We claim:

1. A valve comprising:

a valve body including a valve cavity and first and second fluid ports extending to the valve cavity;

a seat carrier subassembly installed in the valve cavity, the seat carrier subassembly comprising a seat carrier body including a first annular inner wall defining a first flow aperture aligned with the first fluid port and a valve seat disposed in an annular recess surrounding the first annular inner wall, and a second annular inner wall defining a second flow aperture aligned with the second fluid port;

a valve element disposed within the valve cavity and movable between a closed position sealing against the valve seat and an open position permitting fluid flow across the valve seat between the first and second flow apertures; and

an orifice restriction having an outer periphery seated against an interior portion of one of the first annular inner wall and the second annular inner wall.

2. The valve of claim 1, wherein the orifice restriction comprises an orifice carrier retaining a flow restricting orifice disc, with the orifice carrier defining the outer periphery of the orifice restriction.

3. The valve of claim 2, wherein the orifice carrier includes an inner diameter counterbore receiving the flow restricting orifice disc, and a surrounding wall portion crimped over an outer edge of the orifice disc.

4. The valve of claim 2, wherein the orifice carrier comprises a plastic orifice carrier press fit against the one of the first annular inner wall and the second annular inner wall.

5. The valve of claim 4, wherein the orifice carrier includes an outer shoulder that engages a surface of the seat carrier body to axially position the orifice carrier within the seat carrier body.

6. The valve of any of claims 4 and 5, wherein a distal end of the orifice carrier extends beyond a body engaging end of the seat carrier body and into the first fluid port of the valve body.

7. The valve of claim 1, wherein the orifice restriction comprises a flow restricting orifice disc, with the orifice disc being seated against the interior portion of the one of the first annular inner wall and the second annular inner wall.

8. The valve of any of claims 1-7, wherein valve element comprises a diaphragm.

9. The valve of claim 8, wherein the diaphragm is welded to the seat carrier body.

10. The valve of any of claims 1-9, wherein the orifice restriction is seated against the interior portion of the second annular inner wall.

11. The valve of any of claims 1-9, wherein the orifice restriction is seated against the interior portion of the first annular inner wall.

12. The valve of any of claims 1-11, wherein the orifice restriction is captured between the interior portion of the one of the first annular inner wall and the second annular inner wall and a weld ring welded to the seat carrier body.

13. The valve of claim 12, wherein the weld ring is welded to an upper surface of the seat carrier body.

14. The valve of claim 12, wherein the weld ring is welded to a lower surface of the seat carrier body.

15. The valve of any of claims 12-14, wherein the weld ring is flexed against the orifice restriction for live loaded engagement between the weld ring and the orifice restriction.

16. The valve of any of claims 12-14, wherein an inner lip portion of the seat carrier body is flexed against the orifice restriction for live loaded engagement between the seat carrier body and the orifice restriction.

17. The valve of any of claims 1-16 wherein the outer periphery of the orifice restriction is staked into the interior portion of the one of the first annular inner wall and the second annular inner wall.

18. The valve of any of claims 1-16, wherein the outer periphery of the orifice restriction is welded to the interior portion of the one of the first annular inner wall and the second annular inner wall.

19. A valve comprising:

a valve body having a valve cavity and first and second fluid ports extending to the valve cavity;

an annular valve seat surrounding the first fluid port;

a valve element disposed within the valve cavity and movable between a closed position sealing against the valve and an open position permitting fluid flow across the valve seat; and

an orifice restriction comprising an orifice carrier retaining a flow restricting orifice disc, with the orifice carrier being seated against an annular inner wall aligned with one of the first and second fluid ports to restrict flow through the one of the first and second fluid ports.

20. The valve of claim 19, further comprising a seat carrier subassembly installed in the valve cavity, the seat carrier subassembly comprising a seat carrier body and the valve seat, the seat carrier body defining the annular inner wall.

21. The valve of claim 20, wherein the orifice carrier includes an outer shoulder that engages a surface of the seat carrier body to axially position the orifice carrier within the seat carrier body.

22. The valve of any of claims 20 and 21, wherein a distal end of the orifice carrier extends beyond a body engaging end of the seat carrier body and into the first fluid port of the valve body.

23. The valve of any of claims 20-22, wherein the valve element comprises a diaphragm welded to the seat carrier body.

24. The valve of any of claims 19-23, wherein the orifice carrier includes an inner diameter counterbore receiving the flow restricting orifice disc, and a surrounding wall portion crimped over an outer edge of the orifice disc.

25. The valve of any of claims 19-24, wherein the orifice carrier comprises a plastic orifice carrier press fit against the one of the first annular inner wall and the second annular inner wall.

26. The valve of any of clams 19-25, wherein the annular inner wall is aligned with the first fluid port.

27. The valve of claim 26, wherein the annular valve seat is secured in an annular recess surrounding the first fluid port, the annular recess being defined by the inner annular wall and an outer annular wall.

28. The valve of any of claims 19-25, wherein the annular inner wall is aligned with the second fluid port.

29. The valve of any of claims 19-28, wherein the outer periphery of the orifice carrier is staked into the annular inner wall of the one of the first annular inner wall and the second annular inner wall.

30. The valve of any of claims 19-28, wherein the outer periphery of the orifice carrier is welded to the annular inner wall of the one of the first annular inner wall and the second annular inner wall.

31. A valve comprising:

a valve body having a valve cavity and first and second fluid ports extending to the valve cavity;

an annular valve seat surrounding the first fluid port;

a valve element disposed within the valve and movable between a closed position sealing against the valve and an open position permitting fluid flow across the valve seat; and

an orifice restriction seated against an annular inner wall aligned with one of the first and second fluid ports to restrict flow through the one of the first and second fluid ports;

wherein the orifice restriction is captured between an interior portion of the annular inner wall and a weld ring welded to the seat carrier body.

32. The valve of claim 31, wherein the weld ring is welded to an upper surface of the seat carrier body.

33. The valve of claim 31, wherein the weld ring is welded to a lower surface of the seat carrier body.

34. The valve of any of claims 31-33, wherein the weld ring is flexed against the orifice restriction for live loaded engagement between the weld ring and the orifice restriction.

35. The valve of any of claims 31-33, wherein an inner lip portion of the seat carrier body is flexed against the orifice restriction for live loaded engagement between the seat carrier body and the orifice restriction.

36. The valve of any of claims 31-35, further comprising a seat carrier subassembly installed in the valve cavity, the seat carrier subassembly comprising a seat carrier body and the valve seat, the seat carrier body defining the annular inner wall.

37. The valve of claim 36, wherein valve element comprises a diaphragm welded to the seat carrier body.

38. The valve of any of clams 31-37, wherein the annular inner wall is aligned with the first fluid port.

39. The valve of claim 38, wherein the annular valve seat is secured in an annular recess surrounding the first fluid port, the annular recess being defined by the inner annular wall and an outer annular wall.

40. The valve of any of claims 31-37, wherein the annular inner wall is aligned with the second fluid port.

41. A valve comprising:

a valve body having a valve cavity and first and second fluid ports extending to the valve cavity;

an annular valve seat secured in an annular recess surrounding the first fluid port, the annular recess being defined by an inner annular wall and an outer annular wall,

a valve element disposed within the valve and movable between a closed position sealing against the valve seat and an open position permitting fluid flow across the valve seat; and

an orifice restriction having an outer periphery axially captured between an internal counterbore in the valve seat and the annular inner wall.

42. The valve of claim 41, wherein the inner and outer annular walls are formed in a seating surface of the valve body.

43. The valve of claim 41, further comprising a seat carrier subassembly installed in the valve cavity, the seat carrier subassembly including a seat carrier body defining the inner and outer annular walls.

We claim:

1. A valve comprising:

a valve body including a valve cavity and first and second fluid ports extending to the valve cavity;

a seat carrier subassembly installed in the valve cavity, the seat carrier subassembly comprising a seat carrier body including a first annular inner wall defining a first flow aperture aligned with the first fluid port and a valve seat disposed in an annular recess surrounding the first annular inner wall, and a second annular inner wall defining a second flow aperture aligned with the second fluid port;

a valve element disposed within the valve cavity and movable between a closed position sealing against the valve seat and an open position permitting fluid flow across the valve seat between the first and second flow apertures; and

an orifice restriction having an outer periphery seated against an interior portion of one of the first annular inner wall and the second annular inner wall.

2. The valve of claim 1, wherein the orifice restriction comprises an orifice carrier retaining a flow restricting orifice disc, with the orifice carrier defining the outer periphery of the orifice restriction.

3. The valve of claim 2, wherein the orifice carrier includes an inner diameter counterbore receiving the flow restricting orifice disc, and a surrounding wall portion crimped over an outer edge of the orifice disc.

4. The valve of claim 2, wherein the orifice carrier comprises a plastic orifice carrier press fit against the one of the first annular inner wall and the second annular inner wall.

5. The valve of claim 4, wherein the orifice carrier includes an outer shoulder that engages a surface of the seat carrier body to axially position the orifice carrier within the seat carrier body.

6. The valve of claim 4, wherein a distal end of the orifice carrier extends beyond a body engaging end of the seat carrier body and into the first fluid port of the valve body.

7. The valve of claim 1, wherein the orifice restriction comprises a flow restricting orifice disc, with the orifice disc being seated against the interior portion of the one of the first annular inner wall and the second annular inner wall.

8. The valve of claim 1, wherein valve element comprises a diaphragm.

9. The valve of claim 8, wherein the diaphragm is welded to the seat carrier body.

10. The valve of claim 1, wherein the orifice restriction is seated against the interior portion of the second annular inner wall.

11. The valve of claim 1, wherein the orifice restriction is seated against the interior portion of the first annular inner wall.

12. The valve of claim 1, wherein the orifice restriction is captured between the interior portion of the one of the first annular inner wall and the second annular inner wall and a weld ring welded to the seat carrier body.

13. The valve of claim 12, wherein the weld ring is welded to an upper surface of the seat carrier body.

14. The valve of claim 12, wherein the weld ring is welded to a lower surface of the seat carrier body.

15. The valve of claim 12, wherein the weld ring is flexed against the orifice restriction for live loaded engagement between the weld ring and the orifice restriction.

16. The valve of claim 12, wherein an inner lip portion of the seat carrier body is flexed against the orifice restriction for live loaded engagement between the seat carrier body and the orifice restriction.

17. The valve of claim 1, wherein the outer periphery of the orifice restriction is staked into the interior portion of the one of the first annular inner wall and the second annular inner wall.

18. The valve of claim 1, wherein the outer periphery of the orifice restriction is welded to the interior portion of the one of the first annular inner wall and the second annular inner wall.

19. A valve comprising:

a valve body having a valve cavity and first and second fluid ports extending to the valve cavity;

an annular valve seat surrounding the first fluid port;

a valve element disposed within the valve and movable between a closed position sealing against the valve and an open position permitting fluid flow across the valve seat; and

an orifice restriction seated against an annular inner wall aligned with one of the first and second fluid ports to restrict flow through the one of the first and second fluid ports;

wherein the orifice restriction is captured between an interior portion of the annular inner wall and a weld ring welded to a seat carrier body installed in the valve cavity.

20. The valve of claim 19, wherein the weld ring is welded to an upper surface of the seat carrier body.

21. The valve of claim 19, wherein the weld ring is welded to a lower surface of the seat carrier body.

22. The valve of claim 19, wherein the weld ring is flexed against the orifice restriction for live loaded engagement between the weld ring and the orifice restriction.

23. The valve of claim 19, wherein an inner lip portion of the seat carrier body is flexed against the orifice restriction for live loaded engagement between the seat carrier body and the orifice restriction.

24. The valve of claim 19, wherein the seat carrier body defining the annular inner wall.

25. The valve of claim 24, wherein the valve element comprises a diaphragm welded to the seat carrier body.

26. The valve of claim 19, wherein the annular inner wall is aligned with the first fluid port.

27. The valve of claim 26, wherein the annular valve seat is secured in an annular recess surrounding the first fluid port, the annular recess being defined by the annular inner wall and an outer annular wall.

28. The valve of claim 19, wherein the annular inner wall is aligned with the second fluid port.