

CLAIMS

1. A retaining ring comprising:
a generally annular body comprising
a top surface;
a bottom surface;
an outer surface connected to the top surface at an outer top perimeter and the bottom surface at an outer bottom perimeter; and
an inner surface connected to the top surface at an inner top perimeter and the bottom surface at an inner bottom perimeter, the inner surface comprising seven or more planar facets, adjacent planar facets being connected at corners, and the inner bottom perimeter comprising straight edges of the planar facets, the straight edges of the adjacent planar facets connected at the corners such that the inner bottom perimeter defines a polygon.
2. The retaining ring of claim 1, wherein the bottom surface comprises channels extending from the outer surface to the inner surface, and wherein each channel comprises an end open to the inner surface of the body at a same location relative to a nearest corner.
3. The retaining ring of claim 2, wherein the inner surface comprises a first number of facets and the bottom surface comprises a second number of channels, and wherein the first number is a positive integer times the second number.
4. The retaining ring of claim 3, wherein the first number equals the second number.
5. The retaining ring of claim 2, wherein the channels are oriented at an angle relative to a radial segment extending through a center of the retaining ring.
6. The retaining ring of claim 1, wherein each corner extends from the top surface to the bottom surface, and wherein each facet has a rectangular or square shape having a top

straight edge formed with the top surface, a bottom straight edge formed with the bottom surface, and two straight side edges along two corners.

7. The retaining ring of claim 1, wherein the inner surface has between twelve and one-hundred forty-eight facets.

8. The retaining ring of claim 1, wherein the inner bottom perimeter has a symmetric shape.

9. The retaining ring of claim 1, wherein the inner top perimeter forms a polygon.

10. The retaining ring of claim 1, wherein a distance between a center of the retaining ring and a planar facet is about 150 mm to about 155 mm.

11. The retaining ring of claim 1, wherein the body comprises a wearable material.

12. The retaining ring of claim 1, wherein the facets are at equal angular intervals around the inner surface.

13. The retaining ring of claim 1, wherein the facets have the same shape.

14. The retaining ring of claim 1, wherein the facets are perpendicular to the bottom surface.

15. The retaining ring of claim 1, wherein the straight edges have the same length.

16. The retaining ring of claim 1, wherein the facets are rectangular.

17. A carrier head comprising:
a substrate receiving surface;
a generally annular retaining ring surrounding the substrate receiving surface, the retaining ring comprising
a top surface;
a bottom surface;
an outer surface connected to the top surface at an outer top perimeter and the bottom surface at an outer bottom perimeter; and
an inner surface connected to the top surface at an inner top perimeter and the bottom surface at an inner bottom perimeter, the inner surface comprising seven or more planar facets, adjacent planar facets being connected at corners, and the inner bottom perimeter comprising straight edges of the planar facets, the straight edges of the adjacent planar facets connected at the corners such that the inner bottom perimeter defines a polygon.

18. The carrier head of claim 17, wherein the bottom surface comprises channels extending from the outer surface to the inner surface, and wherein each channel comprises an end open to the inner surface of the retaining ring at a corner.

19. The carrier head of claim 18, wherein the inner surface comprises a first number of facets and the bottom surface comprises a second number of channels, and wherein the first number is a positive integer times the second number.

20. The carrier head of claim 19, wherein the first number equals the second number.