



CERAMIC NEWS - PARTS OF A TOILET

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Parts of a Toilet

They're such a part of everyday, modern life, we hardly think about them. We simply push a lever or a button, and they just work. The Betta range of high-quality, modern flushing toilets comes in designs to suit any bathroom and any budget. And while there's a wide variety available, the parts that make up a working toilet are mostly the same.

Let's take a closer look at the components, so you'll have a better idea of what's happening when you push that button or lever. That way, you'll be better able to advise customers on the right toilet for their bathroom, and troubleshoot any problems that arise.



CERAMIC PARTS

The large, outer, ceramic parts that make up the toilet are the cistern, cistern lid and pan. The cistern is the tank that holds the water, while the pan is the lower part of the toilet.

The ceramic parts are cast under high pressure in the factory, ensuring the pieces are uniform and consistent. The cisterns are fired together with their matching lid so they fit together perfectly. Meanwhile, the pans are sump-washed in manufacturing so that all parts coming into contact with black water (the waste water flushed away in the toilet) are glazed – this ensures maximum hygiene.

CISTERNS

Almost all the cisterns produced by Ceramic Industries are for close-couple cisterns, which means they sit securely on the pans. This makes for a more direct transfer of water for a more powerful flush.

Cisterns are produced in a variety of shapes to accommodate different spaces, configurations and styles. Some cisterns can even be concealed neatly behind a wall, and consist of metal frames and plastic tanks.

Water flows into the cistern via an inlet pipe from the water mains, and may enter from the bottom, side or back of the cistern. Inside the cistern is a mechanism that allows water to leave it when a lever or button is pushed, causing the toilet to flush. We'll look at the mechanism types below.

PANS

Two main types of rims are manufactured for pans: open rim and closed rim. As the name implies, an open rim has a gap running between the inner rim and the bowl to allow water to fall freely down the walls of the bowl. In a closed rim toilet (sometimes called boxed rim),

the ceramic rim is continuous with the inner walls of the pan, with holes all along the underside of the rim. This has the advantage of making the pan easier to clean. These toilets are usually quieter when flushed, and the design makes the flow of water more uniform around the bowl.

Water and waste flush out from the pan into the outlet via an S-trap or a P-trap. The S-trap is usually used in ground-floor installations as piping can be routed below ground level, while the P-trap is often used in upper floors where installing a pipe line under the toilet is difficult.

Pans can also be classified according to how they are secured to a surface. They can be either floor-mounted pans or wall-hung pans. Floor mounted toilets usually allow for both P- and S-trap but wall-mounted models use a P-trap.

Many modern designs conceal the trap behind the ceramic base of the pan, making for a neater look.

SEATS

Seats and seat lids come in a variety of styles and options, and can be made from a number of different materials. Solid wood, MDF (compressed wood) and urea are all common materials used for toilet seats. The wood options are heavier and have a warm feel to them, while urea is chemically resistant, hard-wearing and can be moulded into a range of shapes. Urea (also called UF) has antibacterial qualities, is scratch-proof, water resistant and durable.

Modern toilets come in a variety of designs, some with squared edges or long, flowing lines, and the seat designs are created to match.

Many customers opt for soft-close seats. These seats have hinges that offer resistance as the seat and lid come down, avoiding any crashes. Hydraulic cartridges sit within the seat, slowing down the closing action. Remember that forcing a soft-close seat down can damage the mechanism. Both soft-close and standard-close seats are available with high-quality stainless steel hinges. Plastic hinges are also available for smaller budgets.



FLUSH MECHANISMS

The mechanism inside the cistern can look complicated, but once you know the basics, you'll have a better idea of how it all works. The mechanism controls the flow of water into the pan once the lever or button is depressed, as well as the flow of water back into the cistern from the inlet.

The most common choices in flushing mechanism are front-flush, making use of a lever, and top-flush by means of push buttons. The top-flush mechanism is usually dual-flush, allowing the user to choose a long flush or short flush. These innovative new systems save water, and are easy to install and adjust.

In both systems, when the lever or button is depressed, the outlet valve is opened. When the water has left the cistern, the outlet valve closes and the inlet valve opens to let the cistern fill up. As the water fills up the cistern, a plastic, air-filled float rises up with the water. This float is attached to the inlet valve, and once it has reached the set level, the valve shuts off water coming into the cistern.

The float is either a ballcock-type (usually on older toilets) or a modern float system, usually part of the dual-flush systems. The ballcock consists of a plastic ball attached to a metal arm, which opens and closes the inlet valve. The modern system (like the Wirquin mechanisms) has a smaller plastic float that rises up a shaft.

The push-button mechanism works by means of a cable – one button lifts the outlet valve to its full height for a full flush, the other button lifts it to a lower level for a half flush.

Less common in residential settings are electronic push-button flushing, which uses electricity rather than mechanical means to activate the flush.

Cisterns usually have a bottom, left/right side or back entry; all mechanical flush valves work with an internal overflow pipe that allows water to flow down into the pan should the water level in the cistern rise too high. Flush mechanisms can be adjusted in various ways to alter the amount of water entering the cistern.

FIXATION SYSTEMS

Toilets can be securely fastened to the floor using either bolts and plugs or L-brackets. Some modern designs of toilet are wall-mounted, which offers a neat, unobtrusive look. The fixation bolts and other hardware are usually packaged together with the toilet suite when sold.

N.B. toilets should never be secured to the floor using cement.

OUTLET

When the toilet is flushed, waste and water exit the pan via the outlet to flow into the sewerage piping. A pan connector is the component that connects the toilet's outlet to the P-trap or S-trap piping. Depending on the model of toilet, and the space and configuration of the room in which it's being installed, three types of pan connectors are available to choose from.

Straight pan connector

Off-centre pan connector – this accommodates a slight misalignment between the pan and outlet piping
Jollyflex - a flexible connector that can be used in variety of situations when there is a misalignment between pan and outlet piping. These are a must for pans with concealed traps.



*As you've just seen, there's a lot to learn about toilets
(and you thought you finished your toilet training
when you were a toddler!)*

So next time you sit down on one, take a moment to think about the modern marvel that is the toilet. It's a complex mechanical invention but it can also be an aesthetically pleasing piece of bathroom furniture. Every home should have (at least) one, and there's sure to be a model out there for every customer's needs, budget and design preferences.

