TEST REPORT

Report No.: GZES231101990831

Date: 2023-12-05

The following sample(s) was/were submitted and identified on behalf of the client as:

Applicant:	Shanghai G-STAR Sports Co., Ltd. No. 53, Tongming Road, TongAn, Xiamen, Fujian, China
Manufacturer:	Same as applicant
The standards:	EN ISO 20957-1: 2013 EN ISO 20957-8: 2017
Test item description:	Stair Trainer
Model/Type reference:	K5311A, TF-ST105-T/Taurus Stair Trainer ST10.5 Touch, K5311, TF-ST105/Taurus Stair Trainer ST10.5，K5311B
Test result:	For further details, please refer to the following page(s)
Remark:	None

Mike Liu
Reviewer

Holon Li
Project Engineer

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Summary of testing:

Tests according to the following standard was carried out:

EN ISO 20957-1: 2013

EN ISO 20957-8: 2017

After reviewing, full tests were carried out on model K5311A.

The submitted samples fulfil the requirements of specified standards.

Test Location:

Xiamen Products Quality Supervision & Inspection Institute

259, Huanmei North Road, Jimei, Xiamen, Fujian, China

Possible test case verdicts:	
- test case does not apply to the test object ..... :	N/A (not applicable)
- not tested as per client's request.	N/T
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)
Testing	
Date of receipt of test item ..... :	2023-11-12
Date (s) of performance of tests..... :	2023-11-13 to 2023-11-29

General product information:

Stair Trainer for indoor use.

All models are same except model no. and control panel.

1. **Usage Class:** S
2. **Accuracy Class:** C
3. **Maximum user weight:** 180kg

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TEST REPORT

Report No.: GZES231101990831
Date: 2023-12-05

Test Conducted:
Ⅰ: Based on **EN ISO 20957-1: 2013 Stationary training equipment - Part 1: General safety requirements and test methods**

EN ISO 20957-1:2013		
Clause	**Requirement – Test**	**Verdict**
5	**Safety requirements**	
5.1	**General** If any of the following safety requirements are applicable, the equipment shall meet the requirements using the test methods described in Clause 6.	
5.2	**Stability of equipment** The stationary training equipment shall be stable in any direction, in training, folding and storage positions.	P
5.3	**External construction**	
5.3.1	**Edges and corners** All edges and corners of surfaces supporting bodies shall have a radius r ≥ 2,5mm. All other edges of components which are accessible to the user or to third parties shall be free of burrs, rounded or protected.	P
5.3.2	**Tube ends** When tested in accordance with 6.3.2, accessible tube ends shall be closed off, e.g. by parts of the equipment or by plugs. If plugs are used, they shall remain in position at the end of the endurance load test, as described in the relevant parts of the applicable specific standards. If no endurance test is described in a specific standard the pullout force of the plug shall be ≥20 N.	P

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中国・广东・广州高新技术产业开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 sgs.china@sgs.com
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EN ISO 20957-1:2013		
Clause	**Requirement – Test**	**Verdict**
5.3.3	**Squeeze and shear points within the accessible hand and foot area** Squeeze and shear points between moving parts, between moving parts and fixed parts, or between a moving part and the floor shall be guarded or shall have a minimum clearance of at least 60 mm, except as follows: a) if only the fingers are at risk, the dimension shall be at least 25 mm; b) if third party access is prevented by the user's body position, and where the user is able to immediately stop the movement, the distance shall be at least 25 mm; c) if the angle between two adjacent moving parts or between a rigid part and an adjacent moving part is always 50 degrees or greater, it is not considered a shear point; d) open and obvious stops are excluded; however, if the stop is the part which is moving, then it shall pass no closer than 25mm from any fixed frame member throughout its range of movement. All products shall fulfil the above requirements during use. For foldable products during folding or unfolding, the above requirements are waived if the following three requirements are simultaneously met: - inadvertent movement is not possible during folding, unfolding, transportation and/or storage; - access to squeeze and shear points remain at all times in the user's field of vision; - the user can stop the motion at any time.	P
5.3.4	**Squeeze and shear points as well as rotating and reciprocating points in the accessible hand and foot area** The distance between movable parts or between a movable and a fixed part shall be at least 60 mm except as follows: a) if only fingers are at risk, the dimension shall not be less than 25 mm; b) if the distance between the moving part and fixed part, or between two moving parts, does not change during use or setup, the distance shall be greater than 25 mm or less than 9,5 mm; c) open and obvious stops are excluded. However, if the stop is the part which is moving, then it shall pass no closer than 25 mm to any fixed frame member throughout its range of movement.	P
5.3.5	**Weights and resistant means** The range of motion of all weights attached to the stationary training equipment shall be limited to that required to perform the exercise. Test in accordance with 6.3.4. Weights and resistant means with stored energies (e.g. bungee cords, elastic tubes, mechanical springs) shall move freely and return to the starting point. Weights shall be securely retained during use.	N/A
5.4	**Entrapment of the user** The possibility of users not being able to exit the equipment when using it according to the user's manual shall be avoided (e.g. providing assisted means of escape).	P

EN ISO 20957-1:2013		
Clause	**Requirement – Test**	**Verdict**
5.5	**Adjustment components and locking mechanisms** Adjustment components and locking mechanisms on the stationary training equipment shall function securely, be conspicuous, self-evident and safely accessible to the user. The possibility of unintended change shall be eliminated. Adjustment components and locking mechanisms e.g. knobs and levers shall not interfere with the user's range of movement. Weight selection pins shall be fitted with a retention device to prevent unintended change or movement during the exercise.	P
5.6	**Ropes, belts, chains and attachment components**	
5.6.1	**General** Ropes, belts, chains and their attachment components (e.g. snap links, shackles, carabineers, clamps or similar) shall have a safety factor against breakage of 6 times the maximum possible tension that can be developed. The design of the pulleys and the bending radius shall be in accordance with the applicable requirements of the rope, belt or chain manufacturers. Ropes, belts, chains and their attachment components shall not break and function as described in the user's manual.	N/A
5.6.2	**Ropes and belts** Rope and belt ends shall be, as a minimum, flush with the end of the termination means and shall be visible for inspection. Pressed connections shall not be subjected to bending. Rope and belt ends and grips shall have no sharp edges or frayed ends.	N/A
5.6.3	**Rope and belt guides** A means shall be provided to prevent a rope or a belt becoming unintentionally disengaged during use or set-up.	N/A
5.7	**Pull-in points** Pull-in points of rope or belt drives up to 1800mm height shall be protected except if the surface pressure is ≤ 90 N/cm^2 or when access to the pull-in point is prevented by the user's body during exercising. This may be achieved by ensuring that the angle between the rope and the guard is not less than 50° in all positions. The guard shall not rotate together with the pulley. Pull-in points for chains, gears and sprockets shall be protected in accordance with ISO 12100. For flywheels the test finger shall not become trapped when tested in accordance with 6.8.	P
5.8	**Hand grips**	
5.8.1	**Integral handgrips** Gripping positions shall be easily identifiable and designed to reduce slipping (e.g. textured, coated, knurled).	P

EN ISO 20957-1:2013		
Clause	**Requirement – Test**	**Verdict**
5.8.2	**Applied handgrips** When tested in accordance with 6.10, applied handgrips shall not be removed. Applied handgrips shall be equipped with a surface that reduces hand slip.	P
5.8.3	**Rotating handgrips** Rotating handgrips shall be secured during use and shall be designed to reduce slipping (e.g. textured).	N/A
5.9	**Endurance test** The stationary training equipment shall function as specified in the manufacturer's instructions after the test has been carried out.	P
5.10	**Isometric test requirements** If the stationary training equipment is designed to perform an isometric test, then the load or force on the user's body shall be displayed with an accuracy of ±10% in the range of measurement given in the user's manual and the read outs shall be SI units.	N/A
5.11	**Heart rate measurement system** The function of the heart rate measurement system shall be indicated on the display when the equipment is receiving a usable signal from the user, e.g. a blinking heart.	P
5.12	**Heart rate control mode** The function of the heart rate measurement system shall be permanently indicated on the display when the equipment is receiving a usable signal from the user, e.g. a blinking heart. The loss of heart rate signal shall result in effort intensity remaining at the same intensity for maximum 60s and then decrease until the minimum intensity is reached. The rate of decrease shall be at least 10% in each 20s time period.	N/A
5.13	**Electrical safety** Concerning electrical and electronic aspects of stationary training equipment EN 60335-1 shall be applied. For medical devices EN 60601-1 shall be applied.	P
5.14	**Loading**	
5.14.1	**Intrinsic loading** Each piece of equipment loaded with the user's bodymass shall withstand a force F of 2,5 times the bodymass. After the test the equipment shall not be broken and shall still function as intended by the manufacturer.	P
5.14.2	**Extrinsic loading** When tested according to 6.3.4 and loaded with the user's bodymass and/or reaction forces or moments of the user as well as other forces or moments caused by any other source (e.g. additional weights supported by a stand),each piece of equipment shall withstand a load F according to Formula (1): $F=[G_k + 1,5G] \cdot 2,5 \cdot 9,81\ m/s^2$	N/A
5.15	**Care and maintenance** Care and, if applicable, maintenance advice shall be provided with each piece of equipment.	P

EN ISO 20957-1:2013		
Clause	**Requirement – Test**	**Verdict**
5.16	**Assembly instructions** If the stationary training equipment requires assembly, then a manual shall be supplied (in the national language), giving clear and accurate assembly instructions relating to the stationary training equipment and with an emphasis on safe assembly.	P
5.17	**General instructions for use** Each item of stationary training equipment shall be accompanied by a user's manual, in the national language including at least the following information.	P
5.18	**Marking** Stationary training equipment shall be permanently marked.	P

Ⅱ: Based on Based on EN ISO 20957-8: 2017 Stationary training equipment - Part 8: Steppers, stairclimbers and climbers - Additional specific safety requirements and test methods

EN ISO 20957-8: 2017		
Clause	**Requirement – Test**	**Verdict**
5	**Safety requirements**	
5.1	**General** Depending on the design of the piece of training equipment, the requirements in accordance with 5.2 to 5.11 shall apply as appropriate.	
5.2	**External construction**	
5.2.1	**Additional requirements for squeeze and shear points within the accessible area** In addition to the requirements in ISO 20957-1, for ministeppers of class H, the test finger probe B according to EN 71-1 shall not get entrapped when inserted from any direction.	P
5.2.2	**Temperature of accessible surfaces** In addition to the requirements of ISO 20957-1, within 10 s after the test, accessible surfaces of the training equipment shall not have a temperature >65 °C. Test in accordance with 6.2.	P
5.3	**Intrinsic loading** ISO 20957-1 applies. Test in accordance with 6.3.	P
5.4	**Handrails/handlebars** The handrails/handlebars shall be tested with a vertical load of 1 000 N applied on each handrail/handlebar of the training equipment one at a time and in the most onerous position. The handrails/handlebars shall be tested with a horizontal load of 500 N applied on each handrail/handlebar of the training equipment one at a time and in the most onerous position. After the test, the training equipment shall not be broken and shall still function as intended by the manufacturer. Test in accordance with 6.4.	P
5.5	**Footplatforms and stairs**	

EN ISO 20957-8: 2017		
Clause	**Requirement – Test**	**Verdict**
5.5.1	**Footplatforms** The footplatforms shall have a non-slip surface of ≥150 mm (length) by ≥100 mm (width) or 90 % of the total usable surface. Non-slip surfaces shall have a coefficient of friction of >0,5. The footplatform shall have a guard with ≥30 mm height along ≥80 % of the length of the inside edge of the platform. If there are potential squeeze and/or shear points in the area of the front or outside edge of the footplatform, additional guards shall be added to the same requirement as the inside guard. NOTE The footplatform guards are intended to prevent squeeze and shear points in the foot area. Therefore, the distance between the moving pedals can be ≥25 mm. Seated steppers shall have an additional guard or heel restraint across ≥90 % of the rear of the footplatform where the movement of the footplatform is >45° from the horizontal. Test in accordance with 6.5.	N/A
5.5.2	**Stairs** The stairs shall have a non-slip surface of ≥200 mm (length) by ≥500 mm (width) or 90 % of the total usable surface. Non-slip surfaces shall have a coefficient of friction of >0,5. Test in accordance with 6.5.	P
5.6	**Endurance test** The training equipment shall withstand —12 000 cycles for class H, and — 100 000 cycles for class S. After the test, the training equipment shall not be broken and shall still function as intended by the manufacturer. Test in accordance with 6.6.	P
5.7	**Free wheel** In the case of air fan or flywheel resistive system steppers, the transmission assembly shall be of a free wheel type. Test in accordance with 6.1.2 and 6.1.4.	N/A
5.8	**Additional requirement for class A** For each test conducted, the difference between the displayed power and the measured or calculated input power (averaged over the 10 min test period) shall not exceed ±5 W for input power ≤50 W and ±10 % for input power >50 W. Test in accordance with 6.7.	N/A
5.9	**Additional requirements for stairclimbers**	
5.9.1	**Stepping on and stepping off** A system shall be provided to prevent unintentional movement of the stairs during stepping on and stepping off the stairclimbers for a value of 1,5 times the maximum user's body mass as specified in the user's manual. During the test, the staircase shall not move. Test in accordance with 6.8.	P

EN ISO 20957-8: 2017		
Clause	**Requirement – Test**	**Verdict**
5.9.2	**Manual stopping system** The training equipment shall have a mechanical switch to stop within a half cycle movement at least on one handrail/handlebar as well as in front of the user. The mechanical switch in front of the user shall be within 180 mm parallel to the centreline of the staircase. Test in accordance with 6.1.1 and 6.1.2.	P
5.9.3	**Automatic stopping system to reduce the risk of entrapment** The training equipment shall be fitted with a means which automatically stops movement to reduce the risk of foot entrapment between the moving stairs and the floor or structure. Test in accordance with 6.9.	P
5.10	**Additional requirements for seated steppers**	
5.10.1	**Movable handlebars** Movable handlebars shall withstand a load equal to the maximum user's body mass as specified in the user's manual or ≥1 000 N, whichever is greater, in the direction of the movement. Movable handlebars shall withstand a load equal to 20 % of the maximum user's body mass or 200 N, whichever is greater, at 90° to the direction of the movement. After the test, the movable handlebars shall not be broken and shall still function as intended by the manufacturer. Test in accordance with 6.10.1. The ends of movable handlebars shall be designed to reduce the risk of eye socket penetration to the facial area during the intended use for the user and third parties. The design may include, but is not limited to: a) the tip of the movable handlebars having a diameter of ≥50 mm and an edge radius of ≥5 mm; or b) movable handlebars being bent into an inverted U-shape of >180° so as to reduce risk of contact between the facial area and the tip of the movable handlebars. Test in accordance with 6.1.1 and 6,1.2.	N/A
5.10.2	**Non-movable handlebars** Non-movable handlebars shall withstand a horizontal load equal to the maximum user's body mass as specified in the user's manual or≥1 000 N, whichever is greater. Non-movable handlebars shall withstand a vertical load of two times the maximum body mass specified in the user's manual or ≥2 000 N, whichever is greater. After the test, the non-movable handlebars shall not be broken and shall still function as intended by the manufacturer. Test in accordance with 6.10.2.	N/A

EN ISO 20957-8: 2017		
Clause	**Requirement – Test**	**Verdict**
5.10.3	**Seat handlebars** Seat handlebars shall withstand a vertical load of two times the maximum body mass specified in the user's manual or ≥2 000 N, whichever is greater. After the test, the seat handlebars shall not be broken and shall still function as intended by the manufacturer. Test in accordance with 6.10.3.	N/A
5.10.4	**Seat backrest** The seat backrest shall withstand a static load of: —the maximum user's body mass as specified in the user's manual or ≥1 000 N, whichever is greater, for class H; —1,5 times the maximum user's body mass as specified in the user's manual or ≥1 500 N, whichever is greater, for classes S and I. After the test, the seat and seat adjustments shall not be broken and shall still function as intended by the manufacturer. Test in accordance with 6,10.3.	N/A
7	**Additional instructions for use** In addition to ISO 20957-1, the instructions for use shall be supplied with each stepper, stairclimber and climber and shall include at least information on how to step on and step off the stairclimbers.	P

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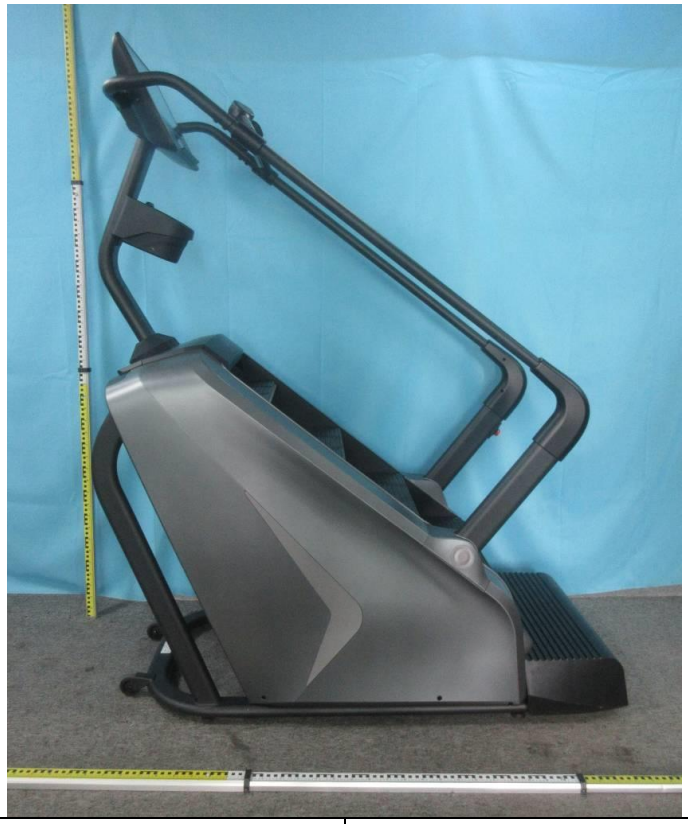
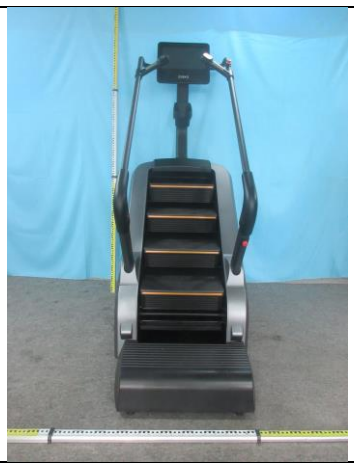
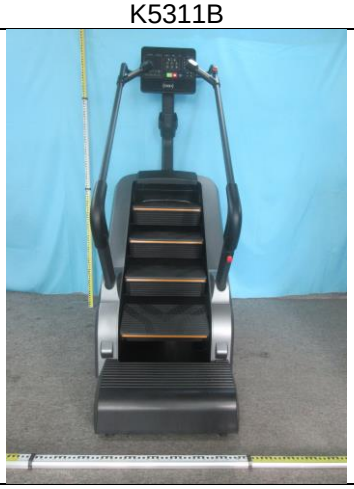
ANNEX 1: Photo documentation



K5311A, TF-ST105-T/Taurus Stair Trainer ST10.5 Touch	K5311, TF-ST105/Taurus Stair Trainer ST10.5, K5311B
	

The testing report/certificate only refers to the sample(s) tested.

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