

## Special Interest Articles:

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and Flued XJ  
replacement

Page 2: Stainless  
prices are Up (↑) and  
Nickel prices are sta-  
ble for February, then  
take a big jump in  
March.

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## Replacement of Flanged and Flued Expansion Joints onto existing Heat Exchangers

I would like to briefly discuss the replacement of Flanged and Flued Expansion Joints (XJ) on existing heat exchangers.

Flanged and Flued XJ's are made in two halves from flat annular plates. The outside edges of the plates are formed in one direction (flanged), and the inside edges are formed in the other direction (flued). The two halves are welded together and then welded onto the heat exchanger shell.

The reason for an expansion joint is to accommodate the difference in the axial expansion of the shell and the tube bundle in Fixed Heat Exchangers. There are two (2) main types of XJ's, Bellows and Flanged and Flued. Our discussion will be limited to Flanged and Flued XJ's only.

The issues can vary for determining failure of a Flanged and Flued XJ. There can be obvious cracking of the XJ and noticeable leaking. Other issues can include, the tube ends are leaking due to either pushing through or pulling out of the tubesheet, or the tubes may appear to be bowed or bent. This is usually caused by trash or dirt in the XJ not allowing it to expand correctly.

The question is, can the flanged and flued XJ be repaired without replacing the entire heat exchanger?

Most flanged and flued XJ's can be replaced without discarding the entire heat exchanger. First, Trumbo will perform designs for a new XJ, and then we, very carefully, will remove the old XJ from the existing shell. Sometimes in the removal process the tubes closest to the ID of the shell can be damaged, if this occurs, Trumbo will remove and replace these few tubes.

Next, Trumbo will furnish a new Flanged and Flued XJ. In order to install the new XJ on the old shell, Trumbo will split the new XJ in half, which allows us to "clam shell" the new XJ onto the existing Heat exchanger. That means there will be two (2) longitudinal seams in the new XJ 180° apart the entire length of the new XJ.

Trumbo has been successful in replacing flanged and flued XJ's on existing shells 100% of the time. What this does for you, the end user, is get the heat exchanger back on line faster and reduce the cost of repairs.

This discussion is for Flanged and Flued XJ's only, Trumbo does not "clam shell" bellows XJ's.

If you are interested in obtaining more information about Trumbo, or if you are looking for a quote, just click here.

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Happy Valentines  
Day.



## NON FERROUS SURCHARGE CHART

Prices for Stainless are up (↑) for February deliveries. Nickel Prices are stable for February, however, they take a big jump in March and drop slightly in April. Remember, this chart is for surcharge only, it does not include the base price for materials.

Alloy	Jan	Feb	March	April	May	June	July	Aug	Sept
2205	0.702	0.8158							
304 CLAD	0.3626	0.3558							
304/304L	0.5511	0.6066							
304H	0.5511	0.6066							
304LN	0.5511	0.6066							
304N	0.5511	0.6066							
309/309S/309H	0.7336	0.8131							
310/310S	1.008	1.1297							
316/316L	0.746	0.8643							
316LN	0.746	0.8643							
316Ti	0.7686	0.8898							
317/317L	0.8705	1.0197							
AL-6XN Plus	1.5604	1.5424	1.6759	1.6253					
alloy 20	1.7049	1.7109	1.9075	1.7805					
AL-200 TM	3.2381	3.2872	3.8015	3.487					
Al-400 TM	2.5286	2.5921	2.9235	2.72					
Al-600 Tm	2.6449	2.6794	3.0531	2.7853					
Altemp 625 In	4.5371	4.5376	5.0202	4.8678					
Alloy 276	4	4.166	4.4784	4.4253					

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Stainless Steel "U" Bundle

