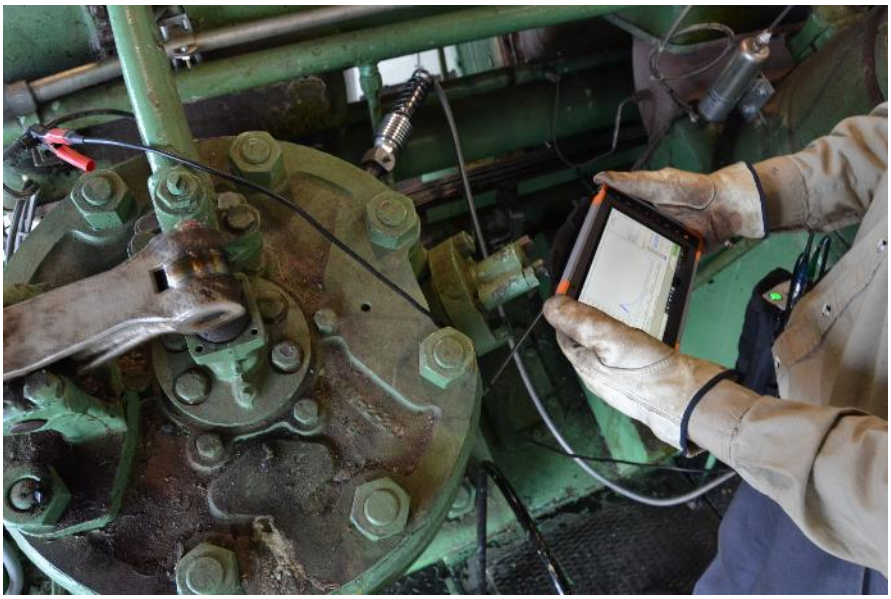
MACHINERY MONITORING SYSTEMS, LLC

Data Sheet

M3000-00
Snapshot®-Balancer

Snapshot® Engine Balancer



Snapshot® - Balancer Key Features:

- Portable balancer for engines
- Ruggedized-EMI Resistant
- Engine cylinder pressure
- Spike Removal/Smoothing
- 2-Stroke/4-Stroke
- Secondary Ignition
- Wireless communication from data module to tablet
- 8-hour battery life
- Class I, Division 2 rating pending

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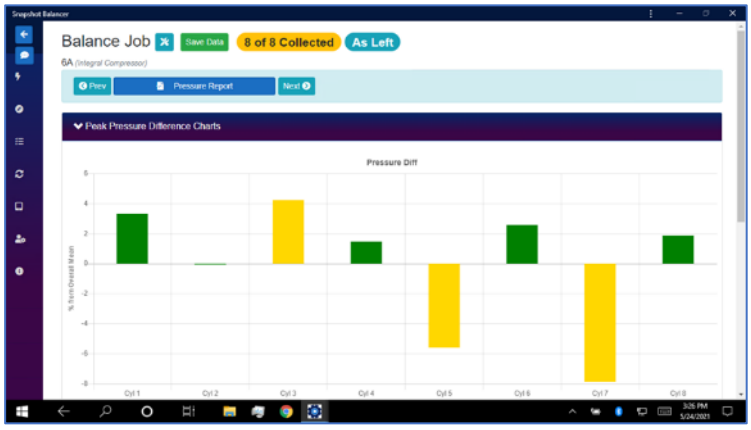
Snapshot® Engine Balancer

The Machinery Monitoring Systems Snapshot Balancer is a portable, analyzer for slow-speed, natural gas fueled engine balancing. The ignition clip allows the operator to first verify proper functioning ignition on all cylinders before attempting to balance an engine. The quick ignition test provides a green, yellow or red indication of ignition quality based on breakdown voltage and spark duration. These parameters are user definable on a per-engine basis. After verifying good ignition, the operator can then proceed with collecting "as-found" balance data. After making appropriate adjustments to fuel flow the operator can collect "as-left" balance data.

The belt worn data acquisition module has a rechargeable battery and connectors for a pressure sensor and a secondary spark clip. The module transmits the data to the Snapshot tablet wirelessly via Bluetooth™. Pressure and ignition curves are displayed on the tablet for the operator. Engine Balance and Ignition reports are available in PDF format for saving, printing or emailing.

The Snapshot Balancer utilizes a Station|Machine|Route database that makes it easy to use company-wide.

PFP Adjustment Screen
Large, easy to read statistics while adjusting cylinder PFP. Numbers update with each set of averages.



Reports
As-Found, As-Left & Balance reports saved on the tablet can be printed, copied or emailed. Data and reports are uploaded to MachineryRx.

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Snapshot® Engine Balancer

The Snapshot Engine Balancer kit comes in a 19” x 16” x 10” foam lined Pelican case and weighs less than 25 pounds complete. The kit contains everything needed to do engine balancing including:

- Snapshot tablet computer
- Data acquisition module
- Ballistic nylon belt case for data acquisition module
- Balancing software installed on tablet
- 1500 PSI engine pressure sensor
- Kiene valve wrench
- Spark clip
- Snapshot tablet docking station/charger
- Battery charger for data acquisition module battery
- Neck strap for Snapshot tablet

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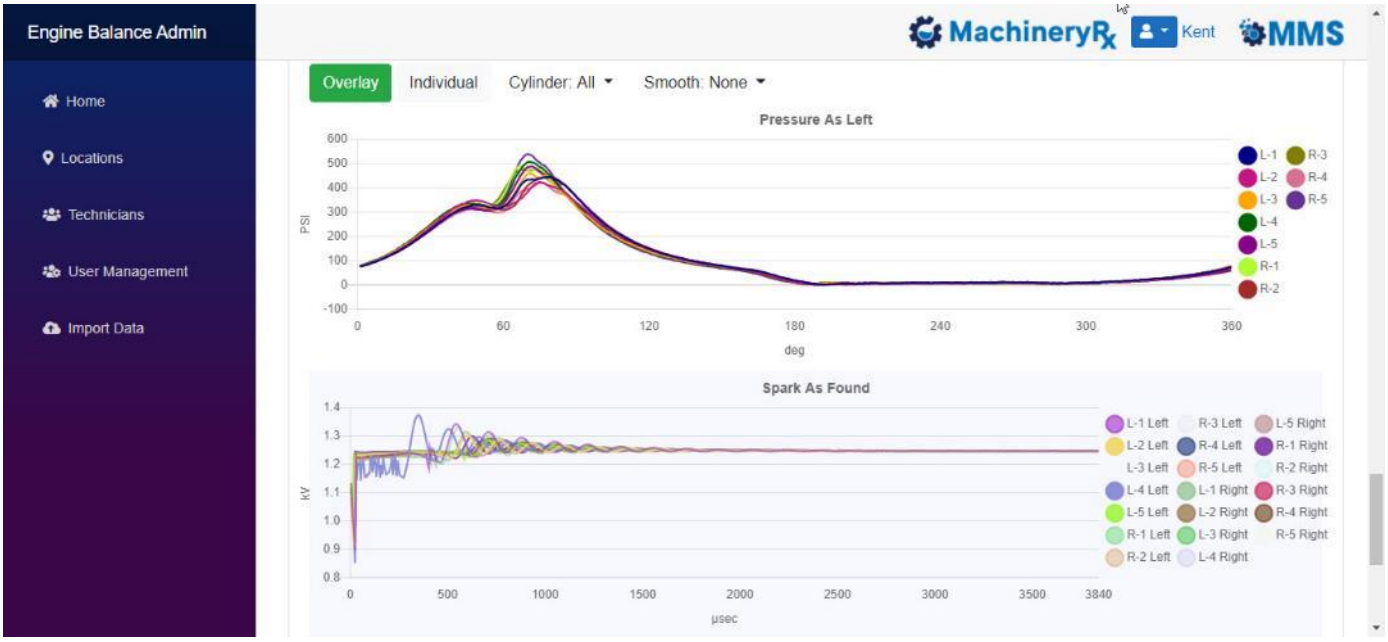
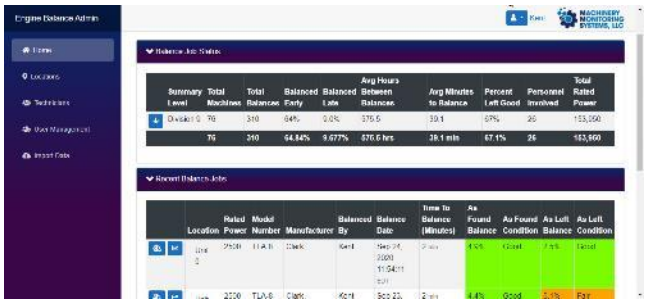
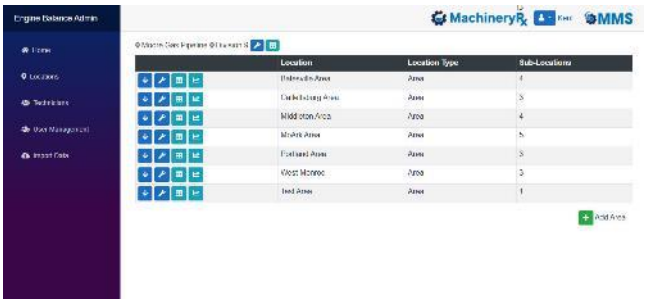
MachineryRx™



The Snapshot Engine Balancer is fully integrated with the MMS MachineryRx ™ website. MachineryRx is a revolutionary new way to track engine balance across your entire organization! A simple-to-use website provides a single location for your operators and analysts to upload their engine balance results. The MachineryRx website supports automatic uploads from MMS' Snapshot Engine Balancer® along with simple form-entry for non-MMS analyzer users.



Home page lists recent balance job for users' area of responsibility (e.g., Corporate, Division, Area, Station)



Click to drill down through different levels

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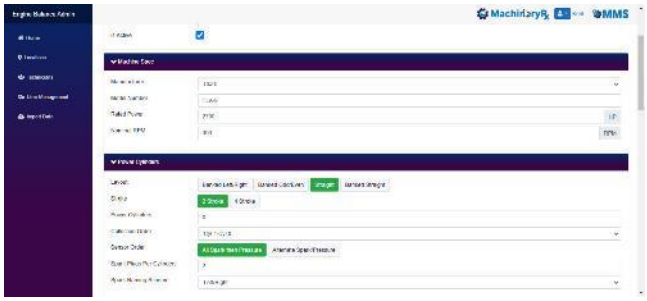
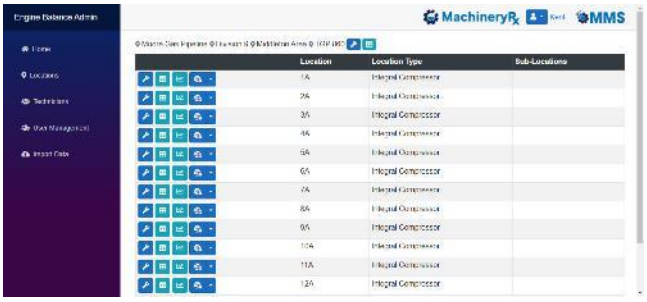
Snapshot®-Balancer

MachineryRx Website

- Organize balance data by multiple, custom levels (e.g., Corporate, Division, Region, Station, Machine)
- Access levels controlled by log-in permissions by user
- Share information and data across company
- Enhance ability for peer advice/review throughout organization
- No software to install…just web browser and log-in credentials
- Acceptable balance limits and balance intervals customizable at each level (Corporate, Division, Area, Station and Machine
- Website securely hosted on Microsoft Azure
- Compare engine balance data across entire company by Unit Model Number
- Informative and actionable reports for management. Managers can add recommendations to a particular balance report
- Automatic upload of balance data from MMS Snapshot Engine Balancers including:
    - Power cylinder pressure and ignition curves
    - As-Found and As-Left data
    - Panel Points
    - Operator Comments
- Simple data entry from non-MMS (Legacy) balancers
    - Operator/Analyst logs into MachineryRx website and enters balance data
    - No redundant entry of information
- Customizable security features



Snapshot Balancer setups stored on MachineryRX website



Easy single click navigation through MachineryRx website

MachineryRx™

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Snapshot Balancer Specifications

Snapshot Module

Size	7” x 4.2” x 2.2”
Weight	2.5 lbs.
Input	LIMO Connector Pressure (Voltage or 4-20 mA) Spark
Operating Temp	0 – 60 °C (32 – 140 °F)
Ratings	Class I, Division 2 Groups A,B,C,D (Pending)

Snapshot Tablet

Size	5.4” x 8.5” 1.4”
Weight	2.2 lbs.
Operating Temp	-20 - 50 °C (-4 – 122 °F)
Ratings	IP-68 Waterproof/Dustproof Class I, D2 Groups A,B,C,D,F,G

Shipping Case

Size	19.18” x 15.79” x 10.5”
Weight	(With all components) 21 lbs.