



QH-TM-□□□

机械式张力测量仪

Mechanical tension measuring instrument

(使用说明书)

(Operating Instructions)

德清千和精密机械有限公司

Deqing Qianhe Precision Machinery Co., Ltd.

二零一九年十月修订

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01 / 产品前言

感谢您选择本公司产品！为了便于您正确地使用本产品，使用前请仔细阅读本说明书并妥善保

- 1.本产品的使用方法请阅读本说明书后面的内容；
- 2.请按照本说明书上的方法使用本产品。本说明书规定以外的其它方法可能会对产品的安全性、使用寿命等带来不良的影响，请谨慎操作；
- 3.本说明书中，技术规格如有变更恕不另行通知；
- 4.禁止擅自转载本说明书内容；
- 5.本说明书如有遗漏、错误等问题敬请谅解！如有疑问请及时与本公司取得联系；
- 6.本产品经过严格检验出厂，到货后如有疑问，请及时与本公司取得联系。

02 / 请注意安全使用标志



警告标志

03 / 售后保证

保修期为一年，即从购买之日起一年以内。在保修期内，由于产品自身原因产生的故障，本公司将无偿进行维修。

属于以下情况（但不限于下列情况）者，不在保修范围内，本公司或者本公司授权的服务中心将实行合理的收费维修。

- ①人为损坏或者超过保修期；
- ②保修凭证上的内容与商品实物标识不符或者被涂改；
- ③未经本公司授权对产品进行改造或维修产生的故障；
- ④因客户要求而改变了基本结构、尺寸的产品；
- ⑤未使用本公司标准配件或者未按产品使用说明书要求使用、维护、保养造成的损坏；
- ⑥在指定之外的电源（电压、频率）的情况下使用或者在电源异常情况下使用导致的故障；
- ⑦火灾、地震、水灾、雷电等不可抗拒因素造成的损坏。

在保修期内，产品经过维修后，其保修期保持原始保修期不变。

04 / 注意

①用于测量漆包线之类的线性材料时,由于在测量时线性材料会变成U形,因此有可能会留下弯度,引发材料本身或漆包层伤痕。

②剧烈地撞击测量线时会对测量线造成伤痕或断裂,请轻轻地放开弧形板。

③本产品是复杂精密仪器,请勿拆装、撞击、跌落。使用温度-2°C-40°C。

④轴承内注入的是专用油,如加入一般的油可能会导致转动不良。

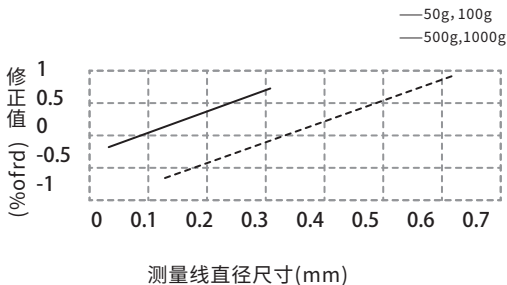
⑤由于是间歇性使用,测量线的运转速度请控制在500米/分以下。

⑥原理上,测量线的粗细及硬度会对测量值造成如下的影响:越细软测量值越偏小;越粗硬测量值越偏大.本产品是使用如下规格的线调校的,如使用其他测量线会发生上述的偏差。

- a.用于50g计量所用的测量线:直径约为0.08mm, 漆包线;
- b.用于100g计量所用的测量线:直径约为0.10mm, 漆包线;
- c.用于500g计量所用的测量线:直径约为0.20mm, 漆包线;
- d.用于1000g以上计量所用的测线:0-500g直径约0.22mm, 500g-1000g直径约0.35mm, 1000g-2000g直径约0.50mm, 2000g-3000g直径约0.70mm, 漆包线。

⑦对于测量线径的粗细不同, 理论上基本可以修正.如使用和本产品的调整检查线硬度基本上相同、粗细不同的线测量时, 用如下图表修正的话可以更准确的测量。此外, 对于测量线的硬度, 由于种类(编织线、单线等)、材质、牌号等不同而会有各种变化, 因此逐个修正较对。作为实际使用的线的修正方法(含粗细、硬度), 可以在使用线上确定测量范围的2个点到3个点的基准张力, 再把读取的指针显示偏差作为修正值。

按照测量线粗细的修正值图标



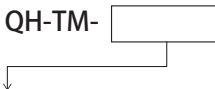
⑧ 本产品为计量仪器, 应定期进行校对。

05 / 产品介绍

本产品出厂前经过严格检验, 您收到了产品之后
请与表1进行型号与规格确认。

1 型号规格确认

产品的型号和规格见包装标签。



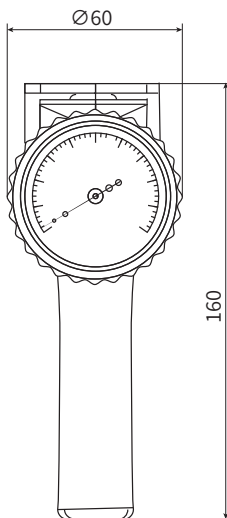
05	测量范围:1g- 50g ,最小刻度: 1g
10	测量范围:2g- 100g, 最小刻度: 2g
20	测量范围:4g- 200g, 最小刻度:4g
50	测量范围:10g- 500g, 最小刻度:10g
100	测量范围:20g-1000g, 最小刻度:20g
200	测量范围:40g-2000g, 最小刻度:40g
300	测量范围:50g-3000g, 最小刻度:50g

表1 型号与规格以及测量范围

② 概要

用于测量棉线，漆包线，金属线，塑料线、纤维、光纤、丝、等线性材料的张紧力。可用于测量动态及静态张紧力。

③ 外形尺寸



4 概要

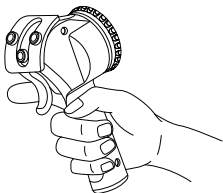


图4.1 拉动弧形线板

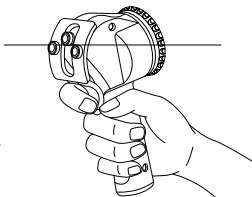


图4.2 正确夹持被测线材

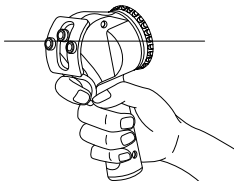


图4.3 轻轻放开弧形线板

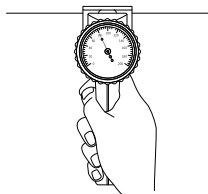


图4.4 正确读取测量

06 / 附录

1. 产品概述

- 【名称】 张力测量仪
【方式】 机械式
【本体材质】 ABS树脂
【本体色】 黑哑光
【包装尺寸】 约210mm×150mm×160mm
【产品质量】 约0.35kg

2. 产品清单

张力计一台、说明书一份

3. 合格证书

产品合格证	
本产品经检验合格	
生产编号：_____	计量员
效验日期：_____	

4. 保修卡

保修卡

生产编号：

购买日期： 年 月 日 保修期：购买日起一年之内

使用者姓名或者单位：

本产品已检验合格，在保质期内发生故障时，以下规定将无偿维修。

保证规定

- ① 按照说明书正常使用产生的故障并且在保修期内的情况将无偿维修。
- ② 以下场合除外：
 - a. 错误使用或者除公司以外的维修或改造引起的故障；
 - b. 地震、水灾、火灾等由于本产品以外的原因产生的故障；
 - c. 易损耗部件的补充。

01 / Product Foreword

Thank you for choosing our products in order to facilitate you in the proper use of this product, please read the instructions carefully before use and keep.

- ①Operation a product please read the back of the contents of this manual;
- ②Please use the method in accordance with the instructions on the use of our products, other methods other than those specified in this manual may be product safety, life and other impact, please exercise caution;
- ③Specifications in this manual are subject to change without notice;
- ④Resolutely resist the unauthorized reproduction of this manual content;
- ⑤This specification are subject to omissions, errors and other problems after updating, if in doubt please do not hesitate to get in touch with the company.
- ⑥This product has been strictly inspected and delivered. If you have any questions after arrival, please contact our company in time.

02 / Please note that the safe use of signs



Warning signs

03 / Warranty

Warranty period of one year from the date of order of less than one year from the customer. During the warranty period, the product itself due to the reason that we will be free with the change spare parts or maintenance.

Belong to the following (but not limited to, the following), one who is not under warranty, the Company or its authorized service center will implement reasonable maintenance fees.

- ①Over the warranty period;
- ②Because users improper use or intentional damage;
- ③Content on the warranty certificate identifies discrepancies and kind of goods or has been altered;
- ④Without the authorization of the product or service produced transform fault;
- ⑤Fails to require the use of the product manual, maintenance, maintenance of damage;
- ⑥In addition to the specified power supply (voltage,frequency) situation resulting from the use or failure to use the power under unusual circumstances;
- ⑦Fire, earthquake, flood, lightning, war, force majeure and other radioactive contamination caused by the failure.

After the warranty period, the maintenance of its warranty period to maintain the original warranty period unchanged.

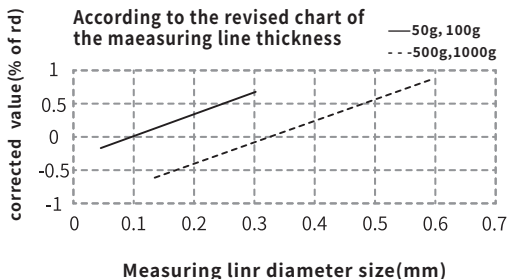
04 / Note

- ① Materials used to measure the linear wire or the like, since the material in the measurement will become a linear U-shaped, it is possible to leave the curvature, the material itself or the enamel layer caused scars.
- ② Would violently hit when measuring line measuring line causing injuries or broken, gently release the curved panels.
- ③ This product is a sophisticated instrument, do not removable, shock, drop, using temperature -2 °C -40 °C.
- ④ Bearing the injection is for oil, such as adding oil may cause general bad turn.
- ⑤ Because it is used intermittently, the operation speed of the measuring line should
- ⑥ In principle, the resulting thickness and hardness measurement values will influence the measuring line is as follows:the more the more small valuables measurements; larger the value, the more coarse measurement of the product line is adjusted using the following specifications, such as the use of others. Said deviation measuring line occurs.

- a. A measuring line used for the measurement of 50g: diameter of about 0.08mm, polyethylene braided wire.
- b. A measuring line used for 100g measured: diameter of about 0.10mm, polyethylene braided wire.
- c. A measuring line used for 500g measured: diameter of about 0.20mm, polyethylene braided wire.
- d. A measuring line used for the measurement of 1000g: 0-500g diameter of about 0.22mm, 500g-1000g polyethylene braided wire diameter of approximately 0.35mm.
- e. A measuring line used for the measurement of 3000g: 0-1500g diameter of about 0.45mm, 1500-3000g diameter of about 0.70mm, polyethylene braided wire.

⑦ For the different diameter of the measured thickness, in theory, can be basically corrected as to adjust the hardness of the use of the inspection line, and the product is substantially the same, different line thickness measurement, using the following chart may be more accurately corrected if Correct the measurement Furthermore, for the hardness measurement line, depending on the

type (braided wire, in-line, etc.), materials, and have a variety of different grades of change, so the more individually corrected right. actually used as the correction line The method (with the thickness, hardness), the tension may determine the reference point of the measuring range of 2 to 3 points in the use of the line, then the read pointer indicates the deviation as a correction value.



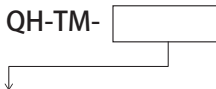
- ⑧ This products is a measuring instrument should be check up on regularly.

05 / Product Description

After the front of the factory through rigorous testing, you receive the product, please make sure the model and specifications in Table 1.

① Model specifications confirmed

Product models and specifications, see the package label.



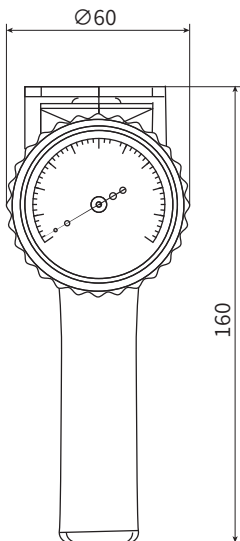
05	Measuring range:1g- 50g, the smallest scale: 1 g
10	Measuring range:2g- 100g, the smallest scale: 2 g
20	Measuring range:4g- 200g, the smallest scale: 4 g
50	Measuring range:10g- 500g, the smallest scale:10g
100	Measuring range:20g-1000g, the smallest scale:20g
200	Measuring range:40g-2000g, the smallest scale:40g
300	Measuring range:50g-3000g, the smallest scale:50g

Table 1 type and specification

② Summary

Tension for measuring thread, wire, metal wire, plastic wire, fiber, fiber, silk, and other linear materials can be used for measuring dynamic and static tension.

③ Dimensions



④ Measurement methods

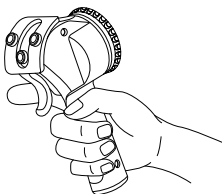


Figure4.1
pull arc line board

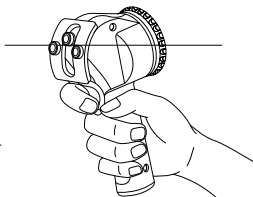


Figure4.2
clamping wire being
measured correctly

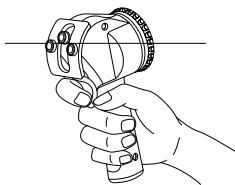


Figure4.3
gently let go of
arc line board

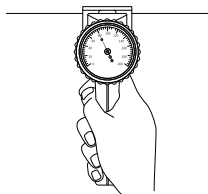


Figure4.4
read correctly measure

06 / Appendix

① Product Overview

【Name】linear tension meter

【Way】mechanical

【Body Material】ABS resin

【The body color】black matt

【Package size】about 210mm × 150mm × 160mm

【Quality】about 0.35kg

② Packing list

A tonometer, Using a manual

③ Certificate

<div>Product certificate</div>	
This product passed inspection	<div>Inspector</div>
Production NO.: _____	
Inspection Date: _____	

4 Warranty Card

Warranty card

The production number	
Purchase date:	Warranty period: within one year from the date on the acquisition date
The user name or unit:	

This product has inspection, failure occurs within the guarantee period, the following provisions will be maintenance free of charge.

Ensure that specified

1. According to the instruction to normal use of the fault and will be maintenance free of charge during the warranty period.

2. Of the following except:

a. Incorrect use or repairs or other than the company restructuring caused by fault;

b. Because this product such as earthquake, flood, fire outside the reason of failure;

c. Easy to loss components.



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