



User and Service Manual

Roadmender DBP 250

v1.20

Roadmender User and Service Manual

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1. General Description and Intended Use.



The Roadmender is designed to produce up to 200kg, per batch, of quality hot-mix asphalt product on site for immediate use for pothole and utility repairs in almost all weather conditions, all year round.

The Roadmender is filled using 20kg bags of specially prepared asphalt mixes that are heated in the drum to between 173°C and 185°C. When thoroughly mixed, the drum is hydraulically tilted to discharge the product into a wheelbarrow for use.

The maximum load that the drum can take is 250kg. It is recommended for optimum performance a maximum of only 10 bags (200kg) should be heated at a time.

It is only intended for use by trained operators as described in the Step-by-step Operating Instructions section (See page 7). All other uses fall outside the Manufacturer's recommended operation and are performed at the Operator's own risk.

Operators interacting with Roadmender must be aware of the instructions in the User and Service Manual and must wear the correct Operator Personal Protective Equipment (see page 5).

Roadmender must **NEVER** be left unattended when in use.

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2. Installation Instructions.

Roadmender is delivered already assembled.

Before its first use follow the procedure below:-

- a) Remove all delivery packaging.

WARNING

Roadmender must be bolted to a trailer to ensure that it is stable and that there is no movement whilst in operation.

- b) A double axle trailer is a minimum requirement. If other equipment such as a vibratory roller is to be transported on the trailer, then a triple axle trailer is recommended.
- c) Check that engine coolant (if water cooled) and oil levels are correct.
- d) Check that all moving parts are greased. See Maintenance and Servicing Section (see page 11).

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3. Roadmender - Essential Parts.



BURNER



**DRUM
CONTROLS**



**BURNER TIMER
& STARTER**



- 1. DRUM BEARING**
- 2. CHAIN**
- 3. DRUM ROLLERS**

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4. Health and Safety

a. Safe Operation of Roadmender

- a) The Roadmender, in most cases, will be used in 'live' road situations. It is the responsibility of the operational management of the contracted company to ensure that appropriate traffic management is put in place. **Roadmender takes no responsibility for the safety of operatives associated with traffic management, or if the machine is used by untrained / uncertified operatives.**
- b) Operators' competence should be approved through an operator sign-off sheet. Roadmender Asphalt takes no responsibility.
- c) Follow the procedure set out on pages 7-10 to ensure safe operation.
- d) Never overload the drum. (Maximum load 250kg).
- e) When warming up the drum - **NEVER run the burner when the machine is empty for more than 3 minutes.**
- f) **ALWAYS** wear the recommended Personal Protection Equipment (PPE) as detailed below
- g) **NEVER** Leave the Roadmender unattended whilst in operation



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The notes on hot-lay bituminous materials, outlined in the HAUC UK Practical Guide To Streetworks states: *“When bitumen is hot it produces fumes. These fumes must not be inhaled as they can be harmful to your health. If bitumen is used in the open air; the risk is very low.”*

It is recommended that Roadmender operators always wear appropriate face masks when working with dusty material, cleaning or while discharging bituminous material from the machine.

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5. Operating Instructions

a. General

- i. **ALWAYS** wear the recommended Personal Protection Equipment before starting Roadmender. *See Health & Safety section on Page 5.*
- ii. The isolation switch, located in the engine compartment must be in the on position and the door securely closed before Roadmender will start.
- iii. **ALWAYS** when starting from cold, allow engine to warm for two minutes.
- iv. **ALWAYS** for the first mix of the day, heat the drum through (for two minutes) before adding the required amount of the asphalt mix.

WARNING

NEVER run the burner when the machine is empty for more than 3 minutes.

- v. **ALWAYS** ensure that the drum is rotating before the burner is fired up.
- vi. **ALWAYS** make sure the burner door is elevated prior to tipping the Roadmender drum to avoid damage to the machine.
- vii. **ALWAYS** make sure the drum is empty and clean of all material before moving the Roadmender.
- viii. **ALWAYS** turn the isolation switch off before moving the Roadmender.
- ix. **ALWAYS** raise the burner **fully** before filling the drum with the required amount of the specially prepared asphalt mix to avoid head injuries.
- x. **ALWAYS** use the specially prepared asphalt mixes supplied by Roadmender Asphalt for surface course materials to ensure compliance.

! WARNING

NEVER use mixes from broken or part used bags.

- xi. Only the **bituminous material** removed during the preparation process may be recycled using the Roadmender and used as a base or binder course prior to laying the surface course. **Use a PAK spray to check for coal tar content if in any doubt.**

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- xii. **ALWAYS** allow the drum to rotate and mix the product until it reaches a temperature between 173°C and 185°C (343°F and 365°F).
- xiii. **ALWAYS** clean the drum when changing mixes.
- xiv. **ALWAYS** clean the drum after every 5 mixes and after the last mix of the day.

! WARNING

NEVER leave Roadmender unattended whilst in operation.

! WARNING

NEVER recycle cold-mix or delayed set or cut back material.

b. Operating Roadmender.

1. Open the engine housing (Left hand Door)
2. Turn on the Battery Isolation Switch located above the battery in the engine compartment.
3. Close and secure the door.
4. Start engine with ignition key and allow it to warm up for 2 minutes.
5. The safety beacon will come on as soon as the engine is started.



1 2 3

6. Start the DRUM rotating (lever 2).
7. Turn on the BURNER using the switch on the Burner housing.
8. Set the MIX TIMER for 2 minutes, the burner will start to warm the drum for the first asphalt mix. **NEVER** run the burner when the machine is empty for more than 3 minutes.
9. Raise the hydraulically assisted DOOR AND BURNER (lever 1).
10. Stop the DRUM rotating (lever 2).

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11. Fill the DRUM with the required number of 20kg premixed bags. No more than 10 bags (200kg) should be heated at one time.
12. Close the hydraulically assisted door and BURNER (lever 1).
13. Use rotation lever (lever 2) to start DRUM rotating. Always mix the material in a clockwise direction.
14. Set the MIX TIMER. It takes approximately 5½ minutes for a 100kg half-load and 8½ minutes for a 200kg full-load. The BURNER will fire up.



NOTE: In cold weather (3°C and below) the pellets will need longer to melt. To achieve this, simply turn off the burner at the end of the mix cycle and allow the mix to keep mixing with the burner door closed (and BURNER TURNED OFF) for a further 90 seconds before discharging the material.

15. When the desired mix time is reached, check the temperature of the mixture (target temperature of between 173°C and 185°C (343°F and 365°F). The temperature reading is dependent on the ambient temperature.

To check the temperature of the mix:-

16. Stop DRUM rotation (lever 2).
17. Raise the door and BURNER (lever 1).
18. Point a thermal temperature laser gun **AT THE MIX** for about 20 seconds.
19. **DO NOT** point at the surrounding steel.
20. If at the correct temperature go to 27, if not;
21. Lower the door and BURNER back into the closed position (lever 1).
22. Re-start DRUM rotation (lever 2).
23. Set the MIX TIMER for a further period as necessary, taking care not to overheat.
24. Repeat steps 21-24 until desired temperature is reached.

NOTE: If white smoke is escaping from the chimney, this indicates the mix is over 160°C. If the temperature reading is above 195°C – dispose of the material safely and start again.

25. Stop the DRUM rotating (lever 2) and switch off the Burner Switch.

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26. Raise the BURNER (lever 1).
27. Tilt the DRUM forward (lever 3) and restart DRUM rotating (lever 2) in order to discharge the mixture into a wheelbarrow.
28. Once wheelbarrow is full return the DRUM to the mixing position.
29. Repeat until DRUM is empty.

! WARNING

ALWAYS pay attention and make sure nothing is obstructing and nobody is close to the drum before lowering.

30. Lower the door and BURNER to the drum.

! WARNING

ALWAYS pay attention when lowering the burner door to avoid potential head injuries.

31. When recharging the machine always make sure the DRUM is completely empty before loading with fresh material.
32. Repeat Steps 6 to 25 for each subsequent mix.
33. After the final mix ensure that the drum is cleaned of any residual material. – *failure to do so could compromise the mix and cause damage to the Roadmender, voiding warranties.*

! WARNING

DO NOT USE ANY DIESEL OR OTHER BITUMEN SOLVENT TO CLEAN THE DRUM

In case of emergency, push either of the Emergency Stop Buttons to shut down the engine.

34. To restart Roadmender, reset the Emergency Stop Button by turning it to the right.
35. To shut down Roadmender, turn off the Ignition and turn all switches into the OFF position, including the Battery Isolation Switch.

Before moving to another site the Roadmender must be shut down as per item 35 above.

! WARNING

Be aware that the Roadmender drum will be very hot after use and may remain so for some time whilst in transit.

Roadmender must **NEVER** be left unattended when in use.

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6. Maintenance & Servicing.

The Engine and Roadmender should be serviced every 200 hours or annually whichever is sooner. Section 8 of this manual details the servicing requirements and specifications.

Before any maintenance work on the Roadmender is undertaken the following safety precautions **MUST** be taken.

- i. When the drum is raised for servicing and greasing, the red safety arm must be in place.
- ii. The Isolation switch must be in the 'OFF' position when working with the burner.

Routine maintenance and servicing must be carried out in accordance with the manufacturer's instructions. These actions must be recorded as having been actioned.

Each day before first use:

- i. Check oil levels
- ii. If water cooled, check coolant level
- iii. Check Drum Rollers for integrity
- iv. Check Chain for tension
- v. Check the burner nozzle is clean
- vi. Fill with Diesel
- vii. Test emergency stops are working.

Each day AFTER use:

- i. Clean the drum by heating it for 2 minutes then use a curved scraper to clean off any residual material from inside the drum.
- ii. Clean burner nozzle with compressed air.
- iii. Blow back of the burner with compressed air
- iv. Blow dust from underneath the Roadmender with compressed air
- v. Clean the drum by heating it for 2 minutes then use a curved scraper to clean off any residual material from inside the drum. *NOTE: it is recommended that appropriate face masks be worn when cleaning out the drum.*

Three times weekly:

- I. Grease (Drum Rollers, Drum Bearing and Chain) through Grease Drum Bearing. See Roadmender – Essential Parts Section on Page 4.

Every Week:

- i. Clean the magic eye in the burner
- ii. Clean engine filter with compressed air and replace when necessary
- iii. Check chain for tension

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7. Trouble Shooting

- a. Engine does not start.
 - i. Check Isolation Switch is in 'ON' position.
 - ii. Ensure engine compartment doors are closed properly.
 - iii. Emergency stop switches are not activated.
 - iv. Check Sufficient power from Battery (Engine does not turn over – replace battery).
 - v. Check Air Filter – clean if dirty
 - vi. Check Oil level – top up as required
 - vii. Check Fuel Level – Fill if required
 - viii. Prime engine if engine has been starved of Fuel.
 - ix. Check Fuel Feed Filters – clean or replace as required.

If the engine still will not start - Refer to engine Manual or contact your Service Provider.

- b. Burner will not fire up (engine working).
 - i. Check the Burner Timer is not at Zero
 - ii. Check that the Isolation Switch on the Raising arm is engaged.
 - iii. Check power supply is switched to 220v
 - iv. Check Magic Eye is clean.
 - v. Check the fuel supply.
 - vi. Refer to manual.

The Burner will not work if the power generation is less than 48-52 ohms. If this is the case consult your Service Provider.

- c. Drum will not rotate.
 - i. Turn up the flow control valve.
 - ii. Check Levers are engaged.
 - iii. Check for Hydraulic leaks around motor.
 - iv. Check Hydraulic filter – clean if required.
 - v. Check the tension in the chain.
 - vi. Check the teeth on the sprockets for undue wear.

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8. Parts and Service specifications.

a. Parts

	Part	Specification	Service
1.	Engine	Lombardini 25 LD 425-2	200 hours/Annually
2.	Burner	Reillo 40 G20 Oil Burner	Magic eye – weekly
3.	Alternator/Generator	Mecc ALte S15W	See Manual
4.	Hydraulic Pump	Caproni	See Manual
5.	Hydraulic Motor	EPM 315	See Manual
6.	Hydraulic Rams	Standard40/25/670	See Manual
7.	Sprockets	Standard 13 and 57 25mm bore 8mm key	Grease Daily
8.	Rollers	Standard 100X30mm 17mm Bore	Grease daily and renew if worn.
9.	Limit switches	TEND TZ 9204	
10	Chain	Tension 10mm Slack	Check Weekly

b. Consumables

Burner Fuel Filter	See Manual	Replace every 200hrs
Engine Fuel Filter	See Manual	Replace every 200hrs
Air Filter	See Manual	Replace every 200hrs Clean Weekly
Oil Filter	See Manual	Replace every 200hrs
Hydraulic Filter	See Manual	Replace every 300hrs
Generator Belt	Check Weekly	Replace when worn
Grease	Check Daily	Grease weekly