hydraulic system, it shall comply with 4.6.4.	Only one hydraulic system.	N/A
4.6.5.4	**Combined hydraulic systems**		N/A
	If an attachment has a hydraulic system connected to the truck hydraulic system, the two systems shall be compatible and the combined systems shall comply with 4.6.4.	Only one hydraulic system.	N/A
4.6.5.5	**Attachments for lifting freight containers**		N/A
	An attachment for lifting freight containers shall be equipped with indicator lights according to ISO 15871. The attachment shall have a device(s) to prevent unintentional disengagement of a container. Means shall be provided to prevent lifting of the container for transport unless all interface mechanisms are fully engaged and locked. If multiple containers are lifted at the same time, the same requirements are valid for all containers. Travel speed shall be restricted to a maximum of 10 km/h if the container is not locked to the attachment in a manner that will prevent unintentional drop (e.g. lifting with grapple arms).	Without freight container.	N/A
4.6.5.6	**Fork arms**		P
4.6.5.6.1	Solid-section fork arms shall be manufactured and tested in accordance with ISO 2330, except with respect to safety factors. The safety factors are subject to regional requirements, additional to the requirements of this part of ISO 3691. See ISO/TS 3691-8.	Fork arms test report provided in accordance with ISO 2330 Single fork: ≥6000kg>3*1750kg	P
4.6.5.6.2	The total capacity of all fork arms fitted to a truck shall not be less than the actual capacity of the truck.	Considered.	P
4.6.5.6.3	Means shall be provided to prevent unintentional lateral displacement of the fork arms on the fork carrier.	Fork arms are fixed on the fork carrier by pins and lateral displacement is limited by backrest extension.	P
4.6.5.6.4	Fork-arm extensions shall be designed to prevent accidental disengagement from the fork arms, and shall be in accordance with ISO 13284.	No fork arm extension.	N/A
4.6.5.7	**Fork carriers**		P
	Hook-on type fork carriers shall be in accordance with ISO 2328.	Fork carriers fulfill the requirements.	P
4.7	**Operator positions**		P

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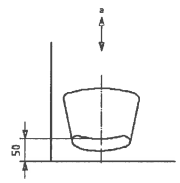
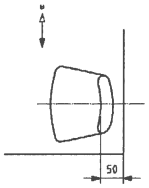
Clause	Requirement	Remarks - Results	Verdict
4.7.1	**Dimensions**		P
	The operator's seat or standing position shall be so located that the operator has sufficient room while operating the truck so as to remain within the plan view outline of the truck. The dimensions shall be of suitable and ergonomic shape to accommodate at least a 5 th percentile to a 95 th percentile of the population, as shown in ISO 3411:2007, Figures 1 to 3, within the plan view outline of the truck. The seat shall not extend beyond the plan view outline of the truck. The minimum distance from the top edge of the seat back to the plan view outline shall be 50 mm (see Figures 1 and 2). For stand-on pedestrian- and centre-controlled ride-on trucks employing a tiller, the tiller steering control movement may extend beyond the plan view. Dimensions in millimetres  * Direction of travel. Figure 1 — Front-seated operator  Figure 2 — Side-seated operator	Checked and OK. The minimum distance from the top edge of the seat back to the plan view outline is greater than 500mm.	P
4.7.2	**Operator access and egress**		P
4.7.2.1	**General**		P
	Trucks shall be designed to permit safe and easy access and egress and to minimize the risk of slipping, falling and tripping. Steps, running boards and hand holds (grab handles, fixed parts of the truck structure, etc.) shall be provided above a step height of 350 mm to give three-point contact at all heights (i.e. one hand and two feet or two hands and one foot). Step width, instep clearance and toe clearance shall comply with ISO 2867.	Three-point contact (hand holder, seat backrest, and step) is provided. Checked and OK. The floor of the operator's position is 900mm above the ground for all machines.	P
4.7.2.2	**Steps**		P
	Steps shall have slip-resistant surfaces or covering (e.g. expanded metal, abrasive coating). The first step shall be not more than 550 mm from the ground and succeeding steps shall be 250 mm to 350 mm, preferably at equal intervals.	The first step: Height: from the ground:543mm Width: 330mm Depth: 172mm The height from the first step to the operator's position: 342mm fulfill the requirements of ISO 2867	P
4.7.2.3	**Compartment floors**		P

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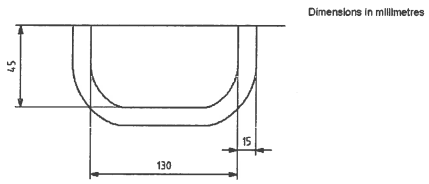
Clause	Requirement	Remarks - Results	Verdict
	The compartment floor frequented by the operator, steps and walkways shall be free of obstacles and shall have a slip-resistant surface, e.g. ribbed mats, abrasive coating, expanded metal.	The compartment floor is made of ribbed mats.	P
4.7.2.4	**Walkways**		N/A
	Walkways more than 2 000 mm from the ground shall have guard rails. The guard rails shall have a height of 900 mm to 1 100 mm and shall be capable of withstanding, without permanent deformation, a force of 900 N applied in a horizontal direction from the inside to the outside.	No walkways.	N/A
4.7.2.5	**Hand holds**		P
	For access to, and egress from, the normal operating position with a floor height above 300 mm, hand hold(s) shall be provided; these may be part of the truck structure. The clearance dimension for a hand hold shall be at least of 45 mm width, 130 mm length and diameter of 15 mm (see Figure 3).  Figure 3 — Hand hold	Checked and OK. Length: 440mm Width: 57mm Diameter: 20mm	P
4.7.3	**Platforms**		N/A
4.7.3.1	**General**		N/A
	Operator stand-on platforms on pedestrian-controlled and stand-on end-controlled trucks shall be dimensioned in accordance with 4.7.1 and shall be capable of withstanding a compression force corresponding to 2,5 times the mass of the laden truck applied along the longitudinal axis of the truck with the outermost projection of the platform against a flat vertical surface. For the purpose of this requirement, the operator platform includes any surrounding reinforcement or parts of the truck which provide resistance to crushing of the platform, except for pedestrian-controlled stand-on trucks employing a tiller.	Sit on truck. No platform.	N/A
4.7.3.2	**Platforms overhanging the truck chassis**		N/A
	Platforms overhanging the truck chassis on tiller-operated stand-on trucks, capable of travelling more than 6 km/h, shall, in addition to 4.7.3.1, be provided with a guard at either the sides or the front of the platform. The guards shall be capable of withstanding a horizontal force of 900 N acting from inside to outside applied in line with the centre of the operator's standing position without permanent deflection. The side guards shall be at a minimum height of 700 mm above the	Sit on truck. No platform.	N/A

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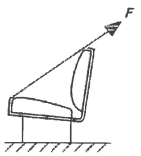
Clause	Requirement	Remarks - Results	Verdict
	platform in its protective position.		
4.7.3.3	**Pedestrian-controlled trucks with foldable platforms**		N/A
	Operator stand-on platforms that are fitted to pedestrian-controlled trucks and overhang the truck's chassis may be capable of being folded or pivoted to an upright position when the operator leaves the platform; this may be done automatically. For platforms which do not act automatically, devices shall be provided to prevent the truck manoeuvring or travelling unless the operator is standing on the platform or the platform is in its upper rest position. Travelling of more than 6 km/h shall only be possible when the platform is pivoted down and guards are in their protective position.	Sit on truck. No platform.	N/A
4.7.3.4	**Stand-on platforms**		N/A
	Operator stand-on platforms which are built within the plan view outline of pedestrian-controlled trucks, where the operator stands to the side of the motor housing, shall be equipped with an additional grab rail for operator stability when riding. This grab rail shall be capable of withstanding a horizontal force of 900 N applied in line with the operator's standing position, without permanent deformation. The requirements of 4.7.3.2 do not apply for this configuration of pedestrian-controlled truck.	Sit on truck. No platform.	N/A
4.7.3.5	**Trucks with foldable platforms and foldable side guards**		N/A
	On trucks with side guards and platforms of the folding or pivoting type as described in 4.7.3.2 and 4.7.3.3, travelling movement shall only be possible when the side guard or platform is in a protective position or an inactive rest position. No travelling movement is allowed with the platform or side guard in an intermediate position.	Sit on truck. No platform.	N/A
4.7.4	**Operator's seat**		P
	The seat shall be designed and located to provide easy access to the controls, shall provide a position for the truck operator in accordance with ergonomic principles and shall meet the following requirements. a) If the seat has a facility allowing fore and aft adjustment, this shall be possible without the use of tools.	Fore and aft adjustment of the seat is allowed without using tools.	P
	b) If a weight-adjustable seat is fitted to reduce vibration transmitted to the operator, the adjustment shall accommodate operator weights of 55 kg to 110 kg. Manual adjustment of the weight mechanism shall be possible without the use of tools.	Can be adjusted by weight. Fulfill the requirement	P

Clause	Requirement	Remarks - Results	Verdict
	c) If a seat has a facility allowing it to swivel about a vertical axis, this shall be possible at all seat adjustment positions without unintentional operation of the controls.	Seat cannot swivel about a vertical axis.	N/A
	d) The seat mounting shall be able to withstand the forces which can occur during operation, e.g. braking forces, as well as the forces imposed by the operator restraint specified in 4.7.8.	OK.	P
	e) The requirements of a) to d), above, also apply to additional operator's seats.	No additional seats.	N/A
	f) When using an auxiliary seat on a stand-on industrial truck, a padded seat surface and backrest is sufficient. If the operating space of the stand-on operator is restricted, the auxiliary seat shall be capable of being folded or pivoted.	No additional seats.	N/A
	g) The seat anchorage to the battery cover or engine cover of sit-on counterbalanced trucks, as well as the latching method of the cover to the truck chassis, shall have sufficient strength in the event of a backwards tip-over of the truck from a loading dock. The seat anchorage shall be able to withstand a force of 2250 N at a 45°±5° angle, as shown in Figure 4. Verification of this requirement shall be by means of a type test carried out using a strap wrapped around the seat as shown in Figure 4. The specification and marking of the operator's seat is subject to regional requirements, additional to the requirements of this part of ISO 3691. See ISO/TS 3691-7:2011.  Key *F* force, 2 250 N **Figure 4 — Seat anchorage pull test**	Checked and tested. Fulfill the requirements	P
4.7.5	**Protection from road wheels and objects thrown up by the wheels**		P
4.7.5.1	**Ride-on trucks**		P
	In the normal operating position, the operator shall be protected against contact with the truck wheels and against objects thrown up by the wheels (e.g. mud, gravel, debris). The protection device for the steered wheels need only cover the wheels when in a straight-line position.	Wheel covered.	P
4.7.5.2	**Pedestrian-controlled trucks**		N/A
	The operator in the normal operating position shall be protected against contact with the drive and stabilizing wheels. The position of these wheel protections shall be in accordance with Figure 5.	Sit on truck.	N/A

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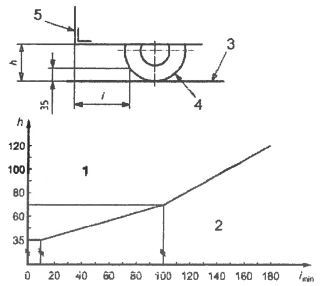
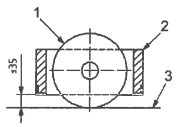
Clause	Requirement	Remarks - Results	Verdict
	Dimensions in millimetres  Either: h < 35 mm; l_{min} = 10 mm Or. h = 35 mm to 70 mm; l_{min} = 2,57 × h – 80 mm h = 70 mm to 120 mm; l_{min} = 1,60 × h – 12 mm **Key** 1 frame 2 foot space 3 ground/floor 4 wheel 5 frame edge h height from ground or floor to frame edge l horizontal distance from end of frame to point on wheel 35 mm above ground or floor **Figure 5 — Free space for operator's feet** If, for pedestrian-controlled trucks, the driving and stabilizing wheel protection specified in 4.7.5.2 cannot be complied with, a wheel guard (deflector) as shown in Figure 6 shall be installed. For castors, the deflector need only be mounted on the side on which the conditions specified in 4.7.5.2 are not met. Dimensions in millimetres  **Key** 1 wheel 2 deflector 3 ground (floor) **Figure 6 — Foot protection**		
4.7.6	**Protection from burning**		P
	All parts of the truck within reach of the operator in the normal operating position or when the operator is entering or leaving the operating position shall be insulated or shielded so that the surface temperature, generated by heat sources in the truck, of bare metal parts does not exceed 65°C, and that of painted or plastic parts does not exceed 83°C. The temperature of the air at the heater outlet, where fitted, shall not exceed 60°C.	High temperature parts within reach of the operating position are well protected.	P
4.7.7	**Protection against crushing, shearing and trapping**		P
4.7.7.1	**General**		P
	Parts that move relative to one another and that are within reach of the operator in the normal operating position shall be adequately guarded. If hazards still exist, they shall be identified according to 6.2 and on the truck in accordance with 6.3.3.4. Fixed guards and their mounting systems are subject to regional requirements, additional to the requirements of this part of ISO 3691. See ISO/TS 3691-7:2011.	Comply with the requirements. Refer to following clause.	P
4.7.7.2	**Minimum distances**		P
	Parts separated by the following minimum distances satisfy the adequate guarding requirements of 4.7.7.1:	The minimum distance between two relative moving parts, such as	P

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Clause	Requirement	Remarks - Results	Verdict
	a) places where only the operator's fingers can be trapped: min. 25 mm; b) places where only the operator's hands or feet can be trapped: min. 50 mm; c) places where the operator's arms or legs can be trapped: min. 100 mm. Moving parts that are related and that need to be in contact with, or move in close proximity to, one another shall be guarded. Any openings in such guarding shall be small enough to prevent an 8 mm diameter probe from passing through them. If such hazards still exist, they shall be identified on the truck in accordance with 6.3.3.4.	control levers is greater than 25mm In the operator's position cannot touch the moving parts, especially tilt cylinders and their components Moving parts which are located on the maintenance point and access position (such as cooling fans of the engine) are protected by lockable engine cover. The openings on the guards are fulfilled the requirements.	
4.7.7.3	**Attachments**		N/A
	Crushing and shearing hazards to the operator in the normal operating position associated with attachments, except at the load supporting points, shall also meet the relevant requirements of 4.7.7.1. If such hazards still exist, they shall be identified according to 6.2 and on the attachment by a warning sign in accordance with 6.3.3.4.	No attachment.	N/A
4.7.7.4	**Foot protection**		N/A
	Trucks with a side-facing seated or standing operator shall be so built that when travelling, the operator cannot unintentionally place his feet outside the confines of the truck; or, alternatively, the truck shall be equipped with a traction cut off (e.g. dead-man switch), enabled whenever an operator's foot is not in the safeguarded position.	Sit on truck without side-facing seat.	N/A
4.7.8	**Operator restraint**		P
	Sit-on counterbalanced lift trucks with a rated capacity up to and including 10 000 kg and sit-on, single side-loading trucks shall have a restraint device, system or enclosure intended to reduce the risk of entrapment of the operator's head and/or torso between the truck and the ground in the event of a tip-over. Such means shall not unduly restrict the operation of the truck, e.g. the operator's access, egress, and/or visibility. Warnings and instructions on the purpose, use and action to be taken in the event of a tip-over, so as to reduce the risk associated with the operator's head impacting a solid surface, shall be provided on the truck and described in the instruction handbook (see 6.2). If a restraint system with a belt is used, this system shall be in accordance with ISO 24135-1. Operator restraint requirements for sit-on counterbalanced trucks are subject to regional	Restraint system with a belt provided and is in accordance with ISO 24135-1.	P

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Clause	Requirement	Remarks - Results	Verdict
	requirements, additional to the requirements of this part of ISO 3691, including requirements for counterbalanced lift trucks having a centre control, sit-on, non-elevating operator and a rated capacity up to and including 10 000 kg, and sit-on, single side-loading trucks. See ISO/TS 3691-8.		
4.7.9	**Additional operator positions**		N/A
	Additional operator position(s) shall be in accordance with 4.7.1 to 4.7.8.	No additional operator position.	N/A
4.8	**Stability**		P
4.8.1	**General**		P
	In order to reduce the hazards of longitudinal and lateral tip-over in the operating conditions foreseen by the manufacturer, the trucks specified below shall comply with the stability requirements given in the applicable part of ISO 22915, without permanent deformation of the structure (see 5.2): -basic test criteria and requirements for all applicable truck types, ISO 22915-1; -counterbalanced trucks with mast, ISO 22915-2; -reach and straddle trucks, ISO 22915-3; -pallet stackers, double stackers and order-picking trucks with operator position elevating up to and including 1 200 mm lift height, ISO 22915-4; -single side-loading trucks, ISO 22915-5; -bidirectional and multidirectional trucks, ISO 22915-7; -industrial variable-reach trucks, ISO 22915-11; -order-picking trucks with operator position elevating above 1 200 mm, ISO 22915-21. NOTE At the time of publication of this part of ISO 3691, other parts of ISO 22915 were planned or under preparation, applicable to the following types of industrial trucks: counterbalanced trucks with mast handling freight containers of 6m (20 ft) length and longer; industrial variable-reach trucks handling freight containers of 6m (20ft) length and longer; rough-terrain trucks with mast, rough-terrain variable-reach trucks; counterbalanced trucks with articulated steering; pedestrian- propelled trucks; burden and personnel carriers; lateral- and front-stacking trucks with elevating operator position. The stability of trucks lifting less than 500 mm shall be tested according to the test requirements defined for travelling by the appropriate International Standard for stability for a similar truck design equipped with a mast. Stability requirements are subject to regional requirements, additional to the requirements of this part of ISO 3691. See ISO/TS 3691-7:2011.	Tests have been conducted according to ISO 22915-1 and ISO 22915-13.	P

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Clause	Requirement	Remarks - Results	Verdict
4.8.2	**Specific operating conditions**		P
	For specific operating conditions foreseen by the manufacturer, additional stability tests shall be carried out in accordance with the following parts of ISO 22915, as applicable: -trucks operating in the special condition of stacking with mast tilted forward and load elevated, ISO 22915-8; -trucks operating in the special condition of stacking with load laterally displaced by powered devices, ISO 22915-10; -trucks operating in the special condition of offset load, offset by utilization, ISO 22915-20.	Tested according to ISO 22915-10 Laterally displaced 100mm	P
4.8.3	**Levelling indicator for rough-terrain trucks**		P
	Rough-terrain trucks shall be equipped with a levelling indicator to permit the operator in the operating position to keep the truck within the tilt limitations (for longitudinal and lateral axes) foreseen by the manufacturer.	Installed on the engine cover, right side of the operator's seat	P
4.9	**Protective devices**		P
4.9.1	**Overhead guard**		P
4.9.1.1	**General**		P
	Ride-on trucks with a maximum lift height of more than 1 800 mm above the floor shall be fitted with an overhead guard complying with ISO 6055 to protect the operator from falling objects. Trucks with an elevating operator position up to and including 1 200 mm that feature a lift height of the load of more than 1 800 mm above the operator platform shall be fitted with an overhead guard complying with ISO 6055 to protect the operator from falling objects.	All machines have the same overhead guard. It was tested according to ISO 6055. All the openings on the overhead guards do not exceed 80mm. All the controls do not project the outline of the overhead guard more than 150mm in the direction of the mast. The vertical distance between the underside of the overhead guard and seat is 1100mm. The deformation after dynamic test: 16mm<20mm. The deformation after impact test: Mass of the test object: 1360kg, Drop energy: 21760J with impact height 1.633m.	P

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Clause	Requirement	Remarks - Results	Verdict
		447mm＞250mm.	
4.9.1.2	**Additional fitting against falling small objects**		P
	The overhead guard specified in 4.9.1.1 shall, when handling a load above 1 800 mm lift height, be constructed in such a manner that it can be provided with an additional fitting making it possible in those special cases to increase the protection of the operator against falling small objects.	OK. Special protective guard can be welded on the top guard.	P
4.9.1.3	**Pedestrian-controlled trucks with foldable platform**		N/A
	Pedestrian-controlled trucks with a foldable platform as specified in 4.7.3.3 shall be provided with means to prevent lifting over 1 800 mm from the floor when the side guards are in their protective position. This does not apply if an overhead guard as specified in 4.9.1.1 is fitted on the truck.	Sit on truck.	N/A
4.9.2	**Load backrest extension**		P
4.9.2.1	**Provision for load backrest extension**		P
	Trucks fitted with fork arms with a lift height of more than 1 800 mm shall be designed so that they can be fitted with a load backrest extension.	Backrests extensions are fitted on the fork carrier by bolt.	P
4.9.2.2	**Size of openings**		P
	Load backrest extensions, if provided, shall have height, width, and size openings sufficient to minimize the possibility of the load falling toward the mast when the mast is in a position of maximum rearward tilt. The size of openings in the load backrest extension, if provided, shall not exceed 150 mm in one of the two dimensions.	Load backrest extensions provided and the size of openings is less than 142 mm in one of the two dimensions.	P
4.9.3	**Warning device**		P
	Trucks shall be equipped with an operator-controlled audible warning device.	Audible warning device provided.	P
4.9.4	**Wheels with split wheel rims for inflatable tyres**		N/A
	When split wheel rims are used with pneumatic tyres, the truck shall be provided with means to prevent the user from separating the halves of the wheel before removing it from the axle. Information on the proper means of removing the tyre from the wheel shall be provided in the instruction handbook (see 6.2).	Integrated wheel rims are used.	N/A
4.9.5	**Traction battery compartment**	Diesel engine powered machine without traction battery.	N/A
4.9.5.1	**Unauthorized access**		N/A
	On trucks with a nominal battery voltage exceeding 120 V d.c., if a lockable cover is not present on the battery enclosure, facilities shall be provided to enable the battery compartment to be secured so as to prevent unauthorized access to the battery.		N/A

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Clause	Requirement	Remarks - Results	Verdict
4.9.5.2	**Metal cover**		N/A
	A metal cover for a battery compartment or battery enclosure shall have either a) sufficient strength and rigidity, in conjunction with an air spacing of at least 30 mm provided between it and the battery terminals, so that the battery terminals are not short-circuited when a 980 N force is applied to any area 300 mm* 300 mm of the cover, or b) an air space reduced to a minimum of 10 mm, provided covers or live parts of the battery are insulated in such a way that disintegration and/or displacement of the insulation is prevented.		N/A
4.9.5.3	**Non-metallic cover**		N/A
	For non-metallic covers of battery compartments, the following applies. a) The cover shall have a burn rating of V0 or V1 in accordance with IEC 60695-11-10. b) The cover shall comply with an impact test of 136 J, the impact being produced by dropping a steel sphere having a diameter of 100 mm and mass of 4,11 kg from a height of 3,3 m. If the battery is located under an overhead guard, the impact may be reduced to 68 J, produced by dropping a steel sphere having a diameter of 100 mm and mass of 4,11 kg from a height of 1,65 m. There shall be no live parts exposed or impact that causes physical damage to the battery. c) If metallic parts project into the battery compartment, then 4.9.5.2 applies.		N/A
4.9.5.4	**Ventilation**		N/A
	The compartment and enclosure that houses a battery shall be provided with means for ventilation that reduce the likelihood of accumulation of explosive hydrogen-air mixture during truck operation. When openings are positioned such that gases can escape freely, these shall be located away from the operator's position. Ventilation openings are usually satisfactory if they provide a cross-section, in square millimetres, equal to half the number of cells, multiplied by the rated capacity in Ampere-hours. This level of ventilation is not intended to cover the charging condition.		N/A
4.9.5.5	**Resistance to electrolyte**		N/A
	The battery enclosure, in accordance with ISO 20898, shall be resistant to the chemical effects of the electrolyte.		N/A
4.9.6	**Battery-restraint devices**		N/A
	On battery-powered trucks, means shall be provided to retain the battery from moving more than 15 mm in a	Diesel engine powered machine without traction	N/A

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Clause	Requirement	Remarks - Results	Verdict
	horizontal direction. In addition, on ride-on type trucks-where the displacement of the traction battery may pose a risk of injury to the operator due to a tip-over—a battery-restraint device(s) shall restrict the battery displacement to no more than 100 mm into the space normally occupied by the operator or from moving more than 100 mm in a lateral direction beyond the limits of the battery compartment. A tip-over may be simulated by allowing a static truck to fall free from its critical balance point impacting on a horizontal plane. A complete truck is not required for this test, but all battery compartment related parts shall be fitted. The movement of the battery shall not interfere with the operator's egress from the truck. The battery housing shall be constructed, located and the battery installed so as to avoid electrolyte being spilled onto the operator in the event of tip-over and/or to avoid the accumulation of vapours in places occupied by the operator. The battery cover, if any, of a compartment that is an integral part of the truck, or a separate enclosure such as a tray and cover, shall be secured.	battery.	
4.9.7	**Starter battery requirements**		P
	The starter battery on engine-powered trucks shall be restrained from movement.	The starter battery is restrained by bolt.	P
4.9.8	**Handling of batteries**		N/A
	Battery-powered trucks should be designed such that there is a means to extract a battery whose mass is in excess of 25 kg from the truck easily and without withstanding the full mass of the battery, e.g. an opening for slings in the overhead guard or rollers.	Diesel engine powered machine without traction battery.	N/A
4.10	**Visibility and lighting**		P
4.10.1	**Visibility**		P
	Requirements for all-round visibility from unladen trucks up to and including 10 000 kg rated capacity shall be in accordance with ISO 13564-1. For visibility with load, see 6.2.2, considering that, if direct visibility is limited by the load, aids can be used. Visibility requirements are subject to regional requirements, additional to the requirements of this part of ISO 3691. See ISO/TS 3691-7:2011. NOTE Visibility requirements for trucks over 10 000 kg were being developed at the time of publication of this part of ISO 3691.	Appropriate light provided for operation. Also for backward operation, audible alarms provided. One rear view mirror is installed on the operator's position Sufficient visibility is provided, can fulfill the requirement.	P
4.10.2	**Lighting**		P

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Clause	Requirement	Remarks - Results	Verdict
	Ride-on trucks shall be so designed that it is possible, referring to the manufacturer's instructions, to equip them with travel lights, working lights and signal lights.	Appropriate light provided for operation: Front: main lamp, direction lamp Rear: reverse lamp, direction lamp, stop lamp For backward operation, audible alarms provided.	P
4.11	**Environmental conditions**		P
4.11.1	**Operator's cab**		N/A
4.11.1.1	**General**		N/A
	If a cab is fitted in lieu of an overhead guard, it shall comply with 4.9.1.	No cab is installed	N/A
4.11.1.2	**Fire resistance**		N/A
	All material and components of the cab shall be fire-resistant, with a maximum burning speed of 250 mm/min when the standard test piece is tested in accordance with ISO 3795.	No cab is installed	N/A
4.11.1.3	**Ventilation**		N/A
	If a totally enclosed cab is fitted, provision shall be made for efficient ventilation.	Not totally enclosed cab.	N/A
4.11.1.4	**Heater, demister and defroster**		N/A
	If a totally enclosed cab is fitted with a heater/demister, the air intake should be connected to a fresh air inlet; recycling of the air is permissible. The heater shall be securely fixed. The heater shall be so designed that the requirements of 4.7.6 can be met. A demist/defrost capability shall be provided for the windscreen and rear window.	Not totally enclosed cab.	N/A
4.11.1.5	**Wipers and washers**		N/A
	Windscreen wiper(s) and washer(s) shall be fitted to allow the operator a clear view of the operating area. Wiper(s) and washer(s) for the rear window may be omitted if the truck is driven predominantly in the forward direction, e.g. tow tractors. Wiper(s) and washer(s) may be omitted entirely if the truck only operates within an enclosed area. If glass is used in the window apertures, it shall be toughened or laminated.		N/A
4.11.1.6	**Access and emergency exit**		N/A
	The cab shall have an access and an emergency exit complying with ISO 2867. The emergency exit, which may be a window, shall allow escape in a different direction than that of the normal exit.		N/A
4.11.1.7	**Storage of instruction handbook**		N/A

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Clause	Requirement	Remarks - Results	Verdict
	Provision shall be made for the storage of the instruction handbook (see 6.2) so that it does not obstruct the normal operating position.		N/A
4.11.1.8	**Additional operator's position**		N/A
	If an additional operator's position is equipped within a cab, it shall meet the requirements of 4.11.1.1 to 4.11.1.6.		N/A
4.11.2	**Noise emissions**		P
	Noise emissions are subject to regional requirements. See ISO/TS 3691-7:2011.	Test according to EN 12053 performed and relevant information provided in the user manual. Sound power level: CPCD35-XW43E-RT: 101.8 dB(A) Sound pressure level: CPCD35-XW43E-RT: 87.5 dB(A)	P
4.11.3	**Vibration**		P
	Whole-body vibrations transmitted to the operator are subject to regional requirements. See ISO/TS 3691-7:2011.	Test according to EN 13059 performed and relevant information provided in the user manual. Arm: CPCD35-XW43E-RT: 1.337 m/s^2 Whole body: CPCD35-XW43E-RT: 0.9568 m/s^2	P
4.11.4	**Electromagnetic compatibility (EMC)**		N/A
	EMC is subject to regional requirements. See ISO/TS 3691-7:2011 and ISO/TS 3691-8.	Covered by EMC directive.	N/A
4.11.5	**Transport**		P
4.11.5.1	**Location for lifting and/or slinging points**		P
	When a truck can be lifted without disassembling, locations for lifting and/or slinging points shall be provided and shall be indicated on the truck and/or in the instruction handbook (see 6.2). When individual assemblies of the truck can be removed for normal operation and/or transport, then lifting and/or slinging points shall be provided and these shall be indicated on the assemblies and/or in the instruction handbook. Slinging points for transportation of the truck shall be arranged such that there is no possibility of sudden movement.	Lifting points marked on the mast and machine.	P
4.11.5.2	**Lifting and tie-down points**		P
	Tie-down points for transportation of the assembled truck shall be provided and indicated on the truck or in the instruction handbook (see 6.2).	Lifting and tie down points are marked and described in the user manual.	P

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Clause	Requirement	Remarks - Results	Verdict
4.11.5.3	**Slinging of removable attachments**		N/A
	Locations for the slinging of a removable attachment shall be provided and shall be indicated on the attachment (see 6.3.1.2) and/or in the instruction handbook. Slinging points for transportation of the attachment shall be arranged such that there is no possibility of sudden movement.	The truck can be lifted without disassembling. The location for slinging points are provided, and mentioned in the instruction.	N/A
4.12	**Devices for towing**		P
	Trucks used for towing trailers shall be fitted with towing or coupling devices designed, constructed and arranged to reduce hazards of connection and disconnection and to prevent accidental disconnection during use.	Towing points are marked and described in the user manual.	P
5	**Verification of safety requirements and/or protective measures**		P
5.1	**General**		P
	The manufacturer shall have verification that the safety requirements and/or protective measures given in Clause 4 have been incorporated into the design and manufacture of the truck. Either one or a combination of the following shall be used to achieve verification: a) by design, e.g. verification of drawings and documents, or calculation; b) by measurement, e.g. tests of travelling and lowering speed or lift and tilt leakage; c) by visual examination, e.g. no permanent deformation after tests, verification of the marking of the truck; d) by further testing.	OK.	P
5.2	**Structural tests**		P
	These tests are to be performed on a sample that is representative of series production. The structural components of the truck and its attachments shall carry static loads of 1,33 Q1 and 1,33 Q2 for 15 min each, where Q1 is the rated capacity at the standard lift height and standard load centre distance in accordance with the information on the capacity plate; Q2 is the actual capacity at maximum lift height in accordance with the information on the capacity plate. The truck shall be on substantially level ground with the mast in the substantially vertical position and may be anchored to prevent tip-over. The loads may be applied at the corresponding height by means independent of the truck. The test shall not result in any visual permanent deformation or damage.	1.33Q1=1.33Q2 Center distance: 500mm Lift height: maximum lift height = 3000mm The mast is substantially vertical. There is no permanent deformation and damage on the machines.	P

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Clause	Requirement	Remarks - Results	Verdict
5.3	**Functional verification**		P
	Functional verification shall be carried out on each truck to verify that it is able to perform the tasks for which it was designed. These tests shall be done according to the manufacturer's instructions. They shall be performed by trained persons either operating and testing the truck according to the manufacturer's instructions or simulating these tests by any method giving an equivalent effect and producing substantially the same result. Each truck shall be inspected to ensure that the travelling, braking, steering, load-handling controls and combined functions, if any, are appropriately identified and operate correctly. The correct operation of warning devices, safety devices and lighting, if any, shall also be checked.	Functional tests and dynamic tests have been performed. Load: functional test Q1=Q2; dynamic test 1.1Q1=1.1Q2 Fulfill the requirements.	P
6	**Information for use**		P
6.1	**General**		P
	Each truck and removable attachment shall be supplied to the user with an instruction handbook(s), covering operating and regular servicing and addressing all identified hazards, printed in the language(s) of the country in which the truck is to be used, where required by national law. See also ISO 12100:- 4), 6.4.5. There is no need for the workshop and parts handbooks intended for use by specialized personnel employed by the manufacturer or his authorized representative to be supplied with each truck, and these can be printed in the language of the country where the truck is to be used, as required by national law. In other cases, the instructions shall be in a language agreed between the truck supplier and purchaser.	OK.	P
6.2	**Instruction handbook**		P
6.2.1	**Truck/attachments**		P

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Clause	Requirement	Remarks - Results	Verdict
	The instruction handbook(s) shall include, as applicable, at least the following information: a) name and address of the manufacturer or authorized representative; b) designation of type, e.g. counterbalanced, side-loading truck; c) description of the truck and accessories; d) attachments supplied with the truck and their assembly precautions; e) details of use of a removable load backrest extension; f) details for the installation of a fire extinguisher, if required by the application of the truck; g) admissible wheel rims and tyres with inflation pressures for pneumatic tyres; h) description of safety devices and warning labels. Instructions on truck/attachments are subject to regional requirements, additional to the requirements of this part of ISO 3691. See ISO/TS 3691-7:2011.	Relevant information is mentioned in the user manual.	P
6.2.2	**Operation of truck**		P
	The instruction handbook(s) shall include, as applicable, at least the following information: a) intended uses of the truck and attachments, and examples of hazardous misuse; b) training requirements for the operator; c) function of operating controls and displays; d) pre-shift checks before the truck is put into operation; e) instructions for adjustment of the operator's seat; f) instructions for operation with/without cab, with/without doors; g) instructions for access and egress;	Relevant information is mentioned in the user manual.	P

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Clause	Requirement	Remarks - Results	Verdict
	h) instructions for safe handling by the operator, e.g. when changing attachments or moving fork arms; i) requirements of the ground/floor where the truck is to be used; j) instructions for starting, driving and stopping the truck; k) instructions for handling loads, warning about the hazards due to the action of wind forces; l) instructions when operating on a gradient; m) instructions for towing the truck; n) instructions for parking the truck; o) warning of risks during the use of the truck and its attachments, including crushing and shearing hazards; p) climatic conditions in which the truck is designed to operate; q) information about the direction of turning of the truck in relation to rotation of the steering wheel for end-controlled trucks; r) information about operating the truck with loads causing insufficient visibility; s) information on the use of any visual aid that may be provided; t) information and conditions for the use of the drawbar; u) instructions when operating a rear touch device; v) information or instructions on action to be taken in the event of a malfunction; w) information for operation of the truck by a remote control device, e.g. visibility; x) the normal operating conditions as defined by the manufacturer, i.e. those for which the truck has been designed and the manner in which the truck will be used; y) instructions on the use of the operator-restraint device, system or enclosure, and guidance on the operator's behaviour in the event of a tip-over; z) information about lighting of the working area; aa) the procedure for movement of inoperative trucks; bb) instructions against operating truck with guarding removed; cc) lift height for travelling; dd) crushing and shearing hazards for the operator of pedestrian-controlled trucks featuring foldable platforms and reach trucks, between parts of the environment and the truck during travelling forward; ee) instructions to the operator of a stand-on end-control truck to step off and away from the truck in the event of a tip-over or off-dock accident; ff) information and instructions for using attachments, e.g. load bearing clamp. Instructions on the operation of the truck are subject to regional requirements, additional to the requirements of this part of ISO 3691. See ISO/TS 3691-7:2011.	Relevant information is mentioned in the user manual.	P
6.2.3	**Details for battery-powered trucks**		N/A

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Clause	Requirement	Remarks - Results	Verdict
	The instruction handbook(s) shall include, as applicable, at least the following information: a) specification of approved batteries and on-board battery chargers; b) procedure for safe handling of batteries, including installation, removal and secure mounting on the truck; c) warning of risks of accumulation of hydrogen under covers; d) battery charging procedures and instructions; e) service mass of battery and ballast when required.	Diesel engine powered machine.	N/A
6.2.4	**Details for internal-combustion-engine powered trucks**		P
	The instruction handbook(s) shall include at least the following information: a) approved fuels; b) procedure for safe handling of fuels; c) procedure for refuelling; d) warning of the effect of exhaust emissions in confined spaces; e) warning of the effect of exhaust emissions for the operator.	Relevant information is mentioned in the user manual.	P
6.2.5	**Service and maintenance**		P
	The instruction handbook(s) shall include, as applicable, at least the following information: a) training and qualifications needed for service and maintenance staff; b) safe procedure for the identification, detection and correction of faults; c) instructions for changing tyres or wheels; d) instructions for verification that markings, e.g. decals, are in place and legible; e) instructions for de-energizing of stored energy components; f) access to maintenance while working at height; g) servicing operations for which no specific skills are required; h) use of approved spare parts; i) drawings and diagrams necessary for truck service and maintenance; j) instructions for disposing of waste material (e.g. oils and battery); k) type and frequency of inspections and maintenance operations, with particular attention to the replacement and durability of wear and serviceable parts, emissions, and to the user's logbook (e.g. filter, brakes, chains,	Relevant information is mentioned in the user manual.	P

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Clause	Requirement	Remarks - Results	Verdict
	hydraulic hoses); l) instructions for removing and reattaching guarding; m) instructions for regular verification of seat belt related to 1) cut or frayed straps, 2) worn or damaged hardware, including anchor points, 3) buckle or retractor malfunction, 4) loose stitching.		
6.2.6	**Transportation, commissioning and storage**		P
	The instruction handbook(s) shall include, as applicable, at least the following information: a) mass and overall dimensions of the truck and dismantled parts for transport, commissioning and storage; b) procedures for transporting, including loading and unloading; c) procedure for truck reassembly and mounting of attachments; d) functional tests on completion of commissioning; e) procedure for movement of inoperative trucks; f) procedure for prolonged shut down and storage of trucks. Transportation, commissioning and storage are subject to regional requirements, additional to the requirements of this part of ISO 3691. See ISO/TS 3691-7.	Relevant information is mentioned in the user manual.	P
6.2.7	**Truck modification**		P
6.2.7.1	Unauthorized truck modification is not permitted. The text of 6.2.7.3 shall be included in the instruction handbook and the workshop handbook.	Relevant information is mentioned in the user manual.	P
6.2.7.2	Except where provided in 6.2.7.3, no modifications or alterations to a powered industrial truck, which could affect, for example, capacity, stability or safety requirements of the truck, shall be made without the prior written approval of the original truck manufacturer, its authorized representative, or a successor thereof. This includes changes affecting, for example, braking, steering, visibility and the addition of removable attachments. When the manufacturer or his successor approves a modification or alteration, the manufacturer or successor shall also make and approve appropriate changes to the capacity plate, decals, tags and operation and maintenance handbooks.	Relevant information is mentioned in the user manual.	P
6.2.7.3	Only in the event that the truck manufacturer is no longer in business and there is no successor in the interest to the business, may the user arrange for a modification or alteration to a powered industrial truck, provided, however, that the user a) arranges for the modification or alteration to be designed, tested and implemented by an engineer(s) expert in industrial trucks and their safety,	Relevant information is mentioned in the user manual.	P

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Clause	Requirement	Remarks - Results	Verdict
	b) maintains a permanent record of the design, test(s) and implementation of the modification or alteration, c) approves and makes appropriate changes to the capacity plate(s), decals, tags and instruction handbook, and d) affixes a permanent and readily visible label to the truck stating the manner in which the truck has been modified or altered, together with the date of the modification or alteration and the name and address of the organization that accomplished those tasks.		
6.3	**Marking**		P
6.3.1	**Information plates**		P
6.3.1.1	**Trucks**		P
	Trucks shall be marked legibly and indelibly (e.g. weather-proofed, profiled letters) with at least the following details: a) name and address of the manufacturer or his authorized representative; b) designation of series or type and compliance with the requirements of this part of ISO 3691; c) serial number and year of manufacture; d) unladen mass of the truck in working order and without removable attachments, and without battery in the case of battery-powered trucks, but with fork arms or integral attachments, the actual mass being permitted to vary from the stated mass by up to 5 % or 1 000 kg, whichever is the lower of the two; e) actual capacity at maximum lift height with load centre distance; where a secondary lift is fitted to a truck, the capacity at maximum lift shall be determined with the secondary mast fully elevated; f) actual capacities at other lift heights and load centre distances, if applicable; g) actual capacity with each removable attachment fitted at the manufacturer's authorized lift height(s) and load centre(s), these actual capacities being easily readable by the operator in the normal operating position; h) on battery-powered trucks, the authorized maximum and minimum battery mass and the system voltage; i) if fitted, the maximum supporting force on the towing point connection, in newtons; j) if fitted, the drawbar pull on the towing point connection, in newtons; k) the nominal power in kilowatts, e.g. marked on the engine or electric motor. Marking requirements are subject to regional	Relevant information is marked.	P

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Clause	Requirement	Remarks - Results	Verdict
	requirements, additional to the requirements of this part of ISO 3691. See ISO/TS 3691-7:2011 and ISO/TS 3691-8.		
6.3.1.2	**Removable attachments**		N/A
	Removable attachments shall be marked legibly and indelibly (e.g. weather-proofed, profiled letters) with at least the following details: a) name and address of the attachment manufacturer or his authorized representative; b) model or type; c) serial number and year of manufacture; d) mass of attachment, which may vary from the stated figure by up to 5 % or 200 kg, whichever is the lower of the two; e) distance of the centre of gravity of the attachment from its mounting face on the truck; f) rated capacity; g) in the case of hydraulically or pneumatically operated attachments, the maximum operating pressure recommended by the attachment manufacturer; h) load centre, if applicable; i) lost load centre distance; j) the instruction "The capacity of the truck and attachment combination shall be complied with".	None.	N/A
6.3.1.3	**Tractors**		N/A
	Tractors shall be marked legibly and indelibly (e.g. weather-proofed, profiled letters) with at least the following details: a) name and address of the manufacturer or the authorized representative; b) designation of series or type; c) unladen mass of the tractor in working order without battery for battery-powered tractors; the mass may vary from the figure shown by up to 5 % or 1 000 kg, whichever is the lower; d) serial number and year of manufacture; e) on battery-powered tractors, the authorized minimum and maximum battery mass and the system of voltage; f) the nominal power in kilowatts, e.g. marked on the engine or electric motor; g) the maximum supporting force on the tow-hook, in newtons; h) the drawbar pull, in newtons, and the period of time during which this pull can be exerted.	Not a tractor.	N/A

EN ISO 3691-1:2015

Clause	Requirement	Remarks - Results	Verdict
6.3.1.4	**Marking of controls**		P
	Controls shall be legibly and indelibly marked (e.g. weather-proofed, profiled letters) with graphic symbols indicating the function(s), except where these are obvious, e.g. accelerator pedal. Each symbol shall be affixed on, or in close proximity to, the control to which it applies. Control symbols shall comply with ISO 3287, for existing symbols.	OK.	P
6.3.2	**Information plate for trucks operating in special conditions**		P
	If a truck is designed to operate in special conditions (see 4.1.1. and 4.8.2), the manufacturer shall provide, where appropriate, and in addition to the information provided in the instruction handbook, an information plate on the truck identifying those special conditions of use, including capacity if different from the capacity during normal operation (see 4.1.2).	OK.	P
6.3.3	**Other information**		P
6.3.3.1	**Marking for slinging of trucks**		P
	Locations for slinging shall be clearly indicated on the truck or shall be declared in the instruction handbook (see 6.2).	Relevant marks are adhered and information provided in the user manual.	P
6.3.3.2	**Pneumatic tyre inflation pressure**		P
	The specified inflation pressures shall be clearly indicated on the truck.	The relevant of the tyres are described on the machine.	P
6.3.3.3	**Filling points**		P
	Filling points for fuel and hydraulic fluid shall be clearly indicated on the truck in accordance with ISO 3287.	Relevant marks are adhered and information provided in the user manual.	P
6.3.3.4	**Warning signs**		P
	Symbols giving warnings of remaining hazards shall be affixed to the truck and attachments on, or in close proximity to, the hazard concerned. On stored energy devices (see 4.1.6), a warning label and the method for removing any stored energy shall be affixed to that component and noted in the service handbook. Warnings shall be in accordance with ISO 15870.	Relevant marks are adhered and information provided in the user manual.	P
6.3.4	**Languages**		P
	If any of the information in 6.3.1 to 6.3.3 is in words, it shall be written in the language(s) of the country in which the truck is to be used, in accordance with national law. In other cases, the instructions shall be in a language agreed between the truck supplier and purchaser.	English marks are provided and relevant declaration is provided to translate the information to the language of the country where the truck is to be used.	P
6.3.5	**Operator restraint**		P

EN ISO 3691-1:2015

Clause	Requirement	Remarks - Results	Verdict
	Information or symbols giving instructions for the use of the operator restraint system or enclosure shall be easily readable by the operator in the normal operating position.	Relevant marks are adhered and information provided in the user manual.	P
Annex A (normative)	**Determination of driving direction and rated capacity**	Considered.	P
Annex B (informative)	**List of significant hazards**	Considered.	P
Annex ZA (informative)	**Relationship between this international standard and the Essential Requirements of EU Directive 2006/42/EC**	Considered.	P

EN 16307-1:2013+A1:2015

Clause	Requirement	Remarks - Results	Verdict
4	**Safety requirements**		P
4.1	**General**		
	The following applies to the self-propelled industrial trucks, other than driverless trucks, variable-reach trucks and burden-carrier trucks, dealt with in EN ISO 3691-1. These are additional to the requirements of EN ISO 3691-1 and, in certain instances, replace them.	Considered.	P
4.2	**Electrical requirements**		P
	Electrical systems and equipment shall be in accordance with the relevant part(s) of EN 1175.	See test report EN 1175-2.	P
4.3	**Travel speed**		N/A
	The requirements of EN ISO 3691-1:2012, 4.2.3 shall apply, except the reference to ISO/TS 3691-8, with the following addition: The travel speed of variable-speed pedestrian-controlled trucks operating on level ground shall not exceed 6 km/h. The maximum speed on level ground of stand-on trucks and pedestrian-controlled trucks fitted with a foldable platform when the operator is on the platform shall not exceed 16 km/h.	Sit on truck.	N/A
4.4	**Brakes**		P
	The requirements of EN ISO 3691-1:2012, 4.3.1 shall apply, except the reference to ISO/TS 3691-8, with the following addition: The parking and service brakes of trucks that can travel with an elevated operator position and/or elevated load above 500 mm, and up to and including 1 200 mm, are subject to the following requirements: - for travel speeds up to and including 9 km/h, parking brakes shall be in accordance with ISO 6292:2008, 6.1.2 a), and service brakes shall comply with the specifications of ISO 6292:2008, Table 2, Group C; - for travel speeds above 9 km/h, parking brakes shall be in accordance with ISO 6292:2008, 6.1.2 b) and service brakes shall comply with the specifications of ISO 6292:2008, Table 2, Group A1.	Refer to attached table 1. No elevated operator position. Not allowed to travel with elevated load (300mm).	P
4.5	**Additional operation of pedestrian controlled and stand-on truck whiles walking along the truck**		N/A
	The requirements of EN ISO 3691-1:2012, 4.4.2.7 shall apply, except the reference to ISO/TS 3691-8, with the following addition: Low-lift order-picking trucks provided with a system that allows operating while walking alongside the truck are subject to the following requirements:	None.	N/A

EN 16307-1:2013+A1:2015

Clause	Requirement	Remarks - Results	Verdict
	- activation of the travel control device from outside of the truck shall only be possible when the truck is stationary; - the travel control shall be a hold-to-run control and the speed shall not exceed 4 km/h while operating the travel control from outside of the truck; - the braking function shall be automatically applied when travel control device is released.		
4.6	**Lift chains**		P
	The requirements of EN ISO 3691-1:2012, 4.6.1 shall apply, except the reference to ISO/TS 3691-8, with the following addition: The minimum safety factor, K1, of the lifting mechanism shall be as follows:	Chain used. Dead weight of the lifting mechanism carried by the chains: 356kg. Max. load of the truck: 3500kg Number of chains: 2 Min. breaking load for one chain: 129.0kN K1=129000x2/(3856x9.8)= 6.8>5 Pitch of chain: 25.4mm Pulley diameter: Φ 110mm (>25.4X3).	P
	— for trucks ⩽ 10 000 kg rated capacity: $K_1 \geqslant 5$ — for trucks > 10 000 kg rated capacity: $K_1 \geqslant 5 - 0{,}2(Q' - 10)$, but not less than 4 where Q' is the rated capacity of the truck, in tonnes.		P
4.7	**Mast tilt and carriage isolation**		P
	The requirements of EN ISO 3691-1:2012, 4.6.3.5 shall apply, with the following addition: For ride-on trucks, the movement of powered attachments shall not be possible through operation of the control when the operator is not in the normal operating position.	Electromagnetic valves are installed in the hydraulic system which is actuated by seat switch. When the operator leaves the seat, all the movement cannot take place through the primary control, including lifting, lowering, tilting and traveling.	P
4.8	**Operator's seat**		P
	The requirements of EN ISO 3691-1:2012, 4.7.4 shall apply with the following addition: The operator's seat shall be specified and marked in accordance with EN 13490.	OK.	P

EN 16307-1:2013+A1:2015

Clause	Requirement	Remarks - Results	Verdict
4.9	**Protection against crushing, shearing and trapping**	See below.	P
4.9.1	**General**		P
	The requirements of EN ISO 3691-1:2012, 4.7.7.1 shall apply with the following addition: Where fixed and/or removable guard systems are needed, the requirements of EN 953 shall be met. When a fixed guard is removed, its fixing system shall remain on the guard or truck. This requirement applies to any fixed guards that are liable to be removed by the user with a risk of loss of the fixings, e.g. fixed guards that are liable to be removed during routine maintenance or setting operations carried out at the place of use.	Engine compartment cover complies with the requirement. Fixing system remains on the guard.	P
4.9.2	**Pedestrian and stand-on end-controlled trucks with mast**		N/A
	The mast shall be guarded at the side facing the operating controls, e.g. by a transparent cover. The guard shall, as a minimum, cover the whole width of the hazardous zone and the full length of the non-elevated mast, or up to 2,2 m from the ground, whichever is less.	Sit on truck.	N/A
4.10	**Load control**		P
	NOTE Taking into account the state of the art, it is not possible to meet the objectives for load control and load moment indicators.	Considered.	P
4.11	**Lateral stability**		P
	The requirements of EN ISO 3691-1:2012, 4.8.1 shall apply. In addition, counterbalanced lift trucks that have a centre control, sit down, non-elevating operator, with a rated capacity up to and including 5 000 kg shall comply with EN 16203:2014.	Rough terrain forklift truck Both machines are out of the scope of EN 16203 But lateral stability is considered in EN ISO 3691-1	P
4.12	**Visibility**		P
	The requirements of EN ISO 3691-1:2012, 4.10.1 shall apply with the following modifications: Replace the requirement given in ISO 13564-1:2012, 9.2.2 a) 1) with the following: forward direction 25 % of the vertical surface of the test body rearward direction 20 % of the vertical surface of the test body Replace the minimum illuminated area of the test surface required by ISO 13564-1:2012, Table 3, Test No.1, with the following:	Considered and tested.	P

EN 16307-1:2013+A1:2015

Clause	Requirement	Remarks - Results	Verdict
	25 % of the vertical surface of the test body ISO 13564-1:2012 will be replaced by a European visibility standard which is under development based on ISO 13564-1:2012		
4.13	**Reduction of noise by design**		P
4.13.1	**General**		P
	Industrial trucks shall be designed and constructed such that risks resulting from the emission of airborne noise are reduced according to the state of the art. When noise is a significant hazard, there is need for a low-noise design. In this case, the methodology for low-noise design given in EN ISO 11688-1 shall be considered. NOTE EN ISO 11688-2 gives useful information on noise-generation mechanisms in machinery. Normally, noise is not a significant hazard for battery-powered trucks.	Considered.	P
4.13.2	**Main source of noise**		P
	On industrial trucks, the main sources of noise are components, such as the following, in a high-speed operation mode: - combustion engines, including air intake, cooling fan and exhaust system; - hydraulic pumps/motors.	Muffler is installed on the machine.	P
4.13.3	**Measures to reduce noise at the operator's position**		P
	Typical measures to reduce noise include the following: - selection of low-noise components; - use of elastic mountings that prevent the transmission of structure-borne noise from the components to the structures; - the use of improved noise insulation in the cabin, if fitted. These and other measures of identical or better efficiency may be used.	Considered	P
4.13.4	**Determination of noise emission values**		P

EN 16307-1:2013+A1:2015

Clause	Requirement	Remarks - Results	Verdict
	The values of noise emissions shall be measured using the test method given in EN 12053.	Test according to EN 12053 performed and relevant information provided in the user manual. Sound power level: CPCD35-XW43E-RT: 101.8 dB(A) Sound pressure level: CPCD35-XW43E-RT: 87.5 dB(A)	P
4.14	**Vibration**		P
	Whole body vibration shall be measured using the test method given in EN 13059.	Test according to EN 13059 performed and relevant information provided in the user manual. Arm: CPCD35-XW43E-RT: 1.337 m/s^2 Whole body: CPCD35-XW43E-RT: 0.9568 m/s^2	P
4.15	**Electromagnetic compatibility (EMC)**		N/A
	The truck's EMC shall comply with EN 12895.	Covered by EMC directive.	N/A
4.16	**Operation in potentially explosive atmospheres**		N/A
	Trucks operating in potentially explosive atmospheres shall comply with EN 1755.	Not intended to be used in the potentially explosive atmospheres.	N/A
5	**Verification of safety requirements and/or protective measures**		P
	The requirements specified in Clause 4 shall be verified in accordance with the referenced standard and the principles defined in EN ISO 3691-1:2012, Clause 5.	Refer to test report of EN ISO 3691-1:2015 clause 5.	P
6	**Information for use**		P
6.1	**Instruction handbook(s)**		P
6.1.1	**Truck/attachments**		P

EN 16307-1:2013+A1:2015

Clause	Requirement	Remarks - Results	Verdict
	The requirements of EN ISO 3691-1:2012, 6.2.1 shall apply with the following addition: The instruction handbook(s) shall include, as applicable, the following: - information on stability; - the noise value in accordance with EN 12053; - the vibration value in accordance with EN 13059; - the static test coefficient used for the lifting accessory.	Relevant information is provided on the user manual.	P
6.1.2	**Operation of the truck**		P
	The requirements of EN ISO 3691-1:2012, 6.2.2 shall apply with the following addition: In addition, the instruction handbook(s) shall include, as applicable, the following: - information about specific protective devices (e.g. protective screen) and their use.	Relevant information is provided on the user manual.	P
6.1.3	**Transportation, commissioning and storage**		P
	The requirements of EN ISO 3691-1:2012, 6.2.6 shall apply with the following addition: Further to EN ISO 3691-1:2012, 6.2.6 c), the instruction handbook(s) shall include, as applicable, the procedure for truck mounting.	Relevant information is provided on the user manual.	P
6.2	**Marking**		P
6.2.1	**Information plates**		P
	The requirements of EN ISO 3691-1:2012, 6.3.1 shall apply, except the reference to ISO/TS 3691-8, with the following modification: Replace EN ISO 3691-1:2012, 6.3.1.1 b) with the following: - designation of the machinery and the mandatory marking	Relevant information is provided on the name plate.	P
Annex A (informative)	**List of significant hazards**	Considered.	P

End of Test Report 50041065 001 Part II of III

Prüfbericht-Nr.: *Test Report No.:*	**50041065 001 Part III of III**	**Auftrags-Nr.:** *Order No.:*	154149891	Seite 1 von 5 *Page 1 of 5*
Kunden-Referenz-Nr.: *Client Reference No.:*	N/A	**Auftragsdatum:** *Order date:*	19.02.2016	
Auftraggeber: *Client:*	Liftsmart			
Prüfgegenstand: *Test item:*	Rough Terrain Forklift Truck			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	LS-RT30, LS-RT35			
Auftrags-Inhalt: *Order content:*	Type Test			
Prüfgrundlage: *Test specification:*	EN 1175-2:1998+A1:2010			

Wareneingangsdatum: *Date of receipt:*	30.03.2016
Prüfmuster-Nr.: *Test sample No.:*	L7AF00002, L7AF00004
Prüfzeitraum: *Testing period:*	30.03.2016 - 30.03.2016
Ort der Prüfung: *Place of testing:*	As client
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shanghai) Co., Ltd
Prüfergebnis*: *Test result*:*	Pass

geprüft von / *tested by*:

2016.04.27 / PE

Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

kontrolliert von / *reviewed by*:

27.04.2016 Jinbiao Zhang / Reviewer

27.04.2016 Qing Shao / TC

Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

Sonstiges / *Other*:
This report is only valid in its full version: Part I of III, Part II of III and Part III of III.

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Clause	Requirement	Remarks - Results	Verdict
5	**General requirements**		P
5.1	**Starter battery**		P
5.1.1	**Insulation**		P
	Any live parts of the battery not connected to the frame shall be insulated.	Well insulated.	P
5.1.2	**Constraining**		P
	Batteries of all trucks shall be constrained to prevent displacement which may give rise to danger.	Start batteries are fixed by bolt. Cannot move.	P
5.1.3	**Disconnection**		P
	Trucks shall be so designed and constructed that the battery can be electrically disconnected with the aid of an easily accessible device e.g. a switch or connector. Disconnectable battery terminals satisfy this requirement providing the terminals are accessible without the use of a key or tool.	Switch provided to disconnect the battery, and can be accessible without the use of key or tool.	P
5.2	**Protection of circuits**		P
	Control and auxiliary circuits shall be fuse protected against short circuit conditions and dangerous excess current. Several auxiliary circuits in parallel, with combined rated current not exceeding 12 A, may be protected by a single device.	Fulfill the requirement.	P
5.3	**Safety related control systems**		P
5.3.1	**Low voltage**		P
	Electrical control systems shall be so designed that all functions operate and safety is not jeopardized if the voltage should fall below the nominal battery voltage by as much as 15%. NOTE Where a system is required to function during engine starting condition, special precautions can be required.	Electrical control system is not jeopardized if the voltage falls below the nominal battery voltage.	P
5.3.2	**Frame faults**		P
	The electric circuits shall be so designed or protected, that frame faults shall not cause inadvertent movements that cannot be controlled by the driver.	OK.	P
5.3.3	**Load handling control**		N/A
	Electrical and electronic control load handling systems shall be arranged so that in case of a fault the load handling movement can be stopped. The safety related parts shall be in accordance with category 1 in EN ISO 13849-1:2008, 6.2. This requirement is not necessary where the movements are controlled by some other means, e.g. direct manually operated hydraulic valves.	Load handling is controlled by hydraulic system.	N/A
5.3.4	**Speed limitation**		N/A

Clause	Requirement	Remarks - Results	Verdict
	For limiting or reducing the speed of a function on trucks designed to travel with an elevated operator and/or load for stability reasons the following shall apply. a) The electrical and electronic circuits shall be so designed and fitted that in the event of electrical faults, the speed limitation is preserved or the motion shall be brought to a controlled stop. Restarting shall not be possible until the circuit has been restored. Where it is not possible to satisfy the above requirements by a simple electrical or electronic circuit, the electrical or electronic circuits may be duplicated. Facilities shall be provided to check the correct functioning at service intervals in accordance with the manufacturer's instructions. The safety related parts shall be in accordance with category 2 in EN ISO 13849-1:2008, 6.2. b) Mechanically operated switches may be of a positive action type in accordance with EN 60947-5-1:1991 such that they disconnect the circuit. Other switches can be used providing the system meets the safety requirements in a) (above).	Speed limitation (braking system) is controlled by hydraulic system.	N/A
5.3.5	**Steering control**		N/A
	Electrical and electronic steering control systems shall be arranged so as to avoid operation of the steering system unrelated to the manual input during travel. Any electrical or electronic fault capable of producing the above condition shall be detected and the steering assistance de-energized within 0.1s. Where the power steering system is fully dependent on the electrical power source, the truck shall also be brought to a controlled stop automatically. It shall be possible to check the operation of the safety circuit of this system at service intervals in accordance with the manufacturer's instructions. The safety related parts shall be in accordance with category 3 in EN ISO 13849-1:2008, 6.2.	Steering is controlled by hydraulic system.	N/A
5.3.6	**Parameter**		P
	Any uncontrolled change of the electronic system parameter shall maintain the safe operation and correct function of the truck. Any change of parameter values controlled by the operator shall not result in a hazardous situation. The system shall ensure safe operation and correct function of the truck.	The electronic control system is provided by the engine manufacturer. It cannot be changed by the operator.	P
5.4	**Wiring practices, conductors and electrical components**		P
	One pole of the electrical system may be connected to the truck frame.	Truck frame are connected.	P

Clause	Requirement	Remarks - Results	Verdict
5.4.1	**Protection**		P
	All conductors not connected to the truck frame shall be either effectively insulated and where necessary protected against thermal and mechanical damage or shall be so placed and safeguarded as to avoid danger when the truck is in its normal operating condition.	All conductors which are not connected to the truck frame have the enough distance with the hot and movable components.	P
5.4.2	**Cross-sectional area**		P
	The cross-sectional area of conductors shall be so selected that during operation of the truck the temperature does not exceed the temperature rating of insulation used.	Cross-sectional area fulfills the requirements.	P
5.4.3	**Specification**		N/A
	Copper conductors external to enclosures (excluding short connections between electric or electronic components and wires that are an integral part of a proprietary component) shall be:	All conductors are within the enclosures of the lifting truck.	N/A
	a) flexible		N/A
	b) cross-sectional area not less than:		N/A
	1) for control wiring 0.50mm²		N/A
	2) for signal wiring 0.30mm²		N/A
	3) for data communication wiring and for conductors of adequately supported copper multicore cables and wiring harnesses 0.08mm²		N/A
	c) of cross –sectional area not less than 1.00 mm² for single wires not incorporated into a harness or extending from the harness more than 250 mm.		N/A
	Conductors of other materials shall be selected and sized to give equivalent performance.		N/A
5.4.4	**Fuel leakage**		P
	Wiring and electrical components shall be designed, placed or protected to minimize hazards arising from leakage from the fuel system, such as contamination and fire.	Wiring and electrical components are far away from the fuel system.	P
5.4.5	**Mechanical protection**		P
	Where wiring passes through metal parts of the frame or enclosures, the holes shall be fitted with insulating bushes or the wiring protected by some other equivalent means.	Fulfill the requirements.	P
5.4.6	**Wiring that flexes**		N/A
	Wiring that flexes during normal operation of the truck functions shall be relieved of mechanical strain at their electrical termination.	No such risk.	N/A
5.4.7	**Identification**		P
	Wires, cables, terminals etc. shall be identified by codings in accordance with the electrical diagram included in the service manual.	Wires, cables, terminals etc. are identified by coding.	P

EN 1175-2:1998+A1:2010

Clause	Requirement	Remarks - Results	Verdict
5.5	**Protection against electric shock**		P
	Exposed high tension ignition terminals on trucks shall be protected against direct contact by barriers or insulated caps.	Diesel engine used.	P
5.6	**Electromagnetic radiations**		N/A
5.6.1	**Non ionising radiations**		N/A
	Where trucks are fitted with functional related non-ionizing radiation devices (e.g. radio transmitter, RFID reader, data collection system), the radiation shall be minimized with consideration to influence to persons, in particular with active or non-active implantable medical devices.	No non-ionising radiation.	N/A
5.6.2	**Electromagnetic compatibility**		N/A
	Any functional electromagnetic emission and the immunity of the electric/electronic systems shall be within the limits of EN 12895:2000.	Covered by application of EMC directive. Declaration of conformity with EMC Directive available.	N/A
6	**Information for use**		P
	Note The main information for use is detailed in the truck standards as listed in the foreword. The following are additional requirements.	Provided in the manual.	P
6.1	**Electrical diagram**		P
	An electrical diagram (which shall include nominal battery voltage and where applicable, frame polarity shall be included in the service manual. Connection points for auxiliary lighting shall be indicated.	Provided in the manual.	P
6.2	**Safety checks**		P
	Methods and intervals for checking safety systems shall be included in the service manual or instruction handbook.	Provided in the manual.	P
6.3	**Non ionising radiation**		N/A
	If the truck, after the commissioning, can be equipped with devices (e.g. radio transmitter, RFID reader, data collection system) that are likely to emit non-ionizing radiation which can cause harm to persons, in particular persons with active or non-active implantable medical devices, a warning shall be given in the instruction manual. If those auxiliary devices are installed by the user, the user itself shall ensure that the supplier instructions are fulfilled and/or no harm for the persons has risen. Where trucks are fitted with non-ionizing radiation devices warning signs shall be installed.	No non-ionising radiation.	N/A

End of Test Report 50041065 001 Part III of III