Barry Napper & Co
Engineers
The Specialists in On-Board Vehicle Weighing and Commercial Vehicle Body Repairs

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Trailer
"Stability Weigh"
User Manual

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Version 1.2

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This handbook is intended as a guidance note for operators of trailers fitted with the Barry Napper and Co ***"Stability Weigh System"***.

The system has been designed as an aid to the vehicle operator to enable him or her to undertake safe and accurate discharge (tipping) of a load when on a delivery site.

This booklet covers the following areas:

- ZERO and SPAN Calibration of the Weighing Instrument
- Setting of the Load and Unload alarm
- Use of the Mobile Phone App – powered by *Bluetooth*® wireless technology
- The safety system master switch
- The electro-pneumatic valve used to restrict the body being raised in a particularly hazardous scenario.
- The various safety trigger levels associated with this system
- Trouble shooting guide

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Rinstrum N420 – K401 Calibration Instructions

To undertake a zero calibration the body must be empty

- Press and hold the **POWER** key and the ***F3*** key, the display will eventually show **9En_OPt**
- Press the **ZERO** key display show **H.'ArE**
- Press the **ZERO** key again display show **SCALE**
- Press the **TARE** key display show **bUI Ld**
- Press the **TARE** key again display show **OPtI On**
- Press the **TARE** key again display show **CAL**
- Press the **GROSS/NET** key display will show **2Er0**
- Press the **OK** key on the numeric key pad on the right hand side
- The display show a random weight in kg on the upper screen and **CUnt ?** on the lower screen
- Press the **OK** key display will show **2 in P**, the display will show **0.000** on the main screen and **dOnE** in the lower screen.
- Press the **OK** key, display will show **2Er0** on the main screen.
- Press the **POWER** key, the display will return to normal weighing

To undertake a loaded (SPAN) calibration load with a known weight (from a weighbridge)

- Press and hold the **POWER** key and the ***F3*** key, the display will eventually show **9En.OPt**
- Press the **ZERO** key display show **H. 'ArE**
- Press the **ZERO** key again display show **SCALE**
- Press the **TARE** key display show **bUI Ld**
- Press the **TARE** key again display show **OPtI On**
- Press the **TARE** key again display show **CAL**
- Press the **GROSS/NET** key display will show **2Er0**
- Press the **GROSS/NET** key display will show **SPAn**
- Press the **OK** key on the numeric key pad on the right hand side
- The display will show a totally random weight in kg
- Press the **OK** key and the display will show a **'E IGht** on the upper section and the lower section (smaller digits) will show a weight in digits.
- Using the **NUMERIC KEYPAD** type in the known payload of the vehicle in full, for example if the payload is 19,780kg, using the numeric pad type in **19.780**, with no spaces or gaps, please ensure the decimal point is included. The weight entered will appear on the lower screen.
- Press the **OK** key display will show **S in P**, the display will show the weight you have just entered on the main screen and **dOnE** in the lower screen.
- Press the **OK** key, display will show **SPAn** on the main screen.
- Press the **POWER** key, the display will return to normal weighing

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Rinstrum N420 – K401 Load Alarm Setting Instructions

- Press and hold the ***F3*** button, the display will show **LOAd** on the upper screen and a weight on the lower screen

- Enter the target load weight (include the decimal point) using the **NUMERIC KEYPAD** on the left side of the instrument.
- Press the **OK** button twice and the instrument will return to normal weighing.
- Once the loaded target weight has been obtained and the alarm is sounding, a short press of the ***F3*** button will silence the alarm.
- To reactivate the alarm for the next load press the ***F3*** button if the same target weight is required a single press of the **OK** button will reactivate the alarm and return the instrument to normal weighing. If a different target weight is required follow the steps above

Rinstrum N420 – K401 Unload Alarm Setting Instructions

- Press and hold the ***F3*** button, the display will show **LOAD** on the upper screen and a weight on the lower screen.
- Press the **UP ARROW** ▲ on the numeric keypad and the display will show **UnLOAd** on the upper screen and a negative weight on the lower screen.

- To amend the unload alarm setting trigger point enter the unload target including the decimal point using the **NUMERIC KEYPAD** (for example two and half tonnes would be -2.500kg), add a minus symbol by pressing the **+/-** on the **NUMERIC KEYPAD**.
- Press the **OK** button twice and the instrument will return to normal weighing.
- Raise the body and press the **TARE** button even though the vehicle is loaded the display will show 0.000kg.
- Commence unloading, the display will show a negative weight and the word **NET** in small text on the left side.
- When the unload target weight is obtained the alarm will sound.
- To return the instrument to normal weighing press the **GROSS/NET** button, the display will show the weight of material remaining in the body.
- If a further delivery from the same load is required repeat the steps above.

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Rinstrum N420 – K401 (Tilt Sensor) Mobile Phone App Operation Instructions

This vehicle is equipped with a mobile phone capable of reading the weighing instrument and integral tilt sensor via a *Bluetooth*® wireless technology.

- On the 1st use of the mobile phone, the *Bluetooth*® wireless adapter will ask the operator to accept a pairing request from a device that will be named *"BNC ???"* please accept this request, if a password is requested please enter 1234.
- For the fastest connection time start the application by pressing the left selection key (or from the menu selecting ***Apps***. – ***Extras*** – ***Collection*** – scroll to ***OBW_Tilt420 Server*** from the list and open using the square central button) before powering the instrument *(ignition controlled on rigid vehicles and side light controlled on trailers)*. The application may ask for the operator to press the central square button to accept connectivity, please do so.
- The application will then start searching for a paired adapter. It will find the adapter, connection usually takes between 30 secs and 2 mins (speed of connection is affected by the number of other mobile phones with active *Bluetooth*® wireless connectivity within 50 metres).
- Once connected the phone will show the information as on the graphic above, when the **side** reading on the tilt sensor exceeds side 2.5° the phone will vibrate and beep indicating to the operator that caution must be exercised.

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Safety Control Systems Master Switch

The Safety System Master Switch activates and deactivates all of the safety control systems on this trailer.

In order to raise the body push the switch to the **ON** position (the LED in the top of the switch will illuminate) all of the safety systems become active.

THE BODY CAN ONLY BE RAISED IF THE SWITCH IS IN THE "ON" POSITION.

To prevent to the flash tone from activating when travelling on the public highway it is suggested that the switch is turned to the **OFF position** before leaving site (the LED will be extinguished)

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Tilt Trailer 3.5º Safety Control Enclosure

The body will only raise if this LED is illuminated.

Please check the LED is illuminated before **loading** and **unloading** the trailer

IF THE LED IS NOT ILLUMINATED DO NOT ATTEMPT TO LOAD THE TRAILER

The LED will extinguish when the trailer exceeds 3.5º side to side tilt

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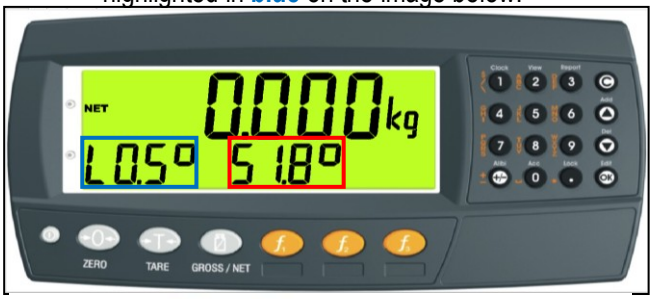
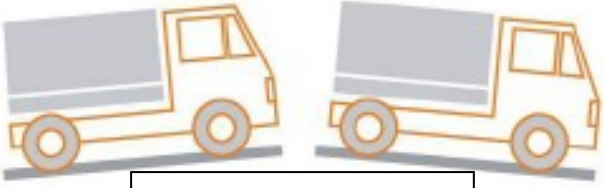
Tilt Sensor SAFE Operation Instructions (revision 1.1)

This trailer is fitted with a tilt sensor integrated into the weighing system display. The tilt sensor reads two sets of incline readings. The side to side or **"S"** degrees of slope highlighted in **red** on the image below and the front to back or **"L"** degrees of slope, highlighted in **blue** on the image below.





Long or L degree incline

If the **"UnStAbLE"** message appears on the screen **ONLY WHEN** the **L degree** reading exceeds 2.5° do not panic, there is no significant risk of overturning. Beware of ground conditions, continue with the load discharge. None of the safety systems will be triggered by excessive **L** degrees of incline or slope.

Side or S degree incline

If the **"UnStAbLE"** message appears on the screen when the **S degree** reading exceeds 2.5° **only proceed with extreme caution.**

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Side or S degree incline

There are three extremely important trigger levels associated with this system, the safety triggers are only activated by the **"S" (side) degrees of slope**.

When the chassis is placed in a position exceeding 2.5° of slope either **front to back** or **side to side** the instrument will make the driver aware of the slope by alternating between **"UnStAbLE" and the relevant degrees. PLEASE DO NOT PANIC**. The **UNSTABLE** text appears on screen to ensure the vehicle operator exercises caution in proceeding with the load discharge. If the UNSTABLE message is triggered **only** by the front to back (L) degree reading there is no significant risk, proceed as normal, please be aware of ground conditions.

If the **UNSTABLE** message is triggered by the side to side degree reading much more caution should be exercised. The safety triggers from the side to side degree reading are detailed below. As each trigger level is exceeded the weighing instrument will display **UNSTABLE** and activate one of the safety devices detailed below:

- **2.5°** The round **green strobe light** located near the swan neck of the trailer will begin to flash, warning the driver that a potentially risky tipping zone has been entered.
- **3.0°** The **audible warning** located inside the strobe light will start to sound advising the driver to lower the body and reposition the trailer.
- **3.5°** The **tipping ram will not lift** if the "S" degrees exceed **3.5°**, if the "S" degrees do exceed 3.5 reposition the trailer to somewhere on the site with a much lower level of "S" slope.

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Stability Weigh Trouble Shooting Guide

- **If the Weighing Instrument is not powered up?** turn on the trailer side lights, the instrument should come on automatically, if the instrument does not power up press the small round power button on the extreme left.

- **If the body will not raise?** Check the weighing instrument is powered up, if yes, turn on the main outdoor switch, the locator LED inside the switch will illuminate when the switch is activated. If the body will still not raise check the LED on the electro-pneumatic valve box (usually located on the outside of the chassis) is illuminated, if this LED is illuminated the body should lift. If the body will still not lift please ring Barry Napper and Co 01427 875 574

- **UNSTABLE** appears on the weighing instrument and mobile phone, both are alternating between the degree reading and **"UNSTABLE"**, check which degree reading is exceeding 2.5º. If ONLY the **"L"** (front to back) degree reading exceeds 2.5º proceed with load discharge, be aware of the ground conditions but there is no significant risk to stability.

- **Green Strobe is illuminated and UNSTABLE** is visible on the weighing instrument and mobile phone. The chassis is at or has exceeded 2.5º of side to side slope. **PROCEED WITH EXTREME CAUTION.**

- **Siren is sounding and Green Strobe is illuminated and UNSTABLE** is visible on the weighing instrument and mobile phone. The chassis is at or has exceeded 3.0º of side to side slope. Immediately lower the body, reposition the trailer to a more suitable location to discharge the load, preferably a situation in which the green strobe light is not illuminated.

- **Body will not raise, Siren is sounding and Green Strobe is illuminated and UNSTABLE** is visible on the weighing instrument and mobile phone. The chassis is at or has exceeded 3.5º of side to side slope. If the body is raised, **lower it as a matter of absolute urgency**, reposition the trailer and restart discharge. If the body has not been raised, reposition the trailer to a suitable discharge location preferably in which the green strobe is not illuminated.

- E000 1 appears on screen. Waggle the side and marker light suzi from the tractor unit and if required sparingly spray the contacts with contact oil. If problem not solved please ring Barry Napper and Co 01427 875 574

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This handbook is intended as a guidance note for operators of vehicles fitted up with the ***"Stability Weigh"*** system. If you the operator have any difficulties with the system please do not hesitate to contact Barry Napper and Co.

We at Barry Napper and Co would welcome constructive feedback on the future content of this handbook.