Sasco Africa
Accurately Weighing Africa

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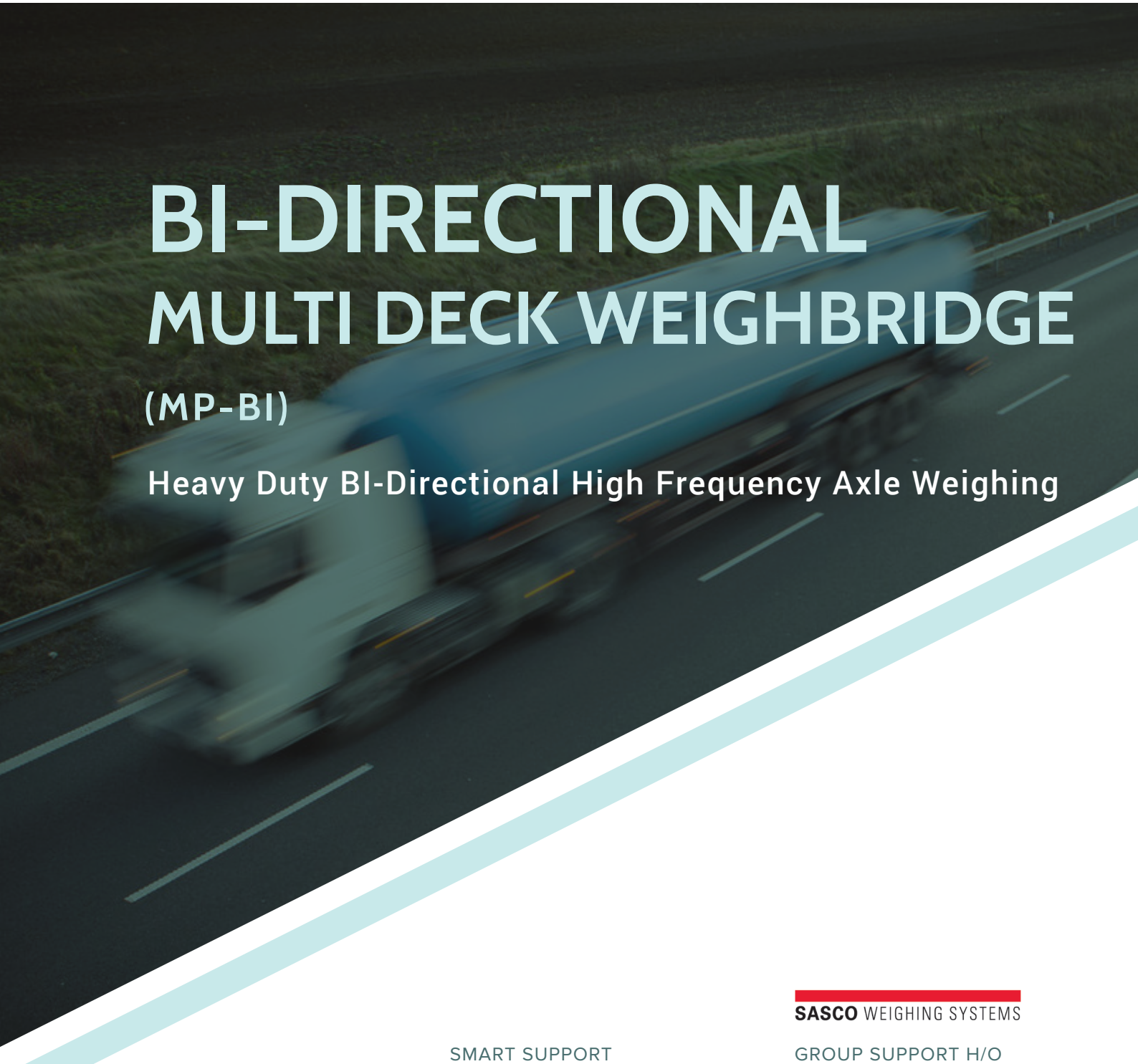
Verification Laboratory
LTF0070



BI-DIRECTIONAL MULTI DECK WEIGHBRIDGE

(MP-BI)

Heavy Duty BI-Directional High Frequency Axle Weighing

SASCO WEIGHING SYSTEMS

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MULTI DECK WEIGHBRIDGES are an important product within Sasco's range of Truck Weighing solutions. Other products within Sasco's truck weighing range which offer a similar solution, include weigh-in-motion wimbridges, standard weighbridges with upgraded instrumentation to enable axle weighing, group axle weighers and weigh pads.

Under conditions of high volume and heavy truck loading and were Bi-Directional axle weighing is required, the MP-BI is the optimal solution for enabling highly accurate digital total weight trade weighing as well highly accurate axle weighing.

The MP-BI, when installed with Sasco ProWeigh+ software, provides for fully compliant axle weighing as well as an array of operational functionality including weighbridge automation, the total integration of weighing data generated with user IT systems and powerful cloud and networking data capabilities.

Product Overview

The MP-BI is a highly accurate trade approved Truck Weighing System providing total weight and axle weights. Unlike standard multi decks, the MP-BI is a bi-directional multi deck which enables axle weighing to be done in either direction.

Sasco typically achieves accuracy levels on both total weight and axle weights of 99.95% on the system, with a maximum total loading of up to 150 tons. Key elements of the system are:

- It is a Bi-Directional multi deck in that both total trade weights and axle weights can be determined by approaching the weighbridge from either direction.

- Complete digital instrumentation with all components being manufactured in Europe.

- The key instrumentation components are one DD1050 indicator, one DD1010 indicator and 20 CPD digital load cells.

- A lower cost of option of a trade approved hybrid digital system comprising one DD1050 indicator, one DD1010 indicator and 20 S500 load cells is also available.

- The total length of the weighbridge is 25 meters comprising 5 interlinked steel deck modules of 3m, 6m,7m, 6m and 3m in length.

- Decks are manufactured from only the highest quality grade steel that can accommodate extreme axle loadings of up to 25 tons

- Mounting option are either pit mounted or mounted above the ground.

- Sasco ProWeigh + software is supplied as standard, which means the challenge of adding on an array of weighbridge automation options is easy.

- Sasco ProWeigh+ also has the functionality to facilitate the integration of weighing data to a range of ERP systems whether directly or via the Cloud.

- The set-up menu of Sasco Proweigh+ Fleet Manager Database, allows for the option of single tare weighing as opposed to double weighing of vehicles.

- The set-up menu of Sasco Proweigh+ Fleet also allows for the option of SOLAS Weighing as well as total weight and axle weighing.

Indicator

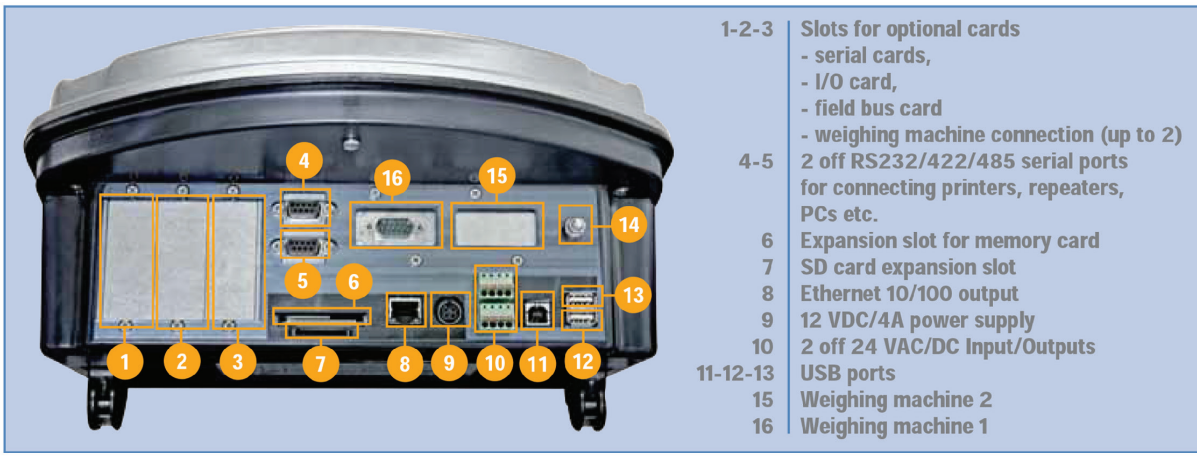
The indicator used on the MP-BI is the DD1050, supported by a DD1010, both of which are manufactured by Bilanciai in Italy. The reasons for deciding to specify the MP-BI with these indicators are as follows:

• Judged on reliability and functionality, Bilanciai is regarded as the leading manufacturer of weighing indicators globally.

• The DD1050 has the capability to directly manage data from all 16 load cells, and the DD1010 4, thereby providing total weights for each of the 5 decks that make up the multi deck. This means that only two indicators are required. The effect of this is, lower maintenance and more accurate calibrations.

• The DD1050 and DD1010 stores all the load cell calibrations, such that when load cells require replacing, the correct calibrations can be simply be down loaded from the indicator to the relevant load cell. This reduces down time.

• The DD1050 offers and array of interfacing terminal options, can form part of a total facilities network, and can also on a standalone basis directly managing and controlling multiple hardware devices used in weighbridge automation.



Load Cells

The MP-BI comes with the option of either CPD or S500 load cells. The S500 load cells are cheaper.

The accuracy of both the CPD and S500 load cells are both very high and both have stainless steel casing. However, the advantages of the more expensive CPD load cell over the S500 are:

• While both the CPD load cell and S500 are IP68 rated, the CPD load cell has proven to be able to sustain being submerged for up to a month without compromising its operations.

• The continuing accuracy under conditions of extreme temperature changes, of CPD load cells, have been proven to be better particularly in environments of extreme heat.

• The CPD load cells come with inbuilt lightning protection in each load cell. This has proven invaluable when installations are in high lightning strike areas.

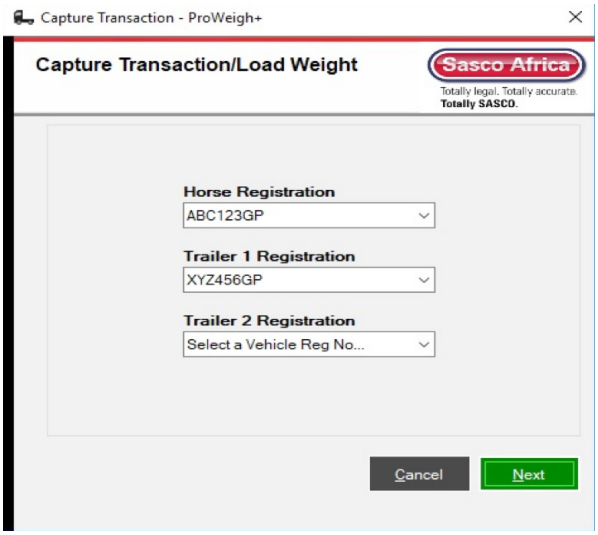
• The CPD load cells come complete with anti-rodent cabling. This has also proven to be invaluable were the products being weighed are prone to attracting rodents.

CPD LOAD CELL

Software and Data Integration

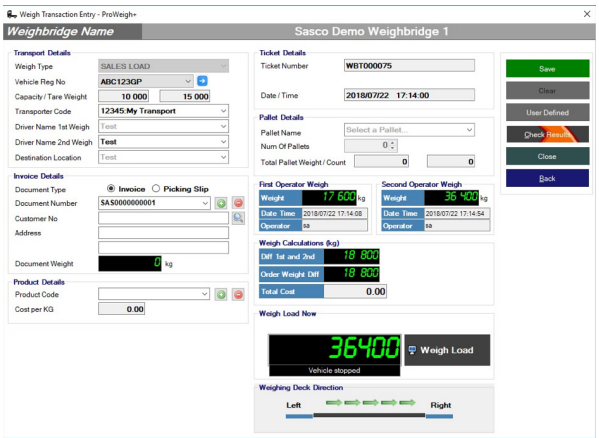
The MP-BI runs on Sasco Proweigh + software and offers the functionality of seamless data integration, either directly or via the Sasco Cloud.

Configured in single weighing tare mode weighing the weighing sequence to be followed by the Weighbridge Operator is as follows:



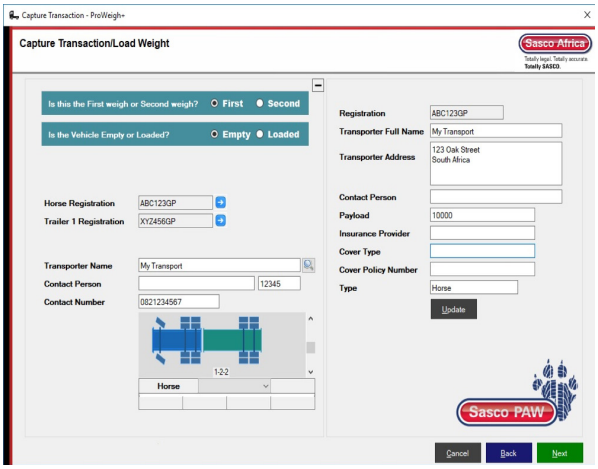
FIRST ACTION:

Capture the registrations of the horse and trailer units, which can be automated via RFID, APNR cameras, or QR codes.



SECOND ACTION:

Weigh.

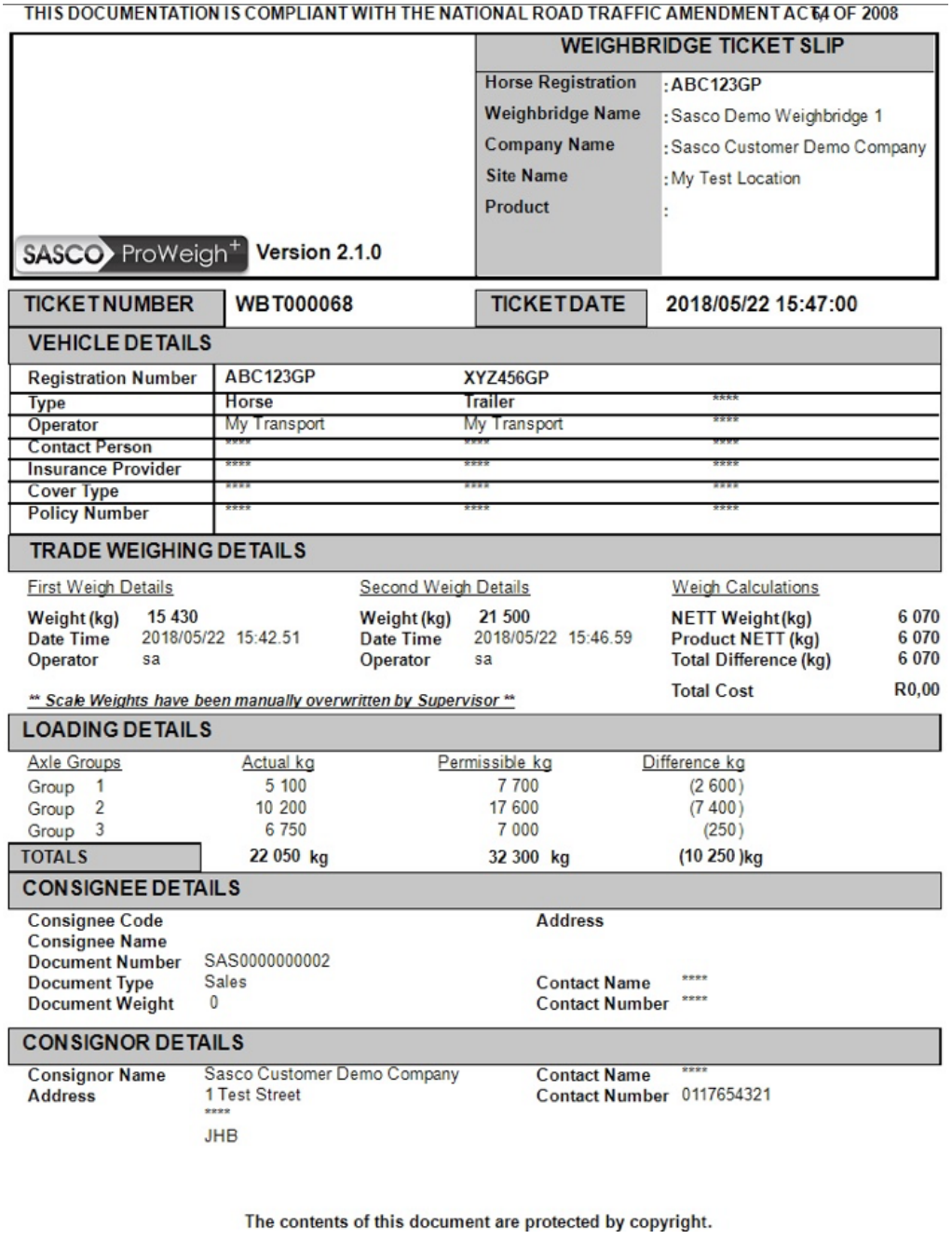


THIRD ACTION:

Select the vehicle configuration so as to determine the correct permissible weights. This can be automated if the vehicles are loaded on the ProWeigh Fleet Master database.

Compliant Total Weight and Axle Weighing Ticket

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.



THIS DOCUMENTATION IS COMPLIANT WITH THE NATIONAL ROAD TRAFFIC AMENDMENT ACT 64 OF 2008

SASCO ProWeigh+ Version 2.1.0

WEIGHBRIDGE TICKET SLIP

Horse Registration	: ABC123GP
Weighbridge Name	: Sasco Demo Weighbridge 1
Company Name	: Sasco Customer Demo Company
Site Name	: My Test Location
Product	:

TICKET NUMBER	WBT000068	TICKET DATE	2018/05/22 15:47:00

VEHICLE DETAILS

Registration Number	ABC123GP	XYZ456GP	
Type	Horse	Trailer	****
Operator	My Transport	My Transport	****
Contact Person	****	****	****
Insurance Provider	****	****	****
Cover Type	****	****	****
Policy Number	****	****	****

TRADE WEIGHING DETAILS

First Weigh Details		Second Weigh Details		Weigh Calculations	
Weight (kg)	15 430	Weight (kg)	21 500	NETT Weight (kg)	6 070
Date Time	2018/05/22 15:42.51	Date Time	2018/05/22 15:46.59	Product NETT (kg)	6 070
Operator	sa	Operator	sa	Total Difference (kg)	6 070
				Total Cost	R0,00

*** Scale Weights have been manually overwritten by Supervisor ***

LOADING DETAILS

Axle Groups	Actual kg	Permissible kg	Difference kg
Group 1	5 100	7 700	(2 600)
Group 2	10 200	17 600	(7 400)
Group 3	6 750	7 000	(250)
TOTALS	22 050 kg	32 300 kg	(10 250) kg

CONSIGNEE DETAILS

Consignee Code		Address	
Consignee Name			
Document Number	SAS0000000002		
Document Type	Sales	Contact Name	****
Document Weight	0	Contact Number	****

CONSIGNOR DETAILS

Consignor Name	Sasco Customer Demo Company	Contact Name	****
Address	1 Test Street	Contact Number	0117654321
	****		
	JHB		

Compliant Solas Weighing Ticket Format

Example of a typical paper form or electronic form SOLAS weighing ticket generated should this weighing option be selected.

SOLAS COMPLIANT WEIGHING TICKET

WEIGHBRIDGE NAME	Sasco P&W Pomona
DATE AND TIME:	2018/07/11 8:00:00
SANAS CERTIFICATE:	1121990
CALIBRATION CERTIFICATE:	1121990
CALIBRATION DATE:	2019/01/19

TICKET NUMBER	**PM00002473**	**TICKET DATE**	**2018/07/11 8:00:00**

TRANSPORTER INFORMATION

Horse Registration:	TESTGP	**Driver Name:**	
Trailer 1 Registration:	TRAILER01GP	**Captured by:**	sa
Trailer 2 Registration:			
Transporter Name:	Test Company		

CARGO INFORMATION

Customer Name:	Test Company
Container Number:	MSKU2666542
ISO Type:	ST20
Load Type:	
Container Tare:	10 000 **kg**
Seal Number:	S12346
Empty Vehicle Weight:	14 000 **kg**
Gross Vehicle Weight:	80 **kg**
Gross Cargo Weight:	-13 920 **kg**
Net Cargo Weight:	-23 920 **kg**

COMPLETED BY _____ **DRIVER** _____

DATE _____ **DATE** _____

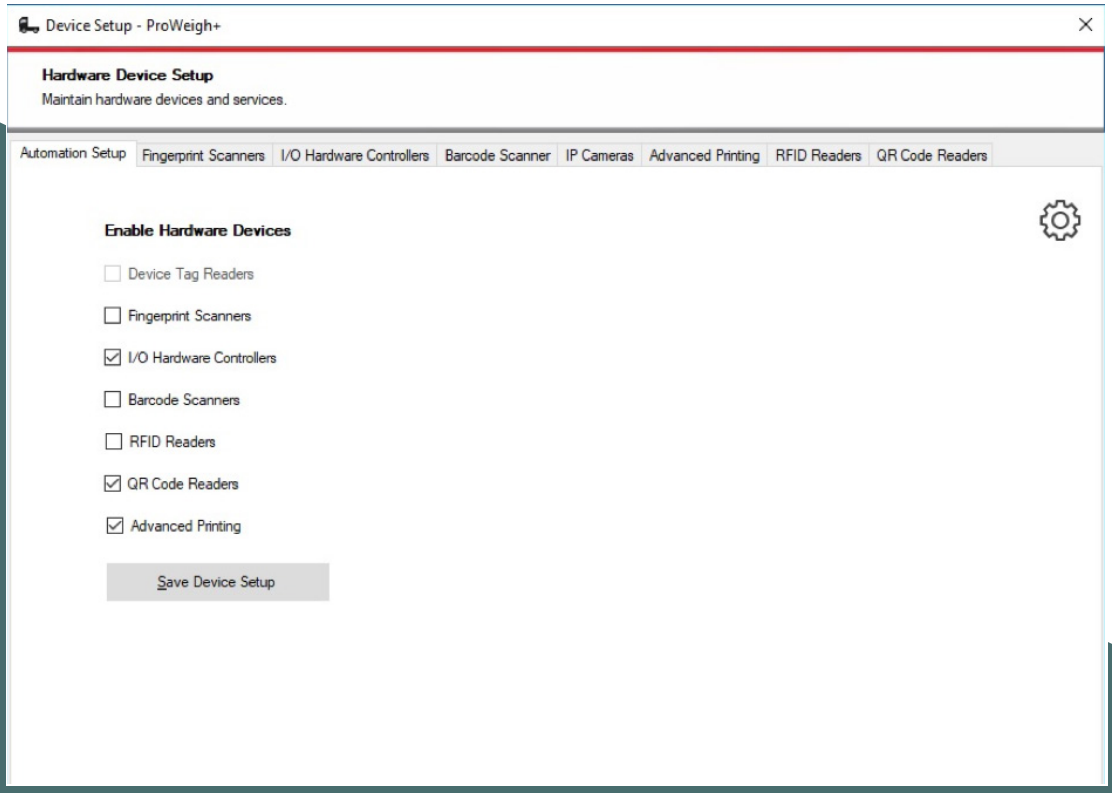
This document also confirms that the minimum mass of the drive axles have been checked and that the mass on the steering axle has been checked for both over and under loading.

Add-on Hardware Options

ProWeigh+ together with the DD1050 can accommodate the add-on of the following hardware devices:

- Robot
- Booms
- Cameras
- Electronic Display Board
- Bar Code Reader
- QR Code Reader
- RFID Reader
- Internet Communications Card

Additional automation hardware can be added without incurring development costs, simply through a standard menu driven activation process.



Application Example

Company B is a steel yard operating in a confined space. They have approximately 100 inter link trucks to weigh per day. This is a standard fleet of known horses and trailers. Steel is transported out to customers and is received into the site from another facility owned by the group. Lightning is not a major issue at the site, nor is flooding as the yard is paved. CAPEX constraints are an issue.

Company B wants to ensure that both is arriving trucks and departing trucks are compliant with the Road Traffic Act and they want to use the weighbridge for trade weighing. All weighing data must directly interface with the groups ERP system.

The MP-BI combined with ProWeigh+ will be the optimal solution and would be configured as follows:

• One MP-BI weighbridges, with S500 load cells will be installed in the ground such that trucks can approach it from both directions, one direction in bound and the other direction out bound.

• QR code scanners will be mounted on poles at either end of the weighbridge at driver height.

• ProWeigh+ will be loaded on the PC's. The QR code scanning will be activated.

• The entire fleet information will be loaded on the ProWeigh+ Fleet Master database.

• All delivery and arrival documentation carried by the drivers will have the registration details of the horse and trailer printed, in the form of a QR code, on the corner of this documentation.

• The ERP interfacing functionality of ProWeigh+ will be activated and the weighbridge PC connected to the customer network.

The weighbridge will through this set up operate on a completely unmanned basis with the QR codes trigger the accessing of the truck information on the Fleet Master Database, and once the weighing is done all data will be transmitted to the ERP system.

TRUCK WITH STEEL

Technical Specifications

	CPD Load Cells	S 500 Load Cells
Total Accuracy	+- 99.95%	+- 99.95%
Axle Weighing Accuracy	+- 99.95%	+- 99.95%
Installation	Above ground or pit	Above ground or pit
Deck Width	3m	3m
Deck Length	25m	25m
Number of Modules	Five - 3m, 6m, 7m, 6m, 3m	Five - 3m, 6m, 7m, 6m, 3m
Indicator	One - DD1050 One - DD1010	One - DD1050 One - DD1010
Indicator IP Rating	IP 48	IP 48
Load Cells	20 - CPD	20 - S500
Load Cell IP Rating	IP68	IP68
Dlink Required	No	Yes
Maximum Total Weigh	150T	150T
Maximum Axle Weigh	25 tons	25 tons
Reverse Calibration	Yes	Yes
Temperature Compensation	Yes	Yes
Maximum Number of Axle Groups	Four	Four
Total Weight Generated	Yes	Yes
Axle Weights Generated	Yes	Yes
RTA Compliant Ticket	Yes	Yes
SOLAS Weighing	Yes	Yes
Double or Single Weighing	Yes	Yes
Manned or Unmanned	Either	Either
PC Required	Yes	Yes
Option of Automation	Yes	Yes
Option of Unmanned	Yes	Yes
Option of Centralization	Yes	Yes
Direct IT Systems Interfacing Possible	Yes	Yes
Cloud Interfacing Possible	Yes	Yes
Pre-Loading of Fleet Possible	Yes	Yes
Deck Warranty	6 Years	6 Years
Instrumentation Warranty	12 months	12 months
Trade Approval	Yes	Yes

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