What is claimed is:

1. An HVAC system, comprising:

a plurality of tubing sections connecting a source of refrigerant to a plurality of distributed cooling units;

a plurality of Y connectors for attachment to said tubing sections with each Y connection comprising a Y connector hub with three threaded hub openings, and three hub connectors for threading into each of said threaded hub openings, with said hub connectors having a dielectric layer on an inner surface and on an outer surface and a press fit joint on a first end, and a thread fit joint on a second end, for attachment to said tubing sections to said Y connector hub; and

a plurality of generally cylindrical hollow tubing connectors with a dielectric coating layer on an inner surface and on an outer surface, with said tubing connectors having a press fit joint on a first end and a press fit joint on a second end, for joining two tubing sections; wherein said Y connectors and said tubing connectors form a network of tubing sections to deliver and return predetermined quantities of refrigerant from said source of refrigerant to said distributed cooling units, with said system comprising press fit and thread fit joints assembled without heat.

2. The HVAC system of claim 1, in which said press fit joints further comprise a tubing insert configured for placement inside an end of said tubing section, with said hub and tubing connectors having a connector body configured for placement over said end of said tubing

section, and a connector nut configured for sliding engagement over said connector body, with said connector nut pressing said end of tubing section between said tubing insert and said connector body, with said dielectric coating layer preventing electrical contact between said tubing section and said connector body, with said joint configured for assembly by pressing and without head.

3. The HVAC system of claim 2 in which said connector body further comprises a raised sealing ridge on an outside of said connector body, for maximizing pressure from said connector nut to said tubing insert.

4. The HVAC system of claim 1 in which said threaded openings of said Y connector hubs are of different sizes for receiving different sizes of threaded hub connectors.

5. The HVAC system of claim 1 in which said tubing connectors have a different sized connector body on said first end and said second end.

6. The HVAC system of claim 2 in which said press fit connector body ends further comprise a tool gripping ridge, configured to assist a tool in pressing said connector nut onto said connector body.

7. The HVAC system of claim 2 in which said Y connector hub, said tubing inserts, and said connectors are made of steel, and said tubing sections are made of aluminum.

8. The HVAC system of claim 2 in which said tubing insert further comprises an outward facing lip, which prevents said tubing insert from slipping inside said end of tubing section.

9. A method of forming of an HVAC system with weldless joints, comprising the steps of;

analyzing a building HVAC system to determine the required number, placement, and sizing of each Y connection in the system, to deliver a calculated amount of refrigerant to a plurality of distributed cooling units;

establishing a position of each Y connection in the physical building;

building each Y connection called for using an appropriately sized Y connector hub, with predetermined sizes of threaded openings;

attaching by threading appropriately sized hub connectors into said connector hub, with each hub connector having a dielectric layer inside and outside, and a press fit first end and a threaded second end;

cutting sections of aluminum tubing to connect a source of refrigerant to said Y connections and to said distributed cooling units;

forming joints between said aluminum tubing sections and said Y connectors by inserting a tubing insert in an end of said tubing sections, placing a connector nut on each of said end of tubing sections, placing said tubing end in a connector body on said press fit end of said connectors, pressing said connector nut onto said connector body to form a tight weldless joint without heat;

determining where sections of tubing need to be connected to other sections of tubing, including where tubing diameter changes;

forming joints between said aluminum tubing sections by use of tubing connectors which form leak proof joints without heat, by inserting a tubing insert in an end of said tubing sections, placing a connector nut on each of said end of tubing sections, placing said tubing end in a connector body on said press fit end of said connectors, pressing said connector nut onto said connector body to form a tight weldless joint without heat.

10. The HVAC system of claim 2 in which said tubing sections and said connectors may be of dissimilar metals.

11. The HVAC system of claim 2 in which said dielectric material is a layer of nonconducting material electrically deposited on said connector and bonded to said connector body.

12. The HVAC system of claim 11 in which said dielectric material is an electrophoretic paint.

13. The tubing connection system of claim 2 in which said dielectric layer is from 15 to 25 microns in thickness.

14. The tubing connection system of claim 8 in which said dielectric material is a plastic.

15. A method of joining tubing sections, comprising the steps of:

inserting a tube insert into an end of a first tube section to be joined to a second tube section;

placing a connector nut onto said first tube end and sliding it up the tube a short distance;

applying locking preparation fluid on a portion of said tube end;

placing said tubing end into a connector body of a tubing connector, in which said connector is made of steel with a generally cylindrical tubular connector body with a first end and a second end, and at least one tool gripping ridge for each end, with said tool gripping ridges encircling said connector body generally in the center region of said connector body, with said connector body having a first connector body on said first end and a second connector body on said second end of said connector, said connector body having an interior surface and an exterior surface, with a first ridge on said interior surface in said first end, and a second ridge on said interior surface in said second end, with said connector body covered inside and out with a dielectric material, enabling said connector to join sections of dissimilar metal tubing;

placing said first tube, connector and tube insert and locking nut into a two piece press, said press including a first jaw for engagement with an end of said connector nut, and a second jaw for engagement with one of said tool grip ridges;

using a foot press for developing hydraulic pressure and pressing the two pieces of said press together and forcing said connector nut over said connector flange, with said end of tube sandwiched between said tube insert and the inside of said connector body; and

repeating these steps on the end of said second tube, to join the two tubes at the connector, with the steel connector configured for joining tubing sections which may be of a dissimilar metal to each other or to the connector.

16. The method of forming an HVAC system of claim 9, in which the step of pressing said connector nuts onto said connector body further comprises using a two piece press, with one piece of said press gripping said connector nut, and a second side of said press gripping said tool gripping ridge of said connector, and pressing them together by moving the two pieces of said press together.

17. The method of forming an HVAC system of claim 16 in which said two piece press has replaceable curved jaws for engagement with different sized connector nuts and connector bodies.

18. The method of forming an HVAC system of claim 16 in which said two piece press is configured for one press piece to rotate around the other press piece, and with each press piece to comprise multiple connector jaws for engagement with different sized connector nuts and connector bodies, so that a variety of different size connector and connectors with one end different from the other end, may be fitted in the two piece press and pressed again connector nuts to form leak proof and weld less joints for high pressure refrigerant lines.

Claims

1. A method of forming of an HVAC system with weldless joints, comprising the steps of; analyzing a building HVAC system to determine the required number, placement, and sizing of each Y connection in the system, to deliver a calculated amount of refrigerant to a plurality of distributed cooling units;

establishing a position of each Y connection in the physical building;

building each Y connection called for using an appropriately sized Y connector hub, with predetermined sizes of threaded openings;

attaching by threading appropriately sized hub connectors into said connector hub, with each hub connector having a dielectric layer inside and outside, and a press fit first end and a threaded second end;

cutting sections of aluminum tubing to connect a source of refrigerant to said Y connections and to said distributed cooling units;

forming joints between said aluminum tubing sections and said Y connectors by inserting a tubing insert in an end of said tubing sections, placing a connector nut on each of said end of tubing sections, placing said tubing end in a connector body on said press fit end of said connectors, pressing said connector nut onto said connector body to form a tight weldless joint without heat;

determining where sections of tubing need to be connected to other sections of tubing, including where tubing diameter changes;

forming joints between said aluminum tubing sections by use of tubing connectors which form leak proof joints without heat, by inserting a tubing insert in an end of said tubing sections, placing a connector nut on each of said end of tubing sections, placing said tubing end in a connector body on said press fit end of said connectors, pressing said connector nut onto said connector body to form a tight weldless joint without heat.

2. A method of joining tubing sections, comprising the steps of:

inserting a tube insert into an end of a first tube section to be joined to a second tube section; placing a connector nut onto said first tube end and sliding it up the tube a short distance;

applying locking preparation fluid on a portion of said tube end;

placing said tubing end into a connector body of a tubing connector, in which said connector is made of steel with a generally cylindrical tubular connector body with a first end and a second end, and at least one tool gripping ridge for each end, with said tool gripping ridges

encircling said connector body generally in the center region of said connector body, with said connector body having a first connector body on said first end and a second connector body on said second end of said connector, said connector body having an interior surface and an exterior surface, with a first ridge on said interior surface in said first end, and a second ridge on said interior surface in said second end, with said connector body covered inside and out with a dielectric material, enabling said connector to join sections of dissimilar metal tubing;

placing said first tube, connector and tube insert and locking nut into a two piece press, said press including a first jaw for engagement with an end of said connector nut, and a second jaw for engagement with one of said tool grip ridges;

using a foot press for developing hydraulic pressure and pressing the two pieces of said press together and forcing said connector nut over said connector flange, with said end of tube sandwiched between said tube insert and the inside of said connector body; and

repeating these steps on the end of said second tube, to join the two tubes at the connector, with the steel connector configured for joining tubing sections which may be of a dissimilar metal to each other or to the connector.

3. The method of forming an HVAC system of claim 1, in which the step of pressing said connector nuts onto said connector body further comprises using a two piece press, with one piece of said press gripping said connector nut, and a second side of said press gripping said tool gripping ridge of said connector, and pressing them together by moving the two pieces of said press together.

4. The method of forming an HVAC system of claim 3 in which said two piece press has replaceable curved jaws for engagement with different sized connector nuts and connector bodies.

5. The method of forming an HVAC system of claim 3 in which said two piece press is configured for one press piece to rotate around the other press piece, and with each press piece to comprise multiple connector jaws for engagement with different sized connector nuts and connector bodies, so that a variety of different size connector and connectors with one end different from the other end, may be fitted in the two piece press and pressed again connector nuts to form leak proof and weld less joints for high pressure refrigerant lines.