

LIBRAWEIGHING

AX SERIES

MOBILE TRAIN WEIGHING SYSTEMS



STATIC AND DYNAMIC WEIGHING.

Easy Setup

The *AX*'s can be setup in minutes and install onto virtually any type of track throughout the world.

Precise Measurement

Get precise measurement of individual wheel and axle weights within seconds.

Fully Portable

The *AX SERIES* can be brought to the train in any light vehicle, carried into place and set up and run by two men.

OIML Approval

Optional trade approval can be added for static weighing giving greater accuracy and "legal for trade weighing".

ACCURATE. HEAVY DUTY. PORTABLE.

AX 300

Dynamic Axle Weigher

Single Base unit for in-motion or static train weighing.

AX 400

Static Bogie Weigher

Double Base unit for static bogie weighing, Half Draft.

AX 800

Static Wagon Weigher

Quad Base units for static train weighing, Full Draft.

AX 1200

Static Wagon Weigher

Six Base units for static train weighing, Full Draft.

OVERVIEW

AX SERIES

TAKE THE SCALE TO THE TRAIN.

Fully Mobile and takes minutes to install onto virtually any track throughout the World. The **AX's** can be carried into place, and set up by two men, no need for special fixings or lifting equipment.

The unit can be conveniently taken to the train in a vehicle rather than having the expense of the train having to travel for hours to find a Weigh station. TrainWeigh is instantly ready to use with high accuracy calibration, which is permanently stored in the units memory, whilst self testing ensures the highest accuracy weighing of all Locomotives and Wagons regardless of sizes, number of wheels or axles. All combinations are accommodated. Axle overloads and NETT weights are automatically weighed and stored along with Gross weight, tare weights along with other information.

We are constantly striving to enhance Rail and Passenger safety. Our technicians are constantly testing and implementing new products and services. From measuring the centre of gravity of Trains, un-level equilibrium system detection. To high speed weighing, prior to bridge crossing and ensuring trains meet and exceed the World's highest regulatory standards possible. The spin off from these achievements, also allow us to supply the highest accuracy for weighing of goods. We have systems that also benefit from OIML Trade requirements, for most countries in the World.

Static

The **AX SERIES** is ideal for train manufacturing workshops for testing Locomotives, Bogies and Coaches when building from new, repairing or general maintenance. Single or multiple units can be used for the highest accuracy proven to within 0.01%.



AX-800 setup for carriage weighing.

Dynamic

The **AX-300** can be used dynamically with individual wheel weights, this is ideal for goods and freight Trains. Automatic weighing ensures correct wheel, axle, wagon and total train loadings and weight distribution down to 1% accuracy depending on track conditions.



The AX-300 setup for dynamic weighing.

FEATURES

AX SERIES

THE MOST ACCURATE WEIGHING DEVICE AVAILABLE.

Ready To Use

The AX's are ready to use out of the box complete with full instructions. We also provide training.

Lightning Protection

Lightning protection is built in as standard.

Built to Last

Our units consist of robust high quality Tool Steel Load Cells and Body.

No Foundations

No need for special equipment, all the tools you need are included in the AX kit.

Hermetically Sealed

The AX's are unaffected by any adverse weather conditions including flooding, ice, snow, extreme temperatures and Humidity.

Major Cost Savings

Major cost savings over traditional inline systems. The AX's can also improve your fuel economy and optimize your loads.

Battery or AC Power

We have a variety of options available to suit your needs, including solar powered systems for remote locations.

Prevents Overload

Prevent overloading and under loading of wagons, the AX's will always give you peace of mind that you have an optimal, safe, balanced load.

Main Advantages of the AX Series Train Weighing System.

1. The AX system can weigh and show up to 20 wheels / 10 Axles simultaneously, static on screen. Most others Weigh only 12 Wheels, however only on the PC.
2. The AX system can show live analysis, of centre of gravity, percentage loading etc of all wheels simultaneously, on the weighing screen, no need for PC / Laptop. Most others can not show any of that on screen, has to be transferred by data stick, to a PC.
3. The same AX Indicator can weigh Dynamic. No need for a different Indicator or system. Most others for multi static weighing, have to use a PC.
4. The same AX Indicator can transmit the data LIVE by Wi-Fi to a laptop, to further view, store the data and reports. The AX Indicator screen can mirror image on the laptop, showing the Identical screen, allowing complete control from the laptop. This allows weighing and analysis from a remote area, even another Country if required. USB can also be used, along with other methods. Most others cannot use Wi-fi.
5. Using this same technology our UK engineers, can Remote log on for upgrades or maintenance. Most others can not do that remote.

The AX system can use multi bases to increase accuracy in Dynamic weighing if and when using more than one scale for analysis .

OVERVIEW

AX SERIES

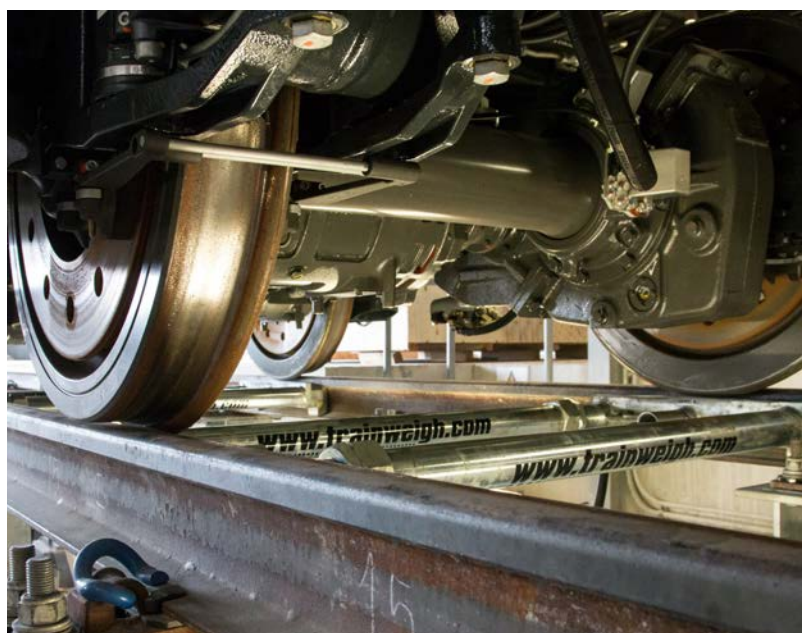
SALES. HIRE. CALIBRATION. CUSTOMIZATION.



At your Service

Our dedicated team of Technicians will work on a full appraisal of your requirements. From a basic single base unit, to a multi base, tilting corner force system. Taking into account all of your requirements and even more features than you dreamed possible. We always strive to achieve more than 100% Satisfaction for all our clients, from the smallest yard, to the largest rail providers in the World.

We also provide **AX** units for long and short term hire. Lease purchase is also available world-wide. We can calibrate and service all types of weighing systems, including other manufacturers products.



The **AX SERIES** will:

- Ensure all product weights are correct for delivery to your customer.
- Improve Safety
- Show Wheel Imbalance problems.
- Assist prevention in derailment.
- Prevent increased wear to rail vehicles and infrastructure.
- Eliminate wheel flat spots and brake lock ups.
- Increase fuel economy.
- Ensure symmetrical loading and highlight any off centre loading.

SOFTWARE

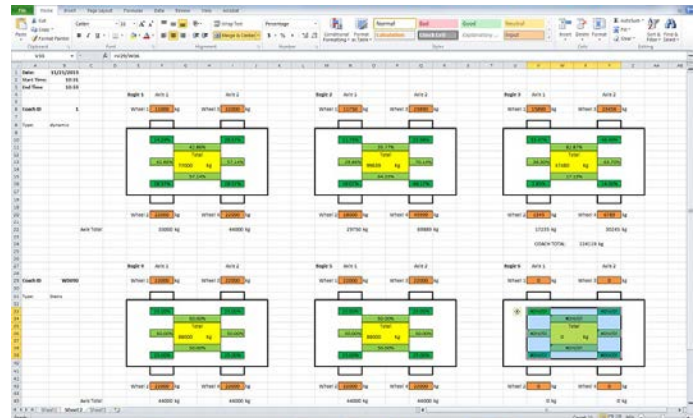
AX SERIES

ACCURATE RESULTS IN SECONDS.

Static Weighing AX Software

Multiple scales can be used to weigh a full static vehicle instead of individual axles. The screen shots below show the types of data available using our AX software with multiple AX units. Up to six AX's can be combined into a single system.

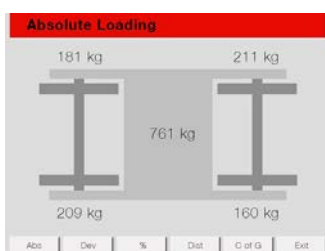
| Axle | Weight | Draft | Force | Number of Axles per bogie | Number of bogies per coach | Number of coaches | Type of weighing |
|----------------|--------|-------------|-------|---------------------------|----------------------------|-------------------|------------------|
| Range 1 | | | | | | | |
| Wheel 1 | 20000 | 10/20/20000 | 80.00 | | | | Dynamic |
| Wheel 2 | 20000 | 10/20/20000 | 80.00 | | | | Dynamic |
| Wheel 3 | 20000 | 10/20/20000 | 80.00 | | | | Dynamic |
| Wheel 4 | 20000 | 10/20/20000 | 80.00 | | | | Dynamic |
| Total | 77000 | 10/20/20000 | 80.00 | | | | |
| Range 2 | | | | | | | |
| Wheel 1 | 10700 | 10/20/10700 | 80.00 | | | | Dynamic |
| Wheel 2 | 8000 | 10/20/8000 | 80.00 | | | | Dynamic |
| Wheel 3 | 10000 | 10/20/10000 | 80.00 | | | | Dynamic |
| Wheel 4 | 4000 | 10/20/4000 | 80.00 | | | | Dynamic |
| Total | 32700 | 10/20/32700 | 80.00 | | | | |
| Range 3 | | | | | | | |
| Wheel 1 | 10000 | 10/20/10000 | 80.00 | | | | Static |
| Wheel 2 | 10000 | 10/20/10000 | 80.00 | | | | Static |
| Wheel 3 | 20000 | 10/20/20000 | 80.00 | | | | Static |
| Wheel 4 | 4700 | 10/20/4700 | 80.00 | | | | Dynamic |
| Total | 47700 | 10/20/47700 | 80.00 | | | | |
| Range 4 | | | | | | | |
| Wheel 1 | 20000 | 10/20/20000 | 80.00 | | | | Static |
| Wheel 2 | 20000 | 10/20/20000 | 80.00 | | | | Static |
| Wheel 3 | 20000 | 10/20/20000 | 80.00 | | | | Static |
| Wheel 4 | 20000 | 10/20/20000 | 80.00 | | | | Static |
| Total | 80000 | 10/20/80000 | 80.00 | | | | |



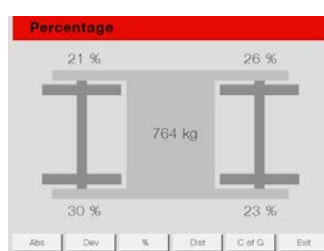
Dynamic/Static Bogie Weighing (DPS) Derailment Protection System

The DPS is an unmanned or manned system that can identify individual wheel loadings. The system will raise an alarm if any wheels or axles are out of a pre-set tolerance input by the user. Health and Safety is optimised with the DPS' built in Centre of Gravity system. This makes identifying load errors, wheel and suspension faults quick and simple prior to trains leaving the depot.

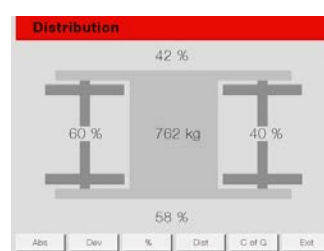
The DPS System is especially useful for providing peace of mind that the train, carriages and cargo are safe. All data can be stored internally on the DPS for downloading to a PC or USB stick and/or printed for records of the readings to be signed off and stored for future reference. The recorded data can easily be integrated into ISO quality systems.



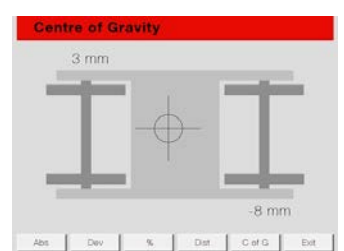
Displays the actual weight distributed onto each wheel.



Displays the percentage of weight distribution onto each wheel.



Displays the weight percentage loading of each axle.



Displays the centre of gravity of each chasis.

WEIGHT INDICATOR

AX SERIES

Weight Indicator & Ticket Printer

IP67 pelicase weighing terminal. The onboard memory can weigh 100 trains to 1000 coaches. An 80mm thermal printer is also built into the case to give instant weighing results.



ID: 0000566
 09:45 23/11/15
 Weighing Mode: Static
 Direction: Left/Right
 Pulling: Yes
 Pushing: No
 Loaded: Yes
 Trim: 0
 Errors: 0

Wheel 1 Wheel 2 Axle total WC KPH

Wagon 1
 7470 kg 8910 kg 16380 kg 0 0
 6350 kg 9520 kg 15870 kg 0 0
 7470 kg 8710 kg 16180 kg 0 0
 6750 kg 7520 kg 14270 kg 0 0

 62700 kg

Wagon 2
 7050 kg 7410 kg 14460 kg 0 0
 7420 kg 7820 kg 15240 kg 0 0
 7150 kg 7450 kg 14600 kg 0 0
 7480 kg 7130 kg 14610 kg 0 0

 58910 kg

Total Train Weight:

121,610 kg

Warnings: 0

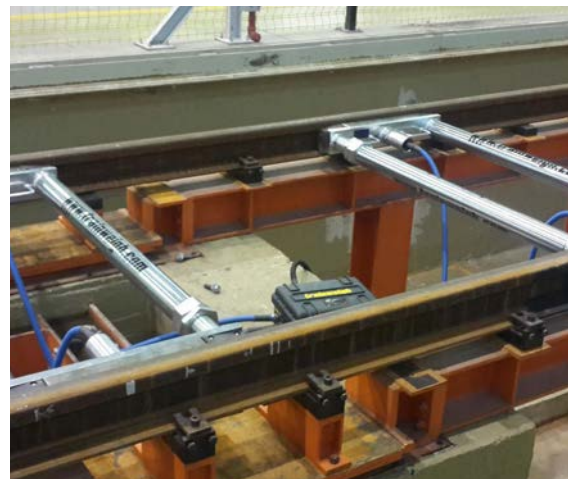
The AX Indicator is the most advanced available and has the following features and Benifts:

- OIML R70 Approval Worldwide.
- 10/100 Mbps Ethernet interface with integrated web server
- WLAN as option
- Integrated USB 2.0 host interface for printer & USB stick
- Up to 4 serial interfaces, RS232, RS485, RS422, 20mA
- Flexible I/O concept for up to 64 inputs and outputs
- Fieldbus interfaces Profibus DP or Modbus TCP
- Analog I/Os, etc.
- OIML 6,000 Divisions accuracy.



High Speed Wireless Option

Powered by a single pair of AA batteries, this wireless technology delivers highly accurate results. Transmitting up to 200 data packets per second at a range of up to 800 meters in an unobstructed enviroment.



TECHNICAL

A X-SERIES

| | |
|---------------------------|--|
| Weighing Capacity | 15 Tonnes/Wheel - 30 Tonnes/Axle |
| Division Size | 10kg (Static) - 20kg (Dynamic) |
| Accuracy | 0.01%-1% (Static) - 2%-3% (Dynamic) |
| Max. Weighing Speed | 3mph / 5kmh |
| Protection Class | IP 67 |
| Instrument Class | 0.5% |
| Linearity error | <0.02% |
| Unit Length | 600mm |
| Unit Weight | 39kg |
| Rated Temperature Range | -10°C - +65°C |
| Transducer Characteristic | 0.1 mV / V Accuracy 0.2% |
| Measuring Amplifier | 24 Bit |
| Sample Rate | 10 kHz |
| Power Supply | 12V, 40V, 90V, 110V, 240V |

- Robust High Quality Tool steel design of Load Cells and Body.
- Fully Hermetically Sealed.
- Number of weighing sensors: 2
- Rail Types: All standard types
- Track Gauge: All standard types
- Commission time: 10 minutes
- Decommission time: 5 minutes
- Data transmission: BUS, Ethernet, USB, WiFi
- Data Export Format: .xlsx, .csv and others
- PC interface for Microsoft™ Windows™

Warranty 2 Years. Service and Maintenance Contracts also available. (Gold and Silver cover with exchange units). Parts, Certified Calibrations Namas ISO 2001. Traceable to UKAS. Accuracy subject to track conditions. Technical data subject to change without notice.

The Weight Indicator meets or exceeds Class III/IIIL, 10,000 division accuracy requirements in accordance with NIST Handbook 44. A Certificate of Compliance Number 08-046 has been issued under the National Type Evaluation Program (NTEP) of the National Conference on Weights and Measures.

Legal for Trade Use.

EC Approved Trade Approved Display -
DK0199.160

Max Scale Divisions:

NON-COMMERCIAL
240,000 Divisions.

NTEP

Canada, Europe,
Asianic, Africa.

OIML

10,000 (Class III/IIIL)
10,000 (Class III/IIILD)
10,000 (Class III),
1,000 (Class III)



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DESIGNED, BUILT & INSTALLED WORLDWIDE BY BRITISH ENGINEERS.

Proudly worked with:

