



**K<sup>®</sup>L KING LAI** ( SZSE : 300260 )

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Thailand, Indonesia,India,Russia-Moscow

**K<sup>®</sup>L KING LAI**  
**STAINLESS STEEL HYGIENIC**  
**TUBES,FITTINGS,UNIONS**

CUSTOMER SUCCESS IS  
OUR SUCCESS

KingLai, founded in 1991, is one of the fastest growing manufacturers for components and fittings in sanitary piping systems. KingLai – sanitary division serves customers in various industries, from daily articles of dairy, food, and beverage, to laboratory studies of chemical, pharmaceutical, and bio-tech. KingLai products are manufactured to meet different regional standards and custom-built products are available upon request.

With our success and wide acceptance by our OEM/ODM customers worldwide, we further expand our services to domestic customers in China and Taiwan

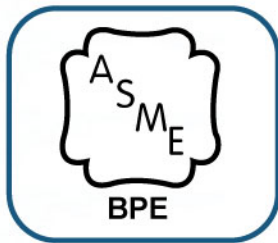
KingLai is constantly improving and upgrading to meet all technological advancement. KingLai's ISO 9001 certification and 3A certification are the results of our dedication to customer service and product quality. With this in mind, we are proud to say "customer success is our success".

KingLai supplies to America, Europe, and other major industrial countries worldwide. As a mature manufacturer, we persist in research and development as well as quality management in lowering production cost while generating the highest efficiency. We feature quick delivery, best quality, competitive pricing and excellent service for KL product.



FIRST IN ASIA

Certified tubing and fitting manufacturer  
by ASME BPE Org.



APPLICATION FIELDS

As high clean applied materials has the global scope began to wide-spread popularization application, Our product is safe and efficient transmission fluid, control fluid steering, in food, beverage, dairy, pharmaceutical and other industrial production in the in a wide range of applications. Fluid handling equipment such as pumps, valves, heat exchangers, storage equipment and pipeline fittings and installation materials, etc. in the company can meet customer multiple design as well as to the health of the strict requirements.

BIO-PHARM EQUIPMENTS

PHARMACEUTICAL,  
CHEMICAL,  
PERSONAL CARE  
LIFE SCIENCE

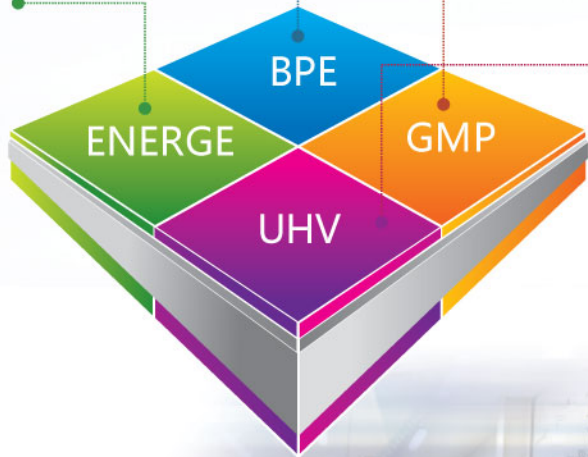


FOODS & BEVERAGE  
SAFTY PRODUCTION

DRINKS, DAIRY, BREW, WINES,

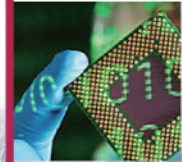


ENERGY  
SAVING &  
ENVIRONMENTS  
SOLAR CELL, LED



ELECTRONIC  
& SEMICON

SEMICONDUCTION  
OPTICAL COATING,  
ITO, UHP DELIVERY



THERE IS NO END OF  
STARTING»

2012/2013...KingLai Group  
Joint Venture with ABC on pressure vessel Investment  
on ITO equipment production

2011 Listed Stock  
ShenZen(SZSE:300260)

2000/2007/2011 Plant Expanding

2010-2013...Worldwide  
Established the United States  
/Europe/Thailand/India/Singapore/Malaysia office

2008-2013...Distributors  
Domestic agents joined

1991 Founded in Taiwan



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|          |    |                                                                                                                                                                                                    |
|----------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TUBES    | 01 | ASME BPE Standard Specifications                                                                                                                                                                   |
|          | 03 | Surface treatment / Size range of finished sanitary tubes                                                                                                                                          |
| UNIONS   | 05 | Clamp ferrule<br>Pressure service ratings / Hygienic Clamp Ferrule Standard<br>Dimensions and Tolerances<br>13MHH / 13MHH3 / 13MHP / 13MHL / Clamp ferrule<br>Blank End Caps / Seal Rings / Flange |
| FITTINGS | 12 | Bends / Elbows<br>45-deg Elbow / 90-deg Elbow / 88-deg Elbow<br>92-deg Elbow/ 180-deg Return Bend                                                                                                  |
|          | 16 | Tees<br>Tees / Reducing Tees / 180°U Tees                                                                                                                                                          |
|          | 26 | Crosses<br>Crosses / Reducing Crosses                                                                                                                                                              |
|          | 29 | Reducers<br>Concentric Reducers / Eccentric Reducers                                                                                                                                               |

### ASME BPE Standard Specifications:

Design requirement: Automatic welding, Ovality, Wall Thickness and Squareness.

Traceability ( permanently marked ) ASME-BPE: Heat number, Size,

Material type, Surface Finishes.

Packaging: Color-Coded End Caps, Transparent Plastic Bags and Detailed Label.

#### ASME BIOPROCESSING EQUIPMENT(BPE)

##### ACCEPTANCE CRITERIA FOR INTERIOR SURFACE FINISHES OF FITTINGS

| ANOMALY OR INDICATION      | ACCEPTANCE CRITERIA                                              |
|----------------------------|------------------------------------------------------------------|
| Cluster of pits            | None accepted.                                                   |
| Discoloration(Demarcation) | If < 5% of the total area when visually inspected and Ra is met. |
| Grit lines                 | If Ra is met.                                                    |
| Longitudinal welds         | If polished smooth, blended, and Ra is met.                      |
| Nicks                      | None accepted.                                                   |
| Oxides                     | None accepted.                                                   |
| Pits                       | If dia. < 0.020", and bottom is shiny.                           |
| Scratches                  | If length < 0.25", depth < 0.003", and Ra is met.                |
| Star burst                 | None accepted.                                                   |
| Surface cracks             | None accepted.                                                   |
| Surface inclusions         | If Ra is met and there is no liquid penetrant indication.        |
| Surface residuals          | None accepted, visual inspection without magnification.          |
| Surface roughness(Ra)      | See Tables Surface Finishes.                                     |
| Water stains               | If no deposits.                                                  |
| Weld slag                  | None accepted.                                                   |
| Weld porosity              | None accepted.                                                   |

### Surface Finish

| POLISH COMBINATION CODE | INTERNAL(ID) SURFACE    |       |                                  | EXTERNAL(OD) SURFACE    |     |                   | ASME BPE SURFACE DESIGNATION |
|-------------------------|-------------------------|-------|----------------------------------|-------------------------|-----|-------------------|------------------------------|
|                         | MAX. SURFACE ROUGHNESS* |       | SURFACE FINISH                   | MAX. SURFACE ROUGHNESS* |     | SURFACE FINISH    |                              |
|                         | μ-in                    | μ-m   |                                  | μ-in                    | μ-m |                   |                              |
| HG                      | 20                      | 0.5   | Mechanical polish                | 32                      | 0.8 | Mechanical polish | SF1                          |
| 4G                      | 15                      | 0.375 | Mechanical polish& Electropolish | 32                      | 0.8 | Mechanical polish | SF4                          |

### Conversion of surface finishes chart:

| STANDARD GRIT | Ra    |           | RMS   |           |
|---------------|-------|-----------|-------|-----------|
|               | μ-in  | μ-m       | μ-in  | μ-m       |
| 150grit       | 27-32 | 0.68-0.80 | 30-35 | 0.76-0.89 |
| 180grit       | 18-23 | 0.46-0.58 | 20-25 | 0.51-0.64 |
| 240grit       | 14-18 | 0.34-0.46 | 15-20 | 0.38-0.51 |
| 320grit       | 8-10  | 0.21-0.25 | 9-11  | 0.23-0.28 |

**GENERAL NOTE:** All Ra readings are taken across the lay.

#### NOTE:

The average Ra is derived from reading taken at four cross sections approximately 90 degrees apart. Other Ra readings are available if agreed upon between vendor and owner/user. No single reading exceeding Ra max.

Size Range Of Finished Sanitary Tubes

| ISO          |       |     | 3A           |       |      | DIN<br>(DIN11850)<br>SERIES2 |       |      | DIN<br>(DIN11850)<br>SERIES1 |       |      | DIN          |       |     | ASME BPE     |      |      | BS           |      |     | GB           |       |      |       |      |      |       |      |      |       |       |     |      |       |     |      |     |     |      |       |     |      |       |      |       |      |      |      |      |     |      |      |      |      |      |      |      |     |      |      |     |
|--------------|-------|-----|--------------|-------|------|------------------------------|-------|------|------------------------------|-------|------|--------------|-------|-----|--------------|------|------|--------------|------|-----|--------------|-------|------|-------|------|------|-------|------|------|-------|-------|-----|------|-------|-----|------|-----|-----|------|-------|-----|------|-------|------|-------|------|------|------|------|-----|------|------|------|------|------|------|------|-----|------|------|-----|
| NOM.<br>SIZE | OD    | T   | NOM.<br>SIZE | OD    | T    | NOM.<br>SIZE                 | OD    | T    | NOM.<br>SIZE                 | OD    | T    | NOM.<br>SIZE | OD    | T   | NOM.<br>SIZE | OD   | T    | NOM.<br>SIZE | OD   | T   | NOM.<br>SIZE | OD    | T    |       |      |      |       |      |      |       |       |     |      |       |     |      |     |     |      |       |     |      |       |      |       |      |      |      |      |     |      |      |      |      |      |      |      |     |      |      |     |
| 25           | 25.0  | 1.2 | 1/2"         | 12.7  | 1.65 | DN10                         | 13    | 1.5  | DN10                         | 12    | 1.0  | DN10         | 12    | 1.5 | 1/4"         | 6.35 | 0.89 | 1/2"         | 12.7 | 1.6 | 1/2"         | 12.7  | 1.5  |       |      |      |       |      |      |       |       |     |      |       |     |      |     |     |      |       |     |      |       |      |       |      |      |      |      |     |      |      |      |      |      |      |      |     |      |      |     |
|              |       |     |              |       |      | DN15                         | 19    | 1.5  | DN15                         | 18    | 1.0  | DN15         | 18    | 1.5 | 3/8"         | 9.53 | 0.89 |              |      |     |              |       |      | 3/4"  | 19.1 | 1.6  | 3/4"  | 19.1 | 1.5  |       |       |     |      |       |     |      |     |     |      |       |     |      |       |      |       |      |      |      |      |     |      |      |      |      |      |      |      |     |      |      |     |
|              |       |     |              |       |      | DN20                         | 23    | 1.5  | DN20                         | 22    | 1.0  | DN20         | 22    | 1.5 | 1/2"         | 12.7 | 1.65 |              |      |     |              |       |      | 3/4"  | 19.1 | 1.65 | 3/4"  | 19.1 | 1.5  |       |       |     |      |       |     |      |     |     |      |       |     |      |       |      |       |      |      |      |      |     |      |      |      |      |      |      |      |     |      |      |     |
|              |       |     |              |       |      | DN25                         | 29    | 1.5  | DN25                         | 28    | 1.0  | DN25         | 28    | 1.5 | 3/4"         | 19.1 | 1.65 |              |      |     |              |       |      | 1.0"  | 25.4 | 1.65 | 1.0"  | 25.4 | 1.5  |       |       |     |      |       |     |      |     |     |      |       |     |      |       |      |       |      |      |      |      |     |      |      |      |      |      |      |      |     |      |      |     |
|              |       |     |              |       |      | DN32                         | 35    | 1.5  | DN32                         | 34    | 1.0  | DN32         | 34    | 1.5 | 1.0"         | 25.4 | 1.65 |              |      |     |              |       |      | 1.0"  | 25.4 | 1.6  | 1.0"  | 25.4 | 1.5  |       |       |     |      |       |     |      |     |     |      |       |     |      |       |      |       |      |      |      |      |     |      |      |      |      |      |      |      |     |      |      |     |
|              |       |     |              |       |      | 38                           | 38.0  | 1.2  | 1.5"                         | 38.1  | 1.65 | DN40         | 41    | 1.5 | DN40         | 40   | 1.0  |              |      |     |              |       |      | DN40  | 40   | 1.5  | 1.5"  | 38.1 | 1.65 | 1.5"  | 38.1  | 1.6 | 1.5" | 38.1  | 1.5 |      |     |     |      |       |     |      |       |      |       |      |      |      |      |     |      |      |      |      |      |      |      |     |      |      |     |
|              |       |     |              |       |      |                              |       |      |                              |       |      |              |       |     |              |      |      |              |      |     |              |       |      |       |      |      |       |      |      |       |       |     |      |       |     | DN50 | 53  | 1.5 | DN50 | 52    | 1.0 | DN50 | 52    | 1.5  | 2.0"  | 50.8 | 1.65 | 2.0" | 50.8 | 1.6 | 2.0" | 50.8 | 1.5  |      |      |      |      |     |      |      |     |
|              |       |     |              |       |      | 63                           | 63.5  | 1.6  | 2.5"                         | 63.5  | 1.65 | DN65         | 70    | 2   |              |      |      |              |      |     |              |       |      |       |      |      |       |      |      | 2.5"  | 63.5  | 1.6 | 2.5" | 63.5  | 1.5 |      |     |     |      |       |     |      |       |      |       |      |      |      |      |     |      |      |      |      |      |      |      |     |      |      |     |
|              |       |     |              |       |      | 76                           | 76.1  | 1.6  | 3"                           | 76.2  | 1.65 |              |       |     |              |      |      |              |      |     |              |       |      |       |      |      |       |      |      |       |       |     |      |       |     | DN80 | 85  | 2   |      |       |     |      |       |      |       |      |      |      |      |     |      |      |      |      |      |      |      |     |      |      |     |
|              |       |     |              |       |      |                              |       |      |                              |       |      |              |       |     |              |      |      |              |      |     |              |       |      |       |      |      |       |      |      |       |       |     |      |       |     |      |     |     |      |       |     |      |       |      |       |      |      |      |      |     |      |      | 2.0" | 50.8 | 1.65 | 2.0" | 50.8 | 1.6 | 2.0" | 50.8 | 1.5 |
|              |       |     |              |       |      |                              |       |      |                              |       |      |              |       |     |              |      |      |              |      |     |              |       |      |       |      |      |       |      |      |       |       |     |      |       |     |      |     |     |      |       |     |      |       |      |       |      |      |      |      |     |      |      | 2.5" | 63.5 | 1.65 | 2.5" | 63.5 | 1.6 | 2.5" | 63.5 | 1.5 |
|              |       |     |              |       |      | 101                          | 101.6 | 2    | 4"                           | 101.6 | 2.11 | DN100        | 104   | 2   | DN125        | 129  | 2    |              |      |     |              |       |      |       |      |      |       |      |      | 4.0"  | 101.6 | 2   | 4.0" | 101.6 | 2   |      |     |     |      |       |     |      |       |      |       |      |      |      |      |     |      |      |      |      |      |      |      |     |      |      |     |
| 104          | 104.0 | 2   | DN125        | 129   | 2    | 4.0"                         | 101.6 | 2.11 | 4.0"                         | 101.6 | 2    | 4.0"         | 101.6 | 2   |              |      |      |              |      |     |              |       |      |       |      |      |       |      |      |       |       |     |      |       |     |      |     |     |      |       |     |      |       |      |       |      |      |      |      |     |      |      |      |      |      |      |      |     |      |      |     |
| 129          | 129.0 | 2   | 6"           | 152.4 | 2.77 |                              |       |      |                              |       |      |              |       |     |              |      |      | DN150        | 154  | 2   | 6.0"         | 152.4 | 2.77 |       |      |      |       |      |      |       |       |     |      |       |     | 6.0" | 154 | 2   |      |       |     |      |       |      |       |      |      |      |      |     |      |      |      |      |      |      |      |     |      |      |     |
|              |       |     |              |       |      |                              |       |      |                              |       |      |              |       |     |              |      |      |              |      |     |              |       |      |       |      |      |       |      |      |       |       |     |      |       |     |      |     |     | 204  | 204.0 | 2   | 8"   | 203.2 | 2.77 | DN200 | 204  | 2    | 8.0" | 204  | 2   | 8.0" | 204  | 2    |      |      |      |      |     |      |      |     |
|              |       |     |              |       |      |                              |       |      |                              |       |      |              |       |     |              |      |      |              |      |     |              |       |      |       |      |      |       |      |      |       |       |     |      |       |     |      |     |     |      |       |     |      |       |      |       |      |      |      |      |     |      |      |      |      |      |      |      |     |      |      |     |
|              |       |     |              |       |      |                              |       |      |                              |       |      |              |       |     |              |      |      |              |      |     |              |       |      | 10.0" | 254  | 2    | 10.0" | 254  | 2    | 10.0" | 254   | 2   |      |       |     |      |     |     |      |       |     |      |       |      |       |      |      |      |      |     |      |      |      |      |      |      |      |     |      |      |     |

Table DT-4-1 Nominal O.D. Tubing Sizes

| Nominal<br>Size,in. | Tube O.D |        | Tube Wall Thickness |      | Centerline Radius (CLR), R |        |
|---------------------|----------|--------|---------------------|------|----------------------------|--------|
|                     | in.      | mm     | in.                 | mm   | in.                        | mm     |
| 1/4"                | 0.250    | 63.5   | 0.035               | 0.89 | 0.563                      | 14.30  |
| 3/8"                | 0.375    | 9.53   | 0.035               | 0.89 | 1.125                      | 28.58  |
| 1/2"                | 0.500    | 12.70  | 0.065               | 1.65 | 1.125                      | 28.58  |
| 3/4"                | 0.750    | 19.05  | 0.065               | 1.65 | 1.125                      | 28.58  |
| 1.0"                | 1.000    | 25.40  | 0.065               | 1.65 | 1.500                      | 38.10  |
| 1.5"                | 1.500    | 38.10  | 0.065               | 1.65 | 2.250                      | 57.15  |
| 2.0"                | 2.000    | 50.80  | 0.065               | 1.65 | 3.000                      | 76.20  |
| 2.5"                | 2.500    | 63.50  | 0.065               | 1.65 | 3.750                      | 92.25  |
| 3.0"                | 3.000    | 76.20  | 0.065               | 1.65 | 4.500                      | 114.30 |
| 4.0"                | 4.000    | 101.60 | 0.083               | 2.11 | 6.000                      | 152.40 |
| 6.0"                | 6.000    | 152.40 | 0.109               | 2.77 | 9.000                      | 228.60 |



Stainless Steel Hygienic Tubes

| No.             | Nominal<br>Size,in. | L<br>mm | T     |      |
|-----------------|---------------------|---------|-------|------|
|                 |                     |         | in.   | mm   |
| A558000**000025 | 1/4"                | 6100.0  | 0.035 | 0.89 |
| A558000**000038 | 3/8"                | 6100.0  | 0.035 | 0.89 |
| A558000**000050 | 1/2"                | 6100.0  | 0.065 | 1.65 |
| A558000**000075 | 3/4"                | 6100.0  | 0.065 | 1.65 |
| A558000**000100 | 1.0"                | 6100.0  | 0.065 | 1.65 |
| A558000**000150 | 1.5"                | 6100.0  | 0.065 | 1.65 |
| A558000**000200 | 2.0"                | 6100.0  | 0.065 | 1.65 |
| A558000**000250 | 2.5"                | 6100.0  | 0.065 | 1.65 |
| A558000**000300 | 3.0"                | 6100.0  | 0.065 | 1.65 |
| A558000**000400 | 4.0"                | 6100.0  | 0.083 | 2.11 |
| A558000**000600 | 6.0"                | 6100.0  | 0.109 | 2.77 |

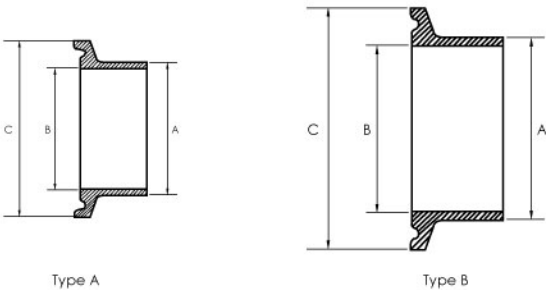


Table DT-7-1 Hygienic Clamp Ferrule Standard Dimensions and Tolerances

| Nominal<br>Size,in. | A         |           | B         |           | C         |           |           |
|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                     | Dimension | Tolerance | Dimension | Tolerance | Dimension | Tolerance | Tolerance |
| Type A 1/4"         | 0.250     | ± 0.005   | 0.180     | ± 0.005   | 0.984     | + 0.005   | - 0.005   |
| 3/8"                | 0.375     | ± 0.005   | 0.305     | ± 0.005   | 0.984     | + 0.005   | - 0.005   |
| 1/2"                | 0.500     | ± 0.005   | 0.370     | ± 0.005   | 0.984     | + 0.005   | - 0.005   |
| 3/4"                | 0.750     | ± 0.005   | 0.620     | ± 0.005   | 0.984     | + 0.005   | - 0.005   |
| Type B 1.0"         | 1.000     | ± 0.005   | 0.870     | ± 0.005   | 1.984     | + 0.008   | - 0.005   |
| 1.5"                | 1.500     | ± 0.008   | 1.370     | ± 0.005   | 1.984     | + 0.008   | - 0.005   |
| 2.0"                | 2.000     | ± 0.008   | 1.870     | ± 0.005   | 2.516     | + 0.008   | - 0.008   |
| 2.5"                | 2.500     | ± 0.010   | 2.370     | ± 0.005   | 3.047     | + 0.008   | - 0.008   |
| 3.0"                | 3.000     | ± 0.010   | 2.870     | ± 0.005   | 3.579     | + 0.010   | - 0.010   |
| 4.0"                | 4.000     | ± 0.015   | 3.834     | ± 0.005   | 4.682     | + 0.015   | - 0.015   |
| 6.0"                | 6.000     | ± 0.030   | 7.782     | ± 0.005   | 6.570     | + 0.030   | - 0.030   |

### Hygienic Clamps: Rated Internal Working Pressure



| Nom.Size    | @70°F/21°C |     | @250°F/121°C |     | @70°F/21°C |     | @250°F/121°C |     | @70°F/21°C |     | @250°F/121°C |     |
|-------------|------------|-----|--------------|-----|------------|-----|--------------|-----|------------|-----|--------------|-----|
|             | PSI        | bar | PSI          | bar | PSI        | bar | PSI          | bar | PSI        | bar | PSI          | bar |
| 1/2" & 3/4" | 1500       | 103 | 1200         | 83  |            |     |              |     | 1500       | 103 | 1200         | 83  |
| 1.0" & 1/2" | 500        | 34  | 250          | 17  | 600        | 41  | 300          | 21  | 1500       | 103 | 1200         | 83  |
| 2.0"        | 450        | 31  | 250          | 17  | 550        | 38  | 275          | 19  | 1000       | 69  | 800          | 55  |
| 2 1/2"      | 400        | 28  | 200          | 14  | 450        | 31  | 225          | 16  | 1000       | 69  | 800          | 55  |
| 3.0"        | 350        | 24  | 150          | 10  | 350        | 24  | 160          | 11  | 1000       | 69  | 800          | 55  |
| 4.0"        | 200        | 14  | 125          | 9   | 250        | 17  | 150          | 10  | 1000       | 69  | 800          | 55  |
| 5.0"        | 175        | 12  | 100          | 7   |            |     |              |     |            |     |              |     |
| 6.0"        | 150        | 10  | 75           | 5   |            |     |              |     |            |     |              |     |
| 8.0"        | 100        | 7   | 50           | 3   |            |     |              |     |            |     |              |     |
| 10.0"       | 40         | 3   | 30           | 2   |            |     |              |     |            |     |              |     |

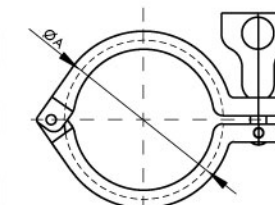
### Material features of union ring seals

| FEATURE             | EPDM                   | NBR                    | Viton                  | Silicone               | TEFLON                 |
|---------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Temperature Range   | -48~135°C<br>-55~275°F | -40~120°C<br>-40~248°F | -29~204°C<br>-20~400°F | -62~232°C<br>-80~450°F | -40~232°C<br>-40~450°F |
| Acid Resistance     | Good-Excellent         | Good                   | Good                   | Good                   | Good-Excellent         |
| Alkali Resistance   | Good-Excellent         | Good                   | Poor-Good              | Poor-Fair              | Good-Excellent         |
| Gasoline Resistance | Poor-Fair              | Good-Excellent         | Good-Excellent         | Good                   | Good-Excellent         |
| Diesel Resistance   | Good                   | Good                   | Good-Excellent         | Good                   | Good-Excellent         |
| Abrasion Resistance | Good-Excellent         | Good                   | Good                   | Good-Excellent         | Good-Excellent         |
| Compression Set     | Fair                   | Good                   | Good-Excellent         | Good-Excellent         | Fair                   |

※ Good-Excellent > Good > Poor-Good > Fair > Poor-Fair

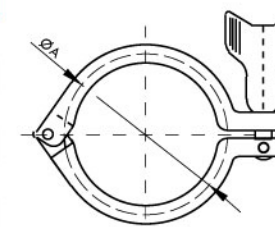
### 13MHH Clamp

| No.            | Nom.Size | A     |
|----------------|----------|-------|
| 1513016-000025 | 1/2"     | 28.6  |
| 1513016-000025 | 3/4"     | 28.6  |
| 1513016-000051 | 1.0"     | 53.9  |
| 1513016-000051 | 1.5"     | 53.9  |
| 1513016-000064 | 2.0"     | 67.4  |
| 1513016-000078 | 2.5"     | 80.9  |
| 1513016-000091 | 3.0"     | 94.4  |
| 1513016-000119 | 4.0"     | 122.4 |
| 1513016-000167 | 6.0"     | 170.4 |
| 1513016-000218 | 8.0"     | 221.2 |
| 1513016-000268 | 10.0"    | 272.0 |



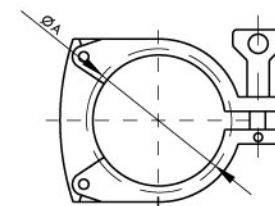
### 13MHH Clamp

| No.            | Nom.Size | A     |
|----------------|----------|-------|
| 1513001-000025 | 1/2"     | 28.6  |
| 1513001-000025 | 3/4"     | 28.6  |
| 1513001-000051 | 1.0"     | 53.9  |
| 1513001-000051 | 1.5"     | 53.9  |
| 1513001-000064 | 2.0"     | 67.4  |
| 1513001-000078 | 2.5"     | 80.9  |
| 1513001-000091 | 3.0"     | 94.4  |
| 1513001-000119 | 4.0"     | 122.4 |
| 1513001-000167 | 6.0"     | 170.4 |
| 1513001-000218 | 8.0"     | 221.2 |
| 1513001-000268 | 10.0"    | 272.0 |



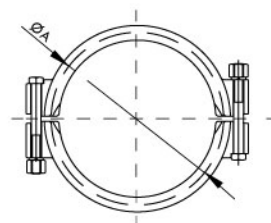
### 13MHH3 Clamp

| No.            | Nom.Size | A     |
|----------------|----------|-------|
| 1513003-000051 | 1.0"     | 53.9  |
| 1513003-000051 | 1.5"     | 53.9  |
| 1513003-000064 | 2.0"     | 67.4  |
| 1513003-000078 | 2.5"     | 80.9  |
| 1513003-000091 | 3.0"     | 94.4  |
| 1513003-000119 | 4.0"     | 122.4 |



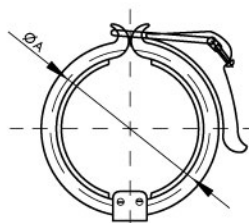
**13MHP Clamp**

| No.            | Nom.Size | A     |
|----------------|----------|-------|
| 1513002-000025 | 1/2"     | 28.6  |
| 1513002-000025 | 3/4"     | 28.6  |
| 1513002-000051 | 1.0"     | 52.0  |
| 1513002-000051 | 1.5"     | 52.0  |
| 1513002-000064 | 2.0"     | 65.5  |
| 1513002-000078 | 2.5"     | 79.0  |
| 1513002-000091 | 3.0"     | 92.5  |
| 1513002-000119 | 4.0"     | 158.8 |
| 1513002-000167 | 6.0"     | 170.4 |



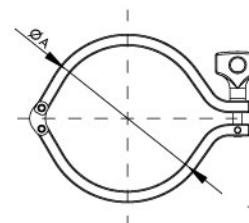
**13MHL Clamp**

| No.            | Nom.Size | A     |
|----------------|----------|-------|
| 1513004-000051 | 1.0"     | 53.9  |
| 1513004-000051 | 1.5"     | 53.9  |
| 1513004-000064 | 2.0"     | 67.4  |
| 1513004-000078 | 2.5"     | 80.9  |
| 1513004-000091 | 3.0"     | 94.4  |
| 1513004-000119 | 4.0"     | 122.4 |



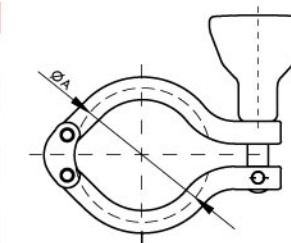
**TC Clamp**

| No.            | Nom.Size | A     |
|----------------|----------|-------|
| 1513017-000051 | 1.0"     | 53.4  |
| 1513017-000051 | 1.5"     | 53.4  |
| 1513017-000064 | 2.0"     | 66.0  |
| 1513017-000078 | 2.5"     | 81.3  |
| 1513017-000091 | 3.0"     | 94.0  |
| 1513017-000119 | 4.0"     | 122.0 |
| 1513017-000167 | 6.0"     | 171.2 |
| 1513017-000218 | 8.0"     | 222.0 |
| 1513017-000268 | 10.0"    | 274.0 |



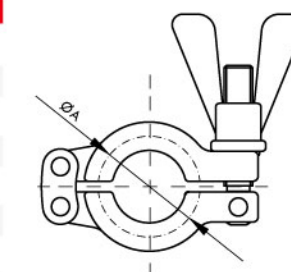
**TC Clamp**

| No.            | Nom.Size | A     |
|----------------|----------|-------|
| 1213007-000100 | 1.0"     | 53.9  |
| 1213007-000150 | 1.5"     | 53.9  |
| 1213007-000200 | 2.0"     | 67.4  |
| 1213007-000250 | 2.5"     | 80.9  |
| 1213007-000300 | 3.0"     | 94.4  |
| 1213007-000400 | 4.0"     | 122.4 |



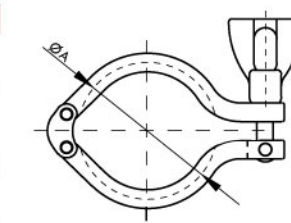
**TC Clamp**

| No.            | Nom.Size | A     |
|----------------|----------|-------|
| 1513028-000025 | 1/2"     | 28.0  |
| 1513028-000025 | 3/4"     | 28.0  |
| 1513028-000051 | 1.0"     | 53.9  |
| 1513028-000051 | 1.5"     | 53.9  |
| 1513028-000064 | 2.0"     | 67.4  |
| 1513028-000078 | 2.5"     | 80.9  |
| 1513028-000091 | 3.0"     | 94.4  |
| 1513028-000119 | 4.0"     | 122.0 |



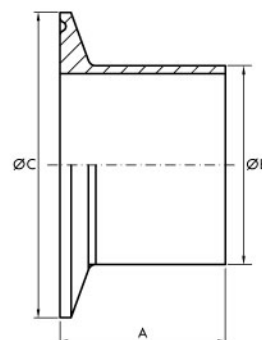
**TC Clamp**

| No.            | Nom.Size | A     |
|----------------|----------|-------|
| 1213001-000100 | 1.0"     | 53.9  |
| 1213001-000150 | 1.5"     | 53.9  |
| 1213001-000200 | 2.0"     | 67.4  |
| 1213001-000250 | 2.5"     | 80.9  |
| 1213001-000300 | 3.0"     | 94.4  |
| 1213001-000400 | 4.0"     | 122.4 |



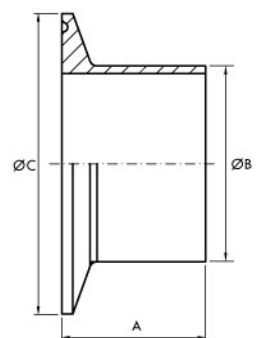
## DT-4.1.4-1 Automatic Tube Weld: Ferrule

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | B<br>in. (mm) | C<br>in. (mm) |
|----------------|----------------------|---------------|---------------|---------------|
| 5514004-000025 | 1/4"                 | 1.750 (44.5)  | 0.250 (6.35)  | 0.984 (25.0)  |
| 5514004-000038 | 3/8"                 | 1.750 (44.5)  | 0.375 (9.53)  | 0.984 (25.0)  |
| 5514004-000050 | 1/2"                 | 1.750 (44.5)  | 0.500 (12.7)  | 0.984 (25.0)  |
| 5514004-000075 | 3/4"                 | 1.750 (44.5)  | 0.750 (19.1)  | 0.984 (25.0)  |
| 5514004-000100 | 1.0"                 | 1.750 (44.5)  | 1.000 (25.4)  | 1.984 (50.4)  |
| 5514004-000150 | 1.5"                 | 1.750 (44.5)  | 1.500 (38.1)  | 1.984 (50.4)  |
| 5514004-000200 | 2.0"                 | 2.250 (57.2)  | 2.000 (50.8)  | 2.516 (63.9)  |
| 5514004-000250 | 2.5"                 | 2.250 (57.2)  | 2.500 (63.5)  | 3.047 (77.5)  |
| 5514004-000300 | 3.0"                 | 2.250 (57.2)  | 3.000 (76.2)  | 3.579 (90.9)  |
| 5514004-000400 | 4.0"                 | 2.250 (57.2)  | 4.000 (101.6) | 4.682 (119.0) |
| 5514004-000600 | 6.0"                 | 3.000 (76.2)  | 6.000 (152.4) | 6.570 (166.9) |



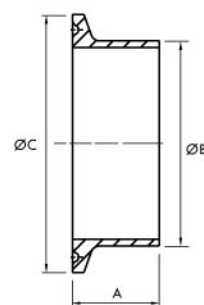
## DT-4.1.4-1 Automatic Tube Weld: Ferrule

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | B<br>in. (mm) | C<br>in. (mm) |
|----------------|----------------------|---------------|---------------|---------------|
| 5514003-000025 | 1/4"                 | 1.130 (28.7)  | 0.250 (6.35)  | 0.984 (25.0)  |
| 5514003-000038 | 3/8"                 | 1.130 (28.7)  | 0.375 (9.53)  | 0.984 (25.0)  |
| 5514003-000050 | 1/2"                 | 1.130 (28.7)  | 0.500 (12.7)  | 0.984 (25.0)  |
| 5514003-000075 | 3/4"                 | 1.130 (28.7)  | 0.750 (19.1)  | 0.984 (25.0)  |
| 5514003-000100 | 1.0"                 | 1.130 (28.7)  | 1.000 (25.4)  | 1.984 (50.4)  |
| 5514003-000150 | 1.5"                 | 1.130 (28.7)  | 1.500 (38.1)  | 1.984 (50.4)  |
| 5514003-000200 | 2.0"                 | 1.130 (28.7)  | 2.000 (50.8)  | 2.516 (63.9)  |
| 5514003-000250 | 2.5"                 | 1.130 (28.7)  | 2.500 (63.5)  | 3.047 (77.5)  |
| 5514003-000300 | 3.0"                 | 1.130 (28.7)  | 3.000 (76.2)  | 3.579 (90.9)  |
| 5514003-000400 | 4.0"                 | 1.130 (28.7)  | 4.000 (101.6) | 4.682 (119.0) |
| 5514003-000600 | 6.0"                 | 1.500 (38.1)  | 6.000 (152.4) | 6.570 (166.9) |



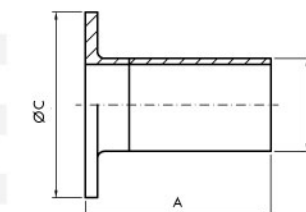
## DT-4.1.4-1 Automatic Tube Weld: Ferrule

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | B<br>in. (mm) | C<br>in. (mm) |
|----------------|----------------------|---------------|---------------|---------------|
| 5514101-000050 | 1/2"                 | 0.500 (12.7)  | 0.500 (12.7)  | 0.984 (25.0)  |
| 5514101-000075 | 3/4"                 | 0.500 (12.7)  | 0.750 (19.1)  | 0.984 (25.0)  |
| 5514101-000100 | 1.0"                 | 0.500 (12.7)  | 1.000 (25.4)  | 1.984 (50.4)  |
| 5514101-000150 | 1.5"                 | 0.500 (12.7)  | 1.500 (38.1)  | 1.984 (50.4)  |
| 5514101-000200 | 2.0"                 | 0.500 (12.7)  | 2.000 (50.8)  | 2.516 (63.9)  |
| 5514101-000250 | 2.5"                 | 0.500 (12.7)  | 2.500 (63.5)  | 3.047 (77.5)  |
| 5514101-000300 | 3.0"                 | 0.500 (12.7)  | 3.000 (76.2)  | 3.579 (90.9)  |
| 5514101-000400 | 4.0"                 | 0.625 (15.9)  | 4.000 (101.6) | 4.682 (119.0) |



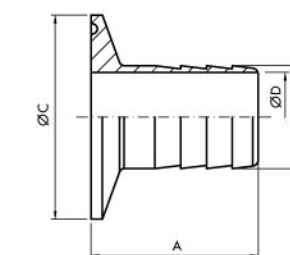
## 14W-AWF Stub End

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | B<br>in. (mm) | C<br>in. (mm) |
|----------------|----------------------|---------------|---------------|---------------|
| 5514065-000050 | 1/2"                 | 2.000 (50.8)  | 0.500 (12.7)  | 1.693 (43.0)  |
| 5514065-000075 | 3/4"                 | 2.000 (50.8)  | 0.750 (19.1)  | 1.689 (42.9)  |
| 5514065-000100 | 1.0"                 | 2.000 (50.8)  | 1.000 (25.4)  | 2.000 (50.8)  |
| 5514065-000150 | 1.5"                 | 2.000 (50.8)  | 1.500 (38.1)  | 2.874 (73.0)  |
| 5514065-000200 | 2.0"                 | 2.500 (63.5)  | 2.000 (50.8)  | 3.626 (92.1)  |
| 5514065-000250 | 2.5"                 | 2.500 (63.5)  | 2.500 (63.5)  | 4.126 (104.8) |
| 5514065-000300 | 3.0"                 | 2.500 (63.5)  | 3.000 (76.2)  | 5.000 (127.0) |
| 5514065-000400 | 4.0"                 | 2.500 (63.5)  | 4.000 (101.6) | 6.189 (157.2) |
| 5514065-000600 | 6.0"                 | 3.000 (76.2)  | 6.000 (152.4) | 8.500 (215.9) |



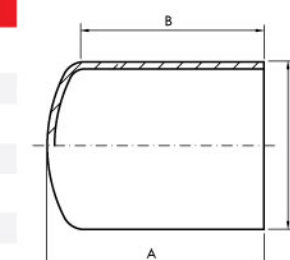
## 14MPHR Hose Connector

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | B<br>in. (mm) | C<br>in. (mm) | D<br>in. (mm) |
|----------------|----------------------|---------------|---------------|---------------|---------------|
| 5514044-000050 | 1/2"                 | 1.500 (38.1)  | 0.530 (13.5)  | 0.984 (25.0)  | 0.370 (9.4)   |
| 5514044-000075 | 3/4"                 | 1.500 (38.1)  | 0.780 (19.8)  | 0.984 (25.0)  | 0.620 (15.8)  |
| 5514044-000100 | 1.0"                 | 1.689 (42.9)  | 1.000 (25.4)  | 1.984 (50.4)  | 0.810 (20.6)  |
| 5514044-000150 | 1.5"                 | 1.689 (42.9)  | 1.500 (38.1)  | 1.984 (50.4)  | 1.310 (33.3)  |
| 5514044-000200 | 2.0"                 | 2.310 (58.7)  | 2.000 (50.4)  | 2.516 (63.9)  | 1.810 (46.0)  |
| 5514044-000250 | 2.5"                 | 2.342 (59.5)  | 2.500 (63.5)  | 3.047 (77.5)  | 2.310 (58.7)  |
| 5514044-000300 | 3.0"                 | 3.095 (78.6)  | 3.000 (76.2)  | 3.578 (90.9)  | 2.835 (72.0)  |
| 5514044-000400 | 4.0"                 | 3.405 (86.5)  | 4.000 (101.6) | 4.682 (119.0) | 3.835 (97.4)  |



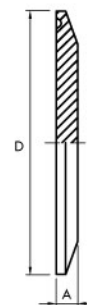
## DT-4.1.5-1 Automatic Tube Weld: Cap

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | B<br>in. (mm) | D<br>in. (mm) |
|----------------|----------------------|---------------|---------------|---------------|
| 5516007-000050 | 1/2"                 | 1.750 (44.5)  | 1.500 (38.1)  | 0.500 (12.7)  |
| 5516007-000075 | 3/4"                 | 1.810 (46.0)  | 1.500 (38.1)  | 0.750 (19.1)  |
| 5516007-000100 | 1.0"                 | 1.875 (47.6)  | 1.500 (38.1)  | 1.000 (25.4)  |
| 5516007-000150 | 1.5"                 | 2.062 (52.4)  | 1.500 (38.1)  | 1.500 (38.1)  |
| 5516007-000200 | 2.0"                 | 2.500 (63.5)  | 1.500 (38.1)  | 2.000 (50.8)  |
| 5516007-000250 | 2.5"                 | 2.810 (71.4)  | 1.500 (38.1)  | 2.500 (63.5)  |
| 5516007-000300 | 3.0"                 | 2.875 (73.0)  | 1.750 (44.5)  | 3.000 (76.2)  |
| 5516007-000400 | 4.0"                 | 3.250 (82.6)  | 2.000 (50.8)  | 4.000 (101.6) |
| 5516007-000600 | 6.0"                 | 4.725 (120.7) | 2.500 (63.5)  | 6.000 (152.4) |



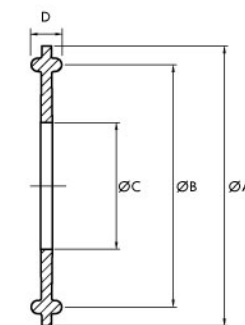
## DT-4.1.5-2 Hygienic Clamp Joint: Solid End Cap

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | D<br>in. (mm) |
|----------------|----------------------|---------------|---------------|
| 5516001-000050 | 1/2"                 | 0.187 (4.7)   | 0.984 (25.0)  |
| 5516001-000075 | 3/4"                 | 0.187 (4.7)   | 0.984 (25.0)  |
| 5516001-000100 | 1.0"                 | 0.187 (4.7)   | 1.984 (50.4)  |
| 5516001-000150 | 1.5"                 | 0.250 (6.4)   | 1.984 (50.4)  |
| 5516001-000200 | 2.0"                 | 0.250 (6.4)   | 2.516 (63.5)  |
| 5516001-000250 | 2.5"                 | 0.250 (6.4)   | 3.047 (76.2)  |
| 5516001-000300 | 3.0"                 | 0.250 (6.4)   | 3.579 (91.3)  |
| 5516001-000400 | 4.0"                 | 0.312 (7.9)   | 4.682 (119.4) |
| 5516001-000600 | 6.0"                 | 0.437 (11.1)  | 6.570 (166.9) |



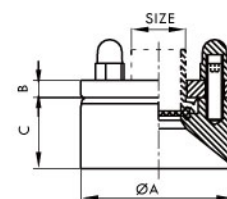
## DT-7-1 Seal Ring

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | B<br>in. (mm) | C<br>in. (mm) | D<br>in. (mm) |
|----------------|----------------------|---------------|---------------|---------------|---------------|
| 5515001-000100 | 1.0"                 | 1.984 (50.4)  | 1.718 (43.6)  | 0.870 (22.1)  | 0.216 (5.5)   |
| 5515001-000150 | 1.5"                 | 1.984 (50.4)  | 1.718 (43.6)  | 1.370 (34.8)  | 0.216 (5.5)   |
| 5515001-000200 | 2.0"                 | 2.516 (63.9)  | 2.218 (56.3)  | 1.870 (47.5)  | 0.216 (5.5)   |
| 5515001-000250 | 2.5"                 | 3.047 (77.4)  | 2.781 (70.6)  | 2.370 (60.2)  | 0.216 (5.5)   |
| 5515001-000300 | 3.0"                 | 3.579 (90.9)  | 3.281 (83.3)  | 2.870 (72.9)  | 0.216 (5.5)   |
| 5515001-000400 | 4.0"                 | 4.682 (118.9) | 4.344 (110.3) | 3.834 (97.4)  | 0.216 (5.5)   |



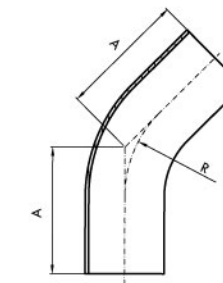
## Flange

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | B<br>in. (mm) | C<br>in. (mm) |
|----------------|----------------------|---------------|---------------|---------------|
| 5501K01-007500 | 3/4"                 | 2.145 (54.5)  | 0.236 (6.0)   | 0.984 (25.0)  |
| 5501K01-010000 | 1.0"                 | 3.326 (84.5)  | 0.236 (6.0)   | 0.984 (25.0)  |
| 5501K01-015000 | 1.5"                 | 3.326 (84.5)  | 0.236 (6.0)   | 0.984 (25.0)  |
| 5501K01-020000 | 2.0"                 | 3.917 (99.5)  | 0.236 (6.0)   | 0.984 (25.0)  |
| 5501K01-025000 | 2.5"                 | 4.409 (112.0) | 0.394 (10.0)  | 1.496 (38.0)  |
| 5501K01-030000 | 3.0"                 | 5.157 (131.0) | 0.94 (23.8)   | 1.496 (38.0)  |



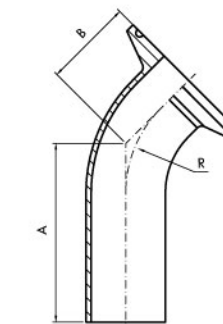
## DT-4.1.1-4 Automatic Tube Weld: 45-deg Elbow

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | R<br>in. (mm) |
|----------------|----------------------|---------------|---------------|
| 5506103-000050 | 1/2"                 | 2.250 (57.2)  | 1.125 (28.6)  |
| 5506103-000075 | 3/4"                 | 2.250 (57.2)  | 1.125 (28.6)  |
| 5506103-000100 | 1.0"                 | 2.250 (57.2)  | 1.500 (38.1)  |
| 5506103-000150 | 1.5"                 | 2.500 (63.5)  | 2.250 (57.2)  |
| 5506103-000200 | 2.0"                 | 3.000 (76.2)  | 3.000 (76.2)  |
| 5506103-000250 | 2.5"                 | 3.375 (85.7)  | 3.750 (95.3)  |
| 5506103-000300 | 3.0"                 | 3.625 (92.1)  | 4.500 (114.3) |
| 5506103-000400 | 4.0"                 | 4.500 (114.3) | 6.000 (152.4) |
| 5506103-000600 | 6.0"                 | 6.250 (158.8) | 9.000 (228.6) |



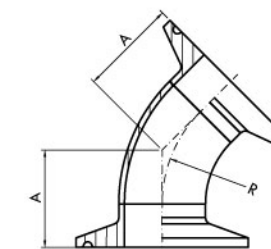
## DT-4.1.1-5 Automatic Tube Weld: Hygienic Clamp Joint, 45-deg Elbow

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | B<br>in. (mm) | R<br>in. (mm) |
|----------------|----------------------|---------------|---------------|---------------|
| 5506303-000050 | 1/2"                 | 2.250 (57.2)  | 1.000 (25.4)  | 1.125 (28.6)  |
| 5506303-000075 | 3/4"                 | 2.250 (57.2)  | 1.000 (25.4)  | 1.125 (28.6)  |
| 5506303-000100 | 1.0"                 | 2.250 (57.2)  | 1.125 (28.6)  | 1.500 (38.1)  |
| 5506303-000150 | 1.5"                 | 2.500 (63.5)  | 1.438 (36.5)  | 2.250 (57.2)  |
| 5506303-000200 | 2.0"                 | 3.000 (76.2)  | 1.750 (44.5)  | 3.000 (76.2)  |
| 5506303-000250 | 2.5"                 | 3.375 (85.7)  | 2.063 (52.4)  | 3.750 (95.3)  |
| 5506303-000300 | 3.0"                 | 3.625 (92.1)  | 2.375 (60.3)  | 4.500 (114.3) |
| 5506303-000400 | 4.0"                 | 4.500 (114.3) | 3.125 (79.4)  | 6.000 (152.4) |
| 5506303-000600 | 6.0"                 | 6.250 (158.8) | 5.250 (133.4) | 9.000 (228.6) |



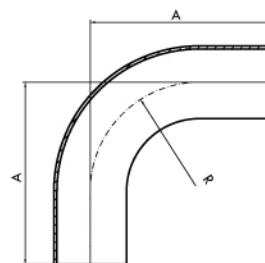
## DT-4.1.1-6 Hygienic Clamp Joint, 45-deg Elbow

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | R<br>in. (mm) |
|----------------|----------------------|---------------|---------------|
| 5506303-000050 | 1/2"                 | 1.000 (25.4)  | 1.125 (28.6)  |
| 5506303-000075 | 3/4"                 | 1.000 (25.4)  | 1.125 (28.6)  |
| 5506303-000100 | 1.0"                 | 1.125 (28.6)  | 1.500 (38.1)  |
| 5506303-000150 | 1.5"                 | 1.438 (36.5)  | 2.250 (57.2)  |
| 5506303-000200 | 2.0"                 | 1.750 (44.5)  | 3.000 (76.2)  |
| 5506303-000250 | 2.5"                 | 2.063 (52.4)  | 3.750 (95.3)  |
| 5506303-000300 | 3.0"                 | 2.375 (60.3)  | 4.500 (114.3) |
| 5506303-000400 | 4.0"                 | 3.125 (79.4)  | 6.000 (152.4) |
| 5506303-000600 | 6.0"                 | 5.250 (133.4) | 9.000 (228.6) |



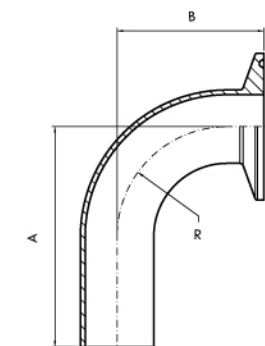
DT-4.1.1-1 Automatic Tube Weld: 90-deg Elbow

| No.            | Nominal<br>Size, in. | A<br>in. (mm)  | R<br>in. (mm) |
|----------------|----------------------|----------------|---------------|
| 5506102-000038 | 3/8"                 | 2.625 (66.7)   | 1.125 (28.6)  |
| 5506102-000050 | 1/2"                 | 3.000 (76.2)   | 1.125 (28.6)  |
| 5506102-000075 | 3/4"                 | 3.000 (76.2)   | 1.125 (28.6)  |
| 5506102-000100 | 1.0"                 | 3.000 (76.2)   | 1.500 (38.1)  |
| 5506102-000150 | 1.5"                 | 3.750 (95.3)   | 2.250 (57.2)  |
| 5506102-000200 | 2.0"                 | 4.750 (120.7)  | 3.000 (76.2)  |
| 5506102-000250 | 2.5"                 | 5.500 (139.7)  | 3.750 (95.3)  |
| 5506102-000300 | 3.0"                 | 6.250 (158.8)  | 4.500 (114.3) |
| 5506102-000400 | 4.0"                 | 203.2 (203.2)  | 6.000 (152.4) |
| 5506102-000600 | 6.0"                 | 11.500 (292.1) | 9.000 (228.6) |



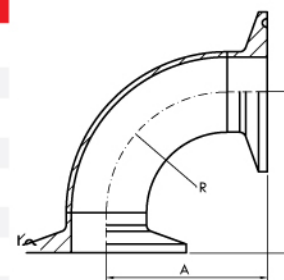
DT-4.1.1-2 Automatic Tube Weld: Hygienic Clamp Joint, 90-deg Elbow

| No.            | Nominal<br>Size, in. | A<br>in. (mm)  | B<br>in. (mm)  | R<br>in. (mm) |
|----------------|----------------------|----------------|----------------|---------------|
| 5506302-000038 | 3/8"                 | 2.625 (66.7)   | 1.625 (41.3)   | 1.125 (28.6)  |
| 5506302-000050 | 1/2"                 | 3.000 (76.2)   | 1.625 (41.3)   | 1.125 (28.6)  |
| 5506302-000075 | 3/4"                 | 3.000 (76.2)   | 1.625 (41.3)   | 1.125 (28.6)  |
| 5506302-000100 | 1.0"                 | 3.000 (76.2)   | 2.000 (50.8)   | 1.500 (38.1)  |
| 5506302-000150 | 1.5"                 | 3.750 (95.3)   | 2.750 (69.9)   | 2.250 (57.2)  |
| 5506302-000200 | 2.0"                 | 4.750 (120.7)  | 3.500 (88.9)   | 3.000 (76.2)  |
| 5506302-000250 | 2.5"                 | 5.500 (139.7)  | 4.250 (108.0)  | 3.750 (95.3)  |
| 5506302-000300 | 3.0"                 | 6.250 (158.8)  | 5.000 (127.0)  | 4.500 (114.3) |
| 5506302-000400 | 4.0"                 | 203.2 (203.2)  | 6.625 (168.3)  | 6.000 (152.4) |
| 5506302-000600 | 6.0"                 | 11.500 (292.1) | 10.500 (266.7) | 9.000 (228.6) |



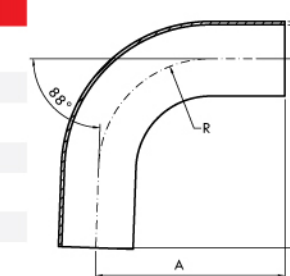
DT-4.1.1-3 Hygienic Clamp Joint, 90-deg Elbow

| No.            | Nominal<br>Size, in. | A<br>in. (mm)  | R<br>in. (mm) |
|----------------|----------------------|----------------|---------------|
| 5506200-000050 | 1/2"                 | 1.625 (41.3)   | 1.125 (28.6)  |
| 5506200-000075 | 3/4"                 | 1.625 (41.3)   | 1.125 (28.6)  |
| 5506200-000100 | 1.0"                 | 2.000 (50.8)   | 1.500 (38.1)  |
| 5506200-000150 | 1.5"                 | 2.750 (69.9)   | 2.250 (57.2)  |
| 5506200-000200 | 2.0"                 | 3.500 (88.9)   | 3.000 (76.2)  |
| 5506200-000250 | 2.5"                 | 4.250 (108.0)  | 3.750 (95.3)  |
| 5506200-000300 | 3.0"                 | 5.000 (127.0)  | 4.500 (114.3) |
| 5506200-000400 | 4.0"                 | 6.625 (168.3)  | 6.000 (152.4) |
| 5506200-000600 | 6.0"                 | 10.500 (266.7) | 9.000 (228.6) |



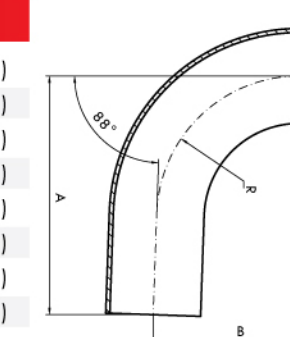
Automatic Tube Weld: 88-deg Elbow

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | R<br>in. (mm) |
|----------------|----------------------|---------------|---------------|
| 5506A01-000050 | 1/2"                 | 3.078 (78.2)  | 1.125 (28.6)  |
| 5506A01-000075 | 3/4"                 | 3.059 (77.7)  | 1.125 (28.6)  |
| 5506A01-000100 | 1.0"                 | 3.047 (77.4)  | 1.125 (38.1)  |
| 5506A01-000150 | 1.5"                 | 3.799 (96.5)  | 2.250 (57.2)  |
| 5506A01-000200 | 2.0"                 | 4.803 (122.0) | 3.000 (76.2)  |
| 5506A01-000250 | 2.5"                 | 5.551 (141.0) | 3.750 (95.3)  |
| 5506A01-000300 | 3.0"                 | 6.260 (160.0) | 4.500 (114.3) |
| 5506A01-000400 | 4.0"                 | 8.070 (205.0) | 6.000 (152.4) |



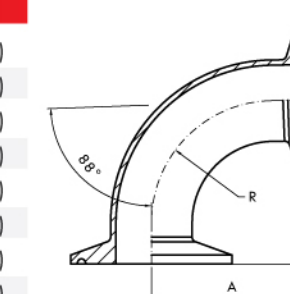
Automatic Tube Weld: Hygienic Clamp Joint, 88-deg Elbow

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | B<br>in. (mm) | R<br>in. (mm) |
|----------------|----------------------|---------------|---------------|---------------|
| 5506A21-000050 | 1/2"                 | 3.031 (77.0)  | 1.598 (40.6)  | 1.125 (28.6)  |
| 5506A21-000075 | 3/4"                 | 3.019 (76.7)  | 1.598 (40.6)  | 1.125 (28.6)  |
| 5506A21-000100 | 1.0"                 | 3.019 (76.7)  | 1.949 (49.5)  | 1.500 (38.1)  |
| 5506A21-000150 | 1.5"                 | 3.771 (95.8)  | 2.720 (69.1)  | 2.250 (57.2)  |
| 5506A21-000200 | 2.0"                 | 4.803 (122.0) | 3.630 (92.2)  | 3.000 (76.2)  |
| 5506A21-000250 | 2.5"                 | 5.551 (140.0) | 4.212 (107.0) | 3.750 (95.3)  |
| 5506A21-000300 | 3.0"                 | 6.260 (159.0) | 4.960 (126.0) | 4.500 (114.3) |
| 5506A21-000400 | 4.0"                 | 8.031 (204.0) | 6.811 (173.0) | 6.000 (152.4) |



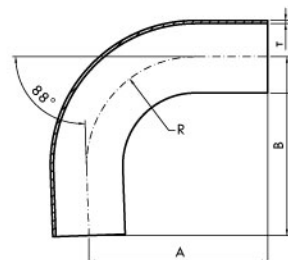
Hygienic Clamp Joint, 88-deg Elbow

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | B<br>in. (mm) | R<br>in. (mm) |
|----------------|----------------------|---------------|---------------|---------------|
| 5506A30-000050 | 1/2"                 | 1.598 (40.6)  | 1.661 (42.2)  | 1.125 (28.6)  |
| 5506A30-000075 | 3/4"                 | 1.578 (40.1)  | 1.641 (41.7)  | 1.125 (28.6)  |
| 5506A30-000100 | 1.0"                 | 1.948 (49.5)  | 2.019 (51.3)  | 1.500 (38.1)  |
| 5506A30-000150 | 1.5"                 | 2.696 (68.6)  | 2.791 (70.9)  | 2.250 (57.2)  |
| 5506A30-000200 | 2.0"                 | 3.429 (87.1)  | 3.551 (90.2)  | 3.000 (76.2)  |
| 5506A30-000250 | 2.5"                 | 4.173 (106.0) | 4.291 (109.0) | 3.750 (95.3)  |
| 5506A30-000300 | 3.0"                 | 4.881 (124.0) | 5.078 (129.0) | 4.500 (114.3) |
| 5506A30-000400 | 4.0"                 | 4.496 (165.0) | 6.732 (171.0) | 6.000 (152.4) |



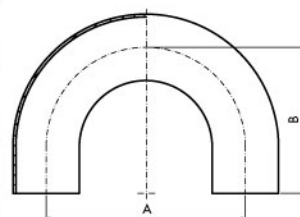
### Automatic Tube Weld: 92-deg Elbow

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | R<br>in. (mm) |
|----------------|----------------------|---------------|---------------|
| 5506B01-000050 | 1/2"                 | 2.921 (74.2)  | 1.125 (28.6)  |
| 5506B01-000075 | 3/4"                 | 3.044 (74.4)  | 1.125 (28.6)  |
| 5506B01-000100 | 1.0"                 | 2.949 (74.9)  | 1.125 (38.1)  |
| 5506B01-000150 | 1.5"                 | 3.700 (94.0)  | 2.250 (57.2)  |
| 5506B01-000200 | 2.0"                 | 4.685 (119.0) | 3.000 (76.2)  |
| 5506B01-000250 | 2.5"                 | 5.433 (138.0) | 3.750 (95.3)  |
| 5506B01-000300 | 3.0"                 | 6.181 (157.0) | 4.500 (114.3) |
| 5506B01-000400 | 4.0"                 | 7.913 (201.0) | 6.000 (152.4) |



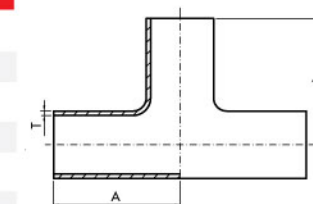
### DT-4.1.1-7 Automatic Tube Weld: 180-deg Return Bend

| No.             | Nominal<br>Size, in. | A<br>in. (mm)  | B<br>in. (mm)  |
|-----------------|----------------------|----------------|----------------|
| 5506107-0000050 | 1/2"                 | 4.500 (114.3)  | 3.000 (76.2)   |
| 5506107-0000075 | 3/4"                 | 4.500 (114.3)  | 3.000 (76.2)   |
| 5506107-0000100 | 1.0"                 | 3.000 (76.2)   | 3.000 (76.2)   |
| 5506107-0000150 | 1.5"                 | 4.500 (114.3)  | 4.500 (114.3)  |
| 5506107-0000200 | 2.0"                 | 6.000 (152.4)  | 5.000 (127.0)  |
| 5506107-0000250 | 2.5"                 | 7.500 (190.5)  | 5.750 (146.1)  |
| 5506107-0000300 | 3.0"                 | 9.000 (228.6)  | 6.500 (165.1)  |
| 5506107-0000400 | 4.0"                 | 12.000 (304.8) | 8.500 (215.9)  |
| 5506107-0000600 | 6.0"                 | 18.000 (457.2) | 11.500 (292.1) |



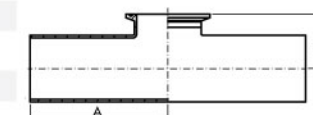
### DT-4.1.2-1 Automatic Tube Weld: Straight Tee

| No.            | Nominal<br>Size, in. | A<br>in. (mm) |
|----------------|----------------------|---------------|
| 5503102-000025 | 1/4"                 | 1.750 (44.5)  |
| 5503102-000035 | 3/8"                 | 1.750 (44.5)  |
| 5503102-000050 | 1/2"                 | 1.875 (47.6)  |
| 5503102-000075 | 3/4"                 | 2.000 (50.8)  |
| 5503102-000100 | 1.0"                 | 2.125 (54.0)  |
| 5503102-000150 | 1.5"                 | 2.375 (60.3)  |
| 5503102-000200 | 2.0"                 | 2.875 (73.0)  |
| 5503102-000250 | 2.5"                 | 3.125 (79.4)  |
| 5503102-000300 | 3.0"                 | 3.375 (85.7)  |
| 5503102-000400 | 4.0"                 | 4.125 (104.8) |
| 5503102-000600 | 6.0"                 | 5.625 (142.9) |



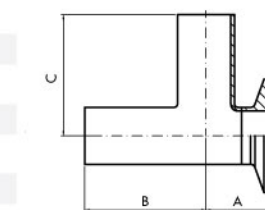
### DT-4.1.2-2 Automatic Tube Weld: Short Outlet Hygienic Clamp Joint Tee

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | B<br>in. (mm) |
|----------------|----------------------|---------------|---------------|
| 5503201-000050 | 1/2"                 | 1.875 (47.6)  | 1.000 (25.4)  |
| 5503201-000075 | 3/4"                 | 2.000 (50.8)  | 1.125 (28.6)  |
| 5503201-000100 | 1.0"                 | 2.125 (54.0)  | 1.125 (28.6)  |
| 5503201-000150 | 1.5"                 | 2.375 (60.3)  | 1.375 (34.9)  |
| 5503201-000200 | 2.0"                 | 2.875 (73.0)  | 1.625 (41.3)  |
| 5503201-000250 | 2.5"                 | 3.125 (79.4)  | 1.875 (47.6)  |
| 5503201-000300 | 3.0"                 | 3.375 (85.7)  | 2.125 (54.0)  |
| 5503201-000400 | 4.0"                 | 4.125 (104.8) | 2.750 (69.9)  |
| 5503201-000600 | 6.0"                 | 5.625 (142.9) | 4.625 (117.5) |



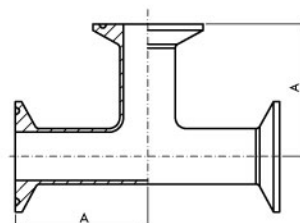
### DT-4.1.2-3 Hygienic Mechanical Joint: Short Outlet Run Tee

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | B<br>in. (mm) | C<br>in. (mm) |
|----------------|----------------------|---------------|---------------|---------------|
| 5503202-000025 | 1/4"                 | 0.875 (22.2)  | 1.750 (44.5)  | 1.750 (44.5)  |
| 5503202-000038 | 3/8"                 | 0.875 (22.2)  | 1.750 (44.5)  | 1.750 (44.5)  |
| 5503202-000050 | 1/2"                 | 0.875 (22.2)  | 1.875 (47.6)  | 1.875 (47.6)  |
| 5503202-000075 | 3/4"                 | 1.000 (25.4)  | 2.000 (50.8)  | 2.000 (50.8)  |
| 5503202-000100 | 1.0"                 | 1.125 (28.6)  | 2.125 (54.0)  | 2.125 (54.0)  |
| 5503202-000150 | 1.5"                 | 1.375 (34.9)  | 2.375 (60.3)  | 2.375 (60.3)  |
| 5503202-000200 | 2.0"                 | 1.625 (41.3)  | 2.875 (73.0)  | 2.875 (73.0)  |
| 5503202-000250 | 2.5"                 | 1.875 (47.6)  | 3.125 (79.4)  | 3.125 (79.4)  |
| 5503202-000300 | 3.0"                 | 2.125 (54.0)  | 3.375 (85.7)  | 3.375 (85.7)  |
| 5503202-000400 | 4.0"                 | 2.750 (69.9)  | 4.125 (104.8) | 4.125 (104.8) |
| 5503202-000600 | 6.0"                 | 4.625 (117.5) | 5.625 (142.9) | 5.625 (142.9) |



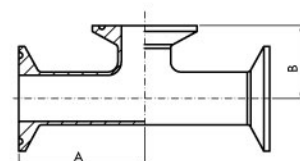
**DT-4.1.2-4 Hygienic Clamp Joint: Straight Tee**

| No.            | Nominal<br>Size, in. | A<br>in. (mm) |
|----------------|----------------------|---------------|
| 5503302-000050 | 1/2"                 | 2.250 (57.2)  |
| 5503302-000075 | 3/4"                 | 2.375 (60.3)  |
| 5503302-000100 | 1.0"                 | 2.625 (66.7)  |
| 5503302-000150 | 1.5"                 | 2.875 (73.0)  |
| 5503302-000200 | 2.0"                 | 3.375 (85.7)  |
| 5503302-000250 | 2.5"                 | 3.625 (92.1)  |
| 5503302-000300 | 3.0"                 | 3.875 (98.4)  |
| 5503302-000400 | 4.0"                 | 4.750 (120.7) |
| 5503302-000600 | 6.0"                 | 7.125 (181.0) |



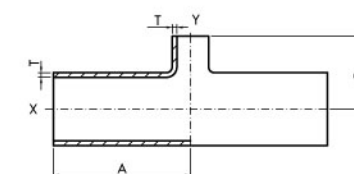
**DT-4.1.2-5 Hygienic Clamp Joint: Short Outlet Tee**

| No.            | Nominal<br>Size, in. | A<br>in. (mm) | B<br>in. (mm) |
|----------------|----------------------|---------------|---------------|
| 5503200-000050 | 1/2"                 | 2.250 (57.2)  | 1.000 (25.4)  |
| 5503200-000075 | 3/4"                 | 2.375 (60.3)  | 1.125 (28.6)  |
| 5503200-000100 | 1.0"                 | 2.625 (66.7)  | 1.125 (28.6)  |
| 5503200-000150 | 1.5"                 | 2.875 (73.0)  | 1.375 (34.9)  |
| 5503200-000200 | 2.0"                 | 3.375 (85.7)  | 1.625 (41.3)  |
| 5503200-000250 | 2.5"                 | 3.625 (92.1)  | 1.875 (47.6)  |
| 5503200-000300 | 3.0"                 | 3.875 (98.4)  | 2.125 (54.0)  |
| 5503200-000400 | 4.0"                 | 4.750 (120.7) | 2.750 (69.9)  |
| 5503200-000600 | 6.0"                 | 7.125 (181.0) | 4.625 (117.5) |



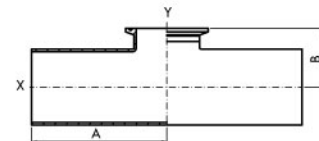
**DT-4.1.2-6 Automatic Tube Weld: Reducing Tee**

| No.            | Nominal Size, in.<br>X Y | A<br>in. (mm) | B<br>in. (mm) |
|----------------|--------------------------|---------------|---------------|
| 5503102-050038 | 1/2" 3/8"                | 1.857 (47.6)  | 1.857 (47.6)  |
| 5503102-075025 | 3/4" 1/4"                | 2.000 (50.8)  | 2.000 (50.8)  |
| 5503102-075038 | 3/4" 3/8"                | 2.000 (50.8)  | 2.000 (50.8)  |
| 5503102-075050 | 3/4" 1/2"                | 2.000 (50.8)  | 2.000 (50.8)  |
| 5503102-100025 | 1.0" 1/4"                | 2.125 (54.0)  | 2.125 (54.0)  |
| 5503102-100038 | 1.0" 3/8"                | 2.125 (54.0)  | 2.125 (54.0)  |
| 5503102-100050 | 1.0" 1/2"                | 2.125 (54.0)  | 2.125 (54.0)  |
| 5503102-100075 | 1.0" 3/4"                | 2.125 (54.0)  | 2.125 (54.0)  |
| 5503102-150025 | 1.5" 1/4"                | 2.375 (60.3)  | 2.375 (60.3)  |
| 5503102-150050 | 1.5" 1/2"                | 2.375 (60.3)  | 2.375 (60.3)  |
| 5503102-150075 | 1.5" 3/4"                | 2.375 (60.3)  | 2.375 (60.3)  |
| 5503102-150100 | 1.5" 1.0"                | 2.375 (60.3)  | 2.375 (60.3)  |
| 5503102-200025 | 2.0" 1/4"                | 2.875 (73.0)  | 2.625 (66.7)  |
| 5503102-200038 | 2.0" 3/8"                | 2.875 (73.0)  | 2.625 (66.7)  |
| 5503102-200050 | 2.0" 1/2"                | 2.875 (73.0)  | 2.625 (66.7)  |
| 5503102-200075 | 2.0" 3/4"                | 2.875 (73.0)  | 2.625 (66.7)  |
| 5503102-200100 | 2.0" 1.0"                | 2.875 (73.0)  | 2.625 (66.7)  |
| 5503102-200150 | 2.0" 1.5"                | 2.875 (73.0)  | 2.625 (66.7)  |
| 5503102-250038 | 2.5" 3/8"                | 3.125 (79.4)  | 2.875 (73.0)  |
| 5503102-250050 | 2.5" 1/2"                | 3.125 (79.4)  | 2.875 (73.0)  |
| 5503102-250075 | 2.5" 3/4"                | 3.125 (79.4)  | 2.875 (73.0)  |
| 5503102-250100 | 2.5" 1.0"                | 3.125 (79.4)  | 2.875 (73.0)  |
| 5503102-250150 | 2.5" 1.5"                | 3.125 (79.4)  | 2.875 (73.0)  |
| 5503102-250200 | 2.5" 2.0"                | 3.125 (79.4)  | 2.875 (73.0)  |
| 5503102-300050 | 3.0" 1/2"                | 3.375 (85.7)  | 3.125 (79.4)  |
| 5503102-300075 | 3.0" 3/4"                | 3.375 (85.7)  | 3.125 (79.4)  |
| 5503102-300100 | 3.0" 1.0"                | 3.375 (85.7)  | 3.125 (79.4)  |
| 5503102-300150 | 3.0" 1.5"                | 3.375 (85.7)  | 3.125 (79.4)  |
| 5503102-300200 | 3.0" 2.0"                | 3.375 (85.7)  | 3.125 (79.4)  |
| 5503102-300250 | 3.0" 2.5"                | 3.375 (85.7)  | 3.125 (79.4)  |
| 5503102-400050 | 4.0" 1/2"                | 4.125 (104.8) | 3.625 (92.1)  |
| 5503102-400075 | 4.0" 3/4"                | 4.125 (104.8) | 3.625 (92.1)  |
| 5503102-400100 | 4.0" 1.0"                | 4.125 (104.8) | 3.625 (92.1)  |
| 5503102-400150 | 4.0" 1.5"                | 4.125 (104.8) | 3.625 (92.1)  |
| 5503102-400200 | 4.0" 2.0"                | 4.125 (104.8) | 3.875 (98.4)  |
| 5503102-400250 | 4.0" 2.5"                | 4.125 (104.8) | 3.875 (98.4)  |
| 5503102-400300 | 4.0" 3.0"                | 4.125 (104.8) | 3.875 (98.4)  |
| 5503102-600075 | 6.0" 3/4"                | 5.625 (142.9) | 4.875 (123.8) |
| 5503102-600100 | 6.0" 1.0"                | 5.625 (142.9) | 4.875 (123.8) |
| 5503102-600150 | 6.0" 1.5"                | 5.625 (142.9) | 4.875 (123.8) |
| 5503102-600200 | 6.0" 2.0"                | 5.625 (142.9) | 4.875 (123.8) |
| 5503102-600250 | 6.0" 2.5"                | 5.625 (142.9) | 4.875 (123.8) |
| 5503102-600300 | 6.0" 3.0"                | 5.625 (142.9) | 4.875 (123.8) |
| 5503102-600400 | 6.0" 4.0"                | 5.625 (142.9) | 5.125 (130.2) |



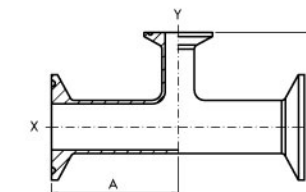
**DT-4.1.2-7 Automatic Tube Weld: Short Outlet Hygienic Clamp, Joint Reducing Tee**

| No.            | Nominal Size, in. |      | A<br>in. (mm) | B<br>in. (mm) |
|----------------|-------------------|------|---------------|---------------|
|                | X                 | Y    |               |               |
| 5503201-075050 | 3/4"              | 1/2" | 2.000 (50.8)  | 1.000 (25.4)  |
| 5503201-100050 | 1.0"              | 1/2" | 2.125 (54.0)  | 1.125 (28.6)  |
| 5503201-100075 | 1.0"              | 3/4" | 2.125 (54.0)  | 1.125 (28.6)  |
| 5503201-150050 | 1.5"              | 1/2" | 2.375 (60.3)  | 1.375 (34.9)  |
| 5503201-150075 | 1.5"              | 3/4" | 2.375 (60.3)  | 1.375 (34.9)  |
| 5503201-150100 | 1.5"              | 1.0" | 2.375 (60.3)  | 1.375 (34.9)  |
| 5503201-200050 | 2.0"              | 1/2" | 2.875 (73.0)  | 1.625 (41.3)  |
| 5503201-200075 | 2.0"              | 3/4" | 2.875 (73.0)  | 1.625 (41.3)  |
| 5503201-200100 | 2.0"              | 1.0" | 2.875 (73.0)  | 1.625 (41.3)  |
| 5503201-200150 | 2.0"              | 1.5" | 2.875 (73.0)  | 1.625 (41.3)  |
| 5503201-250050 | 2.5"              | 1/2" | 3.125 (79.4)  | 1.875 (47.6)  |
| 5503201-250075 | 2.5"              | 3/4" | 3.125 (79.4)  | 1.875 (47.6)  |
| 5503201-250100 | 2.5"              | 1.0" | 3.125 (79.4)  | 1.875 (47.6)  |
| 5503201-250150 | 2.5"              | 1.5" | 3.125 (79.4)  | 1.875 (47.6)  |
| 5503201-250200 | 2.5"              | 2.0" | 3.125 (79.4)  | 1.875 (47.6)  |
| 5503201-300050 | 3.0"              | 1/2" | 3.375 (85.7)  | 2.125 (54.0)  |
| 5503201-300075 | 3.0"              | 3/4" | 3.375 (85.7)  | 2.125 (54.0)  |
| 5503201-300100 | 3.0"              | 1.0" | 3.375 (85.7)  | 2.125 (54.0)  |
| 5503201-300150 | 3.0"              | 1.5" | 3.375 (85.7)  | 2.125 (54.0)  |
| 5503201-300200 | 3.0"              | 2.0" | 3.375 (85.7)  | 2.125 (54.0)  |
| 5503201-300250 | 3.0"              | 2.5" | 3.375 (85.7)  | 2.125 (54.0)  |
| 5503201-400050 | 4.0"              | 1/2" | 4.125 (104.8) | 2.625 (66.7)  |
| 5503201-400075 | 4.0"              | 3/4" | 4.125 (104.8) | 2.625 (66.7)  |
| 5503201-400100 | 4.0"              | 1.0" | 4.125 (104.8) | 2.625 (66.7)  |
| 5503201-400150 | 4.0"              | 1.5" | 4.125 (104.8) | 2.625 (66.7)  |
| 5503201-400200 | 4.0"              | 2.0" | 4.125 (104.8) | 2.625 (66.7)  |
| 5503201-400250 | 4.0"              | 2.5" | 4.125 (104.8) | 2.625 (66.7)  |
| 5503201-400300 | 4.0"              | 3.0" | 4.125 (104.8) | 2.625 (66.7)  |
| 5503201-600050 | 6.0"              | 1/2" | 5.625 (142.9) | 3.625 (92.1)  |
| 5503201-600075 | 6.0"              | 3/4" | 5.625 (142.9) | 3.625 (92.1)  |
| 5503201-600100 | 6.0"              | 1.0" | 5.625 (142.9) | 3.625 (92.1)  |
| 5503201-600150 | 6.0"              | 1.5" | 5.625 (142.9) | 3.625 (92.1)  |
| 5503201-600200 | 6.0"              | 2.0" | 5.625 (142.9) | 3.625 (92.1)  |
| 5503201-600250 | 6.0"              | 2.5" | 5.625 (142.9) | 3.625 (92.1)  |
| 5503201-600300 | 6.0"              | 3.0" | 5.625 (142.9) | 3.625 (92.1)  |
| 5503201-600400 | 6.0"              | 4.0" | 5.625 (142.9) | 3.750 (95.3)  |



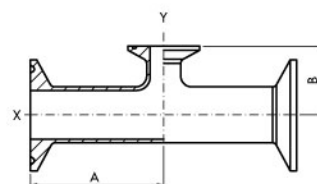
**DT-4.1.2-8 Hygienic Clamp Joint: Reducing Tee**

| No.            | Nominal Size, in. |      | A<br>in. (mm) | B<br>in. (mm) |
|----------------|-------------------|------|---------------|---------------|
|                | X                 | Y    |               |               |
| 5503302-050038 | 1/2"              | 3/8" | 2.375 (60.3)  | 2.375 (60.3)  |
| 5503302-075050 | 3/4"              | 1/2" | 2.500 (63.5)  | 2.500 (63.5)  |
| 5503302-100025 | 1.0"              | 1/4" | 2.625 (66.7)  | 2.625 (66.7)  |
| 5503302-100050 | 1.0"              | 1/2" | 2.625 (66.7)  | 2.625 (66.7)  |
| 5503302-100075 | 1.0"              | 3/4" | 2.625 (66.7)  | 2.625 (66.7)  |
| 5503302-150050 | 1.5"              | 1/2" | 2.875 (73.0)  | 2.875 (73.0)  |
| 5503302-150075 | 1.5"              | 3/4" | 2.875 (73.0)  | 2.875 (73.0)  |
| 5503302-150100 | 1.5"              | 1.0" | 2.875 (73.0)  | 2.875 (73.0)  |
| 5503302-200050 | 2.0"              | 1/2" | 3.375 (85.7)  | 3.125 (79.4)  |
| 5503302-200075 | 2.0"              | 3/4" | 3.375 (85.7)  | 3.125 (79.4)  |
| 5503302-200100 | 2.0"              | 1.0" | 3.375 (85.7)  | 3.125 (79.4)  |
| 5503302-200150 | 2.0"              | 1.5" | 3.375 (85.7)  | 3.125 (79.4)  |
| 5503302-250050 | 2.5"              | 1/2" | 3.625 (92.1)  | 3.375 (85.7)  |
| 5503302-250075 | 2.5"              | 3/4" | 3.625 (92.1)  | 3.375 (85.7)  |
| 5503302-250100 | 2.5"              | 1.0" | 3.625 (92.1)  | 3.375 (85.7)  |
| 5503302-250150 | 2.5"              | 1.5" | 3.625 (92.1)  | 3.375 (85.7)  |
| 5503302-250200 | 2.5"              | 2.0" | 3.625 (92.1)  | 3.375 (85.7)  |
| 5503302-300050 | 3.0"              | 1/2" | 3.875 (98.4)  | 3.625 (92.1)  |
| 5503302-300075 | 3.0"              | 3/4" | 3.875 (98.4)  | 3.625 (92.1)  |
| 5503302-300100 | 3.0"              | 1.0" | 3.875 (98.4)  | 3.625 (92.1)  |
| 5503302-300150 | 3.0"              | 1.5" | 3.875 (98.4)  | 3.625 (92.1)  |
| 5503302-300200 | 3.0"              | 2.0" | 3.875 (98.4)  | 3.625 (92.1)  |
| 5503302-300250 | 3.0"              | 2.5" | 3.875 (98.4)  | 3.625 (92.1)  |
| 5503302-400050 | 4.0"              | 1/2" | 4.750 (120.7) | 4.125 (104.8) |
| 5503302-400075 | 4.0"              | 3/4" | 4.750 (120.7) | 4.125 (104.8) |
| 5503302-400100 | 4.0"              | 1.0" | 4.750 (120.7) | 4.125 (104.8) |
| 5503302-400150 | 4.0"              | 1.5" | 4.750 (120.7) | 4.125 (104.8) |
| 5503302-400200 | 4.0"              | 2.0" | 4.750 (120.7) | 4.375 (111.1) |
| 5503302-400250 | 4.0"              | 2.5" | 4.750 (120.7) | 4.375 (111.1) |
| 5503302-400300 | 4.0"              | 3.0" | 4.750 (120.7) | 4.375 (111.1) |
| 5503302-600300 | 6.0"              | 3.0" | 7.125 (181.0) | 5.375 (136.5) |
| 5503302-600400 | 6.0"              | 4.0" | 7.125 (181.0) | 5.750 (146.1) |



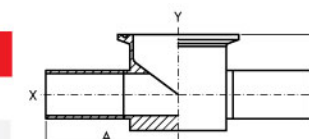
**DT-4.1.2-9 Hygienic Clamp Joint: Short Outlet Reducing Tee**

| No.            | Nominal Size, in. |      | A<br>in. (mm) | B<br>in. (mm) |
|----------------|-------------------|------|---------------|---------------|
|                | X                 | Y    |               |               |
| 5503200-075050 | 3/4"              | 1/2" | 2.500 (63.5)  | 1.000 (25.4)  |
| 5503200-100050 | 1.0"              | 1/2" | 2.625 (66.7)  | 1.125 (28.6)  |
| 5503200-100075 | 1.0"              | 3/4" | 2.625 (66.7)  | 1.125 (28.6)  |
| 5503200-150050 | 1.5"              | 1/2" | 2.875 (73.0)  | 1.375 (34.9)  |
| 5503200-150075 | 1.5"              | 3/4" | 2.875 (73.0)  | 1.375 (34.9)  |
| 5503200-150100 | 1.5"              | 1.0" | 2.875 (73.0)  | 1.375 (34.9)  |
| 5503200-200050 | 2.0"              | 1/2" | 3.375 (85.7)  | 1.625 (41.3)  |
| 5503200-200075 | 2.0"              | 3/4" | 3.375 (85.7)  | 1.625 (41.3)  |
| 5503200-200100 | 2.0"              | 1.0" | 3.375 (85.7)  | 1.625 (41.3)  |
| 5503200-200150 | 2.0"              | 1.5" | 3.375 (85.7)  | 1.625 (41.3)  |
| 5503200-250050 | 2.5"              | 1/2" | 3.625 (92.1)  | 1.875 (47.6)  |
| 5503200-250075 | 2.5"              | 3/4" | 3.625 (92.1)  | 1.875 (47.6)  |
| 5503200-250100 | 2.5"              | 1.0" | 3.625 (92.1)  | 1.875 (47.6)  |
| 5503200-250150 | 2.5"              | 1.5" | 3.625 (92.1)  | 1.875 (47.6)  |
| 5503200-250200 | 2.5"              | 2.0" | 3.625 (92.1)  | 1.875 (47.6)  |
| 5503200-300050 | 3.0"              | 1/2" | 3.875 (98.4)  | 2.125 (54.0)  |
| 5503200-300075 | 3.0"              | 3/4" | 3.875 (98.4)  | 2.125 (54.0)  |
| 5503200-300100 | 3.0"              | 1.0" | 3.875 (98.4)  | 2.125 (54.0)  |
| 5503200-300150 | 3.0"              | 1.5" | 3.875 (98.4)  | 2.125 (54.0)  |
| 5503200-300200 | 3.0"              | 2.0" | 3.875 (98.4)  | 2.125 (54.0)  |
| 5503200-300250 | 3.0"              | 2.5" | 3.875 (98.4)  | 2.125 (54.0)  |
| 5503200-400050 | 4.0"              | 1/2" | 4.750 (120.7) | 2.625 (66.7)  |
| 5503200-400075 | 4.0"              | 3/4" | 4.750 (120.7) | 2.625 (66.7)  |
| 5503200-400100 | 4.0"              | 1.0" | 4.750 (120.7) | 2.625 (66.7)  |
| 5503200-400150 | 4.0"              | 1.5" | 4.750 (120.7) | 2.625 (66.7)  |
| 5503200-400200 | 4.0"              | 2.0" | 4.750 (120.7) | 2.625 (66.7)  |
| 5503200-400250 | 4.0"              | 2.5" | 4.750 (120.7) | 2.625 (66.7)  |
| 5503200-400300 | 4.0"              | 3.0" | 4.750 (120.7) | 2.625 (66.7)  |
| 5503200-600050 | 6.0"              | 1/2" | 7.125 (181.0) | 3.625 (92.1)  |
| 5503200-600075 | 6.0"              | 3/4" | 7.125 (181.0) | 3.625 (92.1)  |
| 5503200-600100 | 6.0"              | 1.0" | 7.125 (181.0) | 3.625 (92.1)  |
| 5503200-600150 | 6.0"              | 1.5" | 7.125 (181.0) | 3.625 (92.1)  |
| 5503200-600200 | 6.0"              | 2.0" | 7.125 (181.0) | 3.625 (92.1)  |
| 5503200-600250 | 6.0"              | 2.5" | 7.125 (181.0) | 3.625 (92.1)  |
| 5503200-600300 | 6.0"              | 3.0" | 7.125 (181.0) | 3.625 (92.1)  |
| 5503200-600400 | 6.0"              | 4.0" | 7.125 (181.0) | 3.375 (95.3)  |



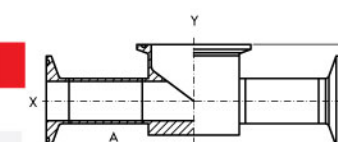
**DT-4.1.2-10 Automatic Tube Weld: Instrument Tee**

| No.            | Nominal Size, in. |      | A<br>in. (mm) | B<br>in. (mm) |
|----------------|-------------------|------|---------------|---------------|
|                | X                 | Y    |               |               |
| 5503203-050150 | 1/2"              | 1.5" | 2.500 (63.5)  | 0.875 (22.2)  |
| 5503203-075150 | 3/4"              | 1.5" | 2.500 (63.5)  | 1.000 (25.4)  |
| 5503203-100150 | 1.0"              | 1.5" | 2.750 (69.9)  | 1.125 (28.6)  |
| 5503203-050200 | 1/2"              | 2.0" | 2.750 (69.9)  | 1.000 (25.4)  |
| 5503203-075200 | 3/4"              | 2.0" | 2.750 (69.9)  | 1.125 (28.6)  |
| 5503203-100200 | 1.0"              | 2.0" | 2.750 (69.9)  | 1.250 (31.8)  |
| 5503203-150200 | 1.5"              | 2.0" | 2.750 (69.9)  | 1.500 (38.1)  |



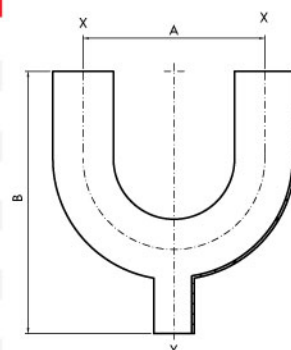
**DT-4.1.2-11 Hygienic Clamp Joint: Instrument Tee**

| No.            | Nominal Size, in. |      | A<br>in. (mm) | B<br>in. (mm) |
|----------------|-------------------|------|---------------|---------------|
|                | X                 | Y    |               |               |
| 5503303-050150 | 1/2"              | 1.5" | 3.000 (76.2)  | 0.875 (22.2)  |
| 5503303-075150 | 3/4"              | 1.5" | 3.000 (76.2)  | 1.000 (25.4)  |
| 5503303-100150 | 1.0"              | 1.5" | 3.000 (76.2)  | 1.125 (28.6)  |
| 5503303-050200 | 1/2"              | 2.0" | 3.250 (82.6)  | 1.000 (25.4)  |
| 5503303-075200 | 3/4"              | 2.0" | 3.250 (82.6)  | 1.125 (28.6)  |
| 5503303-100200 | 1.0"              | 2.0" | 3.250 (82.6)  | 1.250 (31.8)  |
| 5503303-150200 | 1.5"              | 2.0" | 3.250 (82.6)  | 1.500 (38.1)  |



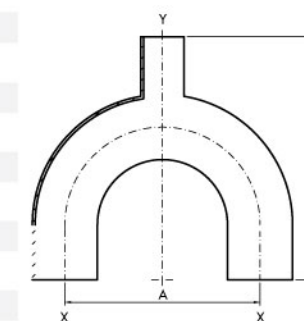
Hygienic Clamp Joint: 180-deg Tee

| No.            | Nominal Size, in. |      | A<br>in. (mm)  | B<br>in. (mm)  |
|----------------|-------------------|------|----------------|----------------|
|                | X                 | Y    |                |                |
| 5506113-075050 | 3/4"              | 1/2" | 4.500 (114.3)  | 4.992 (126.8)  |
| 5506113-100050 | 1.0"              | 1/2" | 3.000 (76.2)   | 5.125 (130.2)  |
| 5506113-100075 | 1.0"              | 3/4" | 3.000 (76.2)   | 5.125 (130.2)  |
| 5506113-000100 | 1.0"              | 1.0" | 3.000 (76.2)   | 5.125 (130.2)  |
| 5506113-150050 | 1.5"              | 1/2" | 4.500 (114.3)  | 6.874 (174.6)  |
| 5506113-150075 | 1.5"              | 3/4" | 4.500 (114.3)  | 6.874 (174.6)  |
| 5506113-150100 | 1.5"              | 1.0" | 4.500 (114.3)  | 6.874 (174.6)  |
| 5506113-000150 | 1.5"              | 1.5" | 4.500 (114.3)  | 6.874 (174.6)  |
| 5506113-200050 | 2.0"              | 1/2" | 6.000 (152.4)  | 7.622 (193.6)  |
| 5506113-200075 | 2.0"              | 3/4" | 6.000 (152.4)  | 7.622 (193.6)  |
| 5506113-200100 | 2.0"              | 1.0" | 6.000 (152.4)  | 7.622 (193.6)  |
| 5506113-200150 | 2.0"              | 1.5" | 6.000 (152.4)  | 7.622 (193.6)  |
| 5506113-000200 | 2.0"              | 2.0" | 6.000 (152.4)  | 7.622 (193.6)  |
| 5506113-250050 | 2.5"              | 1/2" | 7.500 (190.5)  | 8.625 (219.1)  |
| 5506113-250075 | 2.5"              | 3/4" | 7.500 (190.5)  | 8.625 (219.1)  |
| 5506113-250100 | 2.5"              | 1.0" | 7.500 (190.5)  | 8.625 (219.1)  |
| 5506113-250150 | 2.5"              | 1.5" | 7.500 (190.5)  | 8.625 (219.1)  |
| 5506113-250200 | 2.5"              | 2.0" | 7.500 (190.5)  | 8.625 (219.1)  |
| 5506113-000250 | 2.5"              | 2.5" | 7.500 (190.5)  | 8.625 (219.1)  |
| 5506113-300050 | 3.0"              | 1/2" | 9.000 (228.6)  | 9.625 (244.5)  |
| 5506113-300075 | 3.0"              | 3/4" | 9.000 (228.6)  | 9.625 (244.5)  |
| 5506113-300100 | 3.0"              | 1.0" | 9.000 (228.6)  | 9.625 (244.5)  |
| 5506113-300150 | 3.0"              | 1.5" | 9.000 (228.6)  | 9.625 (244.5)  |
| 5506113-300200 | 3.0"              | 2.0" | 9.000 (228.6)  | 9.625 (244.5)  |
| 5506113-300250 | 3.0"              | 2.5" | 12.000 (304.8) | 9.625 (244.5)  |
| 5506113-000300 | 3.0"              | 3.0" | 12.000 (304.8) | 9.625 (244.5)  |
| 5506113-400050 | 4.0"              | 1/2" | 12.000 (304.8) | 12.125 (308.0) |
| 5506113-400075 | 4.0"              | 3/4" | 12.000 (304.8) | 12.125 (308.0) |
| 5506113-400100 | 4.0"              | 1.0" | 12.000 (304.8) | 12.125 (308.0) |
| 5506113-400150 | 4.0"              | 1.5" | 12.000 (304.8) | 12.381 (314.5) |
| 5506113-400200 | 4.0"              | 2.0" | 12.000 (304.8) | 12.381 (314.5) |
| 5506113-400250 | 4.0"              | 2.5" | 12.000 (304.8) | 12.381 (314.5) |
| 5506113-400300 | 4.0"              | 3.0" | 12.000 (304.8) | 12.381 (314.5) |



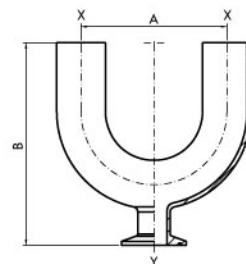
Hygienic Clamp Joint: 180-deg Tee

| No.            | Nominal Size, in. |      | A<br>in. (mm)  | B<br>in. (mm)  |
|----------------|-------------------|------|----------------|----------------|
|                | X                 | Y    |                |                |
| 5506109-100050 | 1.0"              | 1/2" | 3.000 (76.2)   | 4.271 (108.5)  |
| 5506109-100075 | 1.0"              | 3/4" | 3.000 (76.2)   | 4.271 (108.5)  |
| 5506109-000100 | 1.0"              | 1.0" | 3.000 (76.2)   | 4.271 (108.5)  |
| 5506109-150050 | 1.5"              | 1/2" | 4.500 (114.3)  | 6.838 (173.7)  |
| 5506109-150075 | 1.5"              | 3/4" | 4.500 (114.3)  | 6.838 (173.7)  |
| 5506109-150100 | 1.5"              | 1.0" | 4.500 (114.3)  | 6.854 (174.1)  |
| 5506109-000150 | 1.5"              | 1.5" | 4.500 (114.3)  | 6.854 (174.1)  |
| 5506109-200050 | 2.0"              | 1/2" | 6.000 (152.4)  | 8.059 (204.7)  |
| 5506109-200075 | 2.0"              | 3/4" | 6.000 (152.4)  | 8.059 (204.7)  |
| 5506109-200100 | 2.0"              | 1.0" | 6.000 (152.4)  | 8.130 (206.5)  |
| 5506109-200150 | 2.0"              | 1.5" | 6.000 (152.4)  | 8.130 (206.5)  |
| 5506109-000200 | 2.0"              | 2.0" | 6.000 (152.4)  | 8.130 (206.5)  |
| 5506109-250050 | 2.5"              | 1/2" | 7.500 (190.5)  | 9.066 (230.3)  |
| 5506109-250075 | 2.5"              | 3/4" | 7.500 (190.5)  | 9.066 (230.3)  |
| 5506109-250100 | 2.5"              | 1.0" | 7.500 (190.5)  | 9.066 (232.2)  |
| 5506109-250150 | 2.5"              | 1.5" | 7.500 (190.5)  | 9.066 (232.2)  |
| 5506109-250200 | 2.5"              | 2.0" | 7.500 (190.5)  | 9.066 (232.2)  |
| 5506109-000250 | 2.5"              | 2.5" | 7.500 (190.5)  | 9.066 (232.2)  |
| 5506109-300050 | 3.0"              | 1/2" | 9.000 (228.6)  | 10.059 (255.5) |
| 5506109-300075 | 3.0"              | 3/4" | 9.000 (228.6)  | 10.059 (255.5) |
| 5506109-300100 | 3.0"              | 1.0" | 9.000 (228.6)  | 10.133 (257.4) |
| 5506109-300150 | 3.0"              | 1.5" | 9.000 (228.6)  | 10.133 (257.4) |
| 5506109-300200 | 3.0"              | 2.0" | 9.000 (228.6)  | 10.133 (257.4) |
| 5506109-300250 | 3.0"              | 2.5" | 9.000 (228.6)  | 10.133 (257.4) |
| 5506109-000300 | 3.0"              | 3.0" | 9.000 (228.6)  | 10.133 (257.4) |
| 5506109-400050 | 4.0"              | 1/2" | 12.000 (304.8) | 13.059 (331.7) |
| 5506109-400075 | 4.0"              | 3/4" | 12.000 (304.8) | 13.059 (331.7) |
| 5506109-400100 | 4.0"              | 1.0" | 12.000 (304.8) | 13.133 (333.6) |
| 5506109-400150 | 4.0"              | 1.5" | 12.000 (304.8) | 13.133 (333.6) |
| 5506109-400200 | 4.0"              | 2.0" | 12.000 (304.8) | 13.133 (333.6) |
| 5506109-400250 | 4.0"              | 2.5" | 12.000 (304.8) | 13.133 (333.6) |
| 5506109-400300 | 4.0"              | 3.0" | 12.000 (304.8) | 13.133 (333.6) |
| 5506109-000400 | 4.0"              | 4.0" | 12.000 (304.8) | 13.133 (333.6) |



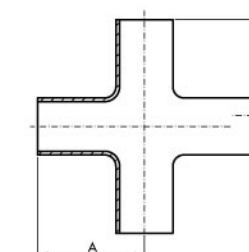
Automatic Tube Weld : Short Outlet Hygienic Clamp Joint, 180-deg Tee

| No.            | Nominal Size,in. |      | A<br>in. (mm)  | B<br>in. (mm)  |
|----------------|------------------|------|----------------|----------------|
| 5506309-000075 | 3/4"             | 3/4" | 4.500 (114.3)  | 3.897 (99.0)   |
| 5506309-100050 | 1.0"             | 1/2" | 3.000 (76.2)   | 4.019 (102.1)  |
| 5506309-100075 | 1.0"             | 3/4" | 3.000 (76.2)   | 4.019 (102.1)  |
| 5506309-000100 | 1.0"             | 1.0" | 3.000 (76.2)   | 4.019 (102.1)  |
| 5506309-150050 | 1.5"             | 1/2" | 4.500 (114.3)  | 5.838 (148.3)  |
| 5506309-150075 | 1.5"             | 3/4" | 4.500 (114.3)  | 5.838 (148.3)  |
| 5506309-150100 | 1.5"             | 1.0" | 4.500 (114.3)  | 5.838 (148.5)  |
| 5506309-000150 | 1.5"             | 1.5" | 4.500 (114.3)  | 5.838 (148.5)  |
| 5506309-200050 | 2.0"             | 1/2" | 6.000 (152.4)  | 6.559 (166.6)  |
| 5506309-200075 | 2.0"             | 3/4" | 6.000 (152.4)  | 6.559 (166.6)  |
| 5506309-200100 | 2.0"             | 1.0" | 6.000 (152.4)  | 6.629 (168.4)  |
| 5506309-200150 | 2.0"             | 1.5" | 6.000 (152.4)  | 6.629 (168.4)  |
| 5506309-000200 | 2.0"             | 2.0" | 6.000 (152.4)  | 6.629 (168.4)  |
| 5506309-250050 | 2.5"             | 1/2" | 7.500 (190.5)  | 7.562 (192.1)  |
| 5506309-250075 | 2.5"             | 3/4" | 7.500 (190.5)  | 7.562 (192.1)  |
| 5506309-250100 | 2.5"             | 1.0" | 7.500 (190.5)  | 7.637 (194.0)  |
| 5506309-250150 | 2.5"             | 1.5" | 7.500 (190.5)  | 7.637 (194.0)  |
| 5506309-250200 | 2.5"             | 2.0" | 7.500 (190.5)  | 7.637 (194.0)  |
| 5506309-000250 | 2.5"             | 2.5" | 7.500 (190.5)  | 7.637 (194.0)  |
| 5506309-300050 | 3.0"             | 1/2" | 9.000 (228.6)  | 8.559 (217.4)  |
| 5506309-300075 | 3.0"             | 3/4" | 9.000 (228.6)  | 8.559 (217.4)  |
| 5506309-300100 | 3.0"             | 1.0" | 9.000 (228.6)  | 8.633 (219.3)  |
| 5506309-300150 | 3.0"             | 1.5" | 9.000 (228.6)  | 8.633 (219.3)  |
| 5506309-300200 | 3.0"             | 2.0" | 9.000 (228.6)  | 8.633 (219.3)  |
| 5506309-300250 | 3.5"             | 2.5" | 9.000 (228.6)  | 8.633 (219.3)  |
| 5506309-000300 | 3.0"             | 3.0" | 9.000 (228.6)  | 8.633 (219.3)  |
| 5506309-400050 | 4.0"             | 1/2" | 12.000 (304.8) | 11.059 (280.9) |
| 5506309-400075 | 4.0"             | 3/4" | 12.000 (304.8) | 11.059 (280.9) |
| 5506309-400100 | 4.0"             | 1.0" | 12.000 (304.8) | 11.133 (282.8) |
| 5506309-400150 | 4.0"             | 1.5" | 12.000 (304.8) | 11.133 (282.8) |
| 5506309-400200 | 4.0"             | 2.0" | 12.000 (304.8) | 11.133 (282.8) |
| 5506309-400250 | 4.0"             | 2.5" | 12.000 (304.8) | 11.133 (282.8) |
| 5506309-400300 | 4.0"             | 3.0" | 12.000 (304.8) | 11.133 (282.8) |
| 5506309-400400 | 4.0"             | 4.0" | 12.000 (304.8) | 11.255 (285.9) |



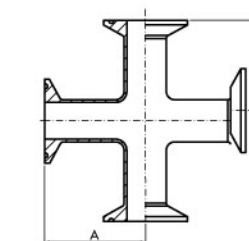
DT-4.1.2-1 Automatic Tube Weld : Straight Cross

| No.            | Nominal Size,in. | A<br>in. (mm) |
|----------------|------------------|---------------|
| 5504102-000050 | 1/2"             | 1.875 (47.6)  |
| 5504102-000075 | 3/4"             | 2.000 (50.8)  |
| 5504102-000100 | 1.0"             | 2.125 (54.0)  |
| 5504102-000150 | 1.5"             | 2.375 (60.3)  |
| 5504102-000200 | 2.0"             | 2.875 (73.0)  |
| 5504102-000250 | 2.5"             | 3.125 (79.4)  |
| 5504102-000300 | 3.0"             | 3.375 (85.7)  |
| 5504102-000400 | 4.0"             | 4.125 (104.8) |
| 5504102-000600 | 6.0"             | 5.625 (142.9) |



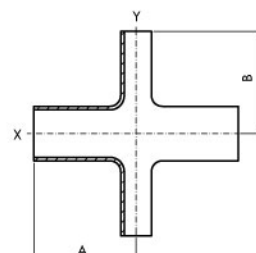
DT-4.1.2-4 Hygienic Clamp Joint: Straight Cross

| No.            | Nominal Size,in. | A<br>in. (mm) |
|----------------|------------------|---------------|
| 5504302-000050 | 1/2"             | 2.250 (57.2)  |
| 5504302-000075 | 3/4"             | 2.375 (60.3)  |
| 5504302-000100 | 1.0"             | 2.625 (66.7)  |
| 5504302-000150 | 1.5"             | 2.875 (73.0)  |
| 5504302-000200 | 2.0"             | 3.375 (85.7)  |
| 5504302-000250 | 2.5"             | 3.625 (92.1)  |
| 5504302-000300 | 3.0"             | 3.875 (98.4)  |
| 5504302-000400 | 4.0"             | 4.750 (120.7) |
| 5504302-000600 | 6.0"             | 7.125 (181.0) |



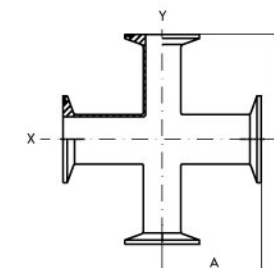
## Automatic Tube Weld : Reducing Cross

| No.            | Nominal Size, in. |      | A     |         | B     |         |
|----------------|-------------------|------|-------|---------|-------|---------|
|                | X                 | Y    | in.   | (mm)    | in.   | (mm)    |
| 5504102-075050 | 3/4"              | 1/2" | 2.000 | (50.8)  | 2.000 | (50.8)  |
| 5504102-100050 | 1.0"              | 1/2" | 2.125 | (54.0)  | 2.125 | (54.0)  |
| 5504102-100075 | 1.0"              | 3/4" | 2.125 | (54.0)  | 2.125 | (54.0)  |
| 5504102-150050 | 1.5"              | 1/2" | 2.375 | (60.3)  | 2.375 | (60.3)  |
| 5504102-150075 | 1.5"              | 3/4" | 2.375 | (60.3)  | 2.375 | (60.3)  |
| 5504102-150100 | 1.5"              | 1.0" | 2.375 | (60.3)  | 2.375 | (60.3)  |
| 5504102-200050 | 2.0"              | 1/2" | 2.875 | (73.0)  | 2.625 | (66.7)  |
| 5504102-200075 | 2.0"              | 3/4" | 2.875 | (73.0)  | 2.625 | (66.7)  |
| 5504102-200100 | 2.0"              | 1.0" | 2.875 | (73.0)  | 2.625 | (66.7)  |
| 5504102-200150 | 2.0"              | 1.5" | 2.875 | (73.0)  | 2.625 | (66.7)  |
| 5504102-250050 | 2.5"              | 1/2" | 3.125 | (79.4)  | 2.875 | (73.0)  |
| 5504102-250075 | 2.5"              | 3/4" | 3.125 | (79.4)  | 2.875 | (73.0)  |
| 5504102-250100 | 2.5"              | 1.0" | 3.125 | (79.4)  | 2.875 | (73.0)  |
| 5504102-250150 | 2.5"              | 1.5" | 3.125 | (79.4)  | 2.875 | (73.0)  |
| 5504102-250200 | 2.5"              | 2.0" | 3.125 | (79.4)  | 2.875 | (73.0)  |
| 5504102-300050 | 3.0"              | 1/2" | 3.375 | (85.7)  | 3.125 | (79.4)  |
| 5504102-300075 | 3.0"              | 3/4" | 3.375 | (85.7)  | 3.125 | (79.4)  |
| 5504102-300100 | 3.0"              | 1.0" | 3.375 | (85.7)  | 3.125 | (79.4)  |
| 5504102-300150 | 3.0"              | 1.5" | 3.375 | (85.7)  | 3.125 | (79.4)  |
| 5504102-300200 | 3.0"              | 2.0" | 3.375 | (85.7)  | 3.125 | (79.4)  |
| 5504102-300250 | 3.0"              | 2.5" | 3.375 | (85.7)  | 3.125 | (79.4)  |
| 5504102-400050 | 4.0"              | 1/2" | 4.125 | (104.8) | 3.625 | (92.1)  |
| 5504102-400075 | 4.0"              | 3/4" | 4.125 | (104.8) | 3.625 | (92.1)  |
| 5504102-400100 | 4.0"              | 1.0" | 4.125 | (104.8) | 3.625 | (92.1)  |
| 5504102-400150 | 4.0"              | 1.5" | 4.125 | (104.8) | 3.625 | (92.1)  |
| 5504102-400200 | 4.0"              | 2.0" | 4.125 | (104.8) | 3.875 | (98.4)  |
| 5504102-400250 | 4.0"              | 2.5" | 4.125 | (104.8) | 3.875 | (98.4)  |
| 5504102-400300 | 4.0"              | 3.0" | 4.125 | (104.8) | 3.875 | (98.4)  |
| 5504102-600300 | 6.0"              | 3.0" | 5.625 | (142.9) | 5.125 | (130.2) |
| 5504102-600400 | 6.0"              | 4.0" | 5.625 | (142.9) | 5.125 | (130.2) |



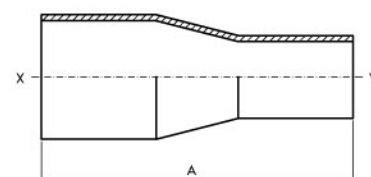
## Hygienic Clamp Joint : Reducing Cross

| No.           | Nominal Size, in. |      | A     |         | B     |         |
|---------------|-------------------|------|-------|---------|-------|---------|
|               | X                 | Y    | in.   | (mm)    | in.   | (mm)    |
| 5504302-07550 | 3/4"              | 1/2" | 2.500 | (63.5)  | 2.500 | (63.5)  |
| 5504302-01050 | 1.0"              | 1/2" | 2.625 | (66.7)  | 2.625 | (66.7)  |
| 5504302-01075 | 1.0"              | 3/4" | 2.625 | (66.7)  | 2.625 | (66.7)  |
| 5504302-01550 | 1.5"              | 1/2" | 2.875 | (73.0)  | 2.875 | (73.0)  |
| 5504302-01575 | 1.5"              | 3/4" | 2.875 | (73.0)  | 2.875 | (73.0)  |
| 5504302-01510 | 1.5"              | 1.0" | 2.875 | (73.0)  | 2.875 | (73.0)  |
| 5504302-02050 | 2.0"              | 1/2" | 3.375 | (85.7)  | 3.125 | (79.4)  |
| 5504302-02075 | 2.0"              | 3/4" | 3.375 | (85.7)  | 3.125 | (79.4)  |
| 5504302-02010 | 2.0"              | 1.0" | 3.375 | (85.7)  | 3.125 | (79.4)  |
| 5504302-02015 | 2.0"              | 1.5" | 3.375 | (85.7)  | 3.125 | (79.4)  |
| 5504302-02510 | 2.5"              | 1.0" | 3.625 | (92.1)  | 3.375 | (85.7)  |
| 5504302-02515 | 2.5"              | 1.5" | 3.625 | (92.1)  | 3.375 | (85.7)  |
| 5504302-02520 | 2.5"              | 2.0" | 3.625 | (92.1)  | 3.375 | (85.7)  |
| 5504302-03010 | 3.0"              | 1.0" | 3.875 | (98.4)  | 3.625 | (92.1)  |
| 5504302-03015 | 3.0"              | 1.5" | 3.875 | (98.4)  | 3.625 | (92.1)  |
| 5504302-03020 | 3.0"              | 2.0" | 3.875 | (98.4)  | 3.875 | (98.4)  |
| 5504302-03025 | 3.0"              | 2.5" | 3.875 | (98.4)  | 3.875 | (98.4)  |
| 5504302-04010 | 4.0"              | 1.0" | 4.750 | (120.7) | 4.125 | (104.8) |
| 5504302-04015 | 4.0"              | 1.5" | 4.750 | (120.7) | 4.125 | (104.8) |
| 5504302-04020 | 4.0"              | 2.0" | 4.750 | (120.7) | 4.375 | (111.1) |
| 5504302-04025 | 4.0"              | 2.5" | 4.750 | (120.7) | 4.375 | (111.1) |
| 5504302-04030 | 4.0"              | 3.0" | 4.750 | (120.7) | 4.375 | (111.1) |
| 5504302-06030 | 6.0"              | 3.0" | 7.125 | (181.0) | 5.375 | (136.5) |
| 5504302-06040 | 6.0"              | 4.0" | 7.125 | (181.0) | 5.750 | (146.1) |



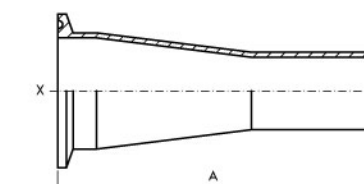
**DT-4.1.3-1(a) Automatic Tube Weld : Concentric Reducer**

| No.            | Nominal Size, in. |      | A              |
|----------------|-------------------|------|----------------|
|                | X                 | Y    | in. (mm)       |
| 5505004-050025 | 1/2"              | 1/4" | 3.250 (82.6)   |
| 5505004-005038 | 1/2"              | 3/8" | 3.250 (82.6)   |
| 5505004-075038 | 3/4"              | 3/8" | 3.250 (82.6)   |
| 5505004-075050 | 3/4"              | 1/2" | 4.000 (101.6)  |
| 5505004-100038 | 1.0"              | 3/8" | 4.500 (114.3)  |
| 5505004-100050 | 1.0"              | 1/2" | 4.500 (114.3)  |
| 5505004-100075 | 1.0"              | 3/4" | 4.000 (101.6)  |
| 5505004-150038 | 1.5"              | 3/8" | 6.000 (152.4)  |
| 5505004-150050 | 1.5"              | 1/2" | 5.550 (139.7)  |
| 5505004-150075 | 1.5"              | 3/4" | 5.000 (127.0)  |
| 5505004-150100 | 1.5"              | 1.0" | 5.000 (127.0)  |
| 5505004-200050 | 2.0"              | 1/2" | 7.750 (196.9)  |
| 5505004-200075 | 2.0"              | 3/4" | 7.250 (184.2)  |
| 5505004-200100 | 2.0"              | 1.0" | 7.250 (184.2)  |
| 5505004-200150 | 2.0"              | 1.5" | 5.250 (133.4)  |
| 5505004-250050 | 2.5"              | 1/2" | 9.750 (247.7)  |
| 5505004-250075 | 2.5"              | 3/4" | 9.250 (235.0)  |
| 5505004-050025 | 2.5"              | 1.0" | 9.250 (235.0)  |
| 5505004-250150 | 2.5"              | 1.5" | 7.250 (184.2)  |
| 5505004-250200 | 2.5"              | 2.0" | 5.550 (139.7)  |
| 5505004-300050 | 3.0"              | 1/2" | 13.250 (336.6) |
| 5505004-300075 | 3.0"              | 3/4" | 12.250 (311.2) |
| 5505004-300100 | 3.0"              | 1.0" | 11.250 (285.8) |
| 5505004-300150 | 3.0"              | 1.5" | 9.250 (235.0)  |
| 5505004-300200 | 3.0"              | 2.0" | 7.500 (190.5)  |
| 5505004-300250 | 3.0"              | 2.5" | 5.550 (139.7)  |
| 5505004-400050 | 4.0"              | 1/2" | 17.500 (444.5) |
| 5505004-400075 | 4.0"              | 3/4" | 16.500 (419.1) |
| 5505004-400100 | 4.0"              | 1.0" | 15.500 (393.7) |
| 5505004-400150 | 4.0"              | 1.5" | 13.500 (342.9) |
| 5505004-400200 | 4.0"              | 2.0" | 11.750 (298.5) |
| 5505004-400250 | 4.0"              | 2.5" | 9.750 (247.7)  |
| 5505004-400300 | 4.0"              | 3.0" | 7.750 (196.9)  |
| 5505004-600300 | 6.0"              | 3.0" | 10.000 (254.0) |
| 5505004-600400 | 6.0"              | 4.0" | 10.000 (254.0) |



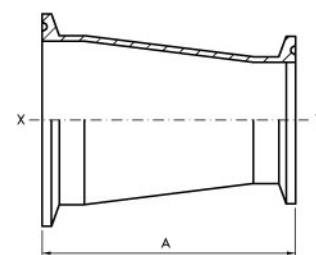
**DT-4.1.3-2(a) Hygienic Clamp Joint: Tube Weld Concentric Reducer**

| No.            | Nominal Size, in. |      | A              |
|----------------|-------------------|------|----------------|
|                | X                 | Y    | in. (mm)       |
| 5505201-075050 | 3/4"              | 1/2" | 3.000 (76.2)   |
| 5505201-100050 | 1.0"              | 1/2" | 3.500 (88.9)   |
| 5505201-100075 | 1.0"              | 3/4" | 3.000 (76.2)   |
| 5505201-150050 | 1.5"              | 1/2" | 4.500 (114.3)  |
| 5505201-150075 | 1.5"              | 3/4" | 4.000 (101.6)  |
| 5505201-150100 | 1.5"              | 1.0" | 4.000 (101.6)  |
| 5505201-200050 | 2.0"              | 1/2" | 6.500 (165.1)  |
| 5505201-200075 | 2.0"              | 3/4" | 6.000 (152.4)  |
| 5505201-200100 | 2.0"              | 1.0" | 6.000 (152.4)  |
| 5505201-200150 | 2.0"              | 1.5" | 4.000 (101.6)  |
| 5505201-250100 | 2.5"              | 1.0" | 8.000 (203.2)  |
| 5505201-250150 | 2.5"              | 1.5" | 6.000 (152.4)  |
| 5505201-250200 | 2.5"              | 2.0" | 4.248 (107.9)  |
| 5505201-300100 | 3.0"              | 1.0" | 10.000 (254.0) |
| 5505201-300150 | 3.0"              | 1.5" | 8.000 (203.2)  |
| 5505201-300200 | 3.0"              | 2.0" | 6.250 (158.8)  |
| 5505201-300250 | 3.0"              | 2.5" | 4.250 (108.0)  |
| 5505201-400100 | 4.0"              | 1.0" | 14.125 (358.8) |
| 5505201-400150 | 4.0"              | 1.5" | 12.125 (308.0) |
| 5505201-400200 | 4.0"              | 2.0" | 10.375 (263.5) |
| 5505201-400250 | 4.0"              | 2.5" | 8.375 (212.7)  |
| 5505201-400300 | 4.0"              | 3.0" | 6.375 (161.9)  |
| 5505201-600300 | 6.0"              | 3.0" | 9.000 (228.6)  |
| 5505201-600400 | 6.0"              | 4.0" | 9.000 (228.6)  |



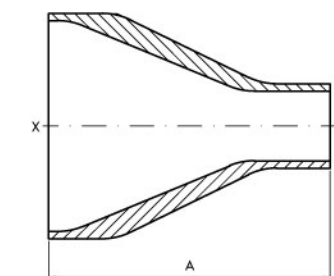
DT-4.1.3-3(a) Hygienic Clamp Joint : Concentric Reducer

| No.            | Nominal Size, in. |      | A<br>in. (mm)  |
|----------------|-------------------|------|----------------|
|                | X                 | Y    |                |
| 5505200-075050 | 3/4"              | 1/2" | 2.000 (50.8)   |
| 5505200-100050 | 1.0"              | 1/2" | 2.500 (63.5)   |
| 5505200-100075 | 1.0"              | 3/4" | 2.000 (50.8)   |
| 5505200-150050 | 1.5"              | 1/2" | 3.500 (88.9)   |
| 5505200-150075 | 1.5"              | 3/4" | 3.000 (76.2)   |
| 5505200-150100 | 1.5"              | 1.0" | 3.000 (76.2)   |
| 5505200-200050 | 2.0"              | 1/2" | 5.500 (139.7)  |
| 5505200-200075 | 2.0"              | 3/4" | 5.000 (127.0)  |
| 5505200-200100 | 2.0"              | 1.0" | 5.000 (127.0)  |
| 5505200-200150 | 2.0"              | 1.5" | 3.000 (76.2)   |
| 5505200-250050 | 2.5"              | 1/2" | 7.500 (190.5)  |
| 5505200-250075 | 2.5"              | 3/4" | 7.000 (177.8)  |
| 5505200-250100 | 2.5"              | 1.0" | 7.000 (177.8)  |
| 5505200-250150 | 2.5"              | 1.5" | 5.000 (127.0)  |
| 5505200-250200 | 2.5"              | 2.0" | 3.000 (76.2)   |
| 5505200-300100 | 3.0"              | 1.0" | 9.000 (228.6)  |
| 5505200-300150 | 3.0"              | 1.5" | 7.000 (177.8)  |
| 5505200-300200 | 3.0"              | 2.0" | 5.000 (127.0)  |
| 5505200-300250 | 3.0"              | 2.5" | 3.000 (76.2)   |
| 5505200-400100 | 4.0"              | 1.0" | 13.125 (333.4) |
| 5505200-400150 | 4.0"              | 1.5" | 11.125 (282.6) |
| 5505200-400200 | 4.0"              | 2.0" | 9.125 (231.8)  |
| 5505200-400250 | 4.0"              | 2.5" | 7.125 (181.0)  |
| 5505200-400300 | 4.0"              | 3.0" | 5.125 (130.2)  |
| 5505200-600300 | 6.0"              | 3.0" | 7.500 (190.5)  |
| 5505200-600400 | 6.0"              | 4.0" | 7.625 (193.7)  |



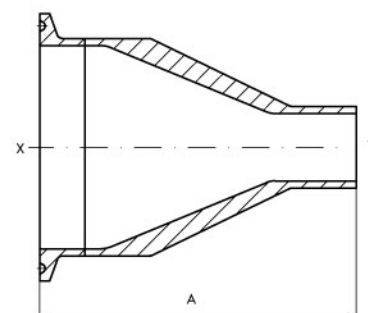
DT-4.1.3-1(b) Automatic Tube Weld : Concentric Reducer

| No.            | Nominal Size, in. |      | A<br>in. (mm) |
|----------------|-------------------|------|---------------|
|                | X                 | Y    |               |
| 5505005-038025 | 3/8"              | 1/4" | 1.625 (41.3)  |
| 5505005-050025 | 1/2"              | 1/4" | 1.875 (47.6)  |
| 5505005-050038 | 1/2"              | 3/8" | 1.875 (47.6)  |
| 5505005-075038 | 3/4"              | 3/8" | 2.000 (50.8)  |
| 5505005-075050 | 3/4"              | 1/2" | 2.125 (54.0)  |
| 5505005-100038 | 1.0"              | 3/8" | 2.250 (57.2)  |
| 5505005-100050 | 1.0"              | 1/2" | 2.500 (63.5)  |
| 5505005-100075 | 1.0"              | 3/4" | 2.125 (54.0)  |
| 5505005-150038 | 1.5"              | 3/8" | 3.000 (76.2)  |
| 5505005-150050 | 1.5"              | 1/2" | 2.750 (69.9)  |
| 5505005-150075 | 1.5"              | 3/4" | 3.000 (76.2)  |
| 5505005-150100 | 1.5"              | 1.0" | 2.500 (63.5)  |
| 5505005-200050 | 2.0"              | 1/2" | 3.606 (91.6)  |
| 5505005-200075 | 2.0"              | 3/4" | 3.375 (85.7)  |
| 5505005-200100 | 2.0"              | 1.0" | 3.375 (85.7)  |
| 5505005-200150 | 2.0"              | 1.5" | 2.500 (63.5)  |
| 5505005-250050 | 2.5"              | 1/2" | 4.878 (123.9) |
| 5505005-250075 | 2.5"              | 3/4" | 4.625 (117.5) |
| 5505005-250100 | 2.5"              | 1.0" | 4.625 (117.5) |
| 5505005-250150 | 2.5"              | 1.5" | 3.375 (85.7)  |
| 5505005-250200 | 2.5"              | 2.0" | 2.500 (63.5)  |
| 5505005-300050 | 3.0"              | 1/2" | 6.625 (168.3) |
| 5505005-300075 | 3.0"              | 3/4" | 6.125 (155.6) |
| 5505005-300100 | 3.0"              | 1.0" | 5.625 (142.9) |
| 5505005-300150 | 3.0"              | 1.5" | 4.255 (108.0) |
| 5505005-300200 | 3.0"              | 2.0" | 3.375 (85.7)  |
| 5505005-300250 | 3.0"              | 2.5" | 2.625 (66.7)  |
| 5505005-400050 | 4.0"              | 1/2" | 8.375 (212.7) |
| 5505005-400075 | 4.0"              | 3/4" | 8.125 (206.4) |
| 5505005-400100 | 4.0"              | 1.0" | 7.375 (187.3) |
| 5505005-400150 | 4.0"              | 1.5" | 6.375 (161.9) |
| 5505005-400200 | 4.0"              | 2.0" | 5.125 (130.2) |
| 5505005-400250 | 4.0"              | 2.5" | 4.250 (108.0) |
| 5505005-400300 | 4.0"              | 3.0" | 3.875 (98.4)  |
| 5505005-600300 | 6.0"              | 3.0" | 7.250 (184.2) |
| 5505005-600400 | 6.0"              | 4.0" | 5.625 (142.9) |



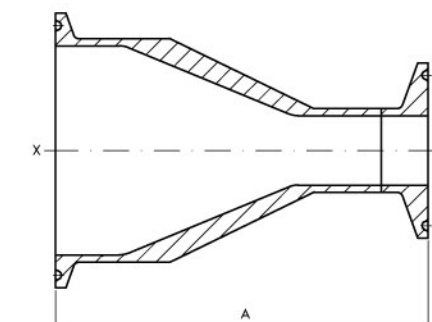
## DT-4.1.3-2(b) Hygienic Clamp Joint: Tube Weld Concentric Reducer

| No.            | Nominal Size, in. |      | A     |         |
|----------------|-------------------|------|-------|---------|
|                | X                 | Y    | in.   | (mm)    |
| 5505202-038025 | 3/8"              | 1/4" | 2.125 | (54.0)  |
| 5505202-050025 | 1/2"              | 1/4" | 2.375 | (60.3)  |
| 5505202-050038 | 1/2"              | 3/8" | 2.375 | (60.3)  |
| 5505202-075038 | 3/4"              | 3/8" | 2.500 | (63.5)  |
| 5505202-075050 | 3/4"              | 1/2" | 2.625 | (66.7)  |
| 5505202-100038 | 1.0"              | 3/8" | 2.750 | (69.9)  |
| 5505202-100050 | 1.0"              | 1/2" | 3.000 | (76.2)  |
| 5505202-100075 | 1.0"              | 3/4" | 2.625 | (66.7)  |
| 5505202-150038 | 1.5"              | 3/8" | 3.500 | (88.9)  |
| 5505202-150050 | 1.5"              | 1/2" | 3.250 | (82.6)  |
| 5505202-150075 | 1.5"              | 3/4" | 3.500 | (88.9)  |
| 5505202-150100 | 1.5"              | 1.0" | 3.000 | (76.2)  |
| 5505202-200050 | 2.0"              | 1/2" | 4.105 | (104.3) |
| 5505202-200075 | 2.0"              | 3/4" | 3.875 | (98.4)  |
| 5505202-200100 | 2.0"              | 1.0" | 3.875 | (98.4)  |
| 5505202-200150 | 2.0"              | 1.5" | 3.000 | (76.2)  |
| 5505202-250050 | 2.5"              | 1/2" | 5.378 | (136.6) |
| 5505202-250075 | 2.5"              | 3/4" | 5.125 | (130.2) |
| 5505202-250100 | 2.5"              | 1.0" | 5.125 | (130.2) |
| 5505202-250150 | 2.5"              | 1.5" | 3.875 | (98.4)  |
| 5505202-250200 | 2.5"              | 2.0" | 3.000 | (76.2)  |
| 5505202-300050 | 3.0"              | 1/2" | 7.125 | (181.0) |
| 5505202-300075 | 3.0"              | 3/4" | 6.625 | (168.3) |
| 5505202-300100 | 3.0"              | 1.0" | 6.125 | (155.6) |
| 5505202-300150 | 3.0"              | 1.5" | 4.750 | (120.7) |
| 5505202-300200 | 3.0"              | 2.0" | 3.875 | (98.4)  |
| 5505202-300250 | 3.0"              | 2.5" | 3.125 | (79.4)  |
| 5505202-400050 | 4.0"              | 1/2" | 8.995 | (228.5) |
| 5505202-400075 | 4.0"              | 3/4" | 8.750 | (222.2) |
| 5505202-400100 | 4.0"              | 1.0" | 7.995 | (203.1) |
| 5505202-400150 | 4.0"              | 1.5" | 6.995 | (177.7) |
| 5505202-400200 | 4.0"              | 2.0" | 5.750 | (146.1) |
| 5505202-400250 | 4.0"              | 2.5" | 4.875 | (123.8) |
| 5505202-400300 | 4.0"              | 3.0" | 4.500 | (114.3) |
| 5505202-600300 | 6.0"              | 3.0" | 8.000 | (203.2) |
| 5505202-600400 | 6.0"              | 4.0" | 6.375 | (161.9) |



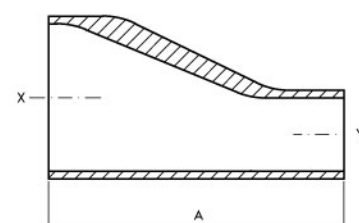
## DT-4.1.3-3(b) Hygienic Clamp Joint : Concentric Reducer

| No.            | Nominal Size, in. |      | A     |         |
|----------------|-------------------|------|-------|---------|
|                | X                 | Y    | in.   | (mm)    |
| 5505203-038025 | 3/8"              | 1/4" | 1.625 | (66.7)  |
| 5505203-050025 | 1/2"              | 1/4" | 1.875 | (73.0)  |
| 5505203-050038 | 1/2"              | 3/8" | 1.875 | (73.0)  |
| 5505203-075038 | 3/4"              | 3/8" | 2.000 | (76.2)  |
| 5505203-075050 | 3/4"              | 1/2" | 2.125 | (79.4)  |
| 5505203-100038 | 1.0"              | 3/8" | 2.250 | (82.6)  |
| 5505203-100050 | 1.0"              | 1/2" | 2.500 | (88.9)  |
| 5505203-100075 | 1.0"              | 3/4" | 2.125 | (79.4)  |
| 5505203-150038 | 1.5"              | 3/8" | 3.000 | (101.6) |
| 5505203-150050 | 1.5"              | 1/2" | 2.750 | (95.3)  |
| 5505203-150075 | 1.5"              | 3/4" | 3.000 | (101.6) |
| 5505203-150100 | 1.5"              | 1.0" | 2.500 | (88.9)  |
| 5505203-200050 | 2.0"              | 1/2" | 3.606 | (117.0) |
| 5505203-200075 | 2.0"              | 3/4" | 3.375 | (111.1) |
| 5505203-200100 | 2.0"              | 1.0" | 3.375 | (111.1) |
| 5505203-200150 | 2.0"              | 1.5" | 2.500 | (88.9)  |
| 5505203-250050 | 2.5"              | 1/2" | 4.878 | (149.3) |
| 5505203-250075 | 2.5"              | 3/4" | 4.625 | (142.9) |
| 5505203-250100 | 2.5"              | 1.0" | 4.625 | (142.9) |
| 5505203-250150 | 2.5"              | 1.5" | 3.375 | (111.1) |
| 5505203-250200 | 2.5"              | 2.0" | 2.500 | (88.9)  |
| 5505203-300050 | 3.0"              | 1/2" | 6.625 | (193.7) |
| 5505203-300075 | 3.0"              | 3/4" | 6.125 | (181.0) |
| 5505203-300100 | 3.0"              | 1.0" | 5.625 | (168.3) |
| 5505203-300150 | 3.0"              | 1.5" | 4.255 | (133.4) |
| 5505203-300200 | 3.0"              | 2.0" | 3.375 | (111.1) |
| 5505203-300250 | 3.0"              | 2.5" | 2.625 | (92.1)  |
| 5505203-400050 | 4.0"              | 1/2" | 8.375 | (241.2) |
| 5505203-400075 | 4.0"              | 3/4" | 8.125 | (234.9) |
| 5505203-400100 | 4.0"              | 1.0" | 7.375 | (215.8) |
| 5505203-400150 | 4.0"              | 1.5" | 6.375 | (190.4) |
| 5505203-400200 | 4.0"              | 2.0" | 5.125 | (158.8) |
| 5505203-400250 | 4.0"              | 2.5" | 4.250 | (136.5) |
| 5505203-400300 | 4.0"              | 3.0" | 3.875 | (127.0) |
| 5505203-600300 | 6.0"              | 3.0" | 7.250 | (215.9) |
| 5505203-600400 | 6.0"              | 4.0" | 5.625 | (177.8) |



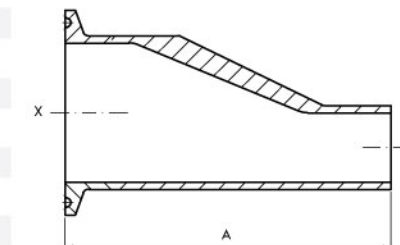
## DT-4.1.3-1(b) Automatic Tube Weld : Eccentric Reducer

| No.            | Nominal Size, in. |      | A             |
|----------------|-------------------|------|---------------|
|                | X                 | Y    | in. (mm)      |
| 5505105-038025 | 3/8"              | 1/4" | 1.625 (41.3)  |
| 5505105-050025 | 1/2"              | 1/4" | 1.875 (47.6)  |
| 5505105-050038 | 1/2"              | 3/8" | 1.875 (47.6)  |
| 5505105-075038 | 3/4"              | 3/8" | 2.000 (50.8)  |
| 5505105-075050 | 3/4"              | 1/2" | 2.125 (54.0)  |
| 5505105-100038 | 1.0"              | 3/8" | 2.250 (57.2)  |
| 5505105-100050 | 1.0"              | 1/2" | 2.500 (63.5)  |
| 5505105-100075 | 1.0"              | 3/4" | 2.125 (54.0)  |
| 5505105-150038 | 1.5"              | 3/8" | 3.000 (76.2)  |
| 5505105-150050 | 1.5"              | 1/2" | 2.750 (69.9)  |
| 5505105-150075 | 1.5"              | 3/4" | 3.000 (76.2)  |
| 5505105-150100 | 1.5"              | 1.0" | 2.500 (63.5)  |
| 5505105-200050 | 2.0"              | 1/2" | 3.606 (91.6)  |
| 5505105-200075 | 2.0"              | 3/4" | 3.375 (85.7)  |
| 5505105-200100 | 2.0"              | 1.0" | 3.375 (85.7)  |
| 5505105-200150 | 2.0"              | 1.5" | 2.500 (63.5)  |
| 5505105-250050 | 2.5"              | 1/2" | 4.878 (123.9) |
| 5505105-250075 | 2.5"              | 3/4" | 4.625 (117.5) |
| 5505105-250100 | 2.5"              | 1.0" | 4.625 (117.5) |
| 5505105-250150 | 2.5"              | 1.5" | 3.375 (85.7)  |
| 5505105-250200 | 2.5"              | 2.0" | 2.500 (63.5)  |
| 5505105-300050 | 3.0"              | 1/2" | 6.625 (168.3) |
| 5505105-300075 | 3.0"              | 3/4" | 6.125 (155.6) |
| 5505105-300100 | 3.0"              | 1.0" | 5.625 (142.9) |
| 5505105-300150 | 3.0"              | 1.5" | 4.255 (108.0) |
| 5505105-300200 | 3.0"              | 2.0" | 3.375 (85.7)  |
| 5505105-300250 | 3.0"              | 2.5" | 2.625 (66.7)  |
| 5505105-400050 | 4.0"              | 1/2" | 8.375 (212.7) |
| 5505105-400075 | 4.0"              | 3/4" | 8.125 (206.4) |
| 5505105-400100 | 4.0"              | 1.0" | 7.375 (187.3) |
| 5505105-400150 | 4.0"              | 1.5" | 6.375 (161.9) |
| 5505105-400200 | 4.0"              | 2.0" | 5.125 (130.2) |
| 5505105-400250 | 4.0"              | 2.5" | 4.250 (108.0) |
| 5505105-400300 | 4.0"              | 3.0" | 3.875 (98.4)  |
| 5505105-600300 | 6.0"              | 3.0" | 7.250 (184.2) |
| 5505105-600400 | 6.0"              | 4.0" | 5.625 (142.9) |



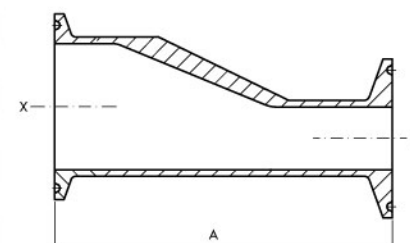
## DT-4.1.3-2(b) Hygienic Clamp Joint : Tube Weld Eccentric Reducer

| No.            | Nominal Size, in. |      | A             |
|----------------|-------------------|------|---------------|
|                | X                 | Y    | in. (mm)      |
| 5505302-038025 | 3/8"              | 1/4" | 2.125 (54.0)  |
| 5505302-050025 | 1/2"              | 1/4" | 2.375 (60.3)  |
| 5505302-050038 | 1/2"              | 3/8" | 2.375 (60.3)  |
| 5505302-075038 | 3/4"              | 3/8" | 2.500 (63.5)  |
| 5505302-075050 | 3/4"              | 1/2" | 2.625 (66.7)  |
| 5505302-100038 | 1.0"              | 3/8" | 2.750 (69.9)  |
| 5505302-100050 | 1.0"              | 1/2" | 3.000 (76.2)  |
| 5505302-100075 | 1.0"              | 3/4" | 2.625 (66.7)  |
| 5505302-150038 | 1.5"              | 3/8" | 3.500 (88.9)  |
| 5505302-150050 | 1.5"              | 1/2" | 3.250 (82.6)  |
| 5505302-150075 | 1.5"              | 3/4" | 3.500 (88.9)  |
| 5505302-150100 | 1.5"              | 1.0" | 3.000 (76.2)  |
| 5505302-200050 | 2.0"              | 1/2" | 4.105 (104.3) |
| 5505302-200075 | 2.0"              | 3/4" | 3.875 (98.4)  |
| 5505302-200100 | 2.0"              | 1.0" | 3.875 (98.4)  |
| 5505302-200150 | 2.0"              | 1.5" | 3.000 (76.2)  |
| 5505302-250050 | 2.5"              | 1/2" | 5.378 (136.6) |
| 5505302-250075 | 2.5"              | 3/4" | 5.125 (130.2) |
| 5505302-250100 | 2.5"              | 1.0" | 5.125 (130.2) |
| 5505302-250150 | 2.5"              | 1.5" | 3.875 (98.4)  |
| 5505302-250200 | 2.5"              | 2.0" | 3.000 (76.2)  |
| 5505302-300050 | 3.0"              | 1/2" | 7.125 (181.0) |
| 5505302-300075 | 3.0"              | 3/4" | 6.625 (168.3) |
| 5505302-300100 | 3.0"              | 1.0" | 6.125 (155.6) |
| 5505302-300150 | 3.0"              | 1.5" | 4.750 (120.7) |
| 5505302-300200 | 3.0"              | 2.0" | 3.875 (98.4)  |
| 5505302-300250 | 3.0"              | 2.5" | 3.125 (79.4)  |
| 5505302-400050 | 4.0"              | 1/2" | 8.995 (228.5) |
| 5505302-400075 | 4.0"              | 3/4" | 8.750 (222.2) |
| 5505302-400100 | 4.0"              | 1.0" | 7.995 (203.1) |
| 5505302-400150 | 4.0"              | 1.5" | 6.995 (177.7) |
| 5505302-400200 | 4.0"              | 2.0" | 5.750 (146.1) |
| 5505302-400250 | 4.0"              | 2.5" | 4.875 (123.8) |
| 5505302-400300 | 4.0"              | 3.0" | 4.500 (114.3) |
| 5505302-600300 | 6.0"              | 3.0" | 8.000 (203.2) |
| 5505302-600400 | 6.0"              | 4.0" | 6.375 (161.9) |



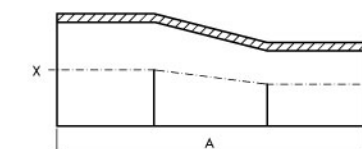
DT-4.1.3-3(b) Hygienic Clamp Joint : Eccentric Reducer

| No.            | Nominal Size, in. |      | A<br>in. (mm) |
|----------------|-------------------|------|---------------|
|                | X                 | Y    |               |
| 5505303-038025 | 3/8"              | 1/4" | 1.625 (66.7)  |
| 5505303-050025 | 1/2"              | 1/4" | 1.875 (73.0)  |
| 5505303-050038 | 1/2"              | 3/8" | 1.875 (73.0)  |
| 5505303-075038 | 3/4"              | 3/8" | 2.000 (76.2)  |
| 5505303-075050 | 3/4"              | 1/2" | 2.125 (79.4)  |
| 5505303-100038 | 1.0"              | 3/8" | 2.250 (82.6)  |
| 5505303-100050 | 1.0"              | 1/2" | 2.500 (88.9)  |
| 5505303-100075 | 1.0"              | 3/4" | 2.125 (79.4)  |
| 5505303-150038 | 1.5"              | 3/8" | 3.000 (101.6) |
| 5505303-150050 | 1.5"              | 1/2" | 2.750 (95.3)  |
| 5505303-150075 | 1.5"              | 3/4" | 3.000 (101.6) |
| 5505303-150100 | 1.5"              | 1.0" | 2.500 (88.9)  |
| 5505303-200050 | 2.0"              | 1/2" | 3.606 (117.0) |
| 5505303-200075 | 2.0"              | 3/4" | 3.375 (111.1) |
| 5505303-200100 | 2.0"              | 1.0" | 3.375 (111.1) |
| 5505303-200150 | 2.0"              | 1.5" | 2.500 (88.9)  |
| 5505303-250050 | 2.5"              | 1/2" | 4.878 (149.3) |
| 5505303-250075 | 2.5"              | 3/4" | 4.625 (142.9) |
| 5505303-250100 | 2.5"              | 1.0" | 4.625 (142.9) |
| 5505303-250150 | 2.5"              | 1.5" | 3.375 (111.1) |
| 5505303-250200 | 2.5"              | 2.0" | 2.500 (88.9)  |
| 5505303-300050 | 3.0"              | 1/2" | 6.625 (193.7) |
| 5505303-300075 | 3.0"              | 3/4" | 6.125 (181.0) |
| 5505303-300100 | 3.0"              | 1.0" | 5.625 (168.3) |
| 5505303-300150 | 3.0"              | 1.5" | 4.255 (133.4) |
| 5505303-300200 | 3.0"              | 2.0" | 3.375 (111.1) |
| 5505303-300250 | 3.0"              | 2.5" | 2.625 (92.1)  |
| 5505303-400050 | 4.0"              | 1/2" | 8.375 (241.2) |
| 5505303-400075 | 4.0"              | 3/4" | 8.125 (234.9) |
| 5505303-400100 | 4.0"              | 1.0" | 7.375 (215.8) |
| 5505303-400150 | 4.0"              | 1.5" | 6.375 (190.4) |
| 5505303-400200 | 4.0"              | 2.0" | 5.125 (158.8) |
| 5505303-400250 | 4.0"              | 2.5" | 4.250 (136.5) |
| 5505303-400300 | 4.0"              | 3.0" | 3.875 (127.0) |
| 5505303-600300 | 6.0"              | 3.0" | 7.250 (215.9) |
| 5505303-600400 | 6.0"              | 4.0" | 5.625 (177.8) |



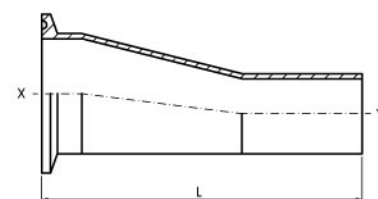
DT-4.1.3-1(a) Automatic Tube Weld : Eccentric Reducer

| No.            | Nominal Size, in. |      | A<br>in. (mm)  |
|----------------|-------------------|------|----------------|
|                | X                 | Y    |                |
| 5505104-005038 | 1/2"              | 3/8" | 3.250 (82.6)   |
| 5505104-075038 | 3/4"              | 3/8" | 3.250 (82.6)   |
| 5505104-075050 | 3/4"              | 1/2" | 4.000 (101.6)  |
| 5505104-100038 | 1.0"              | 3/8" | 4.500 (114.3)  |
| 5505104-100050 | 1.0"              | 1/2" | 4.500 (114.3)  |
| 5505104-100075 | 1.0"              | 3/4" | 4.000 (101.6)  |
| 5505104-150038 | 1.5"              | 3/8" | 6.000 (152.4)  |
| 5505104-150050 | 1.5"              | 1/2" | 5.550 (139.7)  |
| 5505104-150075 | 1.5"              | 3/4" | 5.000 (127.0)  |
| 5505104-150100 | 1.5"              | 1.0" | 5.000 (127.0)  |
| 5505104-200050 | 2.0"              | 1/2" | 7.750 (196.9)  |
| 5505104-200075 | 2.0"              | 3/4" | 7.250 (184.2)  |
| 5505104-200100 | 2.0"              | 1.0" | 7.250 (184.2)  |
| 5505104-200150 | 2.0"              | 1.5" | 5.250 (133.4)  |
| 5505104-250050 | 2.5"              | 1/2" | 9.750 (247.7)  |
| 5505104-250075 | 2.5"              | 3/4" | 9.250 (235.0)  |
| 5505104-050025 | 2.5"              | 1.0" | 9.250 (235.0)  |
| 5505104-250150 | 2.5"              | 1.5" | 7.250 (184.2)  |
| 5505104-250200 | 2.5"              | 2.0" | 5.550 (139.7)  |
| 5505104-300050 | 3.0"              | 1/2" | 13.250 (336.6) |
| 5505104-300075 | 3.0"              | 3/4" | 12.250 (311.2) |
| 5505104-300100 | 3.0"              | 1.0" | 11.250 (285.8) |
| 5505104-300150 | 3.0"              | 1.5" | 9.250 (235.0)  |
| 5505104-300200 | 3.0"              | 2.0" | 7.500 (190.5)  |
| 5505104-300250 | 3.0"              | 2.5" | 5.550 (139.7)  |
| 5505104-400050 | 4.0"              | 1/2" | 17.500 (444.5) |
| 5505104-400075 | 4.0"              | 3/4" | 16.500 (419.1) |
| 5505104-400100 | 4.0"              | 1.0" | 15.500 (393.7) |
| 5505104-400150 | 4.0"              | 1.5" | 13.500 (342.9) |
| 5505104-400200 | 4.0"              | 2.0" | 11.750 (298.5) |
| 5505104-400250 | 4.0"              | 2.5" | 9.750 (247.7)  |
| 5505104-400300 | 4.0"              | 3.0" | 7.750 (196.9)  |
| 5505104-600300 | 6.0"              | 3.0" | 10.000 (254.0) |
| 5505104-600400 | 6.0"              | 4.0" | 10.000 (254.0) |



DT-4.1.3-1(a) Hygienic Clamp Joint: Tube Weld Eccentric Reducer

| No.            | Nominal Size, in. |   | A<br>in. (mm)  |
|----------------|-------------------|---|----------------|
|                | X                 | Y |                |
| 5505301-075050 | 3/4"x1/2"         |   | 3.000 (76.2)   |
| 5505301-100050 | 1.0"x1/2"         |   | 3.500 (88.9)   |
| 5505301-100075 | 1.0"x3/4"         |   | 3.000 (76.2)   |
| 5505301-150050 | 1.5"x1/2"         |   | 4.500 (114.3)  |
| 5505301-150075 | 1.5"x3/4"         |   | 4.000 (101.6)  |
| 5505301-150100 | 1.5"x1.0"         |   | 4.000 (101.6)  |
| 5505301-200050 | 2.0"x1/2"         |   | 6.500 (165.1)  |
| 5505301-200075 | 2.0"x3/4"         |   | 6.000 (152.4)  |
| 5505301-200100 | 2.0"x1.0"         |   | 6.000 (152.4)  |
| 5505301-200150 | 2.0"x1.5"         |   | 4.000 (101.6)  |
| 5505301-250075 | 2.5"x3/4"         |   | 8.000 (203.2)  |
| 5505301-250100 | 2.5"x1.0"         |   | 8.000 (203.2)  |
| 5505301-250150 | 2.5"x1.5"         |   | 6.000 (152.4)  |
| 5505301-250200 | 2.5"x2.0"         |   | 4.250 (108.0)  |
| 5505301-300100 | 3.0"x1.0"         |   | 10.000 (254.0) |
| 5505301-300150 | 3.0"x1.5"         |   | 8.000 (203.2)  |
| 5505301-300200 | 3.0"x2.0"         |   | 6.250 (158.8)  |
| 5505301-300250 | 3.0"x2.5"         |   | 4.250 (108.0)  |
| 5505301-400100 | 4.0"x1.0"         |   | 14.125 (358.8) |
| 5505301-400150 | 4.0"x1.5"         |   | 12.125 (308.0) |
| 5505301-400200 | 4.0"x2.0"         |   | 10.375 (263.5) |
| 5505301-400250 | 4.0"x2.5"         |   | 8.375 (212.7)  |
| 5505301-400300 | 4.0"x3.0"         |   | 6.375 (161.9)  |
| 5505301-600300 | 6.0"x3.0"         |   | 8.750 (222.3)  |
| 5505301-600400 | 6.0"x4.0"         |   | 9.000 (228.6)  |



DT-4.1.3-3(a) Hygienic Clamp Joint: Eccentric Reducer

| No.            | Nominal Size, in. |      | A<br>in. (mm)  |
|----------------|-------------------|------|----------------|
|                | X                 | Y    |                |
| 5505300-075050 | 3/4"              | 1/2" | 2.000 (50.8)   |
| 5505300-100050 | 1.0"              | 1/2" | 2.500 (63.5)   |
| 5505300-100075 | 1.0"              | 3/4" | 2.000 (50.8)   |
| 5505300-150050 | 1.5"              | 1/2" | 3.500 (88.9)   |
| 5505300-150075 | 1.5"              | 3/4" | 3.000 (76.2)   |
| 5505300-150100 | 1.5"              | 1.0" | 3.000 (76.2)   |
| 5505300-200050 | 2.0"              | 1/2" | 5.500 (139.7)  |
| 5505300-200075 | 2.0"              | 3/4" | 5.000 (127.0)  |
| 5505300-200100 | 2.0"              | 1.0" | 5.000 (127.0)  |
| 5505300-200150 | 2.0"              | 1.5" | 3.000 (76.2)   |
| 5505300-250100 | 2.5"              | 1.0" | 7.000 (177.8)  |
| 5505300-250150 | 2.5"              | 1.5" | 5.000 (127.0)  |
| 5505300-250200 | 2.5"              | 2.0" | 3.000 (76.2)   |
| 5505300-300100 | 3.0"              | 1.0" | 9.000 (228.6)  |
| 5505300-300150 | 3.0"              | 1.5" | 7.000 (177.8)  |
| 5505300-300200 | 3.0"              | 2.0" | 5.000 (127.0)  |
| 5505300-300250 | 3.0"              | 2.5" | 3.000 (76.2)   |
| 5505300-400100 | 4.0"              | 1.0" | 13.125 (333.4) |
| 5505300-400150 | 4.0"              | 1.5" | 11.125 (282.6) |
| 5505300-400200 | 4.0"              | 2.0" | 9.125 (231.8)  |
| 5505300-400250 | 4.0"              | 2.5" | 7.125 (181.0)  |
| 5505300-400300 | 4.0"              | 3.0" | 5.125 (130.2)  |
| 5505300-600300 | 6.0"              | 3.0" | 7.625 (193.7)  |
| 5505300-600400 | 6.0"              | 4.0" | 7.625 (193.7)  |

