

AUTOMATIC CABLE TIE INSTALLATION SYSTEMS



The complete line of Panduit automatic cable tie installation systems offers a superior solution for high volume harness, assembly, fastening and packaging applications. These ergonomic systems increase productivity, provide consistent performance, and reduce activities that lead to repetitive motion injuries. A variety of tool options provide users with flexible solutions for their unique application needs.



System Highlights

Multiple systems improve productivity, reliability, and versatility:

- Install a cable tie in less than one second
- Multiple cable tie styles and sizes for maximum productivity
- Optional software for advanced system monitoring and performance



Combined, these innovations improve reliability, maximize productivity, and lower installed costs. As with all Panduit products, quality in design and production along with customer service excellence, are assured.

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A.
System
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Selection Guide – Automatic Installation Systems and Reel-Fed Cable Ties

B1.
Cable Ties

Recommended for annual usage of over 250,000 cable ties/year.
Typical applications: High volume OEM/contract manufacturing.

B2.
Cable
Accessories

PAT1M/PAT1.5M Systems

Tool Head for use with MINIATURE Cross Section

Part Number	Description	Page
PAT1M	For miniature cross section up to .82" (21mm) bundle diameter.	B1.117
PAT1.5M	For miniature cable ties up to 1.31" (33mm) bundle diameter.	B1.117

Dispenser

Part Number	Description	Page
PDM	Stationary dispenser.	B1.117
PDM-DI	Dispenser and data interface software.	B1.119
PD-DIA	Data interface accessory – software and interface card.	B1.119

Transfer Hose

Part Number	Description	Page
PHM1	3.2' (1m) transfer hose.	B1.118
PHM2	6.5' (2m) transfer hose.	B1.118
PHM3	10.0' (3m) transfer hose.	B1.118
PHM4	13.1' (4m) transfer hose.	B1.118

Optional System Accessories

Part Number	Description	Page
PDH10-37	Air hose.	B1.118
PL283N1	Filter/regulator.	B1.118
PATMBM	Bench mount and foot pedal.	B1.118

Reel-Fed Cable Ties

MINIATURE Cross Section

Part Number	Description	Color	Page
Barbed Tie – Max. Bundle Dia.: .82" (21mm), 30 lbs.			
BT1M-XMR	Nylon 6.6.	Natural	B1.120
BT1M-XMR0	Weather Resistant Nylon 6.6.	Black	B1.120
BT1M-XMR30	Heat Stabilized Nylon 6.6.	Black	B1.120
Barbed Tie – Max. Bundle Dia.: 1.31" (33mm), 30 lbs.			
BT1.5M-XMR	Nylon 6.6.	Natural	B1.120
BT1.5M-XMR0	Weather Resistant Nylon 6.6.	Black	B1.120
BT1.5M-XMR30	Heat Stabilized Nylon 6.6.	Black	B1.120
BT1.5M-XMR69	Flame Retardant Nylon 6.6.	Natural Ivory	B1.120
All-Nylon Tie – Max. Bundle Dia.: .82" (21mm), 18 lbs.			
PLT1M-XMR	Nylon 6.6.	Natural	B1.121
PLT1M-XMR0	Weather Resistant Nylon 6.6.	Black	B1.121
PLT1M-XMR00	Weather Resistant Nylon 6.6 (Meets Mil Spec).	Black	B1.121
PLT1M-XMR30	Heat Stabilized Nylon 6.6.	Black	B1.121
All-Nylon Tie – Max. Bundle Dia.: 1.31" (33mm), 18 lbs.			
PLT1.5M-XMR	Nylon 6.6.	Natural	B1.121
PLT1.5M-XMR0	Weather Resistant Nylon 6.6.	Black	B1.121
PLT1.5M-XMR00	Weather Resistant Nylon 6.6 (Meets Mil Spec).	Black	B1.121
PLT1.5M-XMR30	Heat Stabilized Nylon 6.6.	Black	B1.121

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PAT2S/PAT3S Systems

Tool Head for use with STANDARD Cross Section

Part Number	Description	Page
PAT2S	For standard cross section up to 2.00" (51mm) bundle diameter.	B1.117
PAT3S	For standard cross section up to 2.75" (70mm) bundle diameter.	B1.117

Dispenser

Part Number	Description	Page
PDS	Stationary dispenser, PAT2S.	B1.117
PD3S	Stationary dispenser, PAT3S.	B1.117
PDS-DI	Dispenser and data interface software.	B1.119
PDS-DIA	Data interface accessory – software and interface card.	B1.119

Transfer Hose

Part Number	Description	Page
PHS2	6.5' (2m) transfer hose.	B1.118
PHS3	10.0' (3m) transfer hose.	B1.118

Dispenser Frame

Part Number	Description	Page
PDSF	Dispenser frame, PAT2S.	B1.118
PD3SF	Dispenser frame, PAT3S.	B1.118

Optional System Accessories

Part Number	Description	Page
PDH10-37	Air hose.	B1.118
PL283N1	Filter/regulator.	B1.118
PAT2SBM	Bench mount and foot pedal for PAT2S and PAT3S.	B1.118

Reel-Fed Cable Ties

STANDARD Cross Section

Part Number	Description	Color	Page
All-Nylon Tie – Max. Bundle Dia.: 2.00" (51mm), 50 lbs.			
PLT2S-VMR	Nylon 6.6.	Natural	B1.122
PLT2S-VMR0	Weather Resistant Nylon 6.6.	Black	B1.122
PLT2S-VMR00	Weather Resistant Nylon 6.6 (Meets Mil Spec).	Black	B1.122
PLT2S-VMR30	Heat Stabilized Nylon 6.6.	Black	B1.122
All-Nylon Tie – Max. Bundle Dia.: 2.75" (70mm), 50 lbs.			
PLT3S-VMR	Nylon 6.6.	Natural	B1.122
PLT3S-VMR30	Heat Stabilized Nylon 6.6.	Black	B1.122

Tool Head – Multiple sizes accommodate a wide variety of applications

- Ergonomic, lightweight design reduces operator fatigue and repetitive motion injuries – no counter balance required
- Right or left hand operation
- Durable, one-piece cable tie tip collector (for cut-off tips)
- Includes tension adjustment
- Built-in safety interlock prevents false triggering if anything obstructs jaw path



PAT1M



PAT1.5M



PAT2S



PAT3S



PAT1.5M-ATM
For Bundling and
Mounting Applications

Part Number	Max. Bundle Dia.		Dispenser/Frame	Transfer Hose	Used with Cable Ties	Std. Pkg. Qty.
	In.	mm				
PAT1M	.82	21	PDM	PHM1, PHM2, PHM3, PHM4	PLT1M-XMR, BT1M-XMR	1
PAT1.5M	1.31	33	PDM		PLT1.5M-XMR, BT1.5M-XMR	1
PAT2S	2.00	51	PDS/PDSF	PHS2, PHS3	PLT2S-VMR	1
PAT3S	2.75	70	PD3S/PD3SF		PLT3S-VMR	1
PAT1.5M-ATM	1.31	33	PDM	PHM1, PHM2, PHM3, PHM4	PLT1.5M-XMR, BT1.5M-XMR	1

Dispensers

- Microprocessor based controller monitors system performance through LCD display; provides production data and reporting, including error detection and cycle count for improved reliability
- Online HELP menu through LCD display in five languages (English, Spanish, German, Italian or French), is user-friendly for quick and simple training



PDM



PDS/PD3S

Part Number	Used with Tool Head	Description	Std. Pkg. Qty.
PDM	PAT1M, PAT1.5M, PAT1.5M-ATM	Stationary dispenser with electronic display. Online help menu. System operates on 65 psig (minimum) non-lubricated filtered air and 100 – 24 FAC/TP or 60 MHz.	1
PDS	PAT2S		1
PD3S	PAT3S		1

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Transfer Hoses



PHM3

Part Number	Used with Tool Head	Part Description	Length		Std. Pkg. Qty.
			Ft.	m	
PHM1	PAT1M, PAT1.5M	Transfers cable tie and signal from dispenser to tool head; electrical connectors designed for easy attachment provide a reliable, secure connection.	3.2	1	1
PHM2			6.5	2	1
PHM3			10.0	3	1
PHM4			13.1	4	1
PHS2	PAT2S, PAT3S		6.5	2	1
PHS3			10.0	3	1

B1.
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C1.
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Duct

Dispenser Frame



PDSF



PD3SF

Part Number	Used with Dispenser	Description	Std. Pkg. Qty.
PDSF	PDS (PAT2S)	Metal frame supports the PDS dispenser for PAT2S above the cable tie reel as ties are loaded into the dispenser; can be used as a freestanding unit or permanently mounted to a bench or cart.	1
PD3SF	PD3S (PAT3S)	Assembly holds cable tie reel and rewinds the packaging paper liner as cable ties are being loaded into the dispenser.	1

C2.
Surface
Raceway

C3.
Abrasion
Protection

C4.
Cable
Management

Optional System Accessories:

Filter/Regulator and Air Supply Hose



PL283N1



PDH10-37

Part Number	Used with Dispenser	Description	Std. Pkg. Qty.
PL283N1	PDM, PDS	Regulates air flow to dispenser. Filter/regulator 25 micron (max.) element, 3/8" ports. Includes a male connector and a 3/8" port.	1
PDH10-37	PDM, PDS	Air hose from filter/regulator to dispenser; 10.0' (3m) – includes standard air fittings.	1

D1.
Terminals

D2.
Power
Connectors

D3.
Grounding
Connectors

E1.
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Bench Mount



PATMBM

Part Number	Used with Tool Head	Description	Std. Pkg. Qty.
PATMBM	PAT1M, PAT1.5M	Allows hands-free operation for high volume usage. Includes bench mount fixture and foot pedal assembly.	1
PATSBM	PAT2S, PAT3S		1

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Data Interface Software and Ethernet Enabled Dispenser

Panduit exclusive Ethernet enabled dispenser and customized data interface software allow production personnel to monitor real-time data in a shop floor environment.

The Ethernet enabled dispenser provides a physical connection between the cable tie installation system and an Industrial Ethernet Network via an RJ45 connection and internal Ethernet card.

- Allows production and/or engineering personnel the capability to measure and track production performance such as job tracking, cycle counts, tool and dispenser serial numbers, and routine maintenance
- Provides the ability to send email notifications for specific system messages
- Data extraction and reporting capabilities on system performance through an exportable electronic log; helps identify operator training needs
- Ability to monitor alerts from remote desktop locations



Part Number	Used with Dispenser	Description	Std. Pkg. Qty.
PDM-DI	PDM	Ethernet enabled PDM dispenser and data interface software.	1
PDS-DI	PDS	Ethernet enabled PDS dispenser and data interface software.	1
PD-DIA	PDM/PDS	Data interface accessory for existing PDM, PDS dispensers; software and network interface card.	1

PAT/Robot Integration Kit

- Used with the PAT1M and PAT1.5M tool heads
- Utilizes the PAT system electronic interface option, PDM-EI, to optimally integrate the PAT system to a robot for a completely automated cable tie installation process
- Significantly reduces labor costs while improving installation quality, reliability, and consistency



PATM-RK



PATM-TT

Part Number	Components	Description	Std. Pkg. Qty.
PATM-RK	Metallic housing	Includes a pneumatic trigger actuator for remote cable tie installation and a mounting bolt pattern to ease PAT tool integration with a robot end effector for a robust and accurate grip.	1
	Transfer hose strain relief kit	Strain relief to maintain transfer hose bend radius reducing tie misfeeds due to sharp hose bend radii during robot motion; also sold separately under part number PATM-RKS (includes two 1-foot strain relief tubes with fastening cable ties).	
	Quick start guides	Provides easily understood electrical, network, and mechanical installation instructions minimizing the robot integrator's design time and simplifying the integration process.	
	Best practices document	List of best practices when integrating the PAT system to a robot optimizing system performance and productivity.	
PATM-TT	Test tool with rubber jaws	This test tool is used during robot cable tie installation programming, providing a safe method to debug robot software without damaging actual PAT tools (test tool is not provided with the PAT/Robot Integration Kit).	1
PATM-RKS	Transfer hose strain relief kit	Strain relief to maintain transfer hose bend radius reducing cable tie misfeeds due to sharp hose bend radii during robot motion; kit is also included on the PATM-RK kit or sold separately (includes two 1-foot strain relief tubes with fastening cable ties).	1

A. System Overview



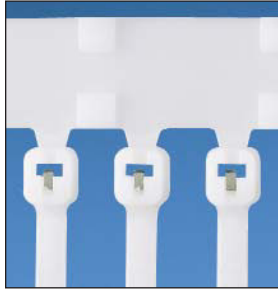
BT-XMR Reel-Fed Cable Ties

B1. Cable Ties

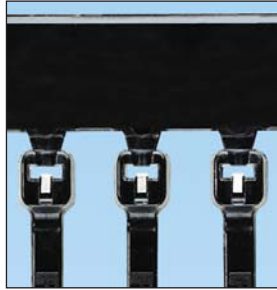
- Continuously molded cable ties (5,000 ties/reel) provide continuous feeding for high productivity and reduced downtime due to fewer reel changes
- Reel-fed cable ties with exclusive stainless steel locking barb and 30 lbs. minimum loop tensile strength permit higher tension for demanding applications
- Metal locking barb and tie body design provide greater bundle tightness, reducing both rotational and lateral movement of the tie
- Reel-fed cable ties in Nylon 6.6 material (Natural color) are UL Listed for use in plenum or air handling spaces per NEC

B2. Cable Accessories

B3. Stainless Steel Ties



BT_XMR



BT_XMR (0, 30)

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C2. Surface Raceway

C3. Abrasion Protection

C4. Cable Management

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Part Number	Tie Style	Material	Color	Max. Bundle Dia.		Length		Width		Min. Loop Tensile Str.	
				In.	mm	In.	mm	In.	mm	Lbs.	N
Reel-Fed Cable Ties for PAT1M System											
BT1M-XMR	Barbed	Nylon 6.6	Natural	.82	21	4.0	102	.100	2.5	30	133
BT1M-XMR0	Barbed	Weather Resistant Nylon 6.6	Black	.82	21	4.0	102	.100	2.5	30	133
BT1M-XMR30	Barbed	Heat Stabilized Nylon 6.6	Black	.82	21	4.0	102	.100	2.5	30	133

Reel-Fed Cable Ties for PAT1.5M System											
BT1.5M-XMR	Barbed	Nylon 6.6	Natural	1.31	33	5.6	142	.100	2.5	30	133
BT1.5M-XMR0	Barbed	Weather Resistant Nylon 6.6	Black	1.31	33	5.6	142	.100	2.5	30	133
BT1.5M-XMR30	Barbed	Heat Stabilized Nylon 6.6	Black	1.31	33	5.6	142	.100	2.5	30	133



PLT-XMR Reel-Fed Cable Ties

- Continuously molded cable ties (5,000 ties/reel) provide continuous feeding for high productivity and reduced downtime due to fewer reel changes
- All-nylon, one-piece locking ties with 18 lbs. minimum loop tensile strength in miniature cross section
- Available in a variety of colors and materials
- Reel-fed cable ties in Nylon 6.6 material (except black) are UL Listed for use in plenum or air handling spaces per NEC



Part Number	Tie Style	Material	Color	Max. Bundle Dia.		Length		Width		Min. Loop Tensile Str.	
				In.	mm	In.	mm	In.	mm	Lbs.	N
Reel-Fed Cable Ties for PAT1M System											
PLT1M-XMR	All-Nylon	Nylon 6.6	Natural	.82	21	4.0	102	.100	2.5	18	80
PLT1M-XMR0	All-Nylon	Weather Resistant Nylon 6.6	Black	.82	21	4.0	102	.100	2.5	18	80
PLT1M-XMR00*	All-Nylon	Weather Resistant Nylon 6.6	Black	.82	21	4.0	102	.100	2.5	18	80
PLT1M-XMR1	All-Nylon	Nylon 6.6	Brown	.82	21	4.0	102	.100	2.5	18	80
PLT1M-XMR2	All-Nylon	Nylon 6.6	Red	.82	21	4.0	102	.100	2.5	18	80
PLT1M-XMR3	All-Nylon	Nylon 6.6	Orange	.82	21	4.0	102	.100	2.5	18	80
PLT1M-XMR4Y	All-Nylon	Nylon 6.6	Yellow	.82	21	4.0	102	.100	2.5	18	80
PLT1M-XMR5	All-Nylon	Nylon 6.6	Green	.82	21	4.0	102	.100	2.5	18	80
PLT1M-XMR6	All-Nylon	Nylon 6.6	Blue	.82	21	4.0	102	.100	2.5	18	80
PLT1M-XMR7	All-Nylon	Nylon 6.6	Purple	.82	21	4.0	102	.100	2.5	18	80
PLT1M-XMR8	All-Nylon	Nylon 6.6	Gray	.82	21	4.0	102	.100	2.5	18	80
PLT1M-XMR10	All-Nylon	Nylon 6.6	White	.82	21	4.0	102	.100	2.5	18	80
PLT1M-XMR30	All-Nylon	Heat Stabilized Nylon 6.6	Black	.82	21	4.0	102	.100	2.5	18	80

Reel-Fed Cable Ties for PAT1.5M System

PLT1.5M-XMR	All-Nylon	Nylon 6.6	Natural	1.31	33	5.6	142	.100	2.5	18	80
PLT1.5M-XMR0	All-Nylon	Weather Resistant Nylon 6.6	Black	1.31	33	5.6	142	.100	2.5	18	80
PLT1.5M-XMR00*	All-Nylon	Weather Resistant Nylon 6.6	Black	1.31	33	5.6	142	.100	2.5	18	80
PLT1.5M-XMR30	All-Nylon	Heat Stabilized Nylon 6.6	Black	1.31	33	5.6	142	.100	2.5	18	80

*Military grade weather resistant material.

Note: PLT_XMR cable ties (natural, 00, and colors) are Class 2 Mil. Spec. per SAE-AS23190A and SAE-AS33671.

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PLT-VMR Reel-Fed Cable Ties

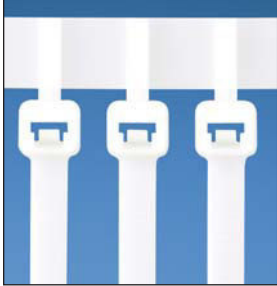
- Continuously molded cable ties (2,500 ties/reel) provide continuous feeding for high productivity and reduced downtime due to fewer reel changes
- All-nylon, one-piece locking ties with 50 lbs. minimum loop tensile strength in standard cross section for larger bundles up to 1.94" (49mm) diameter
- Reel-fed cable ties in Nylon 6.6 material (Natural color) are UL Listed for use in plenum or air handling spaces per NEC

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				In.	mm	In.	mm	In.	mm	Lbs.	N	
Reel-Fed Cable Ties for PAT2S System												
PLT2S-VMR	All-Nylon	Nylon 6.6	Natural	1.94	49	8.1	206	0.190	4.8	50	222	
PLT2S-VMR0	All-Nylon	Weather Resistant Nylon 6.6	Black	1.94	49	8.1	206	0.190	4.8	50	222	
PLT2S-VMR30	All-Nylon	Heat Stabilized Nylon 6.6	Black	1.94	49	8.1	206	0.190	4.8	50	222	
Reel-Fed Cable Ties for PAT3S System												
PLT3S-VMR	All-Nylon	Nylon 6.6	Natural	2.75	70	11.3	287	0.190	4.8	50	222	
PLT3S-VMR30	All-Nylon	Heat Stabilized Nylon 6.6	Black	2.75	70	11.3	287	0.190	4.8	50	222	

Note: PLT_VMR Nylon 6.6 cable ties are Class 2 Mil. Spec. per SAE-AS23190A and SAE-AS33671.