CLAIMS

1. A die casting system, comprising:

a die comprised of a plurality of die components that define a die cavity;

a shot tube in fluid communication with said die cavity, wherein said shot tube includes an integrated melting unit, a first sleeve made of a graphite material, and a second sleeve made of a ceramic material, wherein said first sleeve is disposed inside said die and said second sleeve is disposed outside of said die, and

said integrated melting unit is configured to heat a charge of material from a position inside of said second sleeve; and

a shot tube plunger moveable within said shot tube to communicate said charge of material into said die cavity.

2. The system as recited in claim 1, wherein the die casting system is a vertical die casting system.

3. A method of die casting a component using the die casting system according to claim 1, comprising the steps of:

(a) loading the charge of material within said shot tube of said die casting system;

(b) heating the charge of material at a position inside said shot tube, wherein the charge of material is heated by the integrated melting unit associated with the shot tube; and

(c) injecting the charge of material into said die cavity of said die casting system to cast the component.

4. The method as recited in claim 3, wherein the charge of material is a molten metal and said step (a) includes the step of:

pouring the molten metal into the shot tube.

5. The method as recited in claim 4, wherein said step (b) includes the step of:

heating the molten metal to a desired temperature inside of the shot tube.

6. The method as recited in claim 3, wherein the charge of material is an ingot of material and said step (a) includes the step of:

positioning the solid ingot of material inside of the shot tube.

7. The method as recited in claim 6, wherein said step (b) includes the step of:

melting the solid ingot of material into a molten metal inside of the shot tube.