CLAIMS

1. A filter assembly comprising:

(a) a filter cartridge comprising a closed end and an open end; a handle attached to the closed end, at least one filter module interposed between the closed end and the open end; and a first coupling member attached to the open end, the first coupling member having a central lumen therethrough and an external surface, and at least one lug extending from the exterior surface, the lug having an outer diameter; and,

(b) a support comprising a second coupling member, the second coupling member having a central lumen therethrough and a side wall having at least one channel for receiving the lug, the channel having corresponding parallel channel walls, a terminal section including a closed end and a horizontal axis, and an angled section, angled from the horizontal axis, the angled section having an open end and corresponding parallel channel walls extending from the open end, the terminal section including a lug retaining section having a cross-sectional area narrower than the outer diameter of the lug, the lug retaining section providing resistance as the lug passes through the narrower cross-sectional area;

wherein the filter cartridge is engageable with the support by coupling the first and second coupling members together such that the lug is rotated in the channel from the angled section, through the lug retaining section, into the terminal section, the lug retaining section preventing the lug from rotating out of the terminal section.

2. The filter assembly of claim 1, having at least two lugs and at least two channels, each channel receiving a separate lug.

3. The filter assembly of claim 1 or 2, wherein the central lumen of second coupling member includes a tapered cross-sectional area.

4. The filter assembly of any one of claims 1-3, wherein the first coupling member comprises a cylindrical end with an exterior surface including at least one groove and at least one resilient ring in the groove, and the central lumen of the second coupling member also includes a non-tapered cross-sectional area having a vertical wall with an internal surface, wherein the resilient ring on the first coupling member is compressed when contacting the internal surface of the vertical wall, the ring sealing against the internal surface when the filter cartridge is engaged with the support.

5. The filter assembly of any one of claims 1-4, wherein a user engaging the filter assembly with the support feels a change in resistance as the lug passes through the lug retaining section, such that the user recognizes that the filter assembly is properly engaged with the support.

6. The filter assembly of any one of claims 1-5, wherein the angled section is at an angle in the range of from about 20°/160° to about 40°/140° from the horizontal axis.

7. A filter device comprising a filter device housing comprising an inlet and an outlet and including the filter cartridge engaged with the support of any one of claims 1-6 arranged in the filter device housing, providing a fluid flow path between the inlet and the outlet, wherein the filter cartridge is across the fluid flow path.

8. A method for engaging a filter cartridge with a support, the method comprising:

engaging (a) a filter cartridge comprising a closed end and an open end; a handle attached to the closed end, at least one filter module interposed between the closed end and the open end; and a first coupling member attached to the open end, the first coupling member having a central lumen therethrough and an external surface, and at least one lug extending from the exterior surface, the lug having an outer diameter, with (b) a support comprising a second coupling member, the second coupling member having a central lumen therethrough and a side wall having at least one channel for receiving the lug, the channel having corresponding parallel channel walls, a terminal section including a closed end and a horizontal axis, and an angled section, angled from the horizontal axis, the angled section having an open end and corresponding parallel channel walls extending from the open end, the terminal section including a lug retaining section having a cross-sectional area narrower

than the outer diameter of the lug, the lug retaining section providing resistance as the lug passes through the narrower cross-sectional area;

the method including coupling the first and second coupling members together and rotating the lug in the channel from the angled section, through the lug retaining section, into the terminal section, the lug retaining section preventing the lug from rotating out of the terminal section.

9. The method of claim 8, comprising engaging the filter cartridge with the support until a change in resistance is felt as the lug passes through the lug retaining section, indicating that the filter cartridge is properly engaged with the support.

10. The method of claim 8 or 9, further comprising arranging a filter assembly comprising the filter cartridge engaged with the support in a filter device housing having an inlet and an outlet, and providing a filter device providing a fluid flow path between the inlet and the outlet, wherein the filter cartridge is across the fluid flow path.

11. The method of any one of claims 8-10, comprising rotating the lug in the angled section along an angle in the range of from about 20°/160° to about 40°/140° from the horizontal axis.