

The Low Insertion Fir Tree or LIFT™ family of cable ties, offer an ergonomically advanced solution that provides a low insertion force while maintaining high retention characteristics. The unique LIFT™ flute geometry is designed specifically to meet automotive wire harnessing requirements. LIFT™ cable ties help minimize line worker fatigue. By combining our low insertion fir tree technology with high extraction force characteristics, LIFT™ ties outperform alternative fir tree and arrow style fasteners.

### Features:

- Ergonomically friendly
- Low insertion force (<10 lbf)
- High retention force (>40 lbf)
- Fit a nominal hole range from 6.35mm to 11.5mm, including M6 and M8 threaded holes
- Available in straight 15mm offset and 25mm offset tie styles
- Available with foam gasket

### Benefits:

- Effective in a range of panel thicknesses for round, threaded and hex holes
- Fit small wire bundles while maintaining antislip and rotation requirements
- Reduce line worker fatigue
- Proven reliability in the field
- More durable, cleaner alternative to offset tape-on fasteners

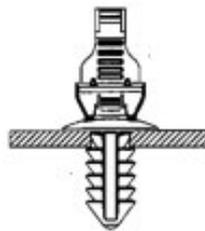


## Technical Information

Part Number	Color	Strap Length (inches/mm)	Typical Mount Size	Panel Thickness	Bundle Diameter		Typical (6.6mm hole / 0.7mm thick panel)	
					Min. (inches/mm)	Max (inches/mm)	Insertion Force (lbf/N)	Retention Force (lbf/N)
<b>Straight Fir - Curve Ties</b>								
20171-0	Black	4.75" / 120mm	6.35mm Hole / M8 Threaded Hole	Max. 7.0mm	1/16" (1.6mm)	1-1/5" (30.0mm)	5/22	60/267
20172-0	Black	4.75" / 120mm	6.35mm Hole / M8 Threaded Hole	Max. 7.0mm	1/16" (1.6mm)	1-1/5" (30.0mm)	5/22	60/267
20154-0	Black	5.5" / 140mm	M6 Threaded Hole	Max. 7.0mm	1/16" (1.6mm)	1-1/2" (38.1mm)	8 / 36	65 / 289
20120-0	Black	5.5" / 140mm	6.6mm Hole / 6.35 Hex	Max. 3.0mm	1/16" (1.6mm)	1-1/2" (38.1mm)	6 / 27	65 / 289
20140-0	Black	5.5" / 140mm	6.6mm Hole / 6.35 Hex	Max. 7.0mm	1/16" (1.6mm)	1-1/2" (38.1mm)	7 / 31	75 / 334
20098-0	Black	7.5" / 190mm	6.6mm Hole / 6.35 Hex	Max. 7.0mm	1/16" (1.6mm)	1-3/4" (44.5mm)	7 / 31	75 / 334
20105-0	Gray	7.5" / 190mm	6.6mm Hole / 6.35 Hex	Max. 7.0mm	1/16" (1.6mm)	1-3/4" (44.5mm)	7 / 31	75 / 334
20110-0	Black	7.5" / 190mm	11.5mm Hole	Max. 8.5mm	1/16" (1.6mm)	1-3/4" (44.5mm)	6 / 27	60 / 267
<b>15mm Offset Ties</b>								
20129-0	Gray	7.5" / 190mm	6.6mm Hole / 6.35 Hex	Max. 7.0 mm	1/16" (1.6mm)	1-3/4" (44.5mm)	6 / 27	60 / 267
20135-0	Black	7.5" / 190mm	6.6mm Hole / 6.35 Hex	Max. 7.0 mm	1/16" (1.6mm)	1-3/4" (44.5mm)	6 / 27	60 / 267
20161-0	Gray	5.5" / 140mm	6.6mm Hole / 6.35 Hex	Max. 7.0 mm	1/16" (1.6mm)	1-1/2" (38.1mm)	6 / 27	60 / 267
20159-0	Black	5.5" / 140mm	6.6mm Hole / 6.35 Hex	Max. 7.0 mm	1/16" (1.6mm)	1-1/2" (38.1mm)	6 / 27	60 / 267
<b>25mm Offset Ties</b>								
20132-0	Black	7.5" / 190mm	6.6mm Hole / 6.35 Hex	Max. 7.0 mm	1/16" (1.6mm)	1-3/4" (44.5mm)	6 / 27	60 / 267
20133-0	Gray	7.5" / 190mm	6.6mm Hole / 6.35 Hex	Max. 7.0 mm	1/16" (1.6mm)	1-3/4" (44.5mm)	6 / 27	60 / 267

Minimum Loop Tensile Strength is 50 lbs for all LIFT™ ties  
Maximum Insertion Force for all LIFT™ ties is 10 lbf  
Minimum Extraction Force for all LIFT™ ties is 40 lbf

Part No. 20098



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