February 23rd, 2016

Furnace Survey for INEX U-Tube Mounting

This questionnaire addresses furnace issues necessary for detailed design of the mounting hardware for INEX Si-SiC U-tubes. All of the information requested below is useful (though not everything is absolutely necessary) and photos of existing equipment are always helpful.

INEX will assist you whenever possible to insure the mounting hardware is fabricated so that it fits correctly the first time. And we have a very good record of accomplishing this. If preferred we can fill out this survey together with you over the phone. Call 716-537-2270 and ask for Curt or Mike.

Detailing the U-tube hardware design may seem complicated at first but INEX will carefully walk you through each step of the design process to insure a successful installation.

Let's start by learning more about your Furnace # ____ at _____.
Please respond to the following questions as best you can:

1) What type of furnace is this ?

    a. Furnace manufacturer ? **=** _____

    b. Batch-type or continuous-type (belt, pusher, roller-hearth or chain-link) ?
    = _____

2) Are you replacing metal-alloy U-tubes or Trident tubes (with three Legs) ?
= _____

    a. What are the existing Leg OD & Centerline (C-C) spacing dimensions ?
    = _____
    (INEX replaces with one of our three (3) standard U-tube sizes - see Page 2.)

    b. Can you provide drawings for the existing metal-alloy radiant tubes ?
    = _____

    c. Are drawings also available for the furnace brickwork and "bung hole" openings in which the radiant tubes are now mounted ?
    = _____
    _____

Notes on Recommended "Bung Hole" sizes:

For INEX **4½" OD X 9" Centerline** U-tubes the "bung holes" should be at least 17½" X 8½" … allowing 2" clearance from the brickwork on all sides.

For INEX **6" OD X 9" Centerline** U-tubes the "bung holes" should be at least 19" X 10" … allowing 2" clearance from the brickwork on all sides.

For INEX **6" OD X 12" Centerline** U-tubes the "bung holes" should be at least 22" X 10" … allowing 2" clearance from the brickwork on all sides.

3) Are the existing radiant tubes generally mounted Horizontal or Vertical ?
= _____

   a. If Horizontal, see the 4½" OD and/or 6"" OD Horizontal drawings on this webpage: http://inexinc.net/Products/UTubes.html … which provide general installation views to be discussed and further detailed.

      Horizontal NOTE: Prior to order acceptance the physical A, B & C dimensions of the furnace must be measured within +/- ¼" to insure the correct OAL fit of the U-tube allowing adequate space for thermal expansion.

   b. If Vertical, see the 4½" OD and/or 6"" OD Vertical drawings on this same webpage: http://inexinc.net/Products/UTubes.html … which provide general installation views to be discussed and further detailed.

      Vertical NOTE: Prior to order acceptance the physical A, B & C dimensions of the furnace must be measured within +/- ⅛" to insure the correct OAL fit of the U-tube allowing adequate space for thermal expansion.

4) Do angle-iron "Picture Frames" already exist, welded to the furnace shell as shown in the INEX U-tube installation drawings ?

   a. If not, are the Backing Plates for the existing metal-alloy radiant tubes directly attached to the furnace shell by clamps or fastened with threaded studs welded to the shell ? = _____.

      NOTE: INEX does NOT recommend clamps to position and secure U-tube Backing Plates.

b. If replacing Trident tubes photographs are required to fully understand how to best retrofit with INEX U-tubes.

Ideally “Picture Frames” should be made from 2” x 2” angle-iron welded inside the “bung hole” opening with the fastener layout pattern exactly matching the holes dimensioned for the Backing Plate (see the next section). The “Picture Frames” must be welded gas-tight to the furnace shell to prevent furnace atmosphere leakage. INEX can provide a “Picture Frame” sketch if desired (but we do not fabricate or install these).

5) The accompanying Backing Plate Template PDF file shows example sketches of various Backing Plates styles used to mount INEX U-tubes. Select the hole layout pattern that most closely resembles the existing Backing Plate for “exact replacement fit”, or choose an entirely different style if desired. Once the Backing Plate style is selected the fastener hole layout dimensions must be specified for attachment to the “Picture Frames” or directly to the furnace shell. Request a detailed INEX Backing Plate design sketch showing the fastener layout pattern *with suggested dimensions*. **If necessary mark-up this sketch with corrected dimensions - this is especially important when Backing Plate must be an “exact replacement fit” to existing weld-studs or fastener holes.**

a. Style A … 6 x 4 holes … (fastener layout pattern)
b. Style B … 7 x 4 holes
c. Style C … 9 x 4 holes
d. Style D … 6 x 5 holes
e. Style E … 7 x 5 holes

Customized fastener arrangements may be possible if detail sketches with precise dimensions are submitted to INEX for evaluation.

Notes on Recommended Backing Plate dimensions:

For INEX **4½” OD X 9” Centerline** U-tubes the Backing Plates should be at least 21½” X 12½”.

NOTE: More compact Backing Plate designs are available for replacing Trident tubes when pairs of INEX U-tubes must be tightly spaced. Please call us for details.

For INEX **6” OD X 9” Centerline** U-tubes the Backing Plates should be at least 23” X 14”.

For INEX **6” OD X 12” Centerline** U-tubes the Backing Plates should be at least 26” X 14”.

6) Please provide the Make and Model # for the:

   a. Burners = _____

   b Recuperators = _____

      NOTE: INEX U-tubes are used with many burners & recuperators made by AFC-Holcroft, Elster Eclipse, Fives North American, Hauck, Honeywell Maxon, SELAS/Pyronics & others. Adaptors for mounting are specifically designed for each Make & Model # - please ask for details.

   c. If recuperators are NOT employed, how are the exhaust gases directed to the roof stacks (or simply upward into a large open space) ? … usually there is a piping elbow, welding flange, or mounting adaptor required. INEX can often supply this hardware.
      = _____
      _____

Please provide any other details you feel are needed for a successful U-tube hardware design.

Contact me anytime for clarification, questions or design guidance.

Best Regards,

Curt Colopy | *VP, Product & Business Development*
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... over 32 Years of Customer Savings
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