

PANDUIT® PAN-STEEL® System FOR HARSH ENVIRONMENTS

Markets

A revolutionary new design in stainless steel ties!

MLT Ties

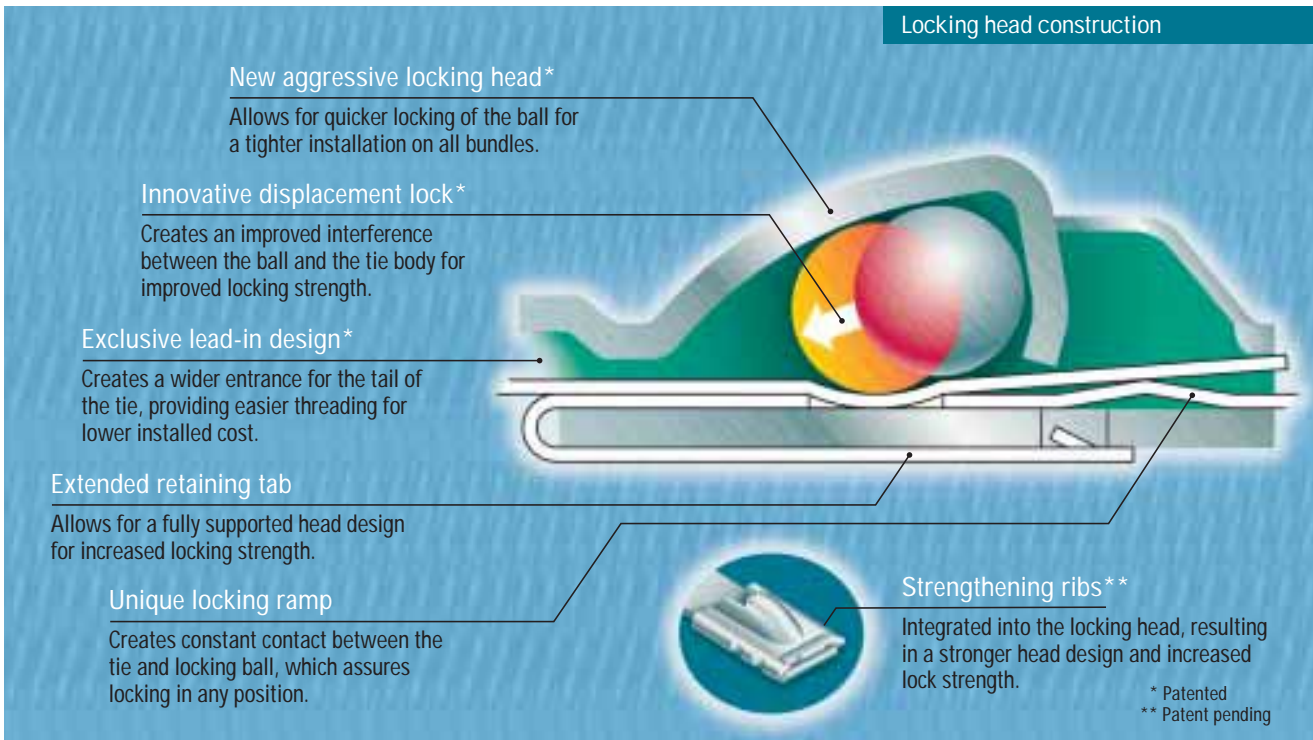
Engineered for the most extreme applications...

- World's highest rated loop tensile strength ball locking tie for an extra margin of safety
- Aggressive head design provides higher retained tension for a more secure bundle
- Exclusive lead-in design for quick, easy threading for fastest installation time

MS Strapping

Marking and ID

Accessories



Advantages of the Rounded Side of PAN-STEEL® Stainless Steel Ties

Technical Info



Cross sectional view of other manufacturer's tie body. (Photo micrograph shown is magnified 150X).



Cross sectional view of PANDUIT® tie body. (Photo micrograph shown is magnified 150X).

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The PAN-STEEL® Stainless Steel Cable Tie is designed for superior comfort and safety when handling due to its fully rounded sides and smooth surfaces. Smooth surfaces and rounded sides assure cable protection and operator safety. PANDUIT® not only removes the burr, but actually passes the material through a secondary process which removes the top and bottom corners of the material.

PANDUIT™ PAN-STEEL® System FOR HARSH ENVIRONMENTS

PAN-STEEL® Stainless Steel Ties – MLT Series



Enhanced PAN-STEEL® Self-Locking Stainless Steel Cable Ties



- Strong, durable method of bundling and fastening
- Can be used in virtually all indoor, outdoor and underground (including direct burial) applications
- Well suited for network bundling of data and power cables
- Fully rounded edges and exclusive lead-in design
- Provides ultimate support for network cables
- Available in 316 material for the most corrosive environments

Part Number	Max. Bundle Diameter		Length**		Min. Loop Tensile Strength*		Min. Bundle Diameter		Width		Thickness		Recommended PANDUIT® Installation Tool***	Std. Pkg. Qty.	Std. Ctn. Qty.
	In.	mm	In.	mm	Lbs.	N	In.	mm	In.	mm	In.	mm			

AISI 304 Stainless Steel – For General Purpose

Standard Cross Section

MLT1S-CP	1.0	25	5.0	127	200	890	.50	12.7	.18	4.6	.010	.25	GS4MT, HTMT, PPTMT, ST2MT or ST3MT	100	500
MLT2S-CP	2.0	51	7.9	201	200	890	.50	12.7	.18	4.6	.010	.25		100	500
MLT2S-L	2.0	51	7.9	201	200	890	.50	12.7	.18	4.6	.010	.25		50	500
MLT2.7S-CP	2.7	69	10.2	259	200	890	.50	12.7	.18	4.6	.010	.25		100	500
MLT4S-CP	4.0	102	14.3	362	200	890	.50	12.7	.18	4.6	.010	.25		100	500
MLT4S-L	4.0	102	14.3	362	200	890	.50	12.7	.18	4.6	.010	.25		50	500
MLT6S-CP	6.0	152	20.5	521	200	890	.50	12.7	.18	4.6	.010	.25		100	500
MLT8S-CP	8.0	203	26.8	679	200	890	.50	12.7	.18	4.6	.010	.25		100	500
MLT10S-CP	10.0	254	33.0	838	200	890	.50	12.7	.18	4.6	.010	.25		100	500
MLT12S-Q	12.0	304	39.3	998	200	890	.50	12.7	.18	4.6	.010	.25		25	125
MLT14S-Q	14.0	355	45.5	1156	200	890	.50	12.7	.18	4.6	.010	.25		25	125
MLT15S-Q	15.0	380	49.2	1250	200	890	.50	12.7	.18	4.6	.010	.25		25	125

NEW! Light-Heavy Cross Section

MLT2LH-LP	2.0	51	7.9	201	250	1112	.50	12.7	.25	6.4	.010	.25	GS4MT, HTMT, PPTMT, ST2MT or ST3MT	50	250
MLT4LH-LP	4.0	102	14.3	362	250	1112	.50	12.7	.25	6.4	.010	.25		50	250
MLT6LH-LP	6.0	152	20.5	521	250	1112	.50	12.7	.25	6.4	.010	.25		50	250
MLT8LH-LP	8.0	203	26.8	679	250	1112	.50	12.7	.25	6.4	.010	.25		50	250

Heavy Cross Section

MLT2H-LP	2.0	51	7.9	201	450	2000	.50	12.7	.31	7.9	.010	.25	GS4MT, HTMT, PPTMT, ST2MT or ST3MT	50	250
MLT2.7H-LP	2.7	69	10.2	259	450	2000	.50	12.7	.31	7.9	.010	.25		50	250
MLT4H-LP	4.0	102	14.3	362	450	2000	.50	12.7	.31	7.9	.010	.25		50	250
MLT6H-LP	6.0	152	20.5	521	450	2000	.50	12.7	.31	7.9	.010	.25		50	250
MLT8H-LP	8.0	203	26.8	679	450	2000	.50	12.7	.31	7.9	.010	.25		50	250
MLT10H-LP	10.0	254	33.0	838	450	2000	.50	12.7	.31	7.9	.010	.25		50	250
MLT12H-Q	12.0	305	42.0	1087	450	2000	.50	12.7	.31	7.9	.010	.25		25	125
MLT14H-Q	14.0	356	47.0	1194	450	2000	.50	12.7	.31	7.9	.010	.25		25	125

NEW! Extra-Heavy Cross Section

MLT2EH-LP	2.0	51	11.8	300	600	2670	1.0	25.4	.50	12.7	.010	.25	RT1HT or ST3MT	50	250
MLT4EH-LP	4.0	102	17.1	434	600	2670	1.0	25.4	.50	12.7	.010	.25		50	250
MLT6EH-LP	6.0	152	23.4	594	600	2670	1.0	25.4	.50	12.7	.010	.25		50	250
MLT8EH-LP	8.0	203	29.7	754	600	2670	1.0	25.4	.50	12.7	.010	.25		50	250
MLT10EH-LP	10.0	254	35.9	912	600	2670	1.0	25.4	.50	12.7	.010	.25		50	250
MLT12EH-Q	12.0	305	42.2	1072	600	2670	1.0	25.4	.50	12.7	.010	.25		25	125
MLT4EH15-LP	4.0	102	17.1	434	700	3115	1.0	25.4	.50	12.7	.015	.38		50	250
MLT6EH15-LP	6.0	152	23.4	594	700	3115	1.0	25.4	.50	12.7	.015	.38		50	250
MLT8EH15-LP	8.0	203	29.7	754	700	3115	1.0	25.4	.50	12.7	.015	.38		50	250
MLT10EH15-LP	10.0	254	35.9	912	700	3115	1.0	25.4	.50	12.7	.015	.38		50	250
MLT12EH15-Q	12.0	305	42.2	1072	700	3115	1.0	25.4	.50	12.7	.015	.38		25	125

*Per SAE Standard AS23190/3 (formerly MIL). For additional details, refer to page F1.

**Other lengths available, contact customer service.

***For information on installation tools, refer to pages B12-B14.

PANDUIT® PAN-STEEL® System FOR HARSH ENVIRONMENTS

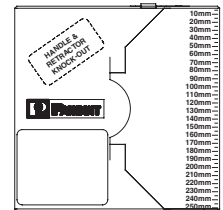
PAN-STEEL® Custom Length Banding System (Coated and Non-Coated)

Custom Length Banding System MBS, MBH, MBEH and MBSH Banding

- For applications that require bundling various bundle diameters
- Supplied in reels of 200 ft (61m), 250 ft (76m) or 1000 ft (305m)
- Bundle any size bundle diameter
- To use, pull out as much banding as needed, cut off using GS4MT with CAMT accessory or with shears and install with MTHS or MTHH banding heads

Polyester coating option provides:

- Low smoke
- Halogen free
- Temperature tolerance -40°F (-40°C) to -302°F (150°C)
- Good UV resistance



Part Number	Max. Bundle Diameter		Length**		Min. Loop Tensile Strength*		Min. Bundle Diameter		Width		Thickness		Recommended PANDUIT® Installation Tool***	Recommended Banding Head	Std. Pkg. Qty.
	In.	mm	Ft.	M	Lbs.	N	In.	mm	In.	mm	In.	mm			

AISI 304 Stainless Steel – For General Purpose Banding

Standard Cross Section

MBS-TLR	Any	Any	250	76	100	445	.50	12.7	.18	4.4	.010	.25	GS4MT, HTMT, PPTMT, ST2MT, ST3MT	MTHS-C	1
MBS-MR	Any	Any	1000	305	100	445	.50	12.7	.18	4.4	.010	.25		MTHS-C	1

Heavy Cross Section

MBH-TLR	Any	Any	250	76	250	1112	.50	12.7	.31	7.9	.010	.25	GS4MT, HTMT, PPTMT, ST2MT, ST3MT	MTHH-C	1
MBH-MR	Any	Any	1000	305	250	1112	.50	12.7	.31	7.9	.010	.25		MTHH-C	1

NEW! Extra-Heavy Cross Section

MBEH-TLR	Any	Any	250	76	300	1335	1.0	25.4	.50	12.7	.010	.25	RT1HT, ST3MT	MTHEH-C	1
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NEW! Super-Heavy Cross Section

MBSH-TR	Any	Any	200	61	450	2000	1.0	25.4	.63	15.9	.015	.38	RT1HT	MTHSH-C	1
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AISI 316 Stainless Steel – For Superior Corrosion Resistance

Standard Cross Section

MBS-TLR316	Any	Any	250	76	100	445	.50	12.7	.18	4.4	.010	.25	GS4MT, HTMT, PPTMT, ST2MT, ST3MT	MTHS-C316	1
MBS-MR316	Any	Any	1000	305	100	445	.50	12.7	.18	4.4	.010	.25		MTHS-C316	1

Heavy Cross Section

MBH-TLR316	Any	Any	250	76	250	1112	.50	12.7	.31	7.9	.010	.25	GS4MT, HTMT, PPTMT, ST2MT, ST3MT	MTHH-C316	1
MBH-MR316	Any	Any	1000	305	250	1112	.50	12.7	.31	7.9	.010	.25		MTHH-C316	1

NEW! Extra-Heavy Cross Section

MBEH-TLR316	Any	Any	250	76	300	1335	1.0	25.4	.50	12.7	.010	.25	RT1HT, ST3MT	MTHEH-C316	1
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NEW! Super-Heavy Cross Section

MBSH-TR316	Any	Any	200	61	450	2000	1.0	25.4	.63	15.9	.015	.38	RT1HT	MTHSH-C316	1
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NEW! Polyester Coated AISI 316 Stainless Steel

Heavy Cross Section

MBCH-QR316	Any	Any	82	25	250	1112	N/A	N/A	.31	7.9	.010	.25	GS4MT, HTMT, PPTMT, ST2MT or ST3MT	MTHH-C316	1
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NEW! Extra-Heavy Cross Section

MBCEH-QR316	Any	Any	82	25	300	1335	N/A	N/A	.50	12.7	.010	.25	RT1HT, ST3MT	MTHEH-C316	1
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NEW! Super-Heavy Cross Section

MBCSH-QR316	Any	Any	82	25	450	2000	N/A	N/A	.63	15.9	.015	.38	RT1HT	MTHSH-C316	1
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*Per SAE Standard AS23190/3 (formerly MIL). For additional details, refer to page F1.

**The GS4MT with CAMT accessory is recommended for cutting the banding. This system provides a straight cut-off which assists in head assembly and eliminates the need for shears.

***For information on installation tools, refer to pages B12-B14.

To determine the proper amount of banding required, use the following formula to determine length of banding needed

Calculate Diameter inches (mm) x 3.14 + 3 inches (76mm)

Example: 10 in. (250mm) Diameter Bundle

10 in. (250mm) x 3.14 = 31.40 + 3 in. (76mm) = 34.40 in. or 35 in. (861mm) of banding required.

PANDUIT™ PAN-STEEL® System FOR HARSH ENVIRONMENTS

Stainless Steel, Brass and Aluminum Marker Plates and Tags



- Identify pipes, conduit, valves, cables and equipment in petrochemical plants, pulp and paper mills, refineries, offshore oil rigs and in any other harsh environments
- All marker plates/tags can be custom marked by *PANDUIT®* with one of two computer controlled systems (laser or embosser) to provide permanent identification to resist corrosion, abrasion and radiation
- Use with *PANDUIT® PAN-STEEL®* Stainless Steel Cable Ties for fast installation at lowest installed cost

Most tags are provided with one .25 in. (6.35mm) hole.



Part Number	Used with <i>PAN-STEEL®</i> Ties	Plate/Tag Size				Material	Thickness		Std. Pkg. Qty.	Std. Ctn. Qty.
		Width		Length			In.	mm		
		In.	mm	In.	mm					
MMP350-C	MLT-S	.75	19	3.50	89	304 Stainless Steel	.010	.25	100	1000
MMP350-C316	MLT-S	.75	19	3.50	89	316 Stainless Steel	.010	.25	100	1000
MMP350H-C	MLT-S/H	.75	19	3.50	89	304 Stainless Steel	.010	.25	100	1000
MMP350H-C316	MLT-S/H	.75	19	3.50	89	316 Stainless Steel	.010	.25	100	1000
MMP350W38-C	MLT-S	.38	10	3.50	89	304 Stainless Steel	.010	.25	100	1000
MMP350W38-C316	MLT-S	.38	10	3.50	89	316 Stainless Steel	.010	.25	100	1000
MMP172-C	MLT-S	.75	19	1.72	44	304 Stainless Steel	.010	.25	100	1000
MMP172-C316	MLT-S	.75	19	1.72	44	316 Stainless Steel	.010	.25	100	1000
MMP172W38-C	MLT-S	.38	10	1.72	44	304 Stainless Steel	.010	.25	100	1000
MMP172W38-C316	MLT-S	.38	10	1.72	44	316 Stainless Steel	.010	.25	100	1000
MT350-C	MLT-S	.75	19	3.50	89	304 Stainless Steel	.010	.25	100	1000
MT350-C316	MLT-S	.75	19	3.50	89	316 Stainless Steel	.010	.25	100	1000
MT350W38-C316	MLT-S	.38	10	3.50	89	316 Stainless Steel	.010	.25	100	1000
MT172-C	MLT-S	.75	19	1.72	44	304 Stainless Steel	.010	.25	100	1000
MT172-C316	MLT-S	.75	19	1.72	44	316 Stainless Steel	.010	.25	100	1000
MT172W38-C	MLT-S	.38	10	1.72	44	304 Stainless Steel	.010	.25	100	1000
MT338W21-Q	MLT-S	2.13	54	3.38	86	304 Stainless Steel	.015	.38	25	250
MTB338W21-Q	MLT-S	2.13	54	3.38	86	Brass	.015	.38	25	250
MT350W17-Q	MLT-S	1.73	44	3.50	89	304 Stainless Steel	.015	.38	25	250
MTB350W17-Q	MLT-S	1.73	44	3.50	89	Brass	.015	.38	25	250
MMP338W21-Q	MLT-S	2.13	54	3.38	86	304 Stainless Steel	.015	.38	25	250
MMPB338W21-Q	MLT-S	2.13	54	3.38	86	Brass	.015	.38	25	250
MMP350W17-Q	MLT-S	1.73	44	3.50	89	304 Stainless Steel	.015	.38	25	250
MT1D-Q	MLT-S	1.00 Circular	25	—	—	304 Stainless Steel	.035	.89	25	250
MTB1D-Q	MLT-S	1.00 Circular	25	—	—	Brass	.040	1.02	25	250
MT150D-Q	MLT-S	1.50 Circular	38	—	—	304 Stainless Steel	.035	.89	25	250
MTB150D-Q	MLT-S	1.50 Circular	38	—	—	Brass	.040	1.02	25	250
MT213D-Q	MLT-S	2.13 Circular	54	—	—	304 Stainless Steel	.015	.38	25	250
MTB213D-Q	MLT-S	2.13 Circular	54	—	—	Brass	.015	.38	25	250
AP350HW86-C	MLT-S/H*	.86	22	3.50	89	Aluminum	.015	.38	100	1000

*Galvanic reaction may occur between stainless steel ties and aluminum marker plates in certain environments causing the aluminum to corrode.

PANDUIT® PAN-STEEL® System FOR HARSH ENVIRONMENTS

Stainless Steel Tie Technical Information

Physical Characteristics of Stainless Steel Cable Ties (MLT Series)

PAN-STEEL®	Stainless Steel
Tensile Strength 73° F (23° C)	90,000* PSI
Color	Stainless
Flammability	Non-flammable
Radiation Resistance	2 X 10 ⁸ Rads
Water Absorption	None

PAN-STEEL®	Stainless Steel
Max. Continuous Use Temperature	1000° F (538° C) for 304 & 316 material
Min. Continuous Use Temperature	-112° F (-80° C) for 304 & 316
Ultraviolet Light Resistance	Excellent

* ASTM E8 Test Method

PANDUIT® Stainless Steel Cable Tie and Strapping Approvals

AGENCY	SPEC / APPROVAL	REQUIREMENT	APPLICABLE PRODUCTS
SAE Int'l formerly US MIL	AS23190 formerly MS23109E	Dimensional, visual, vibration, temp. cycling, immersion, melting point	MLT-S & MLT-H Series and heavy cable ties in both 304 & 316 material
Det Norske Veritas	Cert. #E-6540 #E-6539	Salt mist test, tensile test, accelerated aging, vibration tests	MLT-S, MLT-H & MS ties and straps in 316 material
Amer. Bureau of Shipping	Cert. #99-CH18282-X	Mechanical	MLT-S, MLT-H, MLT-H in both 304 & 316 material and MLTC in 316 material
Lloyd's Register of Shipping	Cert. #89/60123(E2)	Material specification, tensile test, vibration tests	All MLT & MS ties and straps in both 304 and 316 material
Bureau Veritas	Cert. #04048/CIB	Material specification, dimensional, visual	MLT-S, MLT-H in 316 material

AGENCY	SPEC / APPROVAL	REQUIREMENT	APPLICABLE PRODUCTS
Underwriters Laboratories	E56854	Dimensional, tensile, temp., cycling, humidity	MLT-S, MLT-H, MLT-WS, & MLTWH in 304, 316, and 321 material
Germanischer Lloyd	Cert. #32666-83HH51796-89HH	Mechanical	All MLT Ties and MS Straps
US Coast Guard	File No.16703/46	Mechanical	MLT-H Series Cable Ties
US Military	MIL-T-81306A MS90387-3	Mechanical	GS4MT Installation tools
RINA	Cert. #ELE71502CS	Mechanical	All MLT ties

Approvals



Military Specification
MIL-S-23190E



LISTED
E56854



Cert. 99CH18282-X



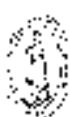
United States
Coast Guard



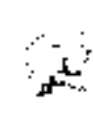
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