CLAIMS:

1. A shower head insert (1) of the type comprising:

at least two water nozzle cartridges (5), each having at least two nozzles (30) configured to produce water jets that impact to atomise the liquid producing droplets of water; and
an injection moulded one-piece water distribution system (4) to supply liquid to the at least two water nozzle cartridges,

the water distribution system comprising:

at least two sockets (12A, 12B, 12C) for receiving the water nozzle cartridges (5), a central water inlet conduit (11) in liquid communication with the first socket (12A), and a narrow bore conduit (14) providing high pressure liquid communication between the first and second sockets,

wherein the narrow bore conduit is angled to allow removal of conduit inner mould needles from the conduit through the at least one open end of the sockets after injection moulding.

2. A shower head insert according to Claim 1, in which the narrow bore conduit is angled and comprises an upwardly depending section (17) and a downwardly section (18).

3. A shower head insert according to Claim 2, in which the narrow bore conduit comprises a proximal upwardly depending section (17) and one or more distal downwardly depending sections (18).

4. A shower head insert according to Claim 3, in which the water distribution system (14) comprises at least three sockets (12A, 12B, 12C)) for receipt of water nozzle cartridges (5), wherein the narrow bore conduit (14) comprises a proximal upwardly depending section (17) and at least two distal downwardly depending sections (18A, 18B).

5. A shower head insert according to any one of Claims 1 to 4, in which each water nozzle cartridge (5) is configured to fit within the socket in a fluidically tight manner and comprises

a waist section (27) that defines a channel for water around the water nozzle cartridge when the cartridge is fitted in the socket.

6. A shower head insert according to Claim 5, in which the inlets (31) for each of the two nozzles (30) of each water nozzle cartridge are disposed in the waist section (27) of the water nozzle cartridge.

7. A shower head insert according to Claim 5 or 6, in which the cartridge comprises sealing means to fluidically seal the channel when the cartridge is fitted in the socket.

8. A shower head insert according to Claim 7, in which the sealing means comprise one or more resiliently deformable annular sealing rings (41) and corresponding annular sockets (40) to seat the one or more annular sealings rings.

9. A shower head insert according to any one of Claims 1 to 8, in which the water nozzle cartridge (5) is configured to snap-fit into the socket.

10. A shower head insert according to Claim 9 in which the water nozzle cartridge (5) comprises upwardly depending arms (35) configured to engage a top (36) of the socket.

11. A shower head insert according to any one of Claims 1 to 10, in which the water nozzle cartridges are injection moulded.

12. A shower head comprising a shower head insert (1) according to any one of Claims 1 to 11 disposed within a shower head body.

13. A shower head according to Claim 12, wherein the shower head body comprises an upper part (2) and a lower part (3) that clip together to enclose the shower head insert.

14. A shower head according to Claim 12, wherein the shower head body is overmoulded around the shower head insert.

15. A shower head according to any one of Claims 12 to 14, including a base fitting (6) configured to lock the shower head inert, shower head body and water distribution system together.

16. A kit for assembling a shower head insert according to any one of Claims 1 to 11 or a shower head according to Claim 12.

17. A water nozzle cartridge for use in a shower head and having a body configured to fit in a socket of the shower head in a fluidically tight manner and comprising at least two nozzles (30) configured to produce water jets that impact to atomise the liquid producing droplets of water, the body having an upper section (25) with an open top, a hollow lower section (26) with an open bottom, a waist section (27) disposed between the upper and hollow lower sections that in use defines a channel for water around the water nozzle cartridge when the cartridge is fitted in a socket of the shower head, wherein each nozzle comprises an inlet (31) disposed on an outer surface of the waist section, and an outlet (32) configured to direct the water jet into the hollow lower section such that the water jets impact within the hollow lower section.

18. A water nozzle cartridge according to Claim 17, in which the upper and skirt sections of the cartridge comprise sealing means to fluidically seal the channel when the cartridge is fitted in the socket.

19. A water nozzle cartridge according to Claim 18, in which the sealing means comprise one or more resiliently deformable annular sealing rings (41) and corresponding annular sockets (40) to seat the one or more annular sealings rings.

20. A water nozzle cartridge according to Claim 19, in which the lower section of the cartridge comprises two or more sealing rings (1) of different diameter.

21. A water nozzle cartridge according to any one of Claims 17 to 20, in which the water nozzle cartridge is configured to snap-fit into the socket.

22. A water nozzle cartridge according to Claim 21, in which the water nozzle cartridge comprises upwardly depending arms (35) configured to engage a top of the socket.

23. A shower head insert (1) of the type comprising:

at least two water nozzle cartridges (5), each having at least two nozzles (30) configured to produce water jets that impact to atomise the liquid producing droplets of water; and

an injection moulded water distribution system (4) to supply liquid to the at least two water nozzle cartridges and comprising at least two sockets (12A, 12B, 12C) for receiving the water nozzle cartridges (5) in a fluidically tight manner, a central water inlet conduit (11) in liquid communication with the first socket (12A), and a narrow bore conduit (14) providing high pressure liquid communication between the first and second sockets,

wherein each water nozzle cartridge comprises a body having an upper section (25) with an open top, a hollow lower section (26) with an open bottom, and a waist section (27) disposed between the upper and hollow lower sections that in use defines a channel for water around the water nozzle cartridge when the cartridge is fitted in a socket of the shower head, wherein each nozzle comprises an inlet (31) disposed on an outer surface of the waist section, and an outlet (32) configured to direct the water jet into the hollow lower section such that the water jets impact within the hollow lower section.

24. A shower head insert (1) according to Claim 23, comprising three water nozzle cartridges (5), wherein the water distribution system (4) comprises three sockets (12A, 12B, 12C) for receiving the water nozzle cartridges (5) in a fluidically tight manner.

25. A shower head insert (1) according to Claim 23 or 24, in which the upper and hollow lower sections of the cartridge comprise sealing means to fluidically seal the channel when the cartridge is fitted in the socket.

26. A shower head insert (1) according to Claim 25, in which the sealing means comprise one or more resiliently deformable annular sealing rings (41) and corresponding annular sockets (40) to seat the one or more annular sealings rings.

27. A shower head comprising a shower head insert (1) of any one of Claims 23 to 26 disposed within a shower head body.