

INSPEC

TESTING SERVICES

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ANAB Certificate number AT-1725

Test Report

PPE against fall from a height EN 360 : 2002 Retractable fall arresters

Report no:

2.22.08.04

Customer:

Jinhua Jech Tools Co., Ltd.
No. 1448 Tongxi Road, Linjiang Industrial Park
Wucheng District
Jinhua City
Zhejiang
China

Manufacturer:
as advised by the Customer

Jinhua Jech Tools Co., Ltd.

Customer order:

T/1055A

Order received:

14 July 2022

Model:

SRL-10S

Dates of tests:

19 July 2022 to 19 August 2022

Signed:

Steven Sum, Laboratory Manager

Issued: 22 August 2022

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Conditions

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Specimens will be disposed of four weeks from the date of this report, unless otherwise instructed.

Opinions, comments and interpretations expressed in this report are shown in italics.

Copies of INSPEC interpretations referenced in this report are available upon request.

Tests marked  are not included in our ANAB Scope of Accreditation.

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Summary of assessment *

Clause	Requirement	Assessment (See Key)
4.1	Design & ergonomics	See page 8
4.2	Materials and construction ^①	Ltd
4.3.1	Locking after conditioning - hot/cold/wet	Pass
4.3.2	Locking after optional conditioning	
4.4	Static strength	Pass
4.5	Dynamic performance	Pass
4.6	Optional endurance	
4.7	Corrosion resistance	Pass
4.8 / 6	Marking	Pass
4.8 / 7	Information	Pass
8	Packaging	Pass

^① INSPEC Interpretations applies

Key

	Shading shows the clauses requested. Any other clauses were not requested.
Pass	Requirement satisfied.
Ltd	Testing requested was insufficient completely to verify compliance with the clause. Refer to the "Result details" section for more information.
Fail	Requirement not satisfied. Refer to the "Result details" section for more information.
NAs	Assessment not carried out.
NAp	Requirement not applicable.
NT	Requested but not tested due to early termination following failure.

* Assessment relates only to those specimens which were tested and are the subject of this report.

Submission details

Product	Quantity	Date received	INSPEC specimen no. (2K159 +)
Retractable type Fall Arrester, model SRL-10S (full length)	03	19 July 2022	01 to 03
Retractable type Fall Arrester, model SRL-10S (shorten length)	01		04

Procedures

The specimens detailed within the submission above were used for the tests covered by this report.

Testing was performed in accordance with EN 360:2002 unless otherwise specified below. Reference should be made to the standard when reading this report.

Unless stated otherwise, specimens were tested in the condition as received by INSPEC.

Testing was performed at INSPEC's laboratory in Kunshan, China.

Result details**4.1 Design and ergonomics**

Specimen 2K15901 was assessed against the general requirements specified in clause 4.1 of EN 363 : 2002. The detailed results of the assessment are given on page 8 of this report.

4.2 Materials and construction

Specimen 2K15904 was assessed.

The retractable lanyard was made of wire rope. **Pass**

EN 354:2002, clause 4.2.3 was not assessed. Manufacturer to certify. **NAs**

The specimen satisfied the static strength test in clause 5.2. Therefore, the internal end of the retractable lanyard is suitably secured to the device. **Pass**

The external end of the retractable lanyard was suitably terminated with a snaphook. **Pass**

The specimen did not incorporate an energy absorber. **NAs**

The connector satisfied EN 362. See INSPEC Test Report 2.22.08.05 **Pass**

The specimen included a snaphook. The snaphook incorporated a swivel function. **Pass**

4.3 Locking**4.3.1 Locking after conditioning**

Specimen 2K15901 was assessed.

After conditioning as described in clause 5.1.2.1 and testing as described in clause 5.1.2.3, the specimen locked and remained locked until released. **Pass**

For the hot condition, the drop mass required was 5 kg.

For the cold condition, the drop mass required was 5 kg.

For the wet condition, the drop mass required was 5 kg.

4.4 Static strength

Specimen 2K15904 was assessed.

The specimen included one anchorage point.

The specimen sustained the 12 kN force applied for 3 minutes when supported at the anchorage point. **Pass**

4.5 Dynamic performance

Specimen 2K15902 was assessed.

The maximum braking force developed was 3.5 kN. This is less than the 6 kN maximum permitted. See Annex 1 for the force/time curve. **Pass**

The arrest distance, H was 1.14 m. This is less than the 2 m maximum permitted. **Pass**

The specimen incorporates a Fall indicator. It activated after the drop test. (EN 364:1992 clause 5.7.2.3) **Pass**

4.7 Corrosion resistance

Specimen 2K15903 was assessed.

After testing as described in clause 5.5, there was no corrosion present. **Pass**

4.8 Marking and information

See 6 and 7 below.

6 Marking

Specimen 2K15901 was assessed against the specific requirements of EN 360 and the results are detailed below.

Results of the assessment of the same specimen against the requirements specified in clause 2.2 of EN 365:1992 are given on page 8 of this report.

Marking was in English and no other languages.

- a) The specimen was marked with the required pictogram. **Pass**
- b) The specimen was marked with the specific conditions of use. [Vertical] **Pass**
- c) The specimen was marked with the manufacturer's model / type identification, thus [SRL-10S]. **Pass**
- d) The specimen was marked with "EN 360". **Pass**

7 Information supplied by the manufacturer

User information in English was provided electronically and used for assessment against the specific requirements of EN 360 and the results are detailed below.

The same User information was assessed against the relevant requirements specified in clause 2.1 of EN 365:1992. The results are given on page 9 of this report.

The information supplied by the manufacturer shall contain the following information or advice.

The language assessed was English.

- | | |
|---|------|
| a) the specific conditions under which the retractable type fall arrester may be used, e.g. vertical / horizontal / inclined; | Pass |
| b) the characteristics required for a reliable anchor point; | Pass |
| c) the correct way of connecting to a reliable anchor point, to a full body harness and to other components of a fall arrest system; | Pass |
| d) on how to ensure the compatibility of any components to be used in conjunction with the retractable type fall arrester, eg by reference to other European Standards; | Pass |
| e) if a complete system is supplied, that components of any complete system shall not be substituted; | Pass |
| f) the correct way of operating the retractable type fall arrester; | Pass |
| g) the necessary minimum clearance below the feet of the user in order to avoid collision with the structure or ground in a fall from a height. With a mass of 100 kg the clearance is the arrest distance H (see 3.5) plus an extra distance of 1 m; | Pass |
| h) the materials from which the retractable lanyard is made; | Pass |
| i) on limitations of the materials in the product or hazards which may affect its performance, eg temperature, the effect of sharp edges, chemical reagents, electrical conductivity, cutting, abrasion, UV degradation, other climatic conditions; | Pass |
| j) that before and during use, consideration should be given as to how any rescue could be safely and efficiently carried out; | Pass |
| k) that the product should only be used by a trained and/or otherwise competent person or the user should be under the direct supervision of such a person; | Pass |
| l) on how to clean the product, including disinfection, without adverse effect; | Pass |
| m) if information exists, the expected lifespan of the product (obsolescence) or how this may be determined; | Pass |
| n) on how to protect the equipment during transportation; | Pass |
| o) the model / type identification mark of retractable type fall arrester; | Pass |
| p) on the meaning of any markings on the product; | Pass |
| q) the number of this European Standard, ie EN 360. | Pass |

8 Packaging

Specimen 2K15901 was assessed.

The specimen was wrapped in commercial packing (a foam box).

Pass

EN 363:2002, Clause 4.1, Design and ergonomics

A fall arrest system shall be so designed and manufactured:

- that, in the foreseeable conditions of use for which it is intended, the user can perform the risk-related activity normally while enjoying appropriate protection of the highest possible level; **NAs**
- as to preclude risks and other nuisance factors under foreseeable conditions of use; **NAs**
- as to facilitate correct positioning on the user and to remain in place for the foreseeable period of use, bearing in mind ambient factors, movements to be made and postures to be adopted. For this purpose, it shall be possible to optimize the adoption of a full body harness to user morphology by all appropriate means, such as adequate adjustment elements or the provision of an adequate size range; **NAP**
- that it is as light as possible without prejudicing design strength and efficiency; **NAs**
- as to become not incorrectly adjusted without the user's knowledge under the foreseeable conditions of use; **NAP**
- that, under the foreseeable conditions of use, the vertical drop of the user is minimized to prevent collision with obstacles and the braking force does not, however, attain the threshold value at which physical injury or the tearing or rupture of any component or element which might cause the user to fall can be expected to occur; **NAs**
- that, after arresting, the user is maintained in a correct position in which he may await help if necessary. **NAP**

Only the characteristics given in indents 3, 5 and 7 lend themselves to objective assessment. Compliance or otherwise with the relevant European standard, against which the specimen has been tested, support the assessments made against those characteristics.

The characteristics given in the other indents, whilst being desirable attributes, cannot be objectively assessed by a testing laboratory, because they involve parameters about which the technician may have only an opinion, not factual knowledge.

EN 365:1992, Clause 2.2, Marking

Each detachable component of a system shall be clearly, indelibly and permanently marked, by any suitable method not having a harmful effect on the materials, with the following information:

Identification mark comprising:

- Last 2 digits of the year of manufacture. **Pass**
 - Manufacturer's or supplier's name, trademark or other means of identification. **Pass**
 - Manufacturer's batch number or serial number of the component. **Pass**
- The characters in the identification mark shall be readable and discernible. **Pass**

EN 365:1992, Clause 2.1, Instructions**2.1 Instruction for use**

Written instructions in the language of the country of sale shall be supplied with each system or component and shall include at least the following information.

- | | |
|--|------|
| a) Instructions containing appropriate detail, supplemented by sketches if necessary, to enable the user to use the system or component correctly. | Pass |
| b) Advice as to whether the system or component, e.g. harness, should be a personal issue to anyone who needs to use it. | Pass |
| c) Advice that documentation should be issued with and kept for each system or component. The record card should contain the following particulars: | |
| - identification mark/s; | Pass |
| - manufacturer's or supplier's name and address; | Pass |
| - the manufacturer's serial number; | Pass |
| - year of manufacture; | Pass |
| - suitability for use with other components within personal fall arresting systems; | Pass |
| - date of purchase; | Pass |
| - date first put into service; | Pass |
| - name of user; | Pass |
| - a space for comments. | Pass |
| d) Instructions that the anchorage of the fall arresting system should always be above the position of the user, and indication of the proper anchorage point. The minimum anchorage strength should be stated. | Pass |
| e) Instructions that immediately before use, the user shall: | |
| - make a visual inspection of the system or component to ensure that it is in a serviceable condition and operates correctly; and | Pass |
| - ensure that the recommendations for use with other components within a system, as advised on the record card for the system or component, are complied with. | Pass |
| f) A warning to replace the system or component immediately, should any doubt arise about its safe condition. This shall be carried out by the manufacturer or by another competent person. | Pass |
| g) Instruction that if the system or component has been used to arrest a fall it is essential for safety that it be withdrawn from use and returned to the manufacturer or competent repair centre for servicing and retest. | Pass |
| h) For textile material components the recommended cleaning procedure, and a warning that such procedure be strictly adhered to. | Pass |
| i) For textile material components an instruction that in the event of becoming wet either when in use or cleaning, it shall be allowed to dry naturally away from an open fire or other source of heat. | Pass |
| j) Instructions for protection during use. | Pass |
| k) Instructions for protection against hazards. | Pass |
| l) Instructions for storage. Where environmental or industrial factors affect the materials, instruction should be given for proper storage. | Pass |
| m) Instruction that the system or component be examined. | |
| - or where deemed necessary by the manufacturer, serviced | Pass |

- at least once every twelve months by a competent person authorized by the manufacturer.

Pass

Estimates of the uncertainty of measurement

Clause	Test	Uncertainty	
4.1	Design and ergonomics	Not applicable	
4.2	Materials and construction	Not applicable	
4.3	Locking	See Note 1	
4.4	Static strength	See Note 1	
4.5	Dynamic performance	Force	$\pm 3.8\%$
		Arrest distance	$\pm 1.3\%$
4.7	Corrosion resistance	See Note 1	
4.8 / 6	Information	Not applicable	
4.8 / 7	Marking	Not applicable	
8	Packaging	Not applicable	

Note 1. The acceptance criterion for this test is a straightforward "Pass/Fail", rather than a numerical value. Consequently, as there is no value to be reported, uncertainty has not been reported either.

Note 2. The uncertainty value is based on a standard uncertainty multiplied by a coverage factor $k = 2$, which provides for a confidence level of approximately 95%. Values expressed as a percentage (%) are relative.

Note 3. It should be noted that the above values have not been taken into account when making assessments against the pass/fail criteria.

ANNEX

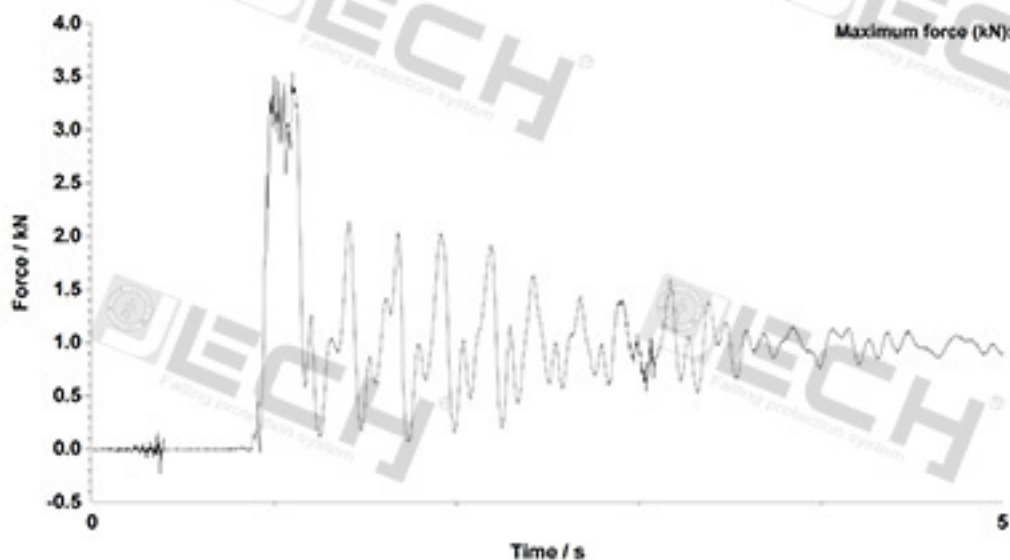
This Annex comprises two sections.

1. Plot of arrest force versus time. (1 page)
2. Photograph of the product tested. (1 page)

END OF REPORT

INSPEC Technical Services

Technician:	LJKZ
Standard:	EN 360:2002 Retractable fall arresters
Sample / File name:	2K15902
Drop item:	Drop mass, 100 kg
Orientation/Attachment Point:	Center eyebolt
Time and Date of Test:	10:36 21/07/22



Results do not achieve full ANAB status until a formal test report has been issued.

Jinhua Jech Tools Co., Ltd. –
Retractable type fall arrester, model SRL-10S



INSPEC Testing Services' specimen 2K15901

19 July 2022