Sasco Africa
Accurately Weighing Africa

sanas
Verification Laboratory
LTF0070

WIM 3000

SASCO SLOW SPEED ADVANCED WEIGH-IN-MOTION SYSTEM

High Accuracy Mega Load Weighing

SASCO WEIGHING SYSTEMS

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WIM 3000

Overloading regulations that have been enacted across most Africa countries. Twenty-two African countries have agreed under the COMESA-EAC-SADC Tripartite Vehicle Load Management Agreement, to both standardize permissible limits ad seek to build from national prosecution systems, a multi-national African overloading management system.

The Road Logistics Industry must now ensure that trucks comply with overloading regulations. This requirement relates to both total weight and axle weights.

This applies to normal trucks as well as “Mega Load Trucks” which are also required to comply with their own specific requirements as set by regulators.

Sasco is a market leader in the supply of a range of multi deck weighbridges, multideck automation, and ERP systems integration. However no standard weighbridge weighing solutions can accommodate the weighing of “Mega Load Trucks”.

Sasco consistent challenges the status quo and has developed a solution to weigh “Mega Load Trucks”.

That solution is the Sasco WIM 3000 solutions delivering accurate total weight and axle weights cost effectively for exceptionally long trucks with remarkably many axles.

Attractions of Weigh-in-Motion

Weigh-in-motion (WIM) is a technology used to determine the weight of vehicles as they are moving. In contrast to traditional truck scales, which require vehicles to stop to be weighed, WIM systems are increasingly used for commercial vehicle weight enforcement, offering several advantages over conventional truck scales.

In relation to the weighing of “Mega Load Trucks” weighbridge-based equipment cannot provide a solution because of the sheer length and width of many of these trucks.

In addition, regulators normally require “Mega Load Trucks” to accurately determine the weight of each axle as well as the relative left right loading of each axle and the relative left right loading of the truck as a whole. Weighbridge solutions cannot provide this.

12 TYRE MEGA LOAD TRUCK ON WIM 3000

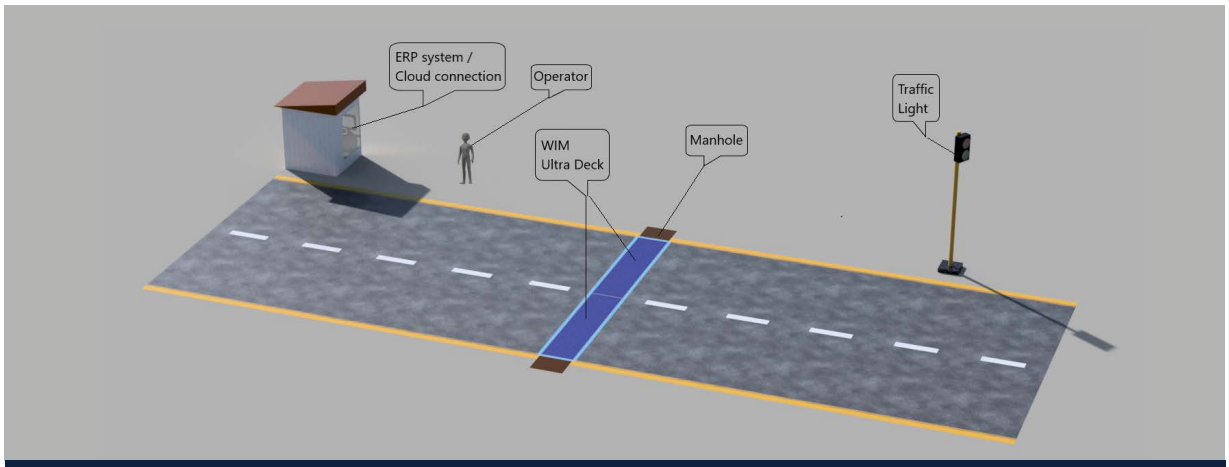
Sasco’s WIM Range

The capabilities of Sasco’s WIM range include exceedingly accurate slow-speeding in-motion weighing of vehicles up to 5kmph right through to high-speed in-motion weighing of vehicles at up to 120 kmph, but with lower accuracy.

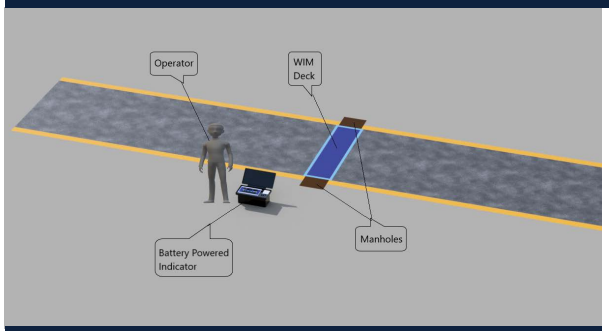
Through our wide range of solutions comprising Low-Speed Basic (WIM 1000), Low-Speed Advanced (WIM 2000), Low-Speed Ultra (WIM 3000), Low-Speed Cybernetic (WIM 4000), Sasco has pioneered the development of slow-speed road weigh-in-motion for the African market.

In addition to our range of slow-speed weigh-in-motion solutions, Sasco also offers a high-speed cybernetic (WIM 5000) weigh-in-motion system.

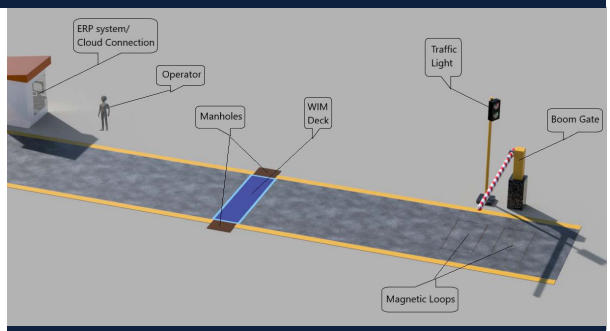
Sasco's WIM Range



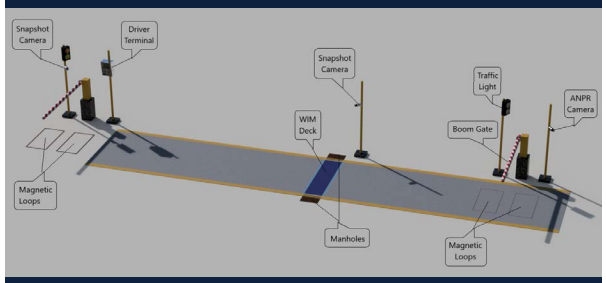
WIM 3000



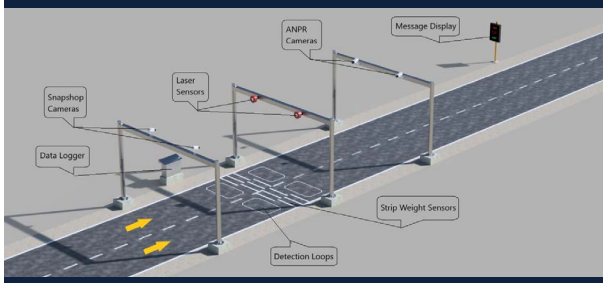
WIM 1000



WIM 2000



WIM 4000

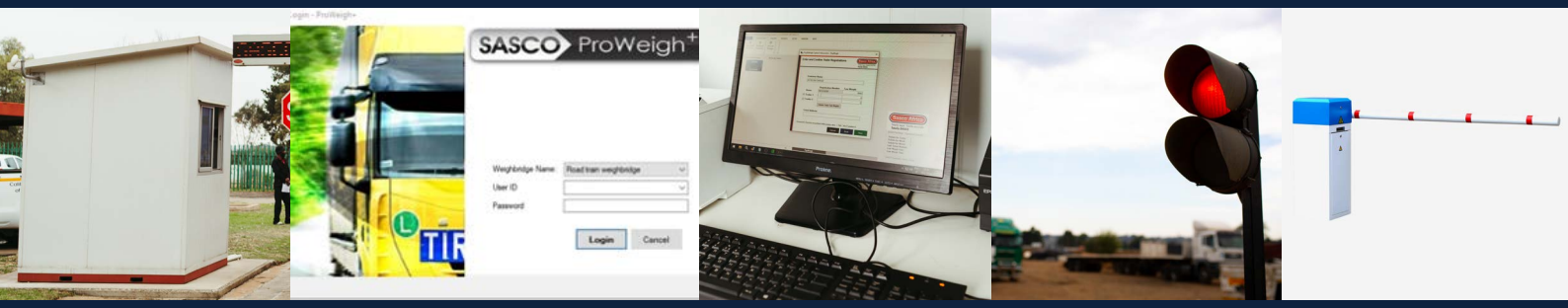


WIM 5000

WIM 3000 Overview

The WIM 3000 comprises an Ultra WIM Deck, DD 700 Indicator a PC loaded with ProWeigh+ software, one traffic light and delivers the same weighing data as a multi deck weighbridge but at a fraction of the cost.

The WIM 3000 is the optimal solution for truck weighing where the trucks are "Mega Load Trucks" with numerous axles and tires requiring in addition to total weights, axle weights and left right relative loading weights.



COMPONENTS SPECIFIC TO WIM 3000

WIM 3000 PROVIDES MULTI DIRECTIONAL WEIGHING DATA

ULTRA WIM Deck

The WIM 3000 uses the Sasco Ultra WIM Deck.

The Ultra WIM Deck is essentially two WIM Decks in a common frame, approximating 6 sqm in size and is flush mounted in the ground.

The concrete civil works around the deck are straightforward but the WIM Deck approaches must be level for at least 10m on the approach side.

THE WIM DECK. THE WIM 3000 COMPRISES TWO WIM DECKS IN A COMMON FRAME

DD700 Indicator

The WIM 3000 uses the DD700 indicator.

The specifications of the DD700 indicator are:

a) Configurable memory storage for truck data
b) Capacity to import and export CSV format data
c) Traffic device sequencing interfaces.
d) 1 x RS232 serial port.
e) 1 x RS422 port.
f) USB host
g) Full audit trail.
h) NTEP 10 000 divs approval.
i) OIML approval.
j) Two additional slot options

Proven Operational Accuracy

Under normal operating conditions, the accuracy of the WIM 3000 has been validated through parallel multi deck weighbridge cross testing to consistently deliver the following results:

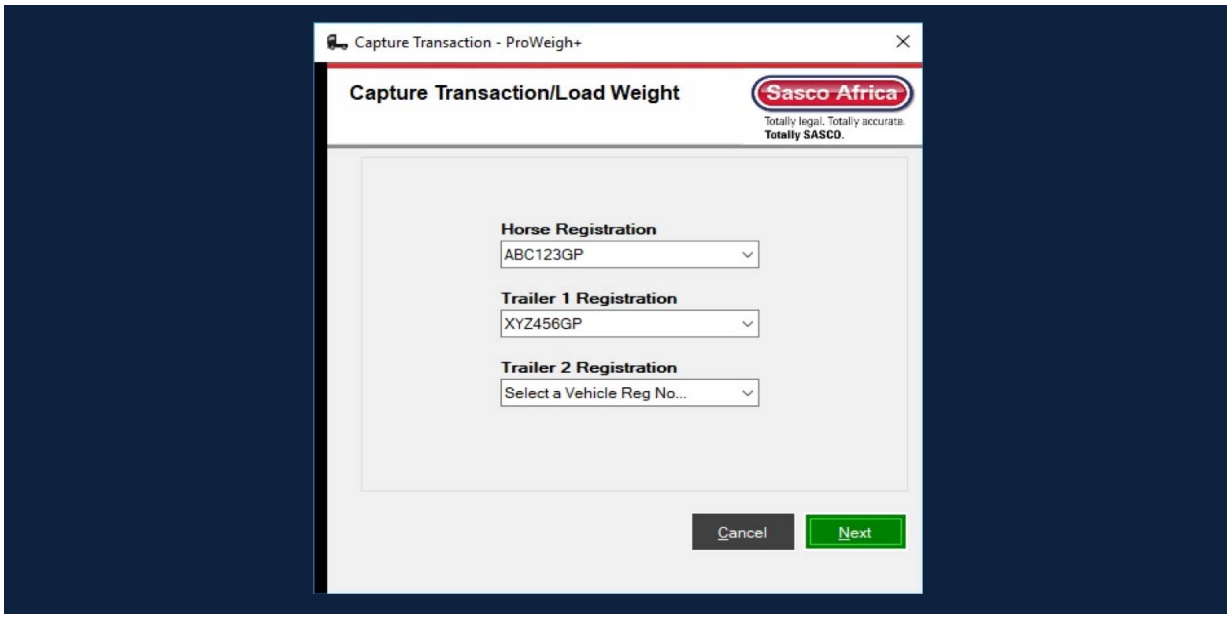
EXCEPTIONAL TOTAL ACCURACY	PERCENTAGE ERROR ON TOTAL WEIGHT	PERCENTAGE ERROR ON AXLE GROUP
3 Kmph	<1%	<2.5%
5 Kmph	± 1%	<2.5%

Approach speeds in excess of 5 Kmph onto the WIM 3000 will impact the accuracy of the system.

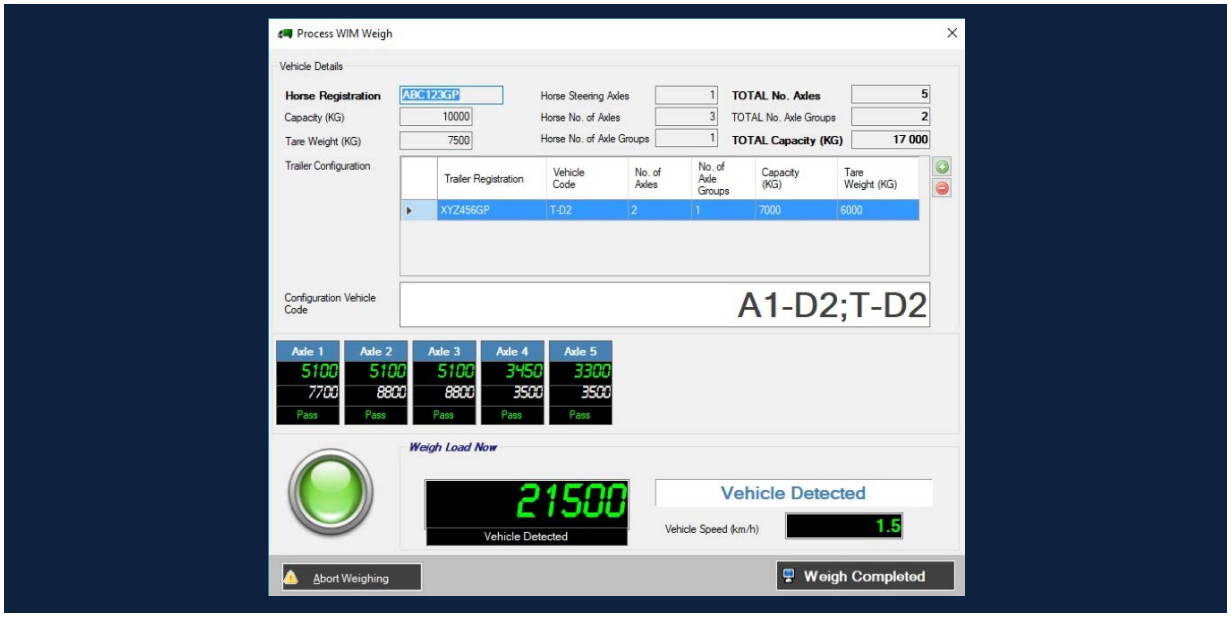
WIM 3000 Weighing Sequence

The WIM 3000 operates with ProWeigh+ software to deliver a simple to use two stage weighing sequence.

First action: Capture the registrations of the horse and trailer units. This must be inputted on the PC, key board or if Barcodes or QR Codes are being used these must be scanned.



Second action: Once the weighing process is complete, print the weighing ticket. If ProWeigh is set up to integrate with the User's IT system or Sasco Cloud, all the relevant weighing information will also be immediately transmitted electronically to this data destination.



Data Integration

The WIM 3000 operates using the ProWeigh+ software with all the integration functionality that ProWeigh+ offers.

All generated by the WIM 3000 can therefore be integrated into ERP systems as further described below:

- ProWeigh+ offers two distinct integration methods, the first being Business Connector which synchronizes data between your various WIM systems with a central database, from here it can then be integrated into a host of applications including ERPs such as SAP, Sage, and Syspro as well as reporting tools like QlikView and Microsoft PowerBI.

- The second method is Web Services which is a standardized messaging protocol which allows you to closely interact with ProWeigh to maintain and monitor various aspects of the software. This is well suited for large workflow-controlled environments.

Figure 1: Webservices

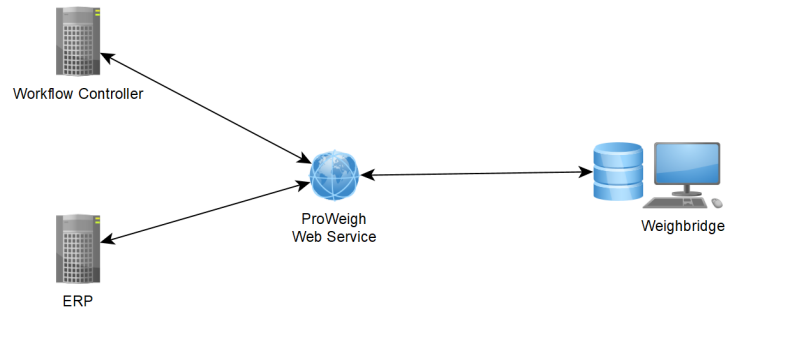
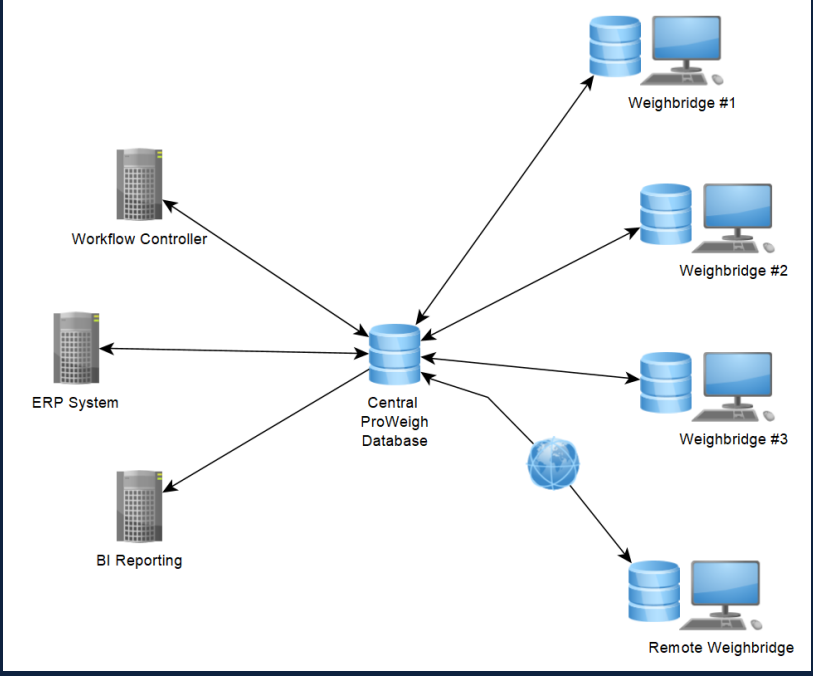


Figure 2: Centralised Database



WIM 3000 Application Example

Company A is a port-based logistics and warehousing business handling ultra-size equipment arriving by sea.

Company A's is authorized by the National Roads Authority to operate a fleet of Mega Trucks which carry ultra large cargoes under abnormal permits. These trucks have between 12 and 25 axles.

A condition of this authorization is that Company A maintains proof in respect of each trip that the vehicle is loaded to within (a) a maximum load per axle (b) a relative total left right weight per axle (c) a total weight and (d) a relative total left right weight.

The optimal solution is the WIM 3000, installed flush in the ground at the close to the exit gate at the port used by **Company A.**

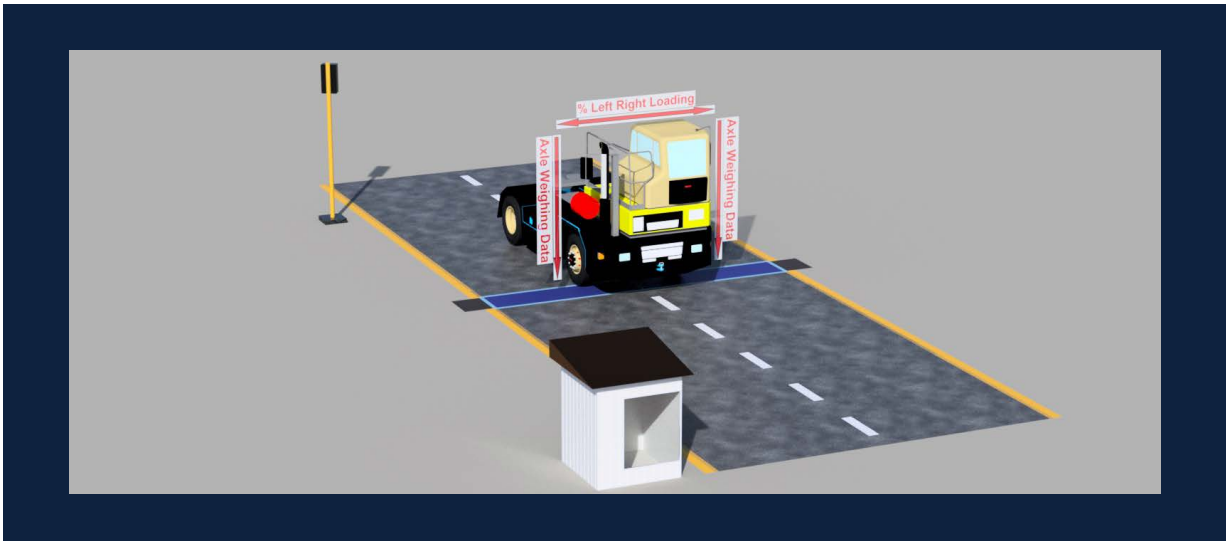
A weighing cabin will be erected next to the WM 3000, which will house the DD700 indicator, a PC and printer.

The following automation hardware will also be installed:

- A traffic light which ProWeigh will turn go green once the departing vehicles registration have been captured and weighing can proceed.

- CCTV cameras linked which will capture images of the departing vehicles and these images will be combined with the weighing data in ProWeigh and then all this data will be transmitted to the ERP system.

- Data cabling between the PC and the ERP system in the main office.



WIM 3000 Technical Specifications

WEIGHING HARDWARE	DETAILS
Deck width	0.76m
WIM Deck length	3.2m
Total Deck length	6.5m
Required level approach	10m
Number of load cells	8
Load Cell approval	OIML
DD700 approval	OIML
Maximum weighing Speed	5 Kmph
Minimum weighing Speed	3 Kmph
Speed recorded	Yes
Weighing accuracy at maximum Speed	+-99%
Weighing accuracy at minimum speed	>99%
Maximum number of axles	No Limit
Manned or Unmanned	Manned
PC Required	Yes
Printer Required	Yes
Mains power required	Yes
Option of add on peripheral devices	Yes

WEIGHING SOFTWARE	DETAILS
ProWeigh	Version 4.6 or higher

WIM 3000 Technical Specifications

AUTOMATION AND OTHER HARDWARE	DETAILS
Computer (Normally One)	• CPU: Intel Core i5 (8th generation or newer) or • AMD Ryzen 5 {3000 Series or newer) • RAM: 8GB or Higher • Storage: 500GB or More • Network: Ethernet and Wi-Fi Serial Port if serial communication needed • USB: 4 ports minimum • Display Resolution: 1920 x 1080 Operating System: Windows 10 or Windows 11
Printer (Normally One)	• Monthly page volume up to 4,000 • Laser print technology • 84 different fonts • A4 print speed of 38 ipm • Tray options 100 - 550 sheets
Traffic Lights (Normally One)	• LED • Honeycomb diffuser • SABS approved

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