

Safety and maintenance tips for mini-excavators

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Whether you're a novice or a veteran equipment operator, reviewing safety tips and maintenance guidelines helps you operate your mini-excavator better.

Before beginning work, check the work area for underground lines and cables, overhead power lines, hidden holes, obstacles, dropoffs, and steep slopes. Dress in close-fitting clothes with a safety helmet and nonskid shoes. Before you start the engine, fasten your seat belt and place all levers in the neutral position.

Start the engine only if you're in the driver's seat. And never allow passengers on your machine.

Preventing tip overs

If you don't know the machine's limitations, it could tip over with you in it. Reread the owner's manual and limit your work to 20° slopes or less. And always operate a mini-excavator with your seat belt on and with a roll-over protective structure (ROPS).

While digging, lower the dozer blade. Also keep the bucket low when traveling uphill. All turns on a slope should be gradual. Steer clear of edges of ditches or banks; they can collapse under the weight.

When traveling in the same direction as the dozer blade, the machine will move in the same direction the operator moves the travel levers. Conversely, when the dozer blade is in the back, be aware that the machine will travel opposite to the direction the levers are moved.

Transporting mini-excavators

In addition to local rules for transporting equipment on public roads, be aware of these safety tips for mini-excavators: Make sure the ramps for loading and unloading are in a straight path and at a low angle. Be careful because steel crawlers can slip on metal ramps.

When the mini-excavator is loaded, center it on the truck or trailer then stop the engine and remove the key. To lock the mini-excavator into place, do the following:

- Relieve hydraulic pressure by operating the control lever until the boom doesn't move
- Block the crawlers
- Tie down the excavator with chains holding the crawlers
- Engage the swing lock pin
- Secure the bucket on the truck or trailer.

When driving a truck with the excavator on it, remember to stop, start, and turn slowly to avoid jarring the equipment and possibly making it slip.

Maintaining your mini-excavator

Most equipment manufacturers provide a recommended maintenance list for their equipment. With mini-excavators, regular maintenance includes:

- Checking the cooling water in the radiator
- Filling the fuel and oil tanks
- Greasing
- Checking the radiator fins for clogging
- Cleaning the wiring and engine

Keeping the equipment clean also helps you spot problems.

Diesel engines are built to withstand wear and tear. But remember


to use at least 45 Cetane, No. 2-D diesel fuel. Anything lower causes engine problems. If you're storing the equipment for an extended period, fill the fuel tank and add fuel conditioner.

Keeping the fuel clean

Diesel fuel's chief contaminant is water. Water in the tank can condense and mix with the fuel, interfering with fuel flow and rusting injection parts. To remove condensation, the diesel engine can be equipped with a fuel-water separator. This separator either holds a sediment bowl that allows water to drain safely or includes a membrane that permits fuel to pass, but not water. The filter needs to be replaced periodically.

The easiest way to avoid condensation problems is to fill the tank after each use. Also remember to fill it every night when cool air allows condensation to form. Each morning, drain any moisture by opening the tank drain. This is especially important at temperatures below 10 F.

The second major contaminant of fuel is dirt. And there's lots of dirt for an excavator at a jobsite. Diesel engines have a particulate filter that screens dirt and dust. If the filter clogs, however, the flow of fuel is restricted and other parts, such as the fuel pump and fuel injector, must work harder. To keep your mini-excavator running smoothly, it's best to check the filter each week, or after 100 hours usage.

taking care in using and maintaining your mini-excavator results in years of good service. 

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