WHAT IS CLAIMED IS:

1. A burnishing tool, comprising:

a fluid supply for providing a flow of burnishing fluid;

an upper nozzle defining a lower supply channel and a plurality of upper cooling channels, each of the upper cooling channels terminating in an upper discharge port;

a lower nozzle defining a plurality of lower cooling channels, each of the lower cooling channels terminating in a lower discharge port; and

a burnishing element positioned between the upper nozzle and the lower nozzle, and defining a working tip, the burnishing element defining a flow passageway providing fluid communication between the lower supply channel and the lower cooling channels, and wherein the upper discharge port and the lower discharge port direct the flow of burnishing fluid directly onto the working tip.

2. The burnishing tool of claim 1, wherein the upper nozzle defines:

an inlet channel in fluid communication with the fluid supply for receiving the flow of burnishing fluid; and

an upper distribution reservoir in fluid communication with the inlet channel, the upper distribution reservoir defining a plurality of outlets in fluid communication with the plurality of upper cooling channels and the lower supply channel for splitting the flow of burnishing fluid between the plurality of upper cooling channels and the lower supply channel.

3. The burnishing tool of claim 2, wherein the upper nozzle defines:

an annular distribution ring fluidly coupled to the plurality of upper cooling channels; and

a plurality of upper distribution channels providing fluid communication between the upper distribution reservoir and the annular distribution ring.

4. The burnishing tool of claim 2, wherein the upper nozzle defines:

a collection chamber fluidly coupled to the lower supply channel; and

a plurality of lower distribution channels providing fluid communication between the upper distribution reservoir and the collection chamber.

5. The burnishing tool of claim 1, wherein the lower nozzle defines:

a lower distribution reservoir in fluid communication with the flow passageway, the lower distribution reservoir defining a plurality of outlets in fluid communication with the plurality of lower cooling channels.

6. The burnishing tool of claim 1, wherein the burnishing element comprises:

a spindle defining an upper attachment portion for engaging the upper nozzle and a lower attachment portion for engaging the lower nozzle, the flow passageway being defined through the spindle; and

a burnishing body positioned around the spindle between the upper attachment portion and the lower attachment portion, the working tip extending outward from the spindle along a radial direction.

7. The burnishing tool of claim 6, wherein the burnishing body has a circular cross-section taken along a plane defined orthogonal to the axial direction.

8. The burnishing tool of claim 6, wherein the burnishing body has a non-circular cross-section taken along a plane defined orthogonal to the axial direction.

9. The burnishing tool of claim 8, wherein the upper nozzle comprises:

a first piece defining a threaded bore for engaging the spindle of the burnishing tool; and

a second piece positioned between the first piece and the burnishing body, the second piece defining a central bore and a non-circular cavity, wherein the spindle extends through the central bore and into the threaded bore and the non-circular cavity is complementary to and configured for receiving the burnishing body.

10. The burnishing tool of claim 9, wherein a first segment of each of the upper cooling channels is defined in the first piece and a second segment of each of the upper cooling channels is defined in the second piece, and wherein the upper nozzle further comprises:

an annular groove defined within the first piece or the second piece, the annular groove providing fluid communication between the first segments and the second segments.

11. The burnishing tool of claim 10, further comprising:

an annular seal positioned around the annular groove between the first piece and the second piece.

12. The burnishing tool of claim 1, wherein each of the upper discharge ports and the lower discharge ports define a discharge angle defined relative to an axial direction, wherein the discharge angle is selected to direct the flow of burnishing fluid onto the working tip of the burnishing element.

13. The burnishing tool of claim 1, wherein the upper nozzle defines a threaded surface for engaging a tool holder.

14. The burnishing tool of claim 1, wherein the burnishing element is a constructed of carbide and the upper nozzle and the lower nozzle are constructed of metal.

15. The burnishing tool of claim 1, wherein the upper nozzle is integrally formed as a single monolithic component and the lower nozzle is integrally formed as a single monolithic component.

16. The burnishing tool of claim 1, wherein the upper nozzle and the lower nozzle each comprise a plurality of layers formed by:

depositing a layer of additive material on a bed of an additive manufacturing machine; and

selectively directing energy from an energy source onto the layer of additive material to fuse a portion of the additive material.

17. A method for manufacturing a burnishing tool, the method comprising:

depositing a layer of additive material on a bed of an additive manufacturing machine and selectively directing energy from an energy source onto the layer of additive material to fuse a portion of the additive material and form an upper nozzle defining a lower supply channel and a plurality of upper cooling channels, each of the upper cooling channels terminating in an upper discharge port;

depositing a layer of additive material on a bed of an additive manufacturing machine and selectively directing energy from an energy source onto the layer of additive material to

fuse a portion of the additive material and form a lower nozzle defining a plurality of lower cooling channels, each of the lower cooling channels terminating in a lower discharge port; and

positioning a burnishing element between the upper nozzle and the lower nozzle, the burnishing element defining a working tip and a flow passageway providing fluid communication between the lower supply channel and the lower cooling channels such that a flow of burnishing fluid may pass through the upper nozzle and the lower nozzle directly onto the working tip.

18. The method of claim 17, wherein the upper nozzle defines:

an inlet channel in fluid communication with a fluid supply for receiving the flow of burnishing fluid;

an upper distribution reservoir in fluid communication with the inlet channel, the upper distribution reservoir defining a plurality of outlets in fluid communication with the plurality of upper cooling channels and the lower supply channel for splitting the flow of burnishing fluid between the plurality of upper cooling channels and the lower supply channel; and

a lower distribution reservoir in fluid communication with the flow passageway, the lower distribution reservoir defining a plurality of outlets in fluid communication with the plurality of lower cooling channels.

19. The method of claim 17, wherein the upper nozzle defines:

an annular distribution ring fluidly coupled to the plurality of upper cooling channels;

a plurality of upper distribution channels providing fluid communication between the upper distribution reservoir and the annular distribution ring;

a collection chamber fluidly coupled to the lower supply channel; and

a plurality of lower distribution channels providing fluid communication between the upper distribution reservoir and the collection chamber.

20. The method of claim 17, wherein the upper nozzle is integrally formed as a single monolithic component and the lower nozzle is integrally formed as a single monolithic component.