heating heads leads to a difference in the number of turns of the heating coils used in the heating heads. As a result, the number of turns of the transformer should be varied (or, for example, the transformer should be replaced with a different one) or the capacitance of the matching capacitor should be varied in accordance with the heating head to be used. This is a problem that requires significant time and effort.

[0011]

Embodiments of the present invention provide a heater for coating removal that can solve the above-described problem of the need of replacing the transformer, which is a process that requires significant time and effort, when the heating head to be used is selected among multiple heating heads.

[0012]

According to to an aspect of the present invention, there is provided a heating a metal member having surface coated with a coating film, the heater including a high-frequency power source; a transformer transforming a high-frequency current outputted from the high-frequency power source; and a plurality of heating units detachably connectable to the transformer to heat the metal member disposed in contact with or near the heater by the high-frequency current outputted from the transformer, wherein one heating unit is selected from the plurality of heating units and attached to the transformer, and an inductance value of the plurality of heating units except for the one heating unit selected from the plurality of heating units is adjusted to fall within a predetermined range relative to an inductance value of the heating unit selected from the plurality of heating units.

[0013]

In an embodiment, at least one heating unit among the plurality of heating units may include a cable sending a high-frequency current transformed at the transformer; and a cable-connected heating head including a heating coil connected to an end of the cable and heating the metal member disposed in contact with or near the heater for coating removal by the high-frequency current, and the sum of an inductance value of the heating coil of the cable-connected heating head and an inductance value of the cable may be adjusted to be within a predetermined range relative to an inductance value of the at least one heating unit among the plurality of heating units.

[0014]

In an embodiment, at least one heating unit among the plurality of heating units may include an integrated heating head integrated with the transformer and including a heating coil heating the metal member disposed in contact with or near the heater for coating removal by the high-frequency current, and an inductance value of the plurality of heating units except for the at least one heating unit may be adjusted to be within a predetermined range relative to an inductance value of the at least heating among the plurality of heating units.

[0015]

In an embodiment, the cable may connect the transformer and the heating coil of the cable-connected heating head, and the length of the cable may be adjusted in accordance with the inductance value of the heating coil of the cable-connected heating head such that the sum of the inductance value of the heating coil of the cable-connected heating head and the inductance value of the cable is within a predetermined range relative to the inductance value of one heating

unit among the plurality of heating units.

[0016]

In an embodiment, the cable may include one water-cooling coaxial cable.

[0017]

In an embodiment, the plurality of heating units may include a first heating unit including a cable sending a high-frequency current transformed at the transformer; and a first heating head including a first heating coil connected to an end of the cable and heating the metal member disposed in contact with or near the heater for coating removal by the high-frequency current; and a second heating unit including a second heating head integrated with the transformer and including a second heating coil heating the metal member disposed in contact with or near the heater for coating removal by the high-frequency current, and the sum of an inductance value of the cable of the first heating unit and an inductance value of the first heating coil may be adjusted to be within a predetermined range relative to an inductance value of the second heating coil.

[0018]

In an embodiment, when the inductance value of the second heating coil is 1.0, the sum of the inductance value of the cable of the first heating coil and the inductance value of the first heating coil may be adjusted to be within a range of 0.6 to 1.3.

[0019]

Embodiments of the present invention require no replacement of the transformer in accordance with the heating head selected for use among multiple heating