T&B° Fittings **KOPEX**-E×°

**Kindorf**®

Superstrut<sup>®</sup>
T&B<sup>®</sup> Cable Tray
Ty-Rap<sup>®</sup>





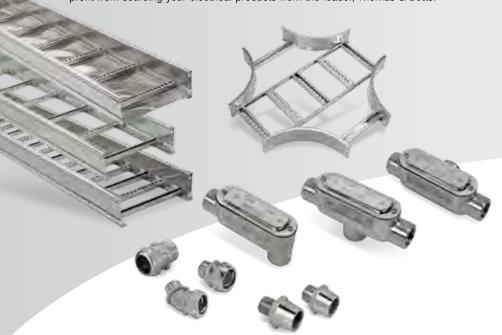
# Thomas & Betts Stainless Steel Products Built to Stand Up to Your Harshest Environments.

Water, salt spray, sunlight, petroleum, chemicals and extreme temperatures — all destructive enemies that can have corrosive, degrading effects on your electrical distribution system. Protect your wiring with conduit, fittings, cable ties, metal framing, cable tray and accessories made from tough, durable, corrosion-resistant stainless steel. Thomas & Betts offers you the widest selection of stainless steel electrical system components — including many innovative, industry-exclusive products that save you time and money, reduce inventory and solve installation challenges.

# At T&B, we're committed to:

- Products which provide solutions to your electrical needs
- Convenience of single-order, single-shipment to your site for thousands of stocking items
- Expert local point of contact for clear, consistent information regarding training, codes and standards
- Quality brands that have proven themselves over time
- Inventive design and manufacture of problem-solving products
- Offering a best-of-class warranty and returns policy
- Uniform carton labeling with additional bar-coding for convenient inventory management
- Nationwide network of stocking electrical distributors
- Outstanding customer service capability
- Supplying you with the right products, convenient packaging, on-time delivery and competitive pricing

We deliver the solutions that make your job easier and offer the power to bring it all together in one package. Call us today and let us help you profit from sourcing your electrical products from the leader, Thomas & Betts.



#### **Washdown Areas**



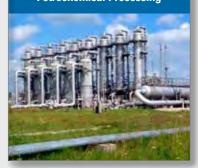
**Food & Beverage Processing** 



**Ship Building** 



**Petrochemical Processing** 



**Transportation Infrastructure** 



### **Customer Service**

1-800-816-7809

# Immediate, Knowledgeable Assistance

Every Thomas & Betts Customer Service Representative is right where the action is — surrounded by all the support and information they need to answer your



questions and fill your orders faster than ever. Your calls and faxes are automatically routed to Customer Service Specialists who personally serve your account and can answer questions about products, order status, price and availability, and other service-related inquiries.

**Phone:** 1-800-816-7809 **Fax:** 1-800-816-7810

Email: generalcustomerserviceteam@tnb.com

#### **T&B Access®**

#### tnbaccess.tnb.com

T&B Access® is a global sales tool for our distributor partners, offering:

- Quote Review
- Stock Checks
- Pricing Inquiries
- Cross Reference
- Order Entry
- Order Status
- Order Resolution
- Shipping Status

- Document Look-Up
- Item History Search
- Multiple-Location User Search
- Shipping Confirmations
- Tracking Data
- Expediting

G

- Returns Processing
- Quality Issues
- Customer Report Cards
- Web Catalog Look-Up

All of these tools and more are available online 24 hours a day -7 days a week, without having to make a single phone call. Multi-lingual options are available in English, French and Spanish. T&B Access® now serves over 10,000 satisfied customer users at over 3,500 locations every month.

#### **Contents**

T&B® Fittings	
Stainless Steel Conduit & Fittings	3–20
Kopex-Ex <sup>™</sup>	
Nopek Ex	
Stainless Steel Conduit Systems	21–34
Kindorf <sup>®</sup>	
Stainless Steel Modular Framing System	35–42
Superstrut®	
•	
Stainless Steel Channels & Accessories	43–50
T&B® Cable Tray	
Object to a Charle Orbita Tox	E4 E0
Stainless Steel Cable Tray	51–56
Ty-Rap <sup>®</sup>	
Ctainless Ctael Fostening Customs	E7 70
Stainless Steel Fastening Systems	5/-/2
Catalog Number Index	73_80







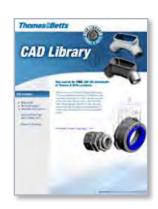
#### **T&B Services**

# **Web CAD Library**

www.tnb.com/CADLibrary

#### Over 5,000 2D and 3D CAD Models Available FREE!

The T&B CAD Library is an on-line source of 2D and 3D CAD models, available FREE to customers who register. Users can download these files to their desktops for import into their working drawings. Drawings are offered in 90 of the most popular native file formats. This is a valuable tool for CAD designers, OEMs and engineering firms, as it will allow them to quickly locate and download T&B drawings into their projects. Over 4,500 drawings of T&B® Fittings, PMA® Cable Protection, Kindorf®, Red•Dot®, Superstrut®, Steel City® and Carlon® products and over 500 ABB products are currently available.



# **Web Catalog**

www.tnb.com/webcatalog

#### Thousands of Products at Your Fingertips

U.S. contractors and specifiers have made our web catalog their number one stop. Users can search for technical information by catalog number, UPC code, competitor number, keyword search, product category and/or brand. Having found the item(s) they are searching for, they can then use our **Where To Buy** function to locate a T&B local distributor and/or other support services.



### **Technical Services**

1-888-862-3289

### Over 170 Years of Industry Experience

Meeting and exceeding our customers' expectations is a fundamental goal of Thomas & Betts. Call our Technical Services Department and talk LIVE to an expert who'll answer questions and concerns regarding all aspects of our products and services. Our experienced and knowledgeable staff is second to none in the industry!



# **Tool Services**

1-800-284-T00L

#### **Quality You Can Trust**

Trust T&B's dedicated Tool Services Department to answer all questions regarding tool applications, repair, warranties, sales/lease/rental and technical information. Ask about our specialized services, including customer/sales training, demos and calibration/certification of tools.





#### In this section...



#### **T&B® Stainless Steel Conduit & Fittings**

Rigid and Intermediate Metal Conduit and Fittings	4–8
Liquidtight Flexible Conduit Fittings	9–13
Jacketed Metal-Clad and Teck Cable Fittings	14–16
Tray Cable Fittings	17
Cord and Cable Fittings	18–20





# Rigid and Intermediate Metal Conduit and Fittings

### **Form 8 Conduit Bodies**

#### **Application**

Conduit Bodies are installed in conduit systems to:

- Connect conduit sections
- Act as pull outlets when conductors are being installed
- Provide easy access for splices in branch conductors
- Make 90° bends in conduit runs
- Act as mounting outlets for wiring devices and lighting fixtures
- Provide access to conductors for maintenance and future system changes
- Suitable for use in food and beverage, pharmaceutical, petrochemical, wastewater treatment, pulp and paper processing and other corrosive environments

#### **Features**

- Standard features include tapered (NPT) threads and integral bushings to protect wire insulation
- Conduit bodies ship complete with covers and gaskets
- Marine-grade Type 316 stainless steel construction in rugged Form 8 design

#### **Standard Material**

Bodies Type 316 stainless steel

Covers Cast and stamped Type 316 stainless steel

with stainless steel screws

Gaskets Neoprene

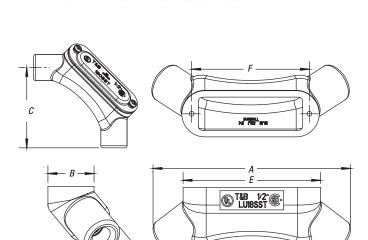
#### **Standard Finish**

Bodies and

Covers Polished

#### **Listings/Compliances**

UL® Standard: 514A, 514B Fed. Spec: W-C-586D CSA Standard: C22.2 No. 18



#### **LU Form 8 Conduit Bodies with Covers**





	нив	DIMENSIONS (IN.)						- CONDUIT	
CAT. NO.		A	В	С	D	E	F	CU. IN.	FILL MAX.
LU18SST	1/2"	6.210	1.450	3.825	1.125	4.320	3.700	5.5	(3) #6 AWG
LU28SST	3/4"	6.981	1.645	4.245	1.500	4.921	4.300	8.5	(3) #6 AWG
LU38SST	1"	8.261	1.850	5.050	1.700	5.625	5.000	14.5	(3) #3 AWG
LU48SST	11/4"	9.923	2.200	5.975	2.200	6.730	5.810	26.5	(3) 1/0
LU58SST	1½"	11.549	2.813	7.000	2.450	7.938	7.125	45.0	(3) 2/0
LU68SST	2"	13.989	3.820	8.500	2.900	9.797	9.125	116.5	(3) 250 MCM

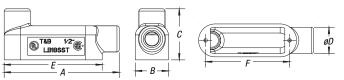






# Rigid and Intermediate Metal Conduit and Fittings

#### **LB Form 8 Conduit Bodies with Covers**

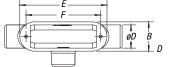


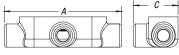


	нив		DIMENSIONS (IN.)					CONDUIT	
CAT. NO.	SIZE	A	В	C	D	E	F	CU. IN.	FILL MAX.
LB18SST	1/2"	5.070	1.450	2.250	1.150	4.320	3.700	5.8	(3) #6 AWG
LB28SST	3/4"	5.671	1.645	2.530	1.400	4.921	4.300	8.0	(3) #6 AWG
LB38SST	1"	6.563	1.850	2.913	1.750	5.625	5.000	13.0	(3) #4 AWG
LB48SST	11/4"	7.734	2.200	3.315	2.200	6.730	5.810	23.5	(3) #2 AWG
LB58SST	11/2"	8.992	2.813	3.800	2.450	7.938	7.125	44.0	(3) #1 AWG
LB68SST	2"	11.000	3.820	4.810	2.900	9.797	9.125	88.0	(3) 1/0



#### **T Form 8 Conduit Bodies with Covers**





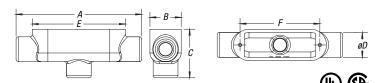


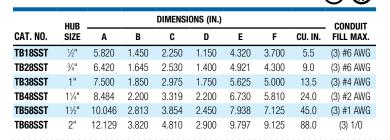


	HUB			DIMENSI	ONS (IN.)				CONDUIT
CAT. NO.	SIZE	A	В	C	D	E	F	CU. IN.	FILL MAX.
T18SST	1/2"	5.820	1.450	2.200	1.150	4.320	3.700	5.5	(3) #6 AWG
T28SST	3/4"	6.420	1.645	2.395	1.400	4.921	4.300	9.0	(3) #6 AWG
T38SST	1"	7.500	1.850	2.850	1.750	5.625	5.000	13.5	(3) #4 AWG
T48SST	11/4"	8.738	2.200	2.950	2.200	6.730	5.810	24.0	(3) #2 AWG
T58SST	11/2"	10.046	2.813	3.867	2.450	7.938	7.125	45.0	(3) #1 AWG
T68SST	2"	12.204	3.820	5.070	2.900	9.797	9.125	88.0	(3) 1/0



#### **TB Form 8 Conduit Bodies with Covers**









**United States** 

Tel: 901.252.8000 800.816.7809 Fax: 901.252.1354

**Technical Services** Tel: 888.862.3289



# Rigid and Intermediate Metal Conduit and Fittings

# Withstand corrosive environments and meet stringent sanitary requirements.

#### **Stainless Steel Conduit**

For corrosion-resistant electrical conduit systems, stainless steel offers value and performance that's hard to match, combining high corrosion, chemical and temperature resistance with strength, durability, ease of installation and low maintenance. Compared to standard galvanized steel conduit in corrosive environments, Type 304 stainless steel offers up to five times the lifespan, while Type 316 offers up to eight times the lifespan. Because it is very easy to clean and its surface has no pores or cracks to harbor bacteria and other impurities, stainless steel also provides one of the most hygienic surfaces.

- Available in both Type 304 and marine-grade Type 316 stainless steel
- Features standard NPT threads for easy installation
- Each 10-ft. length of conduit ships with one Type 316 stainless steel coupling included
- Couplings also sold separately
- · Exceeds requirements for washdown applications
- Food- and potable water-safe
- Satisfies plant-cleanliness mandates from HACCP, FDA and various state agencies
- Meets ASTM A-321/SA-312 Standards
- UL®/cUL Listed

#### **Typical Applications**

- · Petrochemical refining/processing
- · Water and wastewater treatment
- Food and beverage processing
- Marine and coastal facilities
- Pharmaceutical manufacturing
- Pulp and paper processing
- Other applications in corrosive environments or with strict hygiene requirements



NEW

CAT. NO.	TRADE SIZE (IN.)	WEIGHT (LBS./FT.)	STD. PKG. QTY.				
Type 304 Stainless	Type 304 Stainless Steel Conduit with Coupling						
COND1/2SS	1/2	0.82	1,500 ft.				
COND3/4SS	3/4	1.09	1,000 ft.				
COND1SS	1	1.61	700 ft.				
COND11/4SS	11/4	2.18	350 ft.				
COND11/2SS	1½	2.63	300 ft.				
COND2SS	2	3.50	200 ft.				
COND21/2SS	21/2	5.59	120 ft.				
COND3SS	3	7.27	90 ft.				
COND4SS	4	10.08	40 ft.				
Type 316 Stainless	Steel Conduit with	Coupling					
COND4 /CCCT	1/	0.00	4 500 4				

Type 316 Stainless Steel Conduit with Coupling						
1/2	0.82	1,500 ft.				
3/4	1.09	1,000 ft.				
1	1.61	700 ft.				
11/4	2.18	350 ft.				
1½	2.63	300 ft.				
2	3.50	200 ft.				
21/2	5.59	120 ft.				
3	7.27	90 ft.				
4	10.08	40 ft.				
	½ 3/4 1 11/4 11/2 2 21/2 3	½     0.82       ¾     1.09       1     1.61       1½     2.18       1½     2.63       2     3.50       2½     5.59       3     7.27				

NOTE: Conduit sold in 10-ft. lengths. Each 10-ft. length ships with one coupling.



# Rigid and Intermediate Metal Conduit and Fittings

# Withstand corrosive environments and meet stringent sanitary requirements.

# **Stainless Steel Couplings** and **Nipples**

#### **Stainless Steel Couplings**

CAT. NO.	TRADE SIZE (IN.)	WEIGHT (LBS./EA)	STD. PKG. QTY.				
Type 304 Stainless	Type 304 Stainless Steel Couplings						
CPL1/2SS	1/2	0.22	100				
CPL3/4SS	3/4	0.28	50				
CPL1SS	1	0.39	30				
CPL11/4SS	1 1/4	0.55	25				
CPL11/2SS	1 ½	0.77	25				
CPL2SS	2	1.10	20				
CPL21/2SS	2 ½	2.09	12				
CPL3SS	3	3.15	16				
CPL4SS	4	4.29	10				



#### **Conduit Nipples**

CAT. NO.	TRADE SIZE (IN.)	LENGTH (IN.)	WEIGHT (LBS./EA.)	STD. PKG. QTY.
Type 304 Stainless	Steel Nipples			
NPL1/2X12SS	1/2	12	0.79	25
NPL3/4X12SS	3/4	12	1.05	25
NPL1X12SS	1	12	1.54	20
NPL11/4X12SS	1 1/4	12	2.02	16
NPL11/2X12SS	1 ½	12	2.49	8
NPL2X12SS	2	12	3.30	9
Type 316 Stainless	Steel Nipples			
NPL1/2X12SST	1/2	12	0.79	25
NPL3/4X12SST	3/4	12	1.05	25
NPL1X12SST	1	12	1.54	20
NPL11/4X12SST	1 1/4	12	2.02	16
NPL11/2X12SST	1½	12	2.49	8
NPL2X12SST	2	12	3.30	9





#### **Stainless Steel Couplings**

CAT. NO.	TRADE SIZE (IN.)	WEIGHT (LBS./EA.)	STD. PKG. QTY.
Type 316 Stainless	Steel Couplings		
CPL1/2SST	1/2	0.17	100
CPL3/4SST	3/4	0.29	50
CPL1SST	1	0.34	30
CPL11/4SST	11/4	0.37	25
CPL11/2SST	1½	0.61	25
CPL2SST	2	0.90	20
CPL21/2SST	21/2	1.87	12
CPL3SST	3	1.93	16
CPL4SST	4	3.97	10







# Rigid and Intermediate Metal Conduit and Fittings

# Withstand corrosive environments and meet stringent sanitary requirements.

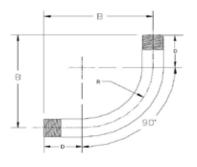
### **Stainless Steel Elbows**

Standard	Radiue	Flhowe	ang
SIMILIALO	BAUIUS	FIDUWS	90

CAT. NO.	TRADE SIZE (IN.)	RADIUS "R"	OFFSET "B"*	STRAIGHT END "D"	WEIGHT (LBS./EA.)	STD. PKG. QTY.
Type 304 Sta	ainless Steel Elbo	ws				,
ELL1/2SS	1/2	4	5.50	1.50	0.64	25
ELL3/4SS	3/4	4.5	6.00	1.50	0.92	25
ELL1SS	1	5.75	7.63	1.88	1.69	20
ELL11/4SS	1 1/4	7.25	9.25	2.00	2.66	8
ELL11/2SS	1 ½	8.25	10.25	2.00	3.67	8
ELL2SS	2	9.5	11.50	2.00	5.31	6
Type 316 Sta	ainless Steel Elbo	ws				
ELL1/2SST	1/2	4	5.50	1.50	0.64	25
ELL3/4SST	3/4	4.5	6.00	1.50	0.92	25
ELL1SST	1	5.75	7.63	1.88	1.69	20
ELL11/4SST	1 1/4	7.25	9.25	2.00	2.66	8
ELL11/2SST	1½	8.25	10.25	2.00	3.67	8
ELL2SST	2	9.5	11.50	2.00	5.31	6
* Minimum	_			_	_	





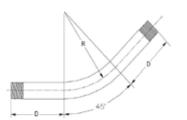


Standard Radius Elbows 45°

CAT. NO.	TRADE SIZE (IN.)	RADIUS "R"	STRAIGHT END "D"	WEIGHT (LBS./EA.)	STD. PKG. QTY.
Type 304 Sta	inless Steel Elbou	NS			
ELL1/245SS	1/2	4	1.50	0.42	25
ELL3/445SS	3/4	4.5	1.50	0.61	25
ELL145SS	1	5.75	1.88	1.11	20
ELL11/445SS	1 1/4	7.25	2.00	1.70	16
ELL11/245SS	1 ½	8.25	2.00	2.30	16
ELL245SS	2	9.5	2.00	3.10	9
Type 316 Sta	inless Steel Elbou	NS			_
ELL1/245SST	1/2	4	1.50	0.42	25
ELL3/445SST	3/4	4.5	1.50	0.61	25
ELL145SST	1	5.75	1.88	1.11	20
ELL11/445SST	1 1/4	7.25	2.00	1.70	16
ELL11/245SST	1½	8.25	2.00	2.30	16
ELL245SST	2	9.5	2.00	3.10	9









<sup>\*</sup> Minimum

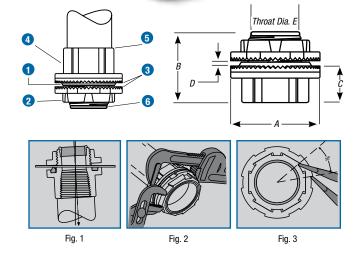
# Rigid and Intermediate Metal Conduit and Fittings

# Designed for unequalled performance.

# **T&B®** Grounding Hub

Never before has a single hub fit like this one. The innovative engineering of the T&B® Grounding Hub will raise your performance expectations for threaded hubs. Look for the distinctive blue color to ensure the quality of a Thomas & Betts fitting.

- Sealing Ring and Groove with innovative profile outperforms standard O-ring design. Sealing ring is captivated in place before installation and resists buckling or slipping during installation. The seal groove is designed for optimum compression of the sealing ring. The sealing ring is designed to provide a complete 360° seal, even when the conduit is not perpendicular with the enclosure. (See Figure 1)
- 2 Locknut Design with peripheral slots and a hexagonal/ angled spline spaced every 30° enables easy application of torque with wrench or hammer and screwdriver. (See Figures 2 & 3)
- Sharper and Deeper Teeth on locknut and body designed for a more penetrating bite for improved bonding to the enclosure.
- 4 Hexagonal/Splined Body Design for fast, easy installation with wrench or hammer and screwdriver.
- Frecision Machined Tapered Threads designed to create watertight union.
- Insulated Throat molded from 105° C rated thermoplastic with a flammability rating of UL94-V0.





				_		-
		A	В	C	D	E
	TRADE				MAX. PANEL	THROAT
CAT. NO.	SIZE	DIA.			THICKNESS	DIA.
H050GRSST	1/2"	17/16	1%6	7/8	3/16	19/32
H075GRSST	3/4"	<b>1</b> ½16	1 <sup>19</sup> / <sub>32</sub>	<sup>29</sup> / <sub>32</sub>	3/16	25/32
H100GRSST	1"	2	1 <sup>13</sup> / <sub>16</sub>	11/16	1/4	1
H125GRSST	11/4"	23/8	11//8	11/16	1/4	15⁄16
H150GRSST	11/2"	23/4	17/8	11/16	1/4	117/32
H200GRSST	2"	31/4	1 <sup>15</sup> / <sub>16</sub>	15/32	1/4	131/32

Hub and Locknut: Type 316 Stainless Steel

Insulating Throat: Thermoplastic temp. rating of 105° C

Flammability rating of UL94-V0

Sealing Ring: Nitrile (BUNA "N")

Meets NEMA sealing requirements for NEMA 3R, 4 and 13 enclosures

UL® Listed and CSA Certified; CSA Certified for hazardous locations Class II Groups E, F, G, Class III (NEC 501.10B)

UL® File No. E-23018. CSA File No. 4484

#### T&B® Grounding Hub Centerline Spacing Chart

CONDUIT TRADE SIZE	1/2"	3/411	1"	11/4"	1½"	2"
1/2"	1%6		_			_
3/4"	143/64	125/32	_	_	_	_
1"	127/32	<b>1</b> 61/64	21/8	_	_	_
11/4"	21/32	29/64	25/16	21/2	_	_
1½"	27/32	221/64	21/2	211/16	27/8	_
2"	$2^{15}/_{32}$	$2^{37}/_{64}$	23/4	215/16	31//8	3¾
Nearest Obstruction to Center of Hub	27/32	61/64	11//8	15/16	1½	1¾

# Rigid and Intermediate Metal Conduit and Fittings

# T&B° Grounding and Bonding Locknut

CAT. NO.	TRADE SIZE	DIA.	HEIGHT	GROUND SCREW	MAX. CONDUCTOR SIZE
L050GR-SST	1/2"	1½	13/32	#10-32 x 1/4"	#10
L075GR-SST	3/4"	<b>1</b> <sup>11</sup> / <sub>16</sub>	13/32	#10-32 x 1/4"	#10
L100GR-SST	1"	2	13/32	#10-32 x 1/4"	#10
L125GR-SST	11/4"	23/8	15/32	1/4-20 x 1/4"	#10
L150GR-SST	1½"	23/4	15/32	1/4-20 x 5/16"	#8
L200GR-SST	2"	31/4	15/32	1/4-20 x 5/16"	#8

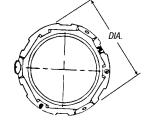


UL® File No. E-3060

CSA File No. 4484







# Support and securely fasten rigid, IMC and EMT Conduit.

### **Pipe Straps**

- · Type 303 stainless steel
- Higher degree of corrosion resistance than traditional zinc-plated or hot-dipped galvanized straps
- One- and two-hole straps for EMT sizes ½" through 2"
- One- and two-hole straps for rigid and IMC sizes 1/2" through 4"



	TRADE	WT. PER	HOLE	STD.
CAT. NO.	SIZE	100	DIA.	PKG.
One-Hole EMT Str	aps			
TS101-SS	1/2"	2.21	1/4"	25
TS102-SS	3/4"	2.49	1/4"	25
TS103-SS	1"	3.31	1/4"	25
TS104-SS	11/4"	3.64	11/16"	10
TS105-SS	1½"	3.87	11/16"	5
TS106-SS	2"	4.03	11/ <sub>16</sub> "	5
One-Hole Rigid/IN	IC Straps			
HS100-SS	3/8"	2.00	9/32"	20
HS101-SS	1/2"	2.21	9/32"	20
HS102-SS	3/4"	2.49	9/32"	20
HS103-SS	1"	3.48	9/32"	20
HS104-SS	11/4"	3.76	11/32"	10
HS105-SS	1½"	18.22	13/32"	10
HS106-SS	2"	19.69	13/32"	5
HS107-SS	21/2"	67.21	15/32"	5
HS108-SS	3"	76.45	17/32"	5
HS110-SS	4"	80.18	17/32"	5

CAT. NO.	TRADE Size	WT. PER 100	HOLE DIA.	STD. PKG.
Two-Hole EMT Stra	ps			
TS901-SS	1/2"	2.21	1/4"	25
TS902-SS	3/4"	3.31	1/4"	25
TS903-SS	1"	3.87	1/41	25
TS904-SS	11/4"	7.54	11/16"	10
TS905-SS	1½"	12.21	11/16"	5
TS906-SS	2"	18.23	11/ <sub>16</sub> "	5
Two-Hole Rigid/IM	C Straps			
HS901-SS	1/2"	2.49	9/32"	20
HS902-SS	3/4"	3.64	9/32"	20
HS903-SS	1"	4.15	9/32"	20
HS904-SS	11/4"	8.17	11/32"	10
HS905-SS	1½"	17.50	13/32"	10
HS906-SS	2"	21.37	13/32"	5
HS907-SS	21/2"	21.54	15/32"	5
HS908-SS	3"	25.72	17/32"	5
HS909-SS	31/2"	27.27	17/32"	5
HS910-SS	4"	31.70	17/32"	5



# Rigid and Intermediate Metal Conduit and Fittings

# Stainless Steel Drain Adaptor and Ball Valve

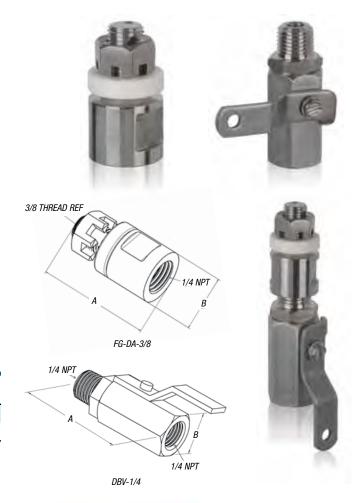
In the electrical system of a food and beverage facility and elsewhere, the T&B Fittings Stainless Steel Drain Adapter provides the means to drain accumulated moisture or small debris from stainless steel electrical enclosures for non-threaded connections.

- The drain adaptor and ball valve are NSF Certified for food and beverage applications.
- When the drain adapter is used in conjunction with the T&B ball valve, the assembly offers a UL Type 4X rating and is suitable for wash down areas.
- The adapter and valve are both constructed of Type 316 Stainless Steel for superior corrosion resistance.
- The innovative, compact body design and special-grade silicone gasket make the drain adapter suitable for installation in tight spaces and on curved surfaces.

#### Certifications

- cULus Listed Type 4X when the T&B ball valve is assembled to the drain adaptor
- NSF Certified per NSF/ANSI Standard 169
- Manufactured with FDA approved materials.

CAT NO.	TRADE SIZE	DIM. "A"	DIM. "B"	UPC NO.
FG-DA-3/8	3/8	1.38"	.75"	78620969862(9)
DBV-1/4	1/4	2.03"	.75"	78620969865(0)









# Liquidtight Flexible Conduit Fittings

# T&B makes liquidtight fittings for demanding situations.

### (jr) (ff



# **Liquidtight Flexible Conduit Fittings**

**Gland** deflects water away from connector and prevents pooling of moisture.

Double Beveled Sealing Ring is designed with five unique sealing mechanisms and cannot be installed backwards. Manufactured of hightemperature rated thermoplastic to demanding specifications. Look for the unique T&B blue color ensuring the highest quality fitting.

Safe Edge® Ground Cone provides superior bonding, stronger pullout, easy threading and conductor protection.

Heat-Curled Insulator provides excellent wire protection and easier glide of conductors through and into the fitting. In addition, the heat-curled finish gives the insulator more strength than glue-in insulators. Look for the unique T&B blue color ensuring the highest quality fitting.

Liquidtight Sealing Gasket locks resilient rubber sealing material inside a stainless steel retaining ring to create a seal that's tight against oil, fumes and moisture at a knockout opening.

Tempered Cast Locknut with Teeth provides superior strength and electrical bonding and can be installed in the enclosure without using a wrench.









# Liquidtight Flexible Conduit Fittings

# T&B makes liquidtight fittings for demanding situations. **Liquidtight Flexible Conduit Fittings**

#### Application

- Used where flexible metal raceway is installed in outdoor or indoor locations exposed to continuous or intermittent moisture
- To positively bond conduit to box or enclosure

#### **Features**

- Ability to install quickly with low torque effort
- Ground cone design offers the following advantages:
  - (1) Compresses metallic convolutions; provides high-quality ground contact with low impedance and high raceway holding power
  - (2) Single helical thread on ground cone is easy to install without cross thread; accepts variations in raceway diameters and convolution pitch
  - (3) Rolled-over edge protects conductors

#### **Sealing Ring Design Features**

- (1) Grips and seals at leading and trailing edge will not abrade raceway jacket
- (2) Provided with grooves on inside diameter for anti-sleeving
- (3) Shoulders on both ends for extra sealing
- (4) Symmetrical shape assures foolproof assembly
- · Can be disconnected and reused.
- Watertight/oil tight installation at box or enclosure termination is assured by external taper thread hub on 5331 series and use of sealing gasket 5262 series
- Suitable for use in Class I Division 2. Class II Division 1 and 2 and Class III Division 1 and 2 Hazardous Locations per NEC® Section 500
- Suitable as a grounding means per NEC® Section 351-9 (up to 11/4" trade size only)
- ½" and 1¼" sizes laboratory tested to carry ground fault current of up to 1,000 amps RMS with duration of fault current 3 cycles
- Conforms with JIC requirements
- Available with imperial, ISO and PG threaded hub

#### **Standard Material**

Type 304 stainless steel

Sealing Ring and Insulator: All thermoplastic

Sealing Gasket: Type 316 stainless steel and Santoprene® thermoplastic rubber

#### Standard Finish — Ground Cone

Electro Zinc Plated with Chromate Coating

#### Range

5331SST Series 3/8" through 2" conduit 5331SSTHT Series 3/4" through 2" conduit \* All hubs provided with taper pipe threads (NPT)

#### Listings/Compliances

UL® UL File No. E-23018

CSA LR-2884, LR-4484, LR-9555

UL 514B

CSA C22.2 No. 18

NEMA FB-1

NFPA 70-1999 (ANSI)

JIC EGP1

JIC EMP1

Federal Specification A-A-50552

Federal Standard H-28 (Threads)

Santoprene is a registered trademark of Advanced Elastomer Systems

NEC and National Electrical Code are registered trademarks of the National Fire Protection Association, Inc.



# Liquidtight Flexible Conduit Fittings

# The strength of steel — with superior corrosion resistance!

# **Stainless Steel Liquidtight Conduit Fittings**

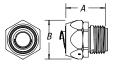
Until now, there's been no ideal conduit fitting solution for use in heavily corrosive environments. Traditional metallic fittings corrode and require frequent replacement. Non-metallic fittings offer less strength, lower UV-resistance and don't stand up well in extreme temperatures. T&B® Stainless Steel Liquidtight Conduit Connectors are constructed of Type 304 stainless steel to resist corrosion while offering high strength, high UV resistance and high endurance. Choose among a full range of fittings in straight, 45° and 90° angled configurations for 3/8" to 2" conduit sizes. Look for the distinctive blue insulator and sealing ring for assurance of T&B quality.\*

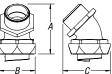
- Ideal for industrial MRO and OEM applications in food and beverage, pharmaceutical, petrochemical, wastewater, salt water and other corrosive environments
- Connects metallic-cored liquidtight conduit to a box or enclosure
- Type 304 stainless steel body and gland nut resist corrosion far better than other metallic fittings
- Stronger and more UV-resistant than non-metallic fittings
- Ground cones are available in  $1\frac{1}{4}$ ",  $1\frac{1}{2}$ " and 2" sizes and are brass/nickel-plated

- Available in straight, 45° and 90° angled configurations to fit conduit from 3/8" to 2'
- UL<sup>®</sup> Listed Ratings: 3, 3R, 4, 4X
- Standard version (SST Series) rated for temperatures up to 105° C (221° F)
- Now available in a new hightemperature version (SSTHT Series) for applications up to 150° Ć (302° F)















#### Stainless Steel Liquidtight Conduit Connectors -- 105° C Max.





#### Stainless Steel High-Temperature Liquidtight Conduit Connectors — 150° C Max.





CAT.	CONDUIT SIZE —	D	– STD. PKG.		
NO.	(IN.)	Α	В	С	QTY.
Straight					
5331SST	3/8	1.36	1.02	_	25
5332SST	1/2	1.36	1.18	_	25
5333SST	3/4	1.39	1.37	_	25
5334SST	1	1.56	1.77	_	5
5335SST	11/4	1.72	2.12	_	20
5336SST	1½	2.02	2.48	_	5
5337SST	2	2.34	3.04	_	2
45° Angle	d				
5341SST	3/8	1.84	1.02	1.43	25
5342SST	1/2	1.62	1.18	2.04	25
5343SST	3/4	2.32	1.37	1.93	10
5344SST	1	2.86	1.77	2.37	5
5345SST	11/4	3.33	2.12	2.80	5
5346SST	1½	3.94	2.48	3.39	2
5347SST	2	4.73	3.04	4.23	1
90° Angle	d				
5351SST	3/8	1.95	1.02	1.84	25
5352SST	1/2	2.12	1.18	2.07	25
5353SST	3/4	2.47	1.37	2.44	10
5354SST	1	2.98	1.77	2.90	5
5355SST	11/4	3.53	2.12	3.36	5
5356SST	1½	4.16	2.48	3.88	2
5357SST	2	8.60	3.04	4.69	1
Rlue sealing	gasket and insulator.				

Blue sealing gasket and insulator. Blue is a trademark color of Thomas & Betts.

••••••					
CAT.	CONDUIT SIZE -	D	– STD. PKG.		
NO.	(IN.)	Α	В	C	QTY.
Straight					
5331SSTHT	3/8	1.36	1.02	_	25
5332SSTHT	1/2	1.36	1.18	_	25
5333SSTHT	3/4	1.39	1.37	_	25
5334SSTHT	1	1.56	1.77	_	5
5335SSTHT	11/4	1.72	2.12	_	20
5336SSTHT	1½	2.02	2.48	_	5
5337SSTHT	2	2.34	3.04		2
45° Angled	1				
5341SSTHT	3/8	1.84	1.02	1.43	25
5342SSTHT	1/2	1.62	1.18	2.04	25
5343SSTHT	3/4	2.32	1.37	1.93	10
5344SSTHT	1	2.86	1.77	2.37	5
5345SSTHT	11/4	3.33	2.12	2.80	5
5346SSTHT	1½	3.94	2.48	3.39	2
5347SSTHT	2	4.73	3.04	4.23	1
90° Angled	1				
5351SSTHT	3/8	1.95	1.02	1.84	25
5352SSTHT	1/2	2.12	1.18	2.07	25
5353SSTHT	3/4	2.47	1.37	2.44	10
5354SSTHT	1	2.98	1.77	2.90	5
5355SSTHT	11/4	3.53	2.12	3.36	5
5356SSTHT	1½	4.16	2.48	3.88	2
5357SSTHT	2	8.60	3.04	4.69	1

Stainless Steel High-Temperature Fittings have a black high temperature-resistant sealing gasket and insulator.



**United States** 

Tel: 901.252.8000 800.816.7809 Fax: 901.252.1354

**Technical Services** Tel: 888.862.3289



# Liquidtight Flexible Conduit Fittings

# Sealing material resists oil, coolants and hydraulic fluids as well as water!

### **Liquidtight Sealing Gasket**

#### **Application**

 When used with an externally threaded connector, provides a tight seal against oil, fumes or moisture at the knockout opening

#### **Features**

- Design locks resilient sealing material in steel
- Steel retainer protects seal from extruding out under torque and limits compression to an optimum predetermined value; provides high quality seal
- · Resilient material flows and seals rough surfaces
- NEMA 3R, 4, 6 and 13

#### **Standard Material**

Retainer Type 316 stainless steel

Sealing Material Santoprene® thermoplastic rubber

#### Range

1/4" to 4" Hub Size



		DIMENS	IONS (IN.)	
CAT. NO.	CONDUIT SIZE	Α	В	STD. PKG.QTY.
5299**	1/4"	.80	.11	50
5261**	3%"	.95	.11	50
5262	1/2"	1.16	.18	50
5263	3/4"	1.49	.19	25
5264	1"	1.75	.19	25
5265	11/4"	2.15	.22	5
5266	1½"	2.42	.23	5
5267	2"	2.92	.23	5
5268	2½"	3.44	.23	5
5269	3"	4.08	.23	5
5270	4"	5.29	.31	5

\*\* UL® Not applicable

UL® File No. E 13938 CSA File No. 2884

SA FIIe No. 2884

Santoprene® is a registered trademark of Advanced Elastomer Systems.

# Liquidtight Flexible Conduit Fittings

# Effectively bonds externally threaded conduit or connector to a threadless opening in a box or enclosure.

#### Locknut

#### **Features**

- Tightens without deformation
- · Locknuts specially designed to:
  - (i) Provide extended reach for clamping on thin boxes and enclosures
  - (ii) Cut through protective coating on box and enclosure, thereby ensuring ground continuity
  - (iii) Permit tightening from outside
  - (iv) Prevent loosening under vibration



#### **Standard Material**

Type 304 stainless steel

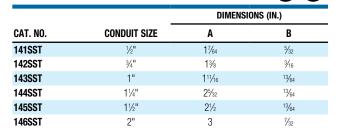
#### Range

1/2" through 2" conduit (All threads straight pipe [NPS])

#### Listings/Compliances

UL® (UL File No. E-23018) NEMA FB1
CSA (LR-2884, LR-4484) NFPA 70
UL514B Federal Sp

UL514B Federal Specification A-A-50553 CSA C22.2 No. 18 Federal Standard H-28 (Threads)









# Liquidtight Flexible Conduit Fittings

Stainless steel construction for unbeatable strength and corrosion resistance!

# Fittings for Liquidtight Flexible Non-Metallic Conduit Type A

#### **Application**

 To provide a liquidtight, dust-tight connection between flexible, non-metallic conduit and a box or an enclosure

#### Features

- · Serrated design provides high mechanical pull-out strength
- Unique component parts (body/gland) design ensures positive seal between conduit and connector
- Tapered thread hub and furnished Neoprene sealing 0-ring provide a liquidtight, dust-tight seal to a box or enclosure
- Smooth insulated body throughout for maximum dielectric strength
- Captive 0-ring and reduced number of parts save installation time
- Supplied with Series 5262 Sealing Gasket
- UL® Listed and CSA Certified for use with Type A conduit only

#### **Standard Material**

Body and Gland Type 304 stainless steel

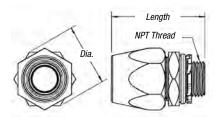
O-Ring Neopren

Sealing Gasket Type 316 stainless steel and

Santoprene® thermoplastic rubber

Locknut Type 304 stainless steel





#### **Standard Finish**

Body, Gland, O-Ring

and Locknut Polished

Range

Conduit Size ½" to 1½" Hub Size ½" to 1¼" NPT

Santoprene is a registered trademark of Advanced Elastomer Systems.





CAT. NO.	CONDUIT SIZE	DIA. (IN.)	LENGTH (IN.)
6302SST	1/2"	1.43	2.10
6303SST	3/4"	1.72	2.55
6304SST	1"	2.00	2.60
6305SST	11/4"	2.88	3.10

UL® File No. E-23018

# Jacketed Metal-Clad and Teck Cable Fittings

### **Jacketed Metal-Clad Cable and Teck Cable**

#### Metal-Clad Cable (Type MC) Ref. NEC® Article 330\*

"Metal-Clad Cable Type MC is a factory assembly of one or more conductors, each individually insulated and enclosed in a metallic sheath of interlocking tape, or a smooth or corrugated tube."

Metal-Clad Cable Type MC is rated for use up to 5,000 volts. The National Electrical Code® permits use of metallic sheath as an equipment grounding conductor.

Metal-clad cables are available with a variety of phase conductor insulations such as crosslinked polyethylene, and silicone rubber ethylene propylene, depending on rated temperature of conductors and working potential. Metallic sheath can be of galvanized steel, aluminum, copper or bronze. A special outer covering such as PVC or Neoprene over metallic sheath is usually provided for environmental protection.

Metal-clad cable is not permitted in locations where it could be subject to physical damage. Metal-clad cable can be used exposed, concealed, in cable tray, in any approved raceway, and with minor exceptions in hazardous locations. Type MC cable can also be used for services, feeders, branch circuits, power, lighting, control and signal circuits.

Use of metal-clad cable is permitted in wet locations, or where exposed to destructive corrosive conditions or can be directly buried in earth, concrete or exposed to cinder fills, strong chlorides, caustic alkalis, vapors, chlorine or hydrochloric acids provided the construction of cable, the conductors within the metallic sheath, the metallic sheath and protective cover over metallic sheath comply with requirements enumerated in Sec. 330-3 of the National Electrical Code®.

Bend radius restrictions are dependent on the size of the cable and the type of sheath, i.e., smooth, interlocked armor, corrugated sheath or shielded conductors and varies from 7 times to 15 times cable external diameter.

NEC® Article 330 requires that approved fittings be used for termination. Where single-conductor cables carrying alternating current enter a ferrous metal box or enclosure, procedures described in NEC® Section 300-20 must be followed to reduce effects of heating due to induced currents. These procedures include recommended arrangements of conductors, cutting of slots in metal between individual conductor holes, passing of conductors through insulating walls or use of non-magnetic aluminum sheathed cable and aluminum terminating fittings.

\* Portions of this section reprinted by permission from NFPA 70, National Electrical Code®, National Fire Protection Association, Boston, MA.

NEC and National Electrical Code are registered trademarks of the National Fire Protection Association, Inc.

Please refer to the following for further details and complete information:

- 1. NEC® Article 334...Metal-Clad Cable (Type MC)
- 2. UL 4, ANSI C33.9...Safety Standards for Type MC Metal-Clad Cable
- 3. UL 514B, Safety Standards for Outlet Boxes & Fittings
- A-A50552...Federal Specification. Fittings for Cable, Power Electrical & Conduit Metal, Flexible
- NEMA FM-1...Standards Publication. Fittings and Supports for Conduit and Cable Assemblies

#### **Teck Cable**

Teck cable derives its name from one of its first users, the Teck-Hughes Gold Mines in Kirkland Lake, Ontario. Teck 90 is CSA Type designation. Trade designation of this cable is Armored Cable.

Teck cables up to 5,000 volts working potential are manufactured in accordance with CSA Standard C22.2 No. 131 and are provided with a bare ground conductor and an optional outer jacket. Depending on phase conductor insulation, the cables are designated as Teck 90 (X-LINK) when insulation is cross-linked polyethylene and Teck 90 (EP) when insulation is ethylene propylene. Both cables are rated for 90° C service (dry locations) and 75° C (wet locations). When Teck cable is suitable for installation down to -40° F, the cables are marked Teck 90 (X-LINK) minus 40 or Teck 90 (EP) minus 40.

Over 5,000 volts working potential Teck cables are manufactured in accordance with IPCEA standards and are certified by CSA. Cables are provided with or without ground wire as required.

Teck cables with outer jacket may be used for exposed or concealed wiring in wet or dry locations, indoors/outdoors and in corrosive environments. Teck cables are suitable for use in ventilated, non-ventilated and ladder-type cable troughs, in ventilated flexible cable ways in both dry and wet locations. Teck cable with outer jacket is suitable for direct earth burial and for Class II Division 2, Class III Division 1 & 2 hazardous locations per Canadian Electric Code.

Some of the features of Teck cable are: flexibility and ease of installation; absence of dead air space within cable increases heat transfer and minimizes condensation; and overall protective covering provides good environmental protection.

Bend radii for permanent training during installation usually varies between 7 times to 12 times the cable diameter depending on cable construction and manufacturer's recommendations. Larger radii bends are required for other conditions.

Section 12-3028 of the Canadian Electric Code requires that the terminating fittings used must provide adequate strain relief to terminal connections and ensure electrical continuity without injury to non-metallic sheath. Continuity is mandatory whether or not the armor is used as a grounding conductor. Except for dry locations free from corrosive atmosphere, the non-metallic jacket is not permitted to be stripped back to a point where armor is exposed after installation.

Where single-conductor cables carrying 200 amps or more enter metal boxes through separate openings, certain precautions are required to prevent overheating of the metal by induction. Use of non-ferrous or non-metallic box connectors, locknuts and bushings and installation of non-magnetic panel inserts is suggested in the code.

Please refer to the following for further details and complete information:

- 1. CEC Section 12...Wiring Methods CEC Section 4...Conductors
- 2. CSA C22.2 No. 131 & 131S (Supplement #1)...Safety Standard for Type Teck Cable
- CSA C22.2 No. 18...Safety Standards for Outlet Boxes, Conduit Boxes and Fittings
- 4. UL File E82038 Volume 1, Section 3, Page 1, Revision 1/31/2007

Please Note: The materials herein, whether relating to the National Electrical Code, the Underwriters Laboratories, Inc. listing, to industry practice or otherwise, are not intended to provide all relevant information required for use and installation of our products. Refer to applicable codes, instructions and industry specifications prior to installation or use.



**United States** 

Tel: 901.252.8000 800.816.7809 Fax: 901.252.1354 **Technical Services** Tel: 888.862.3289



# Jacketed Metal-Clad and Teck Cable Fittings

# STAR TECK<sup>®</sup> Jacketed Metal-Clad Cable Fittings

Overlapping range of sizes, Star Teck® jacketed metal-clad cable fittings are designed to accommodate a broad range of cables, thereby minimizing the possibility of mismatched cables and fittings in the field.

#### **Application**

- Provide means for passing armored, metal-clad, jacketed cables through a bulkhead or enclosure in hazardous areas (these fittings are suitable for hazardous areas when used with T&B sealing compound)
- Form a mechanical grip and water and/or oil-resistant termination
- Provide grounding continuity of cable armor

#### **Cable Type**

JMC, MC-HL, Teck

#### **Features**

#### **Easy Installation**

 Exclusive power-grip. Provides a grip that's high up on the cable — not on the first convolution — so strip length and cutting of cable are not as critical.

#### **Dependable Service**

 Stainless steel retaining ring. Withstands corrosive environments. Non-magnetic.

#### **Dependable Grounding**

 Power-Grip grounding ring is nonmagnetic stainless steel. Provides 360° long-term dependable grounding. It makes immediate contact with the cable.

#### Watertight

 Tapered bushing. Cone-shaped to provide a secure, tight fit while eliminating cupping or water in vertical installations.

#### **Easy to Install in Tight Spaces**

 Low-profile gland nut fits tight spaces. Has grooves for screwdriver installation and flats for a wrench.
 Durable and reusable with funnel entry for easy cable insertion.

#### **Materials**

Type 316 Stainless Steel

#### **Environment Classification**

- Suitable for hazardous locations. Class I Div. 2; Class II Div. 2; Class III. Where explosion-proof or dust-proof fittings are required by code use STAR TECK XP® fittings (STX Series).
- NFMA 4
- Suitable for use in wet locations and concrete tight (steel) applications per UL 514B
- UL® File No. E82038/E38947
- CSA File No. LR638/LR23086

#### Range

 Available in hub sizes from ½" to 4", and will handle outer jacket diameters from 0.525" to 4.340" Easy Installation.
Exclusive powergrip. Provides a
grip that's high
up on the cable
— not on the first
convolution —
so strip length and
cutting of cable
are not critical.

Dependable Grounding. Power-Grip grounding ring is non-magnetic stainless steel. Provides 360° long-term dependable grounding. It makes immediate contact with the cable



Dependable Service. Stainless steel retaining ring. Withstands corrosive environments. Non-magnetic.

Watertight
Tapered Bushing.
Cone-shaped
to provide a
secure, tight fit
while eliminating
cupping or
water in vertical
installations.

Easy to Install in tight spaces. Low-profile gland nut fits tight spaces. Has grooves for screwdriver installation, and flats for a wrench. Durable and reusable with funnel entry for easy cable insertion.

#### **Installing the STAR TECK® Fitting**



1. Prepare cable



2. Insert cable



3. Tighten gland nut



United States

Tel: 901.252.8000 800.816.7809 Fax: 901.252.1354 Technical Services
Tel: 888.862.3289



# Jacketed Metal-Clad and Teck Cable Fittings

Overlapping range of sizes accommodates a broad range of cables!

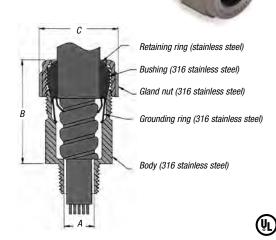
STAR TECK® Jacketed Metal-Clad Cable Fittings for Ordinary Locations

- Overlapping sizes minimize possibility of mismatched cables and fittings in the field
- Available in hub sizes from  $\frac{1}{2}$ " to 4", handling outer jacket diameters from 0.525" to 4.340"
- Suitable for hazardous locations (Class 1 Div. 2; Class II Div. 2; Class III)
- Where explosion-proof or dust-proof boxes are required by code, use STAR TECK XP® fittings (STX050-462 Series)

#### Suggested specifications for metal-clad cable fitting.

- All metal-clad cable fittings for jacketed interlocked armor cable or continuous corrugated cable shall be approved by a nationally recognized testing laboratory, inspection agency or product evaluation organization.
- Where corrugated-jacketed metal-clad cable exposed to intermittent or continuous moisture is terminated into a threaded opening, the fitting shall be watertight type furnished with:
  - a. An elastomeric beveled bushing.
  - b. A funnel entry, splined gland nut.
  - c. A non-magnetic stainless steel grounding device with dual grounding action.
  - d. A taper threaded hub.
  - e. A hexagonal body and gland nut as manufactured by Thomas & Betts.
- 3. Where cable is terminated into a threadless opening, a suitable moisture-resistant elastomeric gasket as manufactured by Thomas & Betts, series 5262, shall be provided between the outside of enclosure and fitting shoulder.
- With single-conductor cable and/or in corrosive environments, stainless steel fittings such as Thomas & Betts series ST050-464SS shall be installed.

Class I Div 2; Class II Div. 2; Class III. Where explosion-proof or dust-ignition-proof boxes are required by Teck, fitting must be used in conjunction with an approved sealing fitting.



	HUB	OVER J	CABLE RANGE OVER JACKET (IN.)		RANGE Armor N.)	DIMENSIONS (IN.)			
CAT NO.	SIZE NPT	MIN.	MAX	MIN.	MAX	Α	B*	C	
ST050-462SS	1/2	0.525	0.650	0.415	0.570	0.395	2.020	1.224	
ST050-464SS	1/2	0.600	0.760	0.490	0.680	0.485	2.020	1.363	
ST050-465SS	1/2	0.725	0.885	0.615	0.805	0.612	2.133	1.633	
ST050-466SS	1/2	0.825	0.985	0.715	0.905	0.612	2.133	1.633	
ST075-467SS	3/4	0.880	1.065	0.770	0.985	0.819	2.450	2.080	
ST075-468SS	3/4	1.025	1.205	0.915	1.125	0.819	2.450	2.080	
ST100-469SS	1	1.187	1.375	1.077	1.295	1.039	2.601	2.230	
ST125-470SS	11/4	1.357	1.625	1.240	1.545	1.182	3.282	2.824	
ST125-550SS	11/4	1.500	1.625	1.390	.390 1.545		3.282	2.824	
ST125-471SS	11/4	1.600	1.875	1.490	1.795	1.370	3.282	2.824	
ST150-472SS	1½	1.700	1.965	1.590	1.885	1.557	3.620	3.260	
ST150-473SS	1½	1.900	2.187	1.790	2.107	1.600	3.620	3.260	
ST200-551SS	2	1.900	2.187	1.790	2.107	1.715	3.640	3.620	
ST200-474SS	2	2.100	2.375	1.990	2.280	1.995	3.640	3.620	
ST200-475SS	2	2.300	2.565	2.190	2.485	2.057	3.640	4.020	
ST200-476SS	2	2.500	2.750	2.390	2.656	2.057	3.640	4.020	
ST250-477SS	2½	2.380	2.640	2.240	2.560	2.230	4.700	4.750	
ST250-478SS	2½	2.580	2.840	2.440	2.750	2.430	4.700	4.750	
ST300-479SS	3	2.790	3.060	2.640	2.970	2.630	4.700	5.050	
ST300-480SS	3	3.000	3.270	2.870	3.190	2.860	4.790	5.480	
ST300-481SS	3	3.210	3.480	3.042	3.390	3.032	4.790	5.480	
ST350-482SS	3½	3.420	3.690	3.270	3.590	3.260	4.790	5.980	
ST350-483SS	3½	3.610	3.870	3.440	3.770	3.430	4.790	5.980	
ST400-484SS	4	3.810	4.030	3.600	3.930	3.590	4.840	6.435	
ST400-485SS	4	3.965	4.185	3.755	4.065	3.745	4.840	6.435	
ST400-486SS	4	4.120	4.340	3.910	4.220	3.900	4.840	6.435	

\* Approximate dimension before installation.



# Tray Cable Fittings

# Increase safety for hazardous locations.

# Silver Grip® TCF® Series **Tray Cord Fittings**

Introducing the Silver Grip® Tray Cord Fitting — the safe, yet cost-efficient choice for increased safety when terminating portable cord and tray cable in hazardous locations. Designed for use in Class I, Gas and Vapor environments, the Silver Grip® Tray Cord Fitting provides efficient strain relief for cables entering enclosures and raceways, and for cords used on portable equipment.

- Corrosion-resistant, Type 316 stainless steel construction
- Tapered Neoprene bushing and 0-ring seal out moisture and dirt ingress
- Chuck grip provides high mechanical pull-out performance. Exceeds applicable requirements
- · Hand-tightens no tools required

#### **Applications**

Tray Cable: Complies with IEC requirements for Class I, Zone 2 locations when used with enclosures containing no arcing or sparking devices. For enclosures with arcing or sparking devices, TCF® fittings must be used in combination with a certified Class I hazardous location sealing fitting.

Portable Cord: Complies with IEC requirements for Class I, Zone 1 locations when used with enclosures containing no arcing or sparking devices. For enclosures with arcing or sparking devices, TCF® fittings must be used in combination with a certified Class I hazardous location sealing fitting.

NOTE: Tray cable is not suitable for use in Zone 1 locations. Portable cord can be used in Zone 1 applications only when installed on portable equipment.

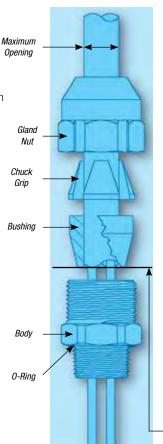
- CSA File Number LR4484
- Class 4418-03 Fittings for Hazardous Locations
- Class 4418-03 Fittings for Hazardous Locations Certified to U.S. Standards
- Class I, Zone 1, AEx e II

#### Silver Grip® TCF® Series Tray Cord Fittings



CAT. NO.	HUB SIZE NPT	THROAT DIA. (IN.)	MIN. CABLE DIA. (IN.)	MAX. OPENING (IN.)	STD. PKG. QTY.
TCF050-27SS6	1/2	.330	.150	.270	25
TCF050-40SS6	1/2	.540	.250	.400	25
TCF050-54SS6	1/2	.540	.400	.540	25
TCF050-67SS6	1/2	.540	.540	.670	10
TCF050-78SS6	1/2	.540	.660	.780	10
TCF075-40SS6	3/4	.540	.250	.400	15
TCF075-54SS6	3/4	.540	.400	.540	15
TCF075-67SS6	3/4	.780	.540	.670	10
TCF075-78SS6	3/4	.780	.660	.780	10
TCF075-88SS6	3/4	.765	.770	.880	10
TCF100-78SS6	1	.980	.660	.780	10
TCF100-88SS6	1	.980	.770	.880	10
TCF100-100SS6	1	.980	.870	1.000	10







When cord will not fit through body, strip cord jacket and trim fillers if required. Insert cable, ensuring the outer jacket reaches the end of the bushing as shown. Tighten gland nut onto body.





# **Cord and Cable Fittings**

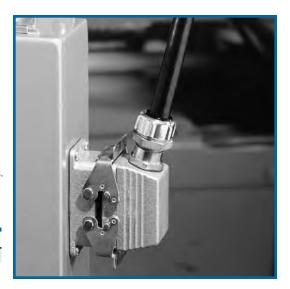
# Whatever the application. Whatever the size. Thomas & Betts is your connection to tough, versatile cord and cable fittings.

Thomas & Betts offers a complete line of rugged, reliable cord and cable fittings. All fittings are produced to the highest standards, combining innovative design and precision manufacturing methods to provide the products you need for your specific applications. Combining proven performance, installation advantages and availability of ranges, T&B is also your connection to lower installed costs for the life of your cord and cable requirements.

Use this guide to help you specify the fitting you need for your cord and cable requirements.

#### **Cord and Cable Requirements**

CORD AND CABLE TYPE	T&B FITTING
S, SO, SV, ST, STD, SJ, SJO, SJT, SJTO, SVO	Ranger® 2920SST Series
S, SO, SV, ST, STD, SJ, SJO, SJT, SJTO, SVO	Wire-Mesh Grips WMG-PC Series for Portable Cord



#### **Considerations for Selection**

- Selection of the proper device or fitting involves consideration of the type of cable to be installed and the environment that will surround the cable installation
- A proper matching of the cable and its fitting is necessary to prevent physical damage to the cable when installed
- NEMA Applications: Fittings used in a trade-size knockout requiring a NEMA 3R, 4, 6 or 13 listing require a 5262 Series sealing ring

#### **Cord and Cable Descriptions**

**Type SJ,** tradename is Junior Hard Service Cord. The outer covering is Thermoset and it is a pendant or portable cord used in damp locations for hard usage.

**Type SJ0,** tradename is Junior Hard Service Cord. The outer covering is oil-resistant Thermoset.

**Type SJT,** tradename is Junior Hard Service Cord. The outer covering is Thermoplastic.

**Type SJT0,** tradename is Junior Hard Service Cord. The outer covering is oil-resistant Thermoplastic.

**Type S0,** tradename is Hard Service Cord. The outer covering is oil-resistant Thermoset and it is a pendant or portable cord used in damp locations for extra hard usage.

# Suggested Specifications for Flexible Cord and Cable Fittings

- Flexible cord or cable and associated fittings shall be suitable for conditions of use and location and approved for the purpose by a nationally recognized testing laboratory, inspection agency or product evaluation organization.
- Flexible cord or cable shall be so connected to the device or fitting that tension will not be transmitted to joints or terminal screws. Sufficient slack shall be provided to avoid sharp flexing and straining. Cord or cable shall be installed in such a manner that liquid will tend to run off the surface instead of draining towards the fitting.
- Where flexible cord or cable exposed to intermittent or constant moisture and subjected to mechanical strain is terminated into a threaded or threadless opening, terminating fittings shall be of watertight strain relief type, such as Thomas & Betts series 2920SST. Fittings shall be equipped with a beveled moisture-resistant/oil-resistant synthetic rubber bushing.
- Where space is limited inside the enclosure, a female hub type fitting such as Thomas & Betts series 2631 shall be furnished. A captivated resilient sealing 0-ring shall be included to positively protect against damage from overtorquing.





United States

Tel: 901.252.8000 800.816.7809 Fax: 901.252.1354 **Technical Services** Tel: 888.862.3289



# **Cord and Cable Fittings**

# Type 304 stainless construction for your harshest environments!

# Ranger® Stainless Steel **Liquidtight Cord Connectors**

Until now, there's been no ideal solution for liquidtight connections of portable cord to a box or enclosure in corrosive environments. Steel connectors rust, and non-metallic connectors can't withstand high temperatures or ultraviolet exposure.

In response to customer demand, Thomas & Betts has developed the latest addition to its high-performance line of Ranger® Cord Connectors. Made of Type 304 stainless steel, Ranger® Stainless Steel Liquidtight Cord Connectors stand up to highly corrosive environments — such as washdown areas in food and beverage or pharmaceutical processing as well as high temperatures and UV exposure.

#### **Application**

- Provide means for passing a cord cable into an enclosure, through a bulkhead or into a rigid conduit
- Form a mechanical grip and water and/or oil-resistant seal for cord
- Form a non-slip connection or termination for flexible cord

#### **Cord & Cable Type**

 SJ, SJE, SJEO, SJEOO, SJO, SJOW, SJOO, SJOOW, SJT, SJTW, SJTO, SJTOW, SJTOO, SJTOOW, SO, SOW, SOO, SOOW, SV, ST, STD, SVD

#### **Features**

- Extended range with superior strain relief
- Reduced overall size, fits into tighter spaces
- Gland nut designed to restrict cable bending

#### **Materials**

Body, Gland Nut, Grip Type 304 stainless steel Bushing Thermoplastic rubber

Grip Ring Nvlon O-Ring (supplied) Buna N

#### **Environment Classification**

Ordinary locations (wet or dry)

Temperature Rating -20° C to 105° C (-4° F to 221° F)

Range

.125" to .950" Cord Range Hub Size Range ½" to 1"

#### Listings/Compliances

1/4" and 1/4" Sizes UL® Recognized

1/2" through 1" Sizes UL® Listed and CSA Certified for use

with portable cord; UL514B liquidtight cord connectors; UL Type 6 and 4X



#### Stainless Steel Cable Glands — 1/4"-3/8" Hub Sizes

	STD. PKG.
С	QTY.

	HUB SIZE	CORD DIA.	DIN	- STD. PKG.		
CAT. NO.	(IN.)	RANGE (IN.)	Α	В	C	QTY.
2918SST	1/4	.118256	1.000	.250	.625	25
2919SST	3/8	.157315	1.313	.438	.750	25

#### Stainless Steel Liquidtight Strain-Relief Cord Connectors — 1/2"-1" Hub Sizes



	HUB SIZE	CORD DIA.	DIN	IN.)	_ STD. PKG.		
CAT. NO.	(IN.)	RANGE (IN.)	Α	В	C	QTY.	
2920SST	1/2	.125375	1.935	.610	1.125	25	
2921SST	1/2	.310560	1.935	.610	1.125	25	
2922SST	1/2	.500750	2.003	.610	1.125	25	
2930SST	3/4	.125375	2.063	.630	1.125	10	
2931SST	3/4	.310560	2.063	.630	1.125	10	
2932SST	3/4	.500750	2.063	.630	1.125	10	
2940SST	1	.310560	2.178	.785	1.500	10	
2941SST	1	.500750	2.218	.785	1.500	10	
2942SST	1	.700950	2.218	.785	1.500	10	

Fax: 901.252.1354

800.816.7809

# **Cord and Cable Fittings**

Our Ranger® Liquidtight Fittings are the only connectors able to take a .250" cable range.

# **Ranger® Series Cord Connectors**

- Connectors that take twice the cable range of ordinary strain relief connectors
- Smaller overall size that makes it easy to fit into tight spaces
- · Gland nut design that restricts cable bending

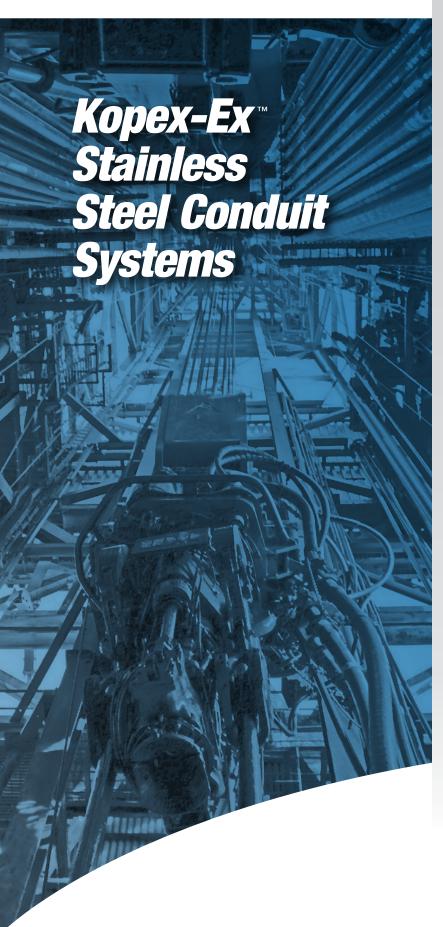


2920SST Ranger® Series

				SVO, SV, SVT	SJ,	SJO, SJT, S	JT0			S	, SO, ST, S1	го		
CAT. NO	SIZE	MIN.	MAX.	#18	#18	#16	#14	#18	#16	#14	#12	#10	#8	#6
2 Conductor														
2920SST	1/2"	0.125	0.375	Χ	Χ	Χ	Χ							
2921SST	1/2"	0.310	0.560			Χ	Χ	Χ	Χ	Χ				
2922SST	1/2"	0.500	0.750				Χ	Χ	Χ	Χ	Χ	Χ		
2930SST	3/4"	0.125	0.375	Χ	Χ	Χ	Χ							
2931SST	3/4"	0.310	0.560			Χ	Χ	Χ	Χ	Χ				
2932SST	3/4"	0.500	0.750				Χ	Χ	Χ	Χ	Χ	Χ		
2940SST	1"	0.310	0.560			Χ	Χ	Χ	Χ	Χ				
2941SST	1"	0.500	0.750				Χ	Χ	Χ	Χ	Χ	Χ		
2942SST	1"	0.700	0.950				Χ						Χ	Χ
3 Conductor														
2920SST	1/2"	0.125	0.375	Χ	Χ	Χ								
2921SST	1/2"	0.310	0.560		Χ	Χ	Χ	Χ	Χ					
2922SST	1/2"	0.500	0.750							Χ	Χ	Χ		
2930SST	3/4"	0.125	0.375	Χ	Χ	Χ								
2931SST	3/4"	0.310	0.560		Χ	Χ	Χ	Χ	Χ					
2932SST	3/4"	0.500	0.750							Χ	Χ	Χ		
2940SST	1"	0.310	0.560			Χ	Χ	Χ	Χ					
2941SST	1"	0.500	0.750		Χ					Χ	Χ	Χ		
2942SST	1"	0.700	0.950									Χ	Χ	
4 Conductor														
2920SST	1/2"	0.125	0.375	Χ										
2921SST	1/2"	0.310	0.560		Χ	Χ	Χ	Χ	Χ					
2922SST	1/2"	0.500	0.750							Χ	Χ			
2930SST	3/11	0.125	0.375	Χ										
2931SST	3/11	0.310	0.560		Χ	Χ	Χ	Χ	Χ					
2932SST	3/11	0.500	0.750							Χ	Χ			
2940SST	1"	0.310	0.560		Χ	Χ	Χ	Χ	Χ					
2941SST	1"	0.500	0.750							Χ	Χ			
2942SST	1"	0.700	0.950								Χ	Χ		







### In this section...



#### Kopex-Ex™ Stainless Steel Conduit Systems







# Liquidtight Flexible Metallic Conduit System — Stainless Steel

See pages E-28-E-29 for suitable Hazardous Area Glands.

	GENERAL TEMP. RATING	FLAME PROPAGATION	SPECIAL Characteristics	APPROVALS
GENERAL OIL RESISTANT  Stainless steel 316 core with general-purpose oil-resistant coating	Static -25° C to 105° C Flexing -5° C to 105° C	Flame dies in less than 30 seconds after ignition source is removed	Flame-retardant PVC covering	IEC 61386
LOW FIRE HAZARD  Stainless steel core with LFH coating	Static -25° C to 90° C  Flexing -5° C to 90° C	Flame dies in less than 30 seconds after ignition source is removed	Limited fire hazard, zero halogen (BS6425 Pt. 1)	LUL Fully Compliant (E1042A6) MOD to NES 518: Issue 3 DEF STAN 61-12 (Part 31) Issue 1 IEC 61386
HIGH TEMPERATURE  Stainless steel core with high-temperature resistant coating	Static -50° C to 130° C Flexing -5° C to 130° C	Flame dies in less than 30 seconds after ignition source is removed	Flame resistance: (UL94V-2) Chemical and oil resistant	IEC 61386
LOW FIRE HAZARD WITH EMC PROTECTION  Stainless steel core with galvinized steel EMC shield and LFH coating	Static -25° C to 90° C Flexing -5° C to 90° C	Flame dies in less than 30 seconds after ignition source is removed	Limited fire hazard, zero halogen (BS6425 Pt. 1) EMC screening level: 60 dB at 1 MHz braided	LUL Fully Compliant (E1042A6) MOD to NES 518: Issue 3 DEF STAN 61-12 (Part 31) Issue 1 IEC 61386
HIGH FLEXIBILITY HIGH TEMPERATURE Stainless steel core with high-temperature, highly flexible coating	Static -65° C to 150° C Flexing -45° C to 135° C	Flame dies in less than 30 seconds after ignition source is removed	High flexibility High temperature	IEC 61386





BRITISH CONDUIT SIZE (MM) US TRADE SIZE (IN.) INSIDE DIAMETER (MM) COIL LENGTHS (M)	16 ¾ 12.5 10/30	20 ½ 16.0 10/30	25 ¾ 21.0 10/30	32 1 26.4 10/20	40 1¼ 35.3 10/20	50 1½ 40.4 10/20	63 2 51.6 10/20
COLOR BLACK	EXSB03*	EXSB04*	EXSB05*	EXSB06*	EXSB07*	EXSB08*	EXSB09*
BLACK	EXST03*	EXST04*	EXST05*	EXST06*	EXST07*	EXST08*	EXST09*
BLACK	EXSH03*	EXSH04*	EXSH05*	EXSH06*	EXSH07*	_	_
BLACK	EXSBBT03*	EXSBBT04*	EXSBBT05*	EXSBBT06*	EXSBBT07*	EXSBBT08*	EXSBBT09*
BLACK	EXSHC03*	EXSHC04*	EXSHC05*	EXSHC06*	EXSHC07*	EXSHC08*	EXSHC09*

\* Add coil length to complete part number (e.g. 10 meters = EXLB0310).

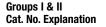




# **ATEX Flameproof Glands**

See data sheets for full approval information.

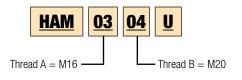
GROUPS, ZONES, CLASS & DIVISION	IP RATING	TEMPERATURE	APPROVALS
GROUPS I & II ZONES 1, 2, 21 AND 22 CLASS I DIV. 2 ABCD CLASS II DIV. 1 EFG	IP66	-60° C to 130° C	SIRA 09 ATEX 1231X IECEX SIRA 09.0103X Exde I Mb Exde IIC Gb Extb IIIC Db CSA File No. 2310045
UNIVERSAL GROUPS I & II ZONES 1, 2, 21 AND 22 CLASS I DIV. 1 BCD (RIGID CONDUIT ONLY) CLASS II DIV. 1 EFG	IP66	-60° C to 130° C	SIRA 09 ATEX 1231X IECEX SIRA 09.0103X Exde I Mb Exde IIC Gb Extb IIIC Db CSA File No. 2310045
UNIVERSAL SWIVEL GROUPS I & II ZONES 1, 2, 21 AND 22 CLASS I DIV. 1 BCD (RIGID CONDUIT ONLY) CLASS II DIV 1. EFG	IP66	-60° C to 130° C	SIRA 09 ATEX 1231X IECEX SIRA 09.0103X Exde I Mb Exde IIC Gb Extb IIIC Db CSA File No. 2310045

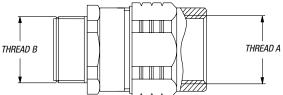


**HAM** = Metric Male Thread

**HAA =** NPT Male Thread

**0304 =** Thread Sizes







800.816.7809 Fax: 901.252.1354









						c Us	
BRITISH CONDUIT SIZE (MM)	16	20	25	32	40	50	63
METRIC THREAD SIZE (MM)	20	20	25	32	40	50	63
NPT THREAD SIZE (IN.)	3/8	1/2	3/4	1	1¼	1½	2
METRIC — STAINLESS STEEL	HAMS0304G1	HAMS0404G1	HAMS0505G1	HAMS0606G1	HAMS0707G1	HAMS0808G1	HAMS0909G1
NPT THREAD — STAINLESS STEEL	HAAS0304G1	HAAS0404G1	HAAS0505G1	HAAS0606G1	HAAS0707G1	HAAS0808G1	HAAS0909G1
METRIC — STAINLESS STEEL	HAMS0304U	HAMS0404U	HAMS0505U	HAMS0606U	HAMS0707U	HAMS0808U	HAMS0909U
NPT THREAD — STAINLESS STEEL	HAAS0304U	HAAS0404U	HAAS0505U	HAAS0606U	HAAS0707U	HAAS0808U	HAAS0909U
METRIC — STAINLESS STEEL	HAMS0304U/SW	HAMS0404U/SW	HAMS0505U/SW	HAMS0606U/SW	HAMS0707U/SW	HAMS0808U/SW	HAMS0909U/SW
NPT THREAD — STAINLESS STEEL	HAAS0304U/SW	HAAS0404U/SW	HAAS0505U/SW	HAAS0606U/SW	HAAS0707U/SW	HAAS0808U/SW	HAAS0909U/SW

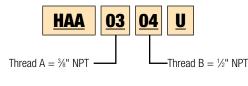
For thread conversion options, contact Technical Support.

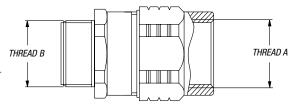
Universal Groups I & II Cat. No. Explanation

**HAM** = Metric Male Thread

**HAA** = NPT Male Thread

0304 = Thread Sizes







800.816.7809



Suitable with Cable Types: SWA (Steel Wire Armored), SWB (Steel Wire Braid), STA (Steel Tape Armored), AWA (Aluminum Wire Armor)

# **Ex d Double Compression Cable Gland**

#### **Features**

- Flameproof Ex d and increased safety Ex e
- Stainless steel 316 (Also available in brass and nickel-plated brass)
- · Wide range of cable sizes

#### **Certification and Standards**

Approved to:

EN/IEC 60079-0, 60079-1, 60079-7, 60079-31

EC TYPE Examination Certificate:

CESI 13 ATEX 041X, IECEx CES 13.0014X

Ex d IIC Gb

Ex e IIC Gb

Ex tb IIIC Db

IP test: IP66-IP68

UL File Number: E477121

Temperature:

-40°C to +100°C Neoprene sealing ring (as standard)

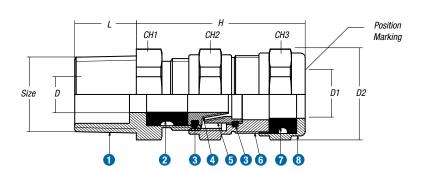
#### Metric

- 1 Lower Body
- 2 Lower Sealing Ring
- 3 0-Ring
- 4 Grounding Cone
- Swivel Braid Retainer
- 6 Middle Body
- Upper Sealing Ring
- 8 Pressure Cap

# Size D D1 D2

#### **NPT**

- 1 Lower Body
- 2 Lower Sealing Ring
- 3 0-Ring
- 4 Grounding Cone
- Swivel Braid Retainer
- 6 Middle Body
- Upper Sealing Ring
- 8 Pressure Cap





**United States** 

Tel: 901.252.8000 800.816.7809 Fax: 901.252.1354 Technical Services
Tel: 888.862.3289

www.tnb.com





		SEALIN	G RANGE		C	ABLE GLAND	DIMENSION	VS		TORQUE (NM)	
CAT NO.	SIZE	D (MIN-MAX)	D1 (MIN-MAX)	H MIN	L MIN	CH1	CH2	СНЗ	D2 MIN	CH2	СНЗ
Stainless Steel 316	6 — Metric										
EXS03MSC1	M16	3-8.5	6–12	47	16	22	26	26	29	27	25
EXS03MMC1	M16	6-12	8.5-16	48	16	25	29	29	31.5	49	28
EXS04MSC1	M20	3-8.5	6–12	47	16	24	26	26	29	27	25
EXS04MMC1	M20	6-12	8.5-16	47	16	25	29	29	31.5	49	28
EXS04MLC1	M20	12-14.5	16-20	50	16	28	30	32	35	33	33
EXS05MSC1	M25	6-12	8.5-16	48	18	29	29	29	31.5	49	28
EXS05MMC1	M25	12-16	16-21	53	18	32	34	34	37	30	27
EXS05MLC1	M25	12-20	16-26	60	18	36	40	40	44	61	32
EXS06MSC1	M32	12-20	16-26	62	18	40	40	40	44	61	32
EXS06MMC1	M32	15-26	20-33	78	18	48	52	52	57	86	40
EXS07MSC1	M40	15–26	20-33	78	18	48	52	52	57	86	40
EXS07MMC1	M40	20-32	29-41	89	18	55	60	60	66	110	75
EXS08MSC1	M50	22-35	33–48	97	18	60	70	75	82	110	75
EXS08MMC1	M50	27-41	36–52	100	18	70	70	74	83	125	75
EXS09MSC1	M63	35-45	43–57	106	20	75	80	80	89.5	160	140
EXS09MMC1	M63	40-52	47–60	107	20	85	85	85	94	250	100
EXS10MSC1	M75	40-52	47–60	107	20	85	85	85	94	250	100
EXS10MMC1	M75	45-60	54-70	125	20	90	95	100	110.5	250	150
EXS11MSC1	M90	45-60	54-70	125	20	95	95	100	110.5	250	150
EXS11MMC1	M90	60-72	63-80	154	20	110	115	115	127	320	210
EXS11MMC1	M90	60–72	63-80	154	20	110	115	115	127	320	210
Stainless Steel 316	6 — NPT										
EXS03ASC1	3/8"	3-8.5	6–12	47	16	22	26	26	29	27.0	25.0
EXS03AMC1	3/8"	6-12	8.5-16	48	16	25	29	29	31.5	49.0	28.0
EXS04ASC1	1/2"	3-8.5	6–12	47	21	24	26	26	29	27.0	25.0
EXS04AMC1	1/2"	6-12	8.5-16	47	21	25	29	29	31.5	49.0	28.0
EXS04ALC1	1/2"	12-14.5	16–20	50	21	28	30	32	35	33.0	33.0
EXS05ASC1	3⁄4"	6–12	8.5-16	48	21	29	29	29	31.5	49.0	28.0
EXS05AMC1	3⁄4"	12–16	16–21	53	21	32	34	34	37	30.0	27.0
EXS05ALC1	3⁄4"	12–20	16–26	60	21	36	40	40	44	61.0	32.0
EXS06ASC1	1"	12–20	16–26	62	26	40	40	40	44	61.0	32.0
EXS06AMC1	1"	15–26	20-33	78	26	48	52	52	57	86.0	40.0
EXS07ASC1	11/4"	15–26	20-33	78	28	48	52	52	57	86.0	40.0
EXS07AMC1	11/4"	20-32	29-41	89	28	55	60	60	66	110.0	75.0
EXS08ASC1	11/2"	22-35	33-48	97	28	60	70	75	82	110.0	75.0
EXS08AMC1	11/2"	27–41	36-52	100	28	70	70	74	83	125.0	75.0
EXS09ASC1	2"	35-45	43-57	106	28	75	80	80	89.5	160.0	140.0
EXS09AMC1	2"	40-52	47-60	107	28	85	85	85	94	250.0	100.0
EXS10ASC1	2 <b>1/2</b> "	40-52	47–60	107	41	85	85	85	94	250.0	100.0
EXS10AMC1	2 <b>1/2</b> "	45-60	54–70	125	41	90	95	100	110.5	250.0	150.0
EXS11ASC1	3"	45-60	54–70	125	43	95	95	100	110.5	250.0	150.0
EXS11AMC1	3"	60-72	63-80	154	43	110	115	115	127	320.0	210.0

<sup>\*</sup> For brass use prefix EX e.g. EX03ASC1



<sup>\*\*</sup> For nickel-plated brass, use prefix EXN e.g. EXN03ASC1



Suitable with Cable Types: Non Armored

# **Ex d Single Compression Cable Gland**

#### **Features**

- Flameproof Ex e
- Stainless steel 316 (also available in brass and nickel-plated brass)
- · Large cable range within one product with removable seals

#### **Certification and Standards**

Approved to:

EN/IEC 60079-0, EN 60079-1, EN 60079-7, EN 60079-11, EN 60079-31

EC TYPE Examination Certificate:

IMQ 13 ATEX 015X

II 2GD / Exe IIC Gb

Ex tb IIIC Db

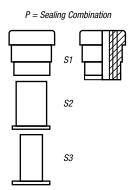
IP test: IP66-IP68

UL File Number: E477121

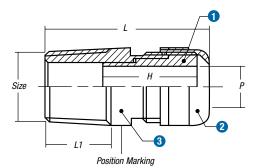
#### Temperature:

-40°C to +100°C Neoprene sealing ring (as standard)





- Sealing Ring
- Cap
- 3 Body









CAT NO.	SIZE	CABLE GLAND DIMENSIONS			SEALING RING DIMENSIONS					_ TORQUE
		L	L MIN	СН	H MIN	MIN-MAX	S1+S2+S3	S1+S2	<b>S1</b>	– TURQUE (NM)
Stainless Steel 31	6 — Metric									
EXS03MMC2	M16	40	16	22	20	3-12	3-6	6–9	9-12	19
EXS04MMC2	M20	40	16	22	20	3-12	3-6	6–9	9-12	19
EXS04MLC2	M20	45	16	28	20	10-16	-	10-14	14-16	28
EXS05MMC2	M25	40	16	28	20	10-18	-	10-14	14-18	28
EXS05MLC2	M25	50	16	35	25	14-20	-	14-17	17-20	31
EXS06MMC2	M32	43	16	35	25	14-24	14–17	17-20	20-24	31
EXS06MLC2	M32	53	16	45	39	22-28	-	22-26	26-28	26
EXS07MMC2	M40	45	18	45	39	22-32	-	22-26	26-32	26
EXS07MLC2	M40	55	18	50	32	26-34	-	26-32	32-34	58
EXS08MMC2	M50	46	18	55 / 50	32	26 -35	-	26-30	30-35	58
EXS08MLC2	M50	63	18	55 / 58	38	35-42	-	35-38	38-42	60
EXS09MMC2	M63	53	18	68 / 58	38	35-45	-	35-38	38-45	60
EXS09MLC2	M63	62	18	75 / 80	25	46-56	-	46-51	51-56	75
EXS10MMC2	M75	64	20	80	25	46-62	46-51	51-57	57-62	75
EXS10MLC2	M75	75	20	95	36	60-69	-	60-63	63-69	110
EXS12MMC2	M90	75	20	95	36	60-75	60-63	63-69	69-75	110
EXS12MLC2	M90	77	20	105	38	75-82	-	75-79	79-82	130
EXS13MMC2	M100	77	20	115 / 105	38	75–85	75–79	79-82	82-85	130
EXS14MMC2	M110	77	20	115	38	85-95	85-89	89-92	92-95	140
Stainless Steel 31	6 — NPT									
EXS03AMC2	3/8"	40	16	22	20	3-12	3-6	6–9	9-12	19
EXS04AMC2	1/2"	40	16	22	20	3-12	3-6	6–9	9-12	19
EXS04ALC2	1/2"	45	16	28	20	10-16	-	10-14	14-16	28
EXS05AMC2	3⁄4"	40	16	28	20	10-18	-	10-14	14-18	28
EXS05ALC2	3⁄4"	50	16	35	25	14-20	-	14-17	17-20	31
EXS06AMC2	1"	47	20	35	25	14-24	14-17	17-20	20-24	31
EXS06ALC2	1"	57	20	45	39	22-28	-	22-26	26-28	26
EXS07AMC2	11/4"	47	20	45	39	22-32	-	22-26	26-32	26
EXS07ALC2	11/4"	57	20	50	32	26-34	-	26-32	32-34	58
EXS08AMC2	11/2"	48	20	55 / 50	32	26 -35	-	26-30	30-35	58
EXS08ALC2	11/2"	65	20	55 / 58	38	35-42	-	35-38	38-42	60
EXS09AMC2	2"	55	20	68 / 58	38	35-45	-	35-38	38-45	60
EXS09ALC2	2"	64	20	75 / 80	25	46-56	-	46-51	51-56	75
EXS10AMC2	21/2"	70	26	80	25	46-62	46-51	51-57	57-62	75
EXS10ALC2	21/2"	81	26	95	36	60-69	-	60-63	63-69	110
EXS12AMC2	3"	81	26	95	36	60-75	60-63	63-69	69-75	110
EXS12ALC2	3"	83	26	105	38	75-82	-	75–79	79-82	130
EXS13AMC2	4"	83	26	115 / 105	38	75-85	75–79	79-82	82-85	130
EXS14AMC2	4"	83	26	115	38	85-95	85-89	89-92	92-95	140



Fax: 901.252.1354

800.816.7809

<sup>\*</sup> For brass use prefix EX e.g. EXO3MMC2 for Metric / EXO3AMC2 for NPT
\*\* For nickel-plated brass, use prefix EXN e.g. EXN03MMC2 for Metric / EXN03AMC2 for NPT



# Exd "Flameproof" and Exe "Increased Safety" Enlargers, Reducers and Thread Converters

Our comprehensive range of Adapters and Reducers provides a method of matching threadforms on hazardous area-approved equipment while ensuring the integrity and Ex approval of the installation is maintained.

The new Kopex-Ex™ line of converters meets the latest ATEX/IECEx and CSA/ UL® standards. This means that all the standards are marked on the product around the main body, which allows for them to be seen easily once installed — a key component of the new standard.

**Enlargers (/E)** are used where the thread size of the female side of the device is larger than the male side

**Reducers (/R)** are used where the thread size of the female side of device is smaller than the male side

**Thread Converters (/TC)** are used where a conversion is required between thread types (e.g. metric to PG)

Kopex-Ex™ Enlargers, Reducers and Thread Converters are designed for hazardous area applications and are certified to protection concepts Exd "Flameproof" and Exe "Increased Safety" for use in Zone 1, 2, 21 and 22 applications under NEC® Class I Div. 1 ABCD Class II Div. 1 EFG.



MALE		METRIC FEMALE I			
EXTERNAL THREAD	M16	M20	M25	- M32	
M16		EXS/M16-M20/E	EXS/M16-M25/E		
M20	EXS/M20-M16/R		EXS/M20-M25/E	EXS/M20-M32/E	
M25	EXS/M25-M16/R	EXS/M25-M20/R		EXS/M25-M32/E	
M32	EXS/M32-M16/R	EXS/M32-M20/R	EXS/M32-M25/R		
M40	EXS/M40-M16/R	EXS/M40-M20/R	EXS/M40-M25/R	EXS/M40-M32/R	
M50	EXS/M50-M16/R	EXS/M50-M20/R	EXS/M50-M25/R	EXS/M50-M32/R	
M63	EXS/M63-M16/R	EXS/M63-M20/R	EXS/M63-M25/R	EXS/M63-M32/R	
M75	EXS/M75-M16/R	EXS/M75-M20/R	EXS/M75-M25/R	EXS/M75-M32/R	
PG9		EXS/PG9-M20/TC			
PG11	EXS/PG11-M16/TC	EXS/PG11-M20/TC			
PG13	EXS/PG13-M16/TC	EXS/PG13-M20/TC			
PG16	EXS/PG16-M16/TC	EXS/PG16-M20/TC	EXS/PG16-M25/TC		
PG21	EXS/PG21-M16/TC	EXS/PG21-M20/TC	EXS/PG21-M25/TC	EXS/PG21-M32/TC	
PG29	EXS/PG29-M16/TC	EXS/PG29-M20/TC	EXS/PG29-M25/TC	EXS/PG29-M32/TC	
PG36	EXS/PG36-M16/TC	EXS/PG36-M20/TC	EXS/PG36-M25/TC	EXS/PG36-M32/TC	
PG42	EXS/PG42-M16/TC	EXS/PG42-M20/TC	EXS/PG42-M25/TC	EXS/PG42-M32/TC	
PG48	EXS/PG48-M16/TC	EXS/PG48-M20/TC	EXS/PG48-M25/TC	EXS/PG48-M32/TC	
NPT ¾"	EXS/038-M16/TC				
NPT ½"	EXS/050-M16/TC	EXS/050-M20/TC	EXS/050-M25/TC		
NPT ¾"	EXS/075-M16/TC	EXS/075-M20/TC	EXS/075-M25/TC	EXS/075-M32/TC	
NPT 1"	EXS/100-M16/TC	EXS/100-M20/TC	EXS/100-M25/TC	EXS/100-M32/TC	
NPT 11/4"	EXS/125-M16/TC	EXS/125-M20/TC	EXS/125-M25/TC	EXS/125-M32/TC	
NPT 1½"	EXS/150-M16/TC	EXS/150-M20/TC	EXS/150-M25/TC	EXS/150-M32/TC	
NPT 2"	EXS/200-M16/TC	EXS/200-M20/TC	EXS/200-M25/TC	EXS/200-M32/TC	
NPT 2½"	EXS/250-M16/R	EXS/250-M20/R	EXS/250-M25/R	EXS/250-M32/R	
NPT 3"	EXS/300-M16/R	EXS/300-M20/R	EXS/300-M25/R	EXS/300-M32/R	





# **Enlargers, Reducers and Thread Converters**

**Connector Description**EXS - Stainless Steel 316
IP Rating
IP66

#### **Approvals**

- Approved to Exe II and Exd IIc, Groups 1 and 2, Zones 1, 2, 21, 22
- ATEX Certification: BASEEFA 07 ATEX 0247X
- IECEx Certification: IECEx BAS07.0090X
- Approved to Class I Div. 1 ABCD Class II Div. 1 EFG (does not include M16 and 3/4" NPT)
- UL® 1203
- CSA C22.2 No. 60079-04, C22.2 No. 60079-1









			Intertek —
M40	M50	M63	M75
EXS/M25-M40/E			
EXS/M32-M40/E	EXS/M32-M50/E		
L/O/IVIOZ IVITO/L	EXS/M40-M50/E	EXS/M40-M63/E	
EXS/M50-M40/R	ENO/WHO WOO/E	EXS/M50-M63/E	EXS/M50-M75/E
EXS/M63-M40/R	EXS/M63-M50/R	E/O/MOU MOU/E	EXS/M63-M75/E
EXS/M75-M40/R	EXS/M75-M50/R	EXS/M75-M63/R	210/11100 III 0/2
Dio/iii/ 0 III/ 10/11	Excitin o moorit	EXOMITO MOOFIL	
EXS/PG29-M40/TC			
EXS/PG36-M40/TC	EXS/PG36-M50/TC		
EXS/PG42-M40/TC	EXS/PG42-M50/TC	EXS/PG42-M63/TC	
EXS/PG48-M40/TC	EXS/PG48-M50/TC	EXS/PG48-M63/TC	
EXS/100-M40/TC			
EXS/125-M40/TC	EXS/125-M50/TC		
EXS/150-M40/TC	EXS/150-M50/TC	EXS/150-M63/TC	
EXS/200-M40/TC	EXS/200-M50/TC	EXS/200-M63/TC	
EXS/250-M40/R	EXS/250-M50/R		
EXS/300-M40/R	EXS/300-M50/R		EXS/300-M75/R



United States

Tel: 901.252.8000 800.816.7809 Fax: 901.252.1354 Technical Services
Tel: 888.862.3289





# **Enlargers, Reducers and Thread Converters (continued)**

MALE		METRIC FEMALE INTERNAL THREAD				
EXTERNAL THREAD	NPT 3/8	NPT 1/2	NPT ¾	NPT 1	NPT 11/4	
M16	EXS/M16-038/TC	EXS/M16-050/TC				
M20		EXS/M20-050/TC	EXS/M20-075/TC			
M25		EXS/M25-050/TC	EXS/M25-075/TC	EXS/M25-100/TC		
M32		EXS/M32-050/TC	EXS/M32-075/TC	EXS/M32-100/TC	EXS/M32-125/TC	
M40		EXS/M40-050/TC	EXS/M40-075/TC	EXS/M40-100/TC	EXS/M40-125/TC	
M50		EXS/M50-050/TC	EXS/M50-075/TC	EXS/M50-100/TC	EXS/M50-125/TC	
M63		EXS/M63-050/TC	EXS/M63-075/TC	EXS/M63-100/TC	EXS/M63-125/TC	
M75		EXS/M75-050/TC	EXS/M75-075/TC	EXS/M75-100/TC	EXS/M75-125/TC	
PG9		EXS/PG9-050/TC				
PG11		EXS/PG11-050/TC				
PG13		EXS/PG13-050/TC				
PG16		EXS/PG16-050/TC	EXS/PG16-075/TC			
PG21		EXS/PG21-050/TC	EXS/PG21-075/TC	EXS/PG21-100/TC		
PG29		EXS/PG29-050/TC	EXS/PG29-075/TC	EXS/PG29-100/TC	EXS/PG29-125/TC	
PG36		EXS/PG36-050/TC	EXS/PG36-075/TC	EXS/PG36-100/TC	EXS/PG36-125/TC	
PG42		EXS/PG42-050/TC	EXS/PG42-075/TC	EXS/PG42-100/TC	EXS/PG42-125/TC	
PG48		EXS/PG48-050/TC	EXS/PG48-075/TC	EXS/PG48-100/TC	EXS/PG48-125/TC	
NPT ½"			EXS/050-075/E			
NPT ¾"		EXS/075-050/R		EXS/075-100/E		
NPT 1"		EXS/100-050/R	EXS/100-075/R		EXS/100-125/E	
NPT 11/4"		EXS/125-050/R	EXS/125-075/R	EXS/125-100/R		
NPT 1½"		EXS/150-050/R	EXS/150-075/R	EXS/150-100/R	EXS/150-125/R	
NPT 2"		EXS/200-050/R	EXS/200-075/R	EXS/200-100/R	EXS/200-125/R	
NPT 2½"		EXS/250-050/R	EXS/250-075/R	EXS/250-100/R	EXS/250-125/R	
NPT 3"		EXS/300-050/R	EXS/300-075/R	EXS/300-100/R	EXS/300-125/R	
MALE			METRIC FEMALE	INTERNAL THREAD		

MALE		METRIC FEMALE INTERNAL THREAD			
EXTERNAL THREAD	PG9	PG11	PG13	PG16	PG21
M16	EXS/M16-PG9/TC	EXS/M16-PG11/TC	EXS/M16-PG13/TC		
M20	EXS/M20-PG9/TC	EXS/M20-PG11/TC	EXS/M20-PG13/TC	EXS/M20-PG16/TC	
M25	EXS/M25-PG9/TC	EXS/M25-PG11/TC	EXS/M25-PG13/TC	EXS/M25-PG16/TC	EXS/M25-PG21/TC
M32	EXS/M32-PG9/TC	EXS/M32-PG11/TC	EXS/M32-PG13/TC	EXS/M32-PG16/TC	EXS/M32-PG21/TC
M40	EXS/M40-PG9/TC	EXS/M40-PG11/TC	EXS/M40-PG13/TC	EXS/M40-PG16/TC	EXS/M40-PG21/TC
M50	EXS/M50-PG9/TC	EXS/M50-PG11/TC	EXS/M50-PG13/TC	EXS/M50-PG16/TC	EXS/M50-PG21/TC
M63	EXS/M63-PG9/TC	EXS/M63-PG11/TC	EXS/M63-PG13/TC	EXS/M63-PG16/TC	EXS/M63-PG21/TC
M75	EXS/M75-PG9/TC	EXS/M75-PG11/TC	EXS/M75-PG13/TC	EXS/M75-PG16/TC	EXS/M75-PG21/TC
PG11	EXS/PG11-PG9/TC				
PG13	EXS/PG13-PG9/TC	EXS/PG13-PG11/TC			
PG16	EXS/PG16-PG9/TC	EXS/PG16-PG11/TC	EXS/PG16-PG13/R		EXS/P16-PG21/E
PG21	EXS/PG21-PG9/TC	EXS/PG21-PG11/TC	EXS/PG21-PG13/R	EXS/PG21-PG16/R	
PG29	EXS/PG29-PG9/TC	EXS/PG29-PG11/TC	EXS/PG29-PG13/R	EXS/PG29-PG16/R	EXS/PG29-PG21/R
PG36	EXS/PG36-PG9/TC	EXS/PG36-PG11/TC	EXS/PG36-PG13/R	EXS/PG36-PG16/R	EXS/PG36-PG21/R
PG42	EXS/PG42-PG9/TC	EXS/PG42-PG11/TC	EXS/PG42-PG13/R	EXS/PG42-PG16/R	EXS/PG42-PG21/R
PG48	EXS/PG48-PG9/TC	EXS/PG48-PG11/TC	EXS/PG48-PG13/R	EXS/PG48-PG16/R	EXS/PG48-PG21/R
NPT ½"	EXS/050-PG9/TC	EXS/050-PG11/TC	EXS/050-PG13/TC	EXS/050-PG16/TC	
NPT ¾"	EXS/075-PG9/TC	EXS/075-PG11/TC	EXS/075-PG13/TC	EXS/075-PG16/TC	EXS/075-PG21/TC
NPT 1"	EXS/100-PG9/TC	EXS/100-PG11/TC	EXS/100-PG13/TC	EXS/100-PG16/TC	EXS/100-PG21/TC
NPT 11/4"	EXS/125-PG9/TC	EXS/125-PG11/TC	EXS/125-PG13/TC	EXS/125-PG16/TC	EXS/125-PG21/TC
NPT 1½"	EXS/150-PG9/TC	EXS/150-PG11/TC	EXS/150-PG13/TC	EXS/150-PG16/TC	EXS/150-PG21/TC
NPT 2"	EXS/200-PG9/TC	EXS/200-PG11/TC	EXS/200-PG13/TC	EXS/200-PG16/TC	EXS/200-PG21/TC















				ertek
NPT 1	1½	NPT 2	NPT 2½	NPT 3
EXS/M40-1	150/TC			
EXS/M50-1	150/TC	EXS/M50-200/TC		
EXS/M63-1		EXS/M63-200/TC		
EXS/M75-1	150/TC	EXS/M75-200/TC		
EXS/PG29-	150/TC			
EXS/PG36-	150/TC			
EXS/PG42-		EXS/PG42-200/TC		
EXS/PG48-	150/IC	EXS/PG48-200/TC		
EXS/125-	150/E	EVC/150 200/E		
EXS/200-	150/R	EXS/150-200/E		
EXS/250-		EXS/250-200/R		EXS/250-300/E
EXS/300-	150/R	EXS/300-200/R	EXS/300-250/R	
PG29	9	PG36	PG42	PG48
EXS/PG21-	PG29/E			
F1/0/P000	D000/D	EXS/PG29-PG36/E	EVO/D000 D0 40/E	
EXS/PG36-I EXS/PG42-		EXS/PG42-PG36/R	EXS/PG36-PG48/E	EXS/PG42-PG48/E
EXS/PG48-		EXS/PG48-PG36/R	EXS/PG48-PG42/R	LX3/F U42-F U40/L
EXS/PG21-	PG29/E			
DIGH UZT		EXS/PG29-PG36/E		
EXS/PG36-			EXS/PG36-PG48/E	
EXS/PG42-I		EXS/PG42-PG36/R	EV0/D040 D040/D	EXS/PG42-PG48/E
EXS/PG48-	ru29/K	EXS/PG48-PG36/R	EXS/PG48-PG42/R	
EXS/100-P				
EXS/125-PI		EXS/125-PG36/TC	EVC/150 DO 40/TO	
EXS/150-PI EXS/200-PI		EXS/150-PG36/TC EXS/200-PG36/TC	EXS/150-PG42/TC EXS/200-PG42/TC	EXS/200-PG48/TC
LA3/200-F1	UL3/10	L/10/200-1 030/10	L/\0/200*F\Q42/TO	LAU/ZUU"F U40/TU









## **Index Exe Couplers**







EXS Stainless Steel 316

- IP RATING: IP66
- APPROVALS:
   BASEEFA 08 ATEX 0359U
   IECEX BAS08.0121U
   -60° C to 200° C
   UL1203



THREAD TYPE — METRIC	M16	M20	M25	M32	M40	M50	M63	M75
NPT	3/8"	1/2"	3/4"	1"	1¼"	1½"	2"	<b>2</b> ½"
THREAD SIZE — METRIC	EXS/M16/C	EXS/M20/C	EXS/M25/C	EXS/M32/C	EXS/M40/C	EXS/M50/C	EXS/M63/C	EXS/M75/C
THREAD SIZE — NPT	EXS/038/C	EXS/050/C	EXS/075/C	EXS/100/C	EXS/M125/C	EXS/M150/C	EXS/M200/C	EXS/250/C

### **Index Exe Hex Locknuts Metric**





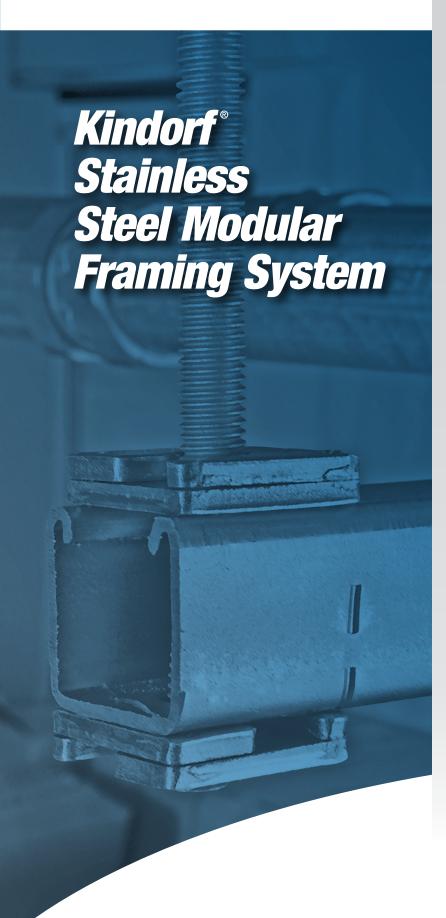




THREAD TYPE — METRIC	M20	M25	M32	M40	M50
NPT	1/2"	3/4"	1"	1¼"	1½"
	MXWH04	MXWH05	MXWH06	MXWH07	MXWH08



# **Kindorf**\*



### In this section...



#### Kindorf® Stainless Steel Modular Framing System

Overview	36
Channels, Straps and Clamps	37
Channel Fittings and Hardware	-42







### **Overview**

## Kindorf® Modular Metal Framing System Saves You Money!

#### Kindorf® Channel

The Kindorf® Channel System is designed so that the maximum number of support and framing applications can be constructed with a minimum amount of labor and pieces.

#### **Uniqueness in Design**

The 1½" dimension in the channel, hole spacing and fittings means all parts fit together, no matter where they're used, or at what angle. This modular dimension provides maximum flexibility in field applications, saving inventory and labor dollars.

#### Strength

Even though the Kindorf® channel is slightly smaller in dimensions, it supports the same weight as 1%" channel.

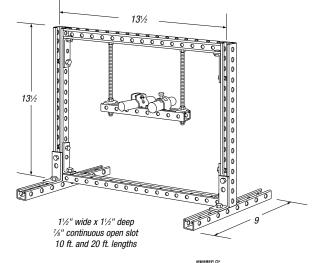
#### Compatibility with 1%" Strut

The Kindorf® System is designed so that most accessories are compatible with 1½" strut. Conduit and pipe straps will work equally well with 1½" and 1½" strut. In addition, 98% of 1½" accessories are interchangeable with Kindorf® channel. Angle fittings can adapt easily to the open side of any 1½" strut and the unique parallelogram nuts provide secure attachment to both types of strut.

#### **Full Line of Support Products**

The Kindorf® channel system's many advantages are extended into a broad product offering including beam clamps, concrete inserts, lighting supports, cable cleats and a variety of threaded components. This, combined with a nationwide network of distributors and service centers, makes the Kindorf® system a single source for supported metal-framing needs.





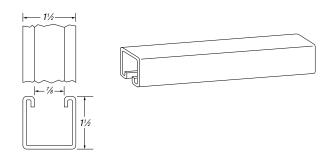






## Channels, Straps and Clamps

#### **B-900 Channel — 1½" x 1½"**

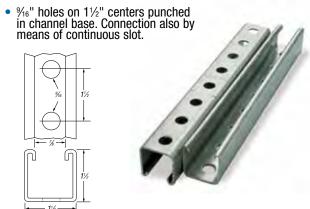


CAT. NO.	DESCRIPTION	LENGTH (FT.)
B-900-10SS	Type 304	10
B-900-10316-SS	Type 316	10

Use H-113-B bolts and B-910-1/2 or B-911-1/2 stainless steel nuts for mounting fittings.

Available 20 ft. lengths.

#### **B-905 Channel — 1½" x 1½"**



CAT. NO.	DESCRIPTION	LENGTH (FT.)
B-905-10SS	Type 304	10
B-905-10-316SS	Type 316	10
D-903-10-31033	Type 510	10

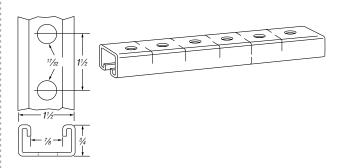
Use H-113-B bolts and B-910-1/2 or B-911-1/2 stainless steel nuts for mounting fittings.

Scribe marks designate mid-point between holes for accurate field cutting.

Available 20 ft. lengths.

#### **B-907 Channel** — 1½" x ¾"

 Connection by means of continuous slot or %16" holes on 1½" centers



CAT. NO.	DESCRIPTION	LENGTH (FT.)
B-907-10SS	Type 304	10
B-907-10316SS	Type 316	10

Available 20 ft. lengths.

# Straps for Rigid Conduit and Pipe — Type 304 Stainless Steel



CAT. NO.	RIGID CONDUIT OR PIPE SIZE (IN.)
C-105-1/2SS	1/2
C-105-3/4SS	3/4
C-105-1SS	1
C-105-1-1/4SS	11⁄4
C-105-1-1/2SS	1½
C-105-2SS	2
C-105-2-1/2SS	2½
C-105-3SS	3
C-105-3-1/2SS	3½
C-105-4SS	4

For Type 316 Stainless Steel, add 316 suffix.





### Fewer parts, less installation time and huge labor savings!

## Trapnut® Strut Fastener

The unique scissor action of the Trapnut® Strut Fastener closes at any desired position on the threaded rod. Once closed, precision threads trap the rod for a sturdy hold that can be adjusted up or down for fine-tune positioning. While the versatile Trapnut® Fastener has a locking pin that holds it in the desired position, it can also be removed and reused.

Unlike a hex nut, there's no need to thread the Trapnut® Fastener from either end of the rod, saving valuable time on the job. While the Trapnut® Fastener is a time-saver for new work, it's invaluable for retrofit applications. Rather than disassembling an existing trapeze to run additional conduit above it, simply clamp the Trapnut® Fastener between the trapeze and beam clamp for a speedy retrofit solution. It's ideal for applications where the rod ends aren't accessible.



The Trapnut® Fastener offers sturdy, loadbearing steel construction, so you can be confident of a solid installation. In addition, the Trapnut® Fastener functions as a hex nut, square washer and flat washer all in one, so there are fewer parts to keep track of on the job.

- Takes 30% less time than the traditional method on new work\*
- Takes 43% less time than the traditional method on retrofit applications\*



New method using Trapnut® Strut Fastener.

\* Based on time study conducted by Thomas & Betts comparing the time to install 15 feet of 2" conduit with typical trapeze assemblies using washers and nuts versus Trapnut® fasteners.



#### Type 316 Stainless Steel Trapnut® Fastener

CAT. NO.	MATERIAL	SIZE (IN.)	DESIGN LOAD LBS.
H122-3/8-SS6	Type 316 Stainless Steel	3/8	590
H122-1/2-SS6	Type 316 Stainless Steel	1/2	1080



#### Trapnut® Fastener is Quick and Easy to Install



#### Hold in the open position.

- No need to thread the Trapnut® Fastener from either end of the rod — saves valuable time
- Perfect for retrofit applications where the rod ends are not accessible



#### Insert the bottom plate on the rod and close the top plate.

- Precision threads trap the threaded rod for a sturdy hold that can be adjusted up or down for fine-tune positioning
- Functions as a hex nut, square washer and flat washer combined



#### Press the pin with pliers.

- Locking pin holds Trapnut® Fastener in the desired position
- Can be removed and reused



#### Tighten to the desired position with pliers.

- Can be adjusted up or down for fine-tuned positioning
- Sturdy, load-bearing stainless steel construction
- Sized to provide custom fit for either 15/8" or 11/2" strut systems



Tel: 901.252.8000 800.816.7809 Fax: 901.252.1354

Tel: 888.862.3289





# **B-911 Series Spring Channel Nuts**

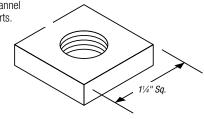
Self-holding clamping nut with spring attached. For use with  $1\frac{1}{2}$ " deep channels.



CAT. NO.	SIZE (IN.)	THICKNESS (IN.)	LBS./C
B-911-3/8-SS	³% <del>-</del> 16	3/16	12.5
B-911-1/2-SS	1/2-13	5/16	16.0

#### **B-914 Series**

Square nuts for use with channel and spot-type concrete inserts.



CAT. NO.	SIZE (IN.)	THICKNESS (IN.)	WT. LBS./C
B 914 1/4SS	1/4-20	<sup>3</sup> / <sub>16</sub>	10.50
B-914-3/8SS	<b>%−16</b>	5/16	13.25
B-914-1/2SS	1/2-13	3/8	14.00

<sup>\*</sup> Standard Pipe Threads.

#### **B-911-SN Series Spring Stud Channel Nuts**

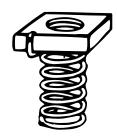
Stud nut self-holding clamping nut with spring attached.

B-911-3/8-SN2, stud: 3/8" dia., 11/4" long.

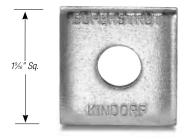
 Accepts Kindorf® Nuts H-114C (hex), H-116-C (square)

B-911-1/2-SN2, Stud: 1/2" dia., 11/4" long.

 Accepts Kindorf® Nuts H-114D (hex), H-116-D (square)



AD-24 I	<b>Selies</b>
Square	Washers

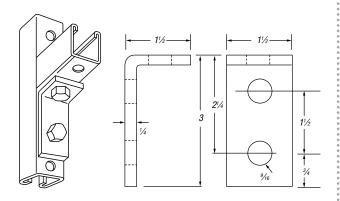


CAT. NO.	BOLT SIZE (IN.)	STD. CTN.
AB-241-1/4SS	1/4	100
AB-241-5/16SS	5/16	100
AB-241-3/8SS	3/8	100
AB-241-1/2SS	1/2	100

CAT. NO.	SIZE (IN.)	THICKNESS (IN.)	WT. LBS./C
B-911-3/8-SN2SS	%−16	5/16	13.0
B-911-1/2-SN2SS	1/2–13	3/8	17.0

NOTE: All hardware shown here is made of Type 304 stainless steel. For Type 316, substitute SS6 suffix for SS suffix at the end of catalog number.

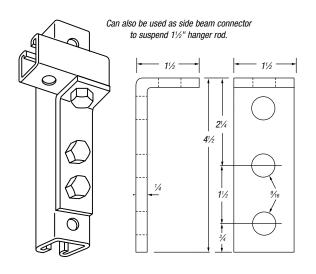
### **B-915 Two-Hole Angle Connector**



Can also be used as side-beam connector to suspend ½" hanger rod.

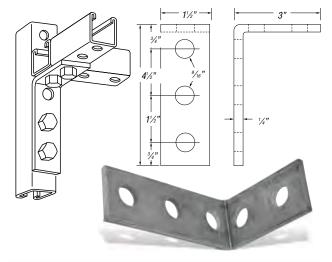
CAT. NO.	DESCRIPTION	
B 915SS	Type 304	
B-915SS6	Type 316	

#### **B-916 Three-Hole Angle Connector**



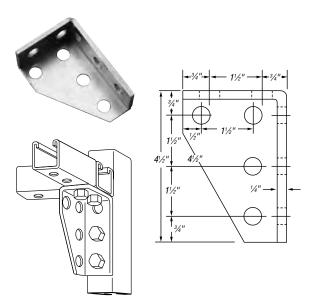
CAT. NO.	DESCRIPTION
B 916SS	Type 304

### **B-917 Five-Hole Angle Connector**



CAT. NO.	DESCRIPTION
B 917SS	Type 304
B-917SS6	Type 316

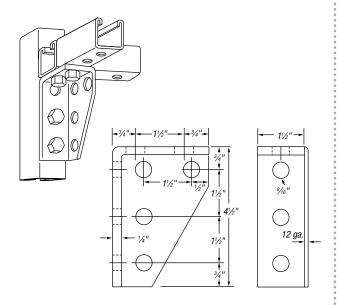
#### **B-918 Left-Hand Gusset Connector**



CAT. NO.	DESCRIPTION
B 918SS	Type 304

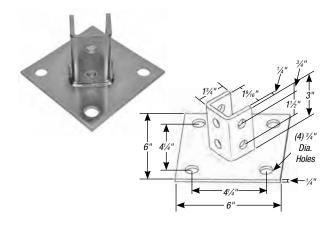


### **B-919 Right-Hand Gusset Connector**



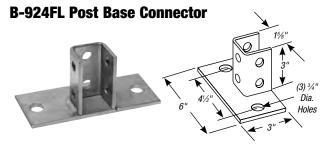
CAT. NO.	DESCRIPTION
B 919SS	Type 304

#### **B-924 Post Base Connector**



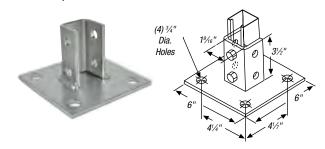
CAT. NO.	DESCRIPTION
B 924SS	Type 304
B-924SS6	Type 316

For use with 11/2" x 11/2" channels.



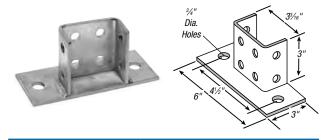
CAT. NO.	DESCRIPTION	
B-924-FLSS6	Type 316	

#### **B-924SQ Post Base Connector**



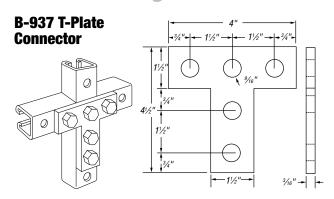
CAT. NO.	DESCRIPTION
B-924SQEGSS6	Type 316

#### **B-925FL Post Base Connector**



CAT. NO.	DESCRIPTION
B-925FLSS6	Type 316





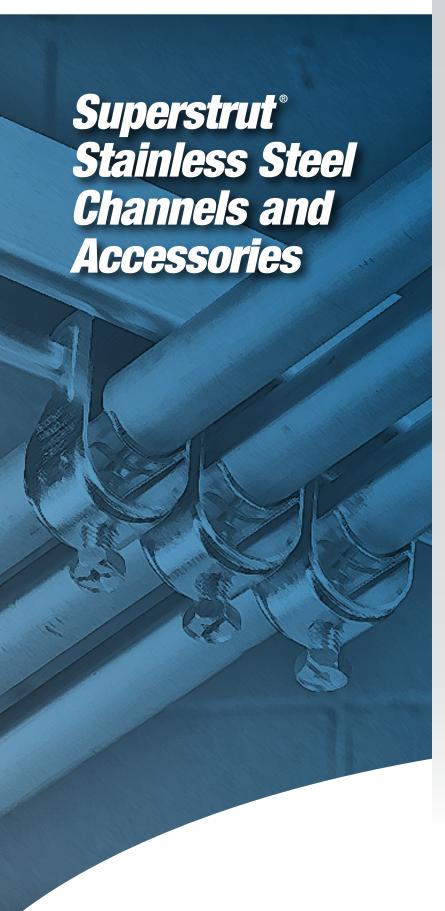
CAT. NO.	DESCRIPTION	
B 937SS	Type 304	

### **B-958R Wing Connector**

CAT. NO.	DESCRIPTION
B 958RSS	Type 304
R 958RSS6	Tyne 316



# **Superstrut**°



### In this section...



# Superstrut® Stainless Steel Channels and Accessories

Channels	44
Channel Fittings and Hardware	45–47
Clamps and Hangers	48–50



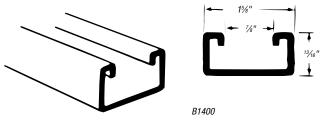


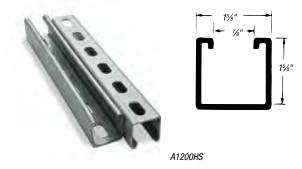
### **Channels**

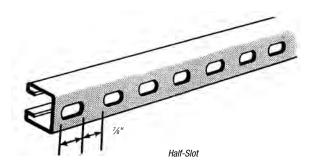


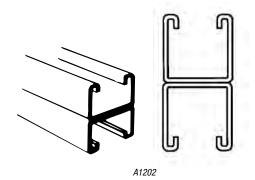
## **Metal Framing Channels**

- 12- or 14-gauge Type 304 or Type 316 stainless steel
- · Available in 10-ft. and 20-ft. lengths with standard length tolerance of ± 1/8"
- · Choose standard or shallow and solid or half-slot style









TYPE 304 STAINLESS	TYPE 316 STAINLESS	IN			IN	
CAT. NO.	CAT. NO.	STYLE	STEEL GAUGE	LENGTH (FT.)	WIDTH	HEIGHT
A1200-10-SS	A1200-10-T316SS	Standard	12	10	1.63	1.63
A1200-20-SS	A1200-20-T316SS	Standard	12	20	1.63	1.63
A1200HS-10-SS	A1200HS-10-T316SS	Standard Half-Slot	12	10	1.63	1.63
A1200HS-20-SS	A1200HS-20-T316SS	Standard Half-Slot	12	20	1.63	1.63
B1400-10-SS	B1400-10-T316SS	Shallow	14	10	1.63	.81
B1400-20-SS	B1400-20-T316SS	Shallow	14	20	1.63	.81
B1400HS-10-SS	B1400HS-10-T316SS	Shallow Half-Slot	14	10	1.63	.81
B1400HS-20-SS	B1400HS-20-T316SS	Shallow Half-Slot	14	20	1.63	.81
A1202-10-SS	A1202-10-T316SS	Back-to-Back	12	10	1.63	3.25
A1202-20-SS	A1202-20-T316SS	Back-to-Back	12	20	1.63	3.25
A1202HS-10-SS	A1202HS-10-T316SS	Back-to-Back Half-Slot	12	10	1.63	3.25
A1202HS-20-SS	A1202HS-20-T316SS	Back-to-Back Half-Slot	12	20	1.63	3.25



### **Channel Fittings and Hardware**

## The hardware to bring your connections together.

# **Type 304 Stainless Steel Nuts and Bolts**

#### E-145 Standard Hex Nut

CAT. NO.	SIZE (IN.)
E-145-1/4SS	1/4
E-145-3/8SS	3/8
E-145-1/2SS	1/2
E-145-5/8SS	5/8
E-145-3/4SS	3/4



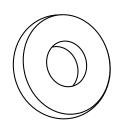
### **H-119 Rod Coupling**

CAT. NO.	SIZE (IN.)
H-119-1/4SS	1/4
H-119-1/2SS	1/2



#### E-147 Flat Steel Washer

CAT. NO.	SIZE (IN.)
E-147-1/4SS	1/4
E-147-5/16SS	5/16
E-147-3/8SS	3/8
E-147-1/2SS	1/2
E-147-5/8SS	5/8
E-147-3/4SS	3/4



#### **EF-147 Fender Washer**

CAT. NO.	SIZE (IN.)
EF-147-1/4SS	1/4
EF-147-3/8SS	3/8
EF-147-1/2SS	1/2



#### E-142 Hex Head Cap Screw

CAT. NO.	SIZE (IN.)
E-142-3/8X1SS	3⁄8 x 1
E-142-3/8X1-1/2SS	3⁄8 x 11∕2
E-142-1/2X1-1/2SS	½ x 1½

Consult your T&B representative for additional sizes.



#### **B-100 Short Spring Nut**

- Nut is square over 1/2" size
- For all "B" series channel and inserts

CAT. NO.	SIZE (IN.)
B-100-1/4SS	1/4
B-100-3/8SS	3/8
B-100-1/2SS	1/2



#### **A-100 Regular Spring Nut**

- Nut is square over ½" size
- For all "A" and "C" series channel and inserts

CAT. NO.	SIZE (IN.)
A-100-1/4SS	1/4
A-100-5/16SS	5/16
A-100-3/8SS	3/8
A-100-1/2SS	1/2
A-100-5/8SS	5/8



### **AB-100 Springless Nut**

- Nut is square over ½" size
- For use with all channels

CAT. NO.	SIZE (IN.)
AB-100-1/4SS	1/4
AB-100-3/8SS	3/8
AB-100-1/2SS	1/2

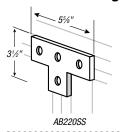


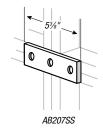


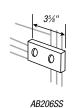
## **Channel Fittings and Hardware**

# **Type 304 Fittings**

### **Flat Plate Fittings**

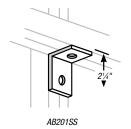


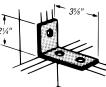


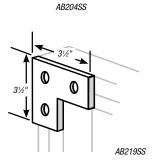


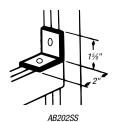


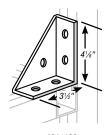
90° Corner Fittings or Brackets

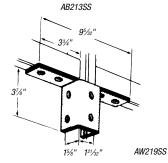


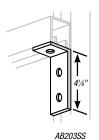


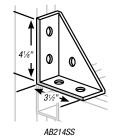




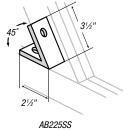


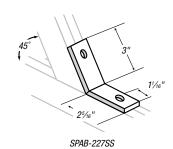














**United States** 

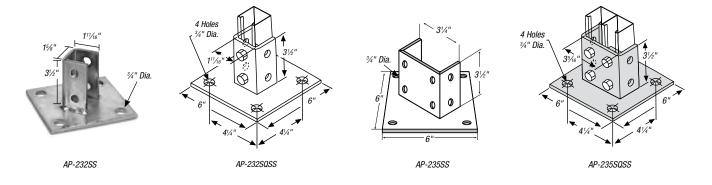
Tel: 901.252.8000 800.816.7809 Fax: 901.252.1354 **Technical Services** Tel: 888.862.3289



# Superstrut\*

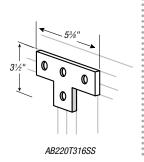
### **Channel Fittings and Hardware**

#### **Pedestal Base**

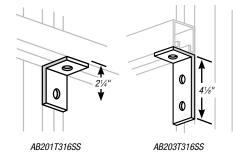


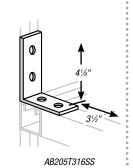
## **Type 316 Fittings**



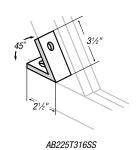


### 90° Corner Fittings or Brackets









Continuously threaded rod for use with conduit hangers and strut to suspend overhead conduit runs.

#### **All-Thread Rod**

- Available in Type 304 or Type 316 stainless steel
- · Comes in standard 6- or 12-ft. lengths



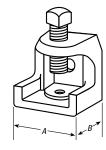
TYPE 304 CAT. NO.	TYPE 316 CAT. NO.	SIZE (IN.)	LENGTH (FT.)	THREADS PER INCH
H104-1/4X6SS	H104-1/4X6SS316	1/4	6	20
H104-1/4X12SS	H104-1/4X12SS6	1/4	12	20
H104-3/8X6SS	H104-3/8X6SS316	3/8	6	16
H104-3/8X12SS	H104-3/8X12SS6	3/8	12	16
H104-1/2X12SS	H104-1/2X12SS316	1/2	12	13
H104-5/8X12SS	H104-5/8X12SS316	5/8	12	11

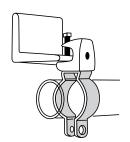


## **Clamps and Hangers**

### **Type 316 Stainless Steel Beam Clamps**







	BASE SIZE (IN.)			TAPPING OF BASE	SET SCREW		
CAT. NO.	Α	В	JAW OPENING (IN.)	AND BACK HOLES	LOAD RATING*	TORQUE IN INCH-LBS.	STD. CTN.
500SS316	1	11/4	15/16	1/4-20	250	60	50
502SS316	2	2	1	<sup>3</sup> / <sub>8</sub> –16	750	120	50
503SS316	25/8	21/2	1	1/2-13	1,250	250	20

‡Safety factor of 3.

Loan Ratings based on bottom hole of Beam Clamp.

CSA File No. LR-52208.

# Type 304 and Type 316 Pipe Straps

Just twist-insert these pipe straps anywhere you need them along the slot side of a channel. For additional flexibility, you can position the straps as closely as your pipe couplings permit.

- Combination slot and hex head bolt for flexibility of attachment
- Captivated square nut on shoulder enables easy one-handed tightening



TYPE 304 CAT. NO.	TYPE 316 CAT. NO.	CONDUIT Size (in.)	O.D. Size (in.)
702-3/8SS	702-3/8T316SS	3/8	0.675
702-1/2SS	702-1/2T316S	1/2	0.840
702-3/4SS	702-3/4T316SS	3/4	1.050
702-1SS	702-1T316SS	1	1.315
702-1-1/4SS	702-1-1/4T316SS	11/4	1.660
702-1-1/2SS	702-1-1/2T316SS	1½	1.900
702-2-1/2SS	702-2-1/2T316SS	2½	2.875
702-3SS	702-3T316SS	3	3.500
702-3-1/2SS	702-3-1/2T316SS	3½	4.000
702-4SS	702-4T316SS	4	4.500
702-5SS	702-5T316SS	5	5.563
702-6SS	702-6T316SS	6	6.625

## **Clamps and Hangers**

# **Conduit and Pipe Hangers**

- Accommodates ½" through 4" EMT or rigid conduit
- Can be used for either vertical or horizontal installation
- 6H-TB Series has a built-in nut, so there are fewer parts to handle or drop
- Installs easily with a screwdriver
- Type 304 stainless steel construction





Fig. 1 6H Series without Bolt



Fig. 2 6H-B Series with Bolt and Hex Nut

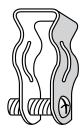


Fig. 3 6H-TB Threaded Series with Bolt

CAT. NO.   FIG. NO.   CAT. NO.   FIG. NO.   EMT (IN.)   OR PIPE (IN.)	<b>STD. CTN.</b> 100 100
6H1SS       1       6H1-BSS       2       ¾       ¾         6H2SS       1       6H2-BSS       2       1       1         6H2-TBSS       3       1       1         6H2 1/2-BSS       2       1¼       —         6H3-SCSS       1       6H3-BSS       2       1½       1¼         6H3-TBSS       3       1½       1¼       1¼         6H4SS       1       6H4-BSS       2       —       1½	100
6H2SS       1       6H2-BSS	
6H2-TBSS     3     1     1       6H2 1/2SS     1     6H2 1/2-BSS     2     1¼     —       6H3-SCSS     1     6H3-BSS     2     1½     1¼       6H3-TBSS     2     1½     1¼       6H4SS     1     6H4-BSS     2     —     1½	
6H2 1/2SS     1     6H2 1/2-BSS     2     1¼     —       6H3-SCSS     1     6H3-BSS     3     1¼     —       6H3-TBSS     2     1½     1¼       6H4SS     1     6H4-BSS     2     —     1½	100
6H2 1/2-TBSS     3     1¼     —       6H3-SCSS     1     6H3-BSS     2     1½     1¼       6H3-TBSS     3     1½     1¼       6H4SS     1     6H4-BSS     2     —     1½	100
6H3-SCSS     1     6H3-BSS     2     1½     1¼       6H3-TBSS     3     1½     1¼       6H4SS     1     6H4-BSS     2     —     1½	100
6H3-TBSS     3     1½     1¼       6H4SS     1     6H4-BSS     2     —     1½	100
<b>6H4SS</b> 1 <b>6H4-BSS</b> 2 — 1½	100
	100
<b>6H4-TBSS</b> 3 — 1½	100
	100
<b>6H5SS</b> 1 <b>6H5-BSS</b> 2 2 2	100
<b>6H5-TBSS</b> 3 2 2	100
<b>6H6SS</b> 1 <b>6H6-BSS</b> 2 2½ 2½	100
<b>6H7SS</b> 1 <b>6H7-BSS</b> 2 3	100
<b>6H8SS</b> 1 <b>6H8-BSS</b> 2 3½ 3½	100
<b>6H9SS</b> 1 <b>6H9-BSS</b> 2 4 4	100

Loading rating 500 lbs. with a safety factor of 3.



### **Clamps and Hangers**

# Takes a bite out of your installation time! Cobra® One-Piece Cable and Pipe Clamp

- One-piece, heavy-duty construction ready to install right out of the box, no need to break apart and re-assemble, no screws or bolts to drop
- Installs quickly and securely using one hand
- · Universal bolt head accepts a range of tools
- Eliminates the guesswork from clamp selection one catalog number attaches equal trade sizes of EMT and rigid conduit
- Parallel hook design keeps conduits and cable square with strut
- Reconfigure wiring without complete disassembly; remove cables easily without disturbing neighboring clamps



CAT. NO.	FOR EMT AND RIGID CONDUIT TRADE SIZE (IN.)	CABLE O.D. Range (In.)	STATIC LOAD LIMIT (LB) SAFETY FACTOR = 4	STD. CTN.
Type 316 Stainless				
CPC050SS6	1/2	0.650-0.890	200	100
CPC075SS6	3/4	0.860-1.110	200	100
CPC100SS6	1	1.100-1.400	200	100
CPC125SS6	11/4	1.400-1.725	200	50
CPC150SS6	1½	1.690-1.980	200	50
CPC200SS6	2	1.980-2.576	200	50
CPC250SS6	2½	2.576-3.060	350	25
CPC300SS6	3	3.060-3.626	350	25
CPC350SS6	3½	3.626-4.126	350	25
CPC400SS6	4	4.126-4.626	350	25





### In this section...



#### **T&B® Stainless Steel Cable Tray**

Overview	52-53
Straight Sections and Covers	54
_	
Fittings	55
3.	
Fitting Covers	56
Fitting Covers	56





### **Overview**

## **Benefits of Cable Tray**

Cable tray wiring systems offer significant advantages over conduit pipe and other wiring systems. Cable tray is less expensive, more reliable, more adaptable to changing needs and easier to maintain. In addition, it is safer than conventional wiring systems.

An evaluation of the costs and benefits of various wiring systems should be done in the design phase. Unfortunately, many engineers who are unfamiliar with wiring systems avoid the system selection process or defer it until construction — often resulting in higher costs, scheduling delays and a system that will not meet future needs.

Selection of a wiring system that is not the most suitable for a particular application in terms of cost, potential corrosion and electrical considerations can lead to numerous problems, including excessive initial cost, poor design, faulty installation, extra maintenance, future power

outages and unnecessary safety concerns.



#### Costs

Extensive experience has shown that the initial cost of a cable tray installation (including conductor, material and installation labor costs) may be as much as 60% less than a comparable conduit wiring system.

Cable tray systems — including trays, supports, fittings and other materials - are generally much less expensive than conduit wiring systems. In addition, major cost savings are generated by the relative ease of installation. Labor costs of installing a cable tray system can run up to 50 percent less. Total cost savings will vary with the complexity and size of the installation.

Direct cost savings are easy to calculate during the design phase of an installation, but the enormous advantages of cable tray systems may accrue only over time. A system's reliability, adaptability, ease of maintenance and inherent safety features result in many other types of cost savings, including:

- Lower engineering and maintenance costs
- Less need to reconfigure system as needs change
- Less down time for electrical and data handling systems
- Fewer environmental problems resulting from loss of power to essential equipment

#### Stainless Steel

Stainless steel offers high yield strength and high creep strength at high ambient temperatures.

T&B stainless steel cable tray systems are roll-formed from AISI Type 316 stainless steel.

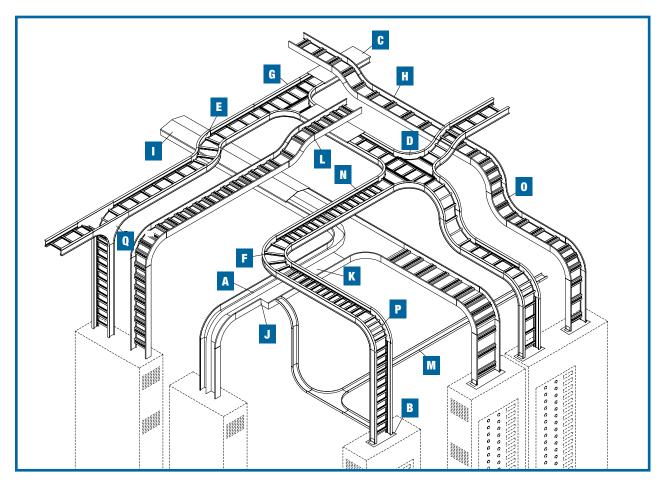
Stainless steel is resistant to dyestuffs, organic chemicals and inorganic chemicals at elevated temperatures. Higher levels of chromium and nickel and a reduced level of carbon serve to increase corrosion resistance and facilitate welding. Type 316 includes molybdenum to increase hightemperature strength and improve corrosion resistance, especially to chloride and sulfuric acid. Carbon content is reduced to facilitate welding.





### **Overview**

## Sample Plant Layout



### **Applications**

#### **Commercial**

- Schools
- Hospitals
- Office Buildings
- Airports
- Casinos
- Stadiums

#### Industrial

- Petrochemical Plants
- Automotive Plants
- Paper Plants
- Food Processing
- Power Plants
- Refineries
- Manufacturing
- Mining

### Legend

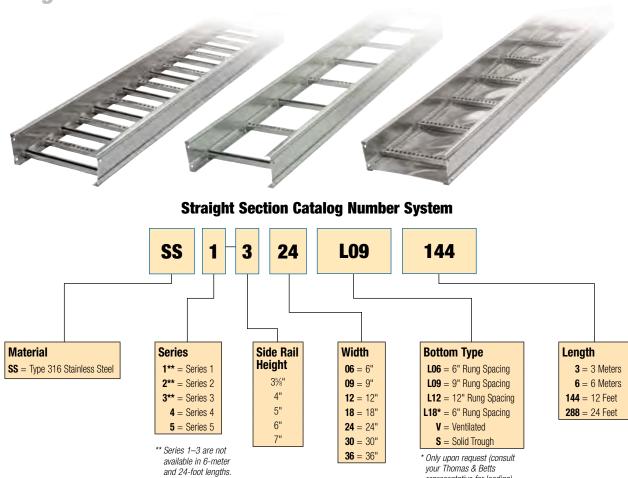
- A..... Barrier Strip
- B..... Box Connector
- C..... Flat Cover
- D...... Horizontal Cross
- E..... Horizontal 45°
- F..... Horizontal 90°
  G.... Horizontal Tee
- H..... Ladder Tray
- Peaked Cover

- I..... Right Reducer
- K..... Solid Tray
- I..... Splice Connector
- Solid Channel Tray
- ...... Ventilated Tray
- Vertical 90° Inside
- P...... Vertical 90° Outside
- Vertical Tee

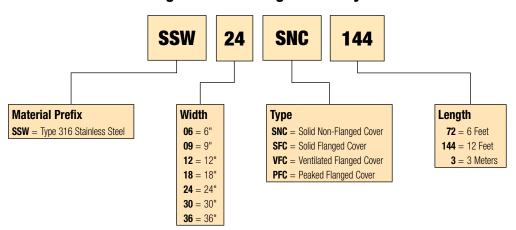




### Straight Sections and Covers



#### **Straight Cover Catalog Number System**





Tel: 888.862.3289



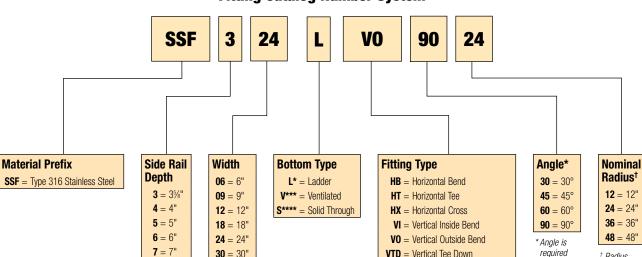
representative for loading).

lengths.

### **Fittings**



#### **Fitting Catalog Number System**



- \* Manufactured with 9" rung spacing measured at the center line of fitting.
- \*\*\* Manufactured with 4" edge-to-edge rung spacing measured at the center line of fitting.

**30** = 30"

**36** = 36"

\*\*\*\* Manufactured with flat sheet inserted under rungs with 9" rung spacing measured at the center line of fitting.

- **VTD** = Vertical Tee Down
- **VTU** = Vertical Tee Up
- HYR = Horizontal Wye Right
- **HYL** = Horizontal Wye Left
- RT = Horizontal Reducing Tee
- **ET** = Horizontal Expanding Tee
- **EX** = Horizontal Expand Cross
- **HLR** = Horizontal Left Reducer
- **HSR** = Horizontal Straight Reducer HRR = Horizontal Right Reducer
- **CS** = Cable Support Fitting

\* Angle is required for HB, VI, VO only.

- † Radius
  - is not required for Fitting Types HYR, HYL, HLR, HRR, HSR.

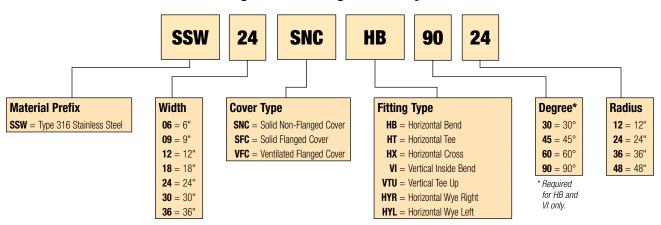


Tel: 888.862.3289

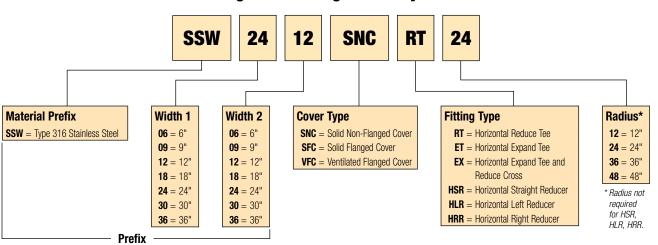


### Fitting Covers

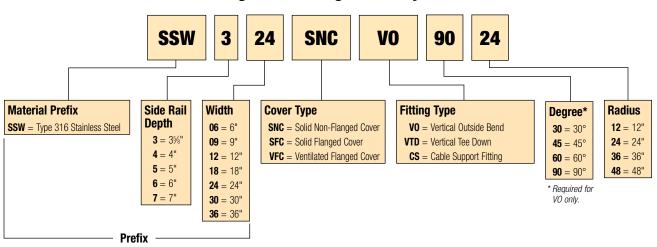
#### **Fitting Cover Catalog Number System**



#### **Fitting Cover Catalog Number System**



#### **Fitting Cover Catalog Number System**





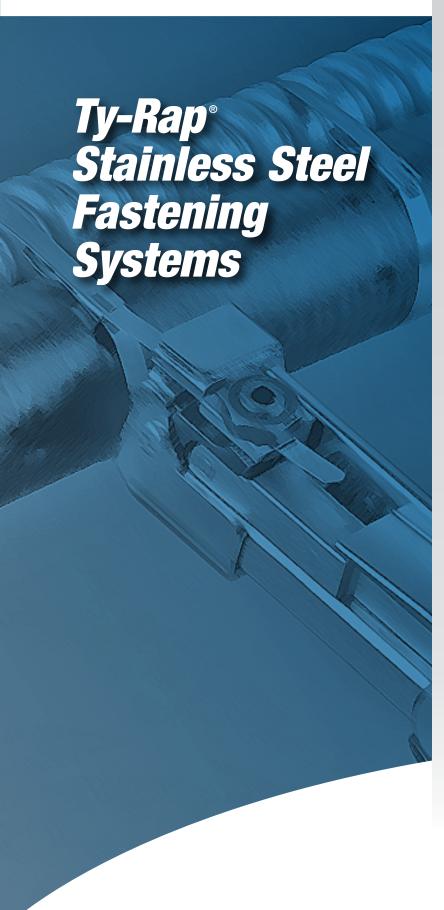
**United States** 

Tel: 901.252.8000 800.816.7809 Fax: 901.252.1354 **Technical Services** 

Tel: 888.862.3289



# Ty-Rap®



### In this section...



### Ty-Rap® Stainless Steel Fastening Systems

Cable Ties	58–67
Strapping and Accessories	68
Identification Systems	69–70
Installation Tools	71–72





## An extra coating of safety and protection!

### **Ty-Rap® Polyester-Coated Stainless Steel Ball-Lock Cable Ties**

Stainless steel offers excellent strength, durability and corrosion-resistance properties. But to stand up to the harshest environments in the world, such as those found on offshore drilling rigs, petroleum refineries, shipyards and chemical processing plants, even stainless steel needs an added layer of protection. That's why Ty-Rap® has added coated ties to its line of stainless steel cable ties. These new ties offer the same easy-to-install, low-profile, secure ball-lock mechanism as standard Ty-Rap® stainless steel ball-lock ties, but they're fully coated with a layer of rugged polyester to seal out salt, moisture, chemicals and UV radiation. Put these Ty-Rap® tough ties to the test against the elements in your harshest applications!

- 316 grade (marine-grade) stainless steel construction for strength and durability
- Prevents corrosion between dissimilar metals
- Fully coated with polyester to resist corrosion, UV radiation, temperature extremes, chemicals, impact, abrasion and cracking
- Rolled wire with polyester coating versus competitive slit steel edges — ensures no sharp edges to harm installers or cable insulation
- Low-smoke, halogen-free polyester coating offers added personnel safety

- Pointed tail enables fast, easy insertion
- Low-profile ball in wedge-shaped head locks tie securely in place
- · Wide operating temperature range of -40° F to 302° F (-40° C to 150° Č)
- Certifications/Standards: Lloyds Register, DNV, GL, CE, RoHS



(Adjustable tension, automatic cut-off)



#### Ty-Ran® Polyester-Coated Stainless Steel Rall-Lock Cable Ties

iy-nap Pulyesiel-G	valeu Stailliess Steel Dai	I-LUCK GADIE 1165			
CAT. NO.	LENTH (IN/MM)	WIDTH (IN/MM)	MAX. BUNDLE DIA. (IN/MM)	TENSILE STRENGTH (IN/MM)	STD. PKG. QTY.
316 Grade Stainless St	eel – Fully Polyester Coated				
LS-4.6-200-C	7.9/201	.18/4.6	2/51	100/444.8	100
LS-4.6-260-C	10.2/259	.18/4.6	27/69	100/444.8	100
LS-4.6-360-C	14.3/362	.18/4.6	4/102	100/444.8	100
LS-4.6-520-C	20.5/521	.18/4.6	6/152	100/444.8	100
LS-4.6-680-C	26.8/679	.18/4.6	8/203	100/444.8	100
LS-7.9-200-C	7.9/201	.31/7.9	2/51	250/1112	50
LS-7.9-360-C	14.3/362	.31/7.9	4/102	250/1112	50
LS-7.9-520-C	20.5/521	.31/7.9	6/152	250/1112	50
LS-7.9-680-C	26.8/679	.31/ 7.9	8/203	250/1112	50



Tel: 901.252.8000 800.816.7809 Fax: 901.252.1354 **Technical Services** Tel: 888.862.3289



## Safe and easy to install!

## Ty-Rap® Ball-Lock Stainless Steel Ties

These one-piece, self-locking stainless steel cable ties offer quick and easy installation — no crimping or folding required — and a strong, reliable lock. Choose among a variety of sizes and materials to meet all of your wire and cable bundling needs, even in the most extreme environments.

#### Fast, easy installation

- Self-locking no time-consuming crimping or folding
- Stainless steel ball in low-profile, wedge-shaped head locks tie securely in place
- Angled tail enables fast, easy insertion
- Rounded edges and smooth surfaces protect installer's hands

#### Two materials suit a variety of environments

- 302/304 grade stainless steel for standard applications
- 316 grade (marine-grade) stainless steel for extra corrosion resistance

#### **Typical Applications**

- Offshore drilling
- Petrochemical processing
- Shipbuilding
- Food and beverage processing
- Pharmaceutical processing

#### ..... Specifications....

· Operating Temp. Range:

-112° F to 1,000° F (-80° C to 538° C)

# Application Tool DAS250 HAND TOOL

(Adjustable tension, automatic cut-off)



#### Ty-Rap® Uncoated Stainless Steel Ball-Lock Cable Ties

CAT. NO.	LENTH (IN/MM)	WIDTH (IN/MM)	MAX. BUNDLE DIA. (IN/MM)	TENSILE STRENGTH (IN/MM)	STD. PKG. QTY.
302/304 Grade Stainles	ss Steel — Uncoated				
LS-4.6-200A	7.9/201	.18/4.6	2/51	100/444.8	100
LS-4.6-260A	10.2/259	.18/4.6	2.9/69	100/444.8	100
LS-4.6-360A	14.2/360	.18/4.6	4 /102	100/444.8	100
LS-4.6-520A	20.5/520	.18/4.6	6/152	100/444.8	100
LS-4.6-680A	26.7/679	.18/4.6	8/203	100/444.8	100
LS-4.6-840A	33.0/838	.18/4.6	10/254	100/444.8	100
LS-7.9-200A	7.9/201	.31/7.9	2/51	250/1112	50
LS-7.9-360A	14.2/360	.31/7.9	4/102	250/1112	50
LS-7.9-520A	20.5/520	.31/7.9	6/152	250/1112	50
LS-7.9-680A	26.7/679	.31/7.9	8/203	250/1112	50
LS-7.9-840A	33.0/838	.31/7.9	10/254	250/1112	50
LS-7.9-1010A	41.3/1050	.31/7.9	12.5/318	250/1112	50
316 Grade Stainless St	teel — Uncoated				
LS-4.6-200B	7.9/201	.18/4.6	2/51	100/444.8	100
LS-4.6-260B	10.2/259	.18/4.6	2.7/69	100/444.8	100
LS-4.6-360B	14.2/360	.18/4.6	4 /102	100/444.8	100
LS-4.6-520B	20.5/520	.18/4.6	6/152	100/444.8	100
LS-4.6-680B	26.7/679	.18/4.6	8/203	100/444.8	100
LS-4.6-840B	33.0/838	.18/4.6	10/254	100/444.8	100
LS-7.9-200B	7.9/201	.31/7.9	2/51	250/1112	50
LS-7.9-360B	14.2/360	.31/7.9	4/102	250/1112	50
LS-7.9-520B	20.5/520	.31/7.9	6/152	250/1112	50
LS-7.9-680B	26.7/679	.31/7.9	8/203	250/1112	50
LS-7.9-840B	33.0/838	.31/7.9	10/254	250/1112	50
LS-7.9-1010B	41.3/1050	.31/7.9	12.5/318	250/1112	50



United States Tel: 901.252.8000

Tel: 901.252.8000 800.816.7809 Fax: 901.252.1354







## Multiple barb lock design!

## Ty-Rap® Multi-Lok Stainless Steel Self-Locking Cable Ties

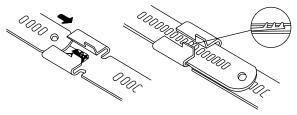
Fire hazards — corrosive environments — temperature extremes — for many cable bundling applications, plastic ties are simply inadequate—or even dangerous.

That's why we developed stainless steel Multi-Lok Ties. Unaffected by fire, UV or extreme temperatures, corrosion-resistant Multi-Lok Ties provide a safe, strong, worry-free hold.

Quickly and easily applied by hand or with the Thomas & Betts Cable Tie Tensioner or Tensioning hook, Multi-Lok Ties feature a unique, self-locking, multiple-locking system that holds in excess of 200 lbs.

Nylon II coating is halogen-free and non-toxic black. This weather-resistant coating is unaffected by UV sunlight. This adds resistance to corrosion, chemicals, and weathering. Preferred stainless steel strap eliminates sharp edges.





As the free end of the Multi-Lok tie passes through the buckle, three separate teeth (four teeth in the 12mm Multi-Lok) mesh with corresponding slots in the band automatically locking the tie as it is being tensioned. Self-locking Multi-Lok Ties feature an extremely strong, unique multiple locking system.

Type 316 Stainless Steel — Nylon 11 Halogen-Free Coated



	TENSILE STRENGTH	WIDTH		LEN	NGTH	WEIGHT	
CAT. NO.	LBS	IN	ММ	IN	ММ	LBS	KG
TYS6-280C	250	.276	7	6	150	.66	.30
TYS9-280C	250	.276	7	9	225	.99	.45
TYS12-280C	250	.276	7	12	300	1.32	.60
TYS18-280C	250	.276	7	18	450	1.76	.80
TYS24-280C	250	.276	7	24	610	2.64	1.20
TYS6-470C	250	.472	12	6	150	1.10	.50
TYS9-470C	250	.472	12	9	225	1.65	.75
TYS12-470C	250	.472	12	12	300	2.20	1.00
TYS18-470C	250	.472	12	18	450	2.97	1.35
TYS24-470C	250	.472	12	24	610	4.29	1.95

Packaging Quantity: 100/bag .010" (.245mm) Thickness

Type 316 Stainless Steel — Uncoated

	TENSILE STRENGTH —	WIDTH		LENGTH		WEIGHT	
CAT. NO.	LBS	IN	ММ	IN	ММ	LBS	KG
TYS6-280	250	.276	7	6	150	.66	.30
TYS9-280	250	.276	7	9	225	.88	.40
TYS12-280	250	.276	7	12	300	1.21	.55
TYS18-280	250	.276	7	18	450	1.98	.90
TYS24-280	250	.276	7	24	610	2.64	1.20
TYS6-470	250	.472	12	6	150	1.10	.50
TYS9-470	250	.472	12	9	225	1.65	.75
TYS12-470	250	.472	12	12	300	2.20	1.00
TYS18-470	250	.472	12	18	450	3.19	1.45
TYS24-470	250	.472	12	24	610	4.29	1.95

Packaging Quantity: 100/bag .010" (.245mm) Thickness



**United States** 

Tel: 901.252.8000 800.816.7809 Fax: 901.252.1354 **Technical Services** Tel: 888.862.3289

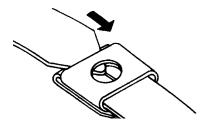


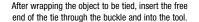
# Strong and slip-free with a unique dual lock.

# Ty-Rap® Dual-Lock Stainless Steel Cable Ties

- 304 grade stainless steel construction
- · Two-piece design
- · Fast, easy installation
- Mini ties (.18" wide) offer 100 lbs. tensile strength
- Standard ties (.25" wide) offer 200 lbs. tensile strength
- Also available in 316 grade stainless steel (to order, add -316 suffix to catalog number)









Squeeze the handle of the tool to create the dual lock and cut off the tail. The cable tie forms a low-profile dual lock.



The tail is formed into a fold lock behind the buckle. The tool forces a dimple in the band into a hole in the buckle.

#### Ty-Rap® Dual-Lock Stainless Steel Cable Ties

	FOR BUNDLE	TENSILE	WIDTH	LENGTH	WEIGHT	STD.		
CAT. NO.	DIAMETER OF IN/MM	STRENGTH LBS/N	IN/MM	IN/MM	LBS/KG	PKG. QTY.		
Mini Stainless Steel Cable Ties								
SS7-180	1/25	100/444.8	.18/4.5	6.5/165	.70/.32	100		
SS10-180	2/51	100/444.8	.18/4.5	10.0/254	.90/.41	100		
SS16-180	4/102	100/444.8	.18/4.5	16.0/406	1.40/.64	100		
SS23-180	6//152	100/444.8	.18/4.5	22.5/572	1.85/.84	100		
SS29-180	8/203	100/444.8	.18/4.5	29.0/737	2.35/1.07	100		
Standard Stainless Ste	el Cable Ties							
SS10-250	2/51	200/890	.25/6.35	10.0/254	1.10/.50	100		
SS17-250	4/101	200/890	.25/6.35	16.5/419	1.80/.82	100		
SS23-250	6/152	200/890	.25/6.35	22.5/572	2.50/1.13	100		
SS29-250	8/203	200/890	.25/6.35	29.0/737	3.20/1.45	100		
SS35-250	10/254	200/890	.25/6.35	35.0/889	3.80/1.72	100		

304 Stainless Steel

.015" (.38mm) Thickness

NOTE: Other lengths available on special request. Add suffix -316 for 316 Stainless Steel.



800.816.7809

Fax: 901.252.1354



65

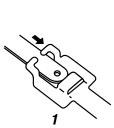


# Need strength, corrosion resistance and flexibility? Ties to use and re-use with quickness and ease!

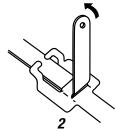
## Ty-Rap® Re-Usable Stainless Steel Cable Ties

- 200/300 series stainless steel construction
- Fully coated in non-toxic, halogen-free low-smoke Nylon 11 for extra corrosion resistance
- Unique buckle design for easy application and re-use
- May be double-wrapped for additional tensile strength
- Also available in 316 grade stainless steel (to order, add -316 suffix to catalog number)

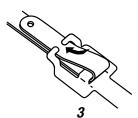




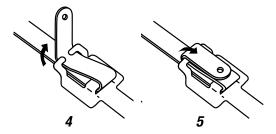
Insert cable tie tail through holding tabs and locking emboss



Bend cable tie tail up



Insert cable tie tail back through holding tabs, creating as tight a bend as possible



For increased tensile strength follow steps #4 and #5 \*Patent Pending

Bend cable tie tail up

Fold cable tie tail over holding tabs

#### Ty-Rap® Re-Usable Stainless Steel Cable Ties

•					
CAT. NO.	TENSILE STRENGTH (LBS/N)	WIDTH (IN/MM)	LENGTH (IN/MM)	WEIGHT (LBS/KG)	STD. PKG. QTY.
SSR6-250C	75/333.60	.25/6.35	6/152	1.4/.64	100
SSR9-250C	75/333.60	.25/6.35	9/229	1.8/.82	100
SSR12-250C	75/333.60	.25/6.35	12/305	2.1/.95	100
SSR18-250C	75/333.60	.25/6.35	18/457	3.0/1.36	100
SSR24-250C	75/333.60	.25/6.35	24/610	3.7/1.68	100
SSR6-375C	100/444.80	.38/9.53	6/152	1.8/.82	100
SSR9-375C	100/444.80	.38/9.53	9/229	2.0/.91	100
SSR12-375C	100/444.80	.38/9.53	12/305	3.1/1.41	100
SSR18-375C	100/444.80	.38/9.53	18/457	4.4/2.00	100
SSR24-375C	100/444.80	.38/9.53	24/610	6.6/2.99	100
SSR30-375C	100/444.80	.38/9.53	30/762	7.0/3.18	100
SSR36-375C	100/444.80	.38/9.53	36/914	8.3/3.76	100

Material: 200/300 Series Stainless Steel

.015" (.38mm) metal thickness; .045" (1.1mm) coated thickness

**NOTE:** This product may be double-wrapped for additional tensile strength.

For additional colors and uncoated ties, consult Thomas & Betts Customer Service for pricing and availability.

For 316 Stainless Steel, add suffix -316 after catalog number. Consult Customer Service for availability.





## Up to 2,000 lbs. tensile strength with single wrap. Double wrap for extra strength!

## **Ty-Rap® Free-End Stainless Steel Clamps**

- · 201 grade stainless steel construction
- · Double-wrapped clamps provide extra strength
- · Available in various lengths, widths and thicknesses



#### Ty-Rap® Free-End Stainless Steel Clamps

CAT. NO.	MAX. DIA. ONCE Around in/mm	MAX. DIA. TWICE Around In/MM	LENGTH IN/MM	TENSILE STRENGTH SINGLE WRAP LBS/N	BAND WIDTH IN/MM	BAND THICKNESS IN/MM	WEIGHT LBS/KG	STD. PKG. QTY.
SSH10-250	2/50	_	10/25	450/2002	.25/6.35	.02/.51	2.2/1.00	100
SSH16-250	3.5/88	1.5/38	16/40	450/2002	.25/6.35	.02/.51	3.1/1.41	100
SSH16-375	3.5/88	1.5/38	16/40	900/4003	.38/9.53	.03/.63	6.2/2.81	100
SSH18-500	4/101	2/50	18/45	1,400/6228	.5/12.70	.03/.76	10.5/4.76	100
SSH19-250	5/127	2.5/63	19/48	450/2002	.25/6.35	.02/.51	3.5/1.59	100
SSH21-625	5/127	2.5/63	21/53	1,700/7562	.63/15.88	.03/.76	15.1/6.85	100
SSH24-750	6/152	3/76	24/60	2,000/8896	.75/19.05	.03/.76	10.9/4.94	50
SSH27-250	7/177	3.5/88	27/68	450/2002	.25/6.35	.02/.51	4.6/2.09	100
SSH31-500	8/203	4/101	31/78	1,400/6228	.5/12.70	.03/.76	4.7/2.13	25
SSH34-250	9/228	4.5/114	34/86	450/2002	.25/6.35	.02/.51	5.6/2.54	100
SSH37-750	10/254	5/127	37/93	2,000/8896	.75/19.05	.03/.76	7.6/3.45	25
SSH44-375	12/304	6/152	44/112	900/4003	.38/9.53	.03/.76	3.6/1.69	25
SSH50-750	14/355	7/177	50/127	2,000/8896	.75/19.05	.03/.76	9.7/4.40	25
SSH56-625	16/406	8/203	56/142	1,700/7562	.63/15.88	.03/.76	9.0/4.08	25
SSH62-750	18/457	9/228	62/157	2,000/8896	.75/19.05	.03/.76	11.6/5.26	25
SSH69-625	20/508	10/254	69/175	1.700/7562	.63/15.88	.00/.76	10.7/4.86	25

Type 201 Stainless Steel

Other Free-End Clamp sizes and metals are available on special order.

**United States** 

800.816.7809

# Ty-Rap®

### **Cable Ties**



Iype LS
Heavy-Duty Stainless Steel
Ball-Lock Cable Ties — Uncoated



Type LS Heavy-Duty Stainless Steel Ball-Lock Cable Ties — Coated



Type TYS Multi-Lok Stainless Steel Ties — Uncoated



Type TYS Multi-Lok Stainless Steel Ties — Coated



Type SS Mini Stainless Steel Cable Ties



Type SS Standard Stainless Steel Cable Ties

# **Stainless Steel Tie Specifications**

					MAX. DIA.	MAX. DIA.	
CAT. NO.		WIDTH IN./MM	LENGTH IN./MM	THICKNESS IN./MM	SINGLE WRAP		
	y-Duty Stainless			1141/11111			
Uncoated	,,						
LS-4.6-200A		.18/4.6	7.9/201	_	2/51	(single	
LS-4.6-360A		.18/4.6	14.2/360	_	4/102	wrap	
LS-4.6-520A		.18/4.6	20.5/520	_	6/152	only)	
LS-4.6-680A		.18/4.6	26.7/679	_	8/203	- )/	
LS-4.6-840A		.18/4.6	33.0/838	_	10/254		
LS-7.9-200A		.31/7.9	7.9/201	_	2/51	(single	
LS-7.9-360A		.31/7.9	14.2/360	_	4/102	wrap	
LS-7.9-520A		.31/7.9	20.5/520	_	6/152	only)	
LS-7.9-680A		.31/7.9	26.7/679	_	8/203	• •	
LS-7.9-840A		.31/7.9	33.0/838	_	10/254		
LS-7.9-1010A		.31/7.9	41.3/1050	_	12.5/318		
Uncoated	Fully Polyester Coated						
LS-4.6-200B	LS-4.6-200-C	.18/4.6	7.9/201	_	2/51	(single	
LS-4.6-360B	LS-4.6-360-C	.18/4.6	14.2/360	_	4/102	wrap	
LS-4.6-520B	LS-4.6-520-C	.18/4.6	20.5/520	_	6/152	only)	
LS-4.6-680B	LS-4.6-680-C	.18/4.6	26.7/679	_	8/203		
LS-4.6-840B	_	.18/4.6	33.0/838	_	10/254		
LS-7.9-200B	LS-7.9-200-C	.31/7.9	7.9/201	_	2/51	(single	
LS-7.9-360B	LS-7.9-360-C	.31/7.9	14.2/360	_	4/102	wrap	
LS-7.9-520B	LS-7.9-520-C	.31/7.9	20.5/520	_	6/152	only)	
LS-7.9-680B	LS-7.9-680-C	.31/7.9	26.7/679	_	8/203		
LS-7.9-840B	_	.31/7.9	33.0/838	_	10/254		
LS-7.9-1010B	_	.31/7.9	41.3/1050	_	12.5/318		
Type TYS Mul	ti-Lok Stainless	Steel Cable 1	ies				
Uncoated	Nylon 11 Coate	d					
TYS6-280	TYS6-280C	.28/7.00	6/152	.01/.25	1.9/48	(single	
TYS9-280	TYS9-280C	.28/7.00	9/229	.01/.25	2.8/71	wrap	
TYS12-280	TYS12-280C	.28/7.00	12/305	.01/.25	3.8/96	only)	
TYS18-280	TYS18-280C	.28/7.00	18/457	.01/.25	5.7/144		
TYS24-280	TYS24-280C	.28/7.00	24/610	.01/.25	7.6/193		
TYS6-470	TYS6-470C	.47/12.00	6/152	.01/.25	1.9/48		
TYS9-470	TYS9-470C	.47/12.00	9/229	.01/.25	2.8/71		
TYS12-470	TYS12-470C	.47/12.00	12/305	.01/.25	3.8/96		
TYS18-470	TYS18-470C	.47/12.00	18/457	.01/.25	5.7/144		
TYS24-470	TYS24-470C	.47/12.00	24/610	.01/.25	7.6/193		
	Stainless Steel C						
SS7-180		.18/4.50	6.5/165	.02/.51	1.7/43	(single	
SS10-180		.18/4.50	10/254	.02/.51	2.8/71	wrap	
SS16-180		.18/4.50	16/406	.02/.51	4.7/119	only)	
SS23-180		.18/4.50	22.5/572	.02/.51	6/152		
SS29-180		.18/4.50	29.0/737	.02/.51	8/203		



SS10-250

SS17-250

SS23-250

SS29-250

SS35-250

Type SS Standard Stainless Steel Cable Ties

**Technical Services** 

Tel: 888.862.3289

800.816.7809 Fax: 901.252.1354 .02/.51

.02/.51

.02/.51

.02/.51

.02/.51

2.1/53

4.3/109

6.5/165

8.5/215

10.5/265

(single

wrap

only)

10/254

16.5/419

22.5/572

29/737

35/889

.25/6.35

.25/6.35

.25/6.35

.25/6.35

.25/6.35

STAINLESS STEEL Type	COATING OR FINISH	MIN. LOOP TENSILE STRENGTH SINGLE WRAP LBS./N	MIN. LOOP Tensile Strength Double Wrap LBS./N	APPLICATION Tools USED	GENERAL Application
	'				
302/304	Dull	100/445	(single	DAS250	
302/304		100/445	wrap	DAS250	
302/304		100/445	only)	DAS250	
302/304		100/445		DAS250	
302/304		100/445		DAS250	
302/304		250/1,112		DAS250	
302/304		250/1,112		DAS250	
302/304		250/1,112		DAS250	
302/304		250/1,112		DAS250	
302/304		250/1,112		DAS250	Offshore drilling
302/304	1	250/1,112		DAS250	Petrochemical processing
					<ul> <li>Shipbuilding</li> </ul>
010	Herested	100/11	(almosto	D400F0	Food & Beverage processing
316	Uncoated	100/445	(single	DAS250	Pharmaceutical processing
316	or Fully	100/445	wrap	DAS250	
316	Polyester	100/445	only)	DAS250	
316	Coated Black	100/445		DAS250	
316		100/445		DAS250	
316		250/1,112		DAS250	
316		250/1,112		DAS250	
316		250/1,112		DAS250	
316		250/1,112		DAS250	
316 316		250/1,112		DAS250 DAS250	
* SS series also available i	n Tuna 216 atainlasa	250/1,112		DA9230	
33 Selles also available li	т туре это заппезз.				
316	Uncoated or	250/1,112	(single	WTAE200	
316	Nylon 11	250/1,112	wrap	WTAE200	
316	Coated Black	250/1,112	only)	WTAE200	
316	Oddiod Didok	250/1,112	Offiy)	WTAE200	Self-locking
316		250/1,112		WTAE201	Cable bundling
316		400/1,779		WTC075	Hazardous and corrosive
316		400/1,779		WTC075	environments
316		400/1,779		WTC075	on a second
316		400/1,779		WTC075	
316		400/1,779		WTC075	
310		400/1,779		W10073	
304*	Dull to Bright	100/445	(single	WTA290	
304*	Duil to Bright	100/445	wrap	WTA290	Wire/cable bundling
304*		100/445	only)	WTA290	I.D. tagging
304*		100/445	Offigy	WTA290	T.D. tagging
304*		100/445		WTA290	
		100/443		WIAZJU	
304*	Dull to Bright	200/890		WTA250	
304*	טעוו נט סוועוונ	200/890	(einale	WTA250 WTA250	Wire/cable bundling
304*		200/890	(single	WTA250 WTA250	
304*			wrap		• I.D. tagging
304*		200/890 200/890	only)	WTA250 WTA250	
JU <del>4</del>		200/030		WIAZUU	





# Ty-Rap®

### **Cable Ties**



Type SSR Reusable Stainless Steel Cable Ties



Type SSH Free-End Clamps

# **Stainless Steel Tie Specifications (continued)**

CAT. NO.	WIDTH IN./MM	LENGTH IN./MM	THICKNESS IN./MM	MAX. DIA. SINGLE Wrap In./Mm	MAX. DIA. DOUBLE WRAP IN./MM	
Type SSR Reusa	able Stainless S	teel Cable Ties				
SSR6-250C	.25/6.35	6/152	.02/.51	1.5/38	N/A	
SSR9-250C	.25/6.35	9/229	.02/.51	2.5/63	1.1/28	
SSR12-250C	.25/6.35	12/305	.02/.51	3.4/86	1.5/38	
SSR18-250C	.25/6.35	18/457	.02/.51	5.4/137	2.5/64	
SSR24-250C	.25/6.35	24/610	.02/.51	7.3/185	3.5/89	
SSR6-375C	.38/9.53	6/152	.02/.51	1.5/38	N/A	
SSR9-375C	.38/9.53	9/229	.02/.51	2.5/63	1.1/28	
SSR12-375C	.38/9.53	12/305	.02/.51	3.4/86	1.5/38	
SSR18-375C	.38/9.53	18/457	.02/.51	5.4/137	2.5/64	
SSR24-375C	.38/9.53	24/610	.02/.51	7.3/185	3.5/89	
SSR30-375C	.38/9.53	30/762	.02/.51	9.1/231	4.4/112	
SSR36-375C	.38/9.53	36/914	.02/.51	11.0/280	5.3/135	
Type SSH Free-	End Clamps			-	<b>-</b>	
SSH10-250	.25/6.35	10/250	.02/.51	2.0/50	_	
SSH16-250	.25/6.35	16/400	.02/.51	3.5/88	1.5/38	
SSH19-250	.25/6.35	19/480	.02/.51	5.0/127	2.5/63	
SSH27-250	.25/6.35	27/680	.02/.51	7.0/177	3.5/88	
SSH34-250	.25/6.35	34/860	.02/.51	9.0/228	4.5/114	
SSH16-375	.38/9.53	16/400	.03/.76	3.5/88	1.5/38	
SSH44-375	.38/9.53	44/1,120	.03/.76	12.0/304	6.0/152	
SSH18-500	.5/12.70	18/460	.03/.76	4.0/101	2.0/50	
SSH31-500	.5/12.70	31/780	.03/.76	8.0/203	4.0/101	
SSH21-625	.63/15.88	21/530	.03/.76	5.0/127	2.5/63	
SSH56-625	.63/15.88	56/1,420	.03/.76	16.0/406	8.0/203	
SSH69-625	.63/15.88	69/1,750	.03/.76	20.0/508	10.0/254	
SSH24-750	.75/19.05	24/600	.03/.76	6.0/152	3.0/76	
SSH37-750	.75/19.05	37/940	.03/.76	10.0/254	5.0/127	
SSH50-750	.75/19.05	50/1,270	.03/.76	14.0/355	7.0/177	
SSH62-750	.75/19.05	62/1,570	.03/.76	18.0/457	9.0/228	



## **Cable Ties**

STAINLESS STEEL TYPE	COATING OR FINISH	MIN. LOOP TENSILE Strength Single Wrap LBS./N	MIN. LOOP TENSILE Strength Double Wrap LBS./N	APPLICATION TOOL USED	GENERAL APPLICATION
200/300	Nylon 11 Coated	75/334	300/1,334	WTAE200	
200/300	(Uncoated or other	75/334	300/1,334	WTAE200	
200/300	colors available on	75/334	300/1,334	WTAE200	<ul> <li>Reusable</li> </ul>
200/300	special order)	75/334	300/1,334	WTAE200	<ul> <li>Cable bundling</li> </ul>
200/300		75/334	300/1,334	WTAE200	• Oil rigs
200/300		100/445	500/2,224	WTAE200	Telecommunications
200/300		100/445	500/2,224	WTAE200	towers
200/300		100/445	500/2,224	WTC075	Hazardous     and corrosive
200/300		100/445	500/2,224	WTC075	environments
200/300		100/445	500/2,224	WTC075	Cable trays
200/300		100/445	500/2,224	WTC075	ouble traje
200/300		100/445	500/2,224	WTC075	
201	Bright	450/2,002	1,200/5,338	WTJ020/WTC075/WTC001	
201		450/2,002	1,200/5,338	WTJ020/WTC075/WTC001	
201		450/2,002	1,200/5,338	WTJ020/WTC075/WTC001	
201		450/2,002	1,200/5,338	WTJ020/WTC075/WTC001	
201		450/2,002	1,200/5,338	WTJ020/WTC075/WTC001	
201		900/4,003	2,400/10,675	WTJ020/WTC075/WTC001	•
201		900/4,003	2,400/10,675	WTC075/WTC001	
201		1,400/6,227	3,300/14,678	WTC075/WTC001	Industrial hoses     Cable bundling
201		1,400/6,227	3,300/14,678	WTC075/WTC001	<ul><li>Cable bundling</li><li>High strength</li></ul>
201		1,700/7,562	4,000/17,792	WTC075/WTC001	· • riigii suerigui
201		1,700/7,562	4,000/17,792	WTC075/WTC001	
201		1,700/7,562	4,000/17,792	WTC001	
201		2,000/8,896	5,000/22,240	WTC001	
201		2,000/8,896	5,000/22,240	WTC001	
201		2,000/8,896	5,000/22,240	WTC001	
201		2,000/8,896	5,000/22,240	WTC001	

Ty-Rap® Stainless Steel Cable Ties have passed a variety of mechanical, environmental, and electrical tests. Other data can be made available upon request.

Fax: 901.252.1354

## Ty-Rap®

### Strapping and Accessories

Boiler rooms, shipyards or off-shore oil platforms — a match for any severe environment!

#### Ty-Rap® Stainless Steel Strap Cable Ties

- Stainless steel strap cable ties have been designed for high-temperature applications and for use in areas of harsh, corrosive environments
- Rated at 200-lb. tensile strength
- Smooth edges protect both the cable insulation and the installer



#### Ty-Rap® Stainless Steel Strap Cable Ties

CAT. NO.	BODY WIDTH IN/MM	LENGTH IN/MM	MAX. WIRE BUNDLE DIA. IN/MM	TENSILE STRENGTH LBS/N	STD. PKG. QTY.
TYS8	.31/7.87	10.65/270.51	2/50.80	200/889.60	100
TYS14	.31/7.87	14.65/372.11	4/101.60	200/889.60	50
TYS22	.31/7.87	22.65/575.31	6/152.40	200/889.60	50
TYS28	.31/7.87	28.65/727.71	8/203.20	200/889.60	50

**NOTE:** Use WT3S Tool for tensioning Cannot be coated with any covering material Made of 316 stainless steel

### 1,000-ft. reel to cut your desired length!

#### **Stainless Steel Strapping on a Reel**

CAT. NO.	DESCRIPTION	WIDTH IN/MM	STRENGTH LBS/N	STD. PKG. QTY.
TYS1000	1,000 ft. of strap, 2 reels of 500 ft. each	.31/7.87	200/889.60	1

Stainless steel ties of virtually any length can be produced from the 1,000-ft. reel in combination with the matching head. **NOTE:** Use WT3S tool for tensioning



## Lockable heads for stainless steel strapping.

#### **Stainless Steel Strapping Locking Heads**



CAT. NO.	DESCRIPTION	STD. PKG. QTY.
TYS5200H	Heads only for stainless strapping	50

## Long-lasting anchor hold. Stainless Steel Mounting Base



CAT. NO.	DESCRIPTION	STD. PKG. QTY.
TCS25	Mounting base for stainless steel ties	50



**Technical Services** Tel: 888.862.3289



### **Identification Systems**

#### Identify cable bundles with permanent, stainless steel imprintable tags.

#### **ID Tagging System**

- Apply Type 304 stainless steel tags with stainless steel cable ties
- Easy-to-use slip a tie through the slots in the tag and fasten with the installation tool
- Works with ¼" wide ties
- .015" Thickness



CAT. NO.	WIDTH IN/MM	LENGTH In/MM	WEIGHT PER 100 LBS/N	STD. PKG. QTY.
SSID100	.75/	2.0/	0.5/	100
	19.05	50.80	2.22	
SSID101	1.50/	2.5/	1.2/	100
	38.10	63.50	5.34	
SSID102	.75/	3.5/	0.8/	100
	19.05	88.90	3.56	

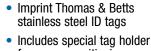
Packaging Quantity: 100/box

NOTE: Customized pre-embossed tags are available. Please consult Technical Service for details.

Add suffix (316) for 316 Stainless Steel.

#### No second guessing — quickly and accurately position ID tags!

#### **ID Tag Imprinter**



imprinting wheel, standard (no substitutions allowed)



CAT. NO.	DESCRIPTION	WEIGHT LBS/N
WTID200	I.D. Tag Imprinter	29.5/131.2
WTID290	3/32" Character	_
	Imprinting Wheel	
WTID281	1/8" Character	_
	Imprinting Wheel	
WTID283	3/16" Character	_
	Imprinting Wheel	
WTID204	(Kit) WTID200	_
	and WTID 283	

Packaging Quantity: 1/box

#### **Stainless Steel ID Tag Strips/Carriers**



CAT. NO.	DESCRIPTION	LENGTH IN/MM	WIDTH IN/MM	WT. PER 100 LBS	STD. PKG. QTY.
ER043	6-Character Carrier	3.64/92.46	.38/9.65	.73	100
ER044	10-Character Carrier	5.14/130.56	.38/9.65	1.25	100
ER045	16-Character Carrier	7.39/187.71	.38/9.65	1.47	100
ER050	Short Strip	4.25/107.95	.38/9.65	.98	100
ER051	Medium Strip	5.75/146.05	.38/9.65	1.33	100
ER052	Long Strip	8.00/203.20	.38/9.65	1.85	100
ER060	I.D. Tag Kit	_	_	_	1

ID Tag Kit contains 50 of each letter, number, symbol, carrier, and strip in a handy carrying case.



**United States** 

Tel: 901.252.8000 800.816.7809 Fax: 901.252.1354

**Technical Services** Tel: 888.862.3289





## **Identification Systems**

# Letters, numbers, and symbols — create easy-to-use custom identifications!

## **Stainless Steel ID Tags**

 Slip tags over carriers or strips (see previous page) and attach to your cable or hose with a variety of Thomas & Betts Stainless Steel Cable Ties



**Thomas & Betts Stainless Steel ID Tags** 

CAT. NO.	DESCRIPTION	LENGTH IN/MM	WIDTH IN/MM	WT. PER 100	STD. PKG. QTY.
ER010	A	.45/2.00	.38/1.69	.31	100
ER011	В	.45/2.00	.38/1.69	.31	100
ER012	С	.45/2.00	.38/1.69	.31	100
ER013	D	.45/2.00	.38/1.69	.31	100
ER014	Е	.45/2.00	.38/1.69	.31	100
ER015	F	.45/2.00	.38/1.69	.31	100
ER016	G	.45/2.00	.38/1.69	.31	100
ER017	Н	.45/2.00	.38/1.69	.31	100
ER018	I	.45/2.00	.38/1.69	.31	100
ER019	J	.45/2.00	.38/1.69	.31	100
ER020	K	.45/2.00	.38/1.69	.31	100
ER021	L	.45/2.00	.38/1.69	.31	100
ER022	M+W	.45/2.00	.38/1.69	.31	100
ER023	N	.45/2.00	.38/1.69	.31	100
ER024	0	.45/2.00	.38/1.69	.31	100
ER025	P	.45/2.00	.38/1.69	.31	100
ER026	Q	.45/2.00	.38/1.69	.31	100
ER027	R	.45/2.00	.38/1.69	.31	100
ER028	S	.45/2.00	.38/1.69	.31	100
ER029	Ť	.45/2.00	.38/1.69	.31	100
ER030	Ü	.45/2.00	.38/1.69	.31	100
ER031	V	.45/2.00	.38/1.69	.31	100
ER032	Χ	.45/2.00	.38/1.69	.31	100
ER033	Y	.45/2.00	.38/1.69	.31	100
ER034	Z	.45/2.00	.38/1.69	.31	100
ER018	1	.45/2.00	.38/1.69	.31	100
ER037	2	.45/2.00	.38/1.69	.31	100
ER038	3	.45/2.00	.38/1.69	.31	100
ER039	4	.45/2.00	.38/1.69	.31	100
ER040	5	.45/2.00	.38/1.69	.31	100
ER041	6	.45/2.00	.38/1.69	.31	100
ER021	7	.45/2.00	.38/1.69	.31	100
ER042	8	.45/2.00	.38/1.69	.31	100
ER041	9	.45/2.00	.38/1.69	.31	100
ER024	0	.45/2.00	.38/1.69	.31	100
ER035	Minus/Hyphen (-)	.45/2.00	.38/1.69	.31	100
ER036	Blank ( )	.45/2.00	.38/1.69	.31	100
ER046	Plus (+)	.45/2.00	.38/1.69	.31	100
ER047	Earth (≈)	.45/2.00	.38/1.69	.31	100
ER048	Sine (~)	.45/2.00	.38/1.69	.31	100
ER049	Slash (/)	.45/2.00	.38/1.69	.31	100

Character size: .218" Material: .025" 316 stainless steel



**Technical Services** Tel: 888.862.3289



#### Installation Tools

#### Get the job done right!

#### Ty-Rap® Heavy-Duty Installation Tool — Stainless Steel

- Installs Ty-Rap® Ball-Lock and Multi-Lok Stainless Steel Cable Ties
- · Rugged stainless steel construction
- Pistol-type installation tool
- · Adjustable tension settings



STD. PKG.	DESCRIPTION	TIE BODY	STD.
CAT. NO.		WIDTH IN./MM	PKG. QTY.
DAS250	Stainless Steel Installation Tool	Up to .31/7.87	1

## The right tools make installing Ty-Rap<sup>®</sup> Stainless Steel Cable Ties a cinch!

#### **Installation Tools for Dual-Lock Stainless Steel Ties**

- Lightweight
- Easy-to-use tool applies tension, locks tie with the dual lock, and cuts off band flush with top surface of buckle

CAT. NO.	DESCRIPTION	WEIGHT LBS/KG	STD. PKG. QTY.
WTA290	Hand Tool to Apply Mini Stainless Steel Cable Ties	1.17/.53	1
WTA250	Hand Tool to Apply Standard Stainless Steel Cable Ties	1.17/.53	1





## Quality tools for tensioning.

#### **Tensioning Tools**





CAT. NO.	DESCRIPTION	WEIGHT LBS/KG	STD. PKG. QTY.
WTAE200	Cable Tie Tensioner, for Tensioning Re-Usable Ties and Multi-Lok Ties	.6/.27	1
WTAE201	Tensioning Hook, for Tensioning Re-Usable Ties and Multi-Lok Ties	.1/.05	1





#### Installation Tools

# Apply tension, cut and secure with confidence! Installation Tools for Free-End Stainless Steel Ties



WTC001
A drop-forged tool with tensioning capability to do all ¼" to ¾" Free-End Clamp sizes.

WTC075
Designed to install ¼" to %" wide Free-End Clamps.
The lightweight, ratchet-action tool tension cuts
and secures the buckle tab.

WTJ020 Lightweight pocket-sized toll to install ½" and ¾" wide Free-End Clamps. This tool also applies tension and has a built-in cutter.

		WEIGHT	STD.
CAT. NO.	DESCRIPTION	LBS/KG	PKG. QTY.
WTJ020	Compact Free-End Stainless Steel Cable Tie Installation Tool for 1/4" to 3/6" sizes	1.1/.50	1
WTC075	Pistol-Grip Free-End Stainless Steel Cable Tie Installation Tool for 1/4" to 5/8" sizes	2.6/1.18	1
WTC001	Free-End Stainless Steel Cable Tie Installation Tool for All Sizes	4.4/2.00	1

# Makes tie installation easy! Ty-Rap® Installation Tool

Installs stainless steel ties



		TIE BODY	STD.
CAT. NO.	DESCRIPTION	WIDTH IN./MM.	PKG. QTY.
WT3S	Installation Tool for Stainless Steel Ties	Up to .50/12.70	1

NOTE: Tensions only



Fax: 901.252.1354





CAT. NO.	PAGE NO.	CAT. NO.	PAGE NO.	CAT. NO.	PAGE NO.
	1		5	5353SSTHT	14
	•				14
1/199T	16	5261	15		14
	16		15		14
	16		15		14
	16		15		14
	16		15		14
	16		15		14
140551	10				14
	2		15	JJJ/JJIII	14
			15		6
00.4000			15		U
	23		15		
	23		15		17
	23		52		17
2920SST	24		52		17
2920SST	24	503SS316	52		17
2920SST	24	5331SST	14		53
2921SST	23	5331SSTHT	14	6H0SS	53
2921SST	24	5332SST	14	6H1-BSS	53
	24		14	6H1SS	53
	24		14		53
	23		14		53
	24		14		53
	24		14		53
	<del>-</del>				53
	24		14		53
	23		14		53
	24		14		
	24		14		53
	24		14		53
2931SST			14		53
2931SST			14		53
2931SST	24	5341SSTHT	14		53
2931SST	24	5342SST	14	6H5-BSS	53
2932SST	23	5342SSTHT	14	6H5-TBSS	53
2932SST	24	5343SST	14	6H5SS	53
	24		14	6H6-BSS	53
	24		14		53
	23		14		53
	24		14		53
	24		14		53
	24				53
			14		
	23		14		53
	24		14	UUA99	53
	24		14		7
	24		14		7
	23		14		
	24		14		52
	24	5352SSTHT	14		52
2942SST	24	5353SST	14	702-1-1/4SS	52



CAT. NO.	PAGE NO.	CAT. NO.	PAGE NO.	CAT. NO.	PAGE NO.
702-1-1/4T316SS	52	AB-241-1/4SS	43	C-105-1SS	41
702-1/2SS		AB-241-3/8SS			41
702-1/2T316S		AB-241-5/16SS			41
702-1SS			-		41
702-1T316SS		В			41
702-2-1/2SS					
702-2-1/2T316SS		B 914 1/4SS			41
702-3-1/2SS		B 915SS	44		41
702-3-1/2T316SS		B 916SS	44	COND1/2SS	
702-3/4SS		B 917SS	44	COND1/2SST	6
702-3/4T316SS		B 918SS	44	COND11/2SS	6
702-3/8SS		B 919SS	45	COND11/2SST	6
702-3/8T316SS		B 924SS	45	COND11/4SS	6
702-3SS		B 937SS	46	COND11/4SST	
		B 958RSS	46	COND1SS	
702-3T316SS		B 958RSS6	46		
702-4SS		B-100-1/2SS		COND1SST	
702-4T316SS		B-100-1/4SS		COND21/2SS	
702-5SS		B-100-3/8SS		COND21/2SST	
702-5T316SS		B-900-10316-SS		COND2SS	6
702-6SS		B-900-10SS		COND2SST	6
702-6T316SS	52	B-905-10-316SS		COND3/4SS	6
		B-905-10SS		COND3/4SST	6
٨		B-907-10316SS		COND3SS	
A		B-907-10SS		COND3SST	
		B-911-1/2-SN2SS		COND4SS	
A-100-1/2SS	49	B-911-1/2-SS		COND4SST	
A-100-1/4SS	49	B-911-3/8-SN2SS			
A-100-3/8SS	49				54
A-100-5/16SS	49	B-911-3/8-SS			54
A-100-5/8SS		B-914-1/2SS			54
A1200-10-SS		B-914-3/8SS		CPC125SS6	54
A1200-10-T316SS		B-915SS6		CPC150SS6	54
A1200-20-SS		B-917SS6		CPC200SS6	54
A1200-20-T316SS		B-924-FLSS6		CPC250SS6	54
A1200HS-10-SS		B-924SQEGSS6			54
A1200HS-10-T316SS		B-924SS6			54
A1200HS-20-SS		B-925FLSS6			54
A1200HS-20-T316SS		B1400-10-SS			
A1202-10-SS		B1400-10-T316SS	48	CPL1/2SS	
		B1400-20-SS		CPL1/2SST	
A1202-10-T316SS	• • • • • • • • • • • • • • • • • • • •	B1400-20-T316SS	48	CPL11/2SS	7
A1202-20-SS		B1400HS-10-SS	48	CPL11/2SST	7
A1202-20-T316SS		B1400HS-10-T316SS	48	CPL11/4SS	7
A1202HS-10-SS		B1400HS-20-SS	48	CPL11/4SST	
A1202HS-10-T316SS		B1400HS-20-T316SS		CPL1SS	
A1202HS-20-SS				CPL1SST	
A1202HS-20-T316SS		C		CPL21/2SS	
AB-100-1/2SS					
AB-100-1/4SS	• • • • • • • • • • • • • • • • • • • •	C-105-1-1/2SS		CPL21/2SST	
AB-100-3/8SS		C-105-1-1/4SS		CPL2SS	
AB-241-1/2SS	43	C-105-1/2SS	41	CPL2SST	7





CAT. NO.	PAGE NO.	CAT. NO.	PAGE NO.	CAT. NO.	PAGE NO.
CPL3/4SS	7	EXS/300-M50/R	35	ER017	74
CPL3/4SST	7	E-142-1/2x1-1/2SS	49	ER018	74
CPL3SS	7	E-142-3/8x1-1/2SS	49	ER018	74
CPL3SST		E-142-3/8x1SS	49	ER019	74
CPL4SS		E-145-1/2SS	49	ER020	74
CPL4SST		E-145-1/4SS		ER021	
		E-145-3/4SS		ER021	
D		E-145-3/8SS		ER022	
		E-145-5/8SS		ER023	74
DAS250	69	E-147-1/2SS		ER024	
DAS250	69	E-147-1/4SS		ER024	
DAS250	69	E-147-3/4SS		ER025	
DAS250	69	E-147-3/8SS		ER026	
DAS250	69	E-147-5/16SS		ER027	
DAS250	69	E-147-5/8SS		ER028	
DAS250	69	EF-147-1/2SS		ER029	
DAS250	69	EF-147-1/4SS		ER030	
DAS250	69	EF-147-3/8SS		ER031	
DAS250	69	ELL1/245SS		ER032	
DAS250	69	ELL1/245SST		ER033	
DAS250	69		•		
DAS250		ELL1/2SS		ER034	
DAS250	69	ELL1/2SST		ER035	
DAS250		ELL11/245SS		ER036	
DAS250		ELL11/245SST		ER037	
DAS250		ELL11/2SS		ER038	
DAS250		ELL11/2SST		ER039	
DAS250		ELL11/445SS	•	ER040	
DAS250		ELL11/445SST		ER041	
DAS250		ELL11/4SS		ER041	
DAS250		ELL11/4SST		ER042	
DAS250		ELL145SS		ER046	
DBV-1/4		ELL145SST		ER047	
		ELL1SS		ER048	
E		ELL1SST		ER049	
		ELL245SS	8	EXS/038-M16/TC	
EXS/PG29-M40/TC	35	ELL245SST	8	EXS/038/C	
EXS/PG36-M40/TC	35	ELL2SS	8	EXS/050-075/E	36
EXS/PG42-M40/TC		ELL2SST	8	EXS/050-M16/TC	34
EXS/PG48-M40/TC		ELL3/445SS	8	EXS/050-M20/TC	34
EXS/PG36-M50/TC		ELL3/445SST	8	EXS/050-M25/TC	34
EXS/PG42-M50/TC		ELL3/4SS	8	EXS/050-PG11/TC	36
EXS/PG48-M50/TC		ELL3/4SST	8	EXS/050-PG13/TC	36
EXS/150-M63/TC		ER010	74	EXS/050-PG16/TC	
EXS/200-M63/TC		ER011		EXS/050-PG9/TC	
EXS/250-M25/R		ER012		EXS/050/C	
EXS/250-M40/R		ER013		EXS/075-050/R	
EXS/250-M50/R		ER014		EXS/075-100/E	
EXS/300-M25/R		ER015		EXS/075-M16/TC	
L/0/000 NILO/11	35	ER016		EXS/075-M20/TC	

Fax: 901.252.1354



CAT. NO.	PAGE NO.	CAT. NO.	PAGE NO.	CAT. NO.	PAGE NO.
EXS/075-M25/TC	34	EXS/150-M40/TC	35	EXS/300-M20/R	34
EXS/075-M32/TC	34	EXS/150-M50/TC		EXS/300-M32/R	34
EXS/075-PG11/TC		EXS/150-PG11/TC		EXS/300-M75/R	
EXS/075-PG13/TC		EXS/150-PG13/TC		EXS/M125/C	
EXS/075-PG16/TC		EXS/150-PG16/TC		EXS/M150/C	
EXS/075-PG21/TC		EXS/150-PG21/TC		EXS/M16-038/TC	
EXS/075-PG9/TC		EXS/150-PG29/TC		EXS/M16-050/TC	
EXS/075/C				EXS/M16-M20/E	
EXS/100-050/R		EXS/150-PG36/TC EXS/150-PG42/TC	37	EXS/M16-M25/E	
EXS/100-075/R		EXS/150-PG9/TC		EXS/M16-PG11/TC	
EXS/100-125/E		EXS/200-050/R		EXS/M16-PG13/TC	
EXS/100-M16/TC		EXS/200-075/R		EXS/M16-PG9/TC	
EXS/100-M20/TC		EXS/200-100/R		EXS/M16/C	
EXS/100-M25/TC		EXS/200-125/R		EXS/M20-050/TC	
EXS/100-M32/TC		EXS/200-150/R		EXS/M20-075/TC	
EXS/100-M40/TC		EXS/200-M16/TC		EXS/M20-M16/R	
EXS/100-PG11/TC		EXS/200-M20/TC		EXS/M20-M25/E	
EXS/100-PG13/TC		EXS/200-M25/TC		EXS/M20-M32/E	
EXS/100-PG16/TC		EXS/200-M32/TC		EXS/M20-PG11/TC	
EXS/100-PG21/TC		EXS/200-M40/TC		EXS/M20-PG13/TC	
EXS/100-PG29/TC		EXS/200-M50/TC		EXS/M20-PG16/TC	
EXS/100-PG29/TC		EXS/200-IVISU/TC		EXS/M20-PG9/TC	
				EXS/M20/C	
EXS/100/C		EXS/200-PG13/TC EXS/200-PG16/TC			
EXS/125-050/R				EXS/M200/C EXS/M25-050/TC	
EXS/125-075/R		EXS/200-PG21/TC EXS/200-PG29/TC		EXS/M25-050/TC	
EXS/125-100/R					
EXS/125-150/E		EXS/200-PG36/TC		EXS/M25-100/TC	
EXS/125-M16/TC		EXS/200-PG42/TC		EXS/M25-M16/R	
EXS/125-M20/TC		EXS/200-PG48/TC		EXS/M25-M20/R	
EXS/125-M25/TC		EXS/200-PG9/TC		EXS/M25-M32/E	
EXS/125-M32/TC		EXS/250-050/R		EXS/M25-M40/E	
EXS/125-M40/TC		EXS/250-075/R		EXS/M25-PG11/TC	
EXS/125-M50/TC		EXS/250-100/R		EXS/M25-PG13/TC	
EXS/125-PG11/TC		EXS/250-125/R		EXS/M25-PG16/TC	
EXS/125-PG13/TC		EXS/250-150/R		EXS/M25-PG21/TC	
EXS/125-PG16/TC		EXS/250-200/R		EXS/M25-PG9/TC	
EXS/125-PG21/TC		EXS/250-300/E		EXS/M25/C	
EXS/125-PG29/TC		EXS/250-M16/R		EXS/M32-050/TC	
EXS/125-PG36/TC		EXS/250-M20/R		EXS/M32-075/TC	
EXS/125-PG9/TC		EXS/250-M32/R		EXS/M32-100/TC	
EXS/150-050/R		EXS/250/C		EXS/M32-125/TC	
EXS/150-075/R		EXS/300-050/R		EXS/M32-M16/R	
EXS/150-100/R		EXS/300-075/R		EXS/M32-M20/R	
EXS/150-125/R		EXS/300-100/R		EXS/M32-M25/R	
EXS/150-200/E		EXS/300-125/R		EXS/M32-M40/E	
EXS/150-M16/TC		EXS/300-150/R	***************************************	EXS/M32-M50/E	
EXS/150-M20/TC		EXS/300-200/R		EXS/M32-PG11/TC	
EXS/150-M25/TC		EXS/300-250/R		EXS/M32-PG13/TC	
EXS/150-M32/TC	34	EXS/300-M16/R	34	EXS/M32-PG16/TC	36





CAT. NO.	PAGE NO.	CAT. NO.	PAGE NO.	CAT. NO.	PAGE NO.
EXS/M32-PG21/TC	36	EXS/M63-M40/R	35	EXS/PG21-M16/TC	
EXS/M32-PG9/TC	36	EXS/M63-M50/R	35	EXS/PG21-M20/TC	
EXS/M32/C		EXS/M63-M75/E		EXS/PG21-M25/TC	
EXS/M40-050/TC	36	EXS/M63-PG11/TC	36	EXS/PG21-M32/TC	
EXS/M40-075/TC	36	EXS/M63-PG13/TC	36	EXS/PG21-PG11/TC	36
EXS/M40-100/TC	36	EXS/M63-PG16/TC	36	EXS/PG21-PG13/R	
EXS/M40-125/TC	36	EXS/M63-PG21/TC	36	EXS/PG21-PG16/R	36
EXS/M40-150/TC	37	EXS/M63-PG9/TC	36	EXS/PG21-PG29/E	37
EXS/M40-M16/R	34	EXS/M63/C	38	EXS/PG21-PG29/E	37
EXS/M40-M20/R	34	EXS/M75-050/TC	36	EXS/PG21-PG9/TC	36
EXS/M40-M25/R	34	EXS/M75-075/TC	36	EXS/PG29-050/TC	36
EXS/M40-M32/R		EXS/M75-100/TC	36	EXS/PG29-075/TC	36
EXS/M40-M50/E	35	EXS/M75-125/TC	36	EXS/PG29-100/TC	36
EXS/M40-M63/E	35	EXS/M75-150/TC	37	EXS/PG29-125/TC	36
EXS/M40-PG11/TC	36	EXS/M75-200/TC	37	EXS/PG29-150/TC	37
EXS/M40-PG13/TC	36	EXS/M75-M16/R	34	EXS/PG29-M16/TC	34
EXS/M40-PG16/TC	36	EXS/M75-M20/R	34	EXS/PG29-M20/TC	34
EXS/M40-PG21/TC	36	EXS/M75-M25/R	34	EXS/PG29-M25/TC	34
EXS/M40-PG9/TC	36	EXS/M75-M32/R	34	EXS/PG29-M32/TC	34
EXS/M40/C	38	EXS/M75-M40/R	35	EXS/PG29-PG11/TC	36
EXS/M50-050/TC	36	EXS/M75-M50/R	35	EXS/PG29-PG13/R	36
EXS/M50-075/TC	36	EXS/M75-M63/R	35	EXS/PG29-PG16/R	36
EXS/M50-100/TC	36	EXS/M75-PG11/TC	36	EXS/PG29-PG21/R	36
EXS/M50-125/TC	36	EXS/M75-PG13/TC	36	EXS/PG29-PG36/E	37
EXS/M50-150/TC	37	EXS/M75-PG16/TC	36	EXS/PG29-PG36/E	37
EXS/M50-200/TC	37	EXS/M75-PG21/TC	36	EXS/PG29-PG9/TC	36
EXS/M50-M16/R	34	EXS/M75-PG9/TC	36	EXS/PG36-050/TC	36
EXS/M50-M20/R	34	EXS/M75/C	38	EXS/PG36-075/TC	36
EXS/M50-M25/R	34	EXS/P16-PG21/E	36	EXS/PG36-100/TC	36
EXS/M50-M32/R	34	EXS/PG11-050/TC	36	EXS/PG36-125/TC	36
EXS/M50-M40/R	35	EXS/PG11-M16/TC	34	EXS/PG36-150/TC	37
EXS/M50-M63/E	35	EXS/PG11-M20/TC	34	EXS/PG36-M16/TC	
EXS/M50-M75/E	35	EXS/PG11-PG9/TC		EXS/PG36-M20/TC	34
EXS/M50-PG11/TC	36	EXS/PG13-050/TC	36	EXS/PG36-M25/TC	34
EXS/M50-PG13/TC	36	EXS/PG13-M16/TC	34	EXS/PG36-M32/TC	34
EXS/M50-PG16/TC	36	EXS/PG13-M20/TC	34	EXS/PG36-PG11/TC	36
EXS/M50-PG21/TC	36	EXS/PG13-PG11/TC	36	EXS/PG36-PG13/R	36
EXS/M50-PG9/TC	36	EXS/PG13-PG9/TC	36	EXS/PG36-PG16/R	36
EXS/M50/C	38	EXS/PG16-050/TC	36	EXS/PG36-PG21/R	36
EXS/M63-050/TC	36	EXS/PG16-075/TC	36	EXS/PG36-PG29/R	37
EXS/M63-075/TC	36	EXS/PG16-M16/TC	34	EXS/PG36-PG29/R	37
EXS/M63-100/TC	36	EXS/PG16-M20/TC	34	EXS/PG36-PG48/E	37
EXS/M63-125/TC	36	EXS/PG16-M25/TC	34	EXS/PG36-PG48/E	37
EXS/M63-150/TC	37	EXS/PG16-PG11/TC	36	EXS/PG36-PG9/TC	36
EXS/M63-200/TC	37	EXS/PG16-PG13/R	36	EXS/PG42-050/TC	36
EXS/M63-M16/R	34	EXS/PG16-PG9/TC	36	EXS/PG42-075/TC	36
EXS/M63-M20/R		EXS/PG21-050/TC	36	EXS/PG42-100/TC	
EXS/M63-M25/R	34	EXS/PG21-075/TC	36	EXS/PG42-125/TC	36
EXS/M63-M32/R		EXS/PG21-100/TC	36	EXS/PG42-150/TC	





EXSPG42-200TC         37         EXS0AMC1         31         EXS09MSC1         31           EXSPG42-MI67C         34         EXS0AMC2         33         EXS10ALC2         33           EXSPG42-M257C         34         EXS04MC1         31         EXS10AMC1         31           EXSPG42-M257C         34         EXS04MC1         31         EXS10AMC2         33           EXSPG42-M327C         34         EXS04MC1         31         EXS10MC2         33           EXSPG42-P6117C         35         EXS04MC2         33         EXS10MC2         33           EXSPG42-P6117C         36         EXS04MC2         33         EXS10MC2         33           EXSPG42-P6137R         36         EXS04MSC1         31         EXS10MMC2         33           EXSPG42-P6137R         36         EXS04MSC1         31         EXS10MMC2         33           EXSPG42-P616R         36         EXS05ALC2         33         EXS10MMC2         33           EXSPG42-P616R         36         EXS05ALC2         33         EXS11AMC1         31           EXSPG42-P629R         37         EXS05AMC1         31         EXS11AMC1         31           EXSPG42-P629R         37         EXS05AMC2<	CAT. NO.	PAGE NO.	CAT. NO.	PAGE NO.	CAT. NO.	PAGE NO.
EXS/PG42-MI6/TC         34         EXS04AMC2         33         EXS10ALC2         33           SS/PG42-M2/OTC         34         EXS04ASC1         31         EXS10AMC1         31           SS/PG42-M3C/TC         34         EXS04MLC1         31         EXS10AMC2         33           SS/PG42-M3C/TC         34         EXS04MLC2         33         EXS10ASC1         31           EXS/PG42-M63/TC         35         EXS04MMC1         31         EXS10MC2         33           SS/PG42-PG11/TC         36         EXS04MMC2         33         EXS10MC2         33           SS/PG42-PG18/R         36         EXS04MC1         31         EXS10MC2         33           SS/PG42-PG18/R         36         EXS05ALC1         31         EXS10MC2         33           SS/PG42-PG29/R         36         EXS05ALC2         33         EXS11MC1         31           SS/PG42-PG29/R         37         EXS05ALC2         33         EXS11MC1         31           SS/PG42-PG29/R         37         EXS05ALC2         33         EXS11MC1         31           SS/PG42-PG36/R         37         EXS05ALC2         33         EXS11MC1         31           SS/PG42-PG36/R         37         <	EXS/PG42-200/TC	37	EXS04AMC1	31	EXS09MSC1	31
EXS/P642-M20/TC         34         EXS04ASC1         31         EXS10AMC1         31           SXS/P642-M25/TC         34         EXS04MLC1         31         EXS10ASC1         33           SXS/P642-M63/TC         35         EXS04MIC2         33         EXS10ASC1         31           EXS/P642-M63/TC         35         EXS04MIC2         33         EXS10MIC2         33           SXS/P642-PG11/TC         36         EXS04MIC2         33         EXS10MIC1         31           EXS/P642-PG18/R         36         EXS04MIC2         33         EXS10MIC1         31           EXS/P642-PG18/R         36         EXS04MIC2         31         EXS10MIC1         31           EXS/P642-PG1/R         36         EXS05ALC1         31         EXS10MIC1         31           EXS/P642-PG29/R         37         EXS05ALC2         33         EXS11AMC1         31           EXS/P642-PG29/R         37         EXS05AMC1         31         EXS11AMC1         31           EXS/P642-PG36/R         37         EXS05AMC2         33         EXS11MMC1         31           EXS/P642-PG36/R         37         EXS05MIC1         31         EXS11MMC1         31           EXS/P642-PG36/R <t< td=""><td></td><td></td><td></td><td></td><td></td><td>•</td></t<>						•
EXS/P642-M25/TC         34         EXS04MLC1         31         EXS10AMC2         33           SXS/P642-M32/TC         34         EXS04MLC2         33         EXS10ASC1         31           EXS/P642-M63/TC         35         EXS04MMC1         31         EXS10MLC2         33           SXS/P642-P611/TC         36         EXS04MMC2         33         EXS10MMC1         31           EXS/P642-P613/R         36         EXS04MSC1         31         EXS10MMC2         33           SXS/P642-P616/R         36         EXS06ALC1         31         EXS10MSC1         31           EXS/P642-P629/R         36         EXS05ALC2         33         EXS11AMC1         31           EXS/P642-P629/R         37         EXS05AMC1         31         EXS11ASC1         31           EXS/P642-P629/R         37         EXS05ASC1         31         EXS11MMC1         31           EXS/P642-P629/R         37         EXS05ASC1         31         EXS11MMC1         31           EXS/P642-P639/R         37         EXS05AMC1         31         EXS11MMC1         31           EXS/P642-P639/R         37         EXS05AMC2         33         EXS11MMC1         31           EXS/P642-P639/R         <						
EXS/P642-M32/TC         34         EXS04MIC2         33         EXS10ASC1         31           DXS/P642-M63/TC         35         EXS04MMC1         31         EXS10MIC2         33           EXS/P642-PG13/TC         36         EXS04MMC2         33         EXS10MMC1         31           DXS/P642-PG13/R         36         EXS04MSC1         31         EXS10MMC1         31           EXS/P642-PG13/R         36         EXS05ALC2         33         EXS11AMC1         31           DXS/P642-PG29/R         37         EXS05AMC2         33         EXS11AMC1         31           DXS/P642-PG29/R         37         EXS05AMC2         33         EXS11MMC1         31           DXS/P642-PG39/R         37         EXS05AMC2         33         EXS11MMC1         31           DXS/P642-PG39/R         37         EXS05AMC2         33         EXS11MMC1         31           DXS/P642-PG39/R         37         EXS05AMC1         31         EXS11MMC1         31           DXS/P642-PG36/R         37         EXS05AMC2         33         EXS11MMC1         31           DXS/P642-PG36/R         37         EXS05MMC2         33         EXS12MC2         33           DXS/P642-PG36/R <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td></t<>						
EXS/PG42-M63/TC         35         EXS04MMC1         31         EXS10MLC2         33           SXS/PG42-PG11/TC         36         EXS04MMC2         33         EXS10MMC1         31           EXS/PG42-PG13/R         36         EXS04MSC1         31         EXS10MMC2         33           SXS/PG42-PG1/R         36         EXS05ALC1         31         EXS10MSC1         31           EXS/PG42-PG21/R         36         EXS05ALC2         33         EXS11AMC1         31           EXS/PG42-PG29/R         37         EXS05AMC1         31         EXS11ASC1         31           EXS/PG42-PG36/R         37         EXS05AMC2         33         EXS11MMC1         31           EXS/PG42-PG36/R         37         EXS05ASC1         31         EXS11MMC1         31           EXS/PG42-PG36/R         37         EXS05MC2         33         EXS11MMC1         31           EXS/PG42-PG36/R         37         EXS05MC2         33         EXS11MC1         31           EXS/PG42-PG36/R         37         EXS05MC2         33         EXS12MC2         33           EXS/PG42-PG36/R         37         EXS05MC2         33         EXS12MC2         33           EXS/PG48-PG3/FC         37 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
EXS/PG42-PG11/TC         36         EXS04MMC2         33         EXS10MMC1         31           EXS/PG42-PG13/R         36         EXS04MSC1         31         EXS10MMC2         33           EXS/PG42-PG16/R         36         EXS05ALC1         31         EXS10MSC1         31           EXS/PG42-PG29/R         36         EXS05ALC2         33         EXS11AMC1         31           EXS/PG42-PG29/R         37         EXS05AMC2         33         EXS11AMC1         31           EXS/PG42-PG29/R         37         EXS05AMC2         33         EXS11MMC1         31           EXS/PG42-PG36/R         37         EXS05AMC2         33         EXS11MMC1         31           EXS/PG42-PG36/R         37         EXS05MLC1         31         EXS11MMC1         31           EXS/PG42-PG48/E         37         EXS05MLC2         33         EXS12ALC2         33           EXS/PG42-PG48/E         37         EXS05MMC2         33         EXS12AMC2         33           EXS/PG42-PG9/TC         36         EXS05MMC2         33         EXS12MMC2         33           EXS/PG48-050/TC         36         EXS05MC2         33         EXS12MMC2         33           EXS/PG48-100/TC <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td></t<>						
EXS/PG42-PG13/R         36         EXS04MSC1         31         EXS10MMC2         33           EXS/PG42-PG16/R         36         EXS05ALC1         31         EXS10MSC1         31           EXS/PG42-PG21/R         36         EXS05ALC2         33         EXS11AMC1         31           EXS/PG42-PG29/R         37         EXS05AMC1         31         EXS11ASC1         31           EXS/PG42-PG36/R         37         EXS05AMC2         33         EXS11MMC1         31           EXS/PG42-PG36/R         37         EXS05AMC1         31         EXS11MMC1         31           EXS/PG42-PG36/R         37         EXS05MLC1         31         EXS11MMC1         31           EXS/PG42-PG48/E         37         EXS05MLC2         33         EXS12MLC2         33           EXS/PG42-PG48/E         37         EXS05MMC1         31         EXS12MLC2         33           EXS/PG42-PG9/TC         36         EXS05MMC1         31         EXS12MLC2         33           EXS/PG48-050/TC         36         EXS05MSC1         31         EXS12MMC2         33           EXS/PG48-00/TC         36         EXS06MC2         33         EXS12MMC2         33           EXS/PG48-100/TC						
EXS/PG42-PG16/R         36         EXS05ALC1         31         EXS10MSC1         31           EXS/PG42-PG21/R         36         EXS05ALC2         33         EXS11AMC1         31           EXS/PG42-PG29/R         37         EXS05AMC1         31         EXS11ASC1         31           EXS/PG42-PG36/R         37         EXS05AMC2         33         EXS11MMC1         31           EXS/PG42-PG36/R         37         EXS05MLC1         31         EXS11MSC1         31           EXS/PG42-PG36/R         37         EXS05MLC2         33         EXS11MSC1         31           EXS/PG42-PG38/E         37         EXS05MLC2         33         EXS12ALC2         33           EXS/PG42-PG48/E         37         EXS05MMC2         33         EXS12MC2         33           EXS/PG42-PG9/TC         36         EXS05MMC2         33         EXS12MC2         33           EXS/PG48-050/TC         36         EXS05MC2         33         EXS12MMC2         33           EXS/PG48-075/TC         36         EXS06ALC2         33         EXS12MMC2         33           EXS/PG48-100/TC         36         EXS06AMC1         31         EXS14MMC2         33           EXS/PG48-150/TC         3						
EXS/PG42-PG21/R         36         EXS05ALC2         33         EXS11AMC1         31           EXS/PG42-PG29/R         37         EXS05AMC1         31         EXS11ASC1         31           EXS/PG42-PG29/R         37         EXS05AMC2         33         EXS11MMC1         31           EXS/PG42-PG36/R         37         EXS05ASC1         31         EXS11MMC1         31           EXS/PG42-PG36/R         37         EXS05MLC1         31         EXS11MSC1         31           EXS/PG42-PG48/E         37         EXS05MLC2         33         EXS12ALC2         33           EXS/PG42-PG48/E         37         EXS05MMC1         31         EXS12ALC2         33           EXS/PG42-PG9/TC         36         EXS05MMC2         33         EXS12MC2         33           EXS/PG48-050/TC         36         EXS05MSC1         31         EXS12MMC2         33           EXS/PG48-000/TC         36         EXS06ALC2         33         EXS13MMC2         33           EXS/PG48-100/TC         36         EXS06AMC1         31         EXS14MMC2         33           EXS/PG48-100/TC         36         EXS06AMC2         33         EXS14MMC2         33           EXS/PG48-200/TC <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td></td<>						
EXS/PG42-PG29/R.         37         EXS05AMC1         31         EXS11ASC1         31           EXS/PG42-PG29/R.         37         EXS05AMC2         33         EXS11MMC1         31           EXS/PG42-PG36/R.         37         EXS05ASC1         31         EXS11MMC1         31           EXS/PG42-PG36/R.         37         EXS05MLC1         31         EXS11MSC1         31           EXS/PG42-PG48/E.         37         EXS05MLC2         33         EXS12ALC2         33           EXS/PG42-PG48/E.         37         EXS05MMC1         31         EXS12AMC2         33           EXS/PG42-PG9/TC         36         EXS05MMC2         33         EXS12MC2         33           EXS/PG48-050/TC         36         EXS05MSC1         31         EXS12MMC2         33           EXS/PG48-075/TC         36         EXS06ALC2         33         EXS13MMC2         33           EXS/PG48-100/TC         36         EXS06AMC1         31         EXS13MMC2         33           EXS/PG48-125/TC         36         EXS06AMC2         33         EXS14MMC2         33           EXS/PG48-120/TC         37         EXS06MC2         33         EXS14MMC2         33           EXS/PG48-M16/TC			2,1000,120,11111111111111111			• • • • • • • • • • • • • • • • • • • •
EXS/PG42-PG29/R.       37       EXS05AMC2       33       EXS11MMC1       31         EXS/PG42-PG36/R.       37       EXS05ASC1       31       EXS11MMC1       31         EXS/PG42-PG36/R.       37       EXS05MLC1       31       EXS11MSC1       31         EXS/PG42-PG48/E.       37       EXS05MLC2       33       EXS12ALC2       33         EXS/PG42-PG9/TC.       36       EXS05MMC2       33       EXS12MLC2       33         EXS/PG48-PG9/TC.       36       EXS05MSC1       31       EXS12MMC2       33         EXS/PG48-075/TC.       36       EXS06ALC2       33       EXS13MMC2       33         EXS/PG48-075/TC.       36       EXS06ALC2       33       EXS13MMC2       33         EXS/PG48-100/TC.       36       EXS06ALC2       33       EXS13MMC2       33         EXS/PG48-100/TC.       36       EXS06AMC1       31       EXS13MMC2       33         EXS/PG48-150/TC.       36       EXS06AMC2       33       EXS14MMC2       33         EXS/PG48-150/TC.       37       EXS06MC2       33       EXS14MMC2       33         EXS/PG48-M16/TC.       37       EXS06MC2       33       EXS14MMC2       33         EX						
EXS/PG42-PG36/R       37       EXS05ASC1       31       EXS11MMC1       31         EXS/PG42-PG36/R       37       EXS05MLC1       31       EXS11MSC1       31         EXS/PG42-PG48/E       37       EXS05MLC2       33       EXS12ALC2       33         EXS/PG42-PG48/E       37       EXS05MMC1       31       EXS12AMC2       33         EXS/PG42-PG9/TC       36       EXS05MMC2       33       EXS12MLC2       33         EXS/PG48-050/TC       36       EXS05MSC1       31       EXS12MMC2       33         EXS/PG48-050/TC       36       EXS06ALC2       33       EXS13AMC2       33         EXS/PG48-100/TC       36       EXS06AMC1       31       EXS13MMC2       33         EXS/PG48-100/TC       36       EXS06AMC2       33       EXS14MMC2       33         EXS/PG48-150/TC       36       EXS06AMC2       33       EXS14MMC2       33         EXS/PG48-200/TC       37       EXS06AMC2       33       EXS14MMC2       33         EXS/PG48-M16/TC       34       EXS06MMC1       31       EXS14MMC2       33         EXS/PG48-M20/TC       34       EXS06MMC2       33       EXSB05       27         EXS/PG48-M25/TC<						
EXS/PG42-PG36/R       37       EXS05MLC1       31       EXS11MSC1       31         EXS/PG42-PG48/E       37       EXS05MLC2       33       EXS12ALC2       33         EXS/PG42-PG48/E       37       EXS05MMC1       31       EXS12AMC2       33         EXS/PG42-PG9/TC       36       EXS05MMC2       33       EXS12MLC2       33         EXS/PG48-050/TC       36       EXS05MSC1       31       EXS12MMC2       33         EXS/PG48-075/TC       36       EXS06ALC2       33       EXS13MMC2       33         EXS/PG48-100/TC       36       EXS06AMC1       31       EXS13MMC2       33         EXS/PG48-125/TC       36       EXS06AMC2       33       EXS14AMC2       33         EXS/PG48-150/TC       37       EXS06AMC2       33       EXS14MMC2       33         EXS/PG48-200/TC       37       EXS06MMC1       31       EXS14MMC2       33         EXS/PG48-M020/TC       34       EXS06MMC1       31       EXSB04       27         EXS/PG48-M25/TC       34       EXS06MMC2       33       EXSB05       27         EXS/PG48-M32/TC       34       EXS06MSC1       31       EXSB06       27         EXS/PG48-M63/TC						
EXS/PG42-PG48/E       37       EXS05MLC2       33       EXS12ALC2       33         EXS/PG42-PG48/E       37       EXS05MMC1       31       EXS12AMC2       33         EXS/PG42-PG9/TC       36       EXS05MMC2       33       EXS12MLC2       33         EXS/PG48-050/TC       36       EXS05MSC1       31       EXS12MMC2       33         EXS/PG48-075/TC       36       EXS06ALC2       33       EXS13MMC2       33         EXS/PG48-100/TC       36       EXS06AMC1       31       EXS13MMC2       33         EXS/PG48-150/TC       36       EXS06AMC2       33       EXS14AMC2       33         EXS/PG48-150/TC       37       EXS06ASC1       31       EXS14MMC2       33         EXS/PG48-200/TC       37       EXS06MLC2       33       EXSB03       27         EXS/PG48-M16/TC       34       EXS06MMC1       31       EXSB04       27         EXS/PG48-M20/TC       34       EXS06MSC1       31       EXSB05       27         EXS/PG48-M32/TC       34       EXS06MSC1       31       EXSB06       27         EXS/PG48-M63/TC       34       EXS07AMC2       33       EXSB09       27         EXS/PG48-PG13/R       <						
EXS/PG42-PG48/E.       37       EXS05MMC1       31       EXS12AMC2       33         EXS/PG42-PG9/TC.       36       EXS05MMC2       33       EXS12MLC2       33         EXS/PG48-050/TC.       36       EXS05MSC1       31       EXS12MMC2       33         EXS/PG48-075/TC.       36       EXS06ALC2       33       EXS13AMC2       33         EXS/PG48-100/TC.       36       EXS06AMC1       31       EXS13MMC2       33         EXS/PG48-125/TC.       36       EXS06AMC2       33       EXS14AMC2       33         EXS/PG48-150/TC.       37       EXS06ASC1       31       EXS14MMC2       33         EXS/PG48-200/TC.       37       EXS06MLC2       33       EXSB03       27         EXS/PG48-M16/TC.       34       EXS06MMC2       33       EXSB04       27         EXS/PG48-M20/TC.       34       EXS06MMC2       33       EXSB05       27         EXS/PG48-M25/TC.       34       EXS06MSC1       31       EXSB06       27         EXS/PG48-M63/TC.       34       EXS07ALC2       33       EXSB07       27         EXS/PG48-PG11/TC.       36       EXS07AMC2       33       EXSB09       27         EXS/PG48-PG13/R.<						
EXS/PG42-PG9/TC       36       EXS05MMC2       33       EXS12MLC2       33         EXS/PG48-050/TC       36       EXS05MSC1       31       EXS12MMC2       33         EXS/PG48-075/TC       36       EXS06ALC2       33       EXS13AMC2       33         EXS/PG48-100/TC       36       EXS06AMC1       31       EXS13MMC2       33         EXS/PG48-125/TC       36       EXS06AMC2       33       EXS14AMC2       33         EXS/PG48-150/TC       37       EXS06ASC1       31       EXS14MMC2       33         EXS/PG48-200/TC       37       EXS06MLC2       33       EXSB03       27         EXS/PG48-M16/TC       34       EXS06MMC1       31       EXSB04       27         EXS/PG48-M20/TC       34       EXS06MMC2       33       EXSB05       27         EXS/PG48-M25/TC       34       EXS06MSC1       31       EXSB06       27         EXS/PG48-M32/TC       34       EXS07ALC2       33       EXSB07       27         EXS/PG48-M63/TC       35       EXS07AMC1       31       EXSB08       27         EXS/PG48-PG11/TC       36       EXS07AMC2       33       EXSB09       27         EXS/PG48-PG13/R       36						
EXS/PG48-050/TC       36       EXS05MSC1       31       EXS12MMC2       33         EXS/PG48-075/TC       36       EXS06ALC2       33       EXS13AMC2       33         EXS/PG48-100/TC       36       EXS06AMC1       31       EXS13MMC2       33         EXS/PG48-125/TC       36       EXS06AMC2       33       EXS14AMC2       33         EXS/PG48-150/TC       37       EXS06ASC1       31       EXS14MMC2       33         EXS/PG48-200/TC       37       EXS06MLC2       33       EXSB03       27         EXS/PG48-M16/TC       34       EXS06MMC1       31       EXSB04       27         EXS/PG48-M20/TC       34       EXS06MMC2       33       EXSB05       27         EXS/PG48-M25/TC       34       EXS06MSC1       31       EXSB06       27         EXS/PG48-M32/TC       34       EXS07ALC2       33       EXSB07       27         EXS/PG48-M63/TC       35       EXS07AMC1       31       EXSB08       27         EXS/PG48-PG11/TC       36       EXS07AMC2       33       EXSB09       27         EXS/PG48-PG13/R       36       EXS07ASC1       31       EXSBBT03       27         EXS/PG48-PG16/R       36<						
EXS/PG48-075/TC       36       EXS06ALC2       33       EXS13AMC2       33         EXS/PG48-100/TC       36       EXS06AMC1       31       EXS13MMC2       33         EXS/PG48-125/TC       36       EXS06AMC2       33       EXS14AMC2       33         EXS/PG48-150/TC       37       EXS06ASC1       31       EXS14MMC2       33         EXS/PG48-200/TC       37       EXS06MLC2       33       EXSB03       27         EXS/PG48-M16/TC       34       EXS06MMC1       31       EXSB04       27         EXS/PG48-M20/TC       34       EXS06MMC2       33       EXSB05       27         EXS/PG48-M25/TC       34       EXS06MSC1       31       EXSB06       27         EXS/PG48-M32/TC       34       EXS07ALC2       33       EXSB07       27         EXS/PG48-M63/TC       35       EXS07AMC1       31       EXSB08       27         EXS/PG48-PG11/TC       36       EXS07AMC2       33       EXSB09       27         EXS/PG48-PG13/R       36       EXS07ASC1       31       EXSBBT03       27         EXS/PG48-PG16/R       36       EXS07MLC2       33       EXSBBT04       27						
EXS/PG48-100/TC       36       EXS06AMC1       31       EXS13MMC2       33         EXS/PG48-125/TC       36       EXS06AMC2       33       EXS14AMC2       33         EXS/PG48-150/TC       37       EXS06ASC1       31       EXS14MMC2       33         EXS/PG48-200/TC       37       EXS06MLC2       33       EXSB03       27         EXS/PG48-M16/TC       34       EXS06MMC1       31       EXSB04       27         EXS/PG48-M20/TC       34       EXS06MMC2       33       EXSB05       27         EXS/PG48-M25/TC       34       EXS06MSC1       31       EXSB06       27         EXS/PG48-M32/TC       34       EXS07ALC2       33       EXSB07       27         EXS/PG48-M63/TC       35       EXS07AMC1       31       EXSB08       27         EXS/PG48-PG11/TC       36       EXS07AMC2       33       EXSB09       27         EXS/PG48-PG13/R       36       EXS07ASC1       31       EXSBBT03       27         EXS/PG48-PG16/R       36       EXS07MLC2       33       EXSBBT04       27						
EXS/PG48-125/TC       36       EXS06AMC2       33       EXS14AMC2       33         EXS/PG48-150/TC       37       EXS06ASC1       31       EXS14MMC2       33         EXS/PG48-200/TC       37       EXS06MLC2       33       EXSB03       27         EXS/PG48-M16/TC       34       EXS06MMC1       31       EXSB04       27         EXS/PG48-M20/TC       34       EXS06MMC2       33       EXSB05       27         EXS/PG48-M25/TC       34       EXS06MSC1       31       EXSB06       27         EXS/PG48-M32/TC       34       EXS07ALC2       33       EXSB07       27         EXS/PG48-M63/TC       35       EXS07AMC1       31       EXSB08       27         EXS/PG48-PG11/TC       36       EXS07AMC2       33       EXSB09       27         EXS/PG48-PG13/R       36       EXS07ASC1       31       EXSBBT03       27         EXS/PG48-PG16/R       36       EXS07MLC2       33       EXSBBT04       27						
EXS/PG48-150/TC       37       EXS06ASC1       31       EXS14MMC2       33         EXS/PG48-200/TC       37       EXS06MLC2       33       EXSB03       27         EXS/PG48-M16/TC       34       EXS06MMC1       31       EXSB04       27         EXS/PG48-M20/TC       34       EXS06MMC2       33       EXSB05       27         EXS/PG48-M25/TC       34       EXS06MSC1       31       EXSB06       27         EXS/PG48-M32/TC       34       EXS07ALC2       33       EXSB07       27         EXS/PG48-M63/TC       35       EXS07AMC1       31       EXSB08       27         EXS/PG48-PG11/TC       36       EXS07AMC2       33       EXSB09       27         EXS/PG48-PG13/R       36       EXS07ASC1       31       EXSBBT03       27         EXS/PG48-PG16/R       36       EXS07MLC2       33       EXSBBT04       27						
EXS/PG48-200/TC       37       EXS06MLC2       33       EXSB03       27         EXS/PG48-M16/TC       34       EXS06MMC1       31       EXSB04       27         EXS/PG48-M20/TC       34       EXS06MMC2       33       EXSB05       27         EXS/PG48-M25/TC       34       EXS06MSC1       31       EXSB06       27         EXS/PG48-M32/TC       34       EXS07ALC2       33       EXSB07       27         EXS/PG48-M63/TC       35       EXS07AMC1       31       EXSB08       27         EXS/PG48-PG11/TC       36       EXS07AMC2       33       EXSB09       27         EXS/PG48-PG13/R       36       EXS07ASC1       31       EXSBBT03       27         EXS/PG48-PG16/R       36       EXS07MLC2       33       EXSBBT04       27						
EXS/PG48-M16/TC       34       EXS06MMC1       31       EXSB04       27         EXS/PG48-M20/TC       34       EXS06MMC2       33       EXSB05       27         EXS/PG48-M25/TC       34       EXS06MSC1       31       EXSB06       27         EXS/PG48-M32/TC       34       EXS07ALC2       33       EXSB07       27         EXS/PG48-M63/TC       35       EXS07AMC1       31       EXSB08       27         EXS/PG48-PG11/TC       36       EXS07AMC2       33       EXSB09       27         EXS/PG48-PG13/R       36       EXS07ASC1       31       EXSBBT03       27         EXS/PG48-PG16/R       36       EXS07MLC2       33       EXSBBT04       27						
EXS/PG48-M20/TC       34       EXS06MMC2       33       EXSB05       27         EXS/PG48-M25/TC       34       EXS06MSC1       31       EXSB06       27         EXS/PG48-M32/TC       34       EXS07ALC2       33       EXSB07       27         EXS/PG48-M63/TC       35       EXS07AMC1       31       EXSB08       27         EXS/PG48-PG11/TC       36       EXS07AMC2       33       EXSB09       27         EXS/PG48-PG13/R       36       EXS07ASC1       31       EXSBBT03       27         EXS/PG48-PG16/R       36       EXS07MLC2       33       EXSBBT04       27						
EXS/PG48-M25/TC       34       EXS06MSC1       31       EXSB06       27         EXS/PG48-M32/TC       34       EXS07ALC2       33       EXSB07       27         EXS/PG48-M63/TC       35       EXS07AMC1       31       EXSB08       27         EXS/PG48-PG11/TC       36       EXS07AMC2       33       EXSB09       27         EXS/PG48-PG13/R       36       EXS07ASC1       31       EXSBBT03       27         EXS/PG48-PG16/R       36       EXS07MLC2       33       EXSBBT04       27						
EXS/PG48-M32/TC       34       EXS07ALC2       33       EXSB07       27         EXS/PG48-M63/TC       35       EXS07AMC1       31       EXSB08       27         EXS/PG48-PG11/TC       36       EXS07AMC2       33       EXSB09       27         EXS/PG48-PG13/R       36       EXS07ASC1       31       EXSBBT03       27         EXS/PG48-PG16/R       36       EXS07MLC2       33       EXSBBT04       27						
EXS/PG48-M63/TC       35       EXS07AMC1       31       EXSB08       27         EXS/PG48-PG11/TC       36       EXS07AMC2       33       EXSB09       27         EXS/PG48-PG13/R       36       EXS07ASC1       31       EXSBBT03       27         EXS/PG48-PG16/R       36       EXS07MLC2       33       EXSBBT04       27						
EXS/PG48-PG11/TC       36       EXS07AMC2       33       EXSB09       27         EXS/PG48-PG13/R       36       EXS07ASC1       31       EXSBBT03       27         EXS/PG48-PG16/R       36       EXS07MLC2       33       EXSBBT04       27						
EXS/PG48-PG13/R       36       EXS07ASC1       31       EXSBBT03       27         EXS/PG48-PG16/R       36       EXS07MLC2       33       EXSBBT04       27						
EXS/PG48-PG16/R						
EXS/PG48-PG21/R						
EXS/PG48-PG29/R						
EXS/PG48-PG29/R						
EXS/PG48-PG36/R						
EXS/PG48-PG36/R						
EXS/PG48-PG42/R			EXS08AMC2	33	EXSH03	27
EXS/PG48-PG42/R	EXS/PG48-PG42/R	37	EXS08ASC1	31		27
EXS/PG48-PG9/TC	EXS/PG48-PG9/TC	36	EXS08MLC2	33	EXSH05	27
EXS/PG9-050/TC	EXS/PG9-050/TC	36	EXS08MMC1	31	EXSH06	27
EXS/PG9-M20/TC	EXS/PG9-M20/TC	34	EXS08MMC2	33	EXSH07	27
EXS03AMC1	EXS03AMC1	31	EXS08MSC1	31	EXSHC03	27
EXS03AMC2	EXS03AMC2	33	EXS09ALC2	33	EXSHC04	27
EXS03ASC1	EXS03ASC1	31	EXS09AMC1	31	EXSHC05	27
EXS03MMC1	EXS03MMC1	31	EXS09AMC2	33		
EXS03MMC2	EXS03MMC2	33			EXSHC07	27
EXS03MSC1			EXS09MLC2	33		
EXS04ALC1	EXS04ALC1	31	EXS09MMC1	31		
EXS04ALC2	EXS04ALC2	33	EXS09MMC2	33		







CAT. NO.	PAGE NO.	CAT. NO.	PAGE NO.	CAT. NO.	PAGE NO.
EXST04	27	HAAS0707U	29		L
EXST05		HAAS0707U/SW			
EXST06		HAAS0808G1			
EXST07		HAAS0808U		L050GR-SST	10
EXST08		HAAS0808U/SW		L075GR-SST	10
EXST09		HAAS0909G1		L100GR-SST	10
		HAAS0909U		L125GR-SST	10
F		HAAS0909U/SW		L150GR-SST	10
Г		HAMS0304G1		L200GR-SST	10
FG-DA-3/8	4.4	HAMS0304U	29	LB18SST	5
FG-DA-3/8	II	HAMS0304U/SW		LB28SST	5
н		HAMS0404G1		LB38SST	5
		HAMS0404U		LB48SST	5
		HAMS0404U/SW		LB58SST	5
H-119-1/2SS	49	HAMS0505G1		LB68SST	5
H-119-1/4SS		HAMS0505U			62
H050GRSST		HAMS0505U/SW			68
H075GRSST		HAMS0606G1			63
H100GRSST		HAMS0606U			68
H104-1/2X12SS		HAMS0606U/SW			63
H104-1/2X12SS316		HAMS0707G1			68
H104-1/4X12SS		HAMS0707U			62
H104-1/4X12SS6		HAMS0707U/SW			63
H104-1/4X6SS		HAMS0808G1			63
H104-1/4X6SS316		HAMS0808U			62
H104-3/8X12SS		HAMS0808U/SW		LS-4.6-360-C	68
H104-3/8X12SS6		HAMS0909G1			63
H104-3/8X6SS		HAMS0909U			68
H104-3/8X6SS316		HAMS0909U/SW			63
H104-5/8X12SS		HS100-SS		LS-4.6-360B	68
H104-5/8X12SS316		HS101-SS			62
H122-1/2-SS6		HS102-SS		LS-4.6-520-C	68
H122-3/8-SS6		HS103-SS			63
H125GRSST		HS104-SS		LS-4.6-520A	68
H150GRSST		HS105-SS		LS-4.6-520B	63
H200GRSST		HS106-SS		LS-4.6-520B	68
HAAS0304G1		HS107-SS		LS-4.6-680-C	62
HAAS0304U		HS108-SS		LS-4.6-680-C	68
HAAS0304U/SW		HS110-SS			63
HAAS0404G1		HS901-SS			68
HAAS0404U		HS902-SS			63
HAAS0404U/SW		HS903-SS			68
HAAS0505G1		HS904-SS			63
HAAS0505Uv		HS905-SS			68
HAAS0505U/SW		HS906-SS		LS-4.6-840B	63
HAAS0606G1		HS907-SS			68
HAAS0606U		HS908-SS			63
HAAS0606U/SW		HS909-SS			68
HAAS0707G1		HS910-SS			63



CAT. NO.	PAGE NO.	CAT. NO.	PAGE NO.	CAT. NO.	PAGE NO.
LS-7.9-1010B	68	NPL11/2X12SS	7	SSH31-500	67
LS-7.9-200-C		NPL11/2X12SST			70
LS-7.9-200-C		NPL11/4X12SS			67
LS-7.9-200A		NPL11/4X12SST			70
LS-7.9-200A		NPL1X12SS		SSH37-750	67
LS-7.9-200B		NPL1X12SST		SSH37-750	70
LS-7.9-200B		NPL2X12SS			67
LS-7.9-360-C		NPL2X12SST			70
LS-7.9-360-C		NPL3/4X12SS		SSH50-750	67
LS-7.9-360A		NPL3/4X12SST		SSH50-750	70
LS-7.9-360A		14 20/ 1/(12001 111111111111111111111111111111111			67
LS-7.9-360B		•			70
LS-7.9-360B		S			67
LS-7.9-520-C					70
LS-7.9-520-C		SS10-180	65		67
LS-7.9-520A		SS10-180			70
LS-7.9-520A		SS10-250			66
LS-7.9-520B		SS10-250			70
LS-7.9-520B		SS16-180			66
LS-7.9-680-C		SS16-180			70
LS-7.9-680-C		SS17-250			66
LS-7.9-680A		SS17-250			70
		SS23-180			66
LS-7.9-680A		SS23-180			70
LS-7.9-680B		SS23-250	•••••••••••••••••••••••••••••••••••••••		66
		SS23-250			70
LS-7.9-840A LS-7.9-840A		SS29-180			66
		SS29-180			70
LS-7.9-840B		SS29-250			
LS-7.9-840B					
LU18SST		SS29-250			70
LU28SST		SS35-250			66
LU38SST		SS35-250			70
LU48SST		SS7-180			66
LU58SST		SS7-180			70
LU68SST	4	SSH10-250			66
		SSH10-250			70
M		SSH16-250			66
		SSH16-250			70
1 D 0 1 1 1 0 1	00	SSH16-375	67	SSR9-375C	66
MXWH04		SSH16-375			70
MXWH05		SSH18-500			20
MXWH06		SSH18-500			20
MXWH07		SSH19-250			20
MXWH08	38	SSH19-250			20
		SSH21-625			20
N		SSH21-625	70	ST075-468SS	20
		SSH24-750	67	ST100-469SS	20
		SSH24-750	70	ST125-470SS	20
NPL1/2X12SS	7	SSH27-250	67	ST125-471SS	20
NPL1/2X12SST	7	SSH27-250	70	ST125-550SS	20





CAT. NO.	PAGE NO.	CAT. NO.	PAGE NO.	CAT. NO.	PAGE NO.
ST150-472SS	20	TYS12-470	68	WTA290	69
ST150-473SS		TYS12-470C	64	WTA290	
ST200-474SS		TYS12-470C		WTAE200	
ST200-475SS		TYS18-280	64	WTAE200	69
ST200-476SS			68	WTAE200	
ST200-551SS		TYS18-280C	64	WTAE200	
ST250-477SS			68	WTAE200	
ST250-478SS			64	WTAE200	
ST300-479SS			68	WTAE200	
ST300-480SS		TYS18-470C		WTAE200	
ST300-481SS		TYS18-470C	68	WTAE200	
ST350-482SS	20		64	WTAE200	
ST350-483SS			68	WTAE200	
ST400-484SS			64	WTAE200	
ST400-485SS		TYS24-280C	68	WTAE201	69
ST400-486SS		TYS24-470		WTAE201	
		TYS24-470		WTC001	
T			64	WTC001	
			68	WTC001	
			64	WTC001	
TCF050-27SS6	21		68	WTC001	
TCF050-40SS6	21	TYS6-280C		WTC001	
TCF050-54SS6	21		68	WTC075	
TCF050-67SS6	21		64	WTC075	
TCF050-78SS6	21		68	WTC075	
TCF075-40SS6	21		64	WTC075	
TCF075-54SS6	21		68	WTC075	
TCF075-67SS6	21		64	WTC075	
TCF075-78SS6	21	TYS9-280		WTC075	
TCF075-88SS6			64	WTC075	
TCF100-100SS6	21		68	WTC075	
TCF100-78SS6			64	WTC075	
TCF100-88SS6			68	WTC075	
TS101-SS	10		64	WTC075/WTC001	
TS102-SS			68	WTC075/WTC001	
TS103-SS	10	1100 1100 111111		WTC075/WTC001	
TS104-SS	10		W	WTC075/WTC001	
TS105-SS			VV	WTC075/WTC001	
TS106-SS				WT.I020	76
TS901-SS		WT3S	76	WTJ020/WTC075/WTC001	
TS902-SS	10		69	WTJ020/WTC075/WTC001	
TS903-SS			69	WTJ020/WTC075/WTC001	
TS904-SS		WTA250	69	WTJ020/WTC075/WTC001	
TS905-SS	10		69	WTJ020/WTC075/WTC001	
TS906-SS			69	WTJ020/WTC075/WTC001	
TYS12-280			75	11 100 LO/ 11 100 I O/ 11 1000 I	
TYS12-280			69		
TYS12-280C			69		
TYS12-280C	•		69		
TYS12-470			69		





Notes	



**United States** 

Tel: 901.252.8000

800.816.7809 Fax: 901.252.1354

## A Global Leader in Innovative...

#### **Power Connection & Control**

**Blackburn CYBEREX**. **(\*)** elastimold

FISHER PIERCE" 📤 HI-Tech 🕌 HOMAC 🥏 JENNINGS

**♦ JOSLYN** *Pos-E-Kon Russellstoll Sta-Kon* 



#### Wire & Cable Management

Carlon Catamount EZCODE Kindorf rededet. Steel City Superstrut T&B Cable Tray Ty-Duct Ty-Rap



#### **Cable Protection Systems**

Adoptofier Carlon Harnessflex KOPEX-Ex Ocal

PMA rededet. Steel City T&B Fittings



#### **Safety Technology**



**Hazlux OSLYN. Lightalarms** 





# Visit the T&B world of electrical product solutions

Visit our web site for more information about Thomas & Betts solutions and our newest products. For a user-friendly catalog and competitive part number search, application and technical support and other useful information, go to: www.tnb.com

### Industry codes and specifications

All Thomas & Betts products meet or exceed applicable industry specifications or codes which are detailed in the appropriate T&B product literature.

IEEE ANSI IEC

## Online CAD library

Thomas & Betts offers free download of two- and threedimensional CAD models of many of its products in more than 90 native CAD formats at: www.tnb.com/cadlibrary

## Landing Page

For more information, visit our landingpage at www.tnb.com/ltfittings





## **Mouser Electronics**

**Authorized Distributor** 

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

#### ABB:

EXS/100-M20/TC EXS/100-M32/TC EXS/150-075/R EXS/M40-050/TC EXS/125-100/R EXS/125-M25/TC

EXS/100-050/R EXS/200-150/R EXS/125-M32/TC EXS/075-M32/TC EXS/125-075/R EXS/100-075/R EXS/125
M20/TC EXS/125-050/R EXS/M20-075/TC EXS/050-M20/TC EXS/075-M25/TC EXS/M25-075/TC EXS/M25-050/TC

EXS/150-125/R EXS/M32-M20/R EXS/075-050/R EXS/150-100/R EXS/M32-M25/R EXS/M32-100/TC EXS/050
M25/TC EXS/075-M20/TC EXS/M63-200/TC EXS/100-M25/TC EXS/M20-050/TC EXS/M20-M25/E