User Manual - Gulper I

FSM Action Research Project



Operation and Maintenance Guide

This manual provides instructions on the safe and proper operation of a Gulper I, including setup, use, cleaning, and maintenance.

https://fsmaction.org

Gulper 1



It is a manually-operated pump suitable for emptying contents from wet, or partially wet pit latrines to a container.

CapEx	USD 200, including materials, labour and fabricator profit.
OpEx	Very low – manually operated and requires no fuel or electricity.
Operators	1–2 operators with basic training; no formal technical skills required.
Add-ons	Containment drums/barrels, transport system(truck or handcart),

How it works

The Gulper uses a simple hand-pumping action to lift sludge from the pit. As the operator moves the handle up and down, one-way valves inside the pump allow sludge to move upward through the pipe and out through the outlet into a drum or container.

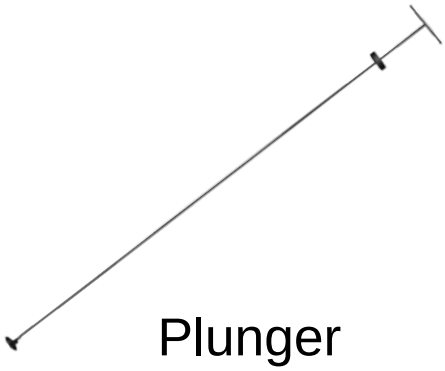
Advantages

- Low cost
- No fuel required
- Lightweight and portable
- Easy to fabricate and maintain

Limitations

- Limited to shallow pits (<1.5 m)
- Cannot handle large debris
- Requires manual effort
- Sludge must still be transferred to barrels, increasing exposure risk

Components and parts

 T - Pipe Outlet	Directs sludge from the riser pipe into a bucket or drum.
 Butterfly - Valve	Allows sludge to enter the pump while preventing it from flowing back into the pit.
 Plunger	Moved up and down by the operator to draw sludge into the pump.
 Trash Cage	Prevents large debris from entering the Gulper.

Operations

Operating the technology	• Check that the Gulper is clean and working properly. • Remove large trash from the pit. • Place a drum under the outlet and lower the Gulper into the pit. • Move the handle up and down to pump sludge into the drum. • If the Gulper blocks, stop and clear the blockage. Do not force the handle. • When finished, wash the Gulper and containers before storing them.
Safety	• Always wear PPE (gloves, gumboots, overalls, eye protection). • Never enter the pit. • Avoid contact with sludge and splashing. • Use proper lifting techniques when handling full drums. • Keep children and bystanders away from the work area. • Wash hands thoroughly with soap and water after completing the job. • Clean and disinfect the Gulper, drums, and other tools after every operation. • Dispose of sludge only at approved treatment or disposal facilities.
Maintenance	• Wash the Gulper and containers after every job. • Check the butterfly valves, plunger, and pipes for wear or damage. • Remove any debris or blockages before storage. • Tighten loose bolts and connections. • Replace worn or damaged parts promptly. • Store the Gulper in a clean, dry place to prevent rust and damage.
IMPORTANT TIPS	• Regular cleaning and inspection help keep the Gulper working efficiently and extend its lifespan. • The Gulper only works with watery sludge.It will not work well in pits with thick sludge or lots of trash because it can get blocked. • The Gulper is suitable for shallow pits (about 1 m deep).In some toilets, the Gulper may be taller than the roof or door opening, making it difficult to insert into the pit. Always inspect the toilet and pit before starting a job to ensure the Gulper can be used safely and effectively. • Leave the toilet and surrounding area clean after the job.Wash and disinfect the floor before leaving. • Clean any spillages immediately. If disinfectant is unavailable, cover the spill with soil to prevent possible contamination. • Clean all equipment and containers before the next job.