WHAT WE CLAIM IS

1. A diaphragm pump, comprising:

a disposable pump head assembly having a bearing housing configured with walls having a shape and defining openings for receiving reciprocating pistons, the disposable pump head assembly also configured with a cam configured to be coupled to a motor for moving the reciprocating pistons in relation to a diaphragm; and

a canister configured with an exterior wall portion, a cover portion, a rear wall portion, and a clamping device, the exterior wall portion defining a cavity to receive the disposable pump head assembly, the rear wall portion having interior walls formed therein with a corresponding shape to the shape of the walls of the bearing housing to receive and engage the support plate and to prevent rotational movement of the disposable pump head assembly in relation to the canister when the cam moves the reciprocating pistons in relation to the diaphragm, the rear wall portion also configured with an opening so that the cam can be coupled to the motor, the clamping device configured to couple detachably the cover portion and the exterior wall portion together for opening the canister to change the disposable pump head assembly and for closing the canister after the disposable pump head assembly has been changed.

CLAIMS

1. A disposable diaphragm pump head and canister assembly, comprising:

a disposable diaphragm pump head assembly configured as an assembled modular unit having an upper housing with an input port and an output port, the upper housing configured to affixedly couple to a diaphragm support plate, the disposable diaphragm pump head assembly also having a bearing housing configured with walls having a shape and defining openings for receiving reciprocating pistons, the disposable diaphragm pump head assembly also configured with a cam configured to be coupled to a motor for moving the reciprocating pistons in relation to a diaphragm; and

a canister configured with an exterior wall portion, a hinged cover portion, a rear wall portion, and a hinged clamping device, the exterior wall portion defining a cavity to receive the disposable diaphragm pump head assembly, the rear wall portion having interior walls formed therein with a corresponding shape to the shape of the walls of the bearing housing to receive and engage the diaphragm support plate and to prevent rotational movement of the disposable diaphragm pump head assembly in relation to the canister when the cam moves the reciprocating pistons in relation to a diaphragm, the rear wall portion also configured with an opening so that the cam can be coupled to the motor, the hinged clamping device configured to couple detachably the hinged cover portion and the exterior wall portion together for opening the canister to change the disposable diaphragm pump head assembly and for closing the canister after the disposable diaphragm pump head assembly has been changed.

2. A disposable diaphragm pump head and canister assembly according to claim 1, wherein the upper housing is configured to couple to the diaphragm support plate via a plurality of upper housing flexible tabs that snap fit to corresponding structure of the diaphragm support plate.

3. A disposable diaphragm pump head and canister assembly according to claim 1, wherein the upper housing is configured to couple to the diaphragm support plate via a snap fit, screws, a sonic weld or rivets.

4. A disposable diaphragm pump head and canister assembly according to claim 1, wherein the hinged cover portion comprises a compressible member, including a compressible pad, dimensioned so as to push a top surface of the disposable diaphragm pump head so as to frictionally engage the disposable diaphragm pump head and the motor.

5. A disposable diaphragm pump head and canister assembly according to claim 1, wherein the hinged clamping device comprises a part for grabbing a lip of the hinged cover portion.