



Technology & Maintenance Council

**RELIABLE  
ANSWERS**

**FOR UNCERTAIN TIMES**

**2020 FALL MEETING – A VIRTUAL EVENT**

**SEPTEMBER 14-17, 2020**



**NEW TECHNOLOGY PRESENTATION**

**DPF<sub>TRAC</sub>**  
DIESEL PARTICULATE FILTER TRACKING SYSTEM



[dpftrackingsystem.com](http://dpftrackingsystem.com)

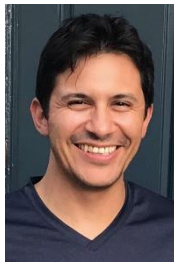
September 16, 2020 4:15 PM (ET)

# Welcome TMC Participants

## DPFTRAC is New Technology That Provides “Reliable Answers For Uncertain Times”

RAVHD, the owner of DPFTRAC, is a leading innovator of technology based solutions focused on providing software and hardware that streamline daily maintenance services for the heavy duty and mid-range commercial trucking industry for the 21st century. DPFTRAC is deployed on the iPad device and on the web. RAVHD is located in Wilmington, California, in the heart of the Port of Los Angeles and Long Beach.

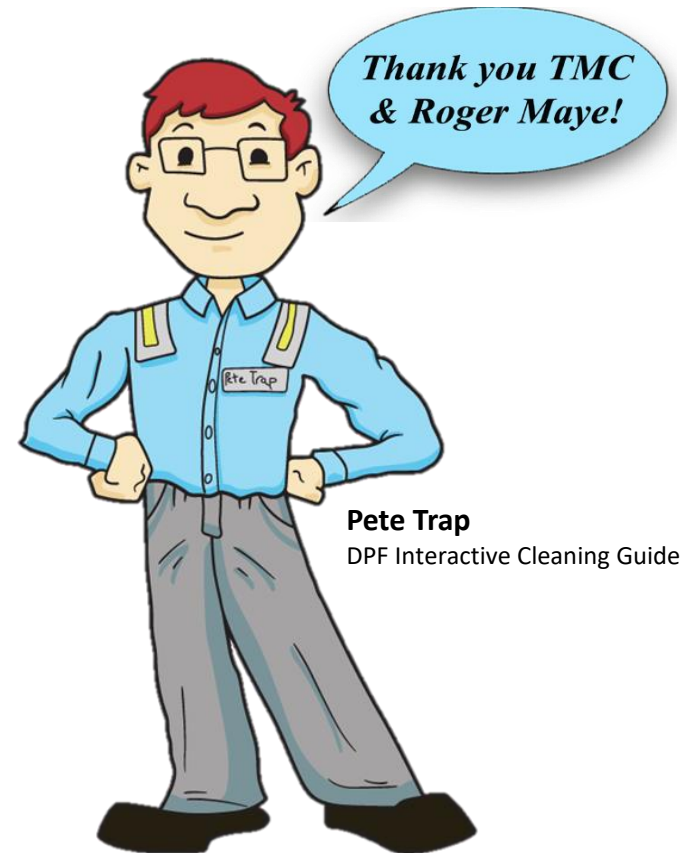
### Today's DPFTRAC Presenters



**Fernando Varela**  
Chief Executive Officer



**Mitch Ward**  
Chief Information Officer



**Pete Trap**  
DPF Interactive Cleaning Guide

For any questions about this presentation, please feel free to send them to: [info@dpftrackingsystem.com](mailto:info@dpftrackingsystem.com)

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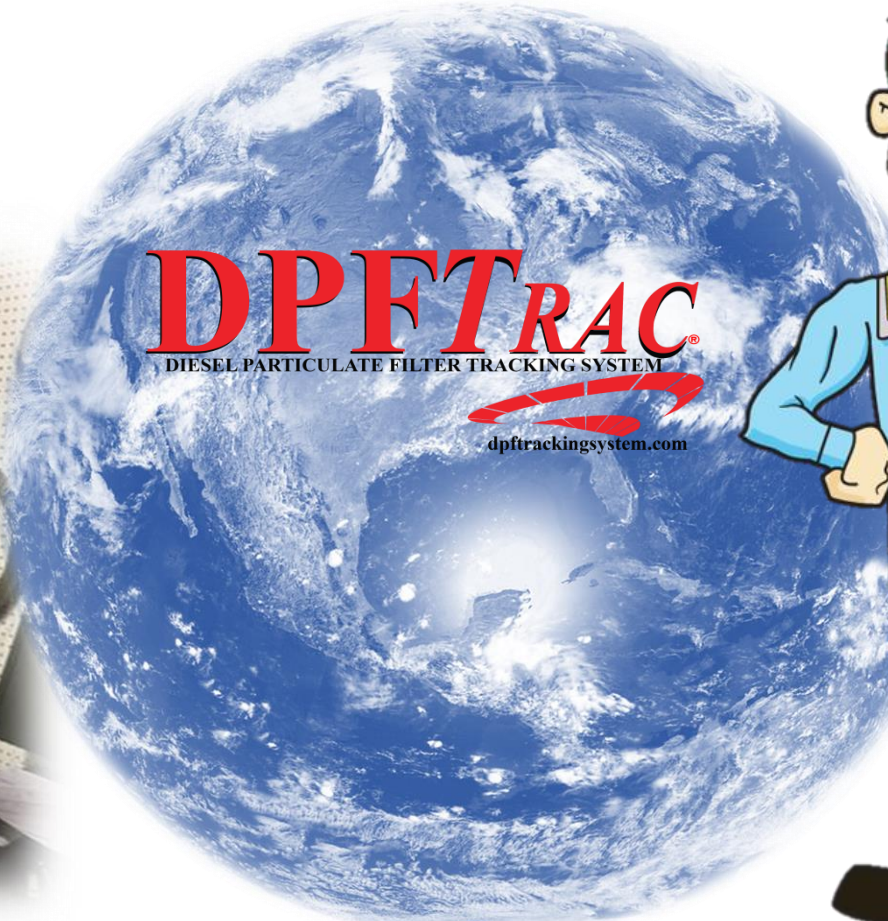
- Introduction to DPFTRAC
- DPFTRAC's Broad Based User Community
- Data Input
  - Key Components – iPad and Laptop
  - We Know Your DPF Technicians
  - Part Number Lookup
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- Data Output
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  - Pending and Images
  - Management Tools
- DPFTRAC System Summary



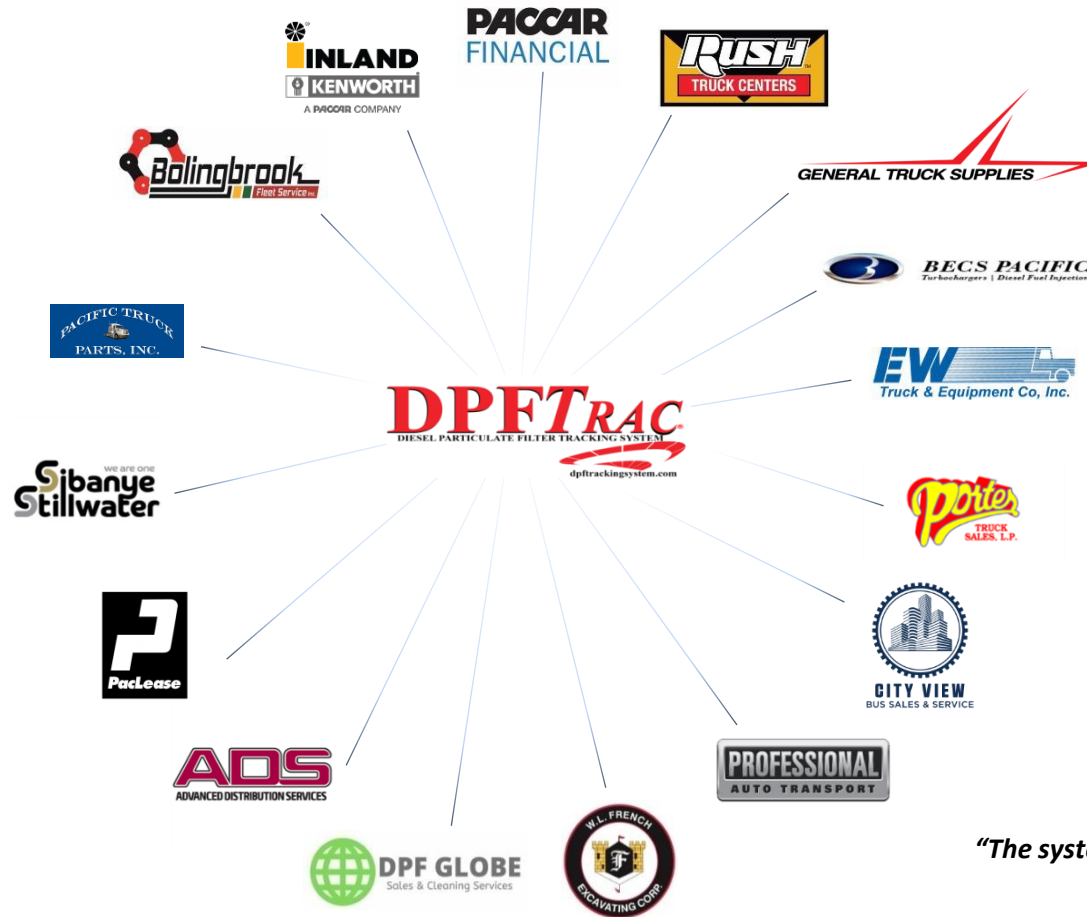
# Introduction to DPFTRAC



- DPFTRAC software application is the world's first DPF [Diesel Particulate Filter] cleaning and tracking program designed for the heavy duty trucking industry
- DPFTRAC uses five standard DPF cleaning phases
  - Visual Inspections
  - PIN Testing
  - Bypass Detection
  - After Pneumatic Cleaning
  - After Thermal Cleaning
- Processed 15,000 DPF's in the United States and Canada
- Industry Proven
- Recognized Standard Procedures



# DPFTRAC's Broad Based User Community



*"The system is fantastic"* - J.S., PACCAR Financial

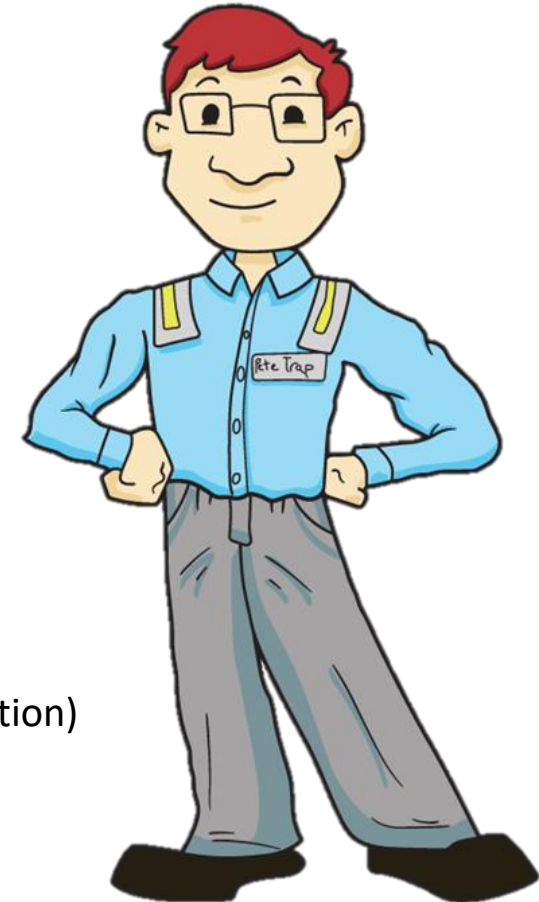
**DPFTRAC Does Not Clean Your Diesel Particulate Filter. DPFTRAC Helps The People That Clean Your DPF Do It Better**



# Key Components – iPad and Web Based



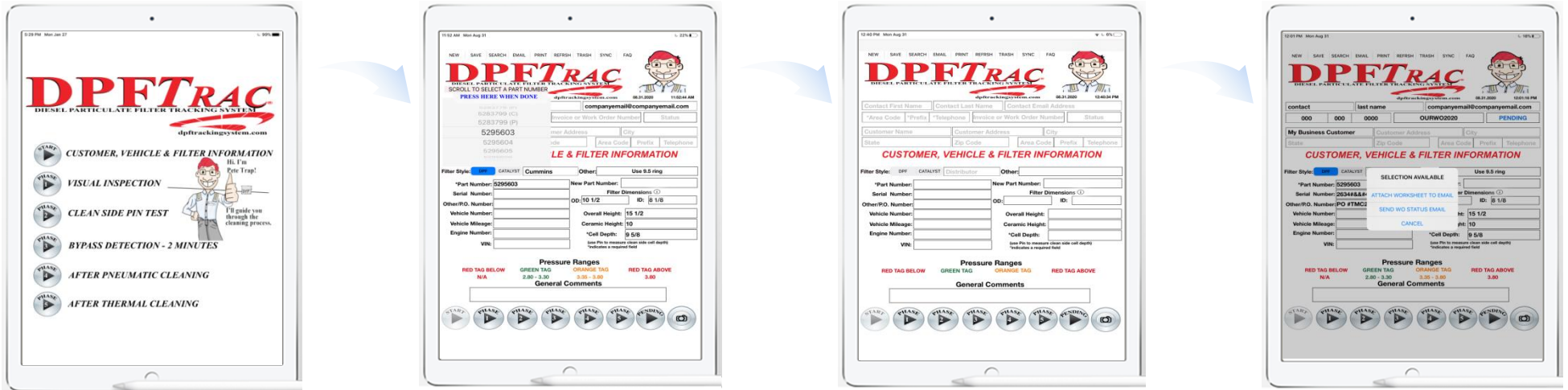
- DPFTRAC electronically accepts DPF observed data (PIN testing, visual inspection, weight, etc.) as input
- DPFTRAC contains a huge built-in database of pressure ranges corresponding to each DPF part number within the database
- DPFTRAC automatically determines a DPF's condition:
  - Red tagged (not recommended for production)
  - Green tagged (good for production)
  - Orange tagged (acceptable for production)
- DPFTRAC means No More Messy Paper Forms
  - Email the DPF cleaning history worksheet (PDF)
  - Text message the customer a work order's detail
  - Print DPFTRAC's completed documents (wirelessly)
- DPFTRAC software promotes social distancing, "reliable answers for uncertain times."
  - Electronic processing
  - No direct interaction required (email and text communication)



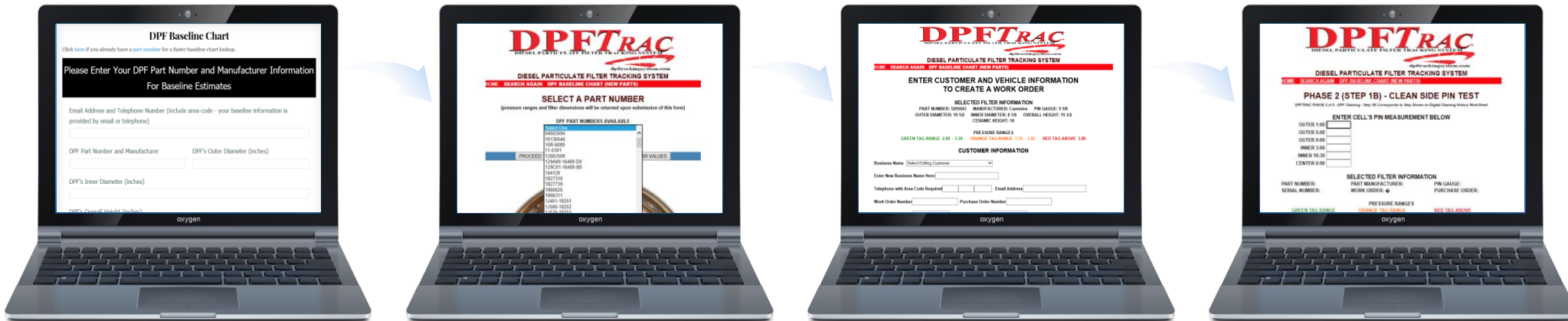
# Key Components – iPad and Web Based



DPFTRAC Accessible on iPads, PCs, Macintosh, Android and All Other Internet-Connected Devices



DPFTRAC Web Mirrors the DPFTRAC iPad Software in All Five Phases



DPF Baseline Estimator Tool

Shown Above: Three of the Five Phases

\* Screens captured from the DPFTRAC Web Based Software



OK, let's get started.

For any questions about this presentation,  
please feel free to send them to:

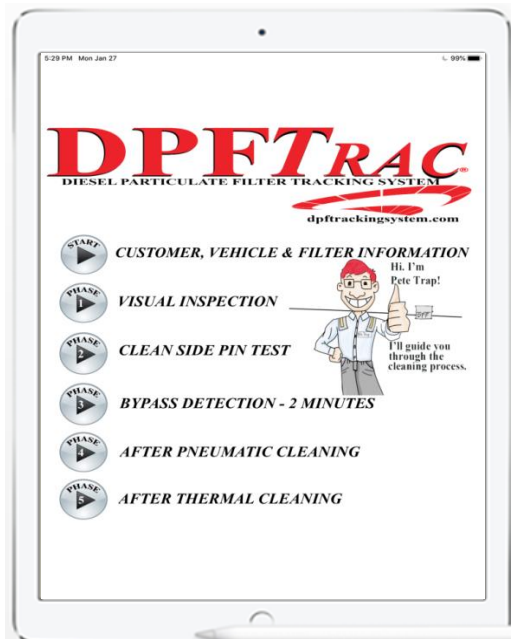
[info@dpftrackingsystem.com](mailto:info@dpftrackingsystem.com)



# We Know Your DPF Technicians



- DPF Technical Staff are tuned into the digital world and smart devices
- DPFTRAC allows the Technician to inspect, diagnose and clean the DPF in a step-by-step standardized five-phase process
- DPFTRAC is the digital tool that can help your staff clean your DPF consistently and properly every time



# Part Number Lookup



Physically Locate Your Part Number on the DPF

Digitally Locate Your Part Number Within the DPFTRAC Database



All DPF testing measurements will be automatically populated on the DPFTRAC screen and on the DPF Cleaning History Worksheet.

<https://www.dpftrackingsystem.com/how-to-locate-a-dpf-part-number/>

# Customer and Vehicle



- Enter Identifying Customer Information (only Telephone Number is required)
- Enter Internal Work Order Number (optional)
- Enter Internal Purchase Order (optional)
- Enter Vehicle Information – Multiple Fields (optional)
- Enter Email Address (optional)



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NEW SAVE SEARCH EMAIL PRINT REFRESH TRASH SYNC FAQ

dpftrackingsystem.com 08.31.2020 12:40:34 PM

Contact First Name	Contact Last Name	Contact Email Address
*Area Code	*Prefix	*Telephone
Invoice or Work Order Number	Status	
Customer Name	Customer Address	City
State	Zip Code	Area Code
	Prefix	Telephone

CUSTOMER, VEHICLE & FILTER INFORMATION

Filter Style: DPF CATALYST Distributor Other:

*Part Number: <input type="text"/>	New Part Number: <input type="text"/>
Serial Number: <input type="text"/>	Filter Dimensions <sup>ⓘ</sup>
Other/P.O. Number: <input type="text"/>	OD: <input type="text"/> ID: <input type="text"/>
Vehicle Number: <input type="text"/>	Overall Height: <input type="text"/>
Vehicle Mileage: <input type="text"/>	Ceramic Height: <input type="text"/>
Engine Number: <input type="text"/>	*Cell Depth: <input type="text"/>
VIN: <input type="text"/>	<small>(use Pin to measure clean side cell depth) *indicates a required field</small>

RED TAG BELOW   
 GREEN TAG   
 ORANGE TAG   
 RED TAG ABOVE

General Comments

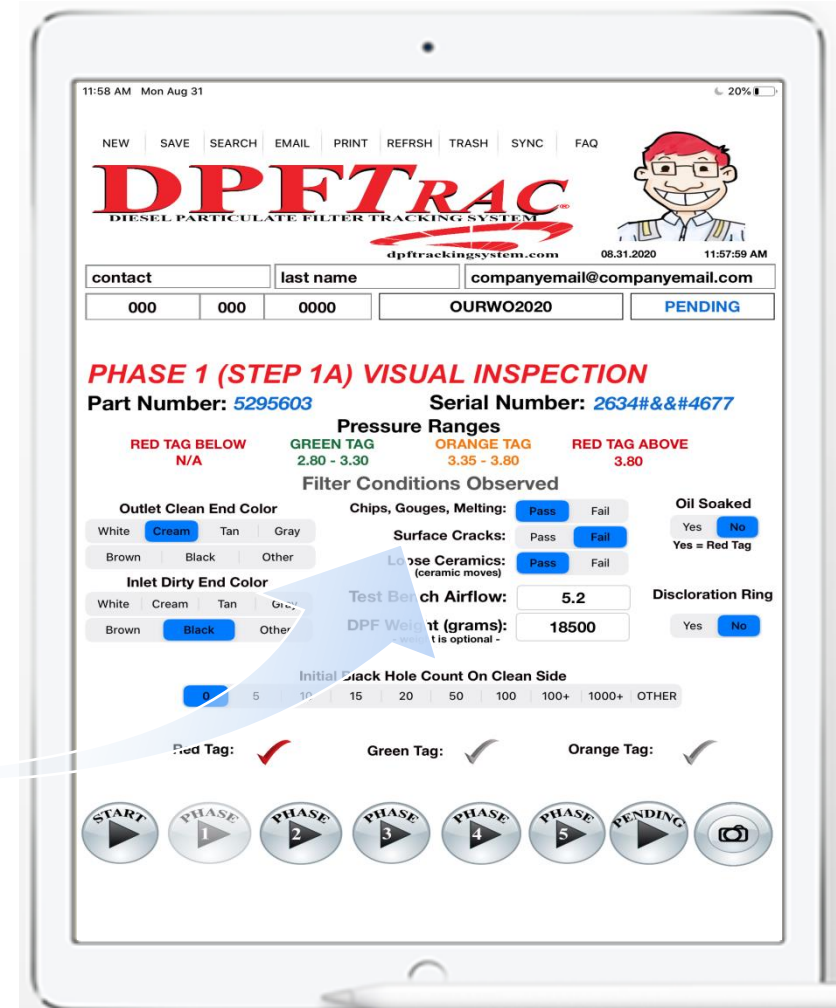
START
PHASE 1
PHASE 2
PHASE 3
PHASE 4
PHASE 5
PENDING
📷

# Visual Inspection



## Filter Conditions Observed

- Outlet Clean End Color
- Inlet Dirty End Color
- Chips, Gouges, Melting
- Surface cracks
- Oil Soaked
- Loose Ceramics
- Initial Airflow
- DPF Pre-clean weight (optional)
- Initial black hole count (on DPF clean side)
- Discoloration of rings

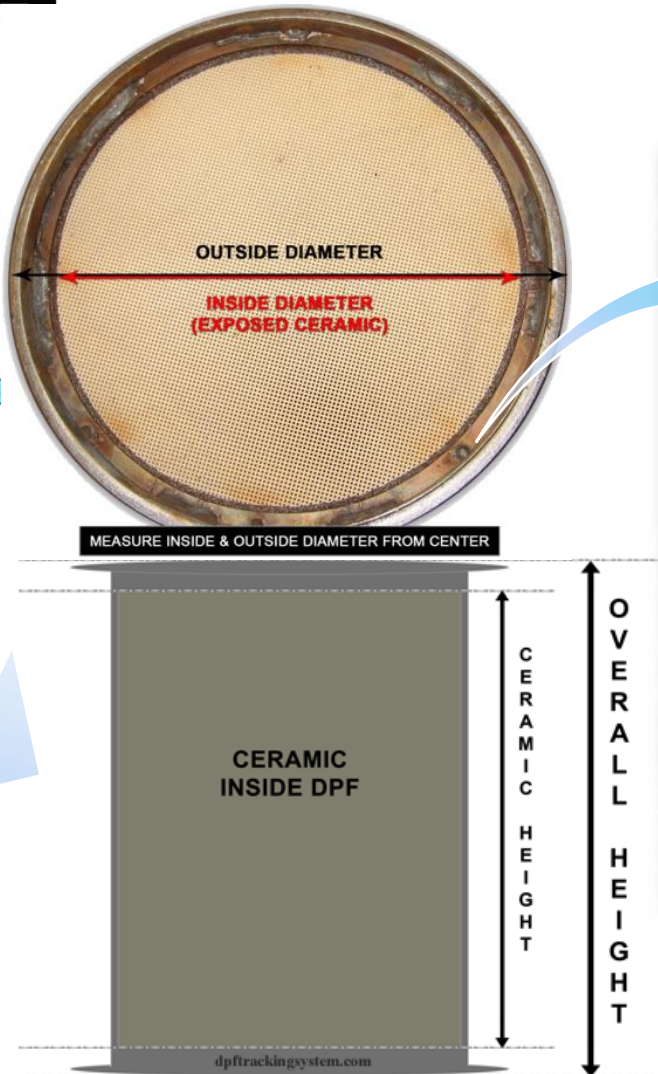


Options are selected using easy touch button features that work well even while wearing protective gloves.

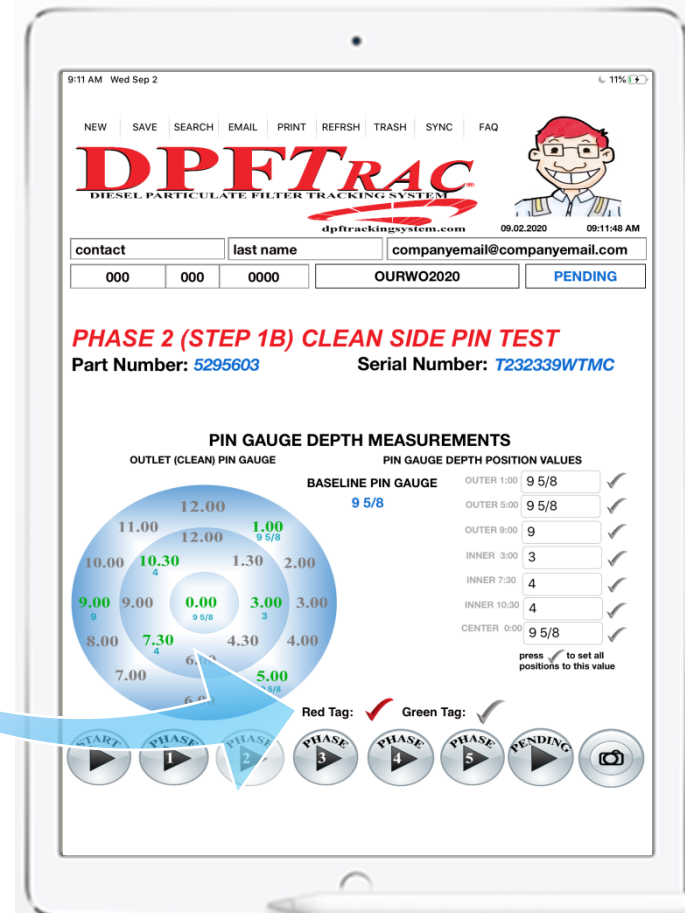
# PIN Testing



Use 10", 16" and 20" PINs as shown.



DPFT<sub>rac</sub> uses PIN Cell Depth and other parameters to determine Red, Green, Orange Tagged Filters.

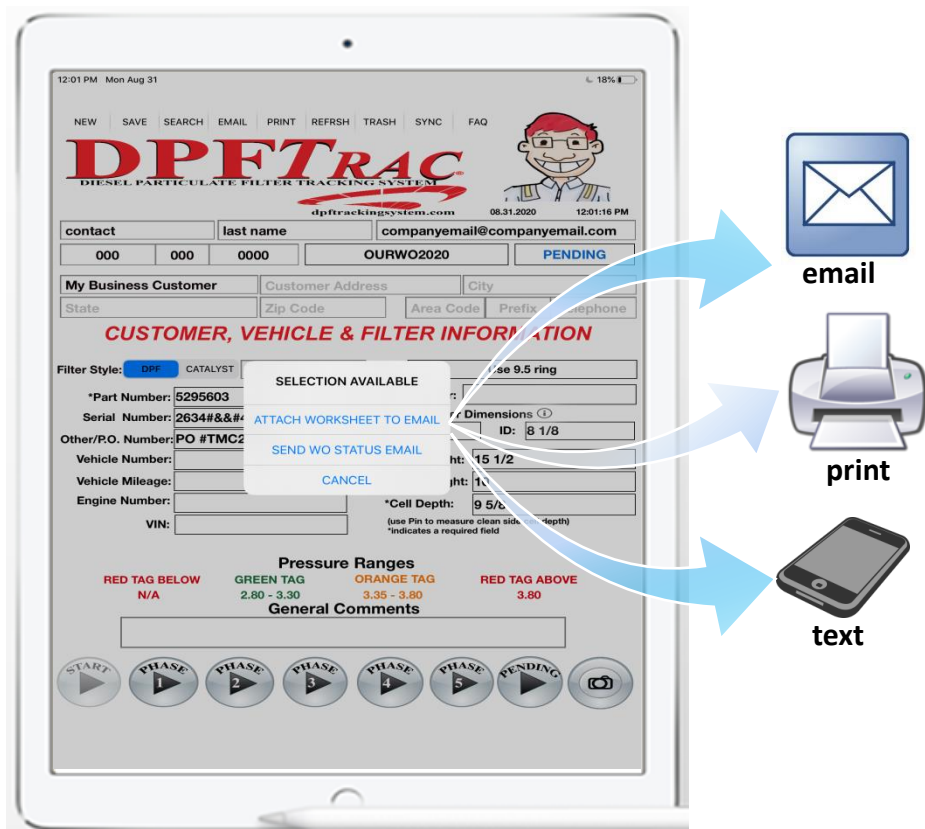


Note: DPFT<sub>rac</sub> uses PIN testing to determine the condition of a DPF. However, DPF Technicians have an option to enter DPF weight throughout the cleaning process.

# Forms and Communication



The DPF Cleaning History Worksheet is generated as a PDF that DPFTrac can email, wirelessly print or text message to customers and management.



The form is titled "DPFTrac Diesel Particulate Filter (DPF) Cleaning History Worksheet". It is divided into several sections:

- Date:** 08.31.2020
- Filter Style:** DPF Catalyst
- Serial Number:** 2634#&&#4677
- Part Number:** 5295603
- Other/P.O. Number:** PO #TMC2020
- Invoice/Work Order Number:** OURWO2020
- Customer:** MY BUSINESS CUSTOMER
- Manufacturer/Distributor (Circle):** Caterpillar, Cummins, International, Detroit Diesel, ECS, Isuzu, Johnson Matthey, Mack, PACCAR, Volvo.
- Filter Dimensions:** OD 10 1/2, ID 8 1/8, Overall Height 15 1/2, Ceramic Height 10.
- Pin Gauging:** Depth of a totally clean cell 9 5/8 (Measure from Clean side).

**Step 1 - Visual Inspection**

- Clean End Color (Circle):** White, Cream, Tan, Gray, Brown, Black, Other: \_\_\_\_\_
- Chips, Gouges, Melting:** Pass/Fail
- Surface Cracks:** Pass/Fail
- Loose Ceramic (Ceramic moves):** Pass/Fail
- Dirty End Color (Circle):** White, Cream, Tan, Gray, Brown, Black, Other: \_\_\_\_\_
- Pin Gauge clean side to check for melting and note measurements (see grid at right)**
- Test Bench Airflow Test:** 6.2 w.g. (Clean side down no gaskets)
- Initial Black Hole Count (on clean side) (est.) (circle):** 0, 5, 15, 20, 50, 100, 100+, 1000+ Other: \_\_\_\_\_

**Step 2 - Pneumatic Stage 1 Cleaning**

- 2-minute Bypass Inspection:** Important - Closely watch top surface of the DPF during first 2-minutes of air blast. Count defective cells allowing distinct spurts of ash or soot, and indicate number below.
- Circle:** 0 1 2 3 4 5 (10) 15 20 50 100 100+ 1000+
- Pin Gauge Depth:** Measure available depth from dirty side of filter - tap lightly if necessary.

**Step 3 - After Pneumatic Cleaning**

- Air Cleaning Time (in minutes) (circle one):** 15, 20, 25, 30, Other: \_\_\_\_\_
- Pin Gauge dirty side for ash content and note measurement (see grid at right)**
- Test Bench Airflow Test:** 3 w.g. (Clean side down no gaskets)
- Step 3 Status:**  Red Tag  Green Tag  Continue to Thermal

**Step 4 - After Thermal Cleaning**

- Air Cleaning Time (in minutes) (circle one):** 15, 20, 25, 30, 40, 50, 60, Other: \_\_\_\_\_
- Pin Gauge dirty side for ash content and note measurement (see grid at right)**
- Test Bench Airflow Test:** 2.8 w.g. (Clean side down no gaskets)
- Final Step 4 status:**  Red Tag  Green Tag  Orange Tag

**Final comments:** \_\_\_\_\_ Operator's Initials: il

**CERTIFIED PRESSURE RANGES FOR 5295603 BELOW**  
RED TAG < n/a GREEN TAG 2.80 - 3.30 ORANGE TAG 3.35 - 3.80 RED TAG > 3.80

Position	Clean Side Step 1	Dirty Side	
		After Pneumatic Step 2	After Thermal Step 3
Outer 1:00	9	9	9
Outer 2:00			
Outer 3:00			
Outer 4:00			
Outer 5:00	9	9	9
Outer 6:00			
Outer 7:00			
Outer 8:00			
Outer 9:00	9	9	9
Outer 10:00			
Outer 11:00			
Outer 12:00			
Inner 1:30			
Inner 3:30	9	9	9
Inner 4:30			
Inner 6:00			
Inner 7:30	9	9	9
Inner 9:00			
Inner 10:30	9	9	9
Inner 12:00			
Center	9	9	9
Average			

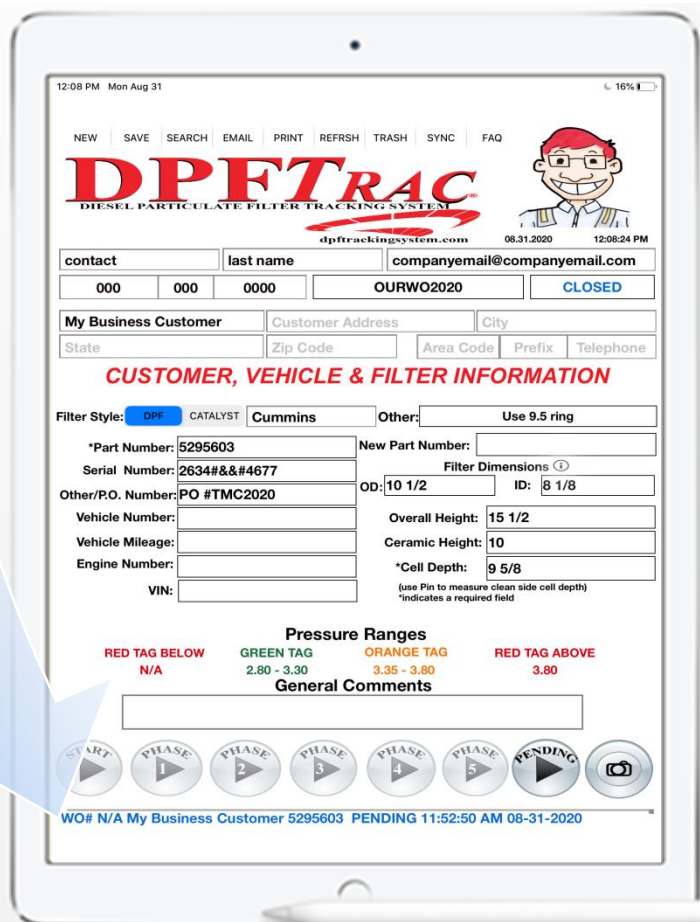
The DPF Cleaning History Worksheet was originally created by FSX, Inc. and modified for digital format

# Pending and Images



DPFTRAC provides quick access to view Pending Work Orders

Up to five DPF images can be attached to each Work Order



DPF Image optional add-on feature



*Ok. Let's wrap this up.*

For any questions about this presentation,  
please feel free to send them to:

[info@dpftrackingsystem.com](mailto:info@dpftrackingsystem.com)

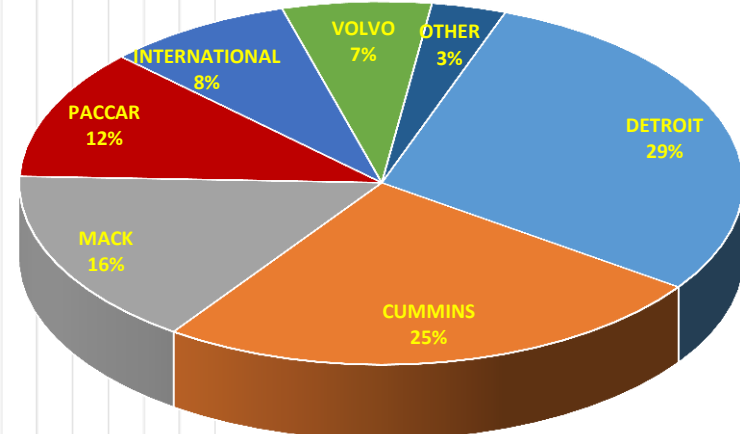
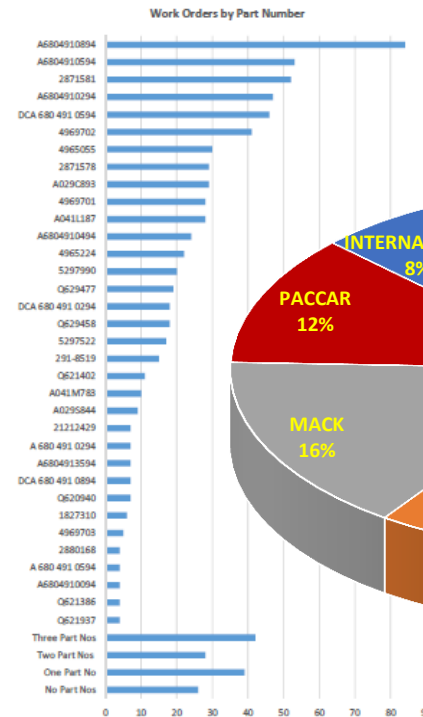


# Management Tools



- Realtime Forecasting and Reporting
- Downloadable on Demand
- Transmittable to Accounting and Customer Relations Management (CRM) Systems

WORK ORDER NUMBER	WORK ORDER STATUS	PART NUMBER	SERIAL NUMBER	MANUFACTURER	PRESSURE RANGE BEFORE CLEANING	PRESSURE RANGE AFTER CLEANING	PHASE1 STATUS	PHASE2 STATUS	PHASE3 STATUS	PHASE4 STATUS	PHASE5 STATUS
WO-20170308100018	CLOSED	A0295844		Paccar			PASS				GREEN
WO-20170308102504	CLOSED	A041M783		Cummins w/gap			PASS	RED			RED
WO-20170308092952	PENDING	A0295844		Paccar			PASS				RED
WO-20170308123811	PENDING	Q621937	4969702	Cummins w/gap			PASS	RED			
WO-20170308121031	PENDING	Q621937	4969702	Cummins			PASS				
WO-20170308124347	PENDING	4969702		Cummins w/gap			PASS				
WO-20170308125008	CLOSED	291-8519	740c070088004	Caterpillar			PASS				GREEN
WO-20170308123836	PENDING	4969702		Cummins w/gap			PASS				
WO-20170308112744	PENDING	Q629477	2871582	Cummins w/gap			PASS	GREEN			
WO-20170308111404	PENDING	2871578		Cummins			PASS				
WO-20170308104024	PENDING			Cummins							
WO-20170308111313	PENDING	2871578		Cummins			PASS				
WO-20170308084128	PENDING	DCA 680 491 059	shm063872	Detroit			PASS				
WO-20170309081739	PENDING	2871581	Q629477	Cummins			PASS	GREEN			
WO-20161026121210	PENDING	Q102905		Cummins			PASS	GREEN			
WO-20170309081257	PENDING	Q620940	4965055	Cummins w/gap			PASS				
WO-20161026022941	PENDING	Q629458		Cummins			PASS				
WO-20170309101657	CLOSED	DCA 680 491 0594		Detroit			PASS				RED
WO-20161026021251	PENDING	A041L187	5297522	Cummins			PASS				GREEN
WO-20170309102939	PENDING	Q620940	4965055	Cummins w/gap			PASS	GREEN			GREEN
WO-20170310105924	PENDING	DCA 680 491 059	SHM132604	Detroit			PASS	RED			GREEN
WO-20170309021155	PENDING	9199M		Johnson Matthey			PASS	RED			
WO-20170310102026	PENDING	291-8519	740C070088000	Caterpillar			PASS	GREEN			GREEN
WO-20170310105333	PENDING	DCA 680 491 0594		Detroit							
WO-20170321030428	PENDING	DCA 680 491 0294		Detroit			PASS		GREEN	GREEN	
WO-20170316031137	PENDING	A6804910894		Detroit Diesel			PASS	GREEN			
WO-20170317084253	PENDING	DCA 680 491 0294		Detroit			PASS	RED		GREEN	
WO-20170317090259	CLOSED	Q629477	2871581	Cummins			PASS	GREEN		GREEN	GREEN
WO-20170317022121	CLOSED	291-8519	740C14205000	Caterpillar			PASS			GREEN	GREEN
WO-20170317125746	CLOSED	4969701	Q621936	Cummins w/gap			PASS		GREEN	GREEN	GREEN
WO-20170317115448	CLOSED	A6804910094		Detroit Diesel			PASS	RED	RED	RED	RED
WO-20170317021955	USERDELETED	DCA 680 491 0294		Detroit						GREEN	
WO-20170317021723	USERDELETED	291-8519	740C14205000	Caterpillar			PASS			GREEN	
WO-20170317021023	CLOSED	4969702	Q621937	Cummins w/gap			PASS	GREEN	GREEN	GREEN	GREEN
WO-20170317022603	PENDING	2871578	Q629458	Cummins			PASS			GREEN	GREEN
WO-20170317023625	CLOSED	2871578	Q629458	Cummins			PASS			GREEN	GREEN
WO-20170317025842	PENDING	A6804910894		Detroit Diesel			PASS	GREEN	RED	GREEN	
WO-20170317031232	CLOSED	A6804910894		Detroit Diesel			PASS	GREEN	GREEN	GREEN	GREEN
WO-20170317031730	PENDING	A6804910894		Detroit Diesel			PASS	RED	RED	GREEN	
WO-20170317032105	PENDING	A6804910894		Detroit Diesel			PASS	RED	RED	ORANGE	
WO-20170317101716	CLOSED	A041L187	5297522	Cummins			PASS			GREEN	GREEN
WO-20170317033616	CLOSED	A6804910894		Detroit Diesel			PASS	GREEN	GREEN	GREEN	GREEN
WO-20170318012501	PENDING	21212429	30892	Mack			PASS			GREEN	GREEN
WO-20170318012927	CLOSED	A041L187	5297522	Cummins			PASS	RED	RED	GREEN	RED
WO-20170318121040	PENDING	21212429	30892	Mack						GREEN	
WO-20170320120625	PENDING	A6804910894		Detroit Diesel			PASS	GREEN	GREEN	GREEN	
WO-20170320125452	PENDING	A6804910894		Detroit Diesel			PASS	GREEN	GREEN	GREEN	
WO-20170512091625	PENDING	A041L187	5297522	Cummins							



# DPFTrac System Summary



- Industry Standardized Step-by-Step DPF Cleaning Process
- Parts Number Database with Pressure Ranges
- Automatic Green/Orange/Red Tags
- Email and Text Messaging Capability
- Cloud Based Storage Backup
- Elimination of Messy Paper Forms



For DPFTrac subscription information visit [dpftrackingsystem.com](http://dpftrackingsystem.com)

# Thank You TMC and Roger Maye!



**RAV<sub>HD</sub>**

**“Reliable Answers For Uncertain Times”**



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You can contact Fernando Varela directly at 310-650-2753