# LEARNER GUIDE

LLN READY

# Asphalt paver

TICKET

**Training support material for:**

RIICBS305E
Conduct asphalt paver operations

**Produced by:**

EASY GUIDES
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# Contents

# Introduction to aphalt pavers

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## Introduction to asphalt paver

An asphalt paver is a machine used in road construction to distribute and lay hot asphalt onto surfaces. It spreads the asphalt evenly and compacts it to create smooth and durable roads, parking lots, or other paved areas, ensuring proper alignment and thickness for a quality finished surface.

**What industries do you use a self-propelled compactor in?**

- Civil construction

## Types of asphalt pavers


### Track Pavers:

These pavers have tracks instead of wheels, providing better traction and stability on uneven or soft surfaces. They are suitable for large-scale paving jobs and offer excellent maneuverability.

### Wheeled Pavers:

Wheeled pavers have rubber tires, making them more manoeuvrable and suitable for smaller paving projects or areas with minimal space. They are typically faster to transport between job sites.

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# The basics of road construction

# The basics of road construction

A surveyor will stake out the site according to the site plan. The stakes mark where the road will go and any drains or pits, which will help to drain water away from the road area.

An excavator or dozer removes the trees, shrubs and other plants and levels the area. Some trees may be protected with padding or fencing.

Sometimes contractors may use a borrow pit (also called a sand box). A borrow pit is an area where soil, sand or gravel (material) is dug out to be used in another area. Sometimes the borrow pit will become the drains, or water catchment areas at the end of the work.

The excavator or dozer may use material from the borrow pit to build up low areas in the road. They may also build up diversion blocks. Diversion blocks divert water away from the road and into drains.

# Prepare to conduct asphalt paver operations

**Element 1**

**What equipment may be used in a traffic control plan?**

Stop/slow bats


High visibility vests

Radios

Barricades

Cones

Bollards

**How do prepare the material to be handled and laid when working with an asphalt paver?**

**Prepare the paver:** Make sure that the asphalt paver is in good working condition and properly calibrated. Check that all components, such as the screed, augers, and conveyors, are clean, lubricated, and functioning correctly.

**Receive the asphalt mix:** Coordinate with the asphalt supplier or plant to receive the appropriate material at the work site. Communicate the desired mix design and any specific requirements.

**Inspect the material:** Before laying the asphalt, visually inspect the material to ensure it meets the specified requirements. Verify the temperature of the mix and check for any signs of contamination or irregularities.

**Establish a paving plan:** Plan the paving process, considering factors like the width and thickness of the desired pavement, joint locations, and any special considerations mentioned in the project specifications.

**Position the paver:** Position the asphalt paver at the starting point of the paving area. Ensure that it is aligned correctly with the reference marks or string lines.

**What faults on tools and equipment should you check for?**


**Damage or Wear:** Check for cracks, bends, or excessive wear on tools that could affect their performance or structural integrity.

**Proper Functioning:** Ensure that tools operate smoothly, have secure fastenings, and functional mechanisms.

**Blade or Edge Condition:** Examine cutting or spreading tools for sharpness and intact blades or edges.

**Handle Integrity:** Inspect handles or grips for stability, firm attachment, and freedom from cracks or breaks.

**Cleanliness:** Remove built-up asphalt or debris from tools to maintain performance and prevent contamination.

**Lubrication:** Apply appropriate lubrication to tools with moving parts to ensure smooth operation and prevent rust or corrosion.

**Calibration (for measuring tools):** Verify the calibration of measuring tools for accurate readings and precise asphalt placement.

**Safety Features:** Check the integrity and functionality of safety features such as guards or safety locks to prevent accidents or injuries.

Check calibration.

# Set up asphalt paver

**Element 2**

## How do you check material spreading controls for correct operation?

**1. Familiarise yourself with the controls.**

**2. Perform a visual inspection of the material spreading system.** Check for damage, wear or obstructions that could affect an even distribution of the asphalt material.

**3. Calibrate the paver according to manufacturer instructions.** Adjust gate opening, feed sensors and other settings.

**4. Conduct a test run and observe the material spreading process.**

**5. Take measurements to ensure thickness and width compliance.**

**6. Make necessary adjustments to the paver controls if needed.**

**7. Repeat and fine-tune the process until desired results are achieved.**

Make adjustments to the paver controls if needed.

# Operate asphalt paver

**Element 2**

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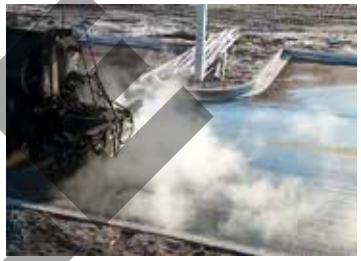
**4. Placement of binder course:** The asphalt paver is used to lay the binder course, which is an intermediate layer of asphalt mix. The paver's hopper is loaded with the hot binder course mix, and the machine moves forward, distributing the mix evenly across the width of the road.



**5. Compaction:** Following the paver, compaction equipment, such as rollers, is used to compact the binder course. The rollers apply pressure to achieve proper density, ensuring a strong and stable base for the final pavement layer.

**6. Surface course application:** Once the binder course is in place and compacted, the asphalt paver is used again to lay the final surface course. The hot asphalt mix is loaded into the paver's hopper and spread evenly across the road's width using the conveyor system and augers.

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# Carry out operator maintenance

**Element 4**

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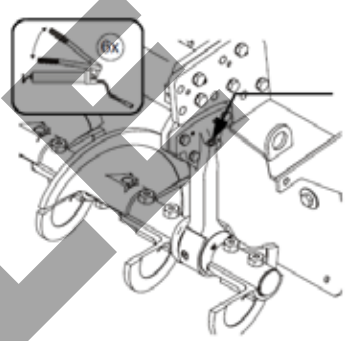
**Clean the paver:** Remove any debris, dirt, or asphalt buildup from the paver's components using appropriate cleaning methods. This may involve using compressed air, brushes, or specialised cleaning products.

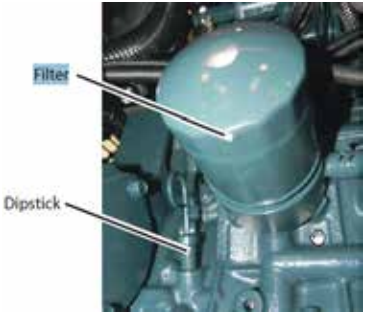
**Lubricate moving parts:** Apply lubricants as recommended by the manufacturer to ensure smooth operation of moving parts. This may include greasing bearings, chains, conveyor systems, and other components that require lubrication.



For example, lubricate grease nipples on auger.

**Check fluid levels:** Verify the levels of essential fluids such as engine oil, hydraulic fluid, coolant, and fuel. Top up or replace fluids as needed, following the manufacturer's specifications. Ensure proper disposal of used fluids in accordance with environmental regulations..

**Inspect and replace filters:** Check and clean or replace air, fuel, and hydraulic filters according to the maintenance schedule. Clean or replace filters ensure that the paver operates efficiently and prevents contaminants from entering sensitive components.




Check engine oil and filter when cool.

**Inspect and tighten connections:** Inspect hoses, belts, bolts, and electrical connections for signs of wear, looseness, or damage. Tighten any loose connections and replace any damaged components to maintain the integrity and reliability of the paver.

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# Relocate paver

**Element 5**

## How do you prepare the paver for relocation?

**Clean the paver** thoroughly by removing debris to ensure it's free from any materials that could cause damage during transportation.

**Conduct a detailed inspection of the paver** to identify any existing damage or mechanical issues, documenting them for reference and potential repairs.

**Secure or remove loose parts** such as screeds or auxiliary equipment, storing them separately to protect them from damage and ensure easy reinstallation later.

**Fold or retract components** like screed extensions or conveyor belts to decrease the overall dimensions of the paver, facilitating easier and safer transport.

**Fasten the paver securely onto a trailer or transportation vehicle** using approved restraints like straps or chains, ensuring even distribution and balanced placement for stability during transit.

**Check on any necessary permits** specific to the transportation of heavy equipment like the asphalt paver.

**Consider engaging professionals** experienced in moving heavy machinery if you lack confidence or the required equipment to ensure a safe and smooth relocation process for the asphalt paver.

# Clean up

**Element 6**

## How do you clear the work area and dispose of and recycle materials?

**Clean the work area:** Remove any loose debris, such as rocks, dirt, or vegetation, from the work area. Sweep the area thoroughly to ensure a clean surface.

**Collect excess asphalt:** If there is any excess asphalt left on the paver or in the hopper, you can use a shovel or rake to gather it and transfer it to a designated storage area. This excess asphalt can often be reused in future projects.

**Dispose of waste materials:** Any waste materials generated during the paving process, such as used asphalt, broken asphalt pieces, or damaged materials, should be collected and disposed of properly. Check local regulations and guidelines for the appropriate disposal methods in your area.

**Separate recyclable materials:** Identify recyclable materials like used asphalt, broken asphalt pieces, or reclaimed asphalt pavement (RAP). Separate these materials from non-recyclable waste. RAP can be reused in new asphalt mixes, contributing to sustainability and cost-effectiveness.