Claims:

1. Apparatus for heating an elongate tubular article and/or a heat shrinkable sleeve applied around the elongate tubular article, comprising a frame member adapted to be disposed around said article and/or sleeve, said frame member having a heater device adapted to heat the elongate tubular article and disposed on or proximal to an inner surface of said frame member, and a controller for operating the heater device; the said heating device having two or more longitudinally disposed heating zones and two or more radially disposed heating sectors.

~~2. Apparatus of claim 1~~, wherein the heater device comprises a plurality of infra red heating panels mounted on said frame member, wherein the heating panels are radially adjustable with respect to the frame to provide an adjustable inner radius.

~~3~~2. Apparatus of claim ~~2~~1, wherein each of the plurality of heating panels defines a zone and a sector.

~~4. Apparatus of claim 2, wherein the heating panels are infra red heating panels.~~

~~5~~3. Apparatus of claim ~~2~~1, wherein the heating panels comprise a heating element layer and an insulating/reflecting layer.

~~6. Apparatus of claim 2, wherein the heating panels are radially adjustable to provide an adjustable inner radius.~~

~~7~~4. Apparatus of claim 1, wherein the frame member comprises two clam shell halves, connected by a hinge, and having a line of contact opposing said hinge, such that, in an open position, the halves are spaced sufficiently apart to allow the frame member to be placed over the elongate tubular article, and, in a closed position, the halves abut or oppose adjacent one another at the line of contact.

~~8~~5. Apparatus of claim 1, wherein the frame member comprises a three piece clam shell design, having a first, top portion, and two wings, each connected to the top portion by a hinge, and having a line of contact opposing said hinge, such that, in an open position, the wings are placed sufficiently apart to allow the frame member to be placed over the elongate tubular article, and, in a closed position, the wings abut or oppose adjacent one another at their respective line of contact.

96. Apparatus of claim 74 or 85, further comprising a shock absorber at the line of contact.

107. Apparatus of claim 74 or 85, further comprising a rough locator or guide for aiding in aligning the apparatus wings or halves when closing around a pipe.

8.11. ~~Apparatus for heating an elongate tubular article and/or a heat shrinkable sleeve applied around the elongate tubular article, comprising a frame member adapted to be disposed around said article and/or sleeve, said frame member having a heater device adapted to heat the elongate tubular article and disposed on or proximal to an inner surface of said frame member, and a controller for operating the heater device;~~Apparatus of claim 1, further comprising an air circulation system.

912. The apparatus of claim 118 wherein the air circulation system comprises an air tube connected to an air supply and running a longitudinal length of the apparatus, said air tube configured to dispel air provided from said air supply along said length, between the apparatus and the article and/or sleeve when disposed around said article and/or sleeve.

1310. The apparatus of claim 129 wherein the air tube comprises a plurality of small orifices for dispelling the air.

1411. The apparatus of claim 129 wherein the air supply is a hot air supply.

1512. The apparatus of any one of the preceding claims, further comprising a shield on each end of said apparatus, configured so that, in use, the shield substantially closes a gap between the apparatus and the article.

1613. The apparatus of claim 1512 wherein the shield comprises a plurality of flaps.

1714. The apparatus of claim 1512 wherein the shield comprises a continuous band.

1815. The apparatus of claim 1512 wherein the shield is flexible.

1916. The apparatus of claim 1512 wherein the shield is made from a heat resistant material selected from glass cloth and sheet metal.

~~20~~17. The apparatus of any one of the preceding claims, further comprising an exhaust vent.

~~21~~18. The apparatus of any one of the preceding claims further comprising a smoke detector sensor.

~~22~~19. The apparatus of any one of the preceding claims further comprising an adhesive collector.

~~23~~20. The apparatus of claim ~~22~~19 wherein the adhesive collector comprises a plurality of wire mesh strips or perforated metal strips positioned near the bottom, interior edges of the apparatus when in use.

~~24~~21. The apparatus of claim ~~23~~20 wherein the wire mesh strips or perforated metal strips have a mesh orifice size greater than 1mm x 1mm.

~~25~~22. An apparatus of any one of the preceding claims further comprising a water and dust tight casing.

2326. An apparatus of claim ~~2~~1 wherein the frame member is adjustable for varying the width of the apparatus, and for affixing panels of varying width.

~~27~~24. An apparatus of any one of the preceding claims further comprising a brake system.

25~~28~~. The apparatus of claim ~~27~~24 wherein the brake system comprises a plurality of springs affixed to the frame member and positioned to lie between the frame member and the article, and a plurality of pads, each affixed to the opposing end of the spring and configured to rest on the article when the apparatus is disposed around said article.

~~22~~269. The apparatus of any one of the preceding claims, further comprising a data storage device, and a digital camera c-onfigured to take a picture of the article and having the ability to transmit the data to a remote location.

~~30. A spacer comprising a body, an arm, and a handle.~~

~~31. A spacer array comprising a plurality of spacers of claim 30, connected by a curved rod.~~

~~32~~27. A kit comprising the apparatus of any one of claims 1-26 and a~~A~~ frame for holding the apparatus of any one of the preceding claims in a vertical position, said frame having a mounting bracket for affixing to the frame member of the apparatus, and a mounting bar for attaching a robotic arm, telescopic rod, or scissor jack.

~~33. A kit comprising the apparatus of any one of claims 1-29 and the frame of claim 32.~~

~~28~~34. A kit comprising the apparatus of any one of claims 1-26 and a~~A~~ clamp for positioning a heat shrinkable sleeve on a substantially vertically oriented elongate tubular article, said clamp comprising a band for clamping onto the elongate tubular article, a plurality of vertical legs extending from the band in the direction of the desired location of the sleeve, a tongue at the end of each of the vertical legs, vertical lips at the end of each tongue opposing the vertical leg.

~~35. A kit comprising the apparatus of any one of claims 1-29, and the clamp of claim 34.~~

~~36. A kit comprising the frame of claim 32 and the clamp of claim 34.~~

~~37~~29. A method for shrinking a heat shrinkable sleeve to a generally horizontally oriented elongate tubular article, said sleeve having a top area and a bottom area, utilizing an apparatus of any one of the preceding claims, comprising:

positioning the heat shrinkable sleeve onto the elongate tubular article to envelop the article circumferentially;

enveloping the sleeve with the apparatus;

activating the heater device on said apparatus to heat said sleeve, thus shrinking said sleeve to said elongate tubular article;

wherein the bottom area is heated to a higher heat intensity and/or for a longer period of time than the top area.

~~38~~30. A method for shrinking a heat shrinkable sleeve to an elongate tubular article, utilizing an apparatus of any one of the preceding claims, comprising:

wrapping the heat shrinkable sleeve onto the elongate tubular article to envelop the article circumferentially and to form a wrap area and an overlap area;

enveloping the sleeve with the apparatus;

activating the heater device on said apparatus to heat said sleeve, thus shrinking said sleeve to said elongate tubular article;

wherein the overlap area is heated to a higher heat intensity or for a longer period of time than the wrap area.

3139. A method for shrinking a heat shrinkable sleeve to an elongate tubular article, utilizing an apparatus of any one of claims ~~12-15~~9-12, comprising:

positioning the heat shrinkable sleeve onto the elongate tubular article to envelop the article circumferentially;

enveloping the sleeve with the apparatus;

activating the heater device on said apparatus to heat said sleeve, thus shrinking said sleeve to said elongate tubular article; and

simultaneously dispelling air from the air supply.

3240. A method for shrinking a heat shrinkable sleeve to an elongate tubular article, utilizing an apparatus of any one of claims ~~12-15~~9-12, comprising:

positioning the heat shrinkable sleeve onto the elongate tubular article to envelop the article circumferentially;

enveloping the sleeve with the apparatus;

repeatedly alternating between activating the heater device on said apparatus to heat said sleeve, and dispelling air from the air supply to cool said sleeve.

~~41. A method for shrinking a heat shrinkable sleeve to a generally vertically oriented elongate tubular article, comprising:~~

~~clamping the clamp of claim 34 to the elongate tubular article in a position directly below where it is desired to shrink the heat shrinkable sleeve;~~

~~positioning the heat shrinkable sleeve onto the elongate tubular article to envelop the article circumferentially, such that the heat shrinkable sleeve rests on the tongue of the clamp, and such that the sleeve has a top area, most distal from the clamp, bottom area most proximal to the clamp, and a middle area between the bottom area and the top area;~~

~~activating the zones of the heating device most proximal to the middle area to shrink said middle area;~~

~~removing the clamp;~~

~~activating the remaining zones of the heating device.~~

4233. A method for shrinking a heat shrinkable sleeve to a generally vertically oriented elongate tubular article, utilizing an apparatus of any one of the preceeding claims, comprising:

positioning the heat shrinkable sleeve onto the elongate tubular article to envelop the article circumferentially, such that the heat shrinkable sleeve has a top area, a bottom area, and a middle area between the bottom area and the top area;

activating the zones of the ~~heating device~~apparatus most proximal to the bottom area to shrink said bottom area;

activating the zones of the ~~heating device~~ apparatus most proximal to the middle area to shrink said middle area;

activating the zones of the ~~heating device~~ apparatus most proximal to the top area to shrink said top area.

~~43~~34. A method for shrinking a heat shrinkable sleeve to an elongate tubular article utilizing an apparatus of any one of the preceding claims, comprising:

pre-warming the heater device on said apparatus;

positioning the heat shrinkable sleeve onto the elongate tubular article to envelop the article circumferentially;

enveloping the sleeve with the pre-warmed apparatus;

activating the heater device on said apparatus to heat said sleeve, thus shrinking said sleeve to said elongate tubular article.

~~44~~35. A method for shrinking a heat shrinkable sleeve to an elongate tubular article utilizing an apparatus of any one of the preceding claims, comprising:

pre-warming the sleeve to an elevated temperature;

positioning the heat shrinkable sleeve onto the elongate tubular article to envelop the article circumferentially;

enveloping the sleeve with the apparatus;

activating the heater device on said apparatus to heat said sleeve, thus shrinking said sleeve to said elongate tubular article.

~~45~~36. A method for shrinking a heat shrinkable sleeve to an elongate tubular article utilizing an apparatus of any one of claims ~~12-15~~9-12, comprising:

positioning the heat shrinkable sleeve onto the elongate tubular article to envelop the article circumferentially;

enveloping the sleeve with the apparatus;

pre-warming the sleeve with hot air dispelled from the air supply;

activating the heater device on said apparatus to heat said sleeve, thus shrinking said sleeve to said elongate tubular article.