



RODGER

BIOPHARMACEUTICAL Processing Components

Componentes de procesamiento **biofarmacéutico**
Composants du traitement **biopharmaceutique**
약제학 부속품



Life Science and **SOLUTIONS**

Ciencias de la vida y **soluciones**

Sciences de la vie et **solutions**

생명과학 및 솔루션

Developments in the field of life sciences, and a rise in global population have created a growing demand for pharmaceuticals worldwide. By manufacturing BPE compliant fittings, RODGER INDUSTRIES INC. is an integral link in this supply chain.

Los avances en el campo de las ciencias de la vida, así como un aumento en la población mundial, han creado una creciente demanda de farmacéuticos alrededor del mundo. Al fabricar rieles para equipo biofarmacéutico (EBF), Rodger Industries Inc. se convierte en un eslabón esencial en esta cadena de suministro.

Les développements dans le domaine des sciences de la vie et l'augmentation de la population de la planète ont créé une demande croissante à l'échelle mondiale pour des produits pharmaceutiques. En fabriquant des raccords conformes avec la norme BPE, RODGER INDUSTRIES INC. constitue un maillon intégral de cette chaîne d'approvisionnement.

생명과학 분야의 발전과 세계적인 인구 증가로 전세계의 제약 관련 수요도 증가하고 있습니다. BPE 규격 준수 부속품을 제조하는 Rodger Industries Inc.는 이 분야의 공급망을 통합하는 역할을 하고 있습니다.



HYGIENIC PROCESSING COMPONENTS

Componentes de Procesamiento Higiénico · Composants de traitement hygiénique · 위생 처리 구성 요소



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About US

Quiénes Somos
À propos de Nous
회사 소개

RODGER INDUSTRIES INC. has more than 80 years collective experience in dairy, food, beverage and high purity industries such as biopharmaceutical and cosmetics. While fittings and filtration solutions are our focal point, we offer additional complementary process components such as valves and high purity tubing. We are committed to continuous improvement of our product quality and range. Our dedicated staff welcomes customer challenges as opportunities to create quality solutions.

RODGER INDUSTRIES INC. tiene más de 80 años de experiencia colectiva en las industrias de lácteos, alimentos, bebidas y de alta pureza, como la biofarmacéutica y los cosméticos. Aunque los rieles y las soluciones de filtración son nuestro enfoque principal, ofrecemos componentes complementarios adicionales, tales como válvulas y tubería de alta pureza. Estamos comprometidos con la mejora continua de la calidad y gama de nuestros productos. Nuestro personal dedicado recibe los retos del cliente como oportunidades para crear soluciones de calidad.

RODGER INDUSTRIES INC. a plus de 80 ans d'expérience collective dans les industries laitières, les domaines des produits alimentaires et des boissons et les industries d'une grande pureté comme celles du domaine biopharmaceutique ou des cosmétiques. Alors que les solutions de raccords et de filtration sont notre priorité, nous offrons des composants du traitement complémentaire supplémentaires, tels que des valves et des tubes d'une grande pureté. Nous nous engageons à fournir une amélioration continue de la qualité et de la gamme de nos produits. Notre personnel dévoué accueille les enjeux des clients comme des occasions de créer des solutions de qualité.

RODGER INDUSTRIES INC.는 낙농, 식품, 음료 및 생물약제, 화장품과 같은 고순도 산업 분야에 80년 이상의 역사를 가지고 있습니다. 주로 부속품과 여과 방법에 초점을 맞추고 있지만 밸브, 고순도 배관 등 보완 공정 부품도 제공합니다. 그리고 제품의 품질과 범위를 지속적으로 개선하기 위해 최선을 다하고 있습니다. 아울러 전담 직원은 고객의 문제 제기를 기회로 삼아 양질의 해결책을 만들어냅니다.



North American MADE

Hecho en Norteamérica

Fabriqués en Amérique du Nord

북미산



The utilization of automated processes, combined with skilled craftsmanship provides us with the optimum formula to produce essential process components, such as fittings and filters. Products continuously undergo meticulous inspection starting with the arrival of raw materials through to final quality control and packaging stages. Biopharmaceutical fittings are visually inspected by use of borescope and white light visual inspection, as well as measured with a profilometer to ensure maximum surface roughness ($R_a \mu\text{-in}$) tolerances have not been exceeded. Uncompromising adherence to product integrity and ensuring maximum repeatability define the values of our organization.

El uso de procesos automatizados, en combinación con fabricación especializada, nos ha dado la fórmula óptima para producir componentes de procesamiento esenciales, tales como los rieles y los filtros. Los productos se someten continuamente a inspección meticulosa, desde el arribo de la materia prima hasta las etapas finales de control de calidad y embalaje. Los rieles biofarmacéuticos se inspeccionan visualmente mediante boroscopio y luz blanca, y se miden con un perfilómetro para garantizar que las tolerancias máximas de rugosidad en la superficie ($R_a \mu\text{-in}$) no se hayan excedido. Los valores de nuestra organización se definen en la adherencia absoluta a la integridad del producto y la garantía de repetitibilidad máxima.

L'utilisation de procédés automatisés, combinée avec des travailleurs qualifiés nous fournit la formule optimale pour produire les principaux composants de procédé, tels que les raccords et les filtres. Les produits sont continuellement soumis à une inspection méticuleuse, de l'arrivée des matières brutes en passant par le contrôle de qualité final et les étapes de l'emballage. Les raccords biopharmaceutiques sont inspectés visuellement au moyen d'un endoscope et de lumière blanche, en plus d'être mesurés au moyen d'un profilomètre afin de s'assurer que les tolérances en matière de rugosité de surface maximale ($R_a \mu\text{-in}$) n'ont pas été dépassées. Le respect sans compromis de l'intégrité du produit et la répétabilité maximale définissent les valeurs de notre organisation.

당사는 자동화된 공정과 숙련된 기술을 활용하여 부속품, 필터 등 기본적인 공정 부품을 최적의 방식으로 생산하고 있습니다. 제품은 원자재 도착에서 최종 품질 관리 및 포장 단계에 이르기까지 계속해서 세심한 검사를 거칩니다. 생물약제용 부속품은 보스코프와 백광 육안 검사를 사용하여 육안으로 검사하며, 최대 표면 거칠기($R_a \mu\text{-in}$) 공차를 초과하지 않도록 하기 위해 조면계를 사용하여 측정합니다. 제품 무결성을 유지하면서 반복성을 최대한 확보하는 것은 당사가 추구하는 주요 가치입니다.





Our BRAND AND RANGE

Notre Marque et Notre Gamme • 우리의 브랜드 및 다양성

Nuestra marca y gama de productos

Standing behind our brand is of utmost importance to us. We take pride in our product's quality and that is why we put our stamp on it. Confidence earned in the marketplace has inherently linked our brand to quality. RODGER sanitary fittings are marked with heat numbers offering complete traceability. Heat numbers are connected to a Material Test Report (MTR) providing a link to the metallurgical origins of the raw components produced by the steel mill. RODGER fittings are marked with alloy type and applicable fittings are marked with Canadian Registration Number (CRN). In addition to this, applicable fittings are accredited with 3A sanitary certification. Rodger Industries offers a wide product range of components and extensive inventory of process components such as sanitary fittings, biopharmaceutical fittings, filters and strainers. From receipt of order to product at your door - we take satisfaction in providing our customers with the fastest possible turnaround times and second to none service.

La réputation derrière notre marque est de la plus haute importance pour nous. Nous sommes fiers de la qualité de nos produits et c'est la raison pour laquelle nous en avons fait notre marque. La confiance que nous avons acquise sur le marché associe de façon inhérente notre marque à la qualité. Les raccords sanitaires de Rodger sont marqués avec des numéros de coulée, offrant une traçabilité complète. Les numéros de coulée sont associés à un rapport d'essai de matériau (MTR) fournissant un lien vers les origines métallurgiques des composants bruts produits par l'aciérie. Les raccords RODGER portent le type d'alliage et les raccords applicables portent le Numéro d'enregistrement canadien (NEC). De plus, les raccords applicables sont accrédités avec la certification sanitaire 3A. Rodger Industries offre un large éventail de produits conçus pour un usage sanitaire et d'autres industries de haute pureté. Nous tirons une grande satisfaction de fournir à nos clients des délais d'exécution les plus rapides possible et un service irréprochable.

Para nosotros es de suma importancia responder por nuestra marca. Nos sentimos tan orgullosos de la calidad de nuestro producto que le hemos puesto nuestro. La confianza ganada en el mercado ha conectado firmemente nuestra marca con el concepto de calidad. La capacidad térmica ofrece un vínculo al Informe de prueba de material (MTR), el cual certifica los orígenes metalúrgicos de los componentes básicos producidos por la acería.. Los adaptadores RODGER vienen marcados con el tipo de aleación y los adaptadores correspondientes están marcados con el número de registro canadiense (CRN). Rodger Industries ofrece una amplia gama de productos adecuados para uso en el procesamiento sanitario y otras industrias de alta pureza. Nos enorgullecemos de ofrecer a nuestros clientes los tiempos de entrega más rápidos y un servicio sin igual.

브랜드에 대한 책임감은 당사에게 가장 중요한 것입니다. 당사는 자사 제품의 품질을 자랑스럽게 생각하므로 제품에 브랜드를 표시합니다. 본질적으로 브랜드에 대한 시장의 신뢰가 품질로 이어졌습니다. 자재 시험 보고서(MTR)에서 원자재가 제강 공장의 어느 야금 공정에서 생산되었는지를 확인할 수 있습니다.에는 합금 타입 및 히트 번호가 표시되며, 해당 부품에는 캐나다 등록번호(Canadian Registration Number; CRN)가 표시됩니다. RODGER 부식품은 합금으로 된 부품으로서 해당 부품에는 캐나다 등록 번호(CRN)가 새겨져 있습니다. Rodger Industries는 위생 설비, 생물약제용 설비, 필터, 스트레이너 등 광범위한 제품 및 공정 부품을 제공합니다. 우리는 어떤 서비스든지 고객들의 요구에 가능한 가장 신속히 반응함으로써 만족해 왔습니다.



BPE MATERIALS

Materiales para equipo de bioprocessos
Matériaux en BPE • BPE 재료

Biopharmaceutical tubes and fittings are manufactured of T316L stainless steel. Raw materials are always inspected upon arrival at our facility and continuously monitored throughout the production process. All mechanically polished tubes meet or exceed A270, 3A, A270-S2.

Los tubos y adaptadores biofarmacéuticos se fabrican con acero inoxidable T316L. La materia prima siempre se inspecciona al llegar a nuestras instalaciones y se monitorea continuamente durante todo el proceso de producción. Todos los tubos pulidos mecánicamente cumplen o superan las especificaciones A270, 3A, A270-S2.

Les tubes et raccords biopharmaceutiques sont fabriqués avec de l'acier inoxydable T316L. Les matières brutes sont toujours inspectées lors de leur arrivée à notre usine et constamment surveillées pendant le processus de production. Tous les tubes polis mécaniquement satisfont ou dépassent les normes A270, 3A, A270-S2.

생물약제학상 투브 및 부속품은 T316L 스텐레스강으로 제조됩니다. 원재료는 항상 공장에 도착하는 즉시 검수한 후 전 제조 과정을 통해 지속적으로 모니터됩니다. 기계로 광택 처리를 한 모든 투브는 A270, 3A, A270-S2에 부합하거나 이를 초과합니다.

CHEMICAL COMPOSITION	ELEMENT	%
Carbon • Carbono • Kohlenstoff • 탄소	(C)	0.030% Max
Manganese • Manganeso • Manganèse • 망간	(Mn)	2.0% Max
Phosphorus • Fósforo • Phosphor • 인	(P)	0.045% Max
Sulphur • Azufre • Schwefel • 황	(S)	0.030% Max
Silicone • Silicona • Silikon • 규소	(Si)	1.0%
Chromium • Cromo • Chrom • 크롬	(Cr)	16.0-18.0%
Nickel • Níquel • Nickel • 니켈	(Ni)	10.0-14.0%
Molybdenum • Molibdeno • Molybdène • 몰리브덴	(Mo)	2.0-3.0%
Nitrogen • Nitrógeno • Azote • 질소	(N)	





+/- TOLERANCE

Tolerancia +/-

Tolérances +/-

+/- 내성

Utilization of automated processes, combined with skilled craftsmanship provides the optimum formula to produce BPE compliant fittings that exceed the exacting tolerances demanded by the biopharmaceutical industry. Uncompromising adherence to product integrity and ensuring maximum repeatability define the values of our organization.

La utilización de procesos automatizados, en combinación con la fabricación especializada, constituyen la fórmula óptima para producir raccords para equipo biofarmacéutico que superan las tolerancias exigentes requeridas por la industria biofarmacéutica. Los valores de nuestra organización se definen en la adherencia absoluta a la integridad del producto y la garantía de repetitibilidad máxima.

L'utilisation de processus automatisés, combinée avec une excellente fabrication, fournit la formule optimale permettant de produire des raccords conformes à la norme BPE qui dépassent les tolérances strictes exigées par le secteur biopharmaceutique. Le respect sans compromis de l'intégrité du produit et la répétabilité maximale définissent les valeurs de notre organisation.

Rodger Industries Inc.는 숙련된 기술력과 자동화 공정을 활용하여 약제학 산업이 요구하는 정확한 공차 조건을 충분히 충족하는 BPE 규격 준수 부속품을 생산하도록 최적의 제조법을 제공하고 있습니다. 제품 무결성을 유지하면서 반복성을 최대한 확보하는 것은 당사가 추구하는 주요 가치입니다.





Material **TRACEABILITY**

Trazabilidad completa
Traçabilité complète
완전한 추적 기능



Fittings and other bioprocessing components are constructed of high purity stainless steel and offer full traceability. Rodger biopharmaceutical fittings are manufactured to BPE standards and are marked to indicate Canadian Registration Number (CRN), alloy type and heat number. Heat numbers offer a link to the Material Test Report (MTR), which certifies the metallurgical origins of the raw components produced by the steel mill. Products are rigorously inspected throughout the manufacturing process, starting with the arrival of raw materials continuing through final quality control. Rodger BPE fittings are only offered in T316L grade stainless steel.

Los ríacos y otros componentes de bioprocesamiento están construidos de acero inoxidable de alta pureza y ofrecen trazabilidad completa. Los ríacos biofarmacéuticos Rodger se fabrican de acuerdo con los estándares del EBF y se marcan para indicar el número de registro canadiense (CRN), el tipo de aleación y la capacidad térmica. La capacidad térmica ofrece un vínculo al Informe de prueba de material (MTR), el cual certifica los orígenes metalúrgicos de los componentes básicos producidos por la acería. Los productos se inspeccionan rigurosamente durante todo el proceso de manufactura, iniciando con el arribo de la materia prima y continuando hasta el control de calidad final. Los ríacos de EBF Rodger se ofrecen únicamente en acero inoxidable de grado T316L.

Les raccords et les autres composants pour la biotransformation sont fabriqués en acier inoxydable d'une très grande pureté et offrent une traçabilité totale. Les raccords biomédicaux de Rodger sont fabriqués conformément aux normes BPE, et portent le type d'alliage et le numéro de coulée, et les raccords applicables portent le Numéro d'enregistrement canadien (NEC). Les numéros de coulée fournissent un lien avec le rapport d'essai de matériau (MTR), qui certifie les origines métallurgiques des composants bruts produits par l'aciérie. Les produits subissent des inspections rigoureuses pendant le processus de fabrication, de l'arrivée des matières brutes au contrôle final de la qualité. Les raccords de Rodger conformes aux normes BPE ne sont offerts qu'en acier inoxydable de calibre T316L.

부속품과 기타 생물학적 제법 처리 부품은 고순도 스텐레스 강으로 만들어졌으며 완전한 추적 기능을 제공합니다. Rodger 약제학 부속품은 BPE 표준에 따라 제조되었으며 CRN(Canadian Registration Number), 합금 종류, 열처리 관리 번호 등이 표시되어 있습니다. 열처리 관리 번호는 제강 공장에서 제조한 미가공 부품의 야금술 종류를 인증하는 자재 시험 보고서 (MTR)와 연결되는 링크를 제공합니다. 또한 원자재 도착에서부터 최종 품질 검사에 이르기까지 제조 공정 전반에서 제품을 엄격하게 검사합니다. Rodger BPE 부속품은 T316L 등급 스텐레스강으로만 제공됩니다.



Surface DESIGNATIONS

Clasificación de superficie • **Désignations** des surfaces • **표면 지정**

Rodger BPE fittings are available with both mechanically polished SF1 and electro-polished SF4 surface finishes. Fittings are measured with a profilometer to ensure that maximum surface roughness (Ra.) tolerances have not been exceeded in adherence to BPE standards. Surface finish reports are available on request. Fitting ends are closed with polyethylene caps and colour coded upon request.

Los accesorios Rodger BPE están disponibles con acabados de superficie SF1 pulidos mecánicamente y pulidos electro-pulidos. Los adaptadores se miden con un perfilómetro para garantizar que no se excedan los límites máximos de rugosidad superficial (Ra.), como lo indican las normas de equipo para bioprocesos. Los extremos de los adaptadores se cierran con tapas de polietileno y se codifican por color bajo pedido.

Les raccords Rodger BPE sont disponibles avec des finitions de surface SF1 polies mécaniquement et SF4 électro-polies. Les raccords sont mesurés au moyen d'un profilomètre afin de s'assurer que les tolérances en matière de rugosité de surface maximale (Ra.) ne dépassent pas les normes BPE. Les extrémités des raccords sont fermées avec des capuchons en polyéthylène et un code de couleurs est ajouté sur demande.

Rodger BPE 부속품은 기계적 광택 SF1 및 전기적 광택을 사용한 SF4 표면 마무리를 하여 제공될 수 있습니다. 표면 거칠기 (Ra.) 저항력이 BPE 기준을 초과하지 않도록 하기 위해 조면기로 부속품을 측정합니다. 부속품 끝은 폴리에틸렌 캡으로 막고 신청 시 색으로 코딩을 합니다.

ASME BPE Surface Designation	Inside Surface			Outside Surface		
	μ-in. Max Ra.	μm Max Ra.	Surface Treatment	μ-in.	μm Max Ra.	Surface Treatment
SF1	20	.5	Mechanically Polished	≤ 32	0.8 μm	Mechanically Polished
SF4	15	.375	Mechanically Polished and Electropolished	≤ 32	0.8 μm	Mechanically Polished



MAX Ra. and Visual Inspection

Ra. Máx. y Inspección visual

Rugosité de surface maximale et inspection visuelle

최대 Ra. 및 육안 검사

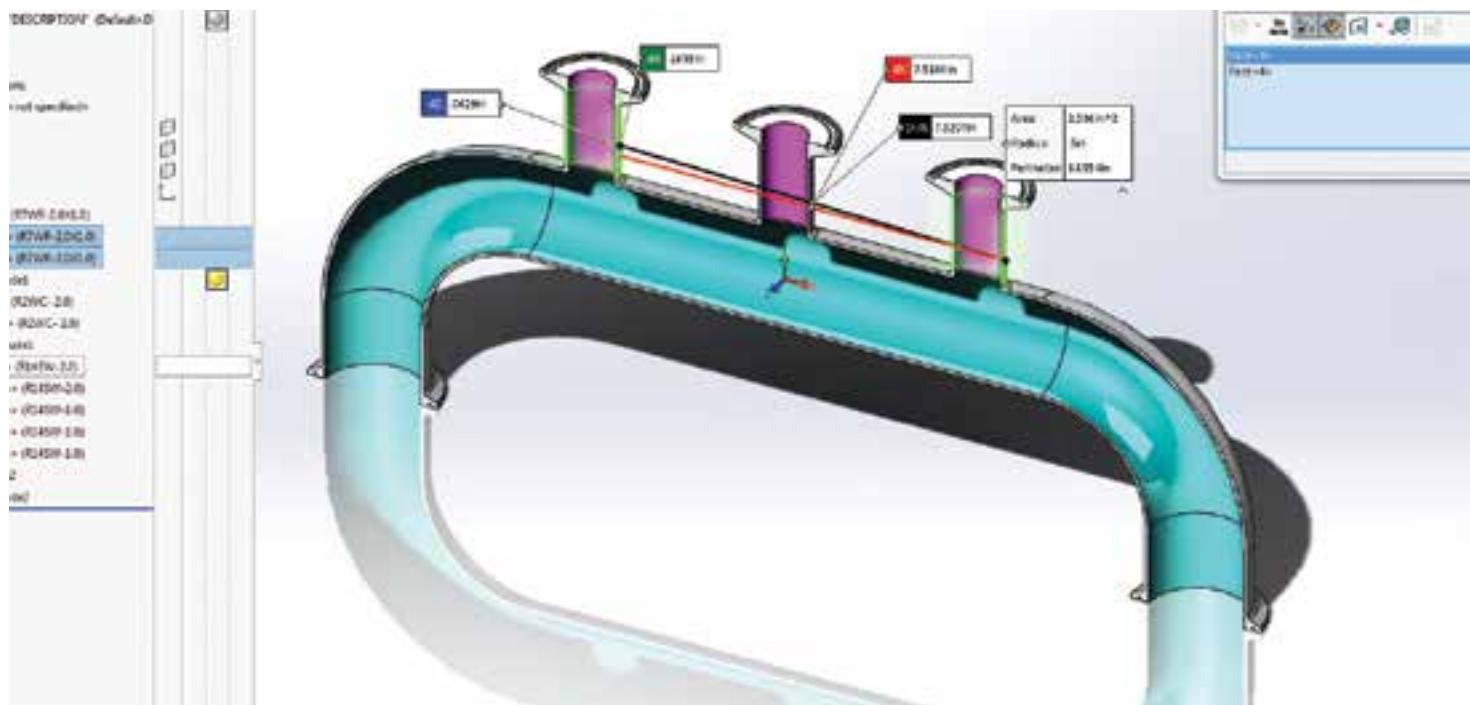
Tubes and fittings undergo meticulous quality measures and inspection to ensure compliance to BPE standards. Biopharmaceutical components are visually inspected by use of borescope camera and white light visual inspection, as well as measured with a profilometer. Fittings are measured with a profilometer to ensure that maximum surface roughness (Ra) tolerances have not been exceeded in adherence to BPE standards. Surface finish reports are available on request.

Los tubos y adaptadores se someten a controles e inspecciones de calidad meticulosos para garantizar que cumplan con las normas de equipo para bioprocesos. Los componentes biofarmacéuticos se inspeccionan visualmente mediante cámara con boroscopio y luz blanca, y se miden con un perfilómetro para garantizar que las tolerancias máximas de rugosidad en la superficie (Ra) no se hayan excedido. Los informes de acabado superficial están disponibles bajo pedido.

Les tubes et les raccords font l'objet de mesures de qualité et d'inspections méticuleuses afin d'assurer leur conformité avec les normes BPE. Les composants biopharmaceutiques sont inspectés visuellement au moyen d'un endoscope et de lumière blanche, en plus d'être mesurés au moyen d'un profilomètre afin de s'assurer que les tolérances en matière de rugosité de surface maximale (Ra) ne dépassent pas les normes BPE. Des rapports sur le fini de surface sont disponibles sur demande.

튜브와 부속품은 BPE 표준 준수를 확인하기 위해 세심하게 질측정 및 검사를 합니다. 약제학 부속품은 보스코프 카메라와 백광 육안 검사를 사용하여 육안으로 검사하며, 최대 표면 거칠기(Ra) 공차가 BPE 표준을 초과하지 않도록 하기 위해 조면계를 사용하여 측정합니다. 표면 마무리 보고서는 요청시 제공할 수 있습니다.





Customized **CAPABILITIES**

Capacidad de producción a medida
Capacités personnalisées

맞춤식 제조



In-house capabilities of producing customized fittings and manifolds allow our customers to focus on their core competencies. Solutions to unique challenges are designed and manufactured to adhere to strict deadlines.

Additionally, required documentation for all custom assemblies is provided, ensuring full traceability. Our know-how and adaptability supports the blueprint to your success.

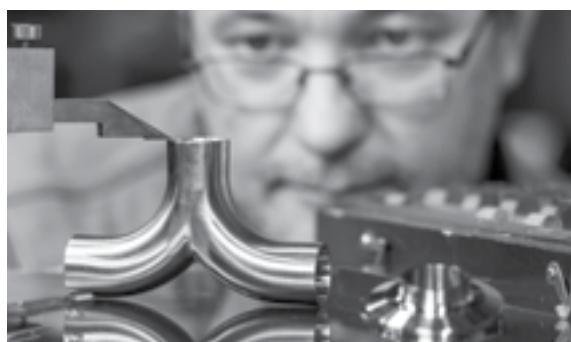
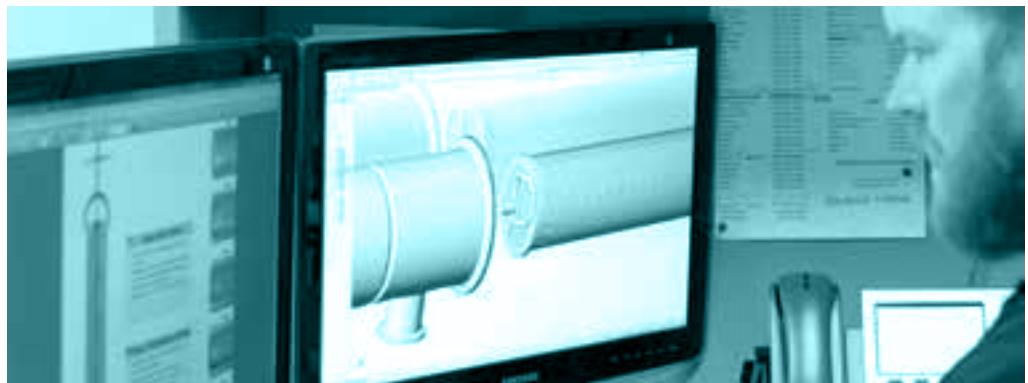
Nuestra capacidad interna de producir rieles y distribuidores a medida permiten a nuestros clientes concentrarse en sus actividades principales. Las soluciones a retos únicos se diseñan y fabrican de manera que se adhieren a fechas límite estrictas. Además, se proporciona la documentación requerida para todo armado personalizado, lo cual garantiza la trazabilidad. Nuestro conocimiento técnico y nuestra adaptabilidad forman una pieza clave de su éxito.

Nos capacités internes de production de raccords et de collecteurs personnalisés permettent à nos clients de se concentrer sur leurs compétences fondamentales. Des solutions à des défis uniques sont conçues et fabriquées dans le respect d'échéanciers stricts. De plus, la documentation requise pour tous les assemblages sur mesure est fournie, assurant ainsi une traçabilité complète. Notre savoir-faire et notre adaptabilité sont la clé de votre succès.

맞춤화된 부속품과 매니폴드의 내부적 제조 기술 덕분에 고객들은 주요 역량을 발전시키는 일에만 초점을 맞출 수 있으며, 촉박한 기한을 준수할 수 있도록 독특한 문제를 해결할 솔루션을 설계 및 제조하고 있습니다. 또한 모든 맞춤식 조립품에 필요한 문서를 제공하여 완전한 주적이 가능하도록 하고 있습니다. 당사의 노하우와 적용 능력은 고객의 성공 청사진을 실현하도록 지원합니다.



Our know-how and adaptability supports the blueprint to your success



ELBOWS AND U-BENDS

Codos y Trampas · Coudees et coudes en U · 엘보우 및 유 굽히다

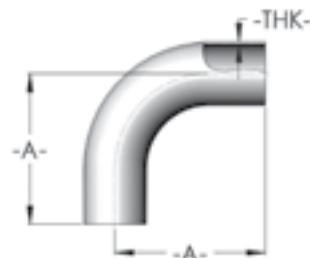




Biopharmaceutical Processing Components

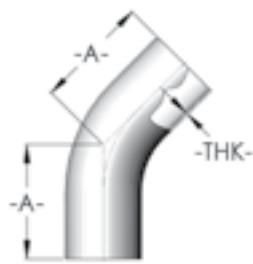


Componentes de procesamiento biofarmacéutico • Composants du traitement biopharmaceutique • 약제학 부속품



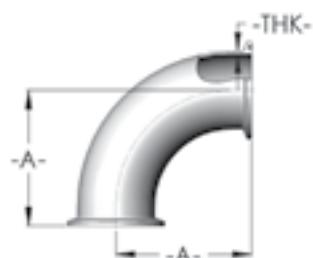
RBP2S
DT- 4.1.1-1

- 90° Elbow**
Both Ends Butt Weld
- Codo de 90°**
Soldadura a tope en ambos extremos
- Coude à 90°**
extrémités à souder
- 90° 엘보우**
양단 맞대기 용접



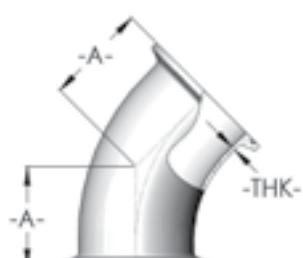
RBP2KS
DT- 4.1.1-4

- 45° Elbow**
Both Ends Butt Weld
- Codo de 45°**
Soldadura a tope en ambos extremos
- Coude à 45°**
extrémités à souder
- 45° 엘보우**
양단 맞대기 용접



RBP2C
DT- 4.1.1-3

- 90° Elbow**
Both Ends Clamp
- Codo de 90°**
Abrazadera en ambos extremos
- Coude à 90°**
extrémités type clamp
- 90° 엘보우**
양단 클램프



RBP2K
DT- 4.1.1-6

- 45° Elbow**
Both Ends Clamp
- Codo de 45°**
Abrazadera en ambos extremos
- Coude à 45°**
extrémités type clamp
- 45° 엘보우**
양단 클램프

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	THK (in.)	THK (mm)
½	12.70	3.000	76.2	.065	1.65
¾	19.05	3.000	76.2	.065	1.65
1	25.40	3.000	76.2	.065	1.65
1 ½	38.10	3.750	95.3	.065	1.65
2	50.80	4.750	120.7	.065	1.65
2 ½	63.50	5.500	139.7	.065	1.65
3	76.20	6.250	158.8	.065	1.65
4	101.60	8.000	203.2	.083	2.11

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	THK (in.)	THK (mm)
½	12.70	2.250	57.2	.065	1.65
¾	19.05	2.250	57.2	.065	1.65
1	25.40	2.250	57.2	.065	1.65
1 ½	38.10	2.500	63.5	.065	1.65
2	50.80	3.000	76.2	.065	1.65
2 ½	63.50	3.375	85.7	.065	1.65
3	76.20	3.625	92.1	.065	1.65
4	101.60	4.500	114.3	.083	2.11

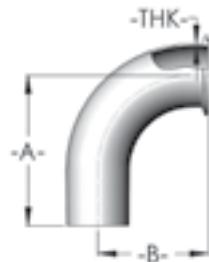
Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	THK (in.)	THK (mm)
½	12.70	1.625	41.3	.065	1.65
¾	19.05	1.625	41.3	.065	1.65
1	25.40	2.000	50.8	.065	1.65
1 ½	38.10	2.750	69.9	.065	1.65
2	50.80	3.500	88.9	.065	1.65
2 ½	63.50	4.250	108.0	.065	1.65
3	76.20	5.000	127.0	.065	1.65
4	101.60	6.625	168.3	.083	2.11

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	THK (in.)	THK (mm)
½	12.70	1.000	25.4	.065	1.65
¾	19.05	1.000	25.4	.065	1.65
1	25.40	1.125	28.6	.065	1.65
1 ½	38.10	1.438	36.5	.065	1.65
2	50.80	1.750	44.5	.065	1.65
2 ½	63.50	2.063	52.4	.065	1.65
3	76.20	2.375	60.3	.065	1.65
4	101.60	3.125	79.4	.083	2.11

Biopharmaceutical Processing Components



Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 부속품



RBP2CW
DT- 4.1.1-2

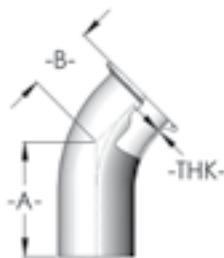
90° Elbow
One End Clamp
Other End Butt Weld

Codo de 90°
Abrazadera en un extremo
Soldadura a tope en el otro extremo

Coude à 90°
extrémités type clamp
et à souder

90° 엘보우
한쪽 클램프
반대쪽 맞대기 용접

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	THK (in.)	THK (mm)
1/2	12.70	3.000	76.2	1.625	41.3	.065	1.65
3/4	19.05	3.000	76.2	1.625	41.3	.065	1.65
1	25.40	3.000	76.2	2.000	50.8	.065	1.65
1 1/2	38.10	3.750	95.3	2.750	69.9	.065	1.65
2	50.80	4.750	120.7	3.500	88.9	.065	1.65
2 1/2	63.50	5.500	139.7	4.250	108.0	.065	1.65
3	76.20	6.250	158.8	5.000	127.0	.065	1.65
4	101.60	8.000	203.2	6.625	168.3	.083	2.11



RBP2KW
DT- 4.1.1-5

45° Elbow
One End Clamp
Other End Butt Weld

Codo de 45°
Abrazadera en un extremo
Soldadura a tope en el otro extremo

Coude à 45°
extrémités type clamp
et à souder

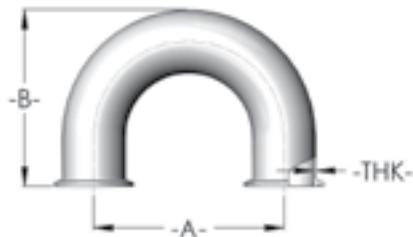
45° 엘보우
한쪽 클램프
반대쪽 맞대기 용접

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	THK (in.)	THK (mm)
1/2	12.70	2.250	57.2	1.000	25.4	.065	1.65
3/4	19.05	2.250	57.2	1.000	25.4	.065	1.65
1	25.40	2.250	57.2	1.125	28.6	.065	1.65
1 1/2	38.10	2.500	63.5	1.438	36.5	.065	1.65
2	50.80	3.000	76.2	1.750	44.5	.065	1.65
2 1/2	63.50	3.375	85.7	2.063	52.4	.065	1.65
3	76.20	3.625	92.1	2.375	60.3	.065	1.65
4	101.60	4.500	114.3	3.125	79.4	.083	2.11

Biopharmaceutical Processing Components



Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 부속품



180° U-Bend
Both Ends Clamp

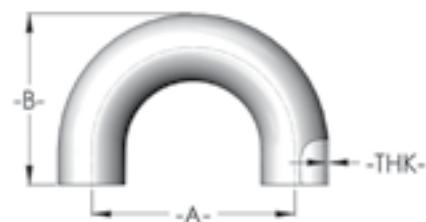
Trampa de 180°
Abrazadera en ambos extremos

Coude en U de 180°
extrémités type clamp

유 굽히다 180°
양단 클램프

R2UC

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	THK (in.)	THK (mm)
1	25.40	3.000	76.2	3.063	77.8	.065	1.65
1 ½	38.10	4.500	114.3	4.188	106.4	.065	1.65
2	50.80	6.000	152.4	5.563	141.3	.065	1.65
2 ½	63.50	7.500	190.5	6.938	176.2	.065	1.65
3	76.20	9.000	228.6	8.313	211.2	.065	1.65
4	101.60	12.000	304.8	10.938	277.8	.083	2.11



180° U-Bend
Both Ends Butt Weld

Trampa de 180°
Stumpfschweißnaht an beiden Enden

Coude en U de 180°
extrémités à souder

유 굽히다 180°
양단 맞대기 용접

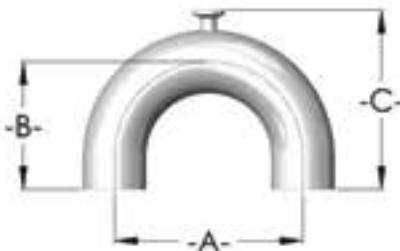
R2UW

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	THK (in.)	THK (mm)
1	25.40	3.000	76.2	2.563	65.1	.065	1.65
1 ½	38.10	4.500	114.3	3.688	93.7	.065	1.65
2	50.80	6.000	152.4	5.063	128.6	.065	1.65
2 ½	63.50	7.500	190.5	6.438	163.5	.065	1.65
3	76.20	9.000	228.6	7.813	198.5	.065	1.65
4	101.60	12.000	304.8	10.313	262.0	.083	2.11

Biopharmaceutical Processing Components



Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 부속품



R2UWPUA

Point of Use U-Bend

Both Ends Weld
Clamp point of use port

Trampa de punto de uso

Ambos extremos con soldadura a tope
Puerto de abrazadera para punto de uso

Code en U au point d'utilisation-

Soudure bout à bout aux deux extrémités
Port de serrage au point d'utilisation

유 굽히다 사용 현장

양쪽 끝 맞대기 용접

클램프 포트 사용 현장

Tube Size (in.)	Port Size (in.)	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)
1	1/2	3.00	76.2	2.06	52.4	3.19	81.1
1	3/4	3.00	76.2	2.06	52.4	3.19	81.1
1 1/2	1/2	4.50	114.3	2.94	74.6	4.32	109.7
1 1/2	3/4	4.50	114.3	2.94	74.6	4.32	109.7
1 1/2	1	4.50	114.3	2.94	74.6	4.32	109.7
2	1/2	6.00	152.4	4.06	103.2	5.69	144.6
2	3/4	6.00	152.4	4.06	103.2	5.69	144.6
2	1	6.00	152.4	4.06	103.2	5.69	144.6
2	1 1/2	6.00	152.4	4.06	103.2	5.69	144.6
2 1/2	1/2	7.50	190.5	5.19	131.8	7.07	179.5
2 1/2	1	7.50	190.5	5.19	131.8	7.07	179.5
2 1/2	2	7.50	190.5	5.19	131.8	7.07	179.5
3	1/2	9.00	228.6	6.31	160.4	8.44	214.5
3	3/4	9.00	228.6	6.31	160.4	8.44	214.5
3	1	9.00	228.6	6.31	160.4	8.44	214.5
3	1 1/2	9.00	228.6	6.31	160.4	8.44	214.5
3	2	9.00	228.6	6.31	160.4	8.44	214.5



R2UWPUB

Point of Use U-Bend

Both Ends Weld
Clamp point of use port

Trampa de punto de uso

Ambos extremos con soldadura a tope
Puerto de abrazadera para punto de uso

Code en U au point d'utilisation-

Soudure bout à bout aux deux extrémités
Port de serrage au point d'utilisation

유 굽히다 사용 현장

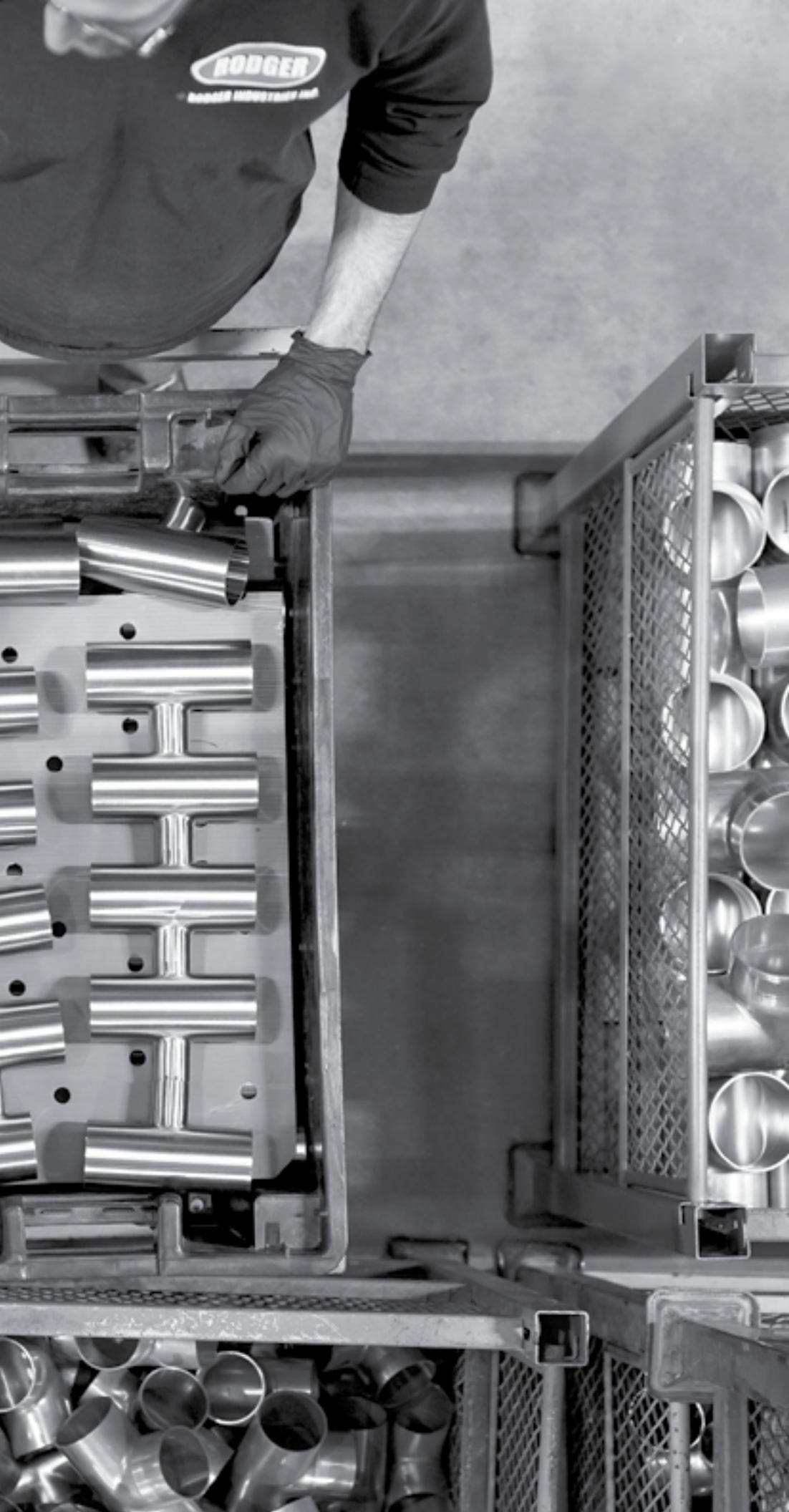
양쪽 끝 맞대기 용접

클램프 포트 사용 현장

Tube Size (in.)	Port Size (in.)	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	D (in.)	D (mm)
1	3/4	3.00	76.2	2.06	52.4	2.19	55.7	1.13	28.7
1 1/2	3/4	4.50	114.3	2.94	74.6	3.32	84.3	1.38	35.1
1 1/2	1	4.50	114.3	2.94	74.6	3.19	81.0	1.38	35.1
2	3/4	6.00	152.4	4.06	103.2	4.69	119.2	1.63	41.4
2	1	6.00	152.4	4.06	103.2	4.56	115.9	1.63	41.4
2	1 1/2	6.00	152.4	4.06	103.2	4.31	109.6	1.63	41.4
2 1/2	1	7.50	190.5	5.19	131.8	5.94	150.8	1.88	47.8
2 1/2	1 1/2	7.50	190.5	5.19	131.8	5.69	144.5	1.88	47.8
2 1/2	2	7.50	190.5	5.19	131.8	5.44	138.1	1.88	47.8
3	1	9.00	228.6	6.31	160.4	7.31	185.8	2.13	54.1
3	1 1/2	9.00	228.6	6.31	160.4	7.06	179.4	2.13	54.1
3	2	9.00	228.6	6.31	160.4	6.81	173.1	2.13	54.1
3	2 1/2	9.00	228.6	6.31	160.4	6.56	166.7	2.13	54.1
4	1	12.00	304.8	8.31	211.2	9.81	249.3	2.63	66.8
4	1 1/2	12.00	304.8	8.31	211.2	9.56	242.9	2.63	66.8
4	2	12.00	304.8	8.31	211.2	9.31	236.6	2.63	66.8
4	2 1/2	12.00	304.8	8.31	211.2	9.06	230.2	2.63	66.8
4	3	12.00	304.8	8.31	211.2	8.81	223.9	2.63	66.8

CROSSES AND TEES

Cruces y conexiones en T · Croix et tés · 크로스 및 티

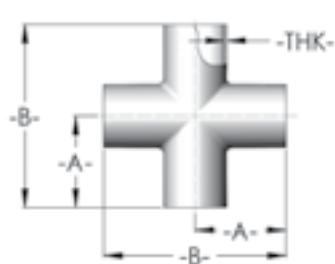




Biopharmaceutical Processing Components



Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 부속품



Cross

All Ends Butt Weld

Cruz

Soldadura a tope en todos los extremos

Croix

extrémités à souder

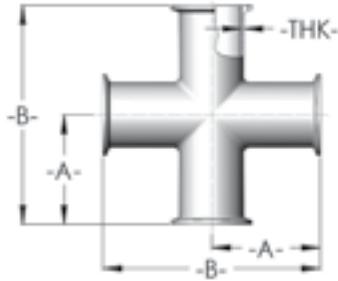
크로스

전체 맞대기 용접

RBP9WWWW

DT- 4.1.2-1

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	THK (in.)	THK (mm)
1/2	12.70	1.875	47.6	3.750	95.3	.065	1.65
3/4	19.05	2.000	50.8	4.000	101.6	.065	1.65
1	25.40	2.125	54.0	4.250	108.0	.065	1.65
1 1/2	38.10	2.375	60.3	4.750	120.7	.065	1.65
2	50.80	2.875	73.0	5.750	146.1	.065	1.65
2 1/2	63.50	3.125	79.4	6.250	158.8	.065	1.65
3	76.20	3.375	85.7	6.750	171.5	.065	1.65
4	101.60	4.125	104.8	8.250	209.6	.083	2.11



Cross

All Ends Clamp

Cruz

Abrazadera en todos los extremos

Croix

extrémités type clamp

크로스

전체 맞대기 용접

RBP9

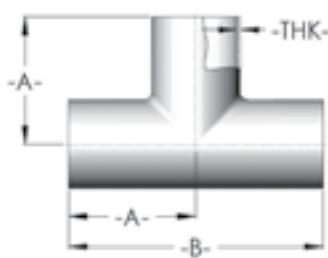
DT- 4.1.2-4

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	THK (in.)	THK (mm)
1/2	12.70	2.250	57.2	4.500	114.3	.065	1.65
3/4	19.05	2.375	60.3	4.750	120.7	.065	1.65
1	25.40	2.625	66.7	5.250	133.4	.065	1.65
1 1/2	38.10	2.875	73.0	5.750	144.8	.065	1.65
2	50.80	3.375	85.7	6.750	171.5	.065	1.65
2 1/2	63.50	3.625	92.1	7.250	184.2	.065	1.65
3	76.20	3.875	98.4	7.750	196.9	.065	1.65
4	101.60	4.750	120.7	9.500	241.3	.083	2.11

Biopharmaceutical Processing Components



Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 부속품



Tee

All Ends Butt Weld

Conexión en T

Soldadura a tope en todos los extremos

Té

extrémités à souder

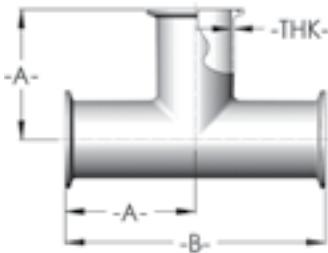
티

전체 맞대기 용접

RBP7W

DT- 4.1.2-1

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	THK (in.)	THK (mm)
½	12.70	1.875	47.6	3.750	95.3	.065	1.65
¾	19.05	2.000	50.8	4.000	101.6	.065	1.65
1	25.40	2.125	54.0	4.250	108.0	.065	1.65
1 ½	38.10	2.375	60.3	4.750	120.7	.065	1.65
2	50.80	2.875	73.0	5.750	146.1	.065	1.65
2 ½	63.50	3.125	79.4	6.250	158.8	.065	1.65
3	76.20	3.375	85.7	6.750	171.5	.065	1.65
4	101.60	4.125	104.8	8.250	209.6	.083	2.11



Tee

All Ends Clamp

Conexión en T

Abrazadera en todos los extremos

Té

extrémités type clamp

티

전체 맞대기 용접

RBP7C

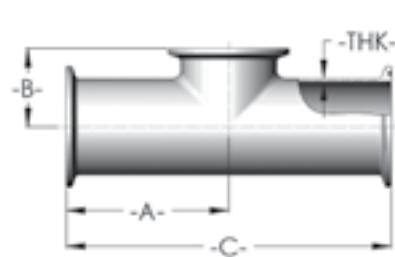
DT- 4.1.2-4

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	THK (in.)	THK (mm)
½	12.70	2.250	57.2	4.500	114.3	.065	1.65
¾	19.05	2.375	60.3	4.750	120.7	.065	1.65
1	25.40	2.625	66.7	5.250	133.4	.065	1.65
1 ½	38.10	2.875	73.0	5.750	146.1	.065	1.65
2	50.80	3.375	85.7	6.750	171.5	.065	1.65
2 ½	63.50	3.625	92.1	7.250	184.2	.065	1.65
3	76.20	3.875	98.4	7.750	196.9	.065	1.65
4	101.60	4.750	120.7	9.500	241.3	.083	2.11

Biopharmaceutical Processing Components



Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 부속품



RBP7SC

DT- 4.1.2-5

Tee

Run Ends Clamp
Branch Short Clamp

Conexión en T

Abrazadera en dos extremos
Abrazadera en extremo corto

Té

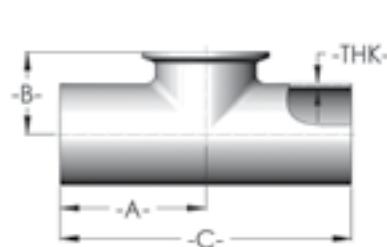
extrémités type clamp
embranchement court type clamp

티

런 엔드 클램프

브랜치 쇼트 클램프

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	THK (in.)	THK (mm)
½	12.70	2.250	57.2	1.000	25.4	4.500	114.3	.065	1.65
¾	19.05	2.375	60.3	1.125	28.6	4.750	120.7	.065	1.65
1	25.40	2.625	66.7	1.125	28.6	5.250	133.4	.065	1.65
1 ½	38.10	2.875	73.0	1.375	34.9	5.750	146.1	.065	1.65
2	50.80	3.375	85.7	1.625	41.3	6.750	171.5	.065	1.65
2 ½	63.50	3.625	92.1	1.875	47.6	7.250	184.2	.065	1.65
3	76.20	3.875	98.4	2.125	54.0	7.750	196.9	.065	1.65
4	101.60	4.750	120.7	2.750	69.9	9.500	241.3	.083	2.11



RBP7WWSC

DT- 4.1.2-2

Tee

Run Ends Butt Weld
Branch Short Clamp

Conexión en T

Soldadura a tope en dos extremos
Abrazadera en extremo corto

Té

extrémités à souder
embranchement court type clamp

티

런 엔드 맞대기 울접

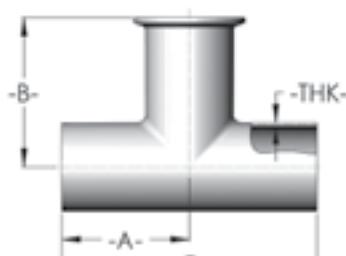
브랜치 쇼트 클램프

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	THK (in.)	THK (mm)
½	12.70	1.875	47.6	1.000	25.4	3.750	95.3	.065	1.65
¾	19.05	2.000	50.8	1.125	28.6	4.000	101.6	.065	1.65
1	25.40	2.125	54.0	1.125	28.6	4.250	108.0	.065	1.65
1 ½	38.10	2.375	60.3	1.375	34.9	4.750	120.7	.065	1.65
2	50.80	2.875	73.0	1.625	41.3	5.750	146.1	.065	1.65
2 ½	63.50	3.125	79.4	1.875	47.6	6.250	158.8	.065	1.65
3	76.20	3.375	85.7	2.125	54.0	6.750	171.5	.065	1.65
4	101.60	4.125	104.8	2.750	69.9	8.250	209.6	.083	2.11

Biopharmaceutical Processing Components



Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 부속품



RBP7WWC

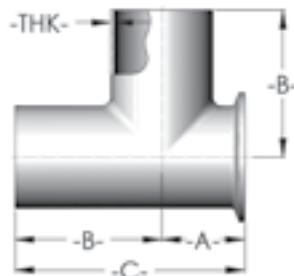
Tee
Run Ends Butt Weld
Branch Clamp

Conexión en T
Soldadura a tope en dos extremos
Abrazadera en un extremo

Té
extrémités à souder
embranchement type clamp

티
런 엔드 맞대기 용접
브랜치 클램프

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	THK (in.)	THK (mm)
½	12.70	1.875	47.6	2.250	57.2	3.750	95.3	.065	1.65
¾	19.05	2.000	50.8	2.375	60.3	4.000	101.6	.065	1.65
1	25.40	2.125	54.0	2.625	66.7	4.250.	108.0	.065	1.65
1 ½	38.10	2.375	60.3	2.875	73.0	4.750	120.7	.065	1.65
2	50.80	2.875	73.0	3.375	85.7	5.750	146.1	.065	1.65
2 ½	63.50	3.125	79.4	3.625	92.1	6.250	158.8	.065	1.65
3	76.20	3.375	85.7	3.875	98.4	6.750	171.5	.065	1.65
4	101.60	4.125	104.8	4.750	120.7	8.250	209.6	.083	2.11



RBP7WSCW

DT- 4.1.2-3

Tee
Run End Butt Weld and Short Clamp
Branch Butt Weld

Conexión en T
Soldadura a tope y abrazadera en extremo corto
Soldadura a tope en extremo corto

Té
extrémités à souder et court
type clamp embranchement à souder

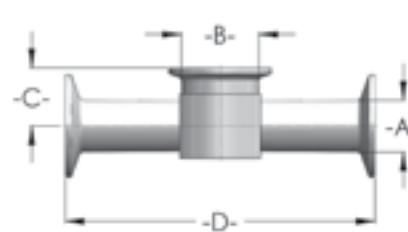
티
런 엔드 맞대기 용접 및
쇼트 클램프
브랜치 맞대기 용접

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	THK (in.)	THK (mm)
½	12.70	0.875	22.2	1.875	47.6	2.750	69.9	.065	1.65
¾	19.05	1.000	25.4	2.000	50.8	3.000	76.2	.065	1.65
1	25.40	1.125	28.6	2.125	54.0	3.250	82.6	.065	1.65
1 ½	38.10	1.375	34.9	2.375	60.3	3.750	95.3	.065	1.65
2	50.80	1.625	41.3	2.875	73.0	4.500	114.3	.065	1.65
2 ½	63.50	1.875	47.6	3.125	79.4	5.000	127.0	.065	1.65
3	76.20	2.125	54.0	3.375	85.7	5.500	139.7	.065	1.65
4	101.60	2.750	69.9	4.125	104.8	6.875	174.6	.083	2.11

Biopharmaceutical Processing Components



Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 부속품



Instrument Tee

All Ends Clamp

Instrumento en T

Abrazadera en todos los extremos

Té à instrumentation

extrémités type clamp

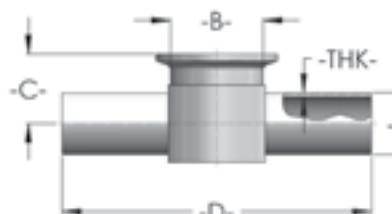
인스트루먼트 티

전체 클램프

RBP7IC

DT- 4.1.2-11

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	D (in.)	D (mm)
1 1/2 x 1/2	38.10 x 12.70	1/2	12.70	1 1/2	38.10	0.875	22.2	6.000	152.4
1 1/2 x 3/4	38.10 x 19.05	3/4	19.05	1 1/2	38.10	1.000	25.4	6.000	152.4
1 1/2 x 1	38.10 x 25.40	1	25.40	1 1/2	38.10	1.125	28.6	6.000	152.4
2 x 1/2	50.80 x 12.70	1/2	12.70	2	50.80	1.000	25.4	6.500	152.4
2 x 3/4	50.80 x 19.05	3/4	19.05	2	50.80	1.125	28.6	6.500	165.1
2 x 1	50.80 x 24.50	1	25.40	2	50.80	1.250	31.8	6.500	165.1



Instrument Tee

Run Ends Butt Weld
Branch Clamp

Instrumento en T

Soldadura a tope en dos extremos
Abrazadera en un extremo

Té à instrumentation

extrémités à souder
embranchement type clamp

인스트루먼트 티

양쪽 맞대기 용접

브랜치 클램프

RBP7IWWC

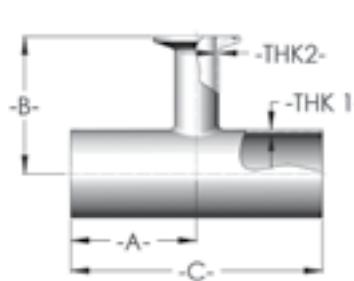
DT- 4.1.2-10

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	D (in.)	D (mm)	THK (in.)	THK (mm)
1 1/2 x 1/2	38.10 x 12.70	1/2	12.70	1 1/2	38.10	0.875	22.2	5.000	127.0	.065	1.65
1 1/2 x 3/4	38.10 x 19.05	3/4	19.05	1 1/2	38.10	1.000	25.4	5.000	127.0	.065	1.65
1 1/2 x 1	38.10 x 25.40	1	25.40	1 1/2	38.10	1.125	28.6	5.000	127.0	.065	1.65
2 x 1/2	50.80 x 12.70	1/2	12.70	2	50.80	1.000	25.4	5.500	139.7	.065	1.65
2 x 3/4	50.80 x 19.05	3/4	19.05	2	50.80	1.125	28.6	5.500	139.7	.065	1.65
2 x 1	50.80 x 24.50	1	25.40	2	50.80	1.250	31.8	5.500	139.7	.065	1.65

Biopharmaceutical Processing Components



Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 부속품



Reducing Tee
Run Ends Butt Weld
Branch Clamp

T reductora
Abrazadera en dos extremos
Soldadura a tope en dos extremos

Réduit en té
extrémités à souder
embranchement type clamp

리듀싱 티 맞대기 용접 브랜치 클램프

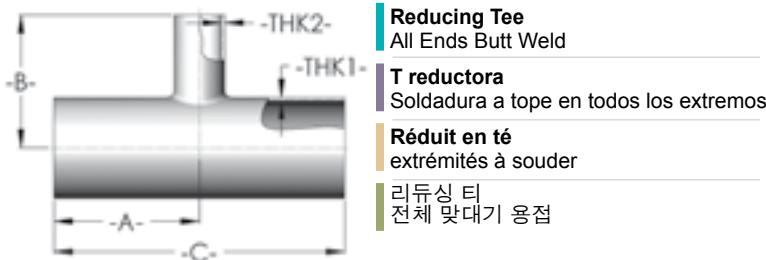
RBP7RWTC

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	THK (in.)	THK (mm)	THK (in.)	THK (mm)
¾ x ½	19.05 x 12.70	2.000	50.8	2.500	63.5	4.000	101.6	.065	1.65	.065	1.65
1 x ½	25.40 x 12.70	2.125	54.0	2.625	66.7	4.250	108.0	.065	1.65	.065	1.65
1 x ¾	25.40 x 19.05	2.125	54.0	2.625	66.7	4.250	108.0	.065	1.65	.065	1.65
1 ½ x ½	38.10 x 12.70	2.375	60.3	2.875	73.0	4.750	120.7	.065	1.65	.065	1.65
1 ½ x ¾	38.10 x 19.05	2.375	60.3	2.875	73.0	4.750	120.7	.065	1.65	.065	1.65
1 ½ x 1	38.10 x 25.40	2.375	60.3	2.875	73.0	4.750	120.7	.065	1.65	.065	1.65
2 x ½	50.80 x 12.70	2.875	73.0	3.125	79.4	5.750	146.1	.065	1.65	.065	1.65
2 x ¾	50.80 x 19.05	2.875	73.0	3.125	79.4	5.750	146.1	.065	1.65	.065	1.65
2 x 1	50.80 x 25.40	2.875	73.0	3.125	79.4	5.750	146.1	.065	1.65	.065	1.65
2 x 1 ½	50.80 x 38.10	2.875	73.0	3.125	79.4	5.750	146.1	.065	1.65	.065	1.65
2 ½ x ½	63.50 x 12.70	3.125	79.4	3.375	85.7	6.250	158.8	.065	1.65	.065	1.65
2 ½ x ¾	63.50 x 19.05	3.125	79.4	3.375	85.7	6.250	158.8	.065	1.65	.065	1.65
2 ½ x 1	63.50 x 25.40	3.125	79.4	3.375	85.7	6.250	158.8	.065	1.65	.065	1.65
2 ½ x 1 ½	63.50 x 38.10	3.125	79.4	3.375	85.7	6.250	158.8	.065	1.65	.065	1.65
2 ½ x 2	63.50 x 50.80	3.125	79.4	3.375	85.7	6.250	158.8	.065	1.65	.065	1.65
3 x ½	76.20 x 12.70	3.375	85.7	3.625	92.1	6.750	171.5	.065	1.65	.065	1.65
3 x ¾	76.20 x 19.05	3.375	85.7	3.625	92.1	6.750	171.5	.065	1.65	.065	1.65
3 x 1	76.20 x 25.40	3.375	85.7	3.625	92.1	6.750	171.5	.065	1.65	.065	1.65
3 x 1 ½	76.20 x 38.10	3.375	85.7	3.625	92.1	6.750	171.5	.065	1.65	.065	1.65
3 x 2	76.20 x 50.80	3.375	85.7	3.625	92.1	6.750	171.5	.065	1.65	.065	1.65
3 x 2 ½	76.20 x 63.50	3.375	85.7	3.625	92.1	6.750	171.5	.065	1.65	.065	1.65
4 x ½	101.60 x 12.70	4.125	104.8	4.125	104.8	8.250	209.6	.083	2.11	.065	1.65
4 x ¾	101.60 x 19.05	4.125	104.8	4.125	104.8	8.250	209.6	.083	2.11	.065	1.65
4 x 1	101.60 x 25.40	4.125	104.8	4.125	104.8	8.250	209.6	.083	2.11	.065	1.65
4 x 1 ½	101.60 x 38.10	4.125	104.8	4.125	104.8	8.250	209.6	.083	2.11	.065	1.65
4 x 2	101.60 x 50.80	4.125	104.8	4.375	111.1	8.250	209.6	.083	2.11	.065	1.65
4 x 2 ½	101.60 x 63.50	4.125	104.8	4.375	111.1	8.250	209.6	.083	2.11	.065	1.65
4 x 3	101.60 x 76.20	4.125	104.8	4.375	111.1	8.250	209.6	.083	2.11	.065	1.65

Biopharmaceutical Processing Components



Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 부속품



Reducing Tee

All Ends Butt Weld

T reducida

Soldadura a tope en todos los extremos

Réduit en té

extrémités à souder

리듀싱 티

전체 맞대기 용접

RBP7WR

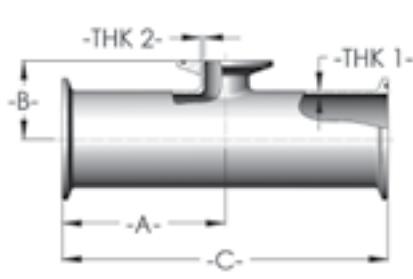
DT- 4.1.2-6

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	THK 1 (in.)	THK 1 (mm)	THK 2 (in.)	THK 2 (mm)
3/4 x 1/2	19.05 x 12.70	2.000	50.8	2.000	50.8	4.000	101.6	.065	1.65	.065	1.65
1 x 1/2	25.40 x 12.70	2.125	54.0	2.125	54.0	4.250	108.0	.065	1.65	.065	1.65
1 x 3/4	25.40 x 19.05	2.125	54.0	2.125	54.0	4.250	108.0	.065	1.65	.065	1.65
1 1/2 x 1/2	38.10 x 12.70	2.375	60.3	2.375	60.3	4.750	120.7	.065	1.65	.065	1.65
1 1/2 x 3/4	38.10 x 19.05	2.375	60.3	2.375	60.3	4.750	120.7	.065	1.65	.065	1.65
1 1/2 x 1	38.10 x 25.40	2.375	60.3	2.375	60.3	4.750	120.7	.065	1.65	.065	1.65
2 x 1/2	50.80 x 12.70	2.875	73.0	2.625	66.7	5.750	146.1	.065	1.65	.065	1.65
2 x 3/4	50.80 x 19.05	2.875	73.0	2.625	66.7	5.750	146.1	.065	1.65	.065	1.65
2 x 1	50.80 x 25.40	2.875	73.0	2.625	66.7	5.750	146.1	.065	1.65	.065	1.65
2 x 1 1/2	50.80 x 38.10	2.875	73.0	2.625	66.7	5.750	146.1	.065	1.65	.065	1.65
2 1/2 x 1/2	63.50 x 12.70	3.125	79.4	2.875	73.0	6.250	158.8	.065	1.65	.065	1.65
2 1/2 x 3/4	63.50 x 19.05	3.125	79.4	2.875	73.0	6.250	158.8	.065	1.65	.065	1.65
2 1/2 x 1	63.50 x 25.40	3.125	79.4	2.875	73.0	6.250	158.8	.065	1.65	.065	1.65
2 1/2 x 1 1/2	63.50 x 38.10	3.125	79.4	2.875	73.0	6.250	158.8	.065	1.65	.065	1.65
2 1/2 x 2	63.50 x 50.80	3.125	79.4	2.875	73.0	6.250	158.8	.065	1.65	.065	1.65
3 x 1/2	76.20 x 12.70	3.375	85.7	3.125	79.4	6.750	171.5	.065	1.65	.065	1.65
3 x 3/4	76.20 x 19.05	3.375	85.7	3.125	79.4	6.750	171.5	.065	1.65	.065	1.65
3 x 1	76.20 x 25.40	3.375	85.7	3.125	79.4	6.750	171.5	.065	1.65	.065	1.65
3 x 1 1/2	76.20 x 38.10	3.375	85.7	3.125	79.4	6.750	171.5	.065	1.65	.065	1.65
3 x 2	76.20 x 50.80	3.375	85.7	3.125	79.4	6.750	171.5	.065	1.65	.065	1.65
3 x 2 1/2	76.20 x 63.50	3.375	85.7	3.125	79.4	6.750	171.5	.065	1.65	.065	1.65
4 x 1/2	101.60 x 12.70	4.125	104.8	3.625	92.1	8.250	209.6	.083	2.11	.065	1.65
4 x 3/4	101.60 x 19.05	4.125	104.8	3.625	92.1	8.250	209.6	.083	2.11	.065	1.65
4 x 1	101.60 x 25.40	4.125	104.8	3.625	92.1	8.250	209.6	.083	2.11	.065	1.65
4 x 1 1/2	101.60 x 38.10	4.125	104.8	3.625	92.1	8.250	209.6	.083	2.11	.065	1.65
4 x 2	101.60 x 50.80	4.125	104.8	3.875	98.4	8.250	209.6	.083	2.11	.065	1.65
4 x 2 1/2	101.60 x 63.50	4.125	104.8	3.875	98.4	8.250	209.6	.083	2.11	.065	1.65
4 x 3	101.60 x 76.20	4.125	104.8	3.875	98.4	8.250	209.6	.083	2.11	.065	1.65

Biopharmaceutical Processing Components



Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 부속품



Reducing Tee

Run Ends Clamp
Branch Short Clamp

T reducida

Abrazadera en dos extremos
Abrazadera en extremo corto

Réduit en té

extrémités type clamp
embranchemet court type clamp

리듀싱 티

양쪽 클램프

브랜치 쇼트 클램프

RBP7RSC

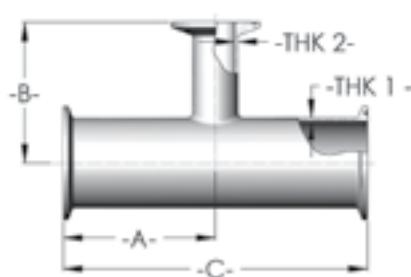
DT- 4.1.2-9

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	THK 1 (in.)	THK 1 (mm)	THK 2 (in.)	THK 2 (mm)
$\frac{3}{4} \times \frac{1}{2}$	19.05 x 12.70	2.500	63.5	1.000	25.4	5.000	127.0	.065	1.65	.065	1.65
$1 \times \frac{1}{2}$	25.40 x 12.70	2.625	66.7	1.125	28.6	5.250	133.4	.065	1.65	.065	1.65
$1 \times \frac{3}{4}$	25.40 x 19.05	2.625	66.7	1.125	28.6	5.250	133.4	.065	1.65	.065	1.65
$1\frac{1}{2} \times \frac{1}{2}$	38.10 x 12.70	2.875	73.0	1.375	34.9	5.750	146.1	.065	1.65	.065	1.65
$1\frac{1}{2} \times \frac{3}{4}$	38.10 x 19.05	2.875	73.0	1.375	34.9	5.750	146.1	.065	1.65	.065	1.65
$1\frac{1}{2} \times 1$	38.10 x 25.40	2.875	73.0	1.375	34.9	5.750	146.1	.065	1.65	.065	1.65
$2 \times \frac{1}{2}$	50.80 x 12.70	3.375	85.7	1.625	41.3	6.750	171.5	.065	1.65	.065	1.65
$2 \times \frac{3}{4}$	50.80 x 19.05	3.375	85.7	1.625	41.3	6.750	171.5	.065	1.65	.065	1.65
2×1	50.80 x 25.40	3.375	85.7	1.625	41.3	6.750	171.5	.065	1.65	.065	1.65
$2 \times 1\frac{1}{2}$	50.80 x 38.10	3.375	85.7	1.625	41.3	6.750	171.5	.065	1.65	.065	1.65
$2\frac{1}{2} \times \frac{1}{2}$	63.50 x 12.70	3.625	92.1	1.875	47.6	7.250	184.2	.065	1.65	.065	1.65
$2\frac{1}{2} \times \frac{3}{4}$	63.50 x 19.05	3.625	92.1	1.875	47.6	7.250	184.2	.065	1.65	.065	1.65
$2\frac{1}{2} \times 1$	63.50 x 25.40	3.625	92.1	1.875	47.6	7.250	184.2	.065	1.65	.065	1.65
$2\frac{1}{2} \times 1\frac{1}{2}$	63.50 x 38.10	3.625	92.1	1.875	47.6	7.250	184.2	.065	1.65	.065	1.65
$2\frac{1}{2} \times 2$	63.50 x 50.80	3.625	92.1	1.875	47.6	7.250	184.2	.065	1.65	.065	1.65
$3 \times \frac{1}{2}$	76.20 x 12.70	3.875	98.4	2.125	54.0	7.750	196.9	.065	1.65	.065	1.65
$3 \times \frac{3}{4}$	76.20 x 19.05	3.875	98.4	2.125	54.0	7.750	196.9	.065	1.65	.065	1.65
3×1	76.20 x 25.40	3.875	98.4	2.125	54.0	7.750	196.9	.065	1.65	.065	1.65
$3 \times 1\frac{1}{2}$	76.20 x 38.10	3.875	98.4	2.125	54.0	7.750	196.9	.065	1.65	.065	1.65
3×2	76.20 x 50.80	3.875	98.4	2.125	54.0	7.750	196.9	.065	1.65	.065	1.65
$3 \times 2\frac{1}{2}$	76.20 x 63.50	3.875	98.4	2.125	54.0	7.750	196.9	.065	1.65	.065	1.65
$4 \times \frac{1}{2}$	101.60 x 12.70	4.750	120.7	2.625	66.7	9.500	241.3	.083	2.11	.065	1.65
$4 \times \frac{3}{4}$	101.60 x 19.05	4.750	120.7	2.625	66.7	9.500	241.3	.083	2.11	.065	1.65
4×1	101.60 x 25.40	4.750	120.7	2.625	66.7	9.500	241.3	.083	2.11	.065	1.65
$4 \times 1\frac{1}{2}$	101.60 x 38.10	4.750	120.7	2.625	66.7	9.500	241.3	.083	2.11	.065	1.65
4×2	101.60 x 50.80	4.750	120.7	2.625	66.7	9.500	241.3	.083	2.11	.065	1.65
$4 \times 2\frac{1}{2}$	101.60 x 63.50	4.750	120.7	2.625	66.7	9.500	241.3	.083	2.11	.065	1.65
4×3	101.60 x 76.20	4.750	120.7	2.625	66.7	9.500	241.3	.083	2.11	.065	1.65

Biopharmaceutical Processing Components



Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 부속품



Reducing Tee

All Ends Clamp

T reductora

Abrazadera en todos los extremos

Réduit en té

extrémités type clamp

리듀싱 티

전체 클램프

RBP7RC

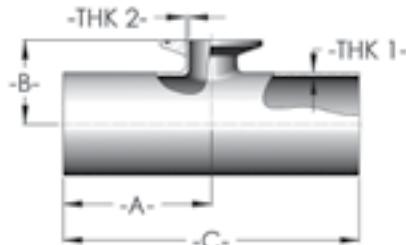
DT- 4.1.2-8

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	THK 1 (in.)	THK 1 (mm)	THK 2 (in.)	THK 2 (mm)
3/4 x 1/2	19.05 x 12.70	2.500	63.5	2.500	63.5	5.000	127.0	.065	1.65	.065	1.65
1 x 1/2	25.40 x 12.70	2.625	66.7	2.625	66.7	5.250	133.4	.065	1.65	.065	1.65
1 x 3/4	25.40 x 19.05	2.625	66.7	2.625	66.7	5.250	133.4	.065	1.65	.065	1.65
1 1/2 x 1/2	38.10 x 12.70	2.875	73.0	2.875	73.0	5.750	146.1	.065	1.65	.065	1.65
1 1/2 x 3/4	38.10 x 19.05	2.875	73.0	2.875	73.0	5.750	146.1	.065	1.65	.065	1.65
1 1/2 x 1	38.10 x 25.40	2.875	73.0	2.875	73.0	5.750	146.1	.065	1.65	.065	1.65
2 x 1/2	50.80 x 12.70	3.375	85.7	3.125	79.4	6.750	171.5	.065	1.65	.065	1.65
2 x 3/4	50.80 x 19.05	3.375	85.7	3.125	79.4	6.750	171.5	.065	1.65	.065	1.65
2 x 1	50.80 x 25.40	3.375	85.7	3.125	79.4	6.750	171.5	.065	1.65	.065	1.65
2 x 1 1/2	50.80 x 38.10	3.375	85.7	3.125	79.4	6.750	171.5	.065	1.65	.065	1.65
2 1/2 x 1/2	63.50 x 12.70	3.625	92.1	3.375	85.7	7.250	184.2	.065	1.65	.065	1.65
2 1/2 x 3/4	63.50 x 19.05	3.625	92.1	3.375	85.7	7.250	184.2	.065	1.65	.065	1.65
2 1/2 x 1	63.50 x 25.40	3.625	92.1	3.375	85.7	7.250	184.2	.065	1.65	.065	1.65
2 1/2 x 1 1/2	63.50 x 38.10	3.625	92.1	3.375	85.7	7.250	184.2	.065	1.65	.065	1.65
2 1/2 x 2	63.50 x 50.80	3.625	92.1	3.375	85.7	7.250	184.2	.065	1.65	.065	1.65
3 x 1/2	76.20 x 12.70	3.875	98.4	3.625	92.1	7.750	196.9	.065	1.65	.065	1.65
3 x 3/4	76.20 x 19.05	3.875	98.4	3.625	92.1	7.750	196.9	.065	1.65	.065	1.65
3 x 1	76.20 x 25.40	3.875	98.4	3.625	92.1	7.750	196.9	.065	1.65	.065	1.65
3 x 1 1/2	76.20 x 38.10	3.875	98.4	3.625	92.1	7.750	196.9	.065	1.65	.065	1.65
3 x 2	76.20 x 50.80	3.875	98.4	3.625	92.1	7.750	196.9	.065	1.65	.065	1.65
3 x 2 1/2	76.20 x 63.50	3.875	98.4	3.625	92.1	7.750	196.9	.065	1.65	.065	1.65
4 x 1/2	101.60 x 12.70	4.750	120.7	4.125	104.8	9.500	241.3	.083	2.11	.065	1.65
4 x 3/4	101.60 x 19.05	4.750	120.7	4.125	104.8	9.500	241.3	.083	2.11	.065	1.65
4 x 1	101.60 x 25.40	4.750	120.7	4.125	104.8	9.500	241.3	.083	2.11	.065	1.65
4 x 1 1/2	101.60 x 38.10	4.750	120.7	4.125	104.8	9.500	241.3	.083	2.11	.065	1.65
4 x 2	101.60 x 50.80	4.750	120.7	4.375	111.1	9.500	241.3	.083	2.11	.065	1.65
4 x 2 1/2	101.60 x 63.50	4.750	120.7	4.375	111.1	9.500	241.3	.083	2.11	.065	1.65
4 x 3	101.60 x 76.20	4.750	120.7	4.375	111.1	9.500	241.3	.083	2.11	.065	1.65

Biopharmaceutical Processing Components



Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 부속품



Reducing Tee
Run Ends Butt Weld
Branch Short Clamp

T reductora
Soldadura a tope en dos extremos
Abrazadera en extremo corto

Réduit en té
extrémités à souder
embranchement court type clamp

리듀싱 티 양쪽 맞대기 용접 브랜치 쇼트 클램프

RBP7RWWSC

DT- 4.1.2-7

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	THK 1 (in.)	THK 1 (mm)	THK 2 (in.)	THK 2 (mm)
¾ x ½	19.05 x 12.70	2.000	50.8	1.000	25.4	4.000	101.6	.065	1.65	.065	1.65
1 x ½	25.40 x 12.70	2.125	54.0	1.125	28.6	4.250	108.0	.065	1.65	.065	1.65
1 x ¾	25.40 x 19.05	2.125	54.4	1.125	28.6	4.250	108.0	.065	1.65	.065	1.65
1 ½ x ½	38.10 x 12.70	2.375	60.3	1.375	34.9	4.750	120.7	.065	1.65	.065	1.65
1 ½ x ¾	38.10 x 19.05	2.375	60.3	1.375	34.9	4.750	120.7	.065	1.65	.065	1.65
1 ½ x 1	38.10 x 25.40	2.375	60.3	1.375	34.9	4.750	120.7	.065	1.65	.065	1.65
2 x ½	50.80 x 12.70	2.875	73.0	1.625	41.3	5.750	146.1	.065	1.65	.065	1.65
2 x ¾	50.80 x 19.05	2.875	73.0	1.625	41.3	5.750	146.1	.065	1.65	.065	1.65
2 x 1	50.80 x 25.40	2.875	73.0	1.625	41.3	5.750	146.1	.065	1.65	.065	1.65
2 x 1 ½	50.80 x 38.10	2.875	73.0	1.625	41.3	5.750	146.1	.065	1.65	.065	1.65
2 ½ x ½	63.50 x 12.70	3.125	79.4	1.875	47.6	6.250	158.8	.065	1.65	.065	1.65
2 ½ x ¾	63.50 x 19.05	3.125	79.4	1.875	47.6	6.250	158.8	.065	1.65	.065	1.65
2 ½ x 1	63.50 x 25.40	3.125	79.4	1.875	47.6	6.250	158.8	.065	1.65	.065	1.65
2 ½ x 1 ½	63.50 x 38.10	3.125	79.4	1.875	47.6	6.250	158.8	.065	1.65	.065	1.65
2 ½ x 2	63.50 x 50.80	3.125	79.4	1.875	47.6	6.250	158.8	.065	1.65	.065	1.65
3 x ½	76.20 x 12.70	3.375	85.7	2.125	54.0	6.750	171.5	.065	1.65	.065	1.65
3 x ¾	76.20 x 19.05	3.375	85.7	2.125	54.0	6.750	171.5	.065	1.65	.065	1.65
3 x 1	76.20 x 25.40	3.375	85.7	2.125	54.0	6.750	171.5	.065	1.65	.065	1.65
3 x 1 ½	76.20 x 38.10	3.375	85.7	2.125	54.0	6.750	171.5	.065	1.65	.065	1.65
3 x 2	76.20 x 50.80	3.375	85.7	2.125	54.0	6.750	171.5	.065	1.65	.065	1.65
3 x 2 ½	76.20 x 63.50	3.375	85.7	2.125	54.0	6.750	171.5	.065	1.65	.065	1.65
4 x ½	101.60 x 12.70	4.125	104.8	2.625	66.7	8.250	209.6	.083	2.11	.065	1.65
4 x ¾	101.60 x 19.05	4.125	104.8	2.625	66.7	8.250	209.6	.083	2.11	.065	1.65
4 x 1	101.60 x 25.40	4.125	104.8	2.625	66.7	8.250	209.6	.083	2.11	.065	1.65
4 x 1 ½	101.60 x 38.10	4.125	104.8	2.625	66.7	8.250	209.6	.083	2.11	.065	1.65
4 x 2	101.60 x 50.80	4.125	104.8	2.625	66.7	8.250	209.6	.083	2.11	.065	1.65
4 x 2 ½	101.60 x 63.50	4.125	104.8	2.625	66.7	8.250	209.6	.083	2.11	.065	1.65
4 x 3	101.60 x 76.20	4.125	104.8	2.625	66.7	8.250	209.6	.083	2.11	.065	1.65

REDUCERS

Reducers · Raccords réducteurs · 감속기

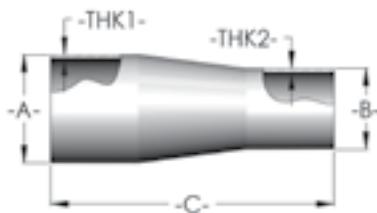




Biopharmaceutical Processing Components

RODGER

Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 부속품



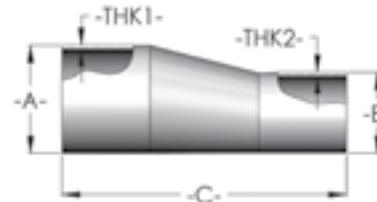
RBP31E

Concentric Reducer
Run Ends Butt Weld
with Tangents

Reducor concéntrico
Soldadura a tope en ambos extremos
con tangentes

Réducteur concentré
extrémités à souder
avec tangentes

동심 가속기
양단 및대기 용접
접선 포함



RBP32E

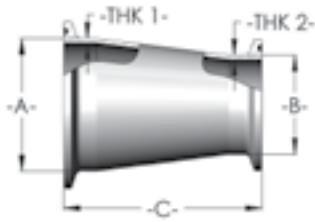
Eccentric Reducer
Run Ends Butt Weld
with Tangents

Reducor excéntrico
Soldadura a tope en ambos extremos
con tangentes

Réducteur excentrique
extrémités à souder
avec tangentes

편심 가속기
양단 및대기 용접
접선 포함

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	THK 1 (in.)	THK 1 (mm)	THK 2 (in.)	THK 2 (mm)
3/4 x 1/2	19.05 x 12.70	0.750	19.1	0.500	12.7	4.000	101.6	.065	1.65	.065	1.65
1 x 1/2	25.40 x 12.70	1.000	25.4	0.500	12.7	4.500	114.3	.065	1.65	.065	1.65
1 x 3/4	25.40 x 19.05	1.000	25.4	0.750	19.1	4.000	101.6	.065	1.65	.065	1.65
1 1/2 x 1/2	38.10 x 12.70	1.500	38.1	0.500	12.7	5.500	139.7	.065	1.65	.065	1.65
1 1/2 x 3/4	38.10 x 19.05	1.500	38.1	0.750	19.1	5.000	127.0	.065	1.65	.065	1.65
1 1/2 x 1	38.10 x 25.40	1.500	38.1	1.000	25.4	5.000	127.0	.065	1.65	.065	1.65
2 x 1/2	50.80 x 12.70	2.000	50.80	0.500	12.7	7.750	196.9	.065	1.65	.065	1.65
2 x 3/4	50.80 x 19.05	2.000	50.80	0.750	19.1	7.250	184.2	.065	1.65	.065	1.65
2 x 1	50.80 x 25.40	2.000	50.80	1.000	25.4	7.250	184.2	.065	1.65	.065	1.65
2 x 1 1/2	50.80 x 38.10	2.000	50.80	1.500	38.1	5.250	133.4	.065	1.65	.065	1.65
2 1/2 x 1/2	63.50 x 12.70	2.500	63.50	0.500	12.7	9.750	247.7	.065	1.65	.065	1.65
2 1/2 x 3/4	63.50 x 19.05	2.500	63.50	0.750	19.1	9.250	235.0	.065	1.65	.065	1.65
2 1/2 x 1	63.50 x 25.40	2.500	63.50	1.000	25.4	9.250	235.0	.065	1.65	.065	1.65
2 1/2 x 1 1/2	63.50 x 38.10	2.500	63.50	1.500	38.1	7.250	184.2	.065	1.65	.065	1.65
2 1/2 x 2	63.50 x 50.80	2.500	63.50	2.000	50.8	5.500	139.7	.065	1.65	.065	1.65
3 x 1	76.20 x 25.40	3.000	76.2	1.000	25.4	11.250	285.8	.065	1.65	.065	1.65
3 x 1 1/2	76.20 x 38.10	3.000	76.2	1.500	38.1	9.250	235.0	.065	1.65	.065	1.65
3 x 2	76.20 x 50.80	3.000	76.2	2.000	50.8	7.500	190.5	.065	1.65	.065	1.65
3 x 2 1/2	76.20 x 63.50	3.000	76.2	2.500	63.5	5.500	139.7	.065	1.65	.065	1.65
4 x 1	101.60 x 25.40	4.000	101.6	1.000	25.4	15.500	393.7	.083	2.11	.065	1.65
4 x 1 1/2	101.60 x 38.10	4.000	101.6	1.500	38.1	13.500	342.9	.083	2.11	.065	1.65
4 x 2	101.60 x 50.80	4.000	101.6	2.000	50.8	11.750	298.5	.083	2.11	.065	1.65
4 x 2 1/2	101.60 x 63.50	4.000	101.6	2.500	63.5	9.750	247.7	.083	2.11	.065	1.65
4 x 3	101.60 x 76.20	4.000	101.6	3.000	76.2	7.750	196.9	.083	2.11	.065	1.65



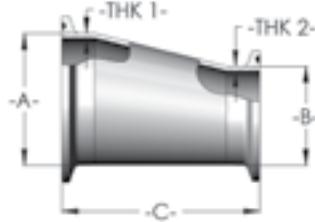
RBP31CC

Concentric Reducer
Both Ends Clamp

Reducer concéntrico
Abrazadera en ambos extremos

Réducteur concentrique
extrémités type clamp

동심 가속기
양단 클램프



RBP32CC

Eccentric Reducer
Both Ends Clamp

Reducer excéntrico
Abrazadera en ambos extremos

Réducteur excentrique
extrémités type clamp

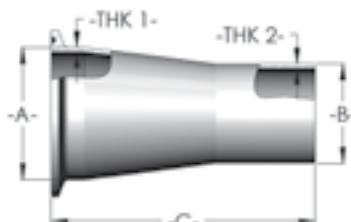
편심 가속기
양단 클램프

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	THK 1 (in.)	THK 1 (mm)	THK 2 (in.)	THK 2 (mm)
¾ x ½	19.05 x 12.70	0.750	19.1	0.500	12.7	2.000	50.8	.065	1.65	.065	1.65
1 x ½	25.40 x 12.70	1.000	25.4	0.500	12.7	2.500	63.5	.065	1.65	.065	1.65
1 x ¾	25.40 x 19.05	1.000	25.4	0.750	19.1	2.000	50.8	.065	1.65	.065	1.65
1 ½ x ½	38.10 x 12.70	1.500	38.1	0.500	12.7	3.500	88.9	.065	1.65	.065	1.65
1 ½ x ¾	38.10 x 19.05	1.500	38.1	0.750	19.1	3.000	76.2	.065	1.65	.065	1.65
1 ½ x 1	38.10 x 25.40	1.500	38.1	1.000	25.4	3.000	76.2	.065	1.65	.065	1.65
2 x ½	50.80 x 12.70	2.000	50.8	0.500	12.7	5.500	139.7	.065	1.65	.065	1.65
2 x ¾	50.80 x 19.05	2.000	50.8	0.750	19.1	5.000	127.0	.065	1.65	.065	1.65
2 x 1	50.80 x 25.40	2.000	50.8	1.000	25.4	5.000	127.0	.065	1.65	.065	1.65
2 x 1 ½	50.80 x 38.10	2.000	50.8	1.500	38.1	3.000	76.2	.065	1.65	.065	1.65
2 ½ x ½	63.50 x 12.70	2.500	63.5	0.500	12.7	7.500	190.5	.065	1.65	.065	1.65
2 ½ x ¾	63.50 x 19.05	2.500	63.5	0.750	19.1	7.000	177.8	.065	1.65	.065	1.65
2 ½ x 1	63.50 x 25.40	2.500	63.5	1.000	25.4	7.000	177.8	.065	1.65	.065	1.65
2 ½ x 1 ½	63.50 x 38.10	2.500	63.5	1.500	38.1	5.000	127.0	.065	1.65	.065	1.65
2 ½ x 2	63.50 x 50.80	2.500	63.5	2.000	50.8	3.000	76.2	.065	1.65	.065	1.65
3 x 1	76.20 x 25.40	3.000	76.2	1.000	25.4	9.000	228.6	.065	1.65	.065	1.65
3 x 1 ½	76.20 x 38.10	3.000	76.2	1.500	38.1	7.000	177.8	.065	1.65	.065	1.65
3 x 2	76.20 x 50.80	3.000	76.2	2.000	50.8	5.000	127.0	.065	1.65	.065	1.65
3 x 2 ½	76.20 x 63.50	3.000	76.2	2.500	63.5	3.000	76.2	.065	1.65	.065	1.65
4 x 1	101.60 x 25.40	4.000	101.6	1.000	25.4	13.125	333.4	.083	2.11	.065	1.65
4 x 1 ½	101.60 x 38.10	4.000	101.6	1.500	38.1	11.125	282.6	.083	2.11	.065	1.65
4 x 2	101.60 x 50.80	4.000	101.6	2.000	50.8	9.125	231.8	.083	2.11	.065	1.65
4 x 2 ½	101.60 x 63.50	4.000	101.6	2.500	63.5	7.125	181.0	.083	2.11	.065	1.65
4 x 3	101.60 x 76.20	4.000	101.6	3.000	76.2	5.125	130.2	.083	2.11	.065	1.65

Biopharmaceutical Processing Components

RODGER

Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 부속품



RBP31CE

Concentric Reducer

Large End Clamp
Small End Butt Weld with Tangent

Reductor concéntrico

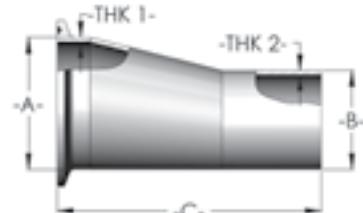
Abrazadera grande en un extremo
Soldadura a tope en extremo corto con tangente

Réducteur concentrique

extrémités grande type clamp
petite à souder avec tangente

동심 가속기

한쪽 클램프
접선을 포함한 스몰 엔드 맞대기 용접



RBP32CE

Eccentric Reducer

Large End Clamp
Small End Butt Weld with Tangent

Reductor excéntrico

Abrazadera grande en un extremo
Soldadura a tope en extremo corto con tangente

Réducteur excentrique

extrémités grande type clamp
petite à souder avec tangente

편심 가속기

라지 엔드 클램프
접선을 포함한 스몰 엔드 맞대기 용접

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	THK 1 (in.)	THK 1 (mm)	THK 2 (in.)	THK 2 (mm)
3/4 x 1/2	19.05 x 12.70	0.750	19.1	0.500	12.7	3.000	76.2	.065	1.65	.065	1.65
1 x 1/2	25.40 x 12.70	1.000	25.4	0.500	12.7	3.500	88.9	.065	1.65	.065	1.65
1 x 3/4	25.40 x 19.05	1.000	25.4	0.750	19.1	3.000	76.2	.065	1.65	.065	1.65
1 1/2 x 1/2	38.10 x 12.70	1.500	38.1	0.500	12.7	4.500	114.3	.065	1.65	.065	1.65
1 1/2 x 3/4	38.10 x 19.05	1.500	38.1	0.750	19.1	4.000	101.6	.065	1.65	.065	1.65
1 1/2 x 1	38.10 x 25.40	1.500	38.1	1.000	25.4	4.000	101.6	.065	1.65	.065	1.65
2 x 1/2	50.80 x 12.70	2.000	50.8	0.500	12.7	6.500	165.1	.065	1.65	.065	1.65
2 x 3/4	50.80 x 19.05	2.000	50.8	0.750	19.1	6.000	152.4	.065	1.65	.065	1.65
2 x 1	50.80 x 25.40	2.000	50.8	1.000	25.4	6.000	152.4	.065	1.65	.065	1.65
2 x 1 1/2	50.80 x 38.10	2.000	50.8	1.500	38.1	4.000	101.6	.065	1.65	.065	1.65
2 1/2 x 1/2	63.50 x 12.70	2.500	63.5	0.500	12.7	8.500	215.9	.065	1.65	.065	1.65
2 1/2 x 3/4	63.50 x 19.05	2.500	63.5	0.750	19.1	8.000	203.2	.065	1.65	.065	1.65
2 1/2 x 1	63.50 x 25.40	2.500	63.5	1.000	25.4	8.000	203.2	.065	1.65	.065	1.65
2 1/2 x 1 1/2	63.50 x 38.10	2.500	63.5	1.500	38.1	6.000	152.4	.065	1.65	.065	1.65
2 1/2 x 2	63.50 x 50.80	2.500	63.5	2.000	50.8	4.250	108.0	.065	1.65	.065	1.65
3 x 1	76.20 x 25.40	3.000	76.2	1.000	25.4	10.000	254.0	.065	1.65	.065	1.65
3 x 1 1/2	76.20 x 38.10	3.000	76.2	1.500	38.1	8.000	203.2	.065	1.65	.065	1.65
3 x 2	76.20 x 50.80	3.000	76.2	2.000	50.8	6.250	158.8	.065	1.65	.065	1.65
3 x 2 1/2	76.20 x 63.50	3.000	76.2	2.500	63.5	4.250	108.0	.065	1.65	.065	1.65
4 x 1	101.60 x 25.40	4.000	101.6	1.000	25.4	14.125	358.8	.083	2.11	.065	1.65
4 x 1 1/2	101.60 x 38.10	4.000	101.6	1.500	38.1	12.125	308.0	.083	2.11	.065	1.65
4 x 2	101.60 x 50.80	4.000	101.6	2.000	50.8	10.375	263.5	.083	2.11	.065	1.65
4 x 2 1/2	101.60 x 63.50	4.000	101.6	2.500	63.5	8.375	212.7	.083	2.11	.065	1.65
4 x 3	101.60 x 76.20	4.000	101.6	3.000	76.2	6.375	161.9	.083	2.11	.065	1.65

FERRULES AND ADAPTORS

Férulas y adaptadores . Viroles et adaptateurs . 페룰 및 어댑터





Biopharmaceutical Processing Components



Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 부속품



BPE Long Ferrule
One End Clamp
One End Butt Weld

Férula larga de EBF
Abrazadera en un extremo
Soldadura a tope en un extremo

Ferrule allongée
extrémités type clamp
et à souder

BPE 를 페루
한쪽 클램프
한쪽 맞대기 용접

STL14AM7

DT-4.1.4-1

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	THK (in.)	THK (mm)
½	12.70	1.750	44.5	.065	1.65
¾	19.05	1.750	44.5	.065	1.65
1	25.40	1.750	44.5	.065	1.65
1 ½	38.10	1.750	44.5	.065	1.65
2	50.80	2.250	57.2	.065	1.65
2 ½	63.50	2.250	57.2	.065	1.65
3	76.20	2.250	57.2	.065	1.65
4	101.60	2.250	57.2	.083	2.11



Short Weld Ferrule
One End Clamp
One End Butt Weld

Férula de soldadura corta
Abrazadera en un extremo
Soldadura a tope en un extremo

Ferrule courte à souder
extrémités type clamp
et à souder

짧은 용접 페루
한쪽 클램프
한쪽 맞대기 용접

R14SW

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	THK (in.)	THK (mm)
½	12.70	0.500	12.7	.065	1.65
¾	19.05	0.500	12.7	.065	1.65
1	25.40	0.500	12.7	.065	1.65
1 ½	38.10	0.500	12.7	.065	1.65
2	50.80	0.500	12.7	.065	1.65
2 ½	63.50	0.500	12.7	.065	1.65
3	76.20	0.500	12.7	.065	1.65
4	101.60	0.625	15.9	.083	2.11



Ferrule
One End Clamp
One End Butt Weld

Férula
Abrazadera en un extremo
Soldadura a tope en un extremo

Réducteur excentrique
extrémités grande type clamp
petite à souder avec tangente

페루
한쪽 클램프
한쪽 맞대기 용접

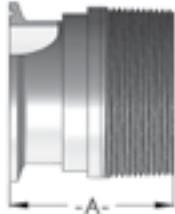
R14A

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	THK (in.)	THK (mm)
1	25.40	1.125	28.6	.065	1.65
1 ½	38.10	1.125	28.6	.065	1.65
2	50.80	1.125	28.6	.065	1.65
2 ½	63.50	1.125	28.6	.065	1.65
3	76.20	1.125	28.6	.065	1.65
4	101.60	1.125	28.6	.083	2.11

Biopharmaceutical Processing Components



Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 부속품



R21

Adaptor
Clamp to Male NPT
*No Wrench Flats

Adaptador
NPT abrazadera a macho
*No hexagonal

Adaptateur
extrémités type clamp et NPT mâle
avec écrou
*Sans écrou

어댑터
수NPT의 클램프
no hex



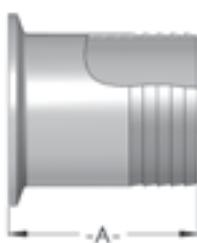
R22

Adaptor
Clamp to Female NPT
*No Wrench Flats

Adaptador
NPT abrazadera a hembra
*No hexagonal

Adaptateur
extrémités type clamp et NPT femelle
avec écrou
*Sans écrou

어댑터
암NPT의 클램프
no hex



R14AHR

Clamp x Rubber Hose Adaptor

Adaptador de manguera de hule con abrazadera

Adaptateur pour boyau en caoutchouc extrémités type clamp

고무 호스 어댑터
클램프 포함

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)
½ x ¼	12.70 x 3.18	2.000	50.8
½ x ¾	12.70 x 6.35	2.000	50.8
½ x ⅜	12.70 x 9.53	2.000	50.8
½ x ½	12.70 x 12.70	2.000	50.8
½ x ¾	12.70 x 19.05	2.000	50.8
¾ x ¼	19.05 x 3.18	2.000	50.8
¾ x ¾	19.05 x 6.35	2.000	50.8
¾ x ⅜	19.05 x 9.53	2.000	50.8
¾ x ½	19.05 x 12.70	2.000	50.8
¾ x ¾	19.05 x 19.05	2.000	50.8
1 x 1	25.40 x 25.40	2.250	57.2
1 ½ x 1 ½	38.10 x 38.10	2.438	61.9
2 x 2	50.80 x 50.80	2.656	67.5
2 ½ x 2 ½	63.50 x 63.50	3.281	83.3
3 x 3 *	76.20 x 76.20	3.500	88.9
4 x 4 *	101.60 x 101.60	3.813	96.9

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)
½ x ¼	12.70 x 3.18	1.250	31.8
½ x ¾	12.70 x 6.35	1.500	38.1
½ x ⅜	12.70 x 9.53	1.500	38.1
½ x ½	12.70 x 12.70	1.500	38.1
½ x ¾	12.70 x 19.05	1.625	41.3
¾ x ¼	19.05 x 3.18	1.250	31.8
¾ x ¾	19.05 x 6.35	1.500	38.1
¾ x ⅜	19.05 x 9.53	1.500	38.1
¾ x ½	19.05 x 12.70	1.500	38.1
¾ x ¾	19.05 x 19.05	1.625	41.3
1 x 1	25.40 x 25.40	1.625	41.3
1 ½ x 1 ½	38.10 x 38.10	2.250	57.2
2 x 2	50.80 x 50.80	1.687	42.8
2 ½ x 2 ½	63.50 x 63.50	2.094	53.2
3 x 3 *	76.20 x 76.20	2.187	55.5
4 x 4 *	101.60 x 101.60	2.625	66.7

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)
½	12.70	1.500	38.1
¾	19.05	1.500	38.1
1	25.40	2.500	63.5
1 ½	38.10	2.500	63.5
2	50.80	2.500	63.5
2 ½	63.50	2.500	63.5
3	76.20	2.500	63.5
4	101.60	2.625	66.7

Biopharmaceutical Processing Components



Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 부속품



Solid End Cap

Tapón sólido

Bouchon solide

솔리드 엔드 캡

R16A

DT- 4.1.5-2

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	B (in.)	B (mm)
½	12.70	0.993	25.2	0.187	4.7
¾	19.05	0.993	25.2	0.187	4.7
1	25.40	1.984	50.4	0.250	6.4
1 ½	38.10	1.984	50.8	0.250	6.4
2	50.80	2.516	63.9	0.250	6.4
2 ½	63.50	3.047	77.4	0.250	6.4
3	76.20	3.579	90.9	0.250	6.4
4	101.60	4.682	118.9	0.312	7.9



Weld Cap

Tapón soldado

Bouchon extrémités à souder

용접 캡

RBP16W

DT- 4.1.5-1

Tube Size (in.)	Tube Size (mm)	A (in.)	A (mm)	THK 2 (in.)	THK 2 (mm)
½	12.70	1.500	38.1	.065	1.65
¾	19.05	1.500	38.1	.065	1.65
1	25.40	1.500	38.1	.065	1.65
1 ½	38.10	1.500	38.1	.065	1.65
2	50.80	1.500	38.1	.065	1.65
2 ½	63.50	1.500	38.1	.065	1.65
3	76.20	1.750	44.5	.065	1.65
4	101.60	2.000	50.80	.083	1.65

Biopharmaceutical Processing Components



Componentes de procesamiento **biofarmacéutico** • Composants du traitement **biopharmaceutique** • 약제학 **부속품**



R13HC

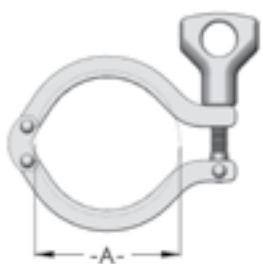
Heavy Duty Clamp

Abrazadera de alta resistencia

Collet renforcé

내구성 클램프

Tube Size (in.)	Tube Size (mm)
½	12.70
¾	19.05
1 ½	38.10
2	50.80
2 ½	63.50
3	76.20
4	101.60



R13HCD

Heavy Duty Clamp (2 pin)

Abrazadera de alta resistencia (de 2 clavijas)

Collet renforcé (2 attaches)

내구성 클램프(2핀)

Tube Size (in.)	Tube Size (mm)
1 ½	38.10
2	50.80
2 ½	63.50
3	76.20
4	101.60



R13HC3S

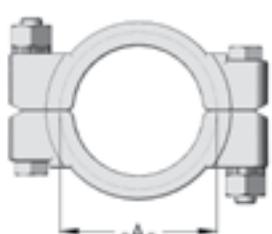
Three Segment Heavy Duty Clamp

Abrazadera de alta resistencia de tres segmentos

Trois segments Collet renforcé

3 세그먼트
내구성 클램프

Tube Size (in.)	Tube Size (mm)
1 ½	38.10
2	50.80
2 ½	63.50
3	76.20
4	101.60



R13HP

Two Piece High Pressure Clamp

Stainless Steel Cast Construction

Abrazadera de alta presión de dos piezas

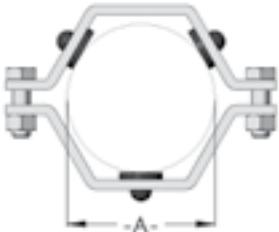
Construcción de acero inoxidable moldeado

Collet pour haute pression

deux pièces d'acier inoxydable moulé

2피스 고압 클램프
스텐레스강 성형 구조

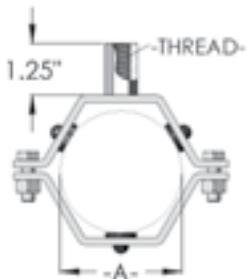
Tube Size (in.)	Tube Size (mm)
½	12.70
¾	19.05
1 ½	38.10
2	50.80
2 ½	63.50
3	76.20
4	101.60



R24G

- Stainless Steel Support with Grommets**
- Soporte de tubo de acero inoxidable con ojales**
- Support en acier inoxydable avec œillets**
- 스텐레스강 행거, 고리 포함**

Tube Size (in.)	Tube Size (mm)
½	12.70
¾	19.05
1	25.40
1 ½	38.10
2	50.80
2 ½	63.50
3	76.20
4	101.60

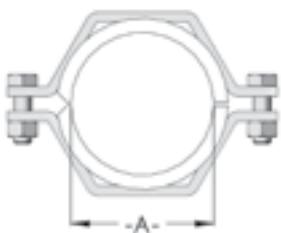


R24GC

- Stainless Steel Tube Support With Grommets & ½" UNC threaded nut**
- Soporte de tubo de acero inoxidable con ojales y tuerca rosada UNC de ½"**
- Support en acier inoxydable avec œillets et écrou**
- 스텐레스강 투브 행거, 고리 포함 및 ½" UNC 스레드 너트**

*Note: 1" Also available with 3/8"-16 UNC nut.
 *Nota: 1" También disponible con tuerca UNC de 3/8"-16
 * Note: 1 pouce aussi disponible avec un écrou 3/8 po.-16 UNC)
 *참고: 1" 3/8"-16 UNC 너트와 함께 제공 가능.

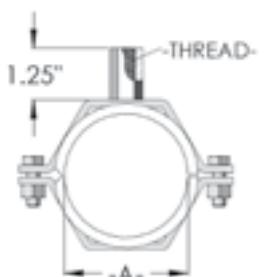
Tube Size (in.)	Tube Size (mm)
½	12.70
¾	19.05
1	25.40
1 ½	38.10
2	50.80
2 ½	63.50
3	76.20
4	101.60



R24GP

- Stainless Steel Tube Support with plastic sleeve**
- Soporte de tubo de acero inoxidable con manga de plástico**
- Support en acier inoxydable avec manchon en plastique**
- 플라스틱 슬리브를 사용한 스텐레스강 행거**

Tube Size (in.)	Tube Size (mm)
½	12.70
¾	19.05
1	25.40
1 ½	38.10
2	50.80
2 ½	63.50
3	76.20
4	101.60



R24GPC

- Stainless Steel Tube Support with plastic sleeve & ½" UNC threaded nut**
- Edelstahl-Rohrstützen con manga de plástico y tuerca rosada UNC de ½"**
- Support en acier inoxydable avec manchon en plastique et écrou**
- 스텐레스강 투브 행거, 플라스틱 슬리브 포함 및 ½" UNC 스레드 너트**

*Note: 1" Also available with 3/8"-16 UNC nut.
 *Nota: 1" También disponible con tuerca UNC de 3/8"-16
 * Note: 1 pouce aussi disponible avec un écrou 3/8 po.-16 UNC)
 *참고: 1" 3/8"-16 UNC 너트와 함께 제공 가능.

Tube Size (in.)	Tube Size (mm)
½	12.70
¾	19.05
1	25.40
1 ½	38.10
2	50.80
2 ½	63.50
3	76.20
4	101.60



Rodger Industries Inc. connects seamlessly to the global marketplace. With a growing network of international partners, we understand the unique challenges faced in the biopharmaceutical industry worldwide.

Rodger Industries Inc. se conecta perfectamente al mercado global. Gracias a nuestra creciente red de socios internacionales, comprendemos los retos únicos que enfrenta la industria biofarmacéutica a nivel mundial.

Rodger Industries Inc. se connecte harmonieusement au marché mondial. Grâce à notre réseau croissant de partenaires internationaux, nous comprenons les défis uniques auxquels fait face le secteur biopharmaceutique dans le monde entier.

Rodger Industries Inc.는 전세계 시장과 긴밀한 유대 관계를 형성하고 있으며, 해외 파트너 네트워크를 확장하는 과정에 목격하고 있는 전세계 약제학 산업이 직면한 독특한 과제들에 대해 이해하고 있습니다.

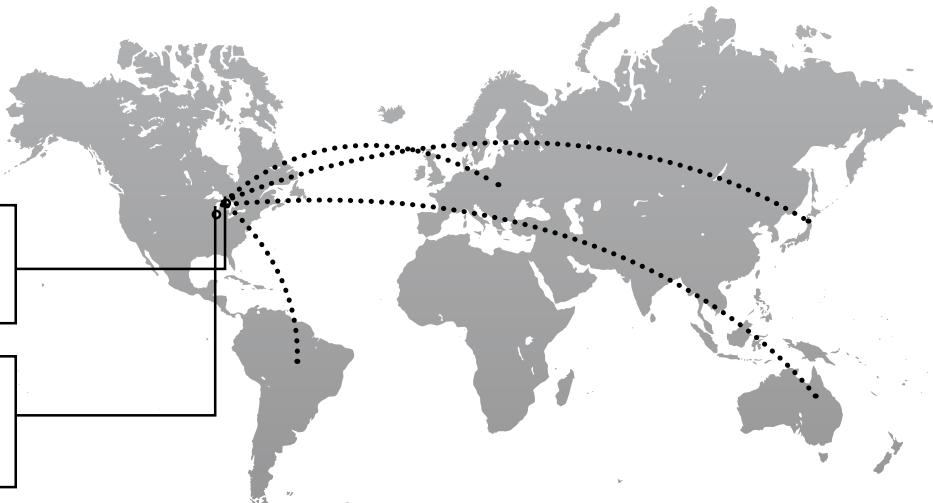
RODGER INDUSTRIES INC.

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Plymouth Township, MI
48170



Let's Connect

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연락처



Connect with us via the web, tablet or smart phone.

Conéctese con nosotros por Internet, tableta o teléfono inteligente.

Connectez-vous à nous par Internet, tablette ou téléphone intelligent.

온라인, 태블릿, 스마트폰 등을 통해 저희에게 연락해 주십시오.



Further To Our Product Range

Filtration

In addition to biopharmaceutical fittings, Rodger Industries Inc. offers a unique range of filtration solutions for use in food and beverage and other hygienic processing industries.

We welcome you to contact us for further information.

Extienda nuestra gama de productos

Filtración

Además de los racores biofarmacéuticos, Rodger Industries Inc. ofrece una gama exclusiva de soluciones de filtración para uso en las industrias de alimentos y bebidas y otras de procesamiento higiénico.

Lo invitamos a comunicarse con nosotros para obtener mayor información.

Gamme de produits supplémentaires

Filtration

En plus de raccords biopharmaceutiques, Rodger Industries Inc. offre une gamme unique de solutions de filtration pouvant être utilisées par le secteur de la transformation des aliments et des boissons et d'autres secteurs de transformation hygiénique

N'hésitez pas à prendre contact avec nous pour obtenir de plus amples renseignements.

기타 제품 범위

여과

Rodger Industries Inc.는 약제학 부속품 이외에도 식음료 및 기타 위생 처리 산업에서 사용하는 독특한 여과 솔루션을 제공하고 있습니다.

자세한 정보는 언제든지 당사에 문의해 주십시오.



FILTERS AND STRAINERS

Filtros y Coladores

Filtres et de Crépines

필터 및 스트레이너



Industry Terminology

ANNEALING

A treatment process for steel for reducing hardness, improving machinability, facilitating cold working, or producing a desired mechanical, physical, or other property (The American Society of Mechanical Engineers Bioprocessing Equipment [ASME BPE], 2014)

ASEPTIC

Free of pathogenic (causing or capable of causing disease) microorganisms (ASME BPE, 2014)

BRIGHT ANNEALING

Reducing oxidation on metal surface by heating and slowly cooling in controlled atmosphere. The heat treatment causes changes in properties of material such as hardness, ductility and strength. Note: Following this process the steel has a more reflective appearance, but still may have imperfections and cloudiness.

BORESCOPE

A device for indirect visual inspection of difficult access locations such as equipment and pipes (ASME BPE, 2014)

CORROSION

A chemical or electrochemical interaction between a metal and its environment, which results in changes in the property of the metal. This may lead to impairment of the function of the metal, the environment, and/or the technical system involved (ASME BPE, 2014)

MILL FINISH

Surface finish of metal after forming process takes place. Surface is normally rough and absent of luster that polished surfaces have.

MECHANICAL POLISHING

A process by which abrasive media is applied to a surface with intent to smoothen until a desired and/or specified surface roughness (Ra) is achieved (ASME BPE, 2014)

ELECTROPOLISHING

A controlled electrochemical process utilizing acid electrolyte, DC current, anode, and cathode to smooth the surface by removal of metal (ASME BPE, 2014)

HEAT NUMBER

An alphanumeric identification of a stated tonnage of metal obtained from a continuous melting in a furnace (ASME BPE, 2014)

HYDROTEST

A pressure test of piping, pressure vessels, or pressure-containing parts, usually performed by pressurizing the internal volume with water at a pressure determined by the applicable code (ASME BPE, 2014)

OVALITY (to tolerances of the standard)

The degree of deviation from perfect circularity of the cross section.

MATERIAL TEST REPORT (MTR)

A document in which the results of tests, examinations, repairs, or treatments required by the material specification to be reported are recorded. This document includes those of any supplementary requirements or other requirements stated in the order for the material. This document may be combined with a certificate of compliance as a single document. When preparing a material test report, a material manufacturer may transcribe data produced by other organizations, provided he accepts responsibility for the accuracy and authenticity of the data (ASME BPE, 2014)

NICK

A surface void anomaly caused by material removal or compression from the surface, whose bottom surface is usually irregular (ASME BPE, 2014)

PASSIVATION

Removal of exogenous iron or iron from the surface of stainless steels and higher alloys by means of a chemical dissolution, most typically by a treatment with an acid solution that will remove the surface contamination and enhance the formation of the passive layer (ASME BPE, 2014)

POROSITY

Cavity-type discontinuities formed by gas entrapment during solidification (ASME BPE, 2014)

PROFILOMETER

An instrument for the measurement of the degree of surface roughness (ASME BPE, 2014)

ROUGHNESS AVERAGE (RA.)

Log of the arithmetic mean of the surface profile. (ASME BPE, 2014)

SEAMLESS TUBING (NO DEFINITION)

Tubing which is extruded and drawn (from a billet) during manufacturing. During the drawing process, the tube forms by means of being pulled through a die.

WELDED TUBING (NO DEFINITION)

Tubing manufactured from a strip which is roll formed and welded to produce a tube.

Notes:



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