

Stainless Steel Hygienics Guide

1. What are Hygienics?

- ◆ Stainless Steel Hygienics is the name given to a range of tube and fittings used in applications requiring a clean and sanitary flow of liquids and where it is essential to avoid contamination of the products being carried.
- ◆ These applications cover the food processing, beverage, biotech and pharmaceutical industries including breweries and dairies.
- ◆ The applications are low pressure with a maximum of 150lbs.
- ◆ The products are available in grades 304L and 316L.
- ◆ The size range is from ¾ inch to 4 inch O/D.
- ◆ The tube and fittings are of welded construction with the internal bead rolled to flatten it and eliminate crevices, thus preventing interruptions to the flow and eliminating the risk of contamination or bug traps as well as facilitate easy cleaning.
- ◆ The tube and fittings are offered with a choice of external finishes:
 - Descaled
 - Bright Annealed
 - Dull Polished
 - Semi-Bright or Bright Polished.

2. What is the manufacturing standard?

- ◆ Hygienic tubes are manufactured to ASTM A270, DIN 11850 and BS 4825 Part 1.
- ◆ Hygienic fittings are manufactured to BS4825 Parts 2 to 5. (EN20286)

3. What markings will be on the tube and fittings?

Tube and fittings with a bright annealed or polished finish will be unmarked.

4. What is the size range?

Sizes to ASTM A270

O/D in	Wall Swg / mm
¾	16 / 1.63
1	16 / 1.63
1½	16 / 1.63
2	16 / 1.63
2½	16 / 1.63
3	16 / 1.63
4	16 / 1.63
4	14 / 2.03

Sizes to DIN 11850

O/D in	Wall mm
1	1.5
1½	1.5
2	1.5
2½	1.5
3	1.5
4	2.0

For more information plus a complete table of sizes and dimensions for all hygienic fittings please visit the Downloads page of the Aalco web site and select the Tubular Products Databook. (<http://www.aalco.co.uk/literature/literature.html#stainless>)


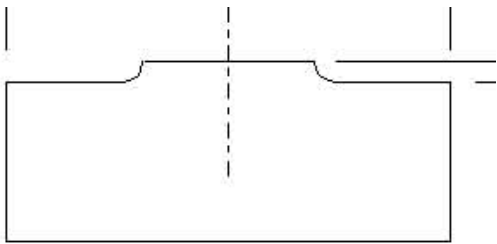
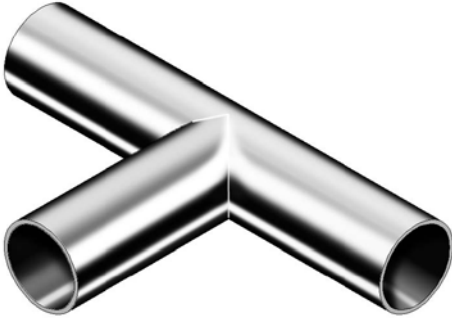
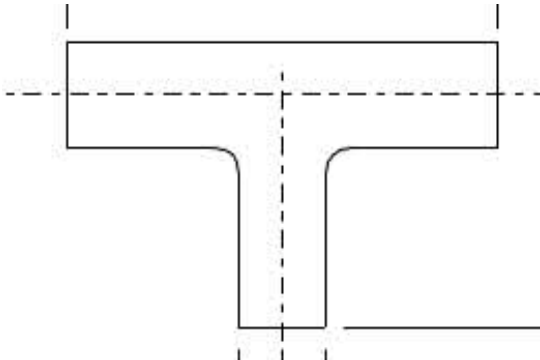


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All Data is indicative only and must not be seen as a substitute for the full specification from which it is drawn. In particular, the mechanical property requirements vary widely with product form and product dimensions. For more complete details please refer to the relevant specification – Specifications for Stainless Steel are listed on a separate Datasheet.

5. What is the range of fittings?

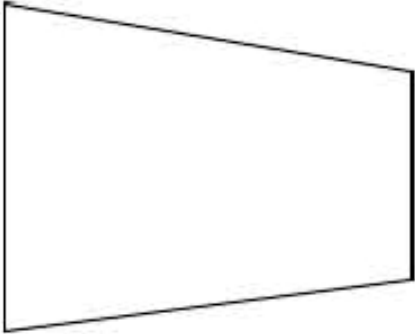
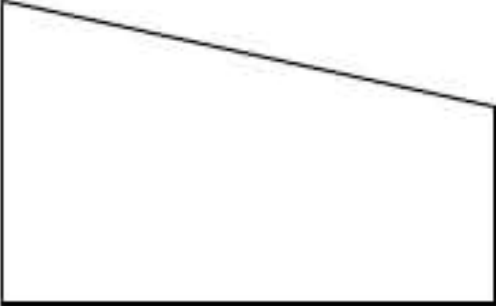
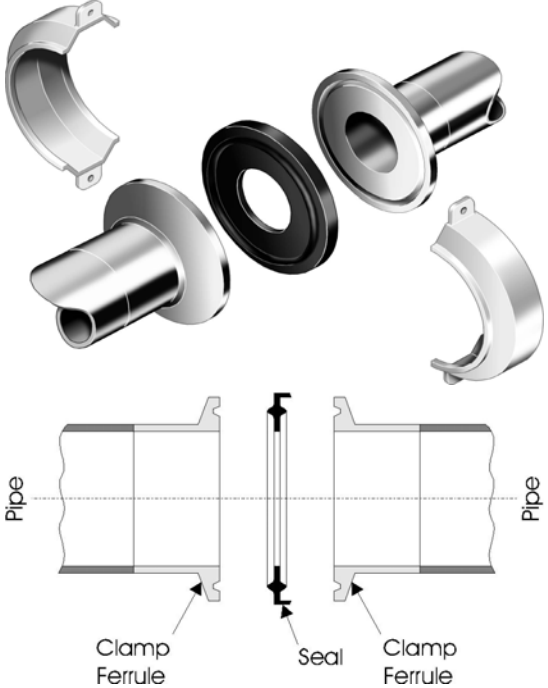
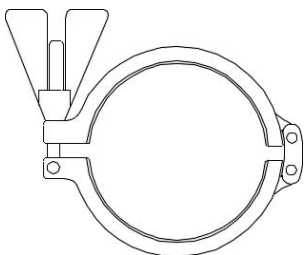
Fitting	Notes
Bends – 45 Degree, 90 Degree Bends & 180 Degree Returns	
	
Pulled Tees	
	<p>Pulled tees have a very short T-piece that is unsuitable for automated machine orbital welding so they can only be hand welded.</p> <p>For orbital machine welding a full tee must be used.</p>
Full Tees	
	<p>Full tees can be welded by hand or on automated orbital welding machines</p>
Reducing Tees	
	

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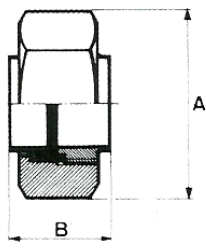
Reducers – Concentric & Eccentric	
 <p>Concentric</p>	 <p>Eccentric</p>
Seals – Material of Manufacture	
	The most common materials used for the manufacture of seals are Nitrile Rubber and EPDM
Clamps	
	<p>These comprise four parts – 2 Weld Ferrules, a Gasket and a Clamp.</p> <p>They are particularly used in systems carrying warm semi-solids and viscous liquids such as chocolate and tomato sauce, which must not cool in the line, but tend to form regular blockages. Such systems tend to need to be opened up quickly and often. The clamp will have some form of closure device such as a 'Triclover' clamp:</p> 
DIN Union	
	The DIN Union is rarely used in the UK. The preferred unions are the RJT (Ring Joint Type) and IDF (International Dairy Federation) types

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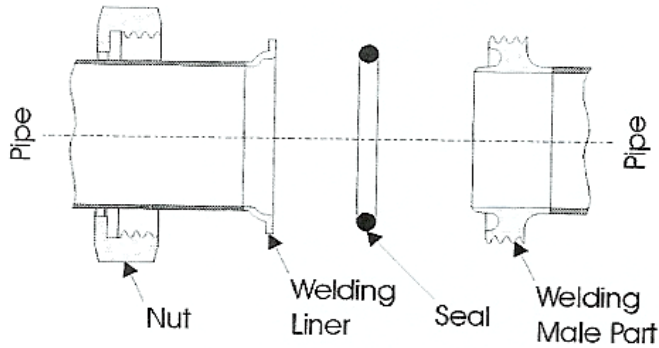
RJT Union



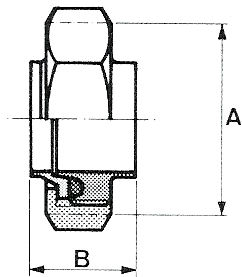
The Ring Joint Type (RJT) Union comprises four parts: - Nut - Liner - Seal - Male Part.

Primarily used where tubes are frequently disassembled for cleaning.

The seal is of an 'O Ring' type and is made of Nitrile:



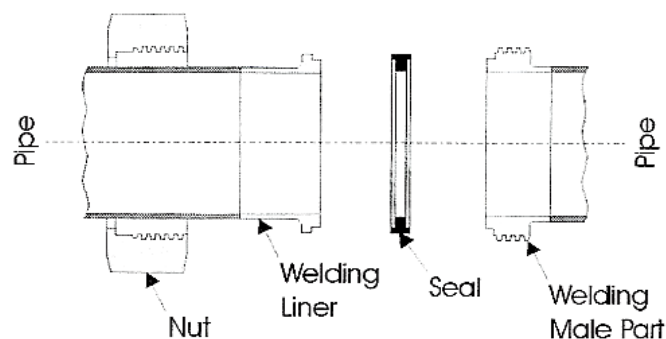
IDF Union



The International Dairy Federation (IDF) Union comprises four parts: Nut - Liner - Seal - Male Part. Here the liner is machined and the seal is a square section. It has a thicker nut than the RJT and a more substantial liner. It is machined rather than pressed. It is considered easier to use.

The IDF has a smoother and cleaner flow line that is free of crevices and bug traps. It is used where CIP (Clean In Place) systems prevail, with the RJT only tends to be used where very regular access is needed.

The IDF seal has a square section and is more substantial than the RJT. It is made of Nitrile or EPDM:



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