




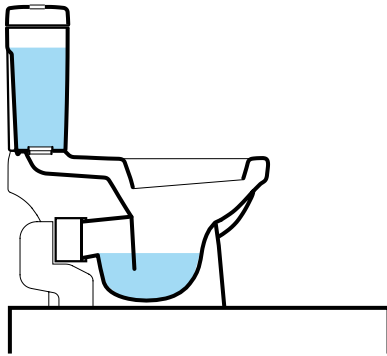
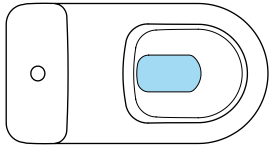
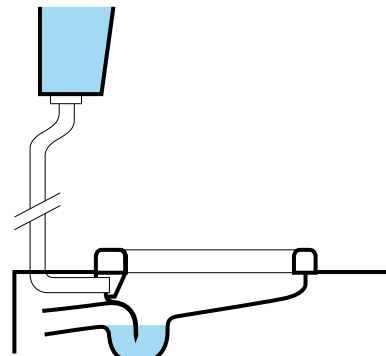
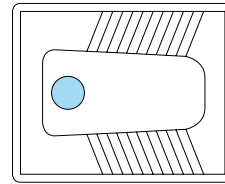


**Inputs:**  Faeces  Urine  Flushwater  
( Anal Cleansing Water)( Dry Cleansing Materials)

**Outputs:**  Blackwater



option 1



option 2

The cistern flush toilet is usually made of porcelain and is a mass-produced, factory-made User Interface. The flush toilet consists of a water tank that supplies the water for flushing the excreta and a bowl into which the excreta are deposited.

The attractive feature of the cistern flush toilet is that it incorporates a sophisticated water seal to prevent odours from coming back up through the plumbing. Water that is stored in the cistern above the toilet bowl is released by pushing or pulling a lever. This allows the water to run into the bowl, mix with the excreta, and carry them away.

**Design Considerations** Modern toilets use 6 to 9 L per flush, whereas older models were designed for flushwater quantities of up to 20 L. There are different low-volume flush toilets currently available that can be used with as little as 3 L of water per flush. In some cases, the volume of water used per flush is not sufficient to empty the bowl and, consequently, the user has to flush two or more times to adequately clean the bowl, which negates the intended saving of water.

A good plumber is required to install a flush toilet. The

plumber will ensure that all valves are connected and sealed properly, therefore, minimizing leakage.

**Appropriateness** A cistern flush toilet should not be considered unless all of the connections and hardware accessories are available locally. The cistern flush toilet must be connected to both a constant source of water for flushing and a Collection and Storage/Treatment or Conveyance technology to receive the blackwater. The cistern flush toilet is suitable for both public and private applications.

**Health Aspects/Acceptance** It is a safe and comfortable toilet to use provided it is kept clean.

**Operation & Maintenance** Although flushwater continuously rinses the bowl, the toilet should be scrubbed clean regularly to maintain hygiene and prevent the buildup of stains. Maintenance is required for the replacement or repair of some mechanical parts or fittings. Menstrual hygiene products should be collected in a separate bin.

### Pros & Cons

- + The excreta of one user are flushed away before the next user arrives
- + No real problems with odours if used correctly
- + Suitable for all types of users (sitters, squatters, wipers and washers)
- High capital costs; operating costs depend on the price of water
- Requires a constant source of water
- Cannot be built and/or repaired locally with available materials

### References & Further Reading

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- Maki, B. (2005). *Assembling and Installing a New Toilet*. Hammerzone.com.  
Available at: [www.hammerzone.com](http://www.hammerzone.com)  
(Describes how to install a toilet with full colour photos and step-by-step instructions)
- Vandervort, D. (2007). *Toilets: Installation and Repair*. HomeTips.com.  
Available at: [www.hometips.com/bathroom\\_toilets.html](http://www.hometips.com/bathroom_toilets.html)  
(Describes each part of the toilet in detail and provides links to other tools, such as how to install a toilet, how to fix a leaking toilet and other toilet essentials)