Improving Refrigeration Maintenance with Tech Assist

What is Tech Assist?

Tech Assist is a web application that provides a single source to view store, rack, case and work order information from a laptop or tablet. It is designed for Managers, Experts and Technicians to help them manage, advise, direct, and support field technicians to resolve refrigeration issues faster, correctly, and with more confidence. The application provides the following

- **Store Viewer** – overview of the entire refrigeration status for the store, rack summaries, list of cases with details, case health observations, and recent work orders.
- **Rack Viewer** – rack health, circuit performance, compressor performance, suction pressure analysis, superheat analysis, receiver float level, and recent work orders.
- **Case Viewer** – case health score and observations, case telemetry, case list and details for other cases on the circuit and rack, case asset information and parameter settings, detailed case data, and recent work orders for the case and rack.
- **Explorer** – standard and customized visualizations of the entire Tech Assist Refrigeration Data Set with hover for details and click through to view specific stores and cases.
- **My Tech Assist Stores** – create your own list of stores and view a performance summary and a list of your stores with additional store details.
- **Store History** – view the history of key measures for a store.
- **Leaderboard** – view a list of all service delivery (HVAC/R) managers along with the current health, 60-day average health, and health improvement for their stores.

Tech Assist also provides PDF Reports that are attached to Work Orders within Service Channel. See the separate Tech Assist PDF Reports fact sheet for more information.

Where does the data come from?

Walmart's systems (ioT and IMS) continuously gather refrigeration data from store controllers. Tech Assist receives, analyzes, and formats this data for viewing multiple times a day. Tech Assist also continuously receives Work Order data from Service Channel.

How do I access Tech Assist?

Use the browser on your laptop or tablet to go to https://techassist.app, enter your email address, retrieve the Verification Code from your email, enter it, and click "Verify and Login to Tech Assist".

How does Tech Assist Improve Refrigeration Maintenance?

Tech Assist improves Refrigeration Maintenance in the following ways:

- **Technician Time Savings** – Tech Assist reduces the time for data collection, root case analysis, resolution time, and call-in assistance time.
- **More Effective Resolutions** – provides the data to determine root cause more accurately.
- **Proactive Maintenance** -identifying and resolving recurring issues, hot spots, and the unhealthiest assets and stores.

How can I provide feedback and request new capabilities?

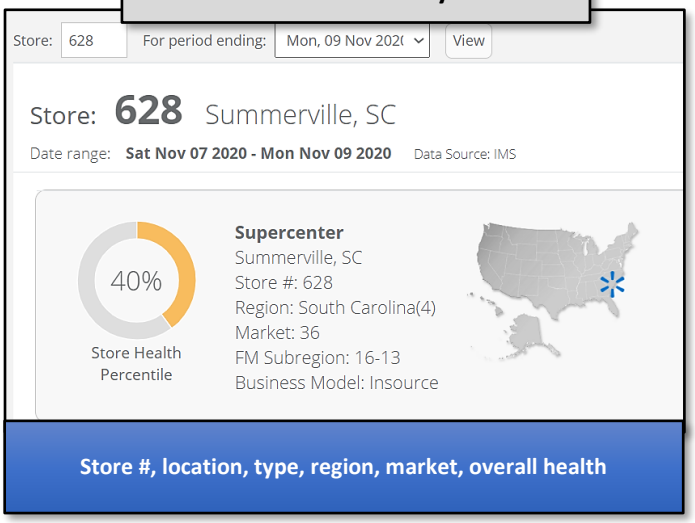
If you have questions, problems or suggestions, email us at feedback@tech-assist.com.

tech assist

Walmart Facility Maintenance

Tech Assist Store Viewer

Store Summary

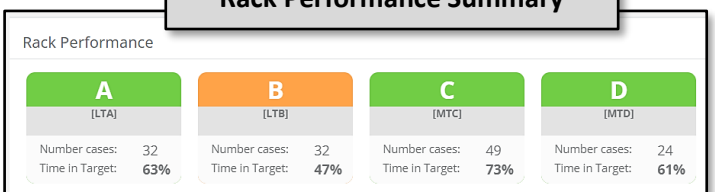


Store #, location, type, region, market, overall health

Store Health Summary

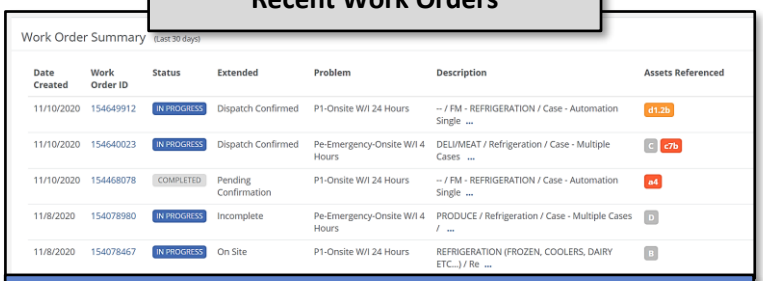
Health summary: unhealthy case counts, % outside target, more

Rack Performance Summary



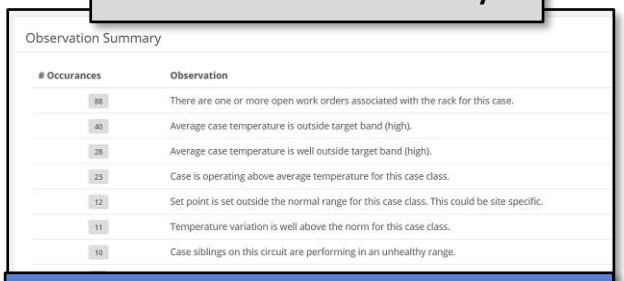
Rack summary including # of cases, % time in target, health score.

Recent Work Orders



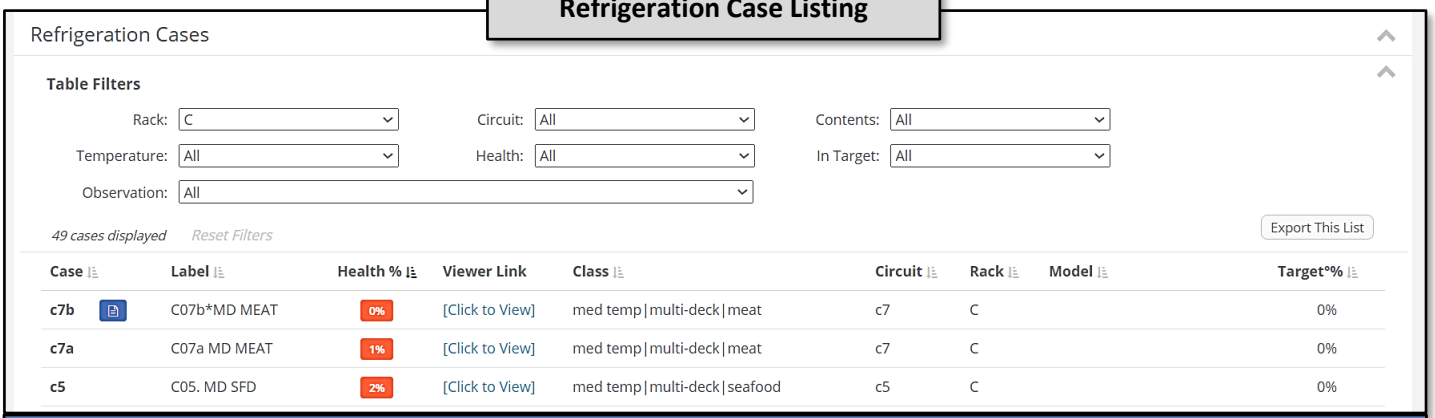
Work Orders within the last 30 days. Click to view in Service Channel.

Case Observations Summary



Case health observations. Click to filter on observation.

Refrigeration Case Listing



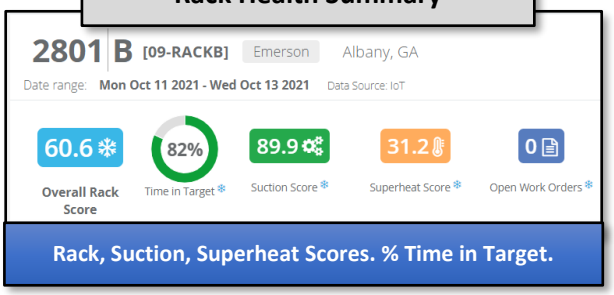
Case listing with various filters. Case information including ID, label, health, class, model, circuit, rack. Click to go to case viewer.

tech assist

Walmart Facility Maintenance

Tech Assist Rack Viewer

Rack Health Summary



Rack, Suction, Superheat Scores. % Time in Target.

Circuit Performance

Circuit	# Cases	% Time in Target	Setpoint°	Avg Offset°	Case Performance
b08	3	26	37	4	b08a b08b b08c
b09	3	49	31	3	b09a b09b b09c
b12	3	61	33	2	b12a b12b b12c
b11	3	75	31	2	b11a b11b b11c
b04	2	92	36	1	b04a b04b
b13	4	95	33	1	b13a b13b b13c b13d
b10	3	96	31	1	b10a b10b b10c
b06	3	97	31	1	b06a b06b b06c
b03	1	99	31	1	b03
b05	4	100	37	1	b05a b05b b05c b05d
b07	2	100	31	0	b07a b07b
b01	2	100	31	1	b01a b01b
b02	1	100	31	1	b02

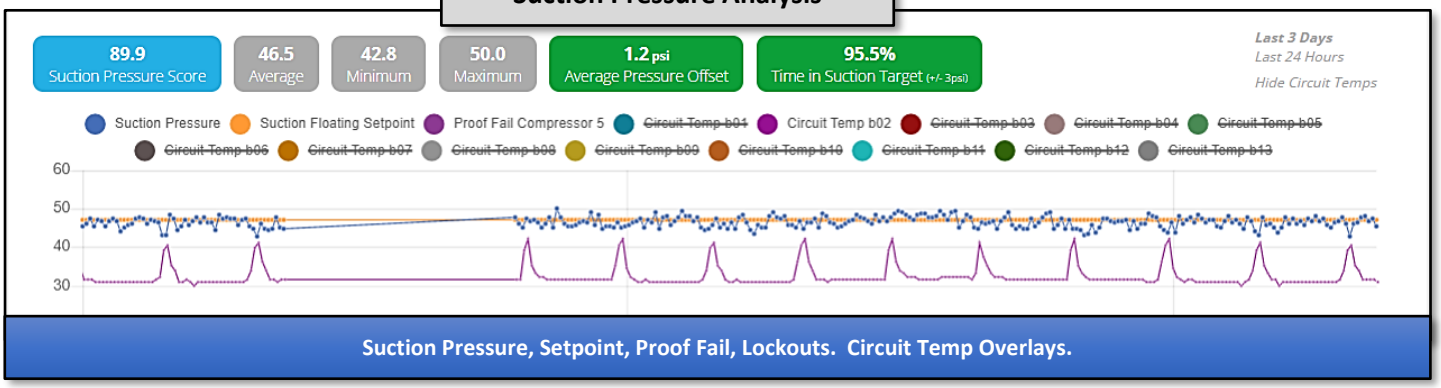
Circuit % Time in Target, Setpoint, Offset, Case Performance

Compressor Performance

Id	Run Time	% Time in Lockout	# Lockouts*	% Time in Proof Failure	# Proof Failures*
1	100.0%	0.0%	0	0.0%	0
2	100.0%	0.0%	0	0.0%	0
3	0.0%	0.0%	0	0.0%	0
4	100.0%	0.0%	0	0.0%	0
5	0.0%	0.0%	0	99.4%	3
6	0.0%	0.0%	0	0.0%	0

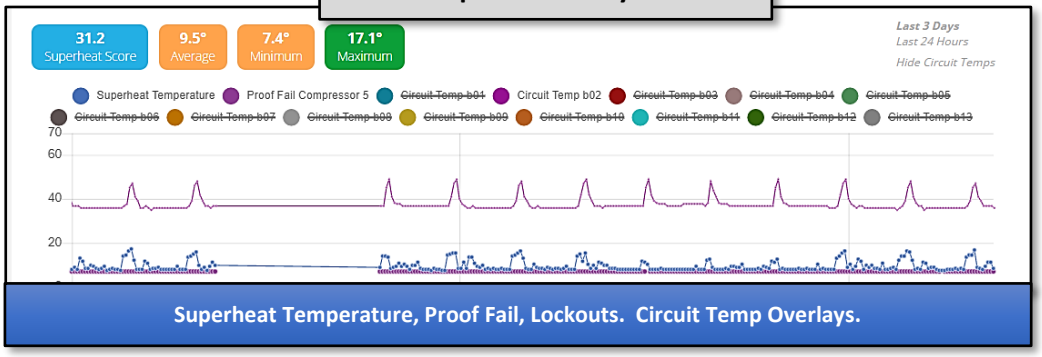
Compressor Run Time, Lockout, Proof Failure

Suction Pressure Analysis



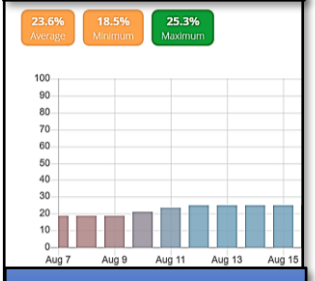
Suction Pressure, Setpoint, Proof Fail, Lockouts. Circuit Temp Overlays.

Superheat Analysis



Superheat Temperature, Proof Fail, Lockouts. Circuit Temp Overlays.

Receiver Float Level



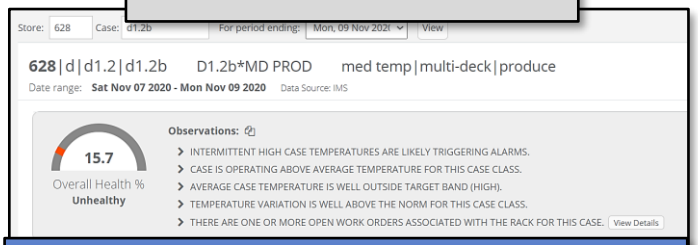
Receiver Float % Full

tech assist

Walmart Facility Maintenance

Tech Assist Case Viewer

Case Health and Observations



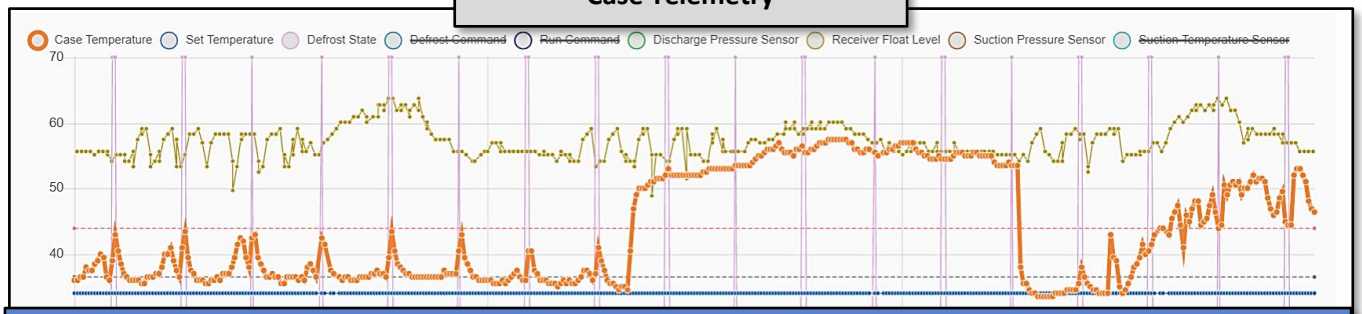
Case type, content, health score and observations

Asset Data

Asset Tag:	L2019-854725
Serial Number:	4578100
Asset Type:	RC
Manufacturer:	TYLER
Model:	N6DHP

Asset and Model Information

Case Telemetry



Visualize Case Temperature, Set point, Defrost State, Discharge Pressure, Suction Pressure, Receiver Float Level, and more

Parameter Data

bakery

Target Temp:	31°
Cut In Temp:	33°
Cut Out Temp:	29°
Super Heat:	
Saturated Suction Temp:	28°
Defrost Type:	OT
Defrost Term Type:	tme
Defrost Term Temp:	0°
Defrost / Day:	6
Defrost Time (min):	L2019-854725
Drain Delay (min):	L2019-854725
Evap Fan Delay (min):	L2019-854725

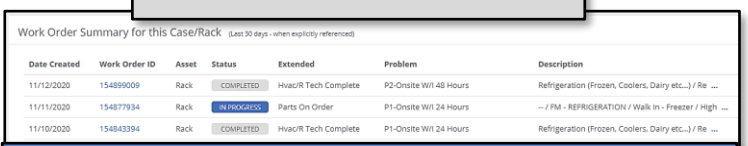
Avoid Call-Ins with Case Parameter Settings

Case Measures and Class Comparisons

Defrost			
average_defrost_recovery_duration	33.04	34.81	Average time (in minutes) for temperature to stabilize after defrost off command
stdev_defrost_recovery_duration	23.60	12.54	Standard deviation of defrost recovery time
average_defrost_recovery_temp	6.50	1.10	Average temperature reached after defrost recovery
stdev_defrost_recovery_temp	7.64	0.82	Standard deviation of defrost recovery temperature
average_defrost_start_temp	40.33	34.44	Average temperature at start of defrost
stdev_defrost_start_temp	7.76	1.16	Standard deviation of defrost start temperature
average_max_defrost_temp	46.33	45.25	Average max temperature reached during defrost
stdev_max_defrost_temp	6.11	1.87	Standard deviation of maximum defrost temperature

View Case Measures, Comparison with Other Cases in this class

Recent Work Orders for this Case



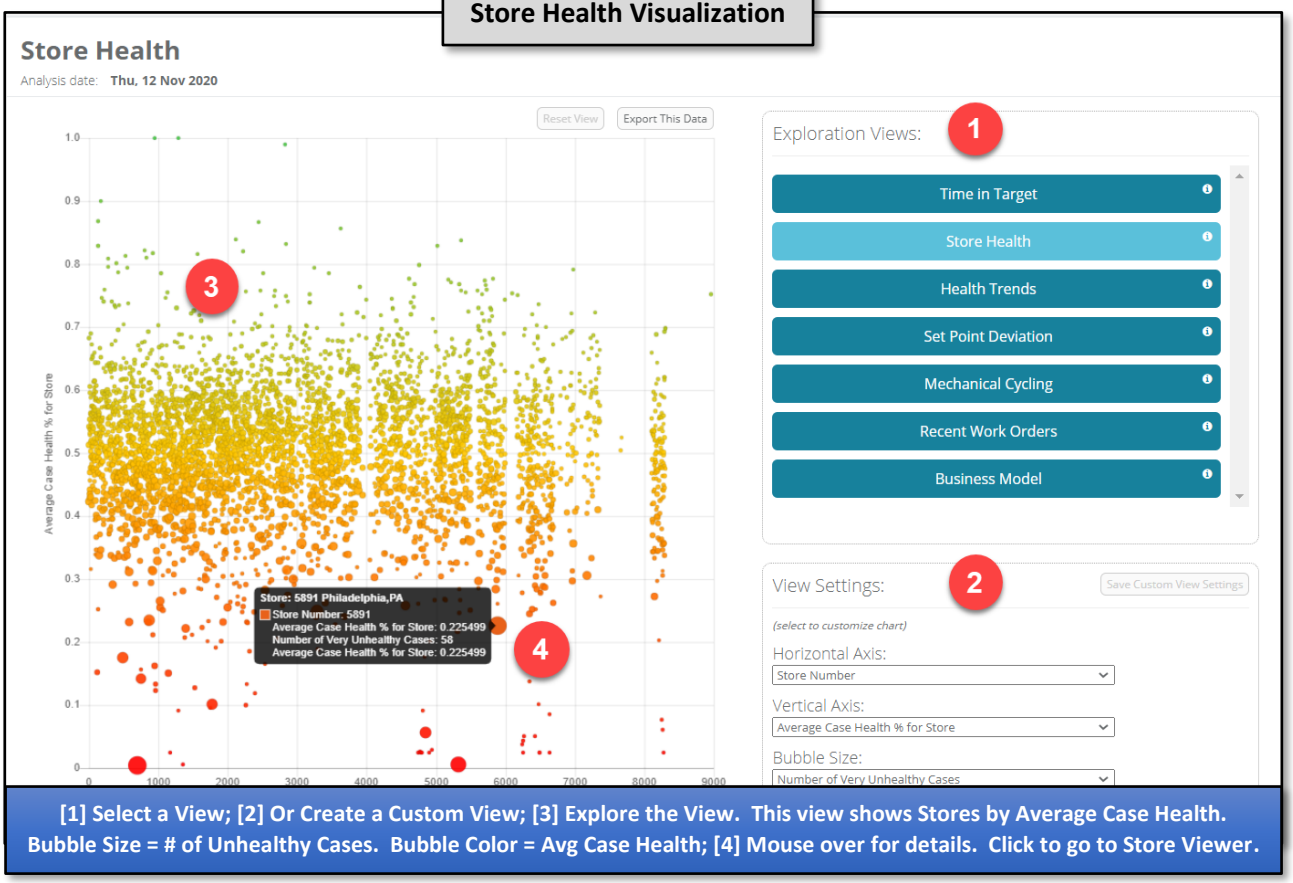
Work Order Summary for this Case/Rack (Last 30 days - when explicitly referenced)

Date Created	Work Order ID	Asset	Status	Extended	Problem	Description
11/12/2020	154899009	Rack	COMPLETED	Hvac/R Tech Complete	P2-Onsite W/I 48 Hours	Refrigeration (Frozen, Coolers, Dairy etc...) / Re ...
11/11/2020	154877934	Rack	IN PROGRESS	Parts On Order	P1-Onsite W/I 24 Hours	-- / FM - REFRIGERATION / Walk In - Freezer / High ...
11/10/2020	154843394	Rack	COMPLETED	Hvac/R Tech Complete	P1-Onsite W/I 24 Hours	Refrigeration (Frozen, Coolers, Dairy etc...) / Re ...

View Recent Work Orders. Click to view in Service Channel.

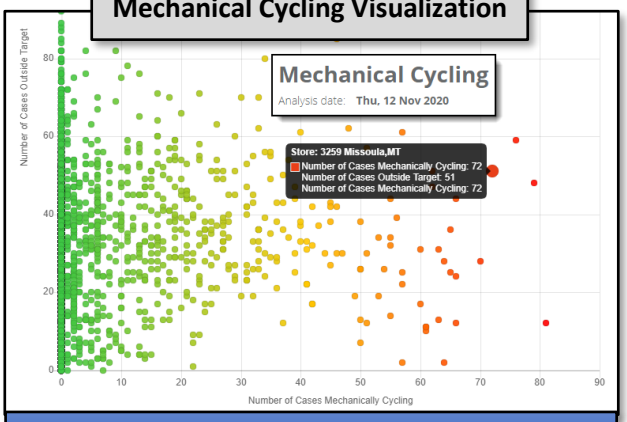
Tech Assist Explorer

Store Health Visualization



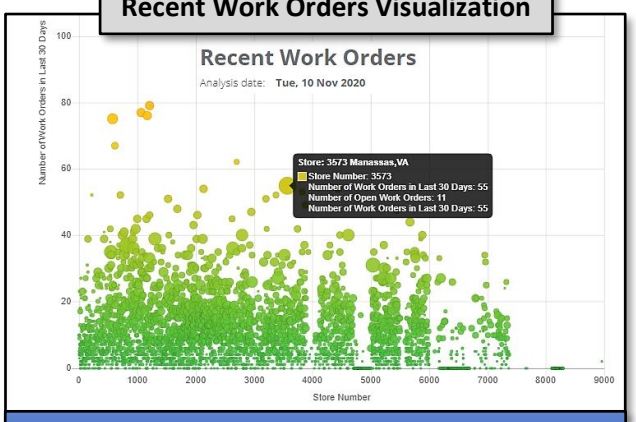
[1] Select a View; [2] Or Create a Custom View; [3] Explore the View. This view shows Stores by Average Case Health. Bubble Size = # of Unhealthy Cases. Bubble Color = Avg Case Health; [4] Mouse over for details. Click to go to Store Viewer.

Mechanical Cycling Visualization



View Mechanical Cycling by Store

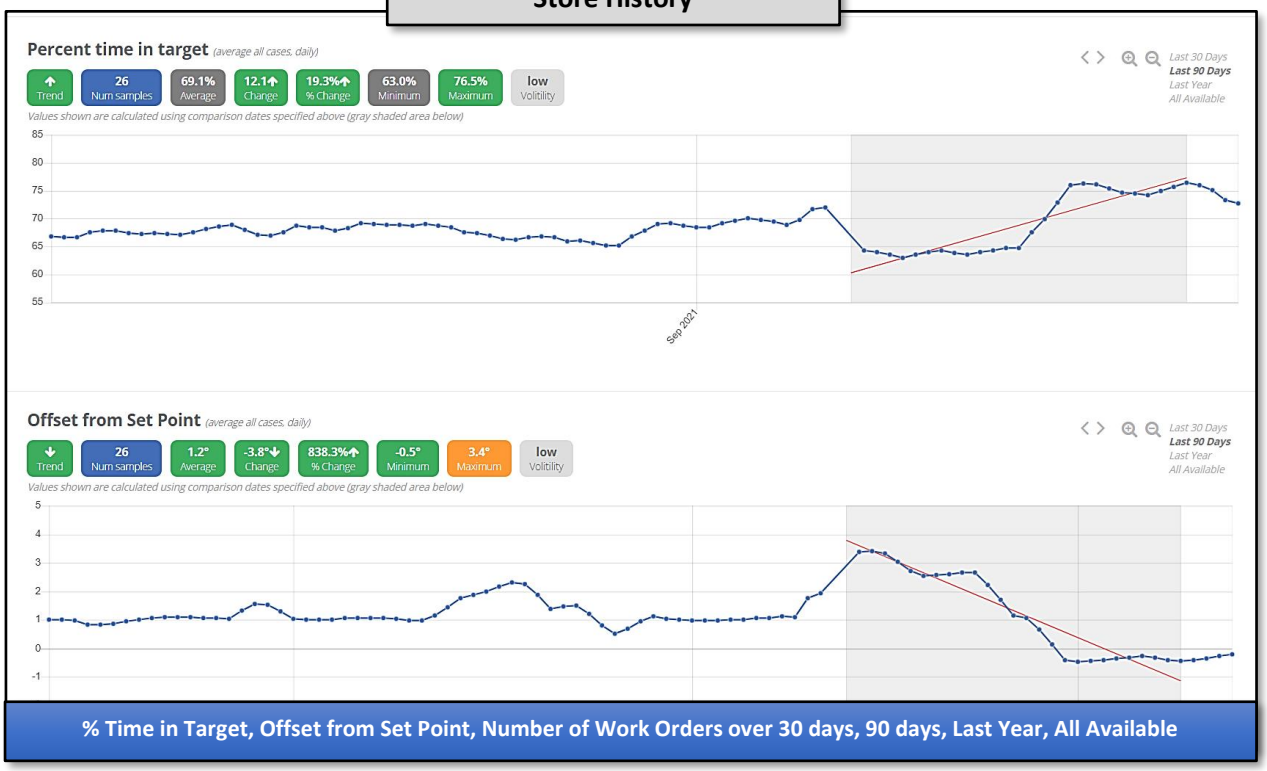
Recent Work Orders Visualization



View Recent Work Orders by Store

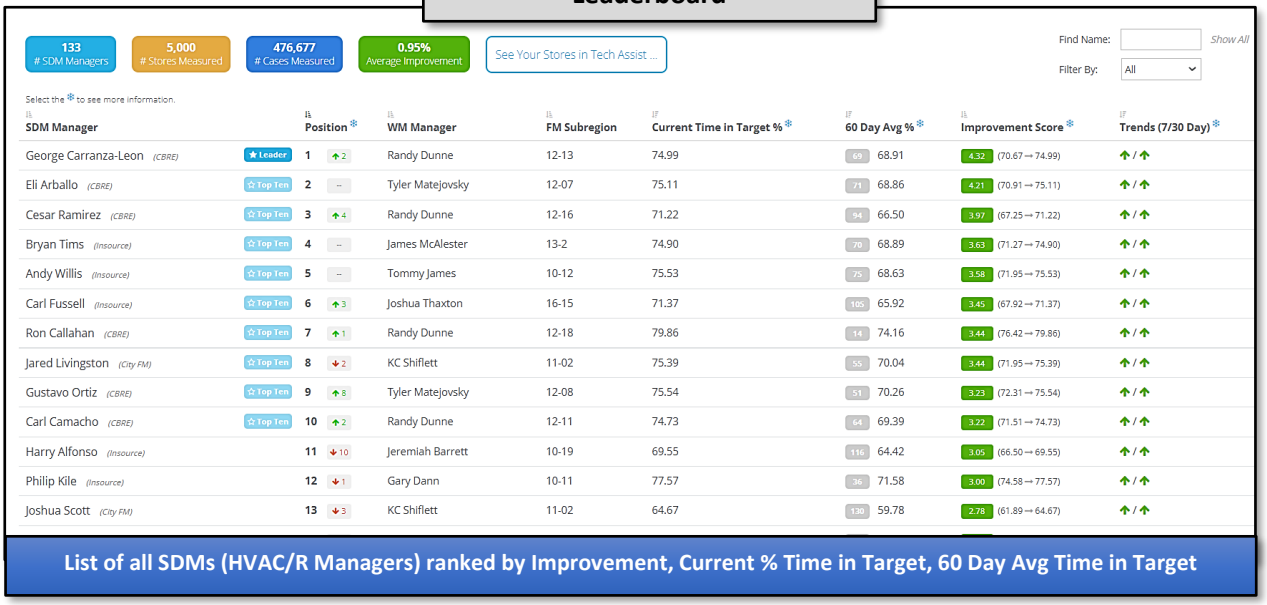
Tech Assist Store History & Leaderboard

Store History



% Time in Target, Offset from Set Point, Number of Work Orders over 30 days, 90 days, Last Year, All Available

Leaderboard



SDM Manager		Position	WM Manager	FM Subregion	Current Time in Target %	60 Day Avg %	Improvement Score	Trends (7/30 Day)
George Carranza-Leon (CBRE)	Leader	1 ↑2	Randy Dunne	12-13	74.99	69 68.91	4.32 (70.67 → 74.99)	↑ / ↑
Eli Arballo (CBRE)	Top Ten	2 --	Tyler Matejovsky	12-07	75.11	71 68.86	4.21 (70.91 → 75.11)	↑ / ↑
Cesar Ramirez (CBRE)	Top Ten	3 ↑4	Randy Dunne	12-16	71.22	94 66.50	3.97 (67.25 → 71.22)	↑ / ↑
Bryan Tims (Insource)	Top Ten	4 --	James McAlester	13-2	74.90	70 68.89	3.63 (71.27 → 74.90)	↑ / ↑
Andy Willis (Insource)	Top Ten	5 --	Tommy James	10-12	75.53	75 68.63	3.58 (71.95 → 75.53)	↑ / ↑
Carl Fussell (Insource)	Top Ten	6 ↑3	Joshua Thaxton	16-15	71.37	105 65.92	3.45 (67.92 → 71.37)	↑ / ↑
Ron Callahan (CBRE)	Top Ten	7 ↑1	Randy Dunne	12-18	79.86	14 74.16	3.44 (76.42 → 79.86)	↑ / ↑
Jared Livingston (City FM)	Top Ten	8 ↓2	KC Shiflett	11-02	75.39	55 70.04	3.44 (71.95 → 75.39)	↑ / ↑
Gustavo Ortiz (CBRE)	Top Ten	9 ↑8	Tyler Matejovsky	12-08	75.54	51 70.26	3.23 (72.31 → 75.54)	↑ / ↑
Carl Camacho (CBRE)	Top Ten	10 ↑2	Randy Dunne	12-11	74.73	64 69.39	3.22 (71.51 → 74.73)	↑ / ↑
Harry Alfonso (Insource)		11 ↓10	Jeremiah Barrett	10-19	69.55	116 64.42	3.05 (66.50 → 69.55)	↑ / ↑
Philip Kile (Insource)		12 ↓1	Gary Dann	10-11	77.57	36 71.58	3.00 (74.58 → 77.57)	↑ / ↑
Joshua Scott (City FM)		13 ↓3	KC Shiflett	11-02	64.67	130 59.78	2.78 (61.89 → 64.67)	↑ / ↑

List of all SDMs (HVAC/R Managers) ranked by Improvement, Current % Time in Target, 60 Day Avg Time in Target