We claim:

1. In combination, a valve cavity cap arrangement and a valve body defining a valve cavity having a recessed surface from which a central passage and at least one radially offset passage extend, the valve cavity cap arrangement comprising:

an insert received in the valve cavity, the insert including an inner annular sealing surface sized to seal against a portion of the recessed surface surrounding the central passage, an outer annular sealing surface sized to seal against an outer periphery of the recessed surface, surrounding the at least one radially offset passage, and a solid web portion extending between the inner annular sealing surface and the outer annular sealing surface; and

a threaded cap having an outer threaded portion threadably engaged with an internal threaded portion of the valve cavity, a central end portion configured to apply a first sealing force to the inner annular sealing surface, and an outer end portion configured to apply a second sealing force to the outer annular sealing surface.

2. The combination of claim 1, wherein the threaded cap comprises an inner cap plug defining the central end portion and an outer cap nut assembled with the inner cap plug and defining the outer end portion, the cap plug being axially adjustable with respect to the cap nut.

3. The combination of claim 2, wherein the cap plug includes an outer threaded portion in threaded engagement with an inner threaded portion of the cap nut.

4. The combination of any of claims 1-3, wherein the insert comprises metal.

5. The combination of any of claims 1-4, wherein the web portion is axially flexible.

6. The combination of any of claims 1-5, wherein the web portion has a thickness between about 0.020 inches and about 0.060 inches.

7. The combination of any of claims 1-6, wherein the valve body comprises a manifold body block including a plurality of valve cavities.

8. The combination of any of claims 1-7, wherein the insert includes a solid central portion surrounded by the inner annular sealing surface.

9. The combination of any of claims 1-7, wherein the insert includes a tubular extension extending through a central bore in the central end portion of the cap.

10. The combination of claim 9, wherein the insert includes a central port extending from the tubular extension to an end surface of the insert radially inward of the inner annular sealing surface.

11. The combination of claim 9, wherein the insert includes at least one port extending radially outward from the tubular extension to an end surface of the insert radially outward of the inner annular sealing surface.

12. The combination of any of claims 1-11, wherein the threaded cap includes at least one vent port.

13. The combination of any of claims 1-12, wherein the central end portion of the threaded cap engages a central bearing surface of the insert and the outer end portion engages an outer bearing surface of the insert, and wherein the web portion is substantially coplanar with the outer bearing surface.

14. The combination of any of claims 1-12, wherein the central end portion of the threaded cap engages a central bearing surface of the insert and the outer end portion engages an outer bearing surface of the insert, and wherein the web portion is disposed axially between the central and outer bearing surfaces and the inner and outer annular sealing surfaces.

15. The combination of any of claims 1-14, wherein the at least one radially offset passage comprises first and second radially offset passages, the first radially offset passage being in fluid communication with the second radially offset passage.

16. A method of sealing a valve cavity including a recessed surface from which a central passage and at least one radially offset passage extend, the method comprising:

installing an insert in the valve cavity, such that an inner annular sealing surface of the insert engages a portion of the recessed surface surrounding the central passage and an outer annular sealing surface of the insert engages an outer periphery of the recessed surface, surrounding the at least one radially offset passage;

assembling a cap with the valve cavity, such that a central end portion of the cap applies a first sealing force to the inner annular sealing surface, and an outer end portion of the cap applies a second sealing force to the outer annular sealing surface.

17. The method of claim 16, wherein assembling the cap with the valve cavity comprises threadably engaging an outer threaded portion of the cap with an internal threaded portion of the valve cavity.

18. The method of any of claims 16 and 17, wherein the cap comprises an inner cap plug defining the central end portion and an outer cap nut assembled with the inner cap plug and defining the outer end portion, wherein assembling the cap with the valve cavity comprises axially adjusting the cap plug with respect to the cap nut.

19. The method of claim 18, wherein axially adjusting the cap plug with respect to the cap nut comprises threadably adjusting an outer threaded portion of the cap plug with an internal threaded portion of the cap nut.

20. The method of any of claims 16-19, wherein the at least one radially offset passage comprises first and second radially offset passages, wherein when the cap is assembled with the valve cavity, the first radially offset passage is in fluid communication with the second radially offset passage.

21. The method of any of claims 16-20, wherein the insert comprises the insert of any of claims 1-15.

22. The method of any of claims 16-21, wherein the cap comprises the cap of any of claims 1-15.

We claim:

1. A combination comprising:

a valve body defining a valve cavity having a recessed surface from which a central passage and at least one radially offset passage extend; and

a valve cavity cap arrangement comprising:

an insert received in the valve cavity, the insert including:

an inner annular sealing surface sized to seal against an inner periphery of the recessed surface surrounding the central passage;

an outer annular sealing surface sized to seal against an outer periphery of the recessed surface, surrounding the at least one radially offset passage; and

a solid web portion extending between the inner annular sealing surface and the outer annular sealing surface; and

a threaded cap having:

an outer threaded portion threadably engaged with an internal threaded portion of the valve cavity;

an outer end portion configured to apply a first sealing force to the outer annular sealing surface; and

a central end portion configured to apply a second sealing force to the inner annular sealing surface;

wherein the insert includes a tubular extension extending through a central bore in the central end portion of the threaded cap and a lower port disposed in a central portion of the insert to provide a fluid passage between the tubular extension and one of the central passage and the at least one radially offset passage of the valve body, for supplying fluid flow to or from the one of the central passage and the at least one radially offset passage.

2. The combination of claim 1, wherein the insert comprises metal.

3. The combination of claim 1, wherein the solid web portion is axially flexible.

4. The combination of claim 1, wherein the solid web portion has a thickness between about 0.020 inches and about 0.060 inches.

5. The combination of claim 1, wherein the valve body comprises a manifold body block including a plurality of valve cavities.

6. The combination of claim 1, wherein the lower port extends radially outward from the tubular extension to an end surface of the insert radially outward of the inner annular sealing surface.

7. The combination of claim 1, wherein the threaded cap includes at least one vent port.

8. The combination of claim 1, wherein the central end portion of the threaded cap engages a central bearing surface of the insert and the outer end portion engages an outer bearing surface of the insert, and wherein the solid web portion is substantially coplanar with the outer bearing surface.

9. The combination of claim 1, wherein the central end portion of the threaded cap engages a central bearing surface of the insert and the outer end portion engages an outer bearing surface of the insert, and wherein the solid web portion is disposed axially between the central and outer bearing surfaces and the inner and outer annular sealing surfaces.

10. The combination of claim 1, wherein the at least one radially offset passage comprises first and second radially offset passages, the first radially offset passage being in fluid communication with the second radially offset passage.

11. The combination of claim 1, wherein the threaded cap comprises an inner cap plug defining the central end portion and an outer cap nut assembled with the inner cap plug and defining the outer end portion, the inner cap plug being axially adjustable with respect to the outer cap nut.

12. The combination of claim 11, wherein the inner cap plug includes an outer threaded portion in threaded engagement with an inner threaded portion of the outer cap nut.

13. A method of sealing a valve cavity including a recessed surface from which a central passage and at least one radially offset passage extend, the method comprising:

providing a single piece insert including:

a central portion having an upper central bearing portion and a lower inner annular sealing bead extending from a lower surface of the central portion;

an outer peripheral portion having an upper outer bearing surface and a lower outer annular sealing bead; and

a solid web portion extending between the central portion and the outer peripheral portion;

installing the single piece insert in the valve cavity, such that the lower inner annular sealing bead engages an inner periphery of the recessed surface surrounding the central passage and the lower outer annular sealing bead engages an outer periphery of the recessed surface, surrounding the at least one radially offset passage;

providing a threaded cap comprising:

an outer cap nut having an outer threaded portion threadably engaged with an internal threaded portion of the valve cavity, the outer cap nut defining an outer end portion radially aligned with the outer annular sealing bead; and

an inner cap plug assembled with the outer cap nut, the inner cap plug extending from a user grippable upper exterior portion to a central end portion defining an end face radially aligned with the inner annular sealing bead;

assembling the outer cap nut with the valve cavity, such that the outer end portion of the threaded cap applies a first sealing force between the outer annular sealing bead and the outer periphery of the recessed surface; and

axially adjusting the inner cap plug within the outer cap nut, such that the central end portion end face applies a second sealing force between the inner annular sealing bead and the inner periphery of the recessed surface.

14. The method of claim 13, wherein axially adjusting the inner cap plug within the outer cap nut comprises threadably adjusting an outer threaded portion of the inner cap plug with an internal threaded portion of the outer cap nut.

15. The method of claim 13, wherein the at least one radially offset passage comprises first and second radially offset passages, wherein when the threaded cap is assembled with the valve cavity, the first radially offset passage is in fluid communication with the second radially offset passage.

16. A combination comprising:

a valve body defining a valve cavity having a recessed surface from which a central passage and at least one radially offset passage extend; and

a valve cavity cap arrangement comprising:

a single piece insert received in the valve cavity, the single piece insert including:

a central portion having an upper central bearing surface and a lower inner annular sealing bead extending from a lower surface of the central portion and sized to seal against an inner periphery of the recessed surface surrounding the central passage;

an outer peripheral portion having an upper outer bearing surface and a lower outer annular sealing bead sized to seal against an outer periphery of the recessed surface, surrounding the at least one radially offset passage; and

a solid web portion extending between the central portion and the outer peripheral portion; and

a threaded cap comprising:

an outer cap nut including an outer threaded portion threadably engaged with an internal threaded portion of the valve cavity, the outer cap nut defining an outer end portion radially aligned with the outer annular sealing bead and engageable with the upper outer bearing surface to apply a first sealing force between the outer annular sealing bead and the outer periphery of the recessed surface; and

an inner cap plug assembled with the outer cap nut, the inner cap plug extending from a user grippable upper exterior portion to a central end portion defining an end face radially aligned with the inner annular sealing bead and engageable with the upper central bearing surface to apply a second sealing force

between the inner annular sealing bead and the inner periphery of the recessed surface.

17. The combination of claim 16, wherein the insert includes a solid central portion surrounded by the inner annular sealing bead.

18. The combination of claim 16, wherein the single piece insert is a single piece metal insert.

19. The combination of claim 16, wherein the inner cap plug is a single piece inner cap plug.

20. The combination of claim 16, wherein the solid web portion is substantially coplanar with the upper central bearing surface, and the central portion and the outer peripheral portion of the insert extend from the solid web portion to provide an enlarged space between the valve cavity recessed surface and the solid web portion.