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www.staht.com

Part Number & Description

600-004	t60 Digital Tensile Tester Kit (Including Accessories & Heavy Duty Carry Case)
600-009	t60 Digital Tensile Tester Kit (Including Accessories & Kit Bag)
601-015	Digital Tensile Tester Load Cell, 60kN
600-044	t25 Digital Tensile Tester Kit (including Accessories & Heavy Duty Carry Case)
600-039	t25 Digital Tensile Tester Kit (including Accessories & Kit Bag)
601-031	Digital Tensile Tester Load Cell, 25kN

Applicable Standards

EN 61000-6-3:2007+A1:2011, Radiated Emissions Test

EN 61000-4-2:2009, Electro-Static Discharge Test

EN 61000-4-3+A1:2010 +A2:2010, Power Frequency Magnetic Field Immunity

EN 61000-4-6:2014, Conducted Disturbances Induced by Electromagnetic Fields

Applicable Directives

2014 / 53 / EU, Radio Equipment Directive (RED)

2011 / 65 / EU, Restriction of Hazardous Substances in Electrical and Electronic Equipment Directive (RoHS)

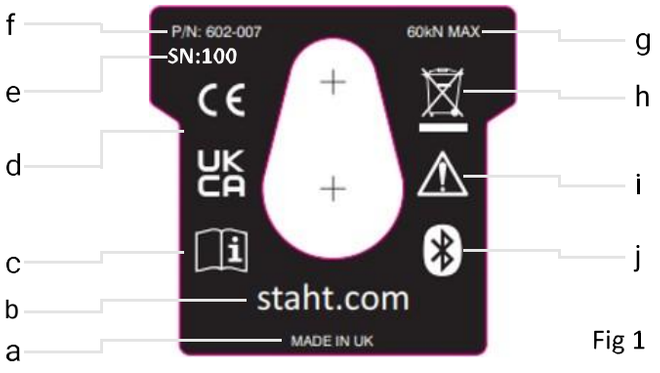

Fig 1

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Cal	11/05/21
Cal Exp	11/05/22
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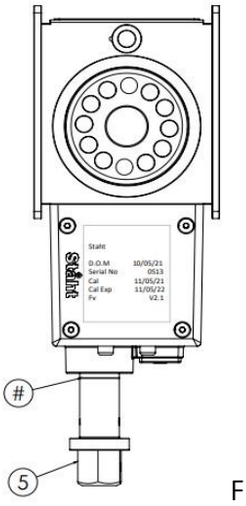
Fig 3



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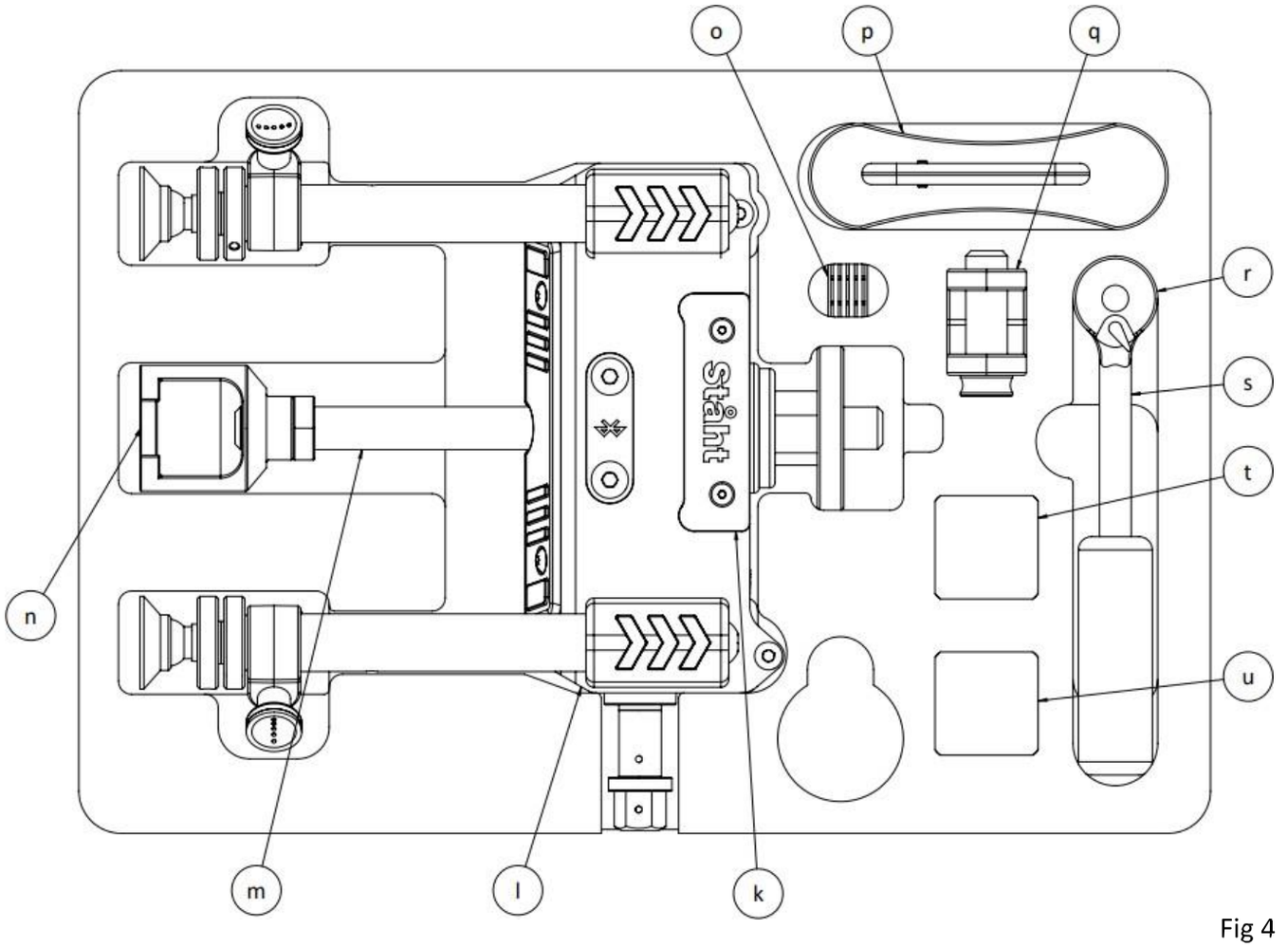
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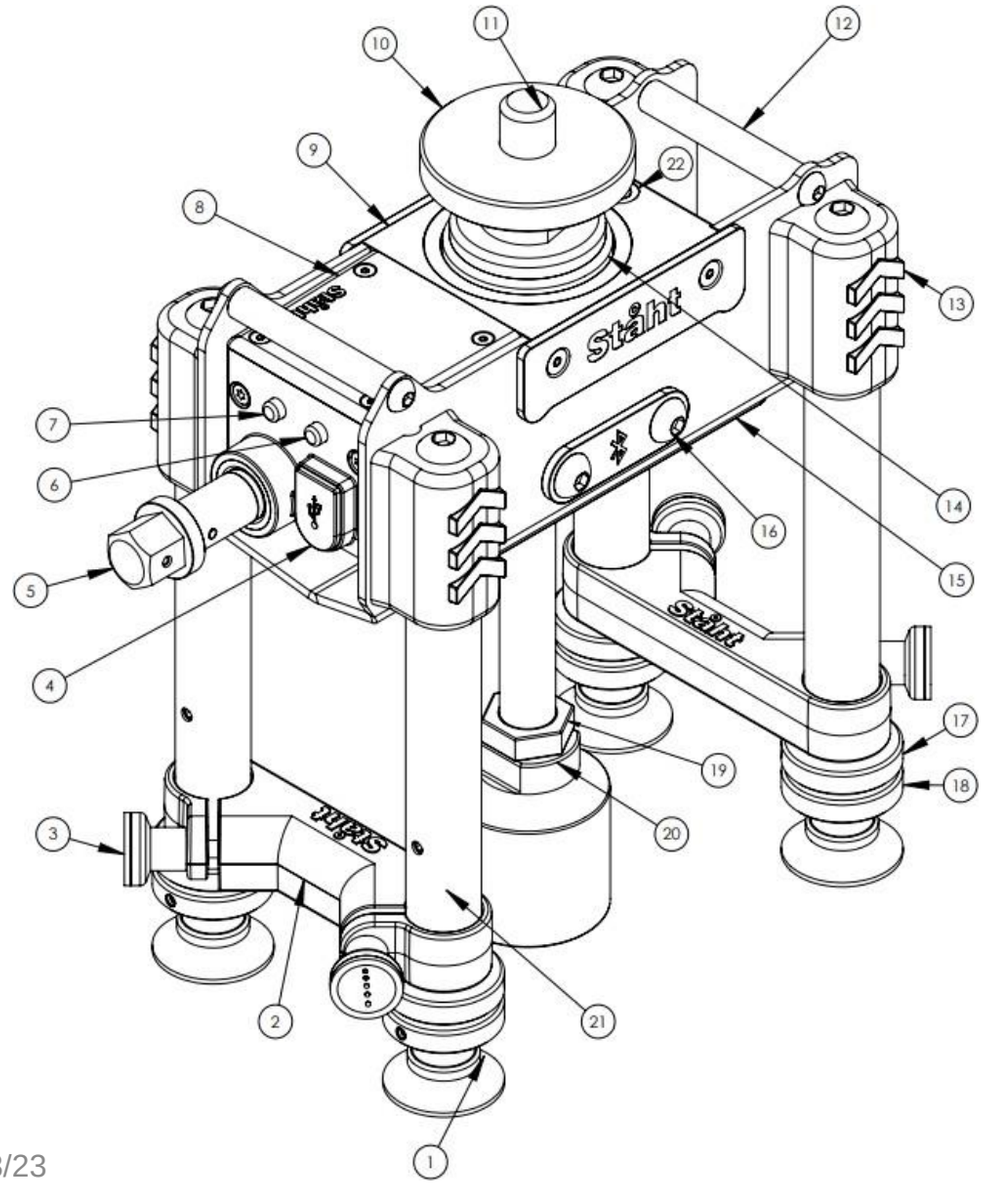
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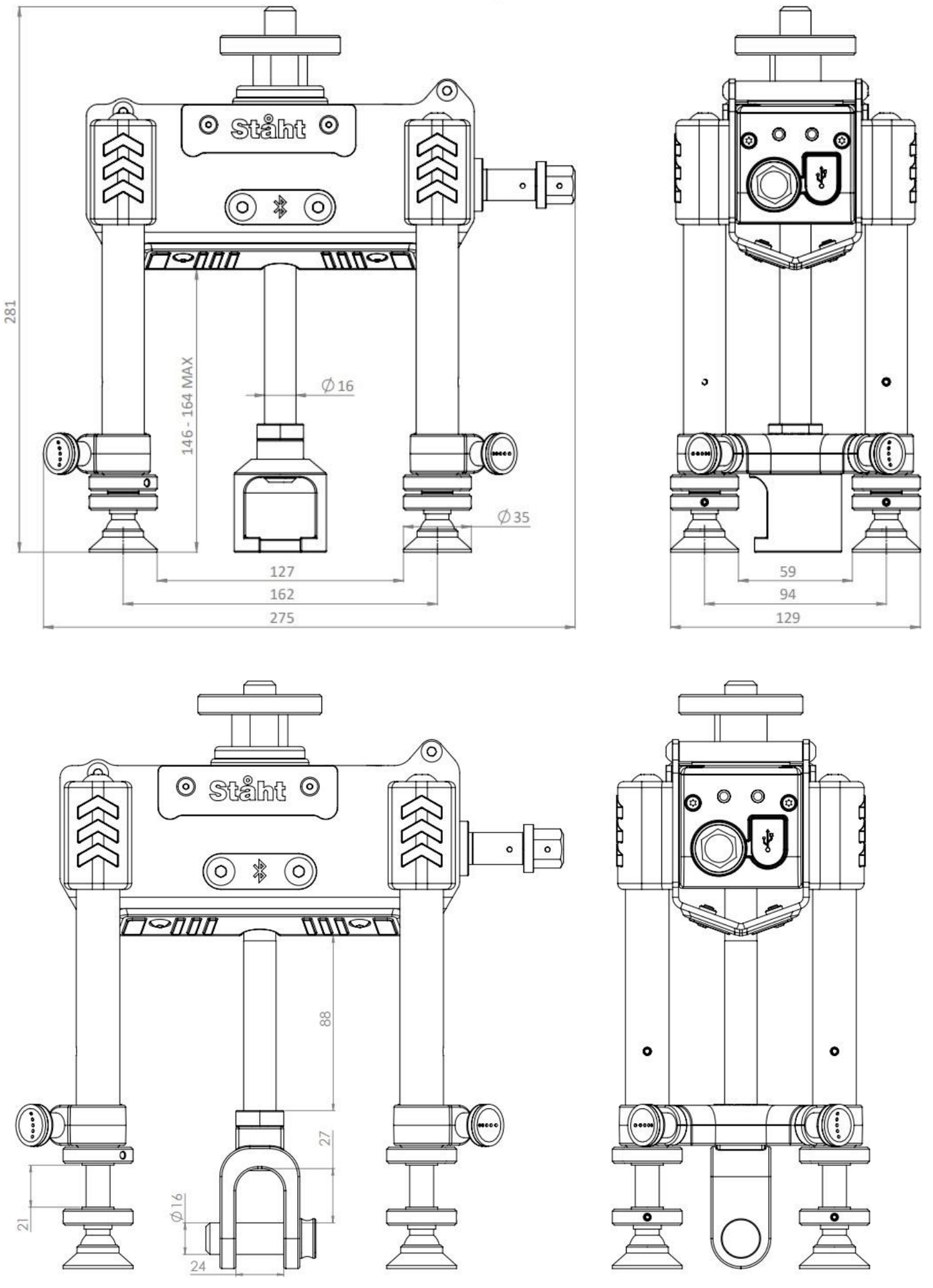
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Fig 6

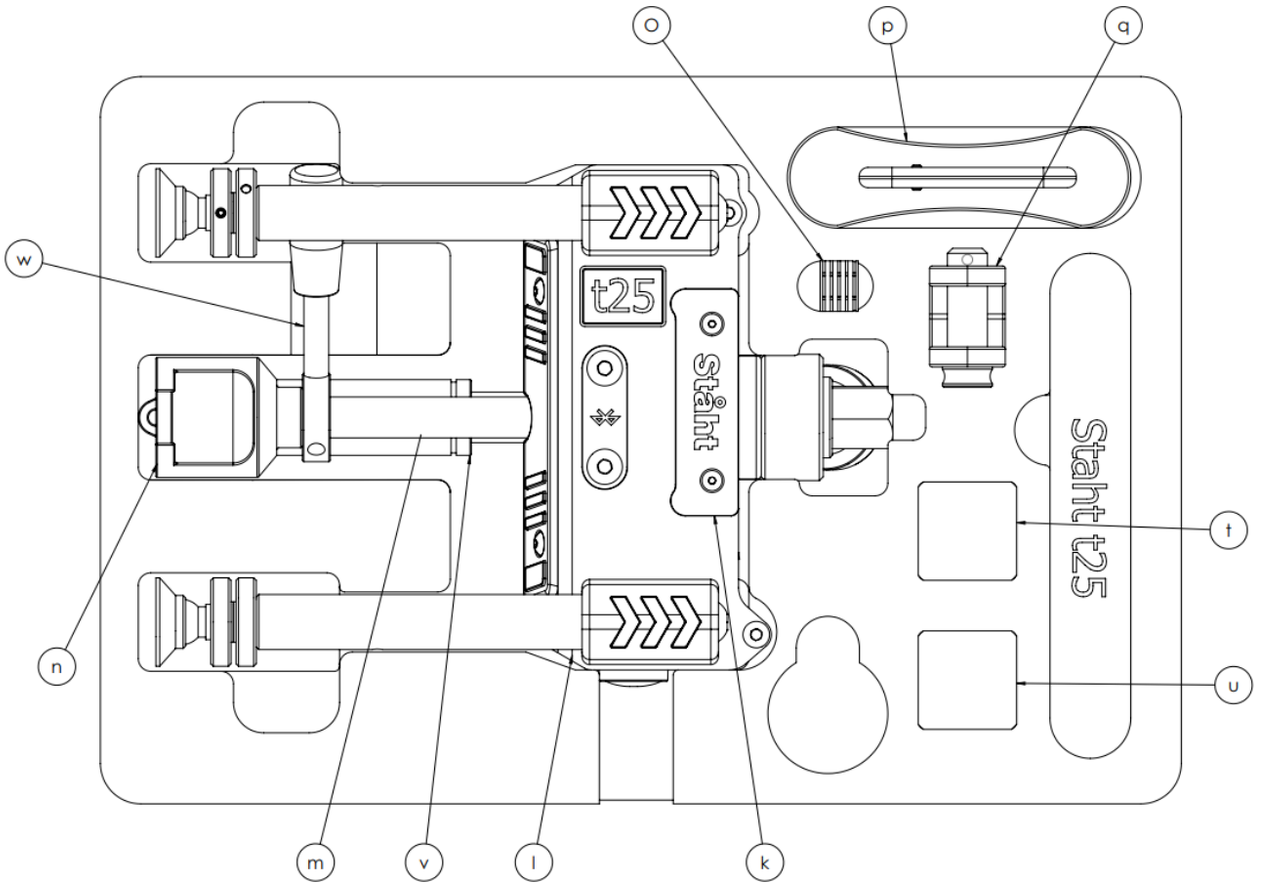
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Fig 6a

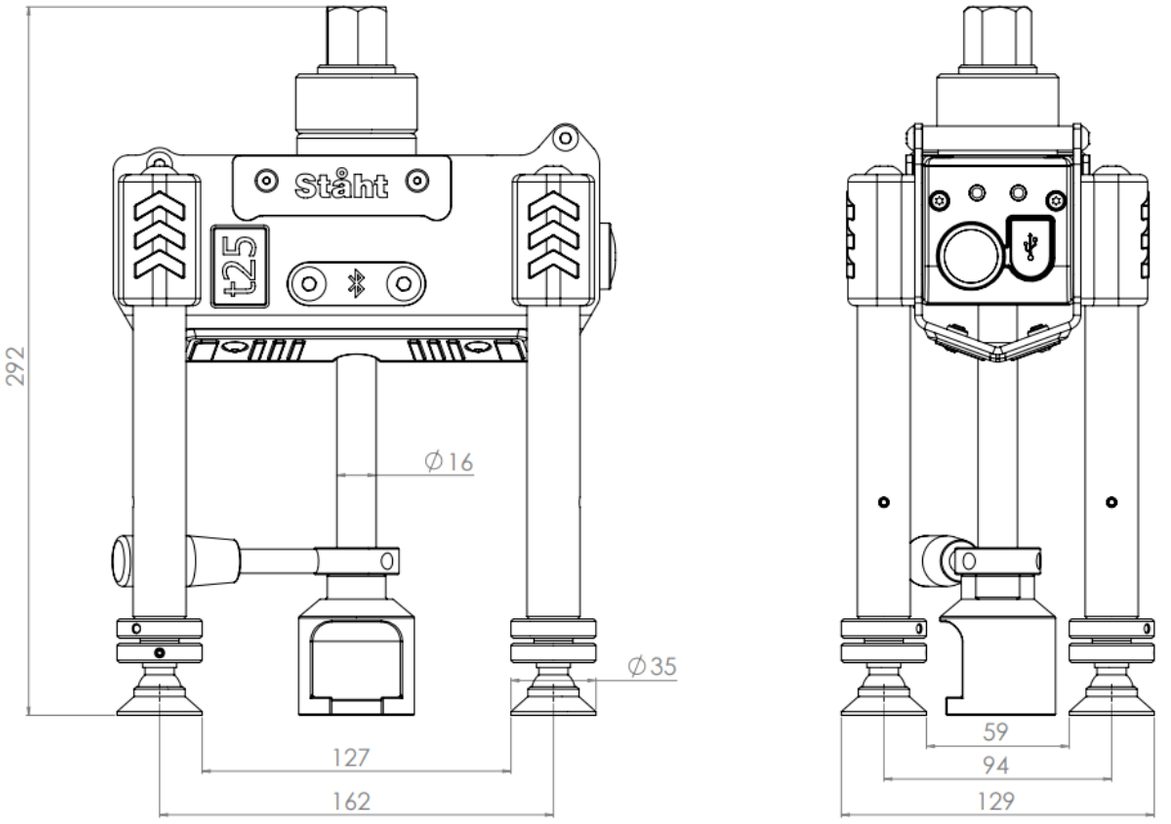
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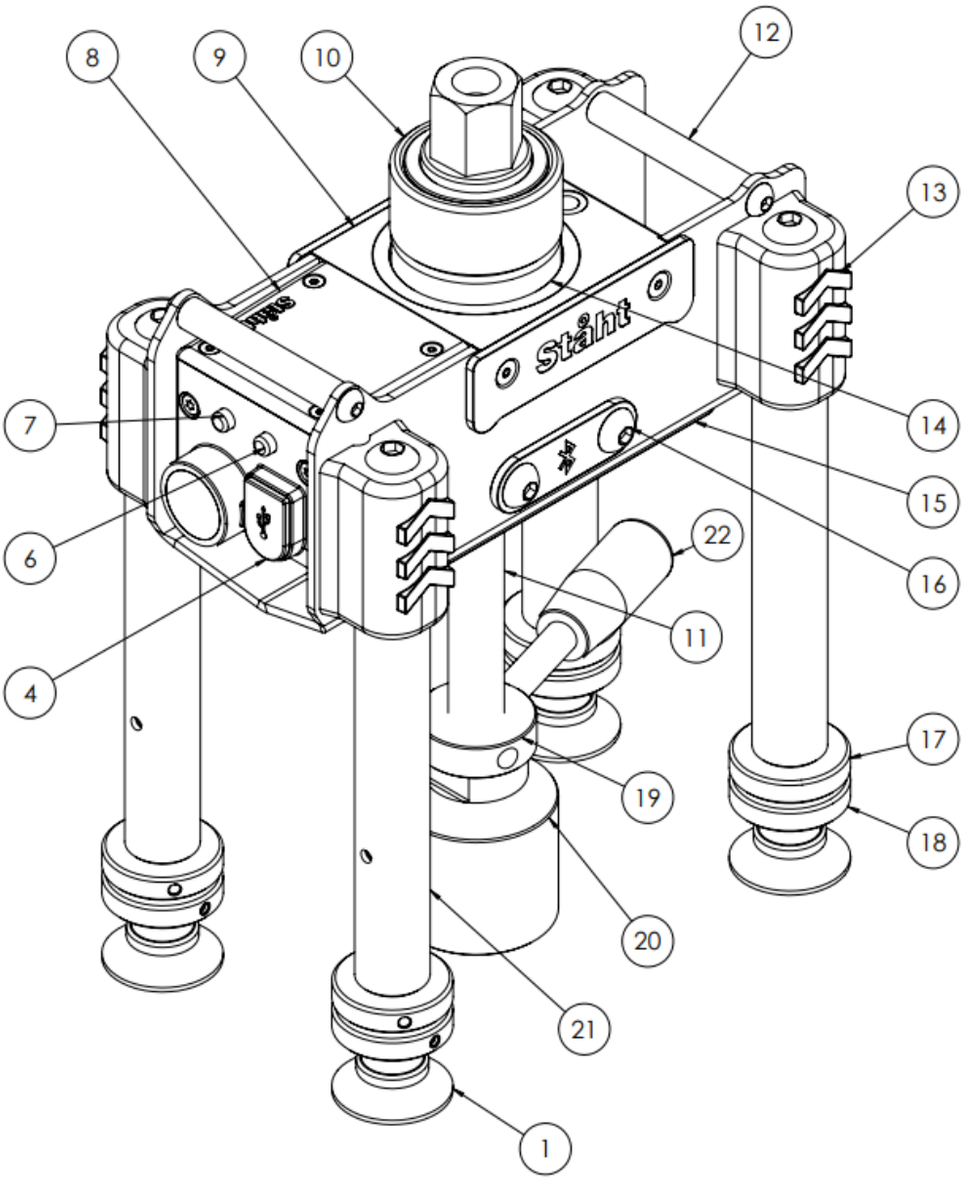
Fig 6b



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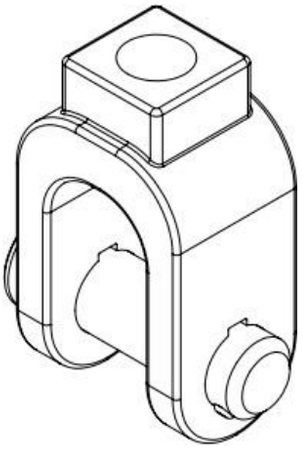
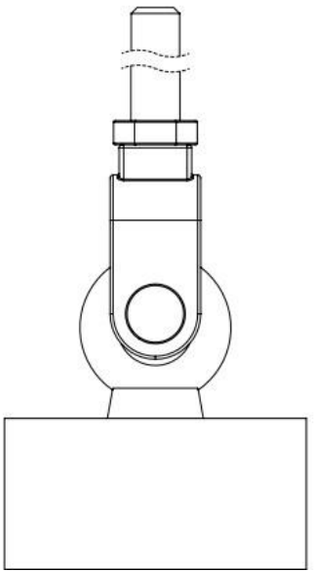




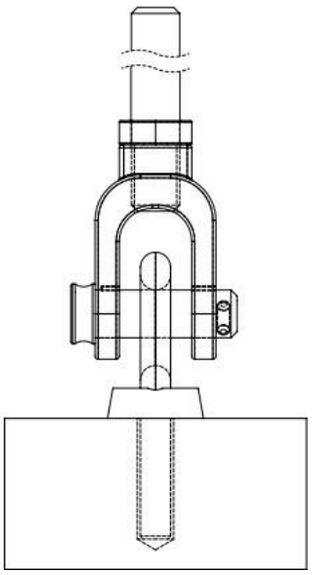
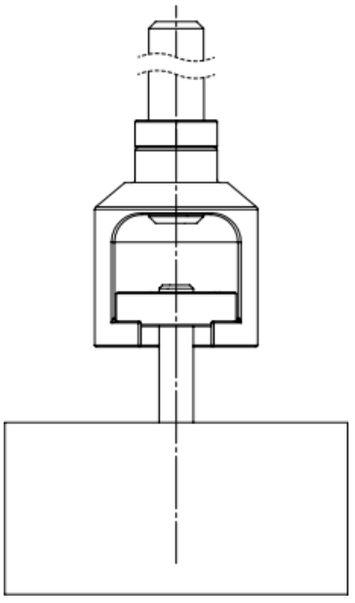
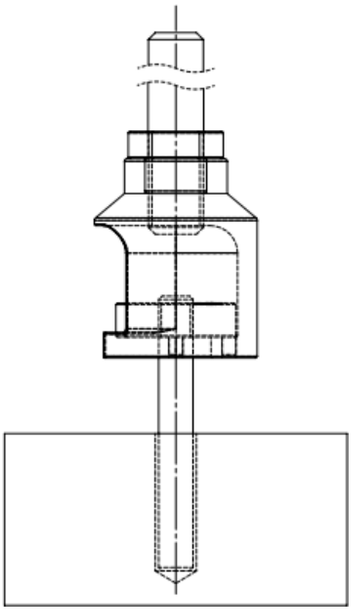


Fig 7





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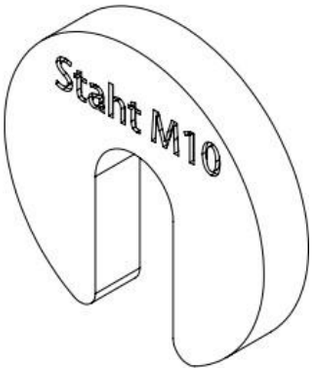

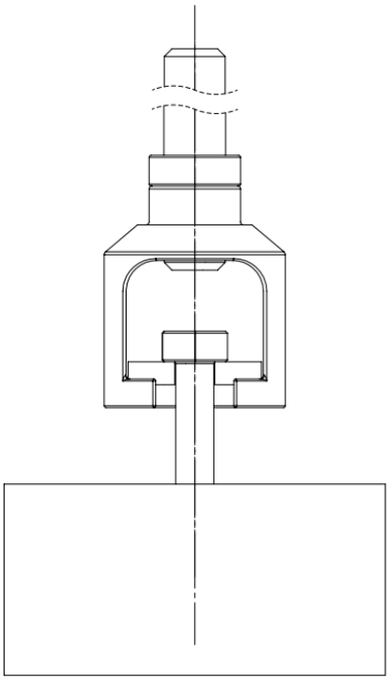

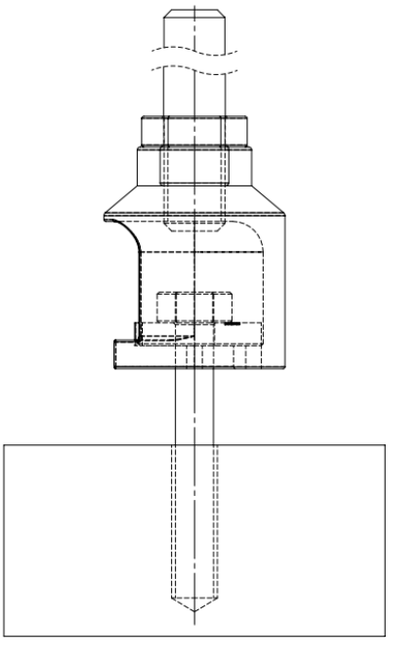

Fig 9

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United Kingdom Tel: (+44) 121 817 0620 Web: www.staht.com

Intended Use - For load testing headed or threaded anchors and eyebolts up to a maximum of 25kN (5620 lbf) or 60kN (13,488lbf). Do not exceed the maximum load.

Description of User - This equipment is to be used by a Competent Person. A competent person is someone who has sufficient training and experience or knowledge that allow them to perform the task for which the equipment is designed for effectively and in a safe manner.

Retaining Instructions - Read and understand this manual and its safety instructions before using this product. Failure to do so can result in serious injury or death. Follow all the instructions. This will avoid fire, explosions, electric shocks or other hazards that may result in damage to property and/or severe or fatal injuries.

The product shall only be used by persons who have fully read and understand the contents of this user manual. Ensure that each person who uses the product has read these warnings and instructions and follows them. Keep all safety information and instructions for future reference and pass them on to subsequent users of the product. The manufacturer is not liable for cases of material damage or personal injury caused by incorrect handling or non-compliance with the safety instructions. In such cases, the warranty will be voided.

Personal Protective Equipment (PPE) - When using this product, you should wear all required PPE for the area of operation. As a minimum, you should wear safety boots, work gloves and eye protection when using this equipment, irrespective of local conditions. All protective equipment should be fit for purpose. Staht Limited is not liable for the provision, usage or disposal of any PPE.

Storage and Transportation - When not in use, store the equipment in the Carry Case or the Kit Bag. Store in a dry, secure place, in a temperature between 0-25^{o}C. If storing for longer than 90 days without use, power cycle the battery. If transporting by air, transport with a reduced charge (<50%)

Environment – Use in temperatures between -10°C and + 50°C. Do not use underwater, or in heavy rain. :Use of this equipment in areas with environmental hazards may require additional precautions to prevent injury to the user or damage to the equipment. Hazards may include, but are not limited to; heat, chemicals, corrosive environments, high voltage power lines, gases, moving machinery, and sharp edges.

Maintenance - Check equipment before each use. Keep the equipment clean and dry. To clean, use a clean damp cloth and light detergent and dry. Use a clean brush to keep all threads clear from dirt, dust and debris. Do not lubricate.

Lubrication – The M16 Threaded Drop Rod used on the t25 (25kN Tester) must be cleaned and lubricated regularly to reduce friction. Apply a light oil (3 in 1, WD40, GT85 or similar) to the drop rod to the threaded working area. **WARNING** Do **NOT** lubricate to t60 (60kN) Drop Rod as it can affect the load readings.

Servicing – All servicing must be done by Staht Limited, or an approved Staht Service Agent. No modifications are permitted to Staht equipment. Only use genuine Staht parts and accessories.

Calibration - From the date of purchase, the tester is calibrated for one year. The "calibration date" and the "next calibration date" can be found on the calibration certificate, the display screen on startup and in the app and web dashboard. We recommend calibration should be performed annually to relevant National / International Standards by Staht or an approved third party. **CAUTION**: Failure to calibrate the tester prior to the next calibration date may invalidate any test data.

Removing the Load Cell -Unscrew the Fasteners (16) from the bridge with a 5mm hex bit /key (l). Remove the Bluetooth® symbol plates. Lift the load cell (9) from the bridge. To re-install, reverse the procedure. **CAUTION**: Take care to align the screws and tighten the screws to 10Nm (7.4ftlbs) with a calibrated torque wrench.

Replacing the Display Cover – Unscrew the four screws using a 2mm hex key. Remove the Display Cover. Replace the cover and replace the four screws. CAUTION: Do not over-tighten screws, Hand tight only.

Charging - On first use, charge the battery to 100% using USB-C cable (o) provided and a suitable USB plug (not provided) to a mains power source. Locate and lift the charging cover (4) to locate the USB-C charging port. When finished charging, remove USB-C cable. Push the protective cover back in place.

Disposal – Dispose of any Electric or Electronic components in accordance with local regulations. Other components should be disposed / recycled responsibly.

1 Year Guarantee – Against any material or manufacturing defect. Exclusions: normal wear and tear, oxidation, modifications or alterations, incorrect storage, poor maintenance, negligence, uses for which this product is not designed.

Troubleshooting / Frequently Asked Questions – Please refer to www.staht.com for more information.

2. Nomenclature

Fig 1 - (a) Country of Origin, (b) Manufacturer, (c) Read Instructions Symbol, (d) Compliance Symbols, (e) Serial Number, (f) Part Number, (g) Maximum Working Load, (h) WEEE compliance symbol, (i) Warning symbol, (j) Bluetooth capability symbol.

Fig 2 - (#) Hex Drive Mark / Red Ring, (5) Hex Drive

Fig 3 - D.O.M. – Date of Manufacture, Serial No. – Serial Number, Cal – Date of Last Calibration, Cal Exp – Date of Next Calibration, Fv – Firmware Version

Fig 4 – (k) Digital Tensile Tester Load Cell, 60kN, (l) Bridge, 60kN, (m) Drop Rod & Top Nut, (n) Anchor Jaw, (o) USB- C Cable, (p) Tool Lanyard for Tester, (q) Clevis, (r) 17mm Socket, (s) 3/8" Socket Wrench c/w Wrist Lanyard, (t) 60kN Threaded Washer Pack, (u) Slotted Washer Pack.

Fig 5- (1) Foot, (2) Leg Brace, (3) Leg Brace Adjuster, (4) USB-C Charging Port, (5) Hex Drive (17mm AF), (6) Green Button (on / off), (7) Yellow Button, (8) Display, (9) Load Cell, (10) Top Nut, (11) Drop Rod, (12) Brace bar, (13) Protective cover, (14) Primary Piston, (15) Grip, (16) Fastener, (17) Knurled Lock Nut, (18) Foot Adjuster, (19) M16 Anti Rotation Nut, (20) Anchor Jaw, (21) Leg.

Fig 6a – (k) Digital Tensile Tester Load Cell, 25kN, (l) Bridge, 25kN, (m) Drop Rod & Sealed Thrust Nut, (n) Anchor Jaw, (o) USB-C Cable, (p) Tool Lanyard for Tester, (q) Clevis, (t) 25kN Threaded Washer Pack, (u) Slotted Washer Pack (v) 24mm Ratchet Spanner (w) Anti Rotation Nut & Handle

Fig 6c - (1) Foot, (4) USB-C Charging Port, (6) Green Button (on / off), (7) Yellow Button, (8) Display, (9) Load Cell, (10) Sealed Thrust Nut, (11) Drop Rod, (12) Brace bar, (13) Protective cover, (14) Primary Piston, (15) Grip, (16) Fastener, (17) Knurled Lock Nut, (18) Foot Adjuster, (19) Anti Rotation Nut, (20) Anchor Jaw, (21) Leg (22) Handle

3. Test Preparation

On first use, charge the battery to 100% using USB-C cable (o) provided and a suitable USB plug (not provided) to a mains power source.

Before starting the Test Procedure follow the preparation steps below.

WARNING - When working at height ensure the tool lanyards are used to secure the tester and the socket wrench, see separate user instructions provided.

WARNING– if the anchor is not installed perpendicular to the surface, DO NOT TEST.

Adaptor Selection - To test threaded or headed anchors use the Anchor Jaw (n). For safety eye bolts, lifting eyes and ring bolts use the Clevis (q).

Fitting the Adaptor to the Drop Rod (11) – Screw the drop rod fully into the Anchor Jaw (20) or Clevis (q) up to the M16 Anti Rotation Nut(19). Secure with the 24mm Spanner provided.

Using the Clevis (See Fig 7) - Rotate the pin with the slot and pull back through the Clevis. Position the Clevis over the eye bolt, push the pin back through the Clevis and rotate 180° to lock.

Washer Selection for Anchor Jaw – Threaded Anchors (See Fig 8) – Select the correct Threaded Washer (t) and screw it onto the anchor leaving at least one thread of the anchor showing. Locate the Anchor Jaw (20) under the Threaded Washer, ensuring that the Threaded Washer is central inside the Anchor Jaw.

Washer Selection for Anchor Jaw – Headed Anchors / Bolts (See Fig 9) – Select the correct sized Slotted Washer (u) and locate in the Anchor Jaw(20), ensuring it is central. Locate this under the head of the anchor, ensuring the anchor is central at the bottom of the slot. Note: The Anchor Jaw has magnets to aid the retention of the Slotted Washer.

Testing Socket Anchors - screw in a suitable threaded or headed anchor (not provided) until it has full engagement with the socket, then follow the Washer Selection instructions detailed above.

Leg Brace Adjustment- To adjust, loosen the leg brace adjusters (3). Slide the leg brace(2) to lowest possible position. Hand-tighten the adjusters to secure leg brace in position. Do not remove adjuster or over-tighten.

Height / Level Adjustment - Unscrew the foot (1) using the foot adjustment disc (18) to the required height. Screw the locking adjusting disc (17) against the leg to lock in position. Repeat on all feet until the required height is reached, checking the level bubble is central and the bridge is stable. For horizontal surfaces refer to bubble level on top. For vertical surfaces refer to bubble level on side.
Note: On inclined surfaces greater than 0^{o} (horizontal), but less than 90^{o} (vertical), do not use bubble level.

4. Screen Functions

Press <GREEN> button (6) – Power On
Long Press <GREEN> button (6) (3 seconds) – Power Off
Press <YELLOW> button (7) – Peak Load On / Off (press to reset)
Long Press <YELLOW> button (7) (3 seconds) – Unit selection (kN / lbf)

5. Test Preparation

WARNING: Do not exceed the maximum test loads for an anchor. Consult the anchor manufacturer for further guidance. Do not exceed the maximum test loads for the tester (MAX 60kN (13,488lbf) or 25kN (5,620 lbf)

WARNING: Do not use electric drill drivers or impact drivers to apply torque to the Hex Drive(5).
WARNING: Allow a minimum of 5mm clearance between the M16 Anti Rotation Nut(19) and the Grip(15)

t60 Proof Load Testing Procedure (if using the Staht App follow the on-screen instructions)

i. Use the Socket Wrench to rotate the Hex Drive counter-clockwise until the Red marker (Hex Drive Marker) is visible (See Fig 2)
ii. Press the <GREEN> button (6) to turn on.
iii. Hand tighten the Top Nut (10) to a minimum of 0.4kN (90lbf)
iv. Adjust all feet down onto the test surface to ensure the bridge is level & stable, ready for testing.
v. Position & tighten the leg braces (4) to the lowest possible position.
vi. Rotate the Socket Wrench clockwise to apply force until the target load (+5%) is achieved. e.g. 10kN + 5% is 10.5kN
vii. Wait approx. 30 seconds for the load to settle and top up the load to the target +5% as required.
viii. Hold the load until the time required elapses.
ix. To remove the load, reverse the direction of rotation on the Socket Wrench until the Red Marker is visible.
x. Loosen the Top Nut to remove any remaining load.

t60 Ultimate Resistance Testing Procedure (if using the Staht App follow the on-screen instructions)

i. Use the Socket Wrench to rotate the Hex Drive counter-clockwise until the Red marker (Hex Drive Marker) is visible (See Fig 2)
ii. Press the <GREEN> button (6) to turn on. Press the yellow button once (short press) to activate the peak hold function.
iii. Insert the handle into the anti rotation nut on the drop rod and datum against a leg to prevent turning.
iv. Tighten the Top Nut (10) by hand to a minimum of 0.4kN (90 lbf)
v. Adjust all feet down onto the test surface to ensure the bridge is level & stable, ready for testing.
vi. Position & tighten the leg braces (4) to the lowest possible position.
vii. Use a 24mm Spanner on the top nut to add progressive load. (MAX 20kN / 4496 lbf)
viii. When the load gets over 20kN (4496lbf) rotate the Socket Wrench clockwise to apply force to the Hex Drive until the failure load is reached.
ix. To remove the load, firstly reverse the direction of Socket Wrench until the Red Marker is visible.
x. Remove all of the remaining force from the top nut with the 24mm Spanner.
xi. Press the yellow button again to clear the peak load.

t25 Proof Load Testing Procedure (if using the Staht App follow the on-screen instructions)

i. Press the <GREEN> button (6) to turn on.
ii. Fully tighten the Sealed Thrust Nut (10) by hand.
iii. Adjust all feet down onto the test surface to ensure the bridge is level & stable, ready for testing.
iv. Place the 24mm Ratchet on the Sealed Thrust Nut and rotate clockwise to apply force until the target load (+5%) is achieved. e.g. 10kN + 5% is 10.5kN
v. Hold the load until the time has elapsed.
vi. To remove the load, reverse the 24mm Ratchet.

t25 Ultimate Resistance Testing Procedure (if using the Staht App follow the on-screen instructions)

i. Press the <GREEN> button (6) to turn on. Press the yellow button once (short press) to activate the peak hold function.
ii. Fully tighten the Sealed Thrust Nut (10) by hand.
iii. Adjust all feet down onto the test surface to ensure the bridge is level & stable, ready for testing.
iv. Place the Ratchet on the Sealed Thrust Nut and rotate clockwise to apply force until the failure load is reached
v. To remove the load, reverse the 24mm Ratchet.
vi. Press the yellow button again to clear the peak load.

Declaration of Conformity

Staht Limited declares, under its sole-responsibility that the products named on this document have been tested to the Standards stated on this document and complies with the Directives stated.

Approved Signatory RHirst **Date** 20/09/2021

Robert Hirst, Managing Director