Produkte
Products

TÜVRheinland®

Prüfbericht-Nr.: *Test Report No.:*	**17707462 001**	**Auftrags-Nr.:** *Order No.:*	1150012174	Seite 1 von 18 *Page 1 of 18*
Kunden-Referenz-Nr.: *Client Reference No.:*	407431	**Auftragsdatum:** *Order date:*	21.09.2016	
Auftraggeber: *Client:*	Baoding Huaxin Crane Machinery Co., Ltd. Donglv Development Zone, Qingyuan County, Baoding 071100, P.R. China			
Prüfgegenstand: *Test item:*	Hand chain block			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	HS-C1T, HS-C2T, HS-C3T, HS-C5T			
Auftrags-Inhalt: *Order content:*	CE			
Prüfgrundlage: *Test specification:*	EN 13157:2004+A1			

Wareneingangsdatum: *Date of receipt:*	21.11.2016
Prüfmuster-Nr.: *Test sample No.:*	1150012174A01-A08
Prüfzeitraum: *Testing period:*	21.11.2016 - 25.11.2016
Ort der Prüfung: *Place of testing:*	see page 2
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland / CCIC (Qingdao) Co., Ltd.
Prüfergebnis*: *Test result*:*	Pass

Detaillierte Fotodokumentation
Seite 3 und / oder Anlage zu diesem Bericht

Detailed photo documentation
page 3 and / or appendix to this report

geprüft von / *tested by*:

Datum *Date*	Name / Stellung *Name / Position*	Unterschrift *Signature*
2017-02-27	Weiwei Mu / PE	Weiwei Mu

kontrolliert von / *reviewed by*:

Datum *Date*	Name / Stellung *Name / Position*	Unterschrift *Signature*
2017.02.28	Ricky Hao / TC	Ricky Hao

Sonstiges / *Other*:
The product, which conforms to the harmonized standard EN 13157, is in compliance with the essential health and safety requirements of the Machinery Directive 2006/42/EC – Annex I.
Attachment 1: Test result.

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*

Prüfbericht-Nr.: 17707462 001
Test Report No.:

Liste der verwendeten Prüfmittel
List of used test equipment

Prüfmittel *Test equipment*	**Prüfmittel-Nr. / ID-Nr.** *Equipment No. / ID-No.*	**Nächste Kalibrierung** *Next calibration*
Tensile test machine	WE-1000	06.05.2017
Weights	0.75-20t	06.05.2017
Force gauge	LTZ-100	06.05.2017
Tape Ruler	0-5 m (TUV QD lab: N106)	09.10.2017
VernierCaliper	0-150mm 22735 (TUV QD lab: N069)	11.08.2017
Ort der Prüfung: Baoding Huaxin Crane Machinery Co., Ltd. *Place of testing:* Donglv Development Zone, Qingyuan County, Baoding 071100, P.R. China		

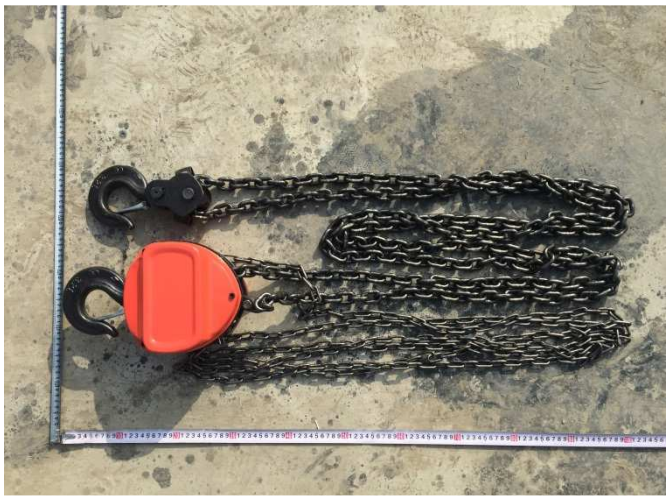
Produktbeschreibung
Product description

1	**Produktdetails** *Product details*	Hand chain block Type: HS-C1T, HS-C2T, HS-C3T, HS-C5T
2	**Maße / Gewicht** *Dimensions / Weight*	See user manual
3	**Bedienelemente** *Operating elements*	Device for lifting and lowering a load suspended from a lifting medium by means of human effort applied to hand chain.
4	**Ausstattung / Zubehör** *Equipment / Accessories*	N/A
5	**Verwendete Materialien** *Used materials*	Load chain: special chain steel
6	**Sonstiges** *Other*	N/A

HS-C1T

HS-C2T

HS-C3T



HS-C5T

Absatz *Clause*	**EN 13157:2004+A1** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
1	Scope This European Standard specifies requirements for the following hand powered lifting equipment defined in clause 3: - Hand chain blocks; - Lever hoists; - Jaw winches; - Hand powered trolleys supporting lifting machines; - Drum winches; - Pulley blocks and deflection pulley. The significant hazards covered by this European Standard are identified in clause 4. This European Standard does not cover hazards related to the lifting of persons. This standard does not specify the additional requirements for: - use in ambient temperature outside the range of -10 °C to +50 °C; - hand powered lifting equipment in direct contact with food stuffs or pharmaceuticals requiring a high level of cleanliness for hygiene reasons; - hazards resulting from handling specific hazardous materials (e.g. explosives, hot molten masses, radiating materials); - hazards caused by operation in an explosive atmosphere. This European Standard is applicable to hand powered lifting equipment, which are manufactured after the date of approval by CEN of this standard.	Informative.	P
2	Normative references	Informative.	P
3	Terms and definitions	Informative.	P
4	List of significant hazards	Informative.	P

Absatz *Clause*	**EN 13157:2004+A1** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
5	Safety requirements and/or measures The lifting equipment shall comply with the safety requirements and/or measures of this clause. In addition, the lifting equipment shall be designed according to the principles of EN ISO 12100 for hazards relevant but not significant which are not dealt with by this European Standard.	Pass.	P
5.1	Hand chain blocks	Pass.	P
5.1.1	Combined units The trolley of a combined trolley and hand chain block shall be in accordance with 5.4.	Hand chain block only.	N/A
5.1.2	Mechanical strength	Pass.	P
5.1.2.1	The mechanical strength shall be checked by an appropriate calculation method. Hand chain blocks shall have a coefficient of utilisation (safety coefficient) of at least 4:1.	Breakage test (BT) lean to Cl. 6.3.2.1. Static test (ST) lean to Cl. 6.3.2.2. Testing results refer to Attachment 1 for details.	P
5.1.2.2	Hand chain blocks shall be designed withstand 1 500 cycles with 110% of the rated capacity with no failure or replacement of parts, no resting time, except for lubrication, a lifting path of the load chain of at least 300 mm per cycle in order to get at least a complete revolution of the load chain wheel.	Endurance test (ET) lean to Cl. 6.3.3.3. Testing results refer to Attachment 1 for details.	P

Absatz *Clause*	**EN 13157:2004+A1** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
5.1.3	Braking Hand chain blocks shall have an automatic braking function during the lifting and lowering operation. The braking function shall be automatic when the operating force ceases, whether the motion is lifting or lowering. The braking device shall allow a regular descent under operator control whatever the position of the load. Brakes shall not contain asbestos.	 The brake is normal close type. The brake is open only in a short time for regular movement when the user operates the hand chain. Brake disk material is copper fiber resin which is free of asbestos. Static test (ST) lean to Cl. 6.3.2.2. Light load test (LLT) lean to Cl. 6.3.3.1. Dynamic test (DT) lean to Cl. 6.3.2.3. Function test (FT) lean to Cl. 6.3.2.4. Testing results refer to Attachment 1 for details.	P
5.1.4	Springs The fracture of a spring shall not lead to a failure of the safety elements except the springs used for load hook safety latches. This can be fulfilled by incorporation of a single guided pressure spring or by using several springs. Guided pressure springs shall have a distance between the coils of less than or equal to the wire diameter. When using several springs, in the case of the failure of one spring, the remaining spring(s) shall ensure that the retention is maintained.	 Two ratchet pawls is used with each a spring and a pin inside. In case of one spring (ratchet pawl) is damaged, the other can still hold the brake.	P

Absatz *Clause*	**EN 13157:2004+A1** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
5.1.5	Operating elements Hand chains shall be secured against unintentional disconnection from the hand chain wheel.	 Hand chain is protected by hand chain wheel guard. Hand chain and hand chain wheel keeps good condition after dynamic test (DT) lean to Cl. 6.3.2.3 and function test (FT) lean to Cl. 6.3.2.4. Testing results refer to Attachment 1 for details.	P
5.1.6	Operating effort To lift the rated capacity the operating effort of each operator shall not exceed 55 daN on the hand chain. To avoid overloading, the operating effort of each operator to lift the rated capacity shall be between the following values: a) rated capacity ≤ 1 000 kg: 20 daN up to 55 daN on the hand chain b) 1 000 kg < rated capacity < 5 000 kg: 40 daN up to 55 daN on the hand chain c) 5 000 kg ≤ rated capacity: 45 daN up to 55 daN on the hand chain If the operating effort is beneath 20 daN at rated capacity the hand chain block shall be equipped with an overload protection system, against overloading caused by excessive operating effort on the hand chain. The overload system shall be independent from the braking device and shall operate in a way that the lowering function is maintained and that the load remains under control. The triggering shall not lead to sudden release of the hand chain.	 Operating effort is in the range of: a) for HS-C1T: between 20 daN and 55 daN on the hand chain b) for HS-C2T and HS-C3T: between 40 daN and 55 daN on the hand chain c) for HS-C5T: between 45 daN and 55 daN on the hand chain No overload protection system. Testing results refer to Attachment 1 for details.	P

Absatz *Clause*	**EN 13157:2004+A1** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
5.1.7	Guarding - cover Accessible parts of the hand chain block shall have no sharp edges, no sharp angles, and no rough surfaces likely to cause injury. Gearing shall be guarded to prevent accidental ingress of parts of the body.	 No sharp edges, angles or rough surfaces which likely to cause injury on the presented samples. Gearings are guarded by steel cover.	P
5.1.8	Hooks Hooks shall be fitted with safety latches to prevent unintentional detachment. The top hook shall be capable of swivelling for correct positioning. Load hooks used as lifting medium, which are not manufactured in accordance with a recognised standard shall not show permanent deformation at a static load of 2-times the rated capacity. At a static load of 4-times the rated capacity, the hook shall be allowed to bend however the load shall remain held safely. This shall be ensured by selecting the appropriate materials and by the heat treatment. NOTE Standards for hooks are listed in annex A.	 Hook with a safety latch and the hook can swivel 360°. Breakage test (BT) lean to Cl. 6.3.2.1. No permanent deformation under 2-times the rated load. The load is still safely held under 4-times the rated load. Testing results refer to Attachment 1 for details.	P
5.1.9	Chain wheel A chain guide shall be provided to prevent hand chain and load chain from jumping off from the chain wheels. The selection criteria and the technical requirements shall be in accordance with EN 818-7. Load chain wheels shall be made in one piece.	 Hand chain is protected by hand chain wheel guard. Load chain is protected by guide rollers. Load chain wheel made in one piece.	P

Absatz *Clause*	**EN 13157:2004+A1** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
5.1.10	Link chain The coefficient of utilisation shall be at least 4 for welded load bearing calibrated link chains; Load chains shall be in accordance with EN 818-7, for fine tolerance short link chains (grade T). Hand chains shall have no sharpness around the welds. The connecting links of the hand chain shall resist without permanent deformation to a force at least equal to 120 daN.	 Load chains, EN 818-7 Grade T Type T. HS-C1T: 6 x 18, single strand (WLL1.15t) HS-C2T: 6 x 18, double strands (WLL 1.15t) HS-C3T: 8 x 24, double strands (WLL 2.05t) HS-C5T: 10 x 30, double strands (WLL 3.2t) Breakage test (BT) of the load chain is proved by testing together with the chain block lean to Cl. 6.3.2.1. Certificate of chain (Chenli) shows the mechanical characteristics. No sharpness around welds on the hand chain. Strength test of the hand chain with positive results much more over 120 daN. Testing results refer to Attachment 1 for details.	P

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5.1.11	Anchorage and end stop of the load chain Chain anchorage devices of the fixed end type shall withstand 4 times the static chain tensile force at rated capacity without rupture. The free end of the load chain shall be fitted with a chain end stop to prevent it from passing through completely. This end stop shall withstand without rupture 2,5 times the static chain tensile force at rated capacity.	 Chain anchorage of the fixed strand is a suspension pin. Breakage test (BT) lean to Cl. 6.3.2.1 shows the safety factor over 4. Free end of the load chain is fitted with a steel block preventing the disengagement of the load chain. End stop static test (ESST) lean to Cl. 6.3.3.2 showing the safety factor over 2.5. Testing results refer to Attachment 1 for details.	P
5.1.12	Temperature Hand chain blocks, and their components shall be capable of operating within the ambient temperature range of -10 °C to 50 °C unless other temperature ranges are agreed between manufacturer and purchaser.	 Commercial steels and brake material (copper fiber resin) were used, which is good during -10 °C to 50 °C. Working temperature range mentioned in the user manual.	P
5.1.13	Safety devices The braking system and the overload protection system shall only be able to be removed, modified, replaced, interfered or neutralised by the use of tools.	 Brake is inside. No overload protection system.	P
5.1.14	Handling, installation and fastening The requirement for safe transport of chain blocks is fulfilled: - If handles, hooks, or other means for slinging is provided or; - If the design of the chain blocks provides hand gripping points for manual handling.	 Upper hook or lower hook for transport.	P
5.2	Lever hoists	N/A.	N/A

Absatz *Clause*	**EN 13157:2004+A1** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
5.3	Jaw winches	N/A.	N/A
5.4	Hand powered trolleys supporting lifting machines	N/A.	N/A
5.5	Drum winches	N/A.	N/A
5.6	Pulley blocks and deflection pulleys	N/A.	N/A
6	Verification of the safety requirements and/or measures	Pass.	P
6.1	General Conformance to each safety requirement and/or measure in clauses 5 and 7 shall be verified in accordance with tables 7 to 12. These tables specify for each requirement the type of verification (see 6.2) and the verification methods (see 6.3) which shall be used.	Table 7 used for hand chain block.	P
6.2	Categories of verification	Pass.	P
6.2.1	Type verifications Verifications carried out on one or several representative samples of a product manufactured in series.	This test report is for type verification.	P
6.2.2	Individual verifications Verifications of each unit put on the market before despatch.	This test report is not for individual verification.	N/A
6.2.3	Sample verification for jaw winches Verifications by sampling on sample of a product manufactured in a series with a rated capacity less or equal to 300 kg (Minimum sampling 10% of each manufactured series).	This test report is not for sample verification.	N/A
6.3	Verification methods	Pass.	P
6.3.1	Check of calculation, examination and measurement	Pass.	P

Absatz *Clause*	**EN 13157:2004+A1** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
6.3.1.1	Calculation check (CC in Table 7 to 12) For lifting equipment produced in series or designed individually (manufactured as single unit) mechanical strength shall be verified by checking calculation documents.	CC: Calculation proofed by testing.	P
6.3.1.2	Measurement of characteristics (MC in Table 7 to 12) This method is used to determine characteristics/dimensions of components meet the requirements in clause 5.	MC: Refer to Cl. 5.1.5, 5.1.6 and 5.1.9	P
6.3.1.3	Visual examination (VE in Table 7 to 12) This method is used to verify whether something is present on the product (e.g. marking) or that certificate (e.g. chains, ropes, webbing), documents (e.g. instructions for use) or drawings are adequate to meet the requirement clauses 5 and 7.	VE: Refer to Cl. 5.1.1, 5.1.4, 5.1.7, 5.1.8, 5.1.9, 5.1.10, 5.1.13, 5.1.14, 7.1.1, 7.1.2 and 7.1.3	P
6.3.2	Testing	Pass.	P
6.3.2.1	Breakage test (BT in Tables 7 to 12) Lifting equipment that is mass produced with a rated capacity up to 5 t shall be subjected to a type test at the most unfavourable position of the lifting medium with a static load of 4 times the rated capacity. Lifting equipment that is mass produced with a rated capacity greater than 5 t or designed individually (manufactured as single unit) and that has a coefficient of utilisation that cannot be checked by the calculation shall be subjected to a type test with a load of 4 times the rated capacity. If, after 10 minutes, the lifting equipment is still holding the test load, the test result shall be considered satisfactory. NOTE Permanent deformations can appear.	BT: Refer to Cl. 5.1.1, 5.1.2, 5.1.8, 5.1.10 and 5.1.11.	P

Absatz *Clause*	**EN 13157:2004+A1** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
6.3.2.2	Static test (ST in Tables 7 to 12) Lifting equipment manufactured as single units that have not been subjected to a breakage test prior to first use, shall be subjected to a test consisting of suspending a load of: - 1,5 times the rated capacity for rated capacities less than 20 t and - 1,25 the rated capacity equal to or grater than 20 t for at least 10 minutes. The test shall be considered satisfactory if no crack, permanent deformation or damage that would adversely affect the function or safety of the lifting equipment is visible, and the connections have not become loose or damaged and if the braking device can hold the load without slipping and if it is possible to perform the dynamic test with the same lifting equipment after the static test.	ST: Refer to Cl. 5.1.2 and 5.1.3.	P
6.3.2.3	Dynamic test (DT in Tables 7 to 12) Lifting equipment shall be subjected to a dynamic operating test with 1,1 times the rated capacity. Tests shall be carried out for each lifting equipment movement under the most unfavourable conditions. The tests shall comprise repeated stopping and starting for each machine movement. The test shall be considered satisfactory if the lifting equipment has carried out all its functions, and that when examined after the test, there is no damage to the mechanisms or structural elements, and that the connections have not become loose or damaged.	DT: Refer to Cl. 5.1.1, 5.1.3 and 5.1.5.	P
6.3.2.4	Functional test (FT in Tables 7 to 12) Lifting equipment works at rated capacity as intended and all functions conform to the requirements and with the technical documentation.	FT: Refer to Cl. 5.1.3 and 5.1.5.	P
6.3.3	Additional tests for Chain blocks	Pass.	P

Absatz *Clause*	**EN 13157:2004+A1** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
6.3.3.1	Light load test (LLT in Table 7) Hand chain blocks shall be subjected to a type test with a test load of between 2% and 10 % of the rated capacity which shall be raised and lowered through a height of between 250 mm and 500 mm. When the hand chain is released at any point during raising and lowering, the brake shall hold the load.	LLT: Refer to Cl. 5.1.3.	P
6.3.3.2	End stop static test (ESST in Table 7) With the braking system deactivated and the end stop in contact with the housing the test load shall be held even if permanent deformation occurs.	ESST: Refer to Cl. 5.1.11.	P
6.3.3.3	Endurance test (ET in Table 7) Hand chain blocks that are mass-produced and have a rated capacity up to 5 t shall be submitted to the following type test. With 110 % of the rated capacity on the lower hook, operate the hand chain block for 1 500 cycles, over 300 mm lifting and lowering the load. The path of 300 mm guarantees that all internal parts (e.g. gears, load wheel etc.) operate underload. At no time during the test shall the test load be set on to the floor. An automatic counting system shall be used to count the number of lifting and lowering cycle.	ET: Refer to Cl. 5.1.2.	P

Absatz *Clause*	**EN 13157:2004+A1** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
(6.3.3.3)	The speed of the lifting and lowering operating cycle shall be no less than the speed of an operator working continuously for 1 minute. The test could be done with higher lifting and lowering speeds, depending on the drive unit which is used. The drive unit shall run continuously during the test except for lubricating the load chain, or to replace the load chain. No other parts shall be replaced, or reworked and at the end of the test they shall show no signs of failure. For multiple strand units (e.g. double, four, eight or more strand units), it is only necessary to test a single strand unit. If after the 1 500 cycles, the hand chain block is still holding the load of 150 % in a static test (see. 6.3.2.2) the test result shall be considered satisfactory.	See page before.	P
6.3.4	Additional tests for lever hoists	N/A.	N/A
6.3.5	Additional tests for jaw winches	N/A.	N/A
6.3.6	Additional tests for drum winches	N/A.	N/A
7	Information for use	Pass.	P
7.1	Information for use of chain blocks	Pass.	P

Absatz *Clause*	**EN 13157:2004+A1** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
7.1.1	Instructions for hand chain blocks The supplier shall provide information and advice as instructions for use in accordance with clause 6.5 of EN ISO 12100-2:2003, drafted in an EC language and accompanied by a translation into the language(s) of the country of use, specifying in particular: a) Intended use; b) Technical data; c) Operating instructions; d) The fastening, installation, transport and storage conditions; e) The table of loads as a function of the machine configurations and support conditions; f) Uses presenting particular hazards and information on foreseeable inappropriate uses, particularly in the case of jamming hazard from mobile elements; g) Maximum elevation of the fixing point; h) Ambient operating temperature between -10°C and +50°C; i) Risks of overheating of the braking system during prolonged lowering of loads; j) Forbidden use of equipment in a specific environment (explosive, corrosive, etc.); k) Maintenance instructions for each of the constituent elements of the equipment with regard to servicing, periodic maintenance, corrosion protection, repair and storage conditions when not in service. In particular, instructions to specify the frequency of overhauls, and elements whose deterioration would involve a risk to health and safety, particularly elements such as chains, brake linings and the criteria leading to replacement of these original items such as number of operations carried out and wear factor. In addition, chain characteristics and instructions for their replacement shall be specified in particular; l) If necessary, advice on the training of operators; m) If a rated capacity limiter is fitted (e.g. friction limiter), the maximal force which applies to the supporting structure when the rated capacity limiter operated; n) Instructions to adjust the bottom of the hand chain between 500 mm and 1 000 mm from the ground.	Pass. a) P. b) P. c) P. d) P. e) P. f) N/A. g) P. h) P. i) P. j) P. k) P. l) P. m) P. n) N/A.	P

Absatz *Clause*	**EN 13157:2004+A1** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
7.1.2	Information on periodic verification and testing of hand chain blocks The manufacturer shall indicate the intervals at which the tests and verifications he specifies (not including those imposed on users by national regulations) should be carried out, i.e.: a) prior to commissioning; b) after repair or reassembly or prolonged stoppage; c) during the period of use of the equipment. The manufacturer shall specify a list of original items requiring specific use and testing. The manufacturer shall advise the user to look out for any defects occurring during use.	Pass. a) P. b) P. c) P.	P
7.1.3	Marking of hand chain blocks All equipment shall have a permanent identification plate located in a clearly visible position, which gives the information shown below. a) the name and address of the manufacturer; b) the series or type designation; c) the serial number, if it exists; d) the rated capacity on the cover and on the bottom block; e) year of manufacture; f) the dimensions and quality of the load chains.	By permanent stick. a) P. b) P. c) P. d) P. e) P. f) P.	P
7.2	Information for use of lever hoists	N/A.	N/A
7.3	Information for use of jaw winches	N/A.	N/A
7.4	Information for use of hand powered trolleys	N/A.	N/A
7.5	Information for use of drum winches	N/A.	N/A
7.6	Information for use of pulley blocks and deflection pulleys	N/A.	N/A

Absatz *Clause*	**EN 13157:2004+A1** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
A	Annex A (normative) Standards for hooks	Normative.	P
ZA	Annex ZA (informative) Relationship of this European Standard and the essential requirements of EC Directive 98/37/EC	Informative.	P
ZB	Annex ZB (informative) Relationship between this European Standard and the Essential Requirements of EU Directives 2006/42/EC	Informative.	P

END OF TEST REPORT

Attachment 1 of Test Report 17707014 001
Testing Results (Hand Chain Block)
Client: Hebei Juying Hoisting Machinery Manufacturing Co., Ltd.

1. Test Description:
Static test (ST) lean to Cl. 6.3.2.2
Cl. 5.1.2 Mechanical strength
Cl. 5.1.3 Braking

Type Designation	**HS-C1T**	**HS-C2T**	**HS-C3T**	**HS-C5T**
Load (1.5 WLL)	1500 kg	3000 kg	4500 kg	7500 kg
	No crack or damage	No crack or damage	No crack or damage	No crack or damage
Result	Pass	Pass	Pass	Pass

2. Test Description:
Breakage test (BT) lean to Cl. 6.3.2.1
Cl. 5.1.2 Mechanical strength
Cl. 5.1.8 Hooks
Cl. 5.1.10 Link chain
Cl. 5.1.11 Anchorage and end stop for load chain

Type Designation	**HS-C1T**	**HS-C2T**	**HS-C3T**	**HS-C5T**
Load (4 WLL)	4000 kg	8000 kg	12000 kg	20000 kg
	Load can be held	Load can be held	Load can be held	Load can be held
Result	Pass	Pass	Pass	Pass

Testing Location:
Baoding Huaxin Crane Machinery Co., Ltd.

Testing Date:
Starting from 21.11.2016 to 25.11.2016

Testing Engineer:
Weiwei Mu
TÜV Rheinland / CCIC (Qingdao) Co., Ltd.

3. Test Description:
Breakage test (BT) lean to Cl. 6.3.2.1
Cl. 5.1.8 Hooks

Type Designation	**HS-C1T**	**HS-C2T**	**HS-C3T**	**HS-C5T**
Initial distance	L_0=29.3	L_0=35.8	L_0=40.5	L_0=51.6
Load (2 WLL)	2000 kg	4000 kg	6000 kg	10000 kg
	L_1=29.4 Δ=0.1	L_1=35.9 Δ=0.1	L_1=40.6 Δ=0.1	L_1=51.7 Δ=0.1
Load (4 WLL)	4000 kg	8000 kg	12000 kg	20000 kg
	Load can be held	Load can be held	Load can be held	Load can be held
Result	Pass	Pass	Pass	Pass

4. Test Description:
Dynamic test (DT) lean to Cl. 6.3.2.3
Functional test (FT) leans to Cl.6.3.2.4
Cl. 5.1.3 Braking
Cl. 5.1.5 Operating elements

Type Designation	**HS-C1T**	**HS-C2T**	**HS-C3T**	**HS-C5T**
Load (1.5 WLL)	1500 kg	3000 kg	4500 kg	7500 kg
	No damage, break functions well	No damage, break functions well	No damage, break functions well	No damage, break functions well
Result	Pass	Pass	Pass	Pass

Testing Location:	**Testing Date:**	**Testing Engineer:**
Baoding Huaxin Crane Machinery Co., Ltd.	*Starting from 21.11.2016 to 25.11.2016*	*Weiwei Mu* *TÜV Rheinland / CCIC (Qingdao) Co., Ltd.*

5. Test Description:
Light load test (LLT) lean to Cl. 6.3.3.1
Cl. 5.1.3 Braking

Type Designation	**HS-C1T**	**HS-C2T**	**HS-C3T**	**HS-C5T**
Load (2% - 10% WLL)	50 kg	100 kg	150 kg	250 kg
	Break functions well	Break functions well	Break functions well	Break functions well
Result	Pass	Pass	Pass	Pass

6. Test Description:
End stop static test (ESST) lean to Cl. 6.3.3.2
Cl. 5.1.11 Anchorage and end stop of the load chain

Type Designation	**HS-C1T**	**HS-C2T**	**HS-C3T**	**HS-C5T**
Load (2.5 WLL)	2500 kg	5000 kg	7500 kg	12500 kg
Condition after test	Test load can be held	Test load can be held	Test load can be held	Test load can be held
Result	Pass	Pass	Pass	Pass

Testing Location:	**Testing Date:**	**Testing Engineer:**
Baoding Huaxin Crane Machinery Co., Ltd.	*Starting from 21.11.2016 to 25.11.2016*	*Weiwei Mu* *TÜV Rheinland / CCIC (Qingdao) Co., Ltd.*

7. Test Description:
Endurance test (ET) lean to Cl. 6.3.3.3
Cl. 5.1.2 Mechanical strength

Type Designation	HS-C1T	HS-C2T	HS-C3T	HS-C5T
Load (1.1 WLL)	1100 kg	2200 kg	3300 kg	5500 kg
Cycle / Duration	1500	1500	1500	1500
Lifting distance	310 mm	310 mm	310 mm	310 mm
Lubrication	15 times	15 times	15 times	15 times
Maintenance / replacement	No	No	No	No
Condition after test	150% rated load can be held	150% rated load can be held	150% rated load can be held	150% rated load can be held
Result	Pass	Pass	Pass	Pass

Testing Location:
Baoding Huaxin Crane Machinery Co., Ltd.

Testing Date:
Starting from 21.11.2016 to 25.11.2016

Testing Engineer:
Weiwei Mu
TÜV Rheinland / CCIC (Qingdao) Co., Ltd.

8. Test Description:
Cl. 5.1.10 Link chain

Type Designation	**6x18 mm**	**8x24 mm**	**10x30 mm**	**Hand chain**
Breakage test	49.8 kN	97.4 kN	131.7 kN	11.1 kN
	The linear part of the chain breaks	The curvature of the chain breaks	The curvature of the chain breaks	The linear part of the chain breaks
Result	Pass	Pass	Pass	Pass

9. Test Description:
Cl. 5.1.6 Operating effort

Type Designation	**HS-C1T**	**HS-C2T**	**HS-C3T**	**HS-C5T**
Load (WLL)	1000 kg	2000 kg	3000 kg	5000 kg
Hand force	31.0 daN	41.1 daN	42.2 daN	44.9 daN
Result	Pass	Pass	Pass	Pass

- END -

Testing Location:	**Testing Date:**	**Testing Engineer:**
Baoding Huaxin Crane Machinery Co., Ltd.	*Starting from 21.11.2016 to 25.11.2016*	*Weiwei Mu* *TÜV Rheinland / CCIC (Qingdao) Co., Ltd.*