Expandable Heat Exchanger Construction

The expandable heat exchanger consists of the outer frame (2 thick blue steel frame plates, positioning rods and mounting brackets), eight all-thread bolts with washers/nuts, a set of exchange plates (stamped plates), and gaskets. The gaskets are applied to the exchange plates and then stacked to build up the exchange plate set. The exchange plate set is placed between the outer frame and the eight pieces of all-thread, washers, and nuts are tightened to compress the plate set to a specified dimension. The following pictures show how the expandable heat exchanger is put together.
AB plates with gaskets. Note gasket allows fluid flow through two of the holes and blocks off the other two (either right open/left blocked – ro/lb or right blocked/ left open – rb/lo). Plates are stacked in an alternating fashion ro/lb, rb/lo, ro/lb, rb/lo, etc. A standard heat exchanger uses 12 of these plates plus the front and back for a total of 14 plates. An expanded heat exchanger uses 24 of these plates plus the front and back for a total of 26 plates.

Back Plate With Gasket – note that it has no holes and the gasket seals it all the way around the perimeter. The gasket will face against the last AB Plate and the back will go against the inside back frame plate.

Back Frame Plate – no fluid holes; solid plate

The arrows show the pattern to use when loosening or tightening the heat exchanger. When tightening use the following dimensions (distance between inside of front and back frame plates):
- 1.65”-1.76” For The 14 Plate Heat Exchanger
- 3.07”-3.28” For The 26 Plate Heat Exchanger