

TEST REPORT**EN ISO 11148-6: 2012****Hand-held non-electric power tools - Safety requirements****- Part 6: Assembly power tools for threaded fasteners**

Report reference No.: SH11080399-006

Tested by (+ signature).....: Heinlich Wu

Approved by (+ signature): Michael Shen

Date of issue.....: 16 August, 2011

Amendment 1: Dec.06, 2012

Amendment 2: June.13, 2013

Testing laboratory: Intertek Testing Services Shanghai Ltd.

Address.....: Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China

Testing location/procedure: TL RMT SMT WMT TMP

Address.....: As above

Applicant.....: Ningbo Steed Tools Co., Ltd.

Address.....: Fangjiada, Gulin Town, Yinzhou District, Ningbo, China.

Test specification:

Standard: EN ISO 11148-6: 2012

Test procedure: CE-MD

Non-standard test method: N/A

Test Report Form No: TTRF EN ISO 11148_6A

TRF Originator: Intertek Shanghai

Master TRF: 2011-06

Test Item Description: Air impact wrench

Trademark.....: N/A

Model and/or type reference.....: AT-5030, AT- 5031, AT-231, AT-261, AT-8006, AT-285-6, AT-265,
PAT-106, PAT-107, NST-5040F

Manufacturer.....: Same as applicant

Rating(s): Max. air pressure: 6,3 bar

AT-5030: n_0 :10000/min; AT-5031: n_0 :9000/minAT-231: n_0 :7000/min; AT-261: n_0 :4500/minAT-8006: n_0 :3800/min; AT-285-6: n_0 :3500/minAT-265: n_0 :4200/min; PAT-106: n_0 :7500/minPAT-107: n_0 :9000/min; NST-5040F n_0 : 7000/min

Remarks.....: None

Test case verdicts

Test case does not apply to the test object : N/A

Test item does meet the requirement..... : P(Pass)

Test item does not meet the requirement..... : F(Fail)

Testing

Date of receipt of test item : N/A

Date(s) of performance of test..... : N/A

General remarks

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(See Enclosure #)" refers to additional information appended to the report.

"(See appended table)" refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

Determination of the test results includes consideration of measurement uncertainty from the test equipment and methods.

General product information:

The products covered by this report are hand-held air impact wrenches.

Amendment 2:

This report based on report ref. no. SH11080399-006 issued on 16 August, 2011 and report ref. no. SH11080399-006 A1 issued on Dec.06, 2012 by Intertek Testing Services Shanghai Limited including following changes and/or additions:

Test standard changed from EN ISO 11148-6: 2010 to EN ISO 11148-6: 2012

Copy of marking plate (Representative)

**Air impact wrench****AT-5030****Max. air pressure: 6.3bar****n₀: 10000/min****Serien Nr.: [xxxxxxxx]****BJ: 2012****Ningbo Steed Tools Co., Ltd.****Fangjiada, Gulin Town, Yinzhou District, Ningbo, China.****Bevollmächtigte Person in EU:****Name: [xxxx] Adresse: [xxxxxxxx]**

Summary of testing:

All tests are carried out in accordance with the EN ISO 11148-6:2012 and the test results meet the requirements specified in the above-mentioned standards.

EN ISO 11148-6:2012			
Clause	Requirement - Test	Result - Remark	Verdict
6	Information for use		
6.1	Marking, signs and written warnings		
	Assembly power tools for threaded fasteners shall be marked visibly, legibly and indelibly with the following information		
	name and full address of the manufacturer and, where applicable, his/her authorized representative		P
	designation of series or type		P
	serial number or batch number;		P
	year of construction, that is the year in which the manufacturing process is completed;		P
	rated speed, in revolutions per minute		P
	for pneumatic assembly power tools for threaded fasteners the rated air pressure marked as (max.)		P
	for hydraulic assembly power tools for threaded fasteners the nominal pressure and flow the maximum allowable setting for the pressure relief valve		N/A
	Assembly power tools for threaded fasteners shall be permanently marked with a graphical symbol in accordance with Annex C showing that the operator's instructions shall be read before work starts.		P
	The direction of rotation, as required in 4.8.4, shall be permanently marked in accordance with Annex C.		P
	Open-ended spanners shall have a warning sign in accordance with Annex C affixed to the head, warning against the risk of crushing.		N/A
	Tools with fixed torque reaction bars shall be provided with labels as shown in Annex C indicating the proper position of the reaction device		N/A
	Other graphical symbols that can be used are shown in Annex C		P
6.2	Instruction handbook		
6.2.1	General		
	For the information provided to the user, the content of Clause 6 together with ISO 12100:2010, 6.4.5.2 and 6.4.5.3, apply.	See copy of manual	P
	The information provided by the manufacturer is an important but not exclusive basis for the safe use of the assembly power tool for threaded fasteners. It shall provide sufficient information for the end user to perform an initial risk assessment.		P

EN ISO 11148-6:2012			
Clause	Requirement - Test	Result - Remark	Verdict
	The hazards identified in 6.2.2.4 to 6.2.2.12 are foreseeable in the general use of hand-held assembly power tools for threaded fasteners. The information provided with the tool shall state that the user or the user's employer shall assess the specific risks that can be present as a result of each use.		P
	The instruction handbook shall contain information relating to at least the following:		P
	name and address of the manufacturer or supplier or any other agent responsible for placing the assembly power tool for threaded fasteners on the market;		P
	designation of the series or type;		P
	operating instructions; see 6.3;		P
	information on noise emission; see 6.4.2;		P
	information on vibration transmitted to the hands of the operator; see 6.4.3		P
	maintenance instructions; see 6.5		P
	explanations of any symbols marked on the assembly power tool for threaded fasteners; see Annex C;		P
	information about residual risks and how to control them		P
6.2.2	Operator's instructions		
6.2.2.1	Statement of use		
	The operator's instructions shall include a description of the correct use of the assembly power tool for threaded fasteners and make reference to the appropriate inserted tools. The operator's instructions shall state that any other use is forbidden. Foreseeable misuse of the assembly power tool for threaded fasteners, which experience has shown to occur, shall be warned against.		P
6.2.2.2	Allowance for user		
	The operator's instructions shall be written primarily for professional users. Where a tool can be used by nonprofessional users, additional information for use shall be provided		P
6.2.2.3	General safety rules		
	Warnings shall be given with regard to significant hazards arising from or associated with the use of the assembly power tool for threaded fasteners.		P
	The following is a non-exhaustive list. Manufacturers may add additional warnings.		P

EN ISO 11148-6:2012			
Clause	Requirement - Test	Result - Remark	Verdict
	For multiple hazards, read and understand the safety instructions before installing, operating, repairing, maintaining, changing accessories on, or working near the assembly power tool for threaded fasteners. Failure to do so can result in serious bodily injury.		P
	Only qualified and trained operators should install, adjust or use the assembly power tool for threaded fasteners.		P
	Do not modify this assembly power tool for threaded fasteners. Modifications can reduce the effectiveness of safety measures and increase the risks to the operator.		P
	Do not discard the safety instructions; give them to the operator.		P
	Do not use the assembly power tool for threaded fasteners if it has been damaged.		P
	Tools shall be inspected periodically to verify that the ratings and markings required by this part of ISO 11148 are legibly marked on the tool. The employer/user shall contact the manufacturer to obtain replacement marking labels when necessary.		P
6.2.2.4	Projectile hazards		
	The following apply		P
	Failure of the workpiece, of accessories or even of the inserted tool itself can generate high-velocity projectiles.		P
	Always wear impact-resistant eye protection during the operation of the assembly power tool for threaded fasteners. The grade of protection required should be assessed for each use.		P
	Ensure that the workpiece is securely fixed.		P
6.2.2.5	Entanglement hazards		
	The following apply		P
	Entanglement hazards can result in choking, scalping and/or lacerations if loose clothing, personal jewellery, neckware, hair or gloves are not kept away from the tool and accessories.		P
	Gloves can become entangled with the rotating drive, causing severed or broken fingers		P
	Rotating drive sockets and drive extensions can easily entangle rubber-coated or metal-reinforced gloves		P
	Do not wear loose-fitting gloves or gloves with cut or frayed fingers		P
	Never hold the drive, socket or drive extension.		P
	Keep hands away from rotating drives.		P
6.2.2.6	Operating hazards		

EN ISO 11148-6:2012			
Clause	Requirement - Test	Result - Remark	Verdict
	The following apply		P
	The use of the tool can expose the operator's hands to hazards including crushing, impacts, cuts and abrasions and heat. Wear suitable gloves to protect hands.		P
	Operators and maintenance personnel shall be physically able to handle the bulk, weight and power of the tool.		P
	Hold the tool correctly; be ready to counteract normal or sudden movements and have both hands available.		P
	Maintain a balanced body position and secure footing		P
	In cases where the means to absorb the reaction torque are requested, it is recommended to use a suspension arm whenever possible. If that is not possible, side handles are recommended for straight case and pistol-grip tools. Reaction bars are recommended for angle nutrunners. In any case, it is recommended to use a means to absorb the reaction torque above 4 N·m for straight tools, above 10 N·m for pistol-grip tools, and above 60 N·m for angle nutrunners.		N/A
	Release the start-and-stop device in the case of an interruption of the energy supply.		P
	Use only lubricants recommended by the manufacturer		P
	Fingers can be crushed in open-ended crow-foot nutrunners.		N/A
	Do not use in confined spaces and beware of crushing hands between tool and workpiece, especially when unscrewing.		P
6.2.2.7	Repetitive motions hazards		
	The following apply		P
	When using a power tool for, the operator can experience discomfort in the hands, arms, shoulders, neck, or other parts of the body.		P
	While using an assembly power tool for threaded fasteners, the operator should adopt a comfortable posture whilst maintaining secure footing and avoiding awkward or off-balanced postures. The operator should change posture during extended tasks, which can help avoid discomfort and fatigue		P
	If the operator experiences symptoms such as persistent or recurring discomfort, pain, throbbing, aching, tingling, numbness, burning sensations or stiffness, these warning signs should not be ignored. The operator should tell the employer and consult a qualified health professional.		P
6.2.2.8	Accessory hazards		
	The following apply.		P

EN ISO 11148-6:2012			
Clause	Requirement - Test	Result - Remark	Verdict
	Disconnect the assembly power tool for threaded fasteners from the energy supply before changing the inserted tool or accessory.		P
	Do not touch sockets or accessories during impacting, as this increases the risk of cuts, burns or vibration injuries.		P
	Use only sizes and types of accessories and consumables that are recommended by the assembly power tool for threaded fasteners manufacturer.		P
	Use only impact-wrench-rated sockets in good condition, as poor condition or hand sockets and accessories used with impact wrenches can shatter and become a projectile.		P
6.2.2.9	Workplace hazards		
	The following apply		P
	Slips, trips and falls are major causes of workplace injury. Be aware of slippery surfaces caused by the use of the tool and also of trip hazards caused by the air line or hydraulic hose		P
	Proceed with care in unfamiliar surroundings. Hidden hazards, such as electricity or other utility lines, can exist		P
	The assembly power tool for threaded fasteners is not intended for use in potentially explosive atmospheres and is not insulated against coming into contact with electric power		P
	Make sure there are no electrical cables, gas pipes, etc., that can cause a hazard if damaged by use of the tool		P
6.2.2.10	Dust and fume hazards		
	The following apply	No such hazards	N/A
	Dust and fumes generated when using assembly power tools for threaded fasteners can cause ill health (for example, cancer, birth defects, asthma and/or dermatitis); risk assessment and implementation of appropriate controls for these hazards are essential.		N/A
	Risk assessment should include dust created by the use of the tool and the potential for disturbing existing dust.		N/A
	Direct the exhaust so as to minimize disturbance of dust in a dust-filled environment		N/A
	Where dust or fumes are created, the priority shall be to control them at the point of emission		N/A
	All integral features or accessories for the collection, extraction or suppression of airborne dust or fumes should be correctly used and maintained in accordance with the manufacturer's instructions.		N/A

EN ISO 11148-6:2012			
Clause	Requirement - Test	Result - Remark	Verdict
	Use respiratory protection in accordance with employer's instructions and as required by occupational health and safety regulations.		N/A
6.2.2.11	Noise hazards		
	The following apply.		P
	Unprotected exposure to high noise levels can cause permanent, disabling, hearing loss and other problems, such as tinnitus (ringing, buzzing, whistling or humming in the ears).		P
	Risk assessment and implementation of appropriate controls for these hazards are essential		P
	Appropriate controls to reduce the risk may include actions such as damping materials to prevent workpieces from "ringing".		P
	Use hearing protection in accordance with employer's instructions and as required by occupational health and safety regulations.		P
	Operate and maintain the assembly power tool for threaded fasteners as recommended in the instruction handbook, to prevent an unnecessary increase in noise levels.		P
	If the assembly power tool for threaded fasteners has a silencer, always ensure it is in place and in good working order when the assembly power tool for threaded fasteners is operating.		P
	Select, maintain and replace the consumable/inserted tool as recommended in the instruction handbook, to prevent an unnecessary increase in noise		P
6.2.2.12	Vibration hazards		
	The information for use shall draw attention to vibration hazards that have not been eliminated by design and construction and remain as residual vibration risks. It shall enable employers to identify the circumstances in which the operator is likely to be at risk from vibration exposure. If the vibration emission value obtained using ISO 28927-2 does not adequately represent the vibration emission in the intended uses (and foreseeable misuses) of the machine, additional information shall be supplied to enable the risks arising from vibration to be assessed and managed.		P
	For recommended interface dimensions for spindles and drive adapters to help reduce vibrations, see ISO/TS 21108.		P
	The following warnings (or equivalent) shall be given.		P
	Exposure to vibration can cause disabling damage to the nerves and blood supply of the hands and arms		P
	Keep the hands away from the nutrunner sockets.		N/A

EN ISO 11148-6:2012			
Clause	Requirement - Test	Result - Remark	Verdict
	Wear warm clothing when working in cold conditions and keep your hands warm and dry.		P
	If you experience numbness, tingling, pain or whitening of the skin in your fingers or hands, stop using the assembly power tool for threaded fasteners, tell your employer and consult a physician.		P
	Operate and maintain the assembly power tool for threaded fasteners as recommended in the instruction handbook, to prevent an unnecessary increase in vibration levels		P
	Do not use worn or ill-fitting sockets or extensions, as this is likely to cause a substantial increase in vibration.		P
	Select, maintain and replace the consumable/inserted tool as recommended in the instruction handbook, to prevent an unnecessary increase in vibration levels.		P
	Sleeve fittings should be used where practicable.		P
	Support the weight of the tool in a stand, tensioner or balancer, if possible		P
	Hold the tool with a light but safe grip, taking account of the required hand reaction forces, because the risk from vibration is generally greater when the grip force is higher.		P
6.2.3	Additional safety instructions for pneumatic power tools		
	The following additional warnings (or equivalent) shall be given with all pneumatic assembly power tools for threaded fasteners.		P
	Air under pressure can cause severe injury:		P
	always shut off air supply, drain hose of air pressure and disconnect tool from air supply when not in use, before changing accessories or when making repairs;		P
	never direct air at yourself or anyone else.		P
	Whipping hoses can cause severe injury. Always check for damaged or loose hoses and fittings		P
	Cold air shall be directed away from the hands		P
	Do not use quick-disconnect couplings at tool inlet for impact and air-hydraulic impulse wrenches. Use hardened steel (or material with comparable shock resistance) threaded hose fittings		P
	Whenever universal twist couplings (claw couplings) are used, lock pins shall be installed and whipcheck safety cables shall be used to safeguard against possible hose-to-tool and hose-and-hose connection failure.		P
	Do not exceed the maximum air pressure stated on the tool.		P

EN ISO 11148-6:2012			
Clause	Requirement - Test	Result - Remark	Verdict
	For torque-control and continuous-rotation tools, the air pressure has a safety critical effect on performance. Therefore, requirements for length and diameter of the hose shall be specified		N/A
	Never carry an air tool by the hose.		P
6.2.4	Additional safety instructions for hydraulic power tools		
	The following additional warnings (or equivalent) shall be given with all hydraulic assembly power tools for threaded fasteners.		N/A
	Do not exceed the maximum relief-valve setting stated on the tool		N/A
	Carry out a daily check for damaged or worn hoses or hydraulic connections and replace if necessary		N/A
	Use only clean oil and filling equipment		N/A
	Power units require a free flow of air for cooling purposes and should, therefore, be positioned in a well ventilated area free from hazardous fumes.		N/A
	Ensure that couplings are clean and correctly engaged before operation		N/A
	Do not inspect or clean the tool while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury		N/A
	Do not install or remove the tool while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury		N/A
	Be sure all hose connections are tight.		N/A
	Wipe all couplers clean before connecting. Failure to do so can result in damage to the quick couplers and cause overheating.		N/A
	Instructions shall be given that only hydraulic fluid recommended by the manufacturer shall be used.		N/A
6.2.5	Specific safety instructions		
	Warnings shall be given about any specific or unusual hazards associated with the use of the assembly power tool for threaded fasteners. Such warnings shall indicate the nature of the hazard, the risk of injury and the avoidance action to take.		P
6.3	Operating instructions		
	The instructions shall include, where appropriate		P
	instructions for setting up or fixing the assembly power tool for threaded fasteners in a stable position, appropriate for assembly power tools for threaded fasteners that can be mounted in a support		P
	assembly instructions, accessories and inserted tools		P
	illustrated description of functions;		P
	limitation on tool use due to environmental conditions		P

EN ISO 11148-6:2012			
Clause	Requirement - Test	Result - Remark	Verdict
	instructions for setting and testing		P
	general instructions for use, including changing inserted tools and limits on the size and type of workpiece		P
6.4	Data		
6.4.1	General		
	The instructions shall include the information on the data plate and the following		P
	mass of the assembly power tool for threaded fasteners		P
	for hydraulic assembly power tools for threaded fasteners		N/A
	specification of the coupling		N/A
	specification of hoses with regard to pressure and flow		N/A
	maximum inlet temperature of the inlet fluid		N/A
6.4.2	Noise		
6.4.2.1	Declaration of emission		
	The instructions shall include the noise-emission values and uncertainties as specified in 5.2 and the reference number of the test code, ISO 15744.		P
6.4.2.2	Additional information		
	If the values for noise emissions obtained using the appropriate tests defined in 5.2 do not adequately represent the emissions during the intended uses of the machine, additional information and/or warnings shall be supplied to enable an assessment and the management of the associated risks.		P
	Information on noise emission should also be provided in the sales literature.		P
6.4.3	Vibration		
6.4.3.1	Declaration of emission		
	The instruction handbook shall include the vibration-emission value and uncertainty as specified in 5.3 and the reference number of the test code, ISO 28927-2.		P
6.4.3.2	Additional information		
	If the values for vibration emissions obtained using the appropriate tests defined in 5.3 do not adequately represent the emissions during the intended uses of the machine, additional information and/or warnings shall be supplied to enable the potential risks to be assessed and managed		P
	Information on vibration emission should also be provided in the sales literature.		P

EN ISO 11148-6:2012			
Clause	Requirement - Test	Result - Remark	Verdict
6.5	Maintenance instructions		
	The maintenance instructions shall contain		P
	instructions to keep the assembly power tools for threaded fasteners safe by regular preventative maintenance		P
	information on when the regular preventative maintenance shall be carried out, for instance, after a specified time of operation, a specified number of cycles/operations or a stated number of times per year		P
	instructions for disposal so as not to expose personnel and the environment to hazards		P
	list of the service operations that the user should carry out		P
	instructions for lubrication, if required		P
	instructions to check the speed and make a simple check of the vibration level after each service		P
	instructions to check the speed regularly		P
	specifications of the spare parts for use when these affect the health and safety of operators		P
	Maintenance instructions shall include the precautions to take to avoid exposure to hazardous substances deposited (due to work processes) on the tool		P