

Chapter 5

Lubrication Points

5.1 Types of lubricators and how to recognize themx

Lubrication is one of those deceptively simple topics that becomes difficult the moment you try to find every point that needs oil on a warm engine. The fittings are small, the types vary, and many of them look like ordinary hardware unless you know what you're looking for. Before you can lubricate anything during warm-up, you need to be able to recognize the different types of lubricators and understand what each one uses for lubricant.

5.1.1 Oil cups (gravity lubricators)



Fig. 1 Oil Cup

These are small, upright cups with a cap or flip-lid. You fill them with light machine oil and open the needle or drip hole so oil feeds by gravity. The knurled knob controls the drip rate. The lever flips to one side to turn off oil entirely. Where found: main bearings, crank pins, valve-gear pivots, governor bearings. Recognition: small brass cup, often with a knurled cap or hinged lid.

5.1.2 Screw-down grease cups

These are filled with hard grease. Screw the cap down a turn to force grease into the bearing. Where found: slow-moving, high-load points like steering gear, axle bearings, and some

valve-gear joints. Recognition: a short, squat cup with a threaded cap that screws downward. Remove the cup to fill it with grease.

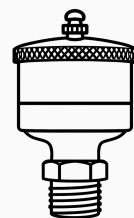
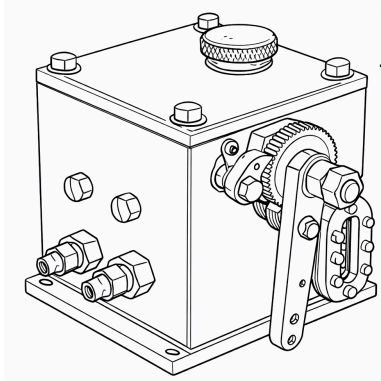


Fig. 2 Grease Cup

5.1.3 Mechanical lubricators (ratchet or displacement type)



These deliver oil in measured strokes driven by engine motion. Where found: cylinder lubrication on some traction engines, governor drive, or high-load bearings. Recognition: a small box with a ratchet arm or linkage; oil lines leading away from it.

5.1.4 Hydrostatic lubricators (sight-feed lubricators)

These feed cylinder oil using steam pressure and a sight glass where you can see the drops. Where found: cylinder lubrication on many engines; water pumps. Recognition: a glass column with a needle valve and feed lines; usually mounted on the turret.

5.1.5 Alemite / Zerk fittings (modern retrofits)

Some restorations use modern grease nipples. Where found: anywhere a previous owner wanted easier greasing. Recognition: small conical or ball-type grease nipples.



Fig. 4 Zerk

5.1.6 Wick lubricators

These use a felt or cotton wick to meter oil slowly. Where found: valve rocker arm, upper and lower cannon bearings Recognition: a reservoir in the casting filled with cotton waste.

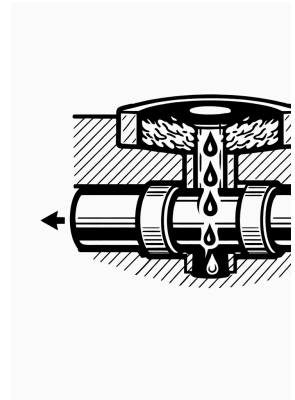


Fig. 5 Wick lubricator

5.2 Types of lubricants matched to the lubricator

5.2.1 Cylinder oil

- Very heavy, high-temperature oil
- Used only where steam enters (cylinders, valves)
- Formulated to dissolve in water
- Delivered by hydrostatic or mechanical lubricators

5.2.2 Engine oil (light machine oil)

- Medium-weight
- Used for bearings, pins, and moving joints
- Delivered by oil cups, wicks, or mechanical lubricators

5.2.3 Grease

- Used for slow, high-load bearings
- Delivered by grease cups or Zerk fittings
- Matching the wrong lubricant to the wrong lubricator is as bad as missing the point entirely.

5.3 Why extra lubrication matters during warm-up

When the engine is cold:

- oil is thick

- grease is stiff
- wicks don't draw
- mechanical lubricators may not stroke
- hydrostatic lubricators won't feed until steam is up
- there is time to perform lubrication

So every point that won't self-lubricate must be hand-oiled. That requires knowing:

- where each point is
- what type of lubricator it uses
- what lubricant belongs there
- whether it needs manual priming before the engine moves

This is why experienced operators walk the engine with an oil can during warm-up: they know exactly what they're looking at.

5.4 Why recognition matters during steam school

Because there will be a test.