



CRAWLER EXCAVATOR OUTLINE



Lesson 1: Goals & Objectives of this Lesson

- Safe Productivity.
- Introduction.
- Goals and Objectives.
- What is a professional?

Lesson 2: Components & Control Identification

- Goals and Objectives of this Lesson.
- Operator's Manual.
- Key Components.
- Boom / Stick.
- Bucket.
- Wear Characteristics.
- Undercarriage.
- Types of Tracks and Pads.
- Frame.
- Radiator.
- Engine.
- Turbocharger (Diesel Engine).
- Hydraulic System.
- ROPS / FOPS.
- Operating Controls.
- Machine Controls.
- Instrument Panels.
- Instrumentation.
- Check Your Knowledge.

Lesson 3: Safety & Warning Symbols

- Goals and Objectives of this Lesson.
- Basics of Safety.
- Frequent Causes of Accidents.
- Safe Environment.
- Medication Warning.
- Personal Protective Equipment (PPE).
- Operator's Station Safety.
- Fire Prevention.
- Safety Warning Decals.
- Refueling Safety.
- Pinch Points / Moving Parts.
- No Riders.
- Hand Signals.
- Night Operations / Challenges.
- Operator Fatigue.
- Responsibility.
- Check Your Knowledge.



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Lesson 4: Pre-Start Procedures

- Goals and Objectives of this Lesson.
- Pre-Start Procedures.
- Checklist.
- Operator's Manual.
- Checks.
- Tracks.
- Inspect Bucket.
- Fluid Levels.
- Electric Cables / Wiring.
- Battery Safety.
- Lubrication System.
- Radiator.
- Hydraulic Warning.
- Lights.
- Pre-Start Inspection.
- Proper Mount / Dismount.
- Housekeeping.
- Fire Prevention.
- Safety Decals.
- Lockout / Tag-Out.
- Seat / Seat Belt.
- Operator's Station.
- Check Your Knowledge.

Lesson 5: Starting Procedures

- Goals and Objectives of this Lesson.
- Machine Start-Up.
- Master Switch.
- Checks.
- Starting the Engine in Warm Weather.
- Check Gauges.
- Starting the Engine in Cold Weather.
- Jump Starting.
- Final Start-Up Safety Reminders.
- Check Your Knowledge.

Lesson 6: After Starting Checks

- Goals and Objectives of this Lesson.
- After Starting Checks.
- Check Your Knowledge.



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Lesson 7: Operation & Safety

- Goals and Objectives of this Lesson.
- Operation.
- Competent Person.
- Planning Ahead.
- Inspecting the Jobsite.
- Planning the Job.
- General Precautions.
- Operator Awareness.
- Traveling.
- Slope Terrain Caution.
- Embankments.
- Overhangs / Undercuts.
- Fatal Accident Report.
- Excavation Requirements.
- General Excavation – Arm Digging.
- General Excavation – Bucket Digging.
- Maximizing Power & Motion.
- Using a Spotter.
- Trench Protective Systems.
- Trench Development.
- Trench Boxes.
- Shield Installation and Movement.
- Spoil Placement.
- Truck Loading.
- Same Level Loading.
- Loading Truck from Above.
- Back Filling.
- Lifting.
- Adverse Weather Conditions.
- Backing Up.
- Front / Back Visibility.
- Never Allow Riders.
- Working in Congested Areas.
- Common Excavator Uses.
- Overhead Utilities.
- If Equipment Contacts Power Line.
- Working Near Utilities.
- Underground Utilities.
- In an Emergency – Turn Off Master Switch.
- Check Your Knowledge.



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Lesson 8: Machine Shutdown

- Goals and Objectives of this Lesson.
- Parking Your Equipment.
- Parking Disabled Equipment.
- Proper Shutdown Procedure.
- Machine Shutdown.
- Proper Shutdown Procedure.
- Preventing Vandalism.
- Check Your Knowledge.

Lesson 9: Advantages & Limitations

- Goals and Objectives of this Lesson.
- Knowing Your Machine.
- Operator's Manual.
- Machine Dimensions.
- Capacities and Limitations.
- Center of Gravity.
- Check Your Knowledge.

Lesson 10: Attachments

- Goals and Objectives of this Lesson.
- Attachments.
- Weight Distribution.
- Typical Attachments.
- Check Your Knowledge.

Lesson 11: Load Securement & Tie-Down

- Goals and Objectives of this Lesson.
- Transporting on a Trailer.
- Working Load Limit.
- Ratchet Binders.
- During Transport.
- Check Your Knowledge.

Lesson 12: Preventive Maintenance

- Goals and Objectives of this Lesson.
- Instruction to Preventive Maintenance.
- Benefits of a Good Program.
- Setting up the Program.
- Keeping Records.
- Component Failure Modes and Warning Signs.
- Engine Failure.
- Lubrication.
- Transmission.
- Final Drives.



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Lesson 12: Preventive Maintenance (Continued)

- Spot Check.
- Pre-Service.
- Equipment Inspection Form.
- Check Your Knowledge.