

On-Board Weighing Systems for Mining Applications



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Weigh Your Mining Payload at the Pick Up Point

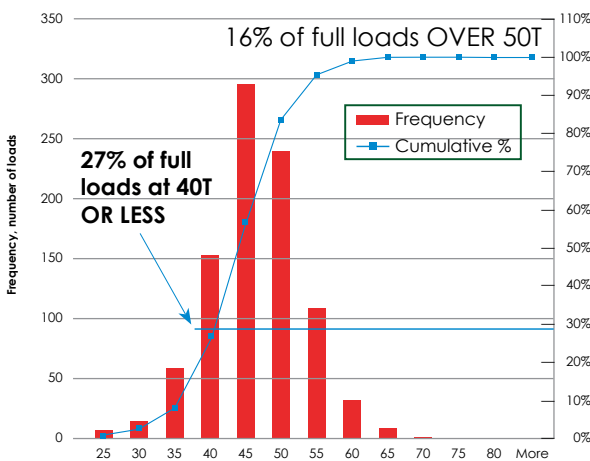


Vulcan On-Board Scales designs and manufactures specific on-board weighing solutions for high capacity dump trucks, articulated dump trucks, and hauling vehicles.

On-board scales gives the driver the ability to monitor the payload weight accumulated during the loading process. This allows control of the haulage weight, minimizing liability issues while promoting hauling efficiency and reinforcing positive driving habits. Managers have the option of setting operational weight limits. The driver can then act on the set weight limit using continual real-time feedback from the in-cab meter. The meter has payload warning options letting the loader know when a capacity target is reached.

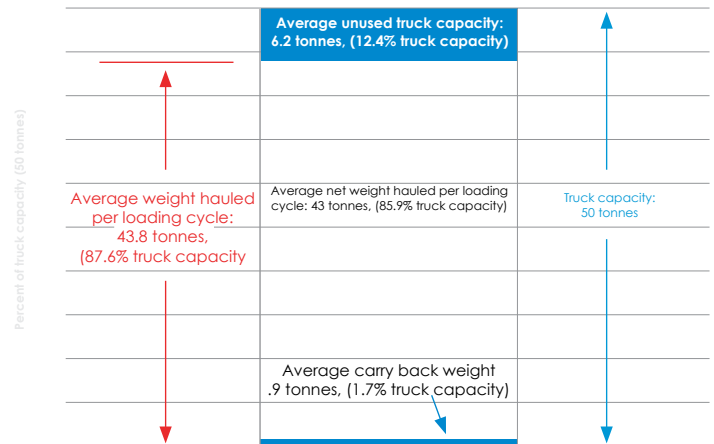
Other forms of information derived from the basic weight data include: number of loads hauled per shift, tons hauled per shift, time between loading and dumping, and carry back weight. All data is stored and can be sent to external computing devices. This information is useful in creating vehicle service strategies and determining overall vehicle service lifetime. The Vulcan OnBoard Scale system is a simple and effective entry point for companies looking for a way to monitor and control how much any single vehicle or fleet is hauling to maximize efficiency and vehicle uptime, while minimizing safety and liability issues.

50 tonne Loading Efficiency Histogram: Truck #931 Thio Mine
Target Full Load Weight: 50 tonne. 877 loads over 35 days.



Hauling Efficiency Bar Graph (truck #931 Thio)

Bar graph illustration of average full loaded weight, average carry back weight and resulting average net weight hauled by payhauler truck #931. 877 loads over 35 days.





How the System Works

The basic measurement components of the weigh system are the chassis mounted load cells and the rear hinge pin load cells. As payload is added to the dump body, the weight is transferred to the truck frame chassis through the load cells and rear load sensing hinge pins. These components measure the weight and send the weight value as an electrical signal to be displayed by the meter in the cab of the vehicle.



Load Cells and Shear Pins

Electrical	350 Ohms nominal impedance
Connector	4-pin bulkhead, military type
Voltage Required	5.0 +/- .1 Vdc
Material	High grade alloy steel
Operating Temperature	-40 to +140 degrees F
System Accuracy	Typical error less than 1% Full Scale of actual weight for operating temperature range and normal loading conditions

V600 Meter

Display	LED, variable brightness Primary: (6) .7" high characters Secondary: (16) .2" high characters
Size	8.0" W x 2.6" D x 3.6" H (including mounting bracket)
Resolution	10, 20, 50, 100 or 200 lb or kg increments
Voltage Required	10.5 to 29.0 Vdc
Current Draw	.7 to 2 amps
Protection	Inline, 2 amp fast acting fuses and reverse voltage protection
Weight	27.8 oz (including mounting bracket)



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