CLAIMS

What is claimed is:

1. A tool (200) for removing a coating from an interior surface (130) of a component (126), comprising:

a rotary device (210);

a grinding attachment (214A) attached to the rotary device (210);

a tool holder configured to:

set an axial position of the grinding attachment (214A) coupled to the rotary device (210) over the coating (128) on the interior surface (130) of the component (126); and

set a radial position of the grinding attachment (214A) coupled to the rotary

device (210), the radial position defining a cutting depth of the grinding attachment (214A) into the coating (128) on the interior surface (130) of the component (126);and

a wheel assembly (270, 280, 290) coupled to the tool holder for guiding the tool holder about an interior perimeter of the component (126);

characterized in that

the tool holder comprises a base (228) and a collet assembly (230) coupled to the base (228) for securing the rotary device (210);

wherein the collet assembly (230) comprises:

an upper section (232);

a lower section (234);

a first handwheel (236) coupled to a threaded shaft (238) for selectively displacing the upper section (232) of the collet assembly (230) toward or away from the lower section (234) of the collet assembly to facilitate setting the axial position of the grinding attachment (214A); and

a second handwheel (240) coupled to a threaded shaft (242) for selectively displacing the collet assembly (230) toward or away from the base to facilitate setting the radial position of the grinding attachment (214A) to set the cutting depth of the grinding attachment (214A) into the coating (128) on the interior surface (130) of the component (126), wherein the threaded shaft (242) extends through the collet assembly (230) to the base (228).

2. The tool (200) according to claim 1, further comprising at least one biasing member (250) for mounting the collet assembly (230) to the base (228), wherein the at least biasing member (250) is configured to spring load the collet assembly (230) toward the base (228).

3. The tool (200) according to claim 1, wherein the collet assembly (230) further comprises:

a depth limiter (244) for setting a maximum cutting depth of the grinding attachment (214A) into the coating (128) on the interior surface (130) of the component (126).

4. The tool (200) according to claim 1, wherein the wheel assembly (270, 280, 290) coupled to the tool holder is configured to guide the tool holder along a flange (208) extending about an interior perimeter of the component (126).

5. The tool (200) according to claim 4, wherein the wheel assembly (270, 280, 290) further comprises:

at least one first wheel (270) rotatably mounted to the tool holder for engaging the interior surface (130) of the combustion component (126);

at least one second wheel (280) rotatably mounted to the tool holder for engaging an outside edge (282) of the flange (208); and

at least one pair of third wheels (290) rotatably mounted to the tool holder for engaging opposing sides of the flange (208).

6. A method for removing a thermal barrier coating (TBC) (128) from an interior surface (130) of a combustion component (126) of a gas turbine system (100) using the tool (200) of any one of the preceding claims, comprising:

positioning the tool (200) within an interior of the combustion component (126);

using the first handwheel (236), setting an initial axial position of the grinding attachment (214A) of the rotary device (210) within the interior of the combustion component (126);

using the second handwheel (240), setting a radial position of the grinding attachment (214A) of the rotary device (210) within the interior of the combustion component (126) to form an initial cut (300) into the TBC (128); and

using the first handwheel (236) and the second handwheel (240), adjusting the axial position and the radial position of the grinding attachment (214A) of the rotary device (210) within the interior of the combustion component (126) to form additional cuts (304) into the TBC (128).

7. The method according to claim 6, further comprising, after forming the initial cut (300) and the additional cuts (304) into the TBC (128):

attaching a polishing attachment (214B) to the rotary device (210); and

removing additional TBC (128) using the polishing attachment (214B).

8. The method according to claim 6, further comprising:

displacing the tool (200) about the interior perimeter of the combustion component (126) when forming the initial cut (300) and the additional cuts (304).

9. The method according to claim 6, wherein the initial cut (300) defines a maximum axial distance from an edge (302) of the TBC (128), wherein the additional cuts (304) are formed between the initial cut (300) and the edge (302) of the TBC (128).