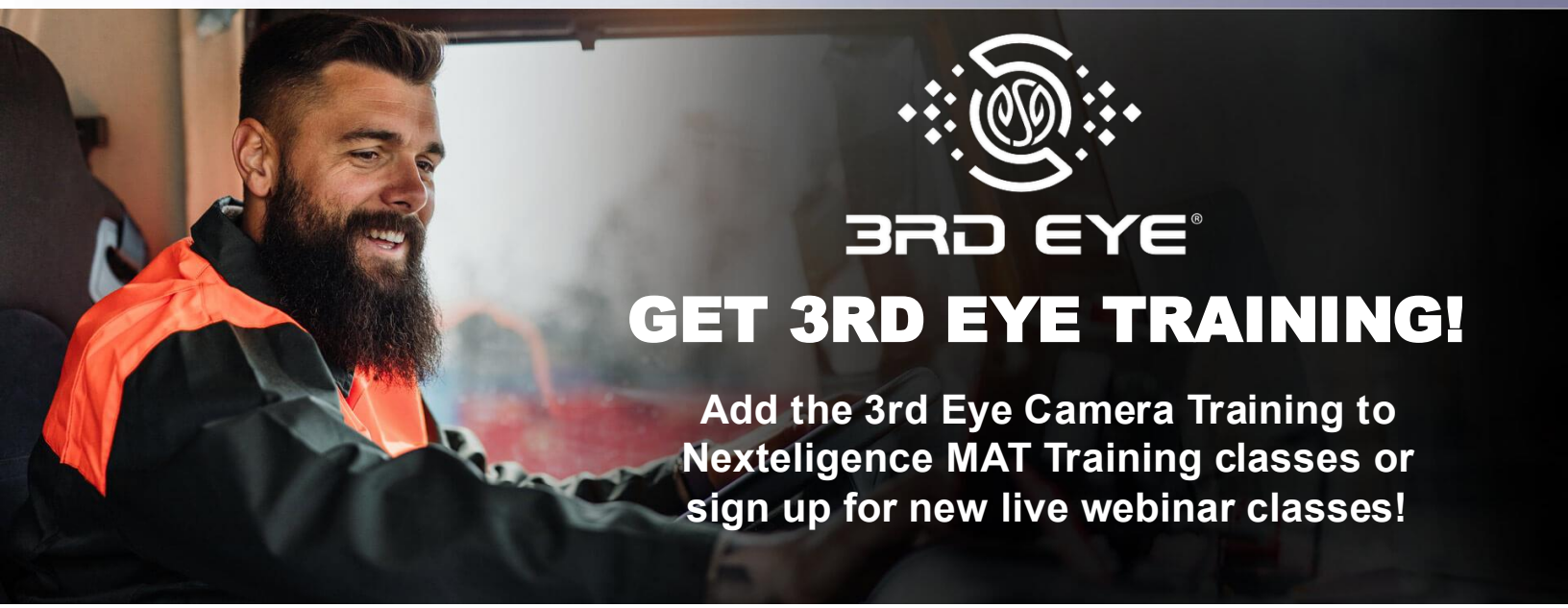
Nexteligence®
Connected-Tech Training

BRONZE SILVER GOLD PLATINUM



3RD EYE®

# GET 3RD EYE TRAINING!

**Add the 3rd Eye Camera Training to Nexteligence MAT Training classes or sign up for new live webinar classes!**

## HELP YOUR TECHNICIANS TAKE THEIR 3RD EYE DIAGNOSTIC, REPAIR, AND MAINTENANCE ABILITIES TO THE NEXT LEVEL!

Nexteligence Factory Training classes help to dramatically increase the technical expertise of your technicians. Reduce repair times for the fleets you service; increase productivity of your 3rd Eye products (or that of your customers); and provide invaluable troubleshooting knowledge that technicians can then use to train other technicians.

## COMBINE CAMERA & DIGITAL TRAINING: 5 HRS

- 7” monitor overview/operation
- 9” Recording monitor overview/operation
- Heil interfacing Switchbox overview/operation
- Digital System Overview/Operation
- Positive Service Verification Overview
- Safety / Driver Coaching Overview
- Recycling Contamination Detection
- Microsite Training


3RD EYE®

**2026 3rd Eye Nexteligence Connected-Tech Training**

# CLASSROOM LESSON OUTLINE

1. **Safety.** General Safety is always a must from everyday activities to well beyond using and working on equipment. Safety must always come first and be used and maintained at all times in everything we do.

2. **What is the 3rd Eye System.** Understanding the system and the functionality is key to using and maintaining the camera components, and their connections.

3. **Digital Components.** Identify the components and how they function with each other in the system.

4. **Connections.** We will map out the connections, discuss the camera triggers, and discuss how to diagnose and repair a faulty connection.

5. **Camera Functionality.** Identify the camera functionality within the system and the benefit of what each camera is used for.

6. **J1939 Connections.** Learn how the camera system is a part of the J1939 Network and how to properly diagnose and make repairs to the connection should a problem arise.

7. **Event Triggers.** We will identify events that need to be captured and what component of the vehicle triggers the capture of the event.

8. **Window Unit Details and Diagnostics.** Learn how the Window Unit functions, as well as how to use it as a diagnostic tool for troubleshooting the system.

9. **Cellular and Data Transfer.** Identify the cellular connections and how it is used to transmit data from the vehicle to the portal.

10. **Efficient Troubleshooting Methods.** We will show attendees how to use efficient and effective methods of troubleshooting the system by using both technical methods and utilizing the portal if available.

11. **Portal Training.** For users that have access to the Microsite, we will show live events, track camera status, and how to use this tool for valuable troubleshooting diagnostics and repair.

# 2026 3RD EYE LIVE WEBINAR
# Q1 TRAINING SCHEDULE

| Online Training Dates * | Product | Time |
|---|---|---|
| January 20th | 3rd Eye Camera and Digital | 8am - 1pm CST |
| February 17th | 3rd Eye Camera and Digital | 8am - 1pm CST |
| March 17th | 3rd Eye Camera and Digital | 8am - 1pm CST |

** Subject to change*
***Classes can be added to schedule upon request***

## Note:

- Minimum number of students = 5
- Classes will start promptly at the listed start time each day
- Additional classes can be added upon request
- 3rd Eye MAT manual provided with class

## Location:

- Online

## Enrollment Info:

- For enrollment, contact the training department at nexteligence@terex.com
- For any enrollment issues, please contact the training department at nexteligence@terex.com


Nexteligence®
Connected-Tech Training

BRONZE SILVER GOLD PLATINUM

# 2026 3RD EYE Q1 FACTORY TRAINING SCHEDULE

- Conducted at Heil Training Facility as an extension to a **REQUESTED** half third day of the Heil Factory MAT training
- Only available as an *add-on purchase option to the Heil MAT training

| Factory Training Dates* | Product | Time |
|---|---|---|
| **February 12th** | **3rd Eye Camera and Digital** | **8am – 1pm CST** |
| **February 26th** | **3rd Eye Camera and Digital** | **8am – 1pm CST** |
| **March 26th** | **3rd Eye Camera and Digital** | **8am – 1pm CST** |

** Subject to change*
***Classes can be added to schedule upon request***


**Note:**
- Class will start promptly at 8am CST each day.
- 3rd Eye MAT manual provided with class.
- This is a tobacco-free facility.

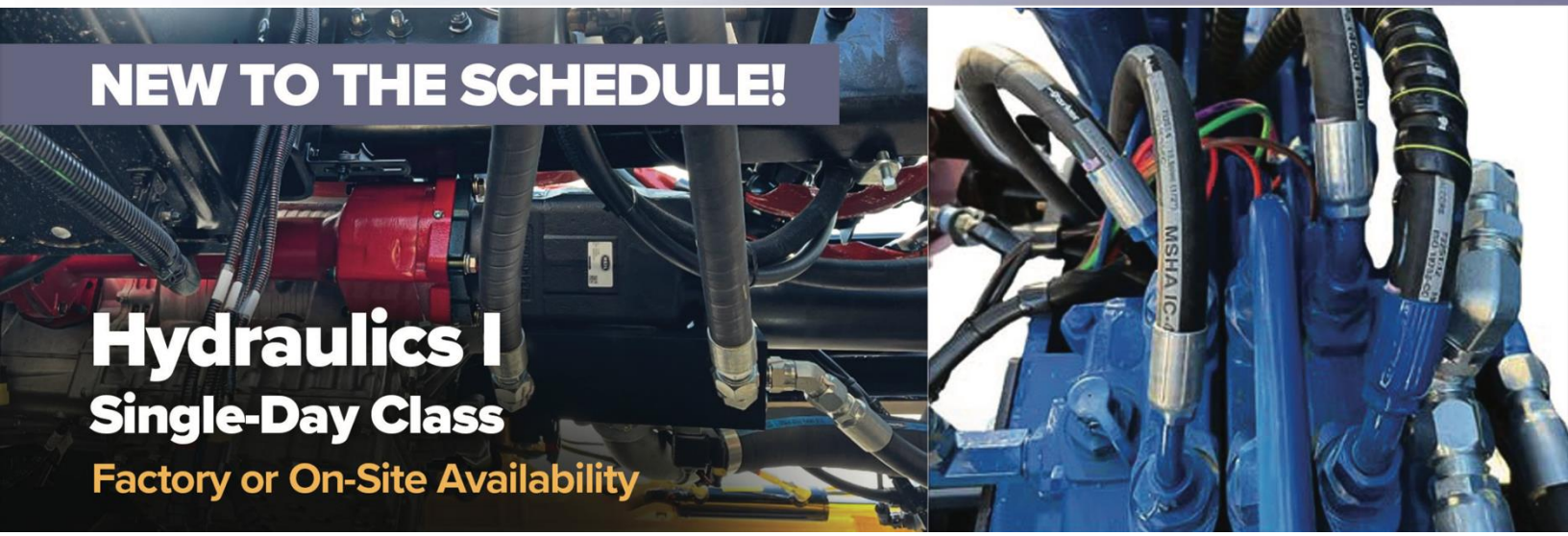
**Location:**
Heil Customer Support Center
4301 Gault Ave N
Fort Payne, AL 35967
- Across from the Alabama National Guard on Gault Ave. (Not the main plant entrance on 45th Street.)
- Parking is available in the upper/lower lots as well as the overflow lot near Parts Central as pictured here ->

3RD EYE®

2026 3rd Eye Nexteligence Connected-Tech Training

Nexteligence®
Connected-Tech Training

BRONZE SILVER GOLD PLATINUM




# HELP YOUR TECHNICIANS TAKE THEIR HYDRAULIC SKILLS TO THE NEXT LEVEL!

Hydraulics is a branch of technology and applied science that leverages engineering, chemistry, and physics to study the mechanical properties and behavior of liquids. At its core, hydraulics serves as the liquid-based counterpart to pneumatics and is a key component of fluid power systems.

This single-day course introduces the foundational principles of hydraulics, beginning with basic theory and progressing through practical applications.

**In this class, students will explore:**

- Pascal's Law and its role in hydraulic pressure transmission
- Hydraulic system architecture, including pumps, valves, cylinders, and fluid reservoirs
- Hydraulic symbols and schematics, with guidance on how to interpret system diagrams
- Testing and troubleshooting techniques, enabling learners to diagnose and resolve common hydraulic issues

Through a combination of theoretical instruction and hands-on practice, participants will gain the skills needed to understand, operate, and maintain hydraulic systems with confidence and precision.

# Hydraulics I Course Summary

## Course Objectives

**After completing this course, the student will be able to:**

- Explain Pascal's Law/Principle
- Demonstrate the flow of hydraulic fluid in a basic hydraulic circuit
- Interpret and explain a hydraulic hose layline
- Describe the importance of clean hydraulic oil
- Understand the benefits of using a good hydraulic oil filter and how to know the filtration ability
- Name all hydraulic components in basic hydraulic system
- Describe each hydraulic component function in a basic system
- Identify hydraulic schematic symbols in a basic system
- Point out schematic symbol functions
- Troubleshoot basic hydraulic system failures
- Name each type of hydraulic pump used in a hydraulic system
- Identify each type of hydraulic valve used in a hydraulic system
- Explain the difference between each type of hydraulic actuator
- Summarize how to perform a hydraulic cylinder bypass test on a hydraulic system

## Hydraulics I Outline

**1. Hydraulics Theory & Principles**

- What is hydraulics?
- Pascal's Law and its application
- Incompressibility, energy conservation, flow continuity

**2. Basic Hydraulic System Operation**

- How a hydraulic system works
- System components and their functions

**3. Hydraulic Oil & Contamination**

- Oil selection, viscosity, contamination sources, and control
- Cost reduction and maintenance best practices

**4. Filter Quality & Beta Ratio**

- Importance of filter quality
- Beta ratio explanation and ISO code for oil cleanliness

**5. Oil Change & Tank Design**

- When to change oil
- Oil tank features and maintenance

**6. Hydraulic Pumps**

- Types: Gear, Vane, Piston
- Operation, efficiency, failure modes, and schematic symbols

**7. Hydraulic Control Valves**

- Manual, pneumatic, electrical, and proportional valves
- Valve operation, troubleshooting, and schematic symbols

**8. Pressure Relief Valves**

- Function, adjustment, and troubleshooting

**9. Cylinders & Testing**

- Cylinder types, failures, bypass testing, and troubleshooting rules

**10. Troubleshooting & Maintenance Rules**

- Key rules for diagnosing and repairing hydraulic systems
- Common causes of component failure

**11. Knowledge Check / Test Questions**

- Multiple slides with review questions on key concepts,
- troubleshooting, and component identification

Nexteligence®
Connected-Tech Training

BRONZE SILVER GOLD PLATINUM


# HELP YOUR TECHNICIANS TAKE THEIR ELECTRICAL SKILLS TO THE NEXT LEVEL!

J1939 is the standard protocol for electronic communication in heavy-duty vehicles, built on CAN (Controller Area Network) technology. Heil units use J1939 to connect and coordinate ECUs (Electronic Control Units) like the main controller, display, sensors, and actuators.

This single-day course is designed to equip truck technicians with the essential knowledge and hands-on skills needed to safely and effectively service refuse equipment using J1939 CAN network technology. The training covers foundational safety practices, electrical theory, and advanced troubleshooting techniques for modern refuse trucks, with a focus on Heil products and related Environmental Solutions (ES) equipment.

**In this class, students will explore:**

- The fundamentals of J1939 communication and how CAN networks move information throughout a vehicle
- The structure and function of ECUs, including how controllers, sensors, and displays share data
- Key electrical concepts such as voltage, current, resistance, duty cycles, and PWM signal behavior
- Network design standards, including backbone layout, stub lengths, addressing, and termination
- Testing and troubleshooting methods that help technicians identify opens, shorts, interference, and failed components

Through a combination of classroom instruction and diagnostic exercises, participants will learn how to service, verify, and maintain CAN based systems on Heil and ES equipment with accuracy and increased confidence.

# J1939 Networks & Communications Course Summary

## Course Objectives

After completing this course, the student will be able to:

**Demonstrate Safe Measurement Practices**

- Identify the correct procedures for testing resistance in electrical circuits, including ensuring all power is disconnected before testing.

**Understand Key Terminology and Acronyms**

- Define PWM (Pulse Width Modulation) and explain its significance in network communication.
- Explain the meaning of CAN and its role in vehicle and industrial networks.

**Interpret Network Signals and Measurements**

- Describe what a duty cycle is and how it relates to PWM signals.
- Recognize the expected resistance values in a healthy CAN network and interpret resistance readings to diagnose network health.

**Apply Network Design Standards**

- State the maximum allowable lengths for network backbones and cable stubs in a J1939 network.
- Understand the importance of network address assignment for communication between components.

**Diagnose and Troubleshoot Network Issues**

- Analyze resistance measurements to identify open circuits, shorts, or failed ECUs in a CAN network.
- Evaluate bus load percentages and recognize recommended operational limits for network reliability.

**Follow Best Practices for Network Maintenance**

- Assess the appropriateness of making wiring repairs within a network harness.
- Understand the function and placement of termination resistors in a network.

**Recognize and Mitigate Interference**

- Identify sources and effects of electromagnetic and radio frequency interference in networked systems.

## Course Outline

**1. J1939 Networks & Communication**

- Objectives: CAN (Controller Area Network) networks, PWM (Pulse Width Modulation), communications, inputs/outputs
- Information Center (In-Sight Display) for operators and technicians

**2. Electrical Theory & Ohm's Law**

- Voltage, current, resistance definitions
- Circuit operation and troubleshooting basics
- Duty cycle and PWM explanation
- History and adoption of J1939
- CAN bus as the nervous system of the vehicle
- ECUs and network layers

**3. Network Communication & Physical Layer**

- Addressing, backbone, cable stubs, ECU connections
- Testing network resistance and troubleshooting tips

**4. CAN Bus Networks in Heil Equipment**

- Examples from Half/Pack with Odyssey Hydraulic Controls
- Network maps and connection points

**5. Repairing CAN/Network Harness**

- Recommended procedures for wire repair
- Avoiding damage, maintaining integrity, EMI/RFI precautions

**6. 3rd Eye Camera Addition**

- Proper connection to J1939 backbone
- Importance of following protocols

**7. J1939 Connection Process**

- Using PCAN-Diag scan tool for bitrate and resistance
- Bus load checks, message verification, adapter installation

Nexteligence®
Connected-Tech Training

BRONZE SILVER GOLD PLATINUM

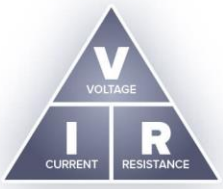
# Electrical Fundamentals I and Digital Multimeter Operation

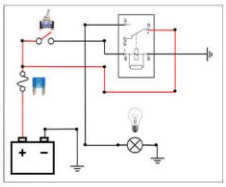
**Scheduled Upon Request**
**(Factory or On-Site Availability Only)**

## HELP YOUR TECHNICIANS TAKE THEIR ELECTRICAL SKILLS TO THE NEXT LEVEL!

We're proud to introduce the 'Electrical Fundamentals I' and 'Digital Multimeter Operation' classes to our Nexteligence training schedule. These one-day sessions are structured similarly to our current MAT classes and count towards Connected-Tech Certification. Please see factory schedule for dates and times.

On the first day, participants will explore basic electrical concepts and theories. The second day is dedicated to mastering the setup and use of a digital multimeter. Students will learn how to test various types of circuits to become thoroughly acquainted with the capabilities of a digital multimeter for testing and troubleshooting electrical faults.

### Electrical Fundamentals I

- Review Safety Best Practices
- Overview Concepts & Circuits
- Read Schematics
- Recognize & Troubleshoot Faults

### Digital Multimeter Operation

- Overview Functions
- Setup for Diagnosis and Testing
- Test Circuits

HEIL

**2026 Heil Nexteligence Connected-Tech Training**

# Basic Electrical and Digital Multimeter (DMM) Class Agenda

## Day 1 – Electrical Fundamentals I – Automotive Format for the Refuse Industry

1. **Safety.** Adhering to safety rules and guidelines is always a top priority for everything we do. Review best practices, personal protective equipment (PPE), hazard definitions and lock out tag out procedures.
2. **What is Electricity?** Learn how electricity is formed and the differences between alternating current (AC) and direct current (DC).
3. **Types of Electrical Circuits.** Learn the types of electrical circuits and how voltage, amperage, and resistance affect each circuit.
4. **Electrical Theory.** Overview and apply OHM's Law and the Power Formula, which are important equations for testing electrical components and knowing whether a device has failed without guesswork.
5. **How to Read Electrical Schematics.** Learn schematic symbols and how to read an electrical schematic.
6. **Faults in an Electrical Circuit.** Learn different types of faults that can occur in an electrical circuit and how to test and repair each fault.
7. **Knowledge Check.** Test your knowledge by troubleshooting various fault scenarios in a circuit.

## Day 2 – Digital Multimeter Operation (You must bring a multimeter for this portion of the class)

1. **What is a Digital Multimeter (DMM)?** Learn the components of the DMM and how each function is used to diagnose problems in an electrical circuit.
2. **Rules for testing circuitry.** Overview the rules for testing and the types of tests.
3. **Testing Circuits.** Learn to test for voltage, voltage drop, resistance and amperage.
4. **Component Testing.** Apply your DMM to test various components such as relays, diodes and coils.
5. **Knowledge Check.** Test your knowledge by identifying how voltage, amperage and resistance reacts in an electrical circuit at different points under various electrical conditions.

Nexteligence®
Connected-Tech Training

BRONZE SILVER GOLD PLATINUM

# Holiday Inn Express & Suites – Fort Payne, AL

***Special Pricing for HEIL Training Students!***

***Contact Information:***
**112 Airport Road West**
**Fort Payne, Alabama 35968**
**United States**

***Director of Sales:***
**Darlene Temple / +1-256-997-1020**

***GDS CODES:***

| | |
|---|---|
| **Hotel Code:** | **FTPAL** |
| **GDS Chain:** | **EX** |
| **Amadeus** | **GAD1C6** |
| **SABRE** | **47745** |
| **Galileo/Apollo** | **17915** |
| **Worldspan** | **0454** |

Holiday Inn Express
AN IHG® HOTEL

Holiday Inn Express and Suites Fort Payne is the Best of DeKalb Alabama, located off I-59 (exit 218).
This Quality of Excellence Award winner offers the perfect location for corporate and leisure travelers. To Go Breakfast, stay connected with IHG Connect, seasonal outdoor pool, newly installed bathrooms, 24-hr exercise facility, sundry shop, business center area, meeting room with AV equipment and the convenience of onsite laundry.

Fort Payne offers views with its location between Lookout Mountain and Sand Mountain. Enjoy a variety of outdoor activities such as Rock climbing, Repelling, Kayaking, Zip lining and trails through Little River Canyon and Desoto State Park. Enjoy a stroll through the Historic Downtown with many shops and eateries, like The Spot. Fort Payne is a stop along the World's Longest Yard Sale (in August) and Antique Alley (in May) that attracts thousands of travelers to the area.

Don't forget to stop by the Alabama Band Fan Club and Museum to view the many awards and collections from the Country Music Group of the Century. Our comfortable accommodations provide the amenities and services travelers expect!

## Hotel Amenities

- Complimentary Self-Parking
- On-Site Business Center
- Outdoor Pool
- On-Site Fitness Center
- Complimentary Breakfast Buffet
- Off-Site Restaurant Delivery Available
- Walking Distance To Off-Site Restaurants
- Newly Renovated

## IHG Rewards Member?

Be sure to let us know if you are an IHG Rewards Member. If not, let us sign you up and you will receive additional bonus points just for being part of the Heil® Training Group! Ask for the Heil/Terex discount!

IHG Hotels & Resorts
KIMPTON · Regent · HOTEL INDIGO · CROWNE PLAZA · HUALUXE · Holiday Inn · Holiday Inn Express
INTERCONTINENTAL · VOCO · STAYBRIDGE SUITES · CANDLEWOOD SUITES · avid · HOTELS · Holiday Inn Express
IHG Rewards Club

HEIL · 3RD EYE®

**2026 Nexteligence Connected-Tech Training**

# Hampton Inn – Fort Payne, AL

***Contact Information:***
**1201 Jordan Road Southwest**
**Fort Payne, Alabama 35968**
**United States**

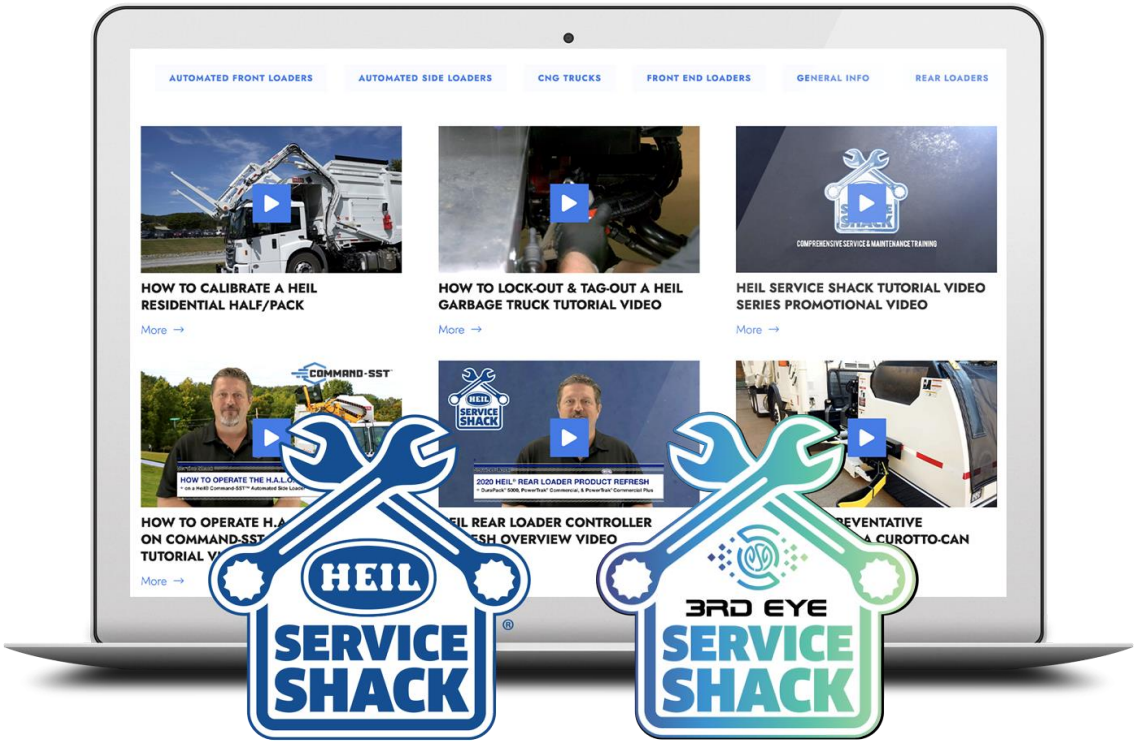
**TEL: +1-256-304-2600**

We're just off I-59, half a mile from the DeKalb Regional Medical Center and Siemens Energy. Head a mile east on Glenn Boulevard into Fort Payne, where you can find local attractions and eateries like the Alabama Fan Club and Museum and the Vintage 1889 Cafe. Enjoy free daily hot breakfast and free WiFi.

Free breakfast | Free WiFi | Non-smoking rooms | Free parking | Indoor pool | Fitness center | Business center | Digital Key

Hilton HONORS

# TAKE ADVANTAGE OF OUR TRAINING RESOURCES!



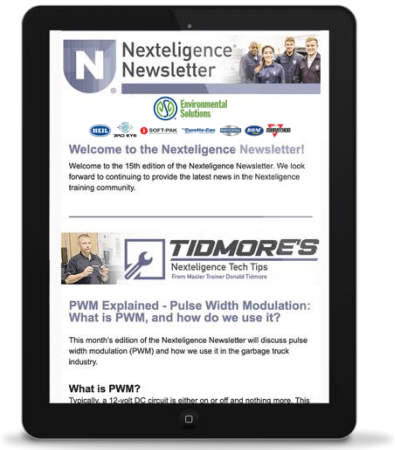

**Service Shack**® tutorial videos are available to you 24/7. Our Service Gurus cover a wide range of topics, with easy-to-understand tutorials that can save hours of valuable time and keep your Heil and 3rd Eye products in peak operating condition.

## Visit the Heil Service Shack

https://www.heil.com/service-shack

## Visit the 3rd Eye Service Shack

https://www.3rdeyecam.com/service-shack




## Nexteligence Newsletter

The **Nexteligence Newsletter** is a resource that focuses on a wide range of specialized topics, such as hydraulics, electrical systems, 3rd Eye hardware, and more.

Visit https://www.heil.com/newsletter-signup/ to sign up.