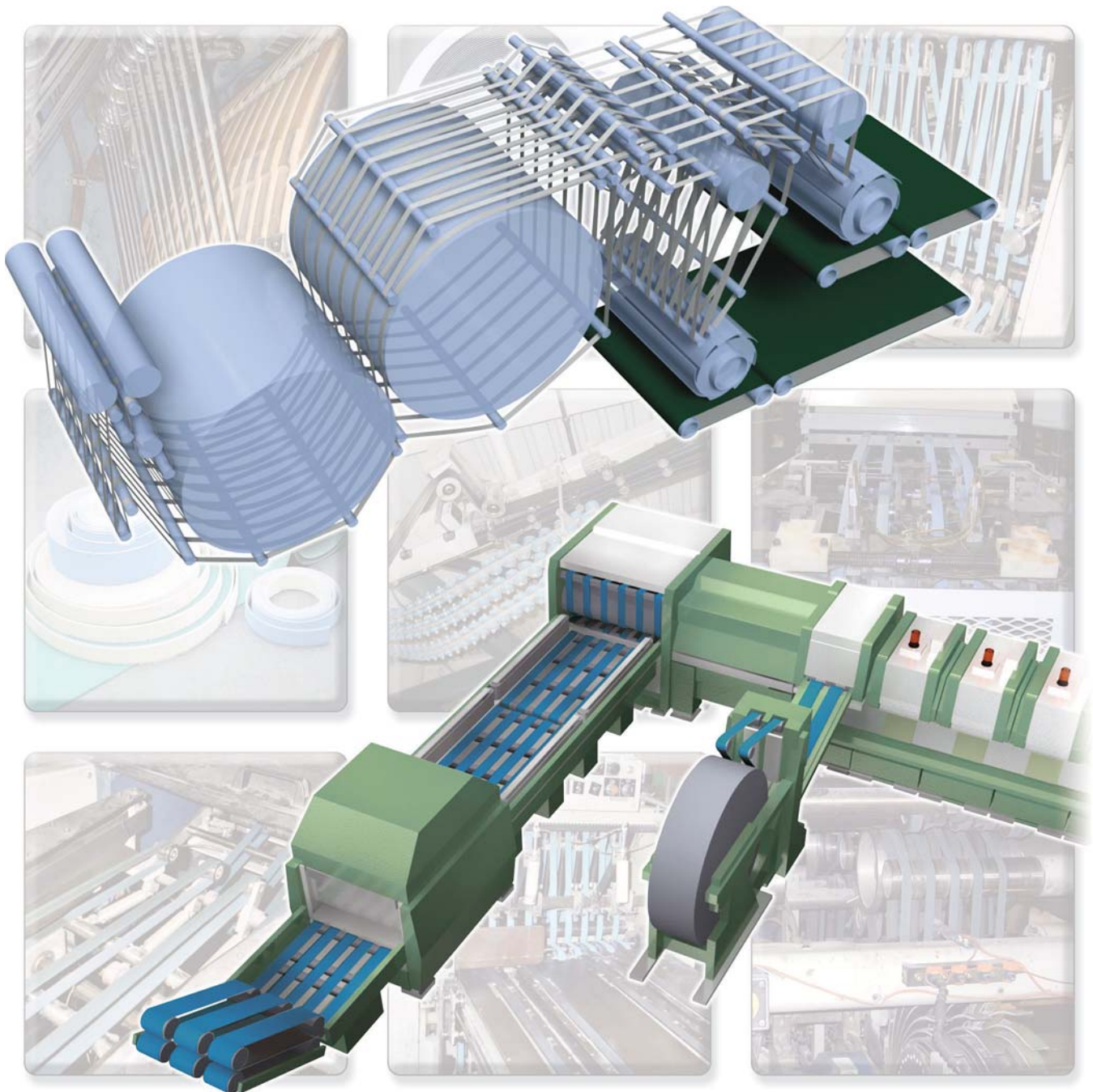




# Belts for Printing and Applications Guide for the **Printing Industry**

**NITTA**

U-PI-08



## Who We Are

- Technology leader in **finger spliceable polyester power transmission machine tapes and belts**
- Your source for reliable **high-strength skived nylon core tapes and belts with highly abrasion-resistant rubber covers**
- Provider of the unique **finger spliceable Aramid Cord V-Guide unitized polyurethane overhead conveyor belt**

## Printing Businesses Who Use Our Products

- **Commercial Printers**
- **Publication Printers**
- **Insert Advertising Printing**
- **Direct Mail Printing**
- **Newspapers**
- **Business Forms Printing** (i.e., Check Printers)
- **Flexible Packaging Printing** (i.e., Film, Foil and Paper)
- **Saddle-Stitching and Perfect Binding Finishing Operations**  
(Independent of Printing Firms)



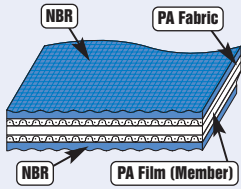
## The NITTA Advantage – Innovative Products and Solutions

- **High quality products** – rugged, durable, long-lasting and quick to install. Nitta belting **minimizes costly machine downtime** to maximize productivity and revenue, allowing printers to be more competitive in today's demanding economy.
- **Customer-back approach** – Nitta partners with end users and OEMs to diagnose trouble spots on machines and throughout facilities. **Nitta works with customers to find the right belting for each application**, even creating new types of belting when needed.
- **Dedicated research** – Nitta R&D has developed **exclusive products** for the printing industry, including belts **designed to overcome** the degrading **overheating conditions** encountered in high-speed press folders and bindery machinery
- **“Value-added” solutions** – Nitta belts **survive heavy-duty loads** and **faster machine speeds**, where other power transmission products fail early and often

**Nitta ensures that printers realize higher profits and greatly improved efficiencies by providing extended service-life and easy installation**

**PolyBelt™**

**Super-strong nylon core, extended-life skived joining, high operating duty cycles**



- **High Strength, Long Life** – High flexibility and rugged design for heavy-duty applications. Nylon core accommodates shock loads, and wide choice of covers provide abrasion resistance, giving long, dependable service.
- **Quick Splice Option** – Much of the PolyBelt used in printing can be joined in **just three minutes**, plus four for cooling, with Nitta's quick option for skive-splicing
- **Electrically Conductive** – Materials with anti-static properties are used in specific layers to provide permanent conductivity, eliminating build-up of electro-static charges
- **Environmental Resistance** – Selected materials are not susceptible to oil contamination. They demonstrate high energy efficiency and maintain high friction resistance. Covers and nylon core are designed for printing and paper processing with high tear resistance in folder, sheeter and finishing line paper jams.

Standard Elongation = 1-2%

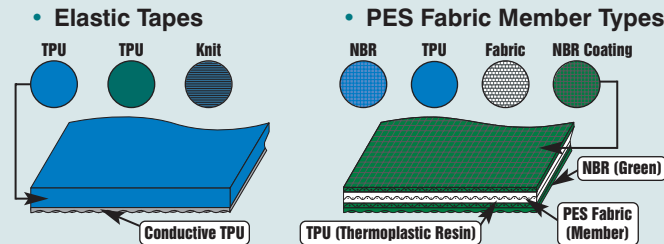
**Nomenclature**

Member Film Thickness in mm x 1000  
(.5 x 1000 = 500)

Surface:  
SG: Coated Fabric L: Light  
M: Medium H: Heavy

**PolySprint™**

**Finger-spliceable, easy installation, quick-melt urethane, high-strength polyester core**



- **Elastic Tapes**
- **PES Fabric Member Types**
- **Ease of Joining** – A single action Nitta cutter eliminates the tedious task of multiple cuts that can lead to mismatched and non-aligned joints. Finger-splice joints are completed without adhesive. Nitta presetter guide rails ensure alignment.
- **Dimensional Stability** – Polyester fabric used as tension member provides high dimensional stability. Selected materials are temperature and humidity tolerant.
- **Abrasion Resistance** – High temperature friction resistant covers and fabric exclusively designed for printing and paper

Standard Elongation = 5%

Standard Elongation = 1%

**Nomenclature**

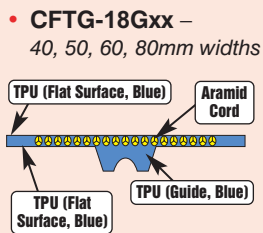
Surface:  
LA: Blue NBR on Both Surfaces  
TTE: Special Fabric  
FZ: Special Fabric + Green NBR on Back Surface

Belt Thickness in mm x 10  
(1.4 x 10 = 14)

Belt Tension in N/mm  
(1% Elongation at 200 hrs running)

**Aramid Cord V-Guide**

**Unique molded V-Guide design for reliable long-term product delivery**

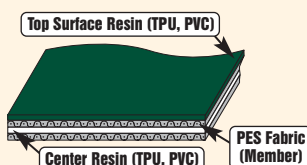


- **CFTG-18Gxx** – 40, 50, 60, 80mm widths
- **Ease of Joining** – Finger-splice, quick-melt process (no adhesive). Special Nitta presetter guide rails with V-Guide notch ensure alignment of prepared ends.
- **Dimensional Stability** – Aramid cord is used as the tension member to provide strength and high dimensional stability. Resistant to oil, temperature and humidity.
- **High Strength, Long Life** – High flexibility and rugged design for heavy-duty use. Integral V-Guide designed for continuous use over small high-speed pulleys.
- **Environmental Resistance** – High energy efficiency, high temp. friction resistance.

Standard Elongation = .5%

**PVC, PU & Rubber Conveyor Belting**

**Hundreds of configurations, wide variety of surfaces**



**Nomenclature**

Belt Construction:  
A: Resin/Fabric  
K: Not Anti-Static  
D: Fabric/Fabric

Strength (N/mm ÷ 10)  
GUH: Green Polyurethane (Hard)  
GUF: Green TPU + Fluororesin  
GUTW: Green TPU + TW

Surface:  
GUH: Green Polyurethane (Hard)  
GUF: Green TPU + Fluororesin  
GUTW: Green TPU + TW

- **Extensive Selection** – Nitta **NLG** (New Light Grip) and other product categories offer many possible options
- **Many Applications** – Light-/medium-duty use throughout pressrooms and binderies

Standard Elongation = .5% (Depending on type)



## PolyBelt™ Application and Specification Data

### Application Data

***Super-strong nylon core, highly abrasion-resistant extended-life rubber covers, high-operating duty cycles***

PolyBelt outperforms all competitive nylon core skived products and is available in a wide range of styles to suit numerous printing applications. PolyBelt machine tapes and belts are widely used in gravure, web offset, sheetfed, and bindery operations where endless applications permit the use of this wear-resistant product. PolyBelt can sustain high abrasion friction machine tape and belt installations better than any competitive product.



### Specifications – Nylon Core Film Types

***Perfectly suited for light- to medium-duty high-speed small pulley diameter applications***

Belt Style	Thickness (mm)	Min. Pulley (mm)	Antistatic	Shaft Load @ 1% (N/mm)	Applications
<b>KCS-350S</b>	1.1	30	yes	6.8	medium-duty conveyor, stacker
<b>KSG-250</b>	.85	20	no	3.0	medium-duty accum., slider-table
<b>TAIR-350</b>	1.15	30	yes	5.2	medium-duty accum., slider-table
<b>TTA-500</b>	1.3	40	no	7.5	medium-duty accum., slider-table
<b>TTA-1000</b>	1.8	60	no	15	heavy-duty accum., slider-table
<b>SG-350</b>	.95	25	yes	5.2	medium-duty accum., stacker
<b>SG-500</b>	1.1	35	yes	7.5	heavy duty accum., stacker
<b>SG-750-2P</b>	1.1	50	no	11.2	transport for cold set ink

### Specifications – Nylon Core Film Carboxylated Rubber Types

***Best applied in high-speed medium- to extreme-duty small/medium/large pulley diameter applications. They are laterally stable and maintain a high coefficient of friction.***

Belt Style	Thickness (mm)	Min. Pulley (mm)	Antistatic	Shaft Load @ 1% (N/mm)	Applications
<b>LA-250</b>	1.25	15	yes	3	light-duty stacker
<b>LA-350</b>	1.4	25	yes	5.2	medium-duty stacker
<b>LA-350N12</b>	1.35	25	yes	5.2	medium-duty accum., stacker
<b>LA-500</b>	1.55	35	yes	7.5	heavy-duty transport
<b>SGLA-350S</b>	1.2	30	yes	6.8	light-duty conveyor, stacker
<b>MA-500</b>	2.5	35	yes	7.5	heavy-duty transport
<b>TFL-10S</b>	2.6	70	yes	19.5	heavy-duty transport
<b>GMTA-500</b>	1.9	40	yes	7.5	heavy-duty conveyor, slider table
<b>HUT-250</b>	1.3	20	yes	3	medium-duty accumulation



### Application Data

**High-strength polyester core, finger-spliceable quick-melt urethane, and easy installation**

PolySprint outperforms all competitive finger-spliceable products and is available in a wide range of styles. PolySprint machine tapes and belts are widely used in gravure, web offset, sheetfed, and bindery operations. PolySprint products greatly reduce costly downtime when an alternative replacement is required for time-consuming skived machine tape installations.

### Specifications – Elastic Types

*Perfectly suited for light- to medium-duty high-speed small pulley diameter applications. Endless applications can be reliably accommodated in bindery machines when take-up adjustments are not available.*

Belt Style	Thickness (mm)	Min. Pulley (mm)	Antistatic	Tension @ 5% (N/mm)	Applications
TA	1.2	25	yes	0.7	medium-duty accum. & transport
TC	1.4	40	yes	0.8	medium-duty accum. & transport
STC-10	1.35	25	yes	0.5	light-duty accum. & slider-table
DBTW-0514	1.4	25	yes	0.5	medium-duty conveyor & transport

### Specifications – Polyester Fabric Types

*Best applied in high-speed medium- to extreme-duty applications. They are dimensionally stable, not affected by humidity, and demonstrate high friction (heat) resistance.*

Belt Style	Thickness (mm)	Min. Pulley (mm)	Antistatic	Tension @ 1% (N/mm)	Applications
DB-4E14	1.4	25	yes	4	medium-duty stacker & transport
FZ-5E12	1.25	35	yes	5	medium-duty transport, bookbinding
GLTE-4E18	1.8	40	yes	4	heavy-duty accum., slider-table
LA-4E14	1.4	25	yes	4	heavy-duty stacker & transport
LA-15E20	2.0	40	yes	15	heavy-duty accumulation
TTE-4E18	1.8	40	yes	4	heavy-duty high-speed folder
TTF-4E10	1.0	15	yes	4	heavy-duty high-speed folder & transport

### Specifications – Polyester Belts with Textured Covers (Conveyor)

*Utilized in medium- to heavy-duty delivery conveyor applications: press folder delivery and streamfeeder delivery in binderies*

Belt Style	Thickness (mm)	Min. Pulley (mm)	Antistatic	Working Load* @ 1% (N/mm)	Applications
BLM-7A	1.0	20	yes	4	light-duty accumulation, slider-table
DGGP-16A	2.8	50	yes	10	medium-duty, slider-table
GYLD-12AK	2.2	30	no	8	heavy-duty, slider-table

\*Working Load = Static Tension

## Belts for Printing Press

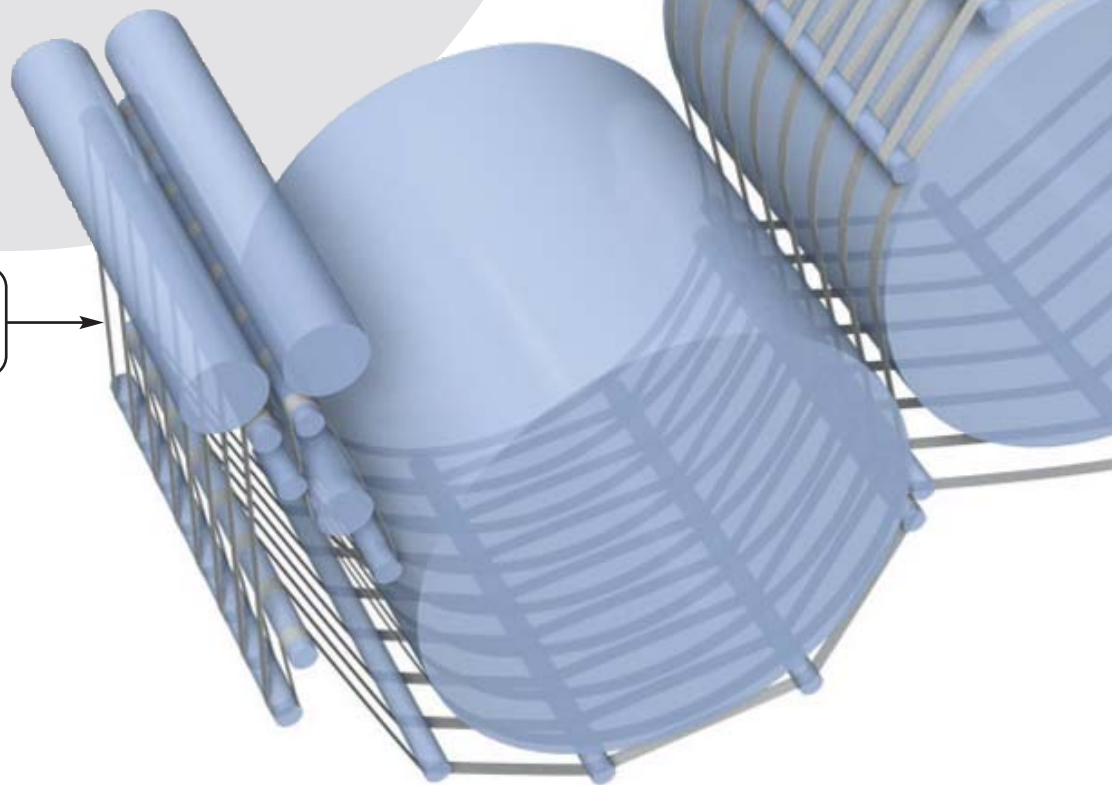
**Abrasion Resistance**

**High Accuracy  
in Conveyance**

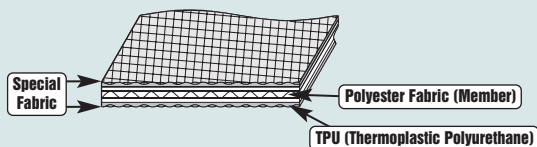
**Long Life**

**No. 1:  
Acceleration Part  
(Short/Long)**

**No. 2:  
Delivery Part**

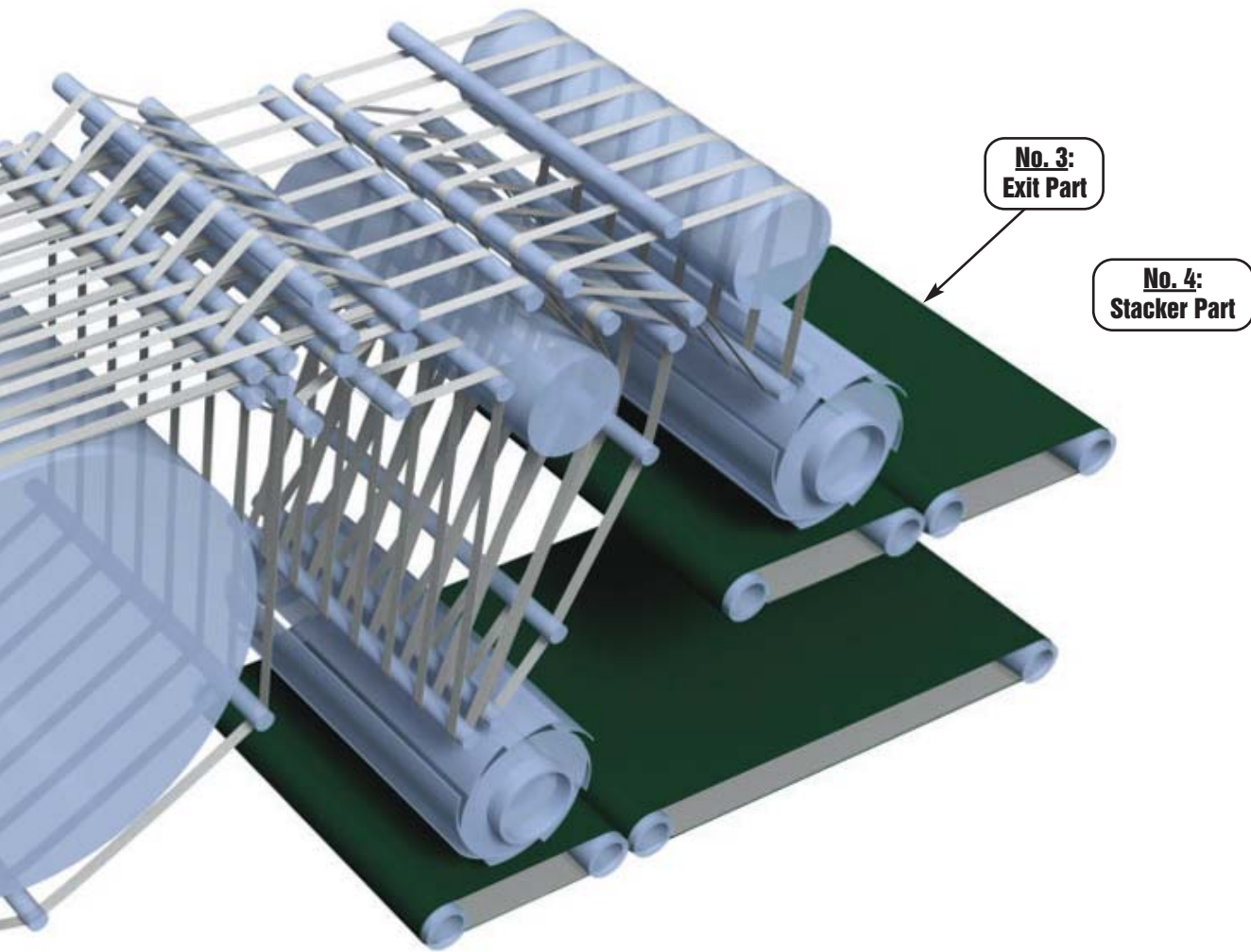


### *PolySprint™* TTE-4E18



- Highly abrasion-resistant fabric on the surface
- Polyester fabric member protected by the inner layers

**Prevent drastic  
tension change due  
to worn fabric on  
the surface**



### Gravure Rotary Press

No.	Part	Recommended Belt Type	Features
1	Acceleration (Short/Long)	PolySprint TTE-4E18	Durable joints and abrasion-resistant covers
2	Delivery	PolySprint TTE-4E18	Durable joints and abrasion-resistant covers
3	Exit	Conveyor	Strong grip due to coefficient of friction (depending on type), general use
4	Stacker	PolySprint FZ-5E12, PolyBelt SG-500, etc.	Moderate slip, abrasion resistance, flange resistance, high tension

### Offset Sheet-Fed Press

Part	Recommended Belt Type	Features
Sheet Feeder	PolyBelt SG type, KCS-350S, etc., PolySprint FZ-5E12, TTF-4E10, etc.	Abrasion resistance, stable friction coefficient

### Offset Rotary Press

Part	Recommended Belt Type	Features
Folder	PolyBelt SG type, KCS-350S, SGLA-350S, L type, etc.	Moderate slip, abrasion resistance, flange resistance
Chopper	PolySprint FZ-5E12, PolyBelts	Moderate slip, abrasion resistance, flange resistance, high tension
Exit	Conveyor	Strong grip due to coefficient of friction (depending on type), general use
Stacker	PolySprint FZ-5E12, PolyBelt SG-500, etc.	Moderate slip, abrasion resistance, flange resistance, high tension



**Features:**

**Friction Coefficient Suitable for Converting Paper**

- Stable conveyance, abrasion resistance

**Soft Fabric on the Surface Avoids Damage to Conveyed Items**

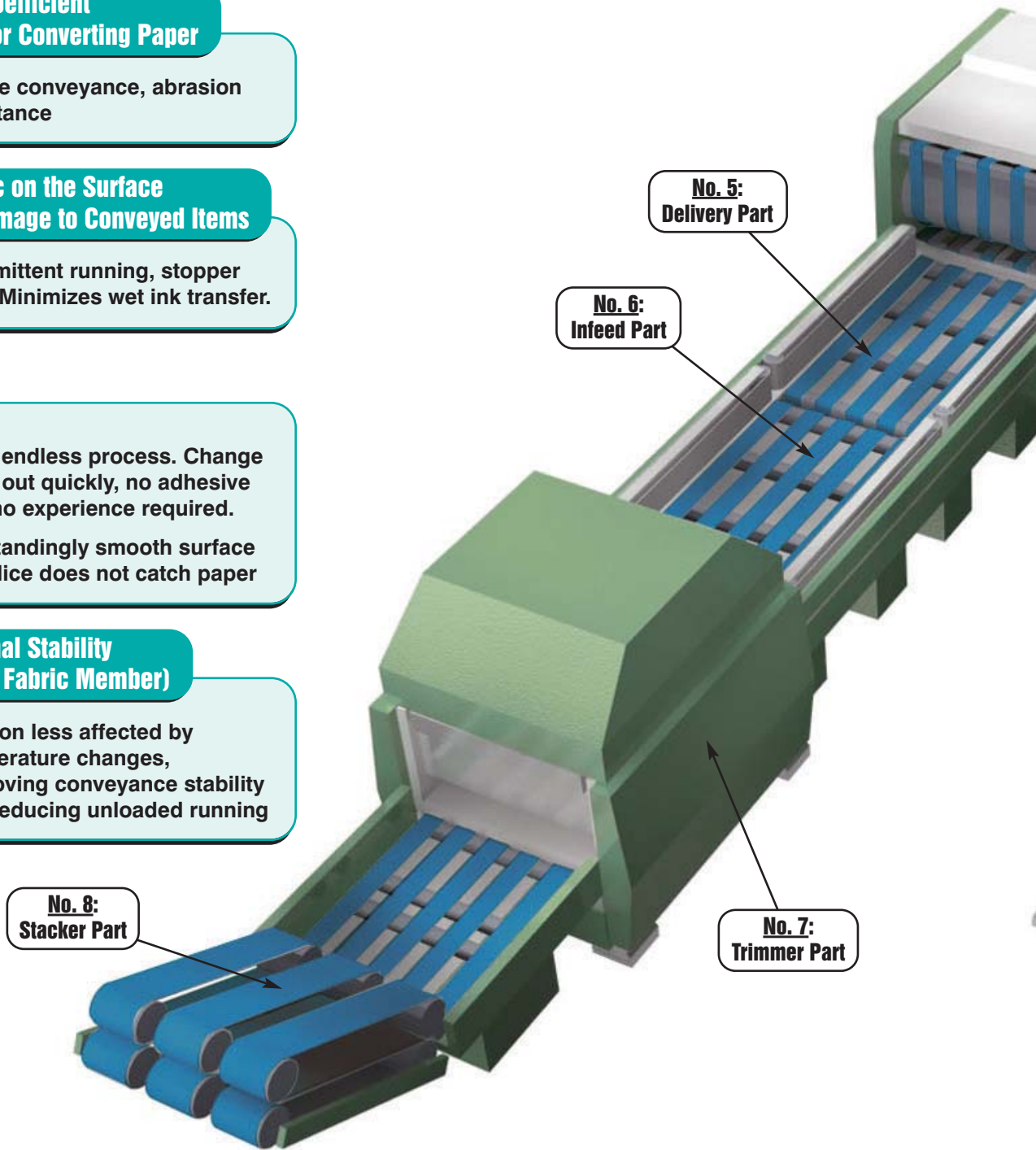
- Intermittent running, stopper part. Minimizes wet ink transfer.

**Finger Joints**

- Easy endless process. Change belts out quickly, no adhesive and no experience required.
- Outstandingly smooth surface of splice does not catch paper

**Dimensional Stability (Polyester Fabric Member)**

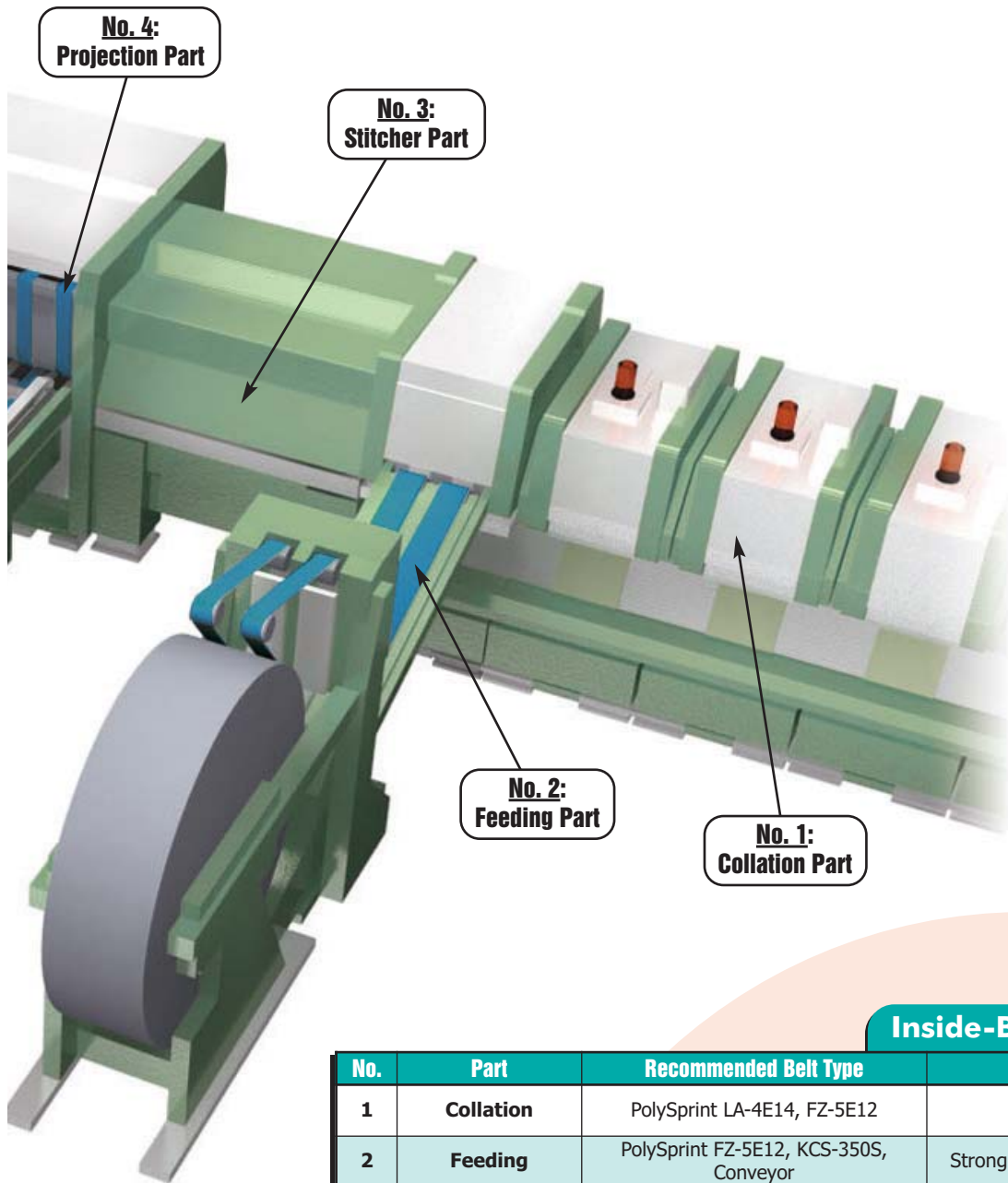
- Tension less affected by temperature changes, improving conveyance stability and reducing unloaded running



**Collator**

Part	Recommended Belt Type	Features
Vertical Conveyance	PolySprint LA-4E14, SLA-8E14	Stable friction coefficient
Exit	PolySprint TA, etc.	Fixed pulley shafts, stable tension





## Inside-Binding Bookbinder

No.	Part	Recommended Belt Type	Features
1	Collation	PolySprint LA-4E14, FZ-5E12	Bend resistance
2	Feeding	PolySprint FZ-5E12, KCS-350S, Conveyor	Strong grip due to coefficient of friction
3	Stitcher	_____	_____
4	Projection	PolySprint FZ-5E12	Strong grip, abrasion resistance
5	Delivery	PolySprint FZ-5E12	Stable friction coefficient, flange resistance
6	Infeed	PolySprint FZ-5E12, LA-4E14	Stable friction coefficient, twist resistance
7	Trimmer	PolySprint TTF-4E10, FZ-5E12	Scratch resistance, bend resistance
8	Stacker	PolySprint FZ-5E12	Stable friction coefficient, flange resistance

## Box-Folder

Part	Recommended Belt Type	Features
Feeding	PolySprint LA-4E14, SLA-8E14, FZ-5E12, PolyBelts	Stable friction coefficient
Chopper	PolySprint FZ-5E12, etc., PolyBelts	Moderate slip, abrasion resistance, flange resistance, high tension

**Aramid Cord V-Guide Belt CFTG-18G - Application and Specification Data**

**For overhead conveying of signatures to stackers and finishing machinery; for streamfeeders and trimmers in binderies**

Nitta's uniquely designed Polyurethane V-Guide Aramid Cord conveyor belt has repeatedly proven its superiority over every competitive belt used in the printing industry. No other belt matches the integrity of this rugged heavy-duty belt with its integral, molded-in guide. The belt is an extrusion that is injection molded in our plant to exacting standards to meet the requirements of the printing industry.



Belt Style	Width (mm) xx denotes	Thickness (mm) belt/total	Min. Pulley (mm)	Tension @ 0.5% (N/mm)	Tension Member
<b>CFTG-18Gxx</b>	40, 50, 60, 80	2.4 / 7.5	90	18	Aramid Cord

**Endless Tools for Aramid Cord V-Guide Belt CFTG-18G**

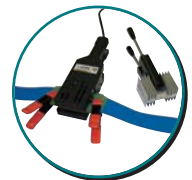
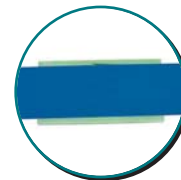
	Item and Type	Appearance	Features	Max. Width (mm)	Max. Thick. (mm)	Size (mm)			Wt. (kg)	Finger Length x Pitch	Power	Temp. (°C)
						Width	Length	Height				
<b>Finger Puncher</b>	<b>FP-120-10-80G</b> Finger Puncher		Designed with slot to fit molded v-guide when punching fingers	80	8	230	610	260	10.8	120 x 10	N/A	N/A
<b>Heat Press</b>	<b>PCF-2210</b> Heat Press		Automated heating and cooling press for joining CFTG	80	8	250	280	180	9	120 x 10	110V or 220V	~200
<b>Other Tools</b>	<b>Gammerler Presetter</b>		Guide rails to hold joint straight when pressing, slot for v-guide	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A



**Quick and Easy Endless (No Experience Required)**

**Finger Joints (No Adhesive Needed)**

*PolySprint™ tools make replacing broken belts quick and easy, with minimal downtime and no need to disassemble the machine*





**Endless Tools for PolySprint™**

	Item and Type	Appearance	Features	Max. Width (mm)	Max. Thick. (mm)	Size (mm)			Wt. (kg)	Finger Length x Pitch	Power	Temp. (°C)
						Width	Length	Height				
<b>Finger Puncher</b>	<b>FP-30-10-50N</b> Finger Puncher		Single action punching system	50	2.0	135	400	390	3.4	30 x 10	N/A	N/A
	<b>FP-30-10-100</b> Finger Puncher		Single action punching system	100	2.0	200	500	504	7.0	30 x 10	N/A	N/A
	<b>FP-70-10-50</b> Finger Puncher		Precise indexing system	50	6.0	180	600	250	9.0	70 x 10	N/A	N/A
	<b>FP-120-10-50</b> Finger Puncher									120 x 10		
	<b>FP-70-10-100</b> Finger Puncher		Precise indexing system	100	6.0	230	610	250	10.4	70 x 10	N/A	N/A
	<b>FP-120-10-100</b> Finger Puncher									120 x 10		

Endless Tools for *PolySprint™*

Item and Type	Appearance	Features	Max. Width (mm)	Max. Thick. (mm)	Size (mm)			Wt. (kg)	Finger Length x Pitch	Power	Temp. (°C)
					Width	Length	Height				
<b>NPS-3050 H1</b> Heat Press		Heat press with digital temperature readout	50	2.0	84	250	100	1.5	30 x 10	100V	~200
<b>NPS-3050 H2</b> Heat Press										200V	
<b>NPS-0310 H1</b> Heat Press		Heat press with digital temperature readout	100	2.0	107	365	107	4.1	30 x 10	100V	~200
<b>NPS-0310 H2</b> Heat Press										200V	
<b>PCF-157D-1</b> Heat Press		Heat press with digital temperature readout	50	6.0	165	325	122	3.2	70 x 10 120 x 10	100V	~200
<b>PCF-157D-2</b> Heat Press										200V	
<b>NPS-3050C</b> Cooling Press		Cooling press for finger joints – no power required	50	2.0	80	224	92	0.6	30 x 10	N/A	N/A
<b>NPS-0310C</b> Cooling Press		Cooling press for finger joints – no power required	100	2.0	85	311	102	2.4	30 x 10	N/A	N/A
<b>PCF-157C</b> Cooling Press		Cooling press for finger joints – no power required	50	6.0	165	325	122	2.4	70 x 10 120 x 10	N/A	N/A
<b>Presetter</b>		Guide rails to hold joint straight when pressing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Clamps</b> (2 Pieces)		Clamps for holding presetter together when pressing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>PolySprint Toolkit</b> Complete 30mm Finger Joining Kit		FP-30-10-50N, NPS-3050H, NPS-3050C, Presetter, Clamps and Case	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Endless Tools for *PolyBelt™*

Item and Type	Appearance	Features	Max. Width (mm)	Max. Thick. (mm)	Size (mm)			Wt. (kg)	Finger Length x Pitch	Power	Temp. (°C)
					Width	Length	Height				
<b>S-300R</b> PolyBelt Skiver		Lightweight portable skiver, designed to skive all Nitta PolyBelt	300	7.0	533	660	355	20.9	N/A	120V	N/A
<b>PP-103</b> PolyBelt Press		Highly reliable and widely accepted	100	5.0	140	295	150	3.1	N/A	100V or 200V	110

**Additional tools and accessories, not shown here, may also be available. Please consult factory for available tools and accessories, and for pricing.**

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