the washing portion 20 and the hydraulic cyclone portion 30, respectively.

The reaction portion 10 has a top and a bottom, and sequentially includes a first cavity 11, a first intermediate section 12, a second cavity 13, a second intermediate section 14, and a third cavity 15, from the top to the bottom.

Refer to FIG. 2, the first cavity 11 includes a first inner wall 111 and a first outer wall 112. The first inner wall 111 is annular to define a first chamber 113. The first outer wall 112 surrounds the first inner wall 111 and is arranged concentrically with the first inner wall 111. At least one waste gas inlet passage 114 is provided on the first outer wall 112. The waste gas inlet passage 114 penetrates the first outer wall 112 and the first inner wall 111 and communicates with the first chamber 113 to let waste gas (or exhaust gas) enter the first chamber 113 via the waste gas inlet passage 114.

Refer to FIG. 2 and FIG. 3, in one embodiment, the waste gas inlet passage 114 includes a first member 1141, a second member 1142 and a connecting member 1143. Both ends of the connecting member 1143 are connected to the first member 1141 and the second member 1142, respectively. Taking a ground as a reference, the first member 1141 extends in a horizontal direction with the ground, and one end not connected to the connecting member 1143 connects with the first chamber 113. The second member 1142 extends in a perpendicular direction with the ground and the second member 1142 is parallel to the direction in which the first cavity 11 is arranged. An