

IP

EE

II

Protezioni
Elaborazioni
Industriali





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Per i dettagli vedere pagine 56 e 57 e aggiornamenti sul sito www.pei.it

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For further details please consult pages 56 and 57 and updates on our website www.pei.eu

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Para más detalles, consulte las páginas 56 y 57 y eventuales actualizaciones en nuestro sitio www.pei.eu

Daha fazla bilgi için sayfa 56 ve 57'ye, güncellemeler için www.pei.eu web sitemize bakınız.

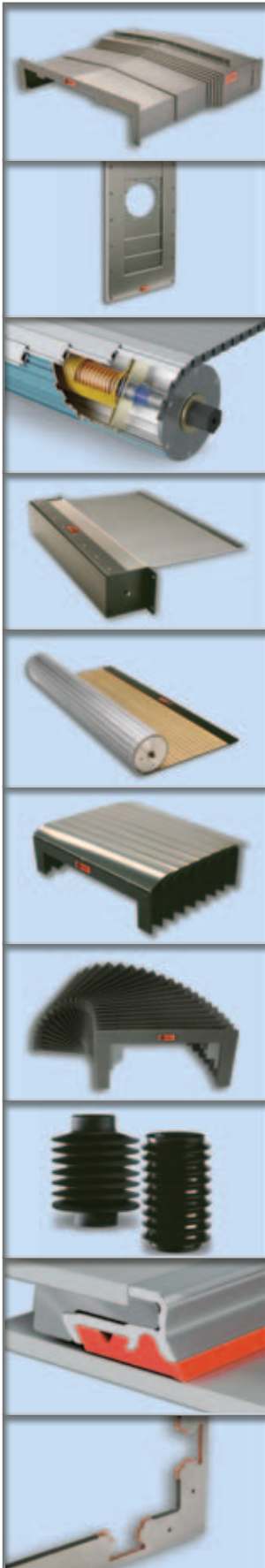
Více informací naleznete na stranách 56 a 57, jakož i na naší neustále aktualizované webové stránce www.pei.eu



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About us



Innovation, quality and constant attention to containing sales prices are the driving values of the **P.E.I. Group**, a leader in Italy and Europe in producing protection for machine tools.

The experience gained in its thirty years in the industry has allowed the Group to rely upon a blend of commercial and managerial skills and technical production know-how. This is accompanied by constant attention to technical innovation, which has led to the Group registering over 50 international patents as at 2014.

In order to offer bellows, aluminium carpets, roll-up covers and telescopic covers that are able to respond promptly to the evolving demands of the market, **P.E.I. Group** invests over 4% of its annual turnover into Research and Development.

The Group's trump card has always been its determination to guarantee customers the best possible service. The Group manages the entire production process: from the initial "tailor-made" design, to finding the most appropriate technical solution and then manufacturing and delivering the product.

The constant, sustained investments in optimising production processes are the Group's key in offering quality products at very competitive prices.

P.E.I. Group's successful strategy sprang intuitively from the founding partners in recognising the importance of workplace safety, during the 1980s which led to the development of protection for the machine tool market.

In recent years, the Group has been a major player in strong market growth, almost doubling its turnover.

Today it is one of the leaders in the Italian market, with a share in excess of 50%.

The Bologna-based Group has 300 workers, who operate at five production sites:

P.E.I. Srl (based in Calderara di Reno, Bologna),

Zanini S.r.l., which produces light structural work **(based in Zola Predosa, Bologna)**

S.P.E.R. S.r.l., a company which produces glued bellows, circular sewn and heat-sealed bellows, and telescopic steel protections **(based in Cremona)**.

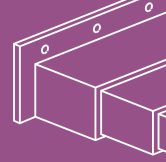
In 2011 the production of bellows for buses started in the new Factory in the **Republic of Serbia** and in 2013 an identical production started in **Brazil**.

A contributing factor to the success of the Group is its widespread network which guarantees coverage across the whole of Italy, paying particular attention to the areas in which machine tools production is concentrated in our country. However, the Group's objectives spread much further afield than the Italian borders: in 2014, over 40% of its turnover came from foreign shores.

Thanks to the wide experience gained in the German market, the **P.E.I. Group** decided to expand its presence in Germany. As of March 2011, instead of just one base situated close to Munich, it has established four. Those bases are situated in the high profile regions for the construction of machine tools. Four German commercial technicians, proximate to their customers, are in direct contact with the Italian production plants.

Through trade agreements, "**made in P.E.I.**" products are distributed worldwide.

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Telescopic Steel Covers

There are many companies throughout the world who manufacture or sell **Telescopic Steel Covers**. Our company has achieved production levels - in terms of volume and quality standards - that place it at the top of the market.

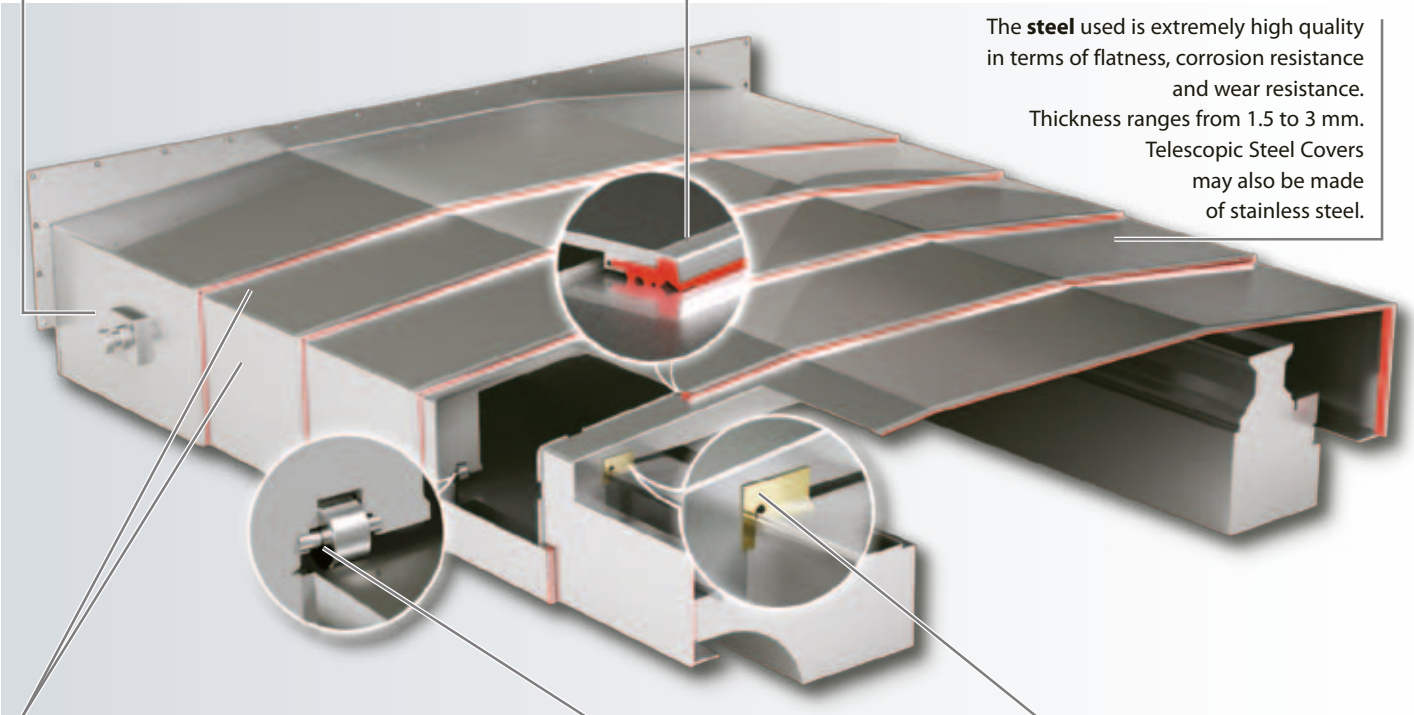
Heavy investment in machinery and personnel training, under the guidance of highly qualified engineers have allowed us to face the latest challenge in the development of Machine Tools: the increase of the axis speeds.

For heavy covers:
a) over 110 kg
for horizontal covers
b) over 70 kg
for front or vertical covers.
Special **supports** are included
for easy, secure lifting.

Wipers keep the surface clean
and prevent chips and
shavings from getting onto
expensive rails.
They must be heat and coolant
resistant, and thus are made of
polyurethane, with or without
a protective stainless steel chip guard.

Special anti-friction **brass guides**
or **wipers** with polyurethane rubber
are inserted on the sides of the Telescopic Steel
Covers, at the discretion of the engineer
based on speed, seal and dimensions.

The **steel** used is extremely high quality
in terms of flatness, corrosion resistance
and wear resistance.
Thickness ranges from 1.5 to 3 mm.
Telescopic Steel Covers
may also be made
of stainless steel.



For high speeds, **P.E.I. shock absorbers**
(patented) are inserted in these positions.
They are very effective in reducing impact
between boxes during movement.
These shock absorbers allow working speeds
considerably higher than those previously
possible, while simultaneously reducing
noise levels and wear.
This innovation, together with precision
production methods, make it possible to
accommodate even the fastest machine
tools.

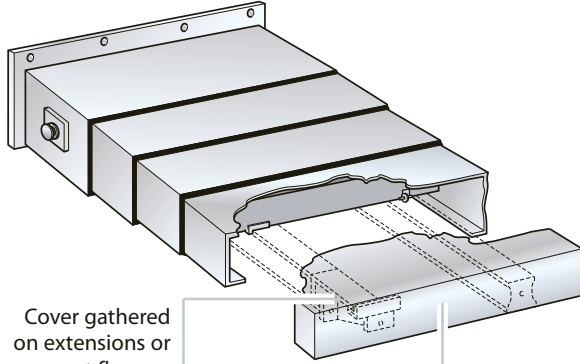
For high speeds
or weights, special
bearings are inserted
for smooth, silent
movement.
Telescopic Steel Covers
with bearings require
tempered or auxiliary
guides.

Compact, low-speed
Telescopic Steel Covers are
equipped
with special
anti-friction brass
or non-metallic
guides.

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Working Positions

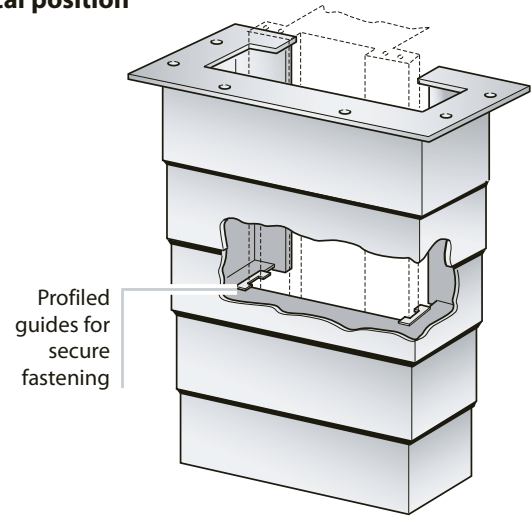
Horizontal position



Cover gathered on extensions or support flanges, if desired

Removable closing panel if desired

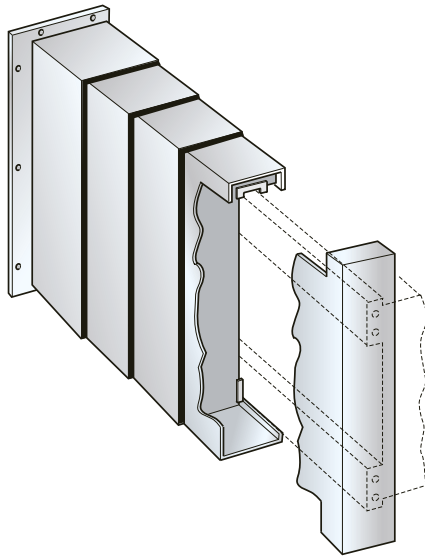
Vertical position



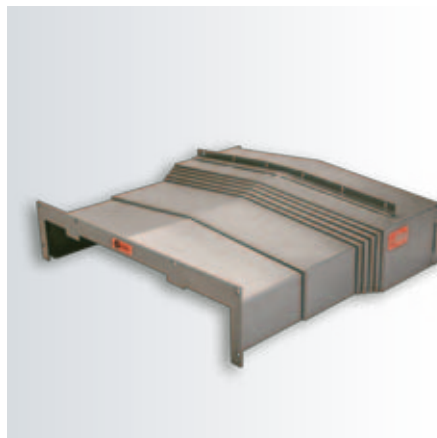
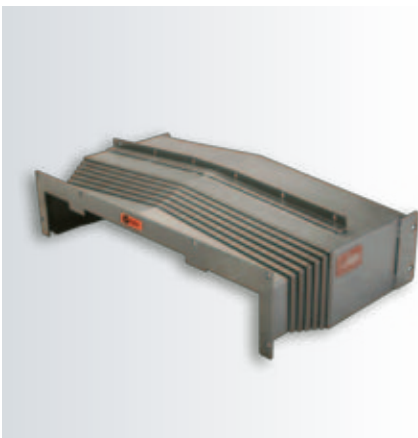
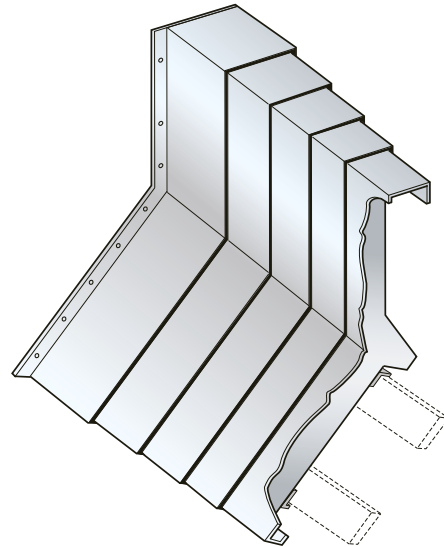
Profiled guides for secure fastening

Snap-on guides available upon request for rapid frontal installation

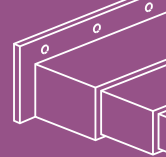
Transverse position



Transverse LATHE cover

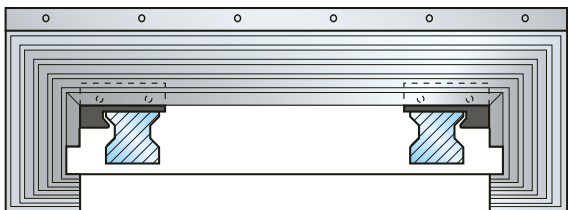


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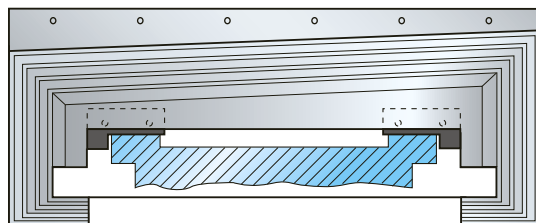


Configurations

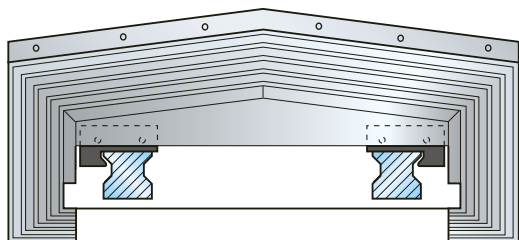
Shape 1



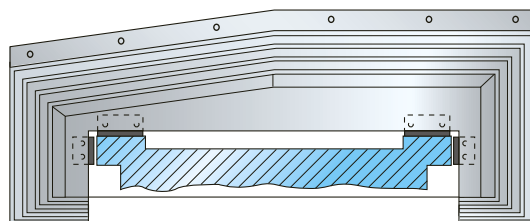
Shape 2



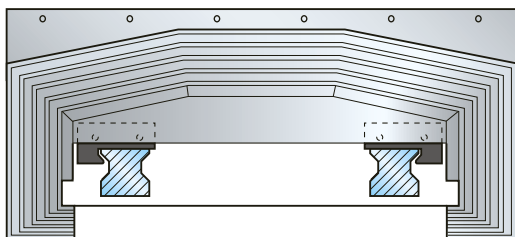
Shape 3



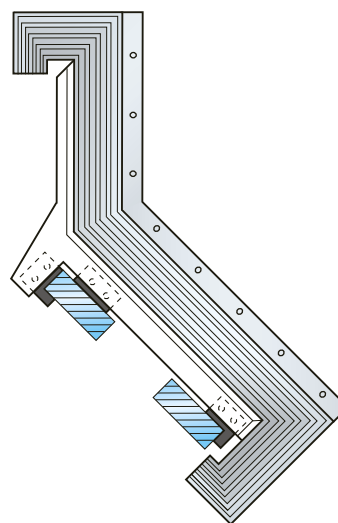
Shape 4



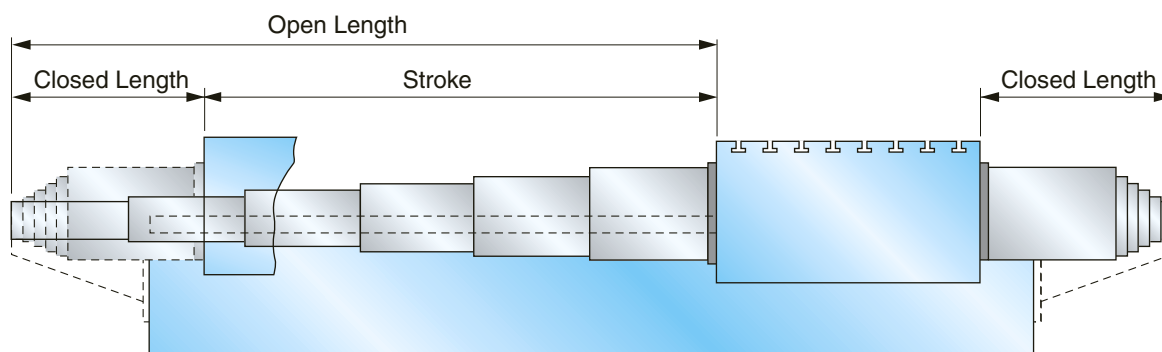
Shape 5



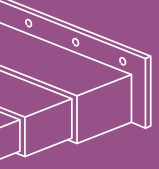
Shape 6



NOTE: Only a few standard configurations of Telescopic Steel Covers are shown above.



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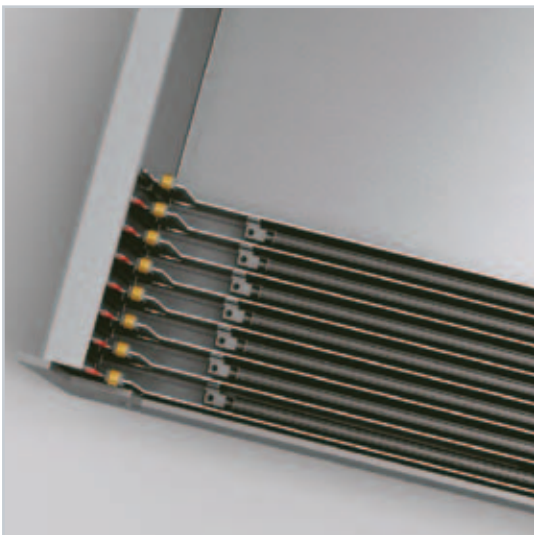
DAMPER-SHELL

The new generation viscoelastic shock absorber that effectively reduces impact noise in large scale telescopic covers

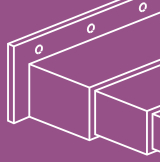
- **DAMPER-SHELL** is ideal for working speeds up to 80m/min and acceleration up to 1g.
- **DAMPER-SHELL** opens smoothly during expansion without causing friction on the boxes.
- **DAMPER-SHELL** is free from boost residue whether the telescopic cover is closed or in resting position.
- **DAMPER-SHELL** has an excellent dimension/cost ratio.
- **DAMPER-SHELL** is ideal for long strokes being a silent, durable and reliable solution.
- Telescopic covers equipped with **DAMPER-SHELL** require quick and simple maintenance.



(Patent pending)



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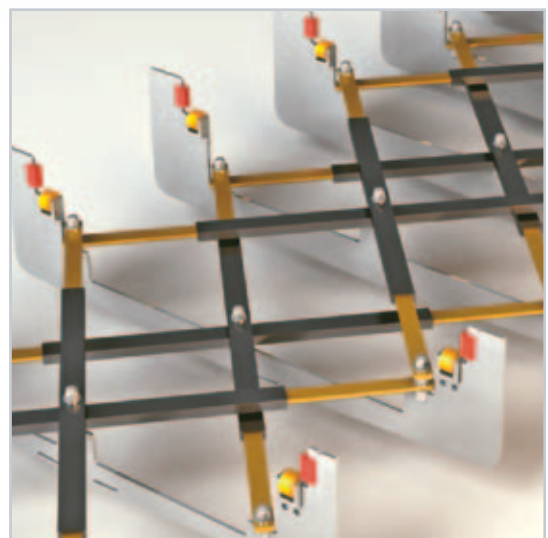
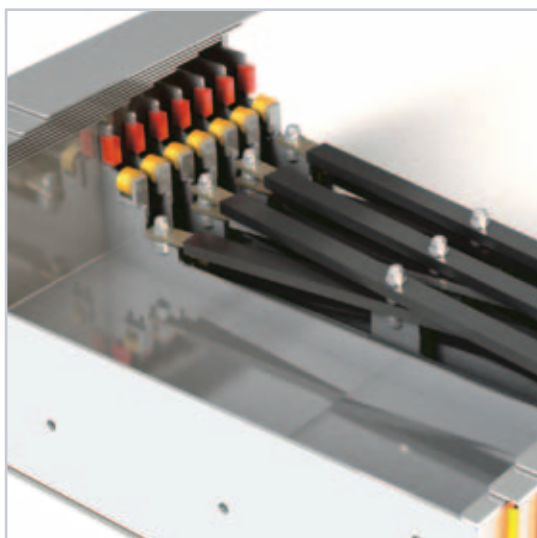
SYNCHRO-TEL

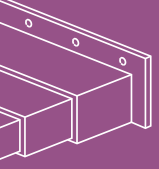
The mechanical brace system that synchronizes movement in telescopic covers

- **SYNCHRO-TEL** is a mechanical system which synchronizes the opening and closure of medium sized telescopic covers.
- **SYNCHRO-TEL** is ideal for working at high speeds and acceleration.
- The shaft mechanism of the **SYNCHRO-TEL** telescopic cover eliminates any collision between the boxes.
- **SYNCHRO-TEL** generates minimum stress on the pivots.
- Guaranteed stability of the telescopic shafts secured by three pivots to the boxes.
- Guaranteed minimum closed length.
- **SYNCHRO-TEL** is a convenient and cost saving solution.
- Mathematical testing and calculations prove **SYNCHRO-TEL** to be the most reliable and durable synchro system on the current market.



(Patent pending)



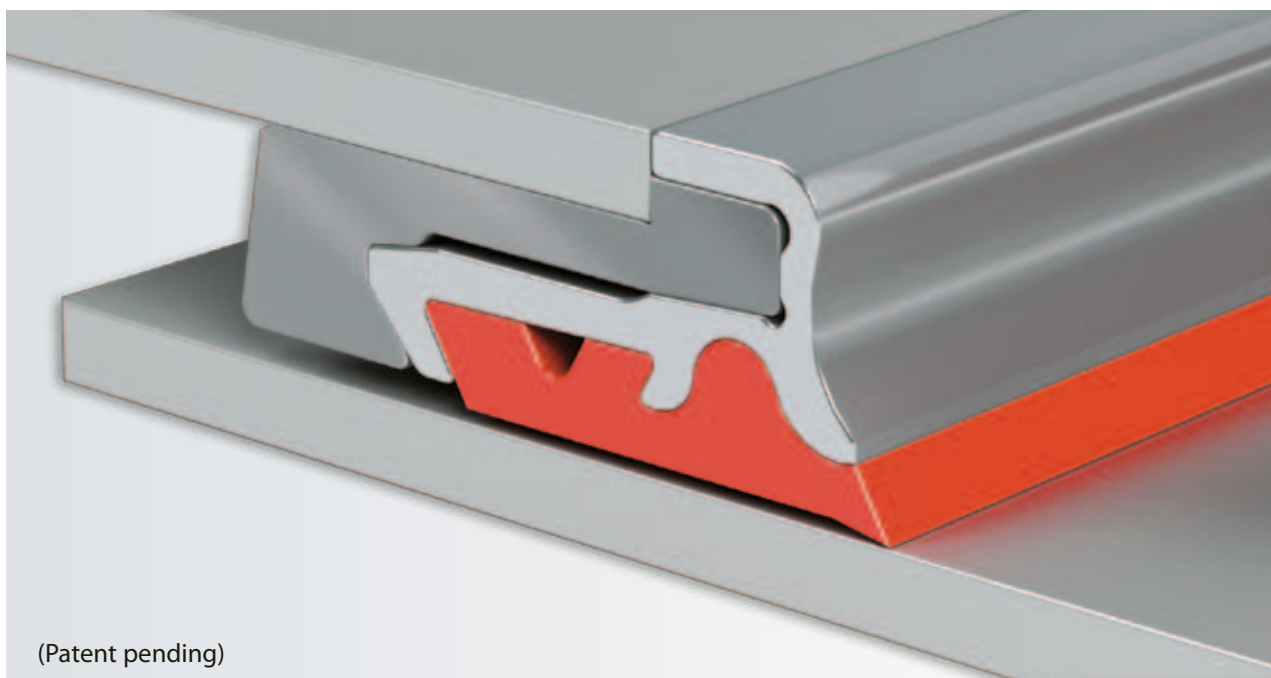


PR4A

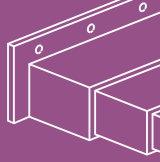
The instantly replaceable wiper for Telescopic covers

Attention: disassembly not required!

- **WIPER PR4A** is a cutting-edge solution for replacing the wiper profile instantly and without stopping the machinery.
- **WIPER PR4A** is made of 3 independent elements:
 - firstly it has a solid metal profile on the telescopic cover box
 - secondly it has a removable metal profile
 - finally it has a seal designed to clean the cover.
- Telescopic covers equipped with **WIPER PR4A** allow the client to independently replace the wiper profile:
 - Release the removable part
 - Replace the removable metal profile ready-made for the new seal
 - **WIPER PR4A** offers a range of seals with different technical features depending on the working conditions it is subjected (e.g. a working environment that uses coolants or a dry working environment in the **PR4A D** version).



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Telescopic Steel Covers Questionnaire

! Type of machine:

Trade mark:

Model: Axis:.....

Cover code: Canister qt.

Acceleration: m/sec² Speed:m/min

Working Horizontal Vertical

Position Crosspiece Inclined

Sliding by skids by rollers

Treadability Yes No

Coolant Yes No

! Customer:.....

Street:..... no.

Town Land

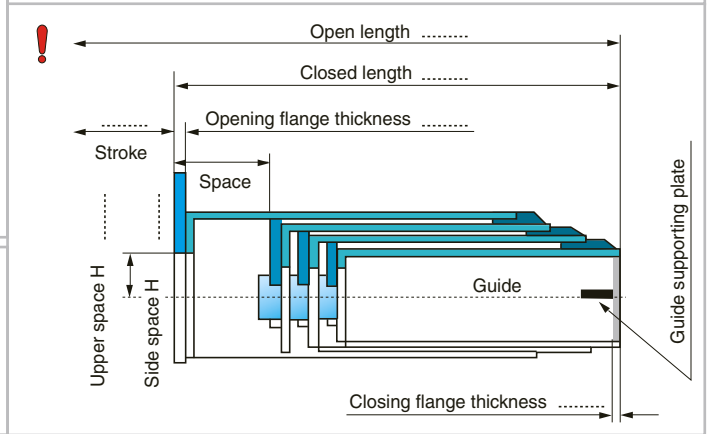
Reference person:

Phone:

Fax:.....

E-mail:.....

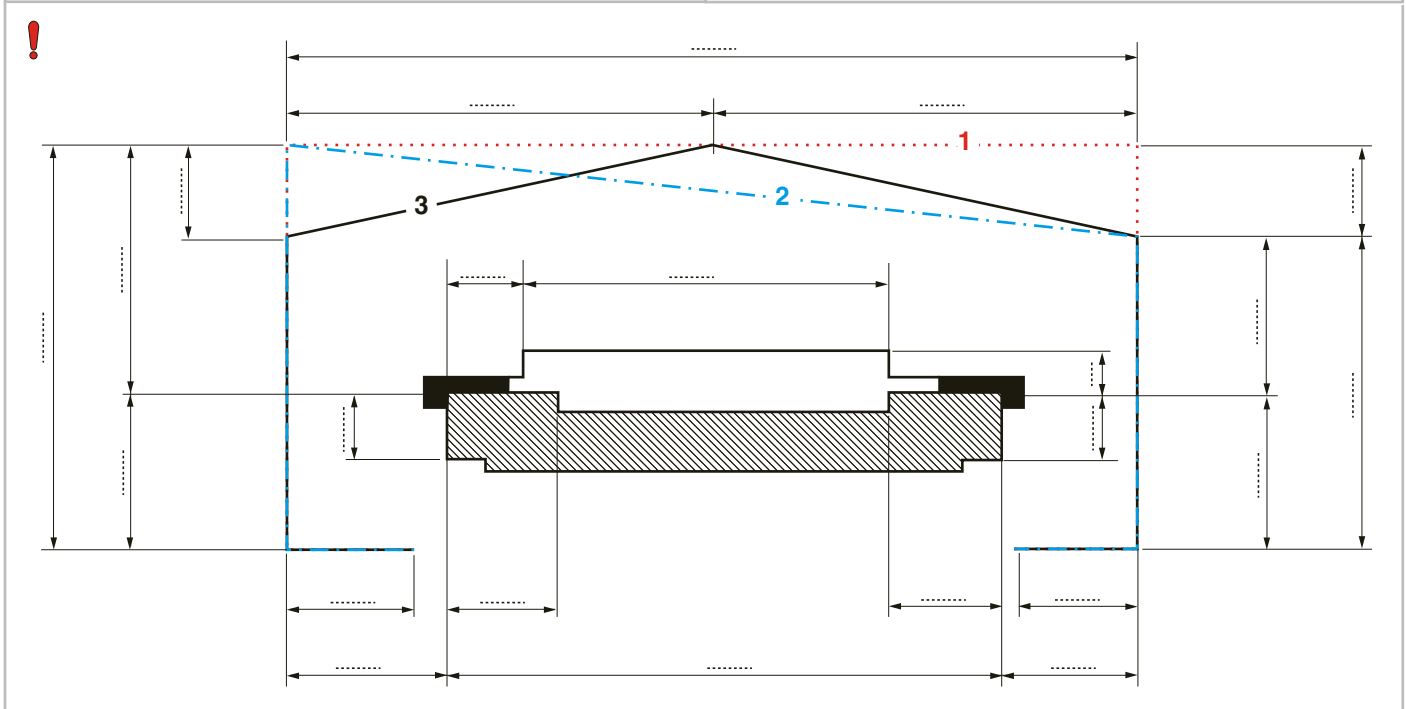
Required quantity Pcs:..... Right:..... Left:.....



! Please indicate the Cover overall, fastenings excluded.

Desired shape: **1** - **2** - **3** -

View from the opening flange View from the closing flange



! Opening Flange sketch

! Closing Flange sketch

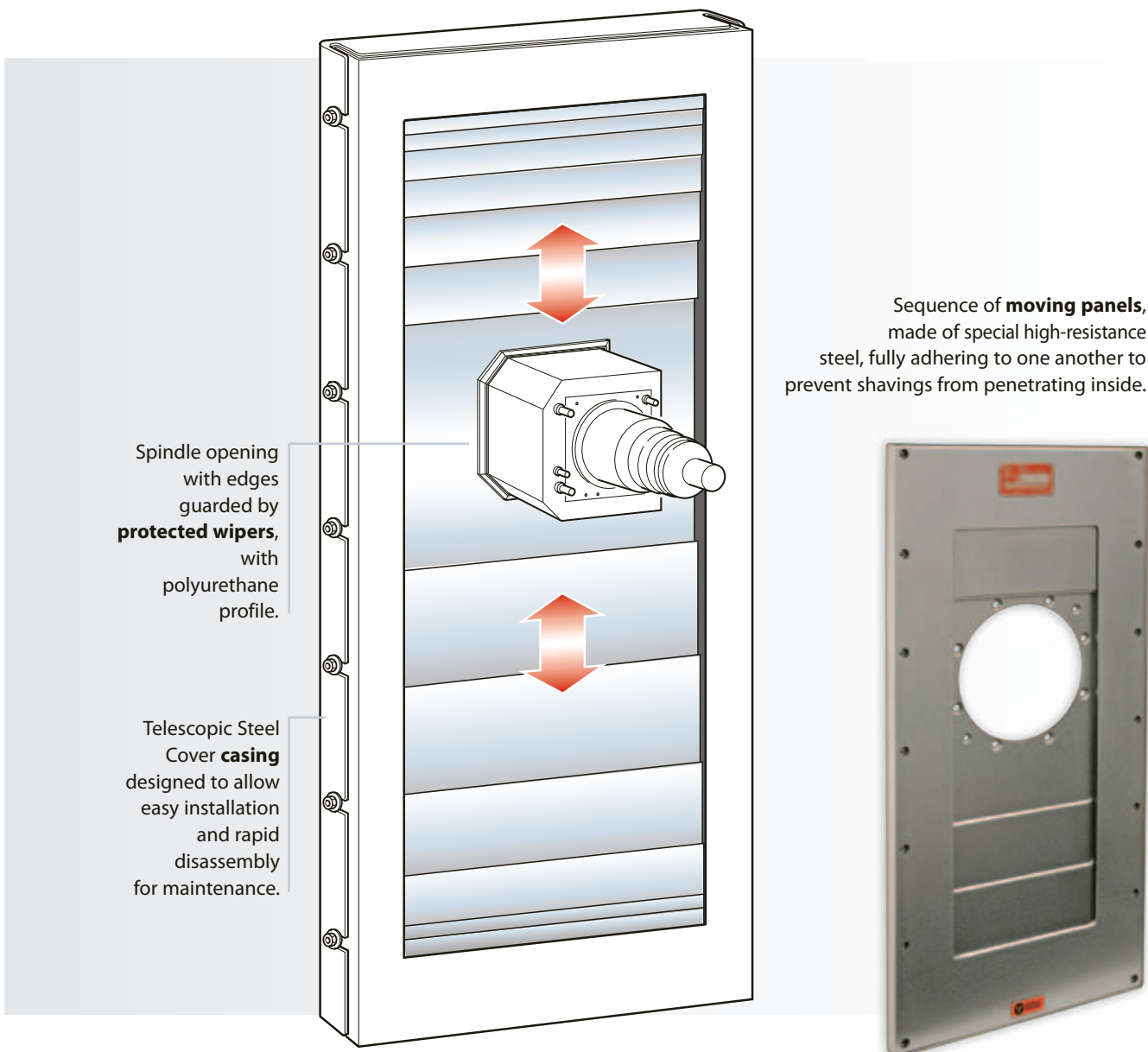
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NOTE: The data fields and/or tables marked by **!** are the least ones to be filled in order to give you a quotation. Please send an e-mail to info@pei.eu or a fax to +39 051 6464840.

SHEET-POCKET™

The **SHEET-POCKET™** Telescopic Steel Cover is the most effective solution for shielding the Y-axis (vertical) in horizontal machining centers. **It can achieve speeds up to 150 m/min. and accelerations of 2 g.** It is supplied in a fully enclosed frame that is independent from the machine structure. The self-contained sheet-pocket is easy to install and remove for maintenance or inspection.

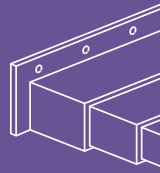
The dimensions are defined by our technicians together with the customer's engineers to maximize the working area.



The **SHEET-POCKET™** Telescopic Steel Cover can be easily combined with **SURE-SPRING®** roll-up covers as shown on page 16 of this catalog.

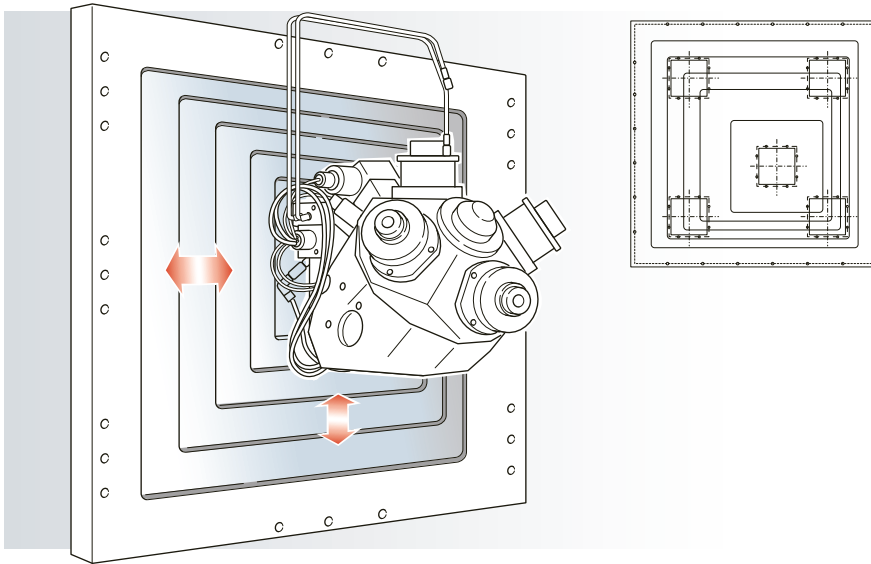
(Patented)

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SQUARE SLIDING COVER™

This family of **Telescopic Steel Cover**, was designed to meet special needs that frequently arise on SPECIAL or TRANSFER machines and small machining centers. This configuration is especially innovative thanks to the patent-pending method for moving each individual panel, thus allowing users to take greater advantage of the available space.



- For dual-axis operation
- High speed
- Compact size
- Easy to install
- Maximum use of available space

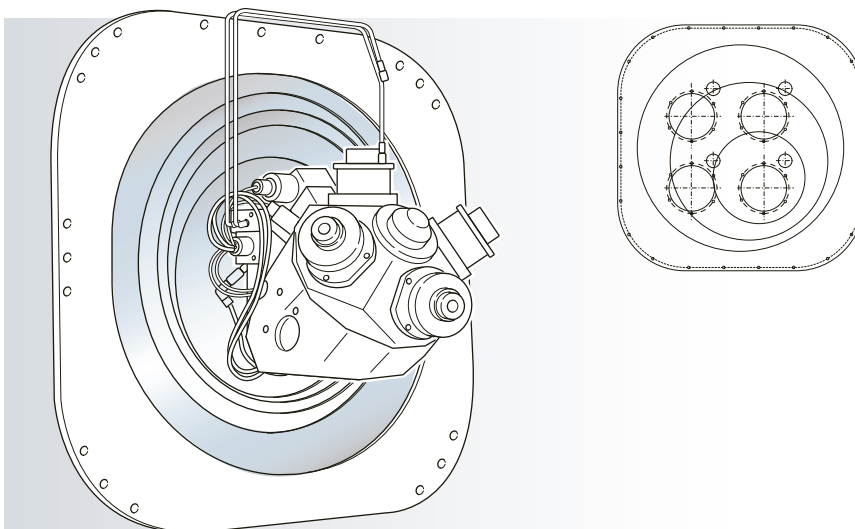


(Patented)

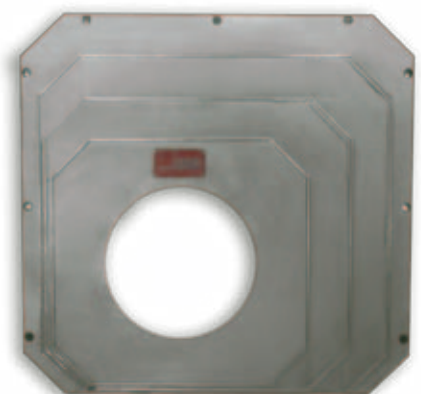
ROUND SLIDING COVER™

Like the **SQUARE SLIDING COVER**, this type of **Telescopic Steel Cover** was designed to meet special needs that frequently arise on SPECIAL or TRANSFER machines and small machining centers.

Since it has a wide range of applications, contact our Engineering Department to define the ideal sizing for the cover.



- For dual-axis operation
- High speed
- Compact size
- Easy to install



(Patented)

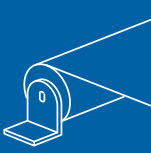
METAL TELESCOPIC COVER REVISION



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- Overhaul of ALL TYPES of telescopic covers for machine tools
- Revision or replacement of damaged sections
- Replace riders or guide rollers
- Replace brass wear strips
- Clean and buffed to original finish
- In case of too damaged telescopic covers, we can build them new.

- **SHORT DELIVERY TIME**



Roll-up Covers

P.E.I. Roll-up Covers are normally equipped with our patented system of multiple springs. This offers countless advantages:

- **Reliability**
- **Extremely high speeds**
- **Resistance to high and low temperatures**
- **1,000,000 movements guaranteed**
- **Compact size**
- **Easy installation**
- **Constant tensioning**
- **Special roll-up covers for machine tools**

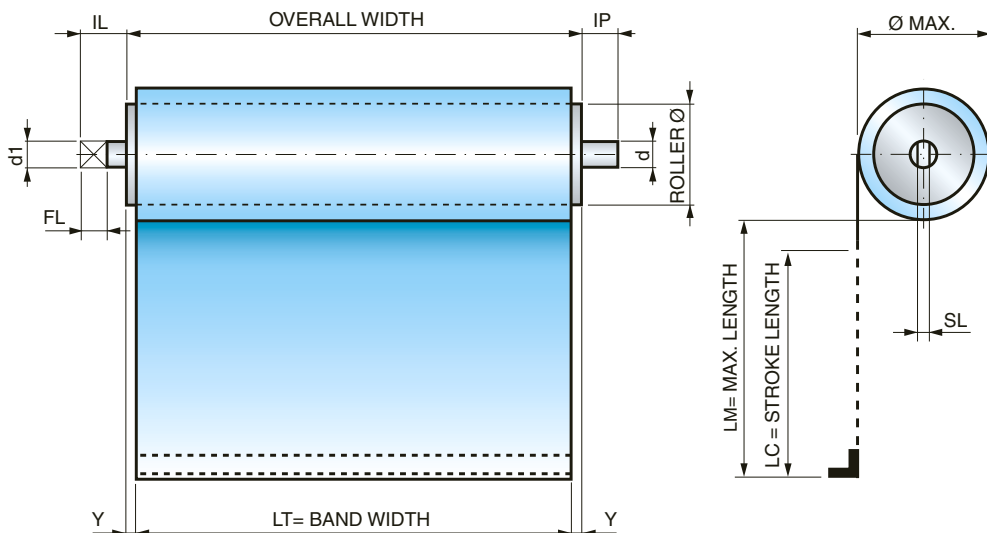
STEEL-TEX

STEEL-TEX: the stainless steel band specially studied for roll-up covers.



- **STEEL-TEX** is a the stainless steel roll-up cover with polyurethane.
- **STEEL-TEX** is cut resistant on impact with incandescent and sharp metal shavings.
- **STEEL-TEX** offers exceptional resistance during dry working or with coolants.
- **STEEL-TEX** is compact, weighs 0.9 kg per sq.m and is 0.8mm thick.
- **STEEL-TEX** can be installed on the entire range of P.E.I. roll-up covers.

Roll-up Covers without Canister



LM		2 · Y =
Da	a	
0	400	4
401	600	5
601	800	6
801	1200	8
1201	1600	10
1601	2400	14
2401	3000	18
3001	3850	22
3851	4700	26
4701	5550	32

Shaft sizes

Standard Roll-up Covers

Ø ROLLER	d1	IL	FL	SL	d	IP
30	6	8	8	2,6	7	8
40-50-60-70	10	15	12	4	10	10
80-90-100-120						

For special working conditions, our engineering department can adjust these dimensions. Carefully review the drawing enclosed with the proposal.

Formula for calculating the OVERALL WIDTH

$$\text{OVERALL WIDTH} = \text{LT} + 2\text{Y}$$

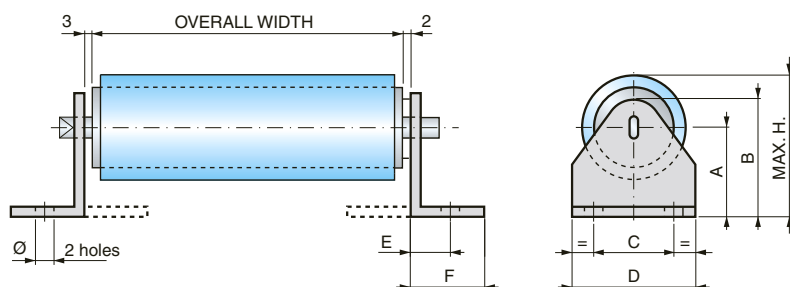
Example:

$$\text{LM} = 1000 \quad \text{LT} = 500 \quad 2\text{Y} = 8$$

$$\text{OVERALL WIDTH} = 508$$

SURE-SPRING® Roll-up Covers

Ø ROLLER	d1	IL	FL	SL	d	IP
39-52-71	10	15	12	4	10	10



Measurements for standard supports

Code	A	B	C	D	E	F	Ø	Hmax	Material
033	33	45	26	40	11	18	6,5	59	galvanized Fe 15/10
050	50	62	26	40	11	18	6,5	93	galvanized Fe 15/10
060	60	76	36	50	15	22	6,5	112	galvanized Fe 20/10
080	80	96	42	60	17	26	6,5	151	galvanized Fe 25/10
119	119	136	54	106	37	70	10	225	galvanized Fe 40/10

Formula for calculating max. Ø

$$\text{Ø MAX.} = 2 \cdot \sqrt{\frac{L \cdot s \cdot 1,20}{\pi} + r^2}$$

L = MAX. LENGTH TO WIND
s = BAND THICKNESS*
r = ROLLER Ø/2

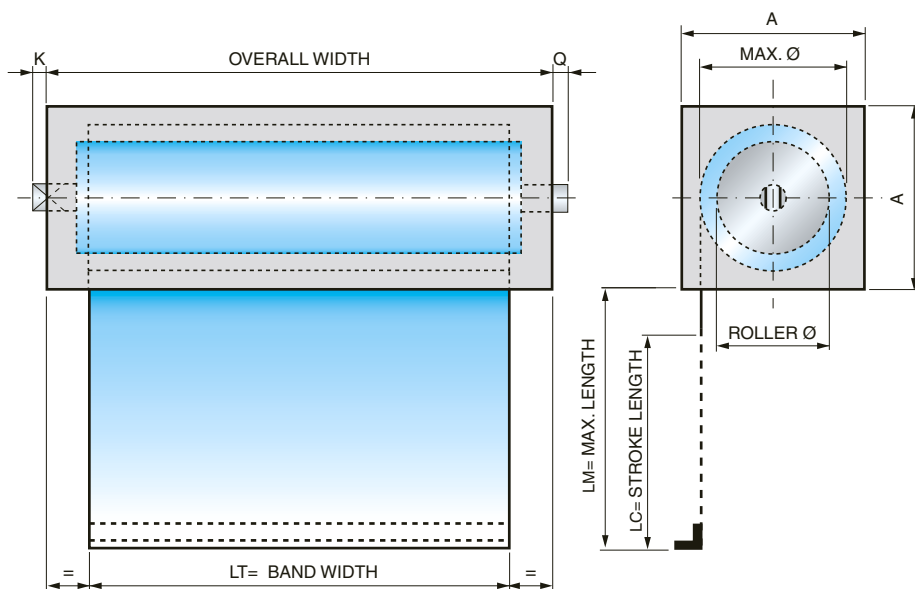
(* see materials list on pages 52-53)



Roll-up Covers with Canister

Enclosing the roller offers many advantages:

- **Protects roller from accidental impact**
- **Integral wiper keeps band clean**
- **Attractive appearance**
- **Wide variety of fastening systems**
- **Materials: Aluminum, Steel, Stainless Steel**
- **1,000,000 movements guaranteed**



Canisters A x A
40 x 40
50 x 50
60 x 60
70 x 70
80 x 80
90 x 90
100 x 100
110 x 110
120 x 120
130 x 130
140 x 140
150 x 150

Canister material	K	Q	Z*
Aluminum	3	1	25
Steel	10	7	13
Stainless steel	10	7	13

Z*= FIXED COEFFICIENT

Recommended sizes

These tables list the recommended MAX. BAND LENGTH based on the OVERALL WIDTH. The values shown are guaranteed at a MAX. SPEED of 40 m/min.

For higher speeds and for sizes not indicated in the tables, contact our engineering department

All the Roll-up Covers with or without Canister are manufactured to order.

ROLLER Ø	OVERALL WIDTH	150	250	350	500	750	1000	1250	1500
ROLLER Ø30	OVERALL WIDTH	150	250	350	500	750	1000	1250	1500
	MAX. LENGTH	300	500	650	800	1000	1200	1350	1500
ROLLER Ø40	OVERALL WIDTH	150	250	350	500	750	1000	1250	1500
	MAX. LENGTH	400	600	900	1200	1500	1800	2000	2200
ROLLER Ø50	OVERALL WIDTH	150	250	350	500	750	1000	1250	1500
	MAX. LENGTH	450	700	1050	1350	1650	2000	2250	2450
ROLLER Ø60	OVERALL WIDTH	150	250	350	500	750	1000	1250	1500
	MAX. LENGTH	500	1000	1600	1900	2200	2500	2750	3000
ROLLER Ø70	OVERALL WIDTH	150	250	350	500	750	1000	1250	1500
	MAX. LENGTH	550	1100	1750	2050	2350	2600	2900	3150
ROLLER Ø80	OVERALL WIDTH	150	250	350	500	750	1000	1250	1500
	MAX. LENGTH	700	1300	2000	2350	2700	3100	3400	3700
ROLLER Ø90	OVERALL WIDTH	150	250	350	500	750	1000	1250	1500
	MAX. LENGTH	750	1400	2150	2500	2850	3200	3550	3850
ROLLER Ø100	OVERALL WIDTH	150	250	350	500	750	1000	1250	1500
	MAX. LENGTH	800	1500	2300	2650	3000	3300	3700	4000
ROLLER Ø120	OVERALL WIDTH	150	250	350	500	750	1000	1250	1500
	MAX. LENGTH	850	1600	2450	2800	3150	3400	3850	4150

Size examples for SURE-SPRING® Roll-up Covers

ROLLER Ø39	OVERALL WIDTH	250	350	500	750	1000	1250	1500
	MAX. LENGTH	850	1250	1650	2000	2500	3000	3850
ROLLER Ø52	OVERALL WIDTH	250	350	500	750	1000	1250	1500
	MAX. LENGTH	1000	1500	2000	2500	3000	3850	4700
ROLLER Ø71	OVERALL WIDTH	250	350	500	750	1000	1250	1500
	MAX. LENGTH	1400	2100	2400	2850	3700	4800	5550

Formula for calculating the Minimum canister size = A

$$A = \text{MAX } \varnothing + 8$$

Formula for calculating the OVERALL WIDTH

With Steel and Stainless Steel canister

$$\text{OVERALL WIDTH} = \text{LT} + \text{Z} + 2\text{Y}^* + \left(\frac{\text{LM}}{100}\right)$$

Example with Steel canister:

$$\text{LT} = 500 \quad 2\text{Y} = 8 \quad \text{LM} = 1000$$

$$\text{LM}/100 = 10 \quad \text{Z} = 13$$

$$\text{OVERALL WIDTH} = 531$$

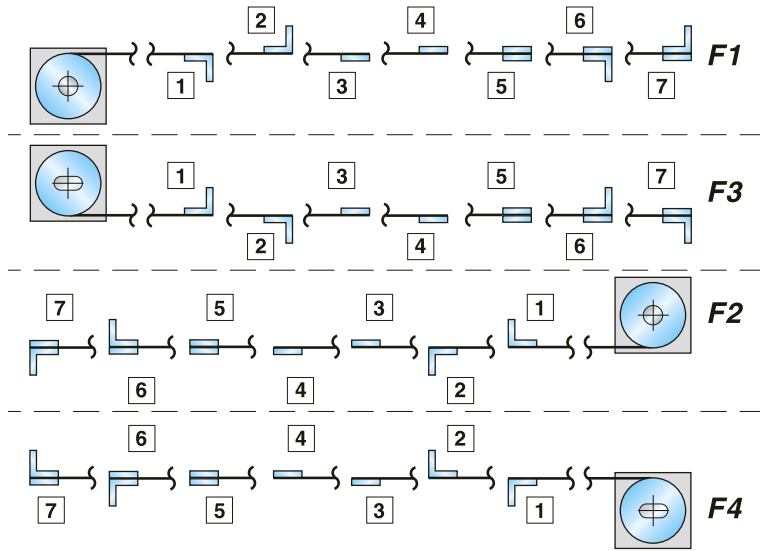
(* see 2Y table on page 12)

Installing Roll-up Covers

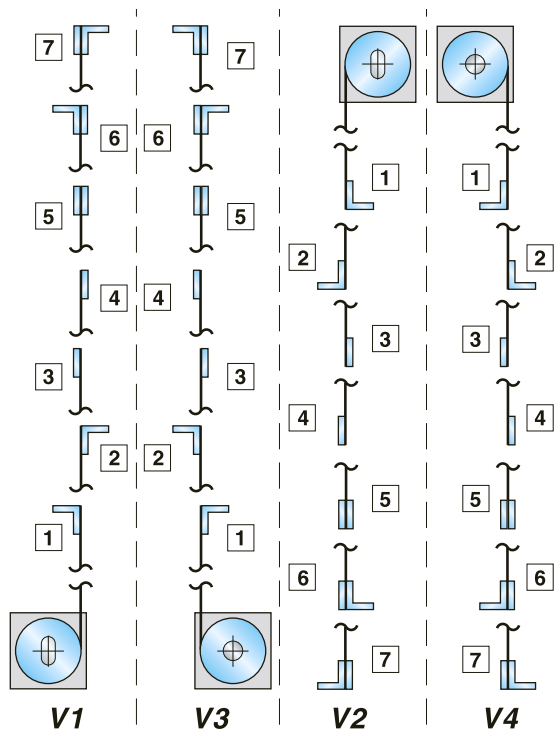
This diagram is valid for all Roll-up Covers, and shows:

- Terminal type
- Terminal position on the band
- Band output direction
- View of shaft/tab

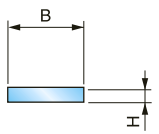
Horizontal and frontal positions



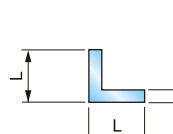
Vertical positions



Terminal materials: Aluminum, Steel

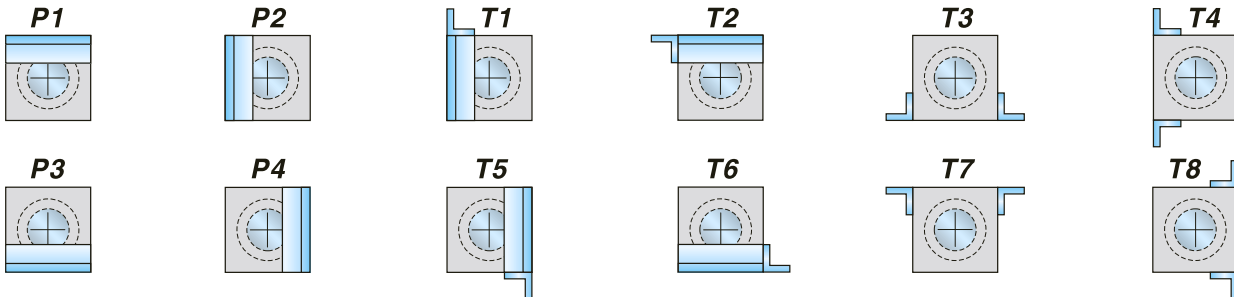


B x H
15 x 3
20 x 3
30 x 3

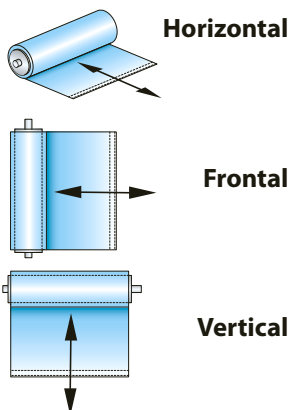


L x L x S
15 x 15 x 3
20 x 20 x 3
30 x 30 x 3

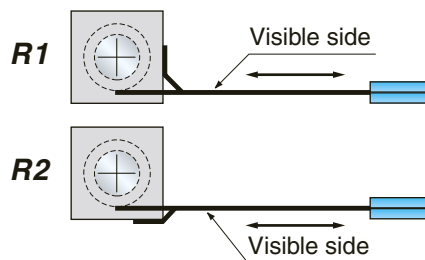
Standard canister mounting systems: To describe the canister attachment system, place one of the drawings below over the selected roll-up cover position, above. Do not rotate either drawing.



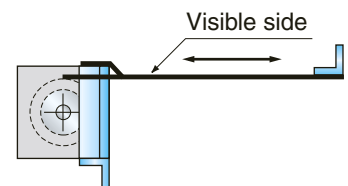
Positions



Wiper: This diagram shows the 2 ways to install the wiper to the canister.



Example assembling code

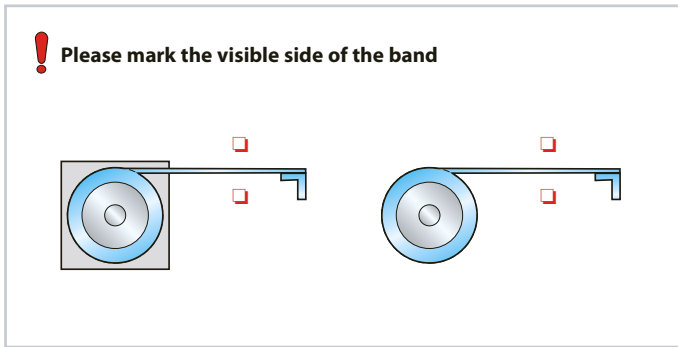


Working position	F1
Terminal attachment	2
Canister attachment	T5
Wiper position	R2

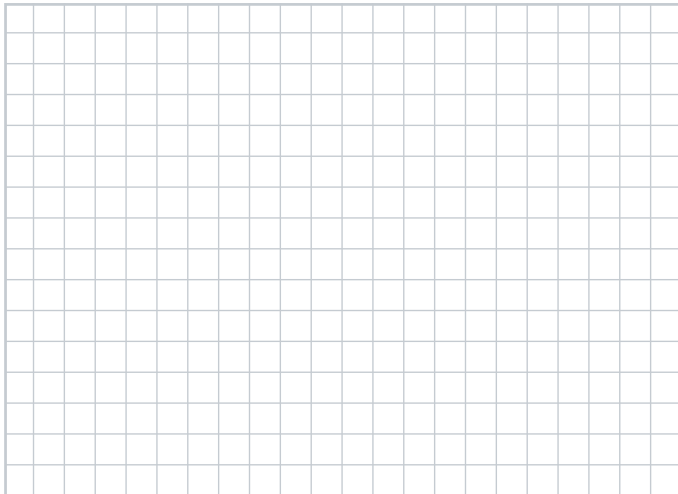


Roll-up Covers Questionnaire

<p>! Type of machine on which the ROLL-UP COVER is to be installed:</p> <input type="checkbox"/> METAL working machine <input type="checkbox"/> MARBLE working machine <input type="checkbox"/> GOLD working machine <input type="checkbox"/> PAPER working machine <input type="checkbox"/> FABRIC working machine <input type="checkbox"/> GLASS working machine <input type="checkbox"/> FOOD processing machine <input type="checkbox"/> PHARMACEUTICAL processing machine <input type="checkbox"/> AGRICULTURAL processing machine <input type="checkbox"/> TANNING machinery <input type="checkbox"/> CLAY working machine <input type="checkbox"/> WOOD working machine <input type="checkbox"/> Other	<p>! Type of material falling on the band:</p> <input type="checkbox"/> Steel shavings <input type="checkbox"/> Cast iron shavings <input type="checkbox"/> Brass shavings <input type="checkbox"/> Aluminum shavings <input type="checkbox"/> Wood shavings <input type="checkbox"/> Ambient dust <input type="checkbox"/> Grinding swarf <input type="checkbox"/> Welding splatter <input type="checkbox"/> Other <p>! Liquids to which the band will be exposed:</p> <input type="checkbox"/> Water/steam <input type="checkbox"/> Coolant/oils <input type="checkbox"/> Oils with a viscosity of ISO..... <input type="checkbox"/> Other	<p>! Amount of material falling on the band:..... Kg</p> <p>! Temperature of material falling on the band:..... °C</p> <p>! Temperature of work area:..... °C</p> <p>! Max. rapid travel speed:..... m/min.</p> <p>! Max. acceleration:..... g</p> <p>! Max. working motions per hour:.....</p> <p>! Max. daily working hours:.....</p>
--	---	--



Sketch



! Company name.....

Phone:..... E-mail:.....

Quantity:.....

Annual demand:

Date:

Notes

.....

.....

STANDARD ROLL-UP COVER

SURE-SPRING® ROLL-UP COVER

WITH canister WITHOUT canister

! LT= BAND WIDTH mm

! LM= MAX. LENGTH mm

! OVERALL WIDTH calculated mm

! Working position: Horizontal Frontal Vertical

F 1 F 2 F 3 F 4

V 1 V 2 V 3 V 4

• TEMAT Band material code:

001 002 202 003 004 005 007 008

009 091 101 102 104 105 106 011

012 013 014 122 015 151 161 160

162 164 165 167 169 180 017 018

019 020 022 Other.....

• Ø Selected Roller.....mm

• Ø Calculated Max.mm

• Support code:

033 050 060 080 119

• Canister material: Alu Steel Stainless steel

• Canister dimensions:

40x40 50x50 60x60 70x70

80x80 90x90 100x100 110x110

120x120 130x130 140x140 150x150

• Canister attachment system:

P1 P2 P3 P4 T1 T2

T3 T4 T5 T6 T7 T8

• Wiper position: R 1 R 2

• Terminal attachment system:

1 2 3 4 5 6 7

• Terminal material: Aluminum Steel

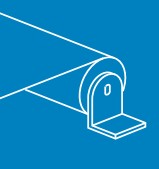
15x3 20x3 30x3

15x15x3 20x20x3 30x30x3

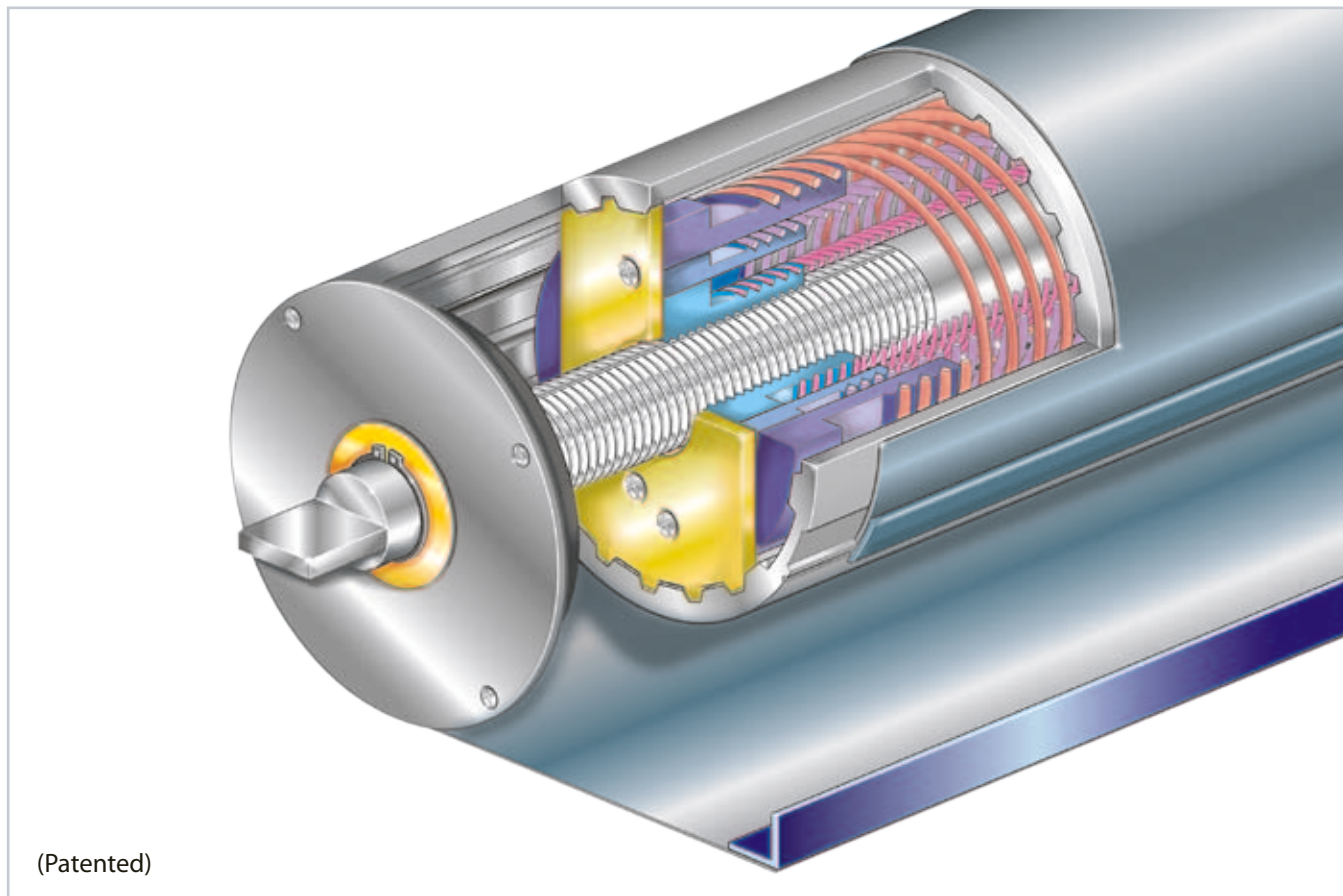
GENERAL TOLERANCES ± 1%

NOTE: The data fields and/or tables marked by **!** are the least ones to be filled in order to give you a quotation. Please send an e-mail to info@pei.eu or a fax to +39 051 6464840.

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SURE-SPRING®



The P.E.I. **Patented design** known as **SURE-SPRING®** represent the most advanced level of technical innovation in the field of roll-up covers.

The spring mechanism design takes into account the intrinsic defects in other rollers available on the market, and overcomes them by means of a radical new design of the spring mechanism.

The second major innovation consists of the mechanical system to fasten the band to the tube.

No adhesives are needed for this roll-up cover!!

In addition to those of standard P.E.I. roll-up covers, P.E.I. **SURE-SPRING®** roll-up covers offer the following advantages:

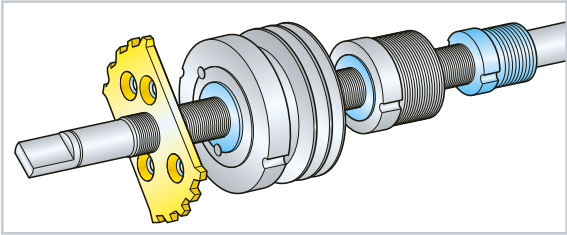
- **Suitable for HIGH SPEED operation**
- **The multiple springs remain COAXIAL**
- **The springs NEVER INTERSECT**
- **REDUCED overall diameters**
- **EXCELLENT reliability**
- **Advancement speeds of up to 150 m/min**
- **Acceleration of up to 2 g**
- **2,000,000 movements guaranteed**
- **SECURE attachment of the band to the tube, because NO adhesive products are used**
- **PRACTICAL maintenance, since the band can be replaced quickly and easily**
- **Also suitable for use in work environments where STRONGLY AGGRESSIVE chemicals are used**
- **HEALTHY for the environment.**



SURE-SPRING® Technical Specifications

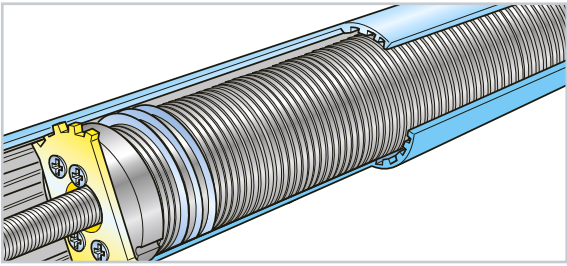
Transmission

The rotary movement of the tube in relation to the fixed central shaft is transmitted by a sliding spline. This system compensates for the elongation of the multiple springs by moving the spring mounting point axially along a threaded shaft.



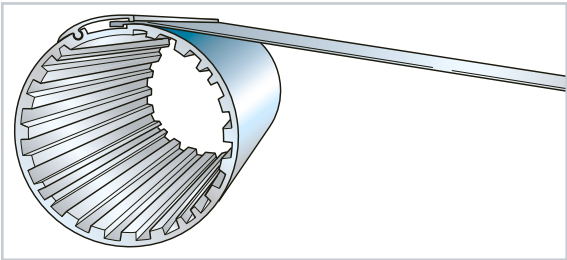
Innovative features

This new system allows the multiple springs to work according to an ideal geometry, keeping their coils properly spaced.



Mechanical system attaching the band to the tube

This is the most reliable system for insuring a secure attachment between the band to the tube.

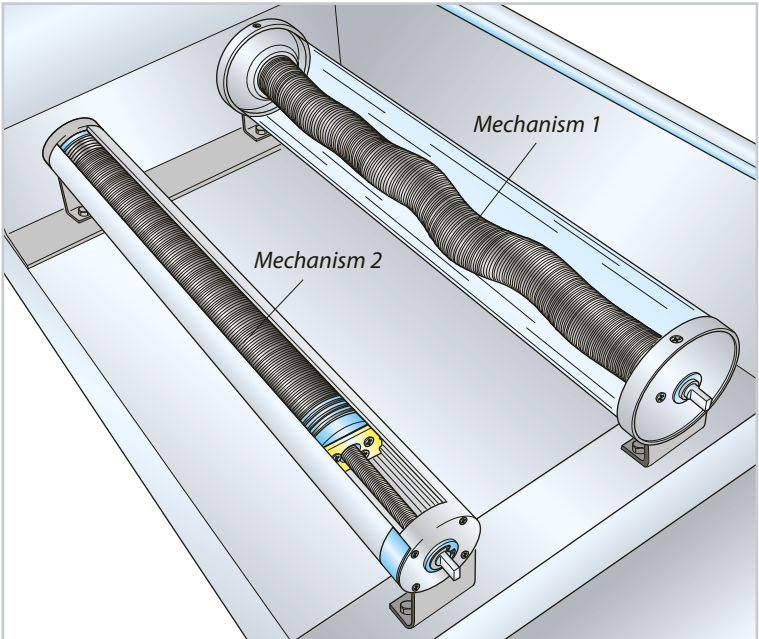


SURE-SPRING® Operating diagram

This illustration clearly highlights the different behavior of the spring mechanisms during operation:

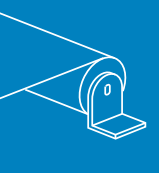
- In Mechanism 1 (traditional system) the springs are rigidly attached to the fixed caps at the ends of the shaft. In this system the springs helically twist and snake while winding or unwinding, causing obvious problems of friction and wear between the coils as well as between the coils and the central shaft.
- In Mechanism 2 (SURE-SPRING® system) the springs are attached to a special moving cap, which slides lengthwise while winding and unwinding, keeping the spring coils packed and concentric at all times. This spring configuration avoids most of the wear mentioned above, allowing better performance and a much longer operating life-span for the spring mechanism.

For recommended dimensions see page 13.

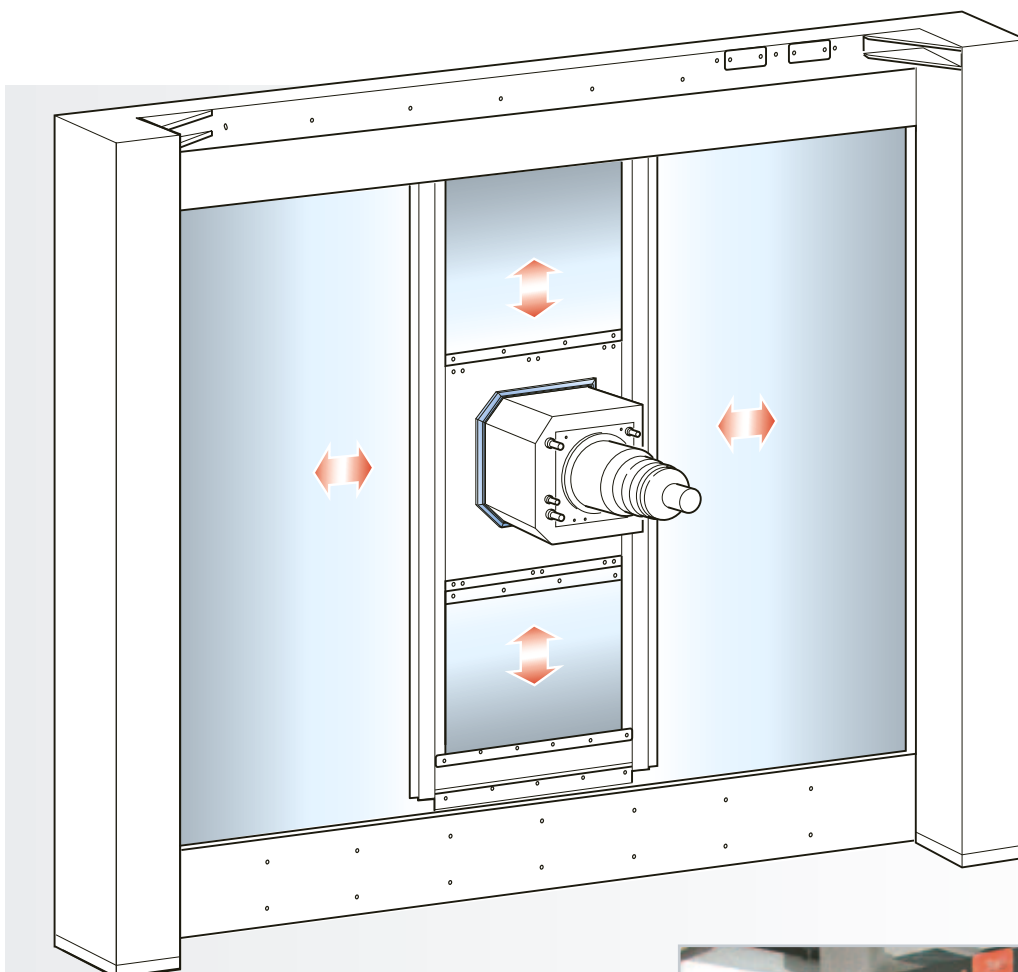


Mechanism 1: Traditional system
Mechanism 2: P.E.I. SURE-SPRING® system

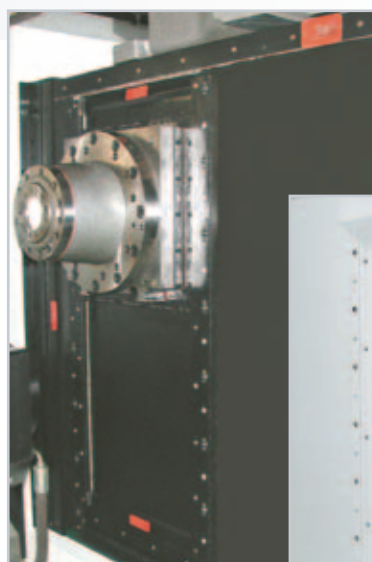
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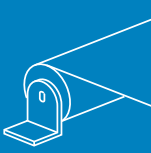
X-Y 4R SHIELD



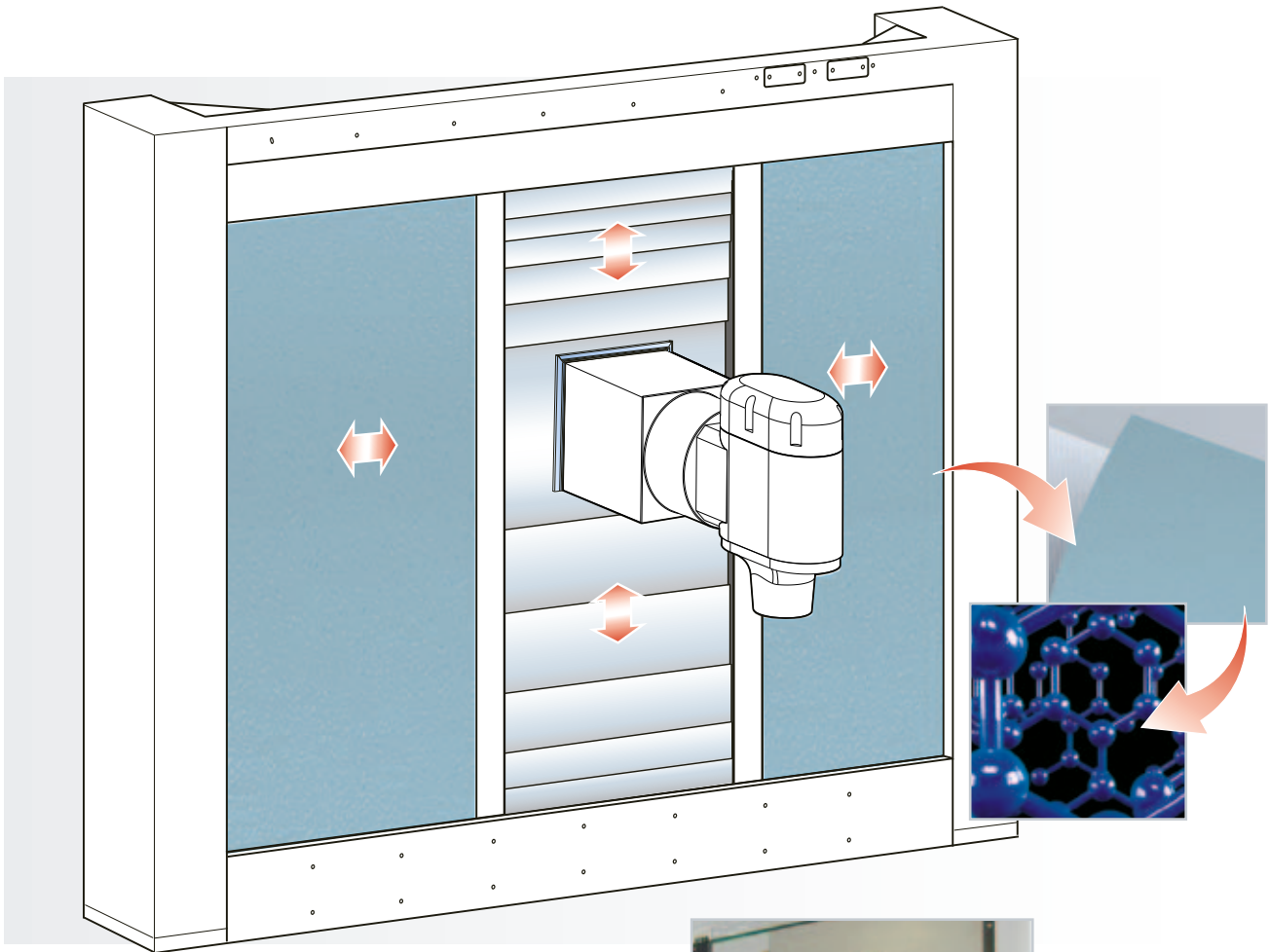
- The **X-Y 4R SHIELD** is a truly effective solution to the problem that occurs in horizontal machining centers when separating the tool working area from the motor area.
The protective wall of the **X-Y 4R SHIELD** encloses and seals the machine, while at the same time allowing the spindle to move freely in all directions.
- The **X-Y 4R SHIELD** uses four **SURE-SPRING®** roll-up covers, making the system very sturdy and reliable, even for the fastest machine tools on the market.
- **X-Y 4R SHIELDS** are designed for acceleration up to 1.5 g and speeds up to 90 m/min.
Special designs are required for higher accelerations and speeds.
- The modular system is designed to the customer's specifications, allowing rapid assembly of the machine.
Its simple design makes maintenance and inspection easy.



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X-Y SP-2R SHIELD



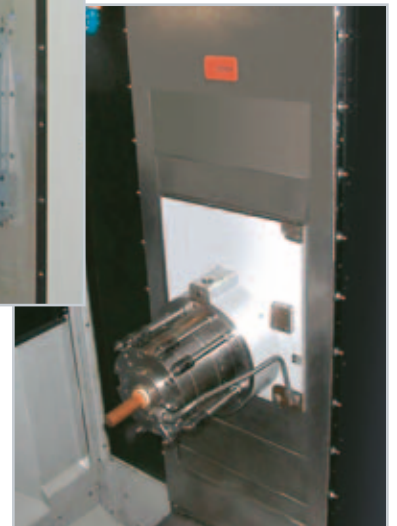
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- The **X-Y Sheet-Pocket™-2R SHIELD** offers all the advantages of **X-Y 4R SHIELD**.

It represents the most reliable system for protecting the work area, on the horizontal and vertical machining centers, in an environment where a large quantity of hot shavings is produced.

As shown in the above picture, this system is mounted on a **SHEET-POCKET™** Steel Cover (patented - see page 9) on the Y-axis and two rollers on X-axis with **Ceramix** bands:

- ✓ **CERAMIX** is a very resistant band covered by a high ceramic polymer coating.
 - ✓ **CERAMIX** is very reliable and ensures excellent resistance against the impact of hot shavings and is efficient also in cases of dry-working. It is very resistant against mineral oils too.
 - ✓ **CERAMIX** has an excellent abrasion resistance and excellent shear strength.
 - ✓ **CERAMIX** has a compact size and is light weight.
- We can guarantee this system up to accelerations of 1 g and speeds up 90 m/min. For higher applications, please contact our Engineering Department.
(See Technical Characteristics of Ceramix band on pages 52-53 under code TEMAT180).



ROLL-UP COVERS FOR LATHES

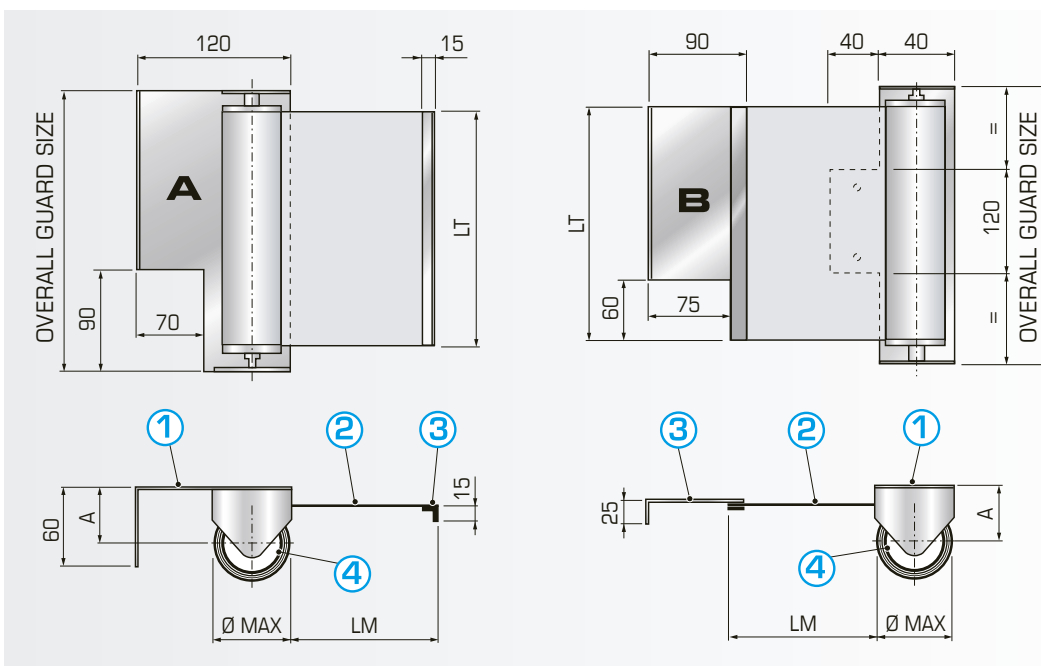
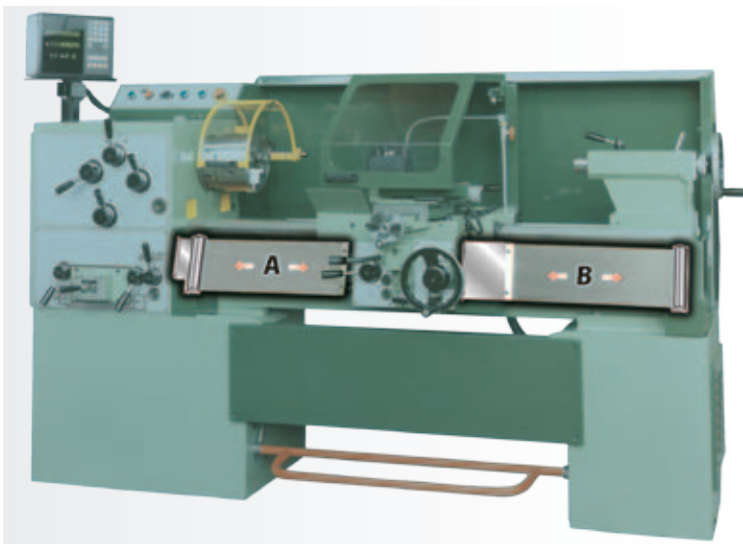
P.E.I. ROLL-UP COVERS for LATHES respond to the need to limit hazards caused by movement of the lead screw and/or spline shaft.

P.E.I. ROLL-UP COVERS for LATHES offer the following advantages:

- Ease of installation.
- Adaptable to any type of lathe.
- Compact size.
- Shatter-proof in case of accidental breakage.

CHARACTERISTICS OF ROLL-UP COVERS:

- BRACKET of galvanized steel for fastening to the machine.
- BAND of coolant and oil resistant fabric
- RETURN MECHANISM with single or multiple springs
- Contact our engineering department for housings and cover guards PER CUSTOMER DRAWINGS.



KEY:

- ① ③ **BRACKETS:** of galvanized steel
- ② **BAND:** of coolant and oil resistant fabric
- ④ **RETURN MECHANISM:** with single or multiple springs

STANDARD SIZE

Code	Description	ID Code			
		LT150LM1200	LT200LM1500	LT200LM2000	LT250LM3000
LT	Band Width	150	200	200	250
LM	Max. Length	1200	1500	2000	3000
Ø MAX	Max. Diameter	48	52	62	83
A	Distance between supports	33	50	50	50

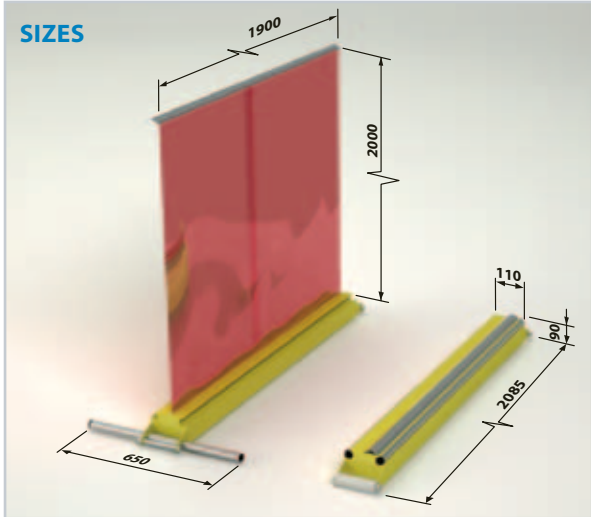
Measurements in mm.
OVERALL GUARD SIZE = LT + 30



WELD SCREEN

WELD SCREEN is a protection screen for welding and grinding stations.

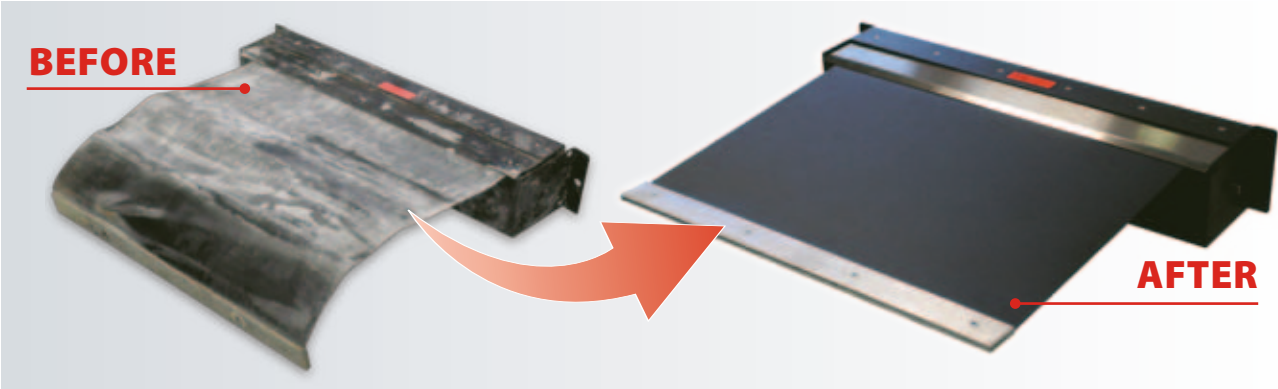
- **WELD SCREEN** offers protection to personnel who are in the vicinity of welding and grinding work areas. The semi-transparent screen protects personnel from contact with metal chips and sparks produced during the welding and grinding processes.
- **WELD SCREEN** is fitted with a mobile stand allowing the user to adjust the screen as required.
- **WELD SCREEN** is foldaway making it compact and portable.



TECHNICAL DATA	
✓ WEIGHT:	8,9 Kg
✓ REFERENCE STANDARD:	UNI EN 1598 DL 626/94 DL 81/2008
✓ AVAILABILITY:	Immediate

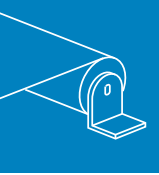
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Roll-up covers REVISION



- Overhaul of ALL TYPES of ROLL-UP COVERS AND SHUTTERINGS WITH OR without Canister
- Replacement of the damaged FLEXIBLE COVER, SHUTTERING or BAND
- Replacement of the MECHANISM
- Replacement of WIPERS or other COMPONENTS if worn-out
- Cleaning and buffing of ALL SURFACES to original finish
- If the roll-up cover should be too damaged, we can build a new one

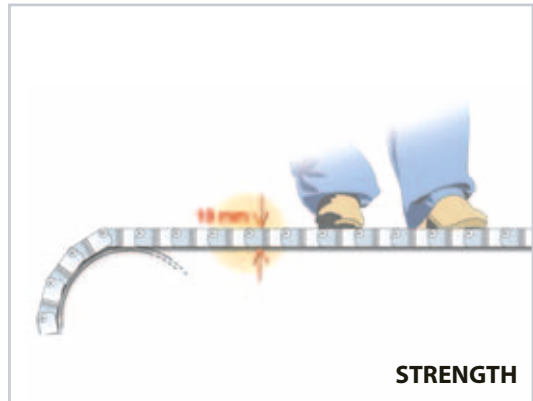
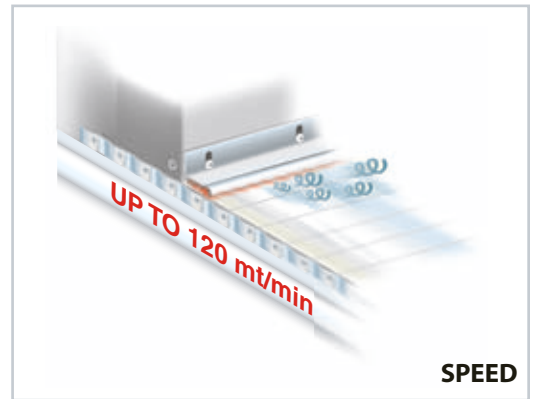
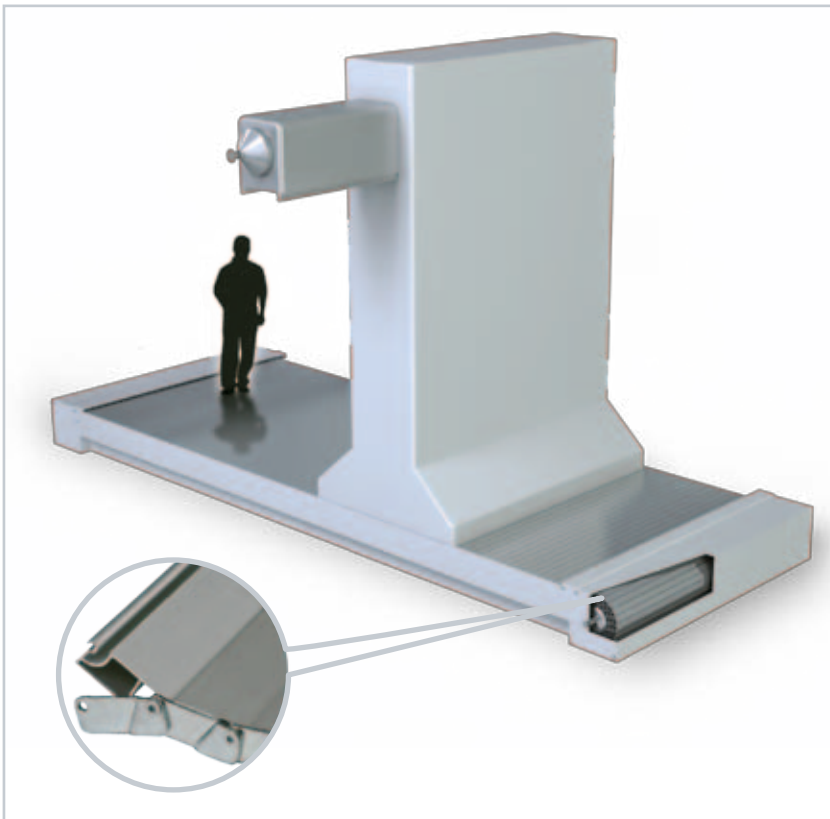
SHORT DELIVERY TIME



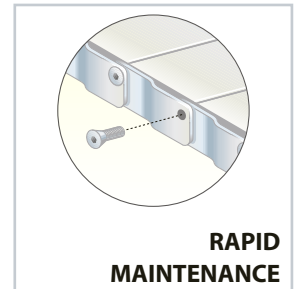
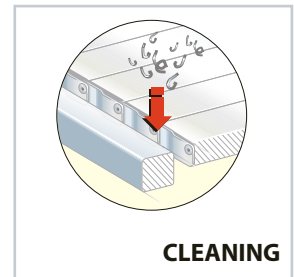
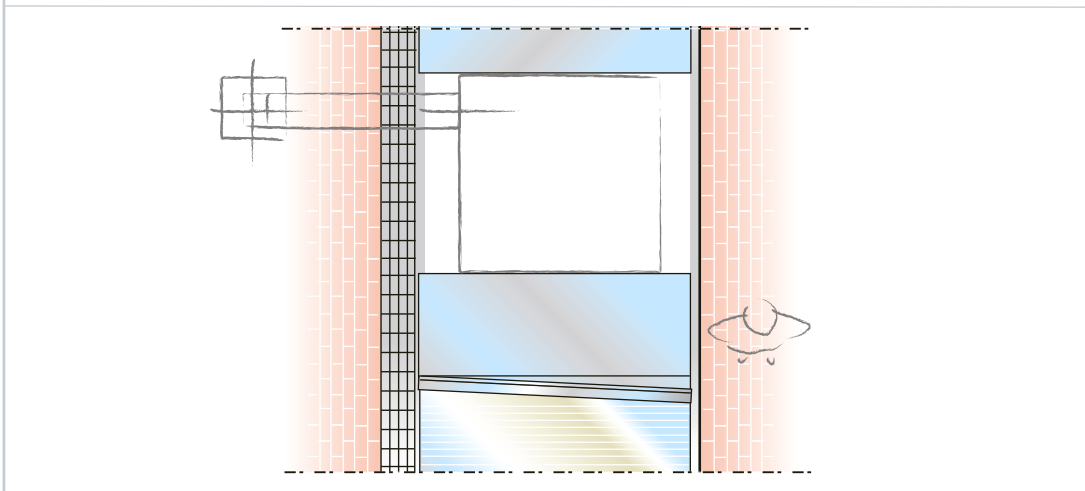
Roll-up Covers with COVER TYPE J

Roller protections equipped with **type-J SHUTTERING** are particularly suitable for covering large bases, pits or holes. These protections have the following characteristics:

- **SPEED:** suitable for high speed applications, both dry and coolant processing.
- **QUIET:** thanks to the mechanical roller system, there is no noise caused by collisions or vibrations.
- **STRENGTH:** particularly suitable for walk-on applications.
- **CLEANING:** the belt slide on the side of the shaving conveyor has been designed to make the shaving fall in the conveyor without causing any clogging.
- **RAPID MAINTENANCE:** if some elements are damaged the belt does not need to be removed. The damaged elements can be removed simply by unscrewing lateral screws.



The wiper is slightly angled relative to the travel direction of the cover so as to force the chips and coolant towards the chip conveyor trough side.



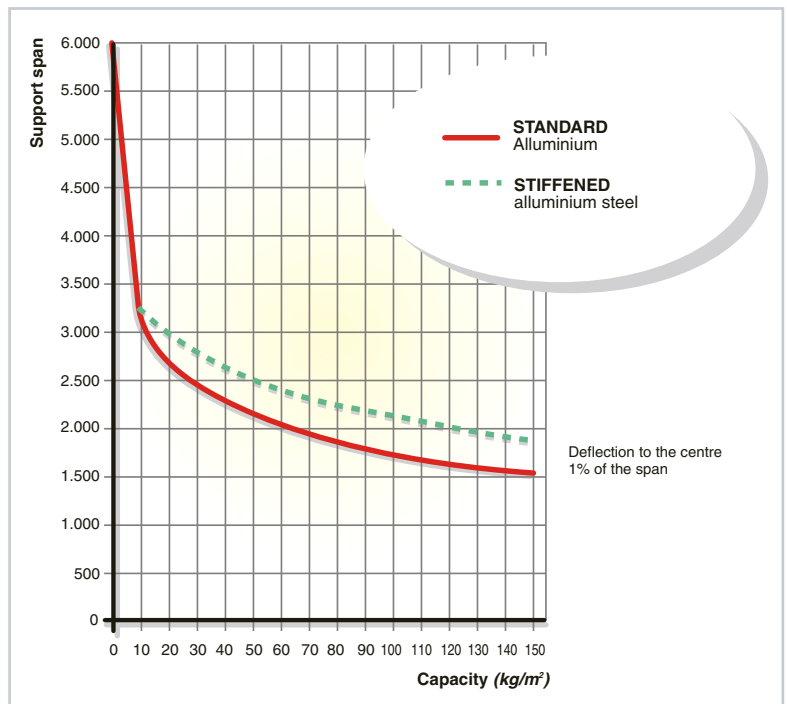
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Roll-up Covers with COVER TYPE J

TECHNICAL DATA FOR COVER TYPE J

- **Entirely** made of metal
- Perfect **flatness** of the side exposed to chips
- Cleaning **wiper** on the side exposed to chips
- **Shielded** joint with integrated labyrinth to prevent coolant from getting trough
- High **bending resistance**. See graphic of Span/Capacity
- **Reinforced version** with steel profiles
- Highly resistant to tensile stress.
Minimum guaranteed **2 KN/m of width**
- Steel lateral caps with **chain** joint
- Thickness of the carpet: **18 mm**
- Take-up in both directions on a **150 mm** diameter
- Reduced weight: **12.5 kg/sqm**
(29 kg/sqm for the reinforced version)
- **Modular** system with individual interchangeable elements
- Operating speeds up to **120 m/min**
- Life guaranteed: **1.000.000** movements

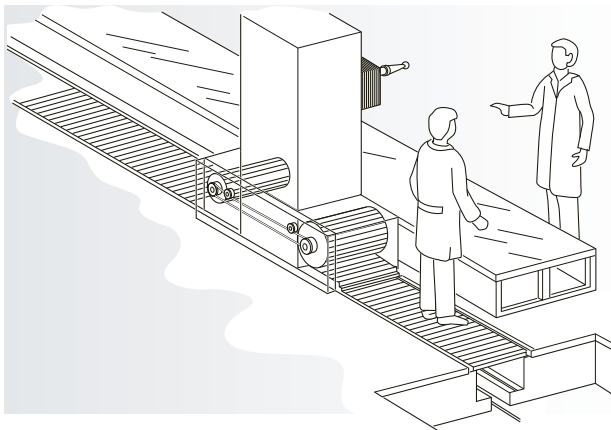


P.E.I. manufactures these moving walkway/pit covers for horizontal, mobile surfaces, to meet accident prevention and safety regulations. These units cover the upper part of the machine pit whose base is below the walking surface and allow the crossing of the pit by anyone, thus avoiding possible accidents or damage to people or equipment which could occur with the pit uncovered.

The variable speed drive system, which allows for mechanical speed control, makes the drive system independent from the general machine control system. Size and speed are established by the customer and studied by our technical staff in order to obtain optimal operation.

Special Product: Roll-up Covers with Chain Movement

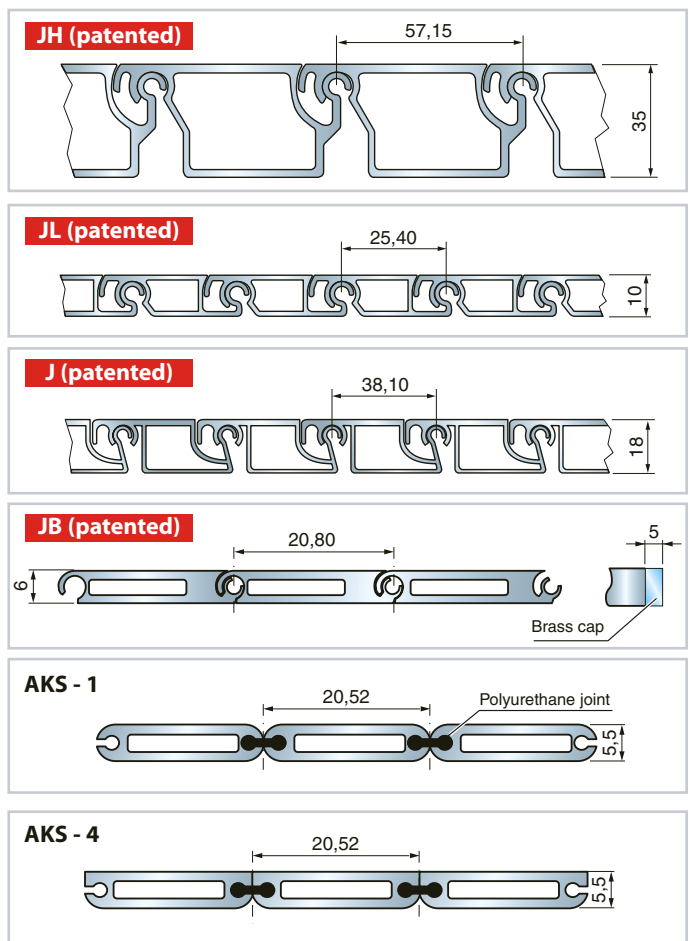
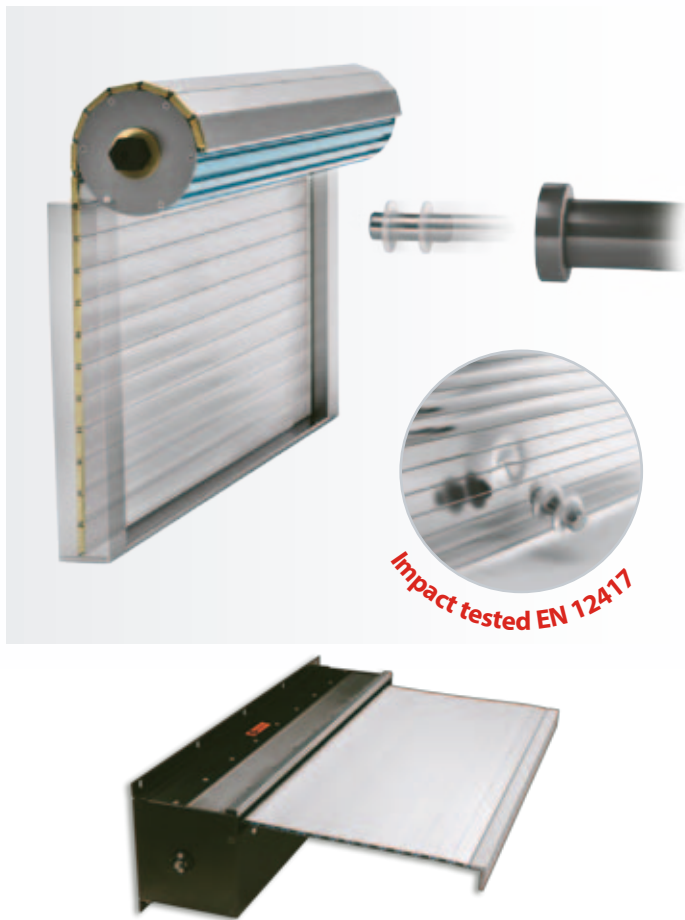
P.E.I.'s patented system of **ROLL-UP COVERS WITH CHAIN MOVEMENT** have the essential feature of keeping the strip perfectly fixed while the machine is running.



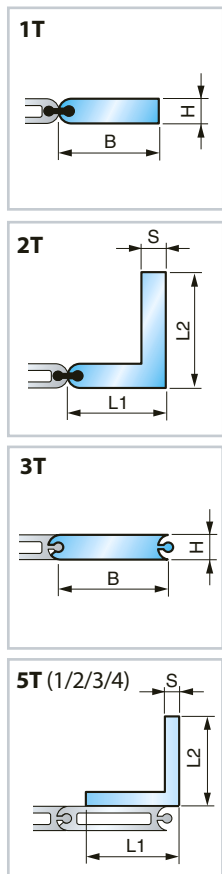
- The band is fixed relative to the floor, allowing people to cross the machine trench at any time even while the machine is in operation.
- During operation, the special interconnecting chain causes the unwinding action of one roll to automatically wind-up the opposite roll. Our patented compensating mechanism keeps the system in balance, even though the diameters of rolls continuously change.
- The patented compensating mechanism is very compact and is mounted to the machine column in its own canister.
- The patented design insures a perfectly functional and reliable design.
- Upon request, we can design a system using DC or pneumatic motors.
- The dimensions, layout, and speed of travel are developed for each order and can meet your exact needs.

FLEXIBLE ALUMINUM COVERS

All the FLEXIBLE ROLL-UP COVERS of "J" RANGE are IMPACT TESTED according to EN 12417.



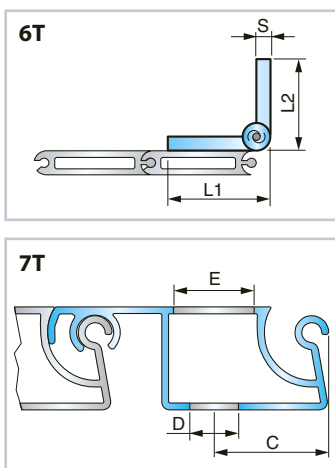
Standard end mount profiles:



CODE	Minimum winding diameter		Cover weight Kg/m ²	Cover cleaning	Bending strength, support distance*		Max. charge permitted kg each wheel Ø100 Kg	Impact tested EN12417 Joule	Anti-slip treatment
	With upper roller mm	With lower roller mm			(90 Kg) mm	(150 Kg) mm			
JH	200	200	25,0	Wiper	4500	4000	75	250	Upon request
JL	100	100	12,2	Wiper	1200	1000	50	90	Upon request
J	150	150	12,5	Wiper	2200	1750	50	150	Upon request
JB	/	60	9,5	Wiper	750	600	50	150	Not available
AKS1	50	50	9,0	Brush	750	600	/	-	Not available
AKS4	/	50	9,0	Wiper	750	600	10	-	Not available

MATERIAL: Anodized grey aluminum
MAX. FEASIBLE WIDTH: 6000 mm

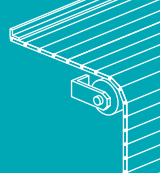
* Max. bending 1% of the support distance



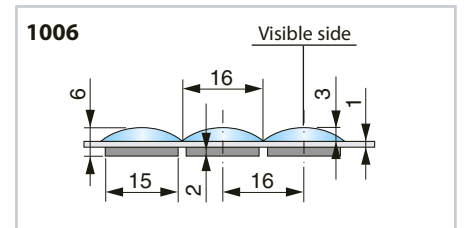
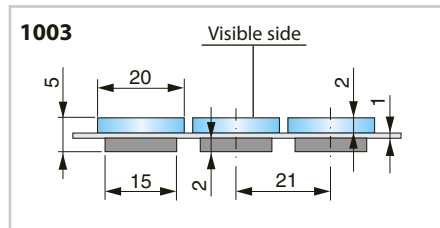
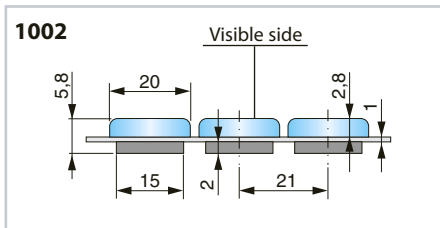
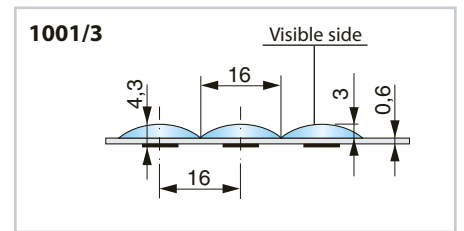
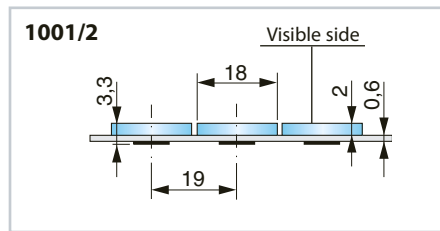
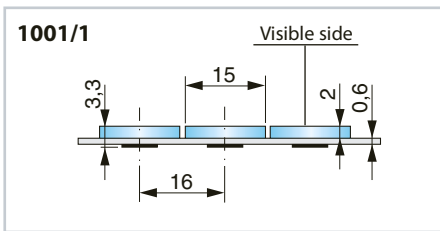
Terminal CODE	L1xL2xS	BxH	C	D	E	Material	Description	Cover CODE
1T		25x5,5				Al	Flat	AKS-1/AKS-4
2T	20x30x5,5					Al	Corner	AKS-1/AKS-4
3T		20x6				Al	Cover	JB
5 T/1	15x15x3					Al-Stl	Corner	JB
5 T/2	20x20x3					Al-Stl	Corner	JB
5 T/3	30x30x3					Al-Stl	Corner	J / JB / JL
5 T/4	40x40x5					Stl	Corner	J / JH
6T	30x30x2					Stl	Hinged	AKS-1/AKS-4 J/JL/JH/JB
7T	Drilling upon request only		18 20 35	ø 5,50 ø 8,50 ø 13	ø 10 ø 14 ø 20	Al	Cover	JL J JH

Al = Aluminum Stl = Steel

We can provide end mountings to match customer drawings upon request.



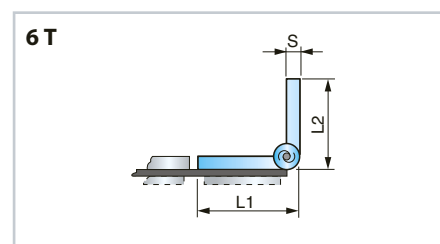
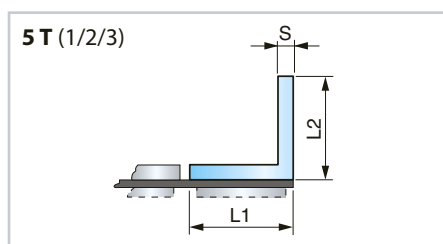
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CODE	Possible combinations of materials		Minimum winding diameter (mm)		Max. feasible width (mm)
	Upper elements	Lower elements	With upper roller	With lower roller	
1001/1	Al-Stl-Br		50	30	2000
1001/2	Al-Stl-Br		70	30	2000
1001/3	Al		70	30	2000
1002	Al	Al-Stl-Br	40	40	2000
1003	Al-Stl-Br	Al-Stl-Br	70	40	2000
1006	Al	Al-Stl-Br	70	50	2000

Al= Aluminum Stl= Steel Br= Brass

Standard end mount profiles:



Code	L1xL2xS	Material
5T/1	15x15x3	Al - Ac
5T/2	20x20x3	Al - Ac
5T/3	30x30x3	Al - Ac
6T	30x30x2	Stl hinge

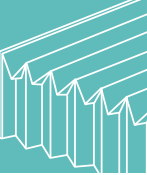
We can provide end mounts to match customer drawings upon request.

X-Y LM SHIELD with Thermic-Welded Covers and Movable Plates

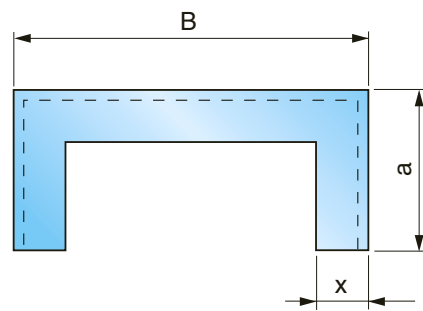
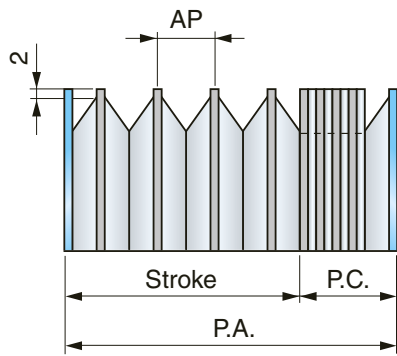
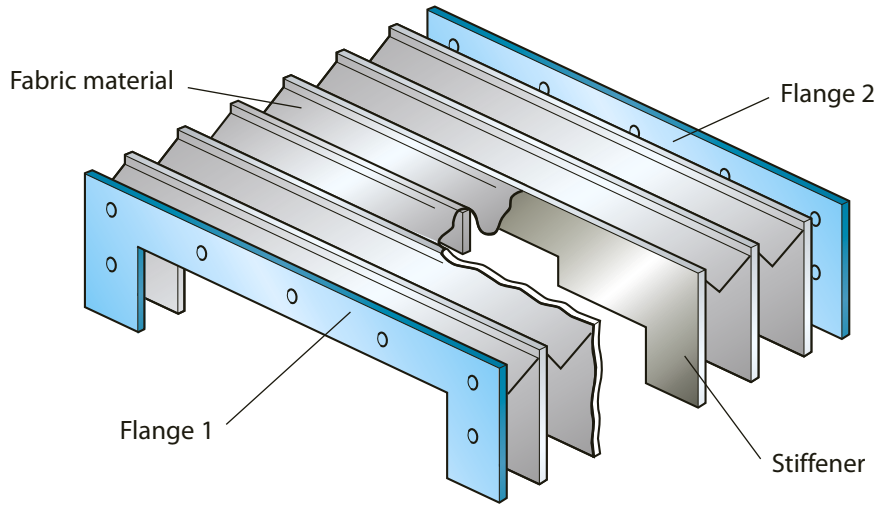
- The **X - Y LM SHIELD** composed of thermic-welded bellows with steel laminations, represents the cheapest solution for protecting the working area in horizontal spindle machining centers where there is a large production of hot shavings. This system consists of No. 2 horizontal bellows and No. 2 vertical bellows, protected by movable stainless steel plates guaranteeing a very functional product for Quality/Price.
- Accelerations up to 1 G
- Speeds up 120 m/min.
- The thermic-welded protection bellows are largely used on every kind of machine tool. They are frequently used in machining centers and chip-removing machines. In order to protect the bellow exposed to hot shavings, a shielding made by metal elements, called "plates" will be necessary. The steel laminations are fixed by special clamps keeping the plates adherent and loaded one on the other to prevent contaminants and shavings from entering.



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THERMIC-WELDED COVERS



- P.A.** = Open length
- P.C.** = Closed length
- Stroke** = Open length - closed length

- B** = Outside width
- a** = Outside height
- x** = Fold height

Formula for calculating the CLOSED LENGTH

- AP** = Opening of 1 fold = $x \cdot 2 - 8$
- SM** = Fabric thickness *
- SS** = Stiffener thickness *
- SF** = Flange thickness *

NP = Number of folds = $\frac{P.A.}{AP} + 2$

P. C. = $(SM \cdot 8 + SS) \cdot NP + (SF \cdot 2)$

* See materials list on page 31.

This data sheet shows only one type of Thermic-Welded Cover that we manufacture.

Contact our engineering department for other types.

Example:

Given that: Fold height = 15 mm
Open length = 1000 mm

Opening of 1 fold = $15 \times 2 - 8 = 22$

Number of folds = $\frac{1000}{22} + 2 = 48$

Closed length = $(0,25 \times 8 + 1^{**}) \times 48 + (2^{***} \times 2)$

Closed length = $3 \times 48 + 4 = 148$

Closed length = 148 mm

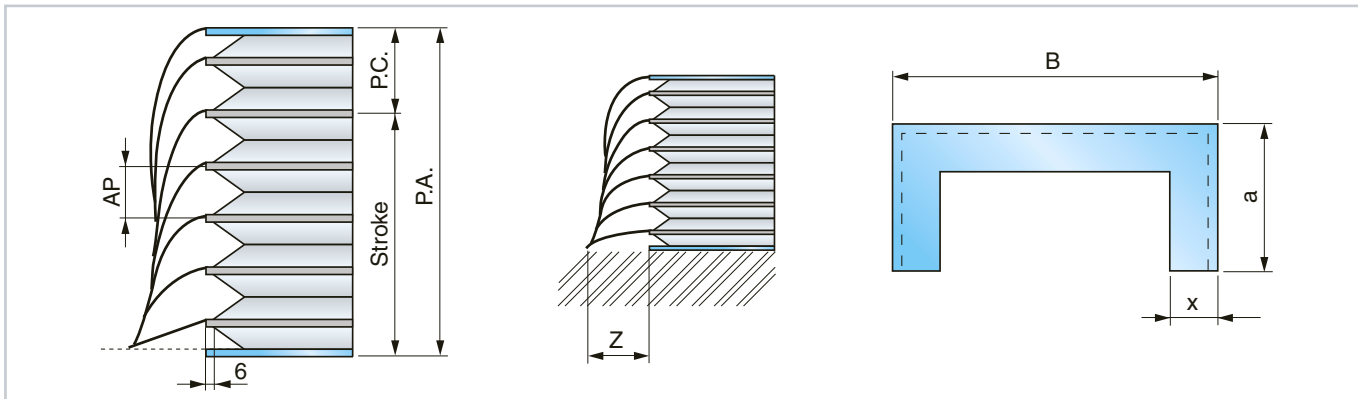
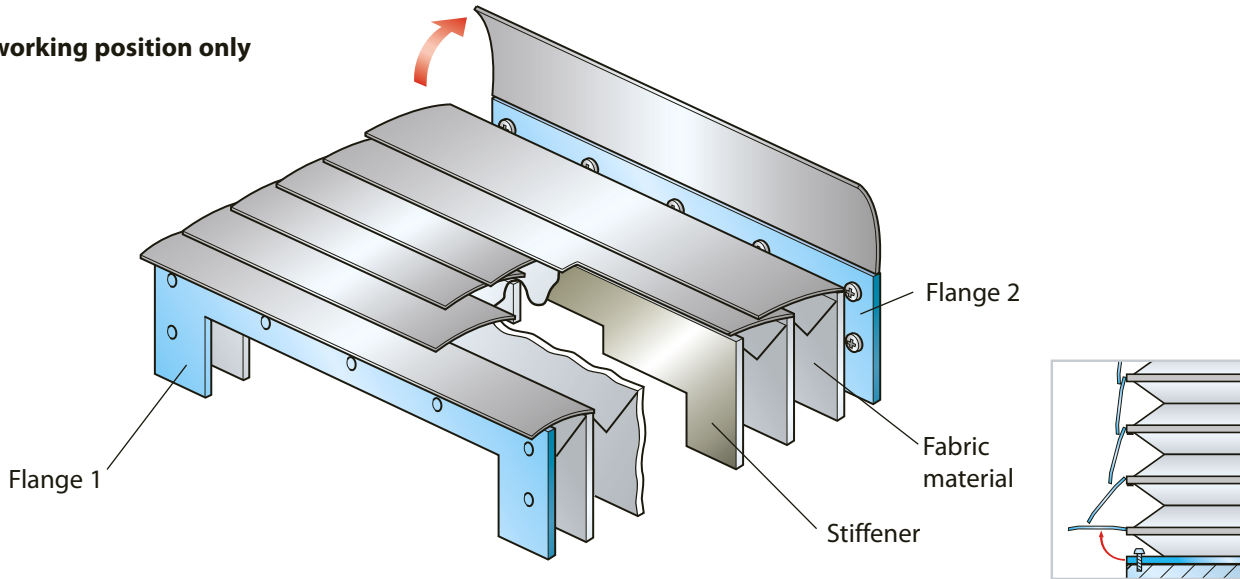
* We hypothesize the fabric material with code "TEMAT015" (see materials list on page 32)

** We hypothesize that the stiffener is 1 mm thick

*** We hypothesize that the flange is 2 mm thick (see materials list on page 31)

THERMIC-WELDED COVER WITH FLEXIBLE LAMINATIONS

Vertical working position only



P.A. = Open length
P.C. = Closed length
Stroke = Open length - closed length

B = Outside width
a = Outside height
x = Fold height

x(mm)	15	20	25	30	35	40	45
Z(mm)	40	50	60	70	80	90	100

Formula for calculating the CLOSED LENGTH

Opening of 1 fold = $(x \cdot 2) - 16$

SM = Fabric thickness *

SS = Stiffener thickness *

SF = Flange thickness *

NP = Number of folds = $\frac{P.A.}{AP} + 2$

P.C. = $(SM \cdot 8 + SS) \cdot NP + (SF \cdot 2)$

* See materials list on page 31

This data sheet shows only one type of Thermic-Welded Cover that we manufacture.

Contact our engineering department for other types.

Example

Given that: Fold height = 30 mm
 Open length = 1000 mm

Opening of 1 fold = $(30 \times 2) - 16 = 44$

Number of folds = $\frac{1000}{44} + 2 = 25$

Closed length = $(0,25 \times 8 + 1^{**}) \times 25 + (2^{***} \times 2)$

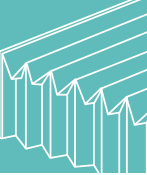
Closed length = $3 \times 25 + 4 = 79$

Closed length = 79 mm

* We hypothesize the fabric material with code "TEMAT015" (see materials list on page 32)

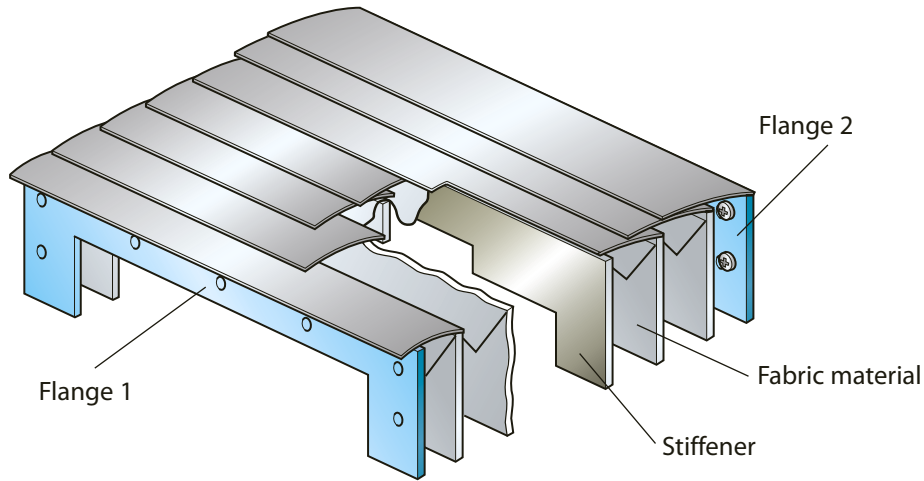
** We hypothesize that the stiffener is 1 mm thick

*** We hypothesize that the flange is 2 mm thick (see materials list on page 31)

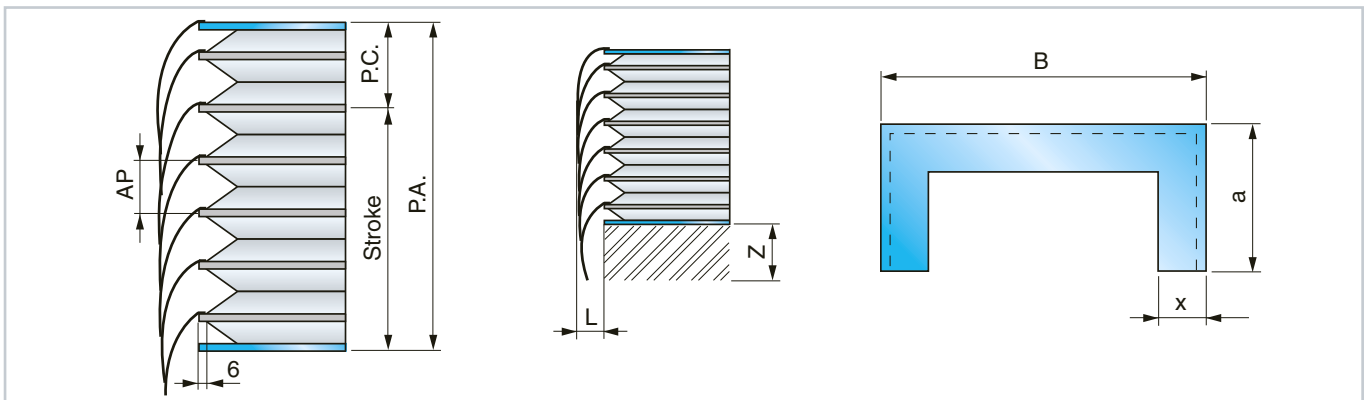
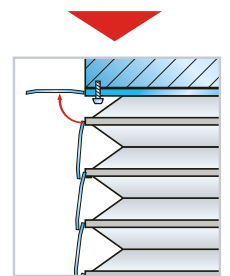


THERMIC-WELDED COVER WITH FIXED LAMINATIONS

Working position:
Horizontal
Vertical
Frontal



Possible special fixing to facilitate the mounting of the first steel lamination



P.A. = Open length
P.C. = Closed length
Stroke = Open length - closed length

B = Outside width
a = Outside height
x = Fold height

x(mm)	15	20	25	30	35	40	45
L(mm)	16	21	26	33	43	48	56
Z(mm)	45	55	65	75	85	95	105

Formula for calculating the CLOSED LENGTH

AP = Opening of 1 fold = $x \cdot 2 - 16$
SM = Fabric thickness *
SS = Stiffener thickness *
SF = Flange thickness *
NP = Number of folds = $\frac{P.A.}{AP} + 2$
P. C. = $(SM \cdot 8 + SS) \cdot NP + (SF \cdot 2)$

* See materials list on page 31

This data sheet shows only one type of Thermic-Welded Cover that we manufacture.

Contact our engineering department for other types.

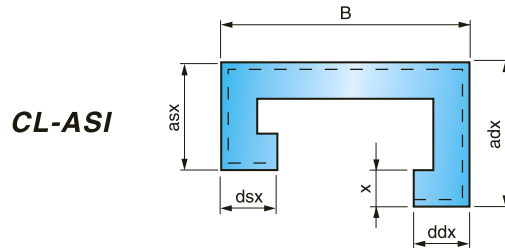
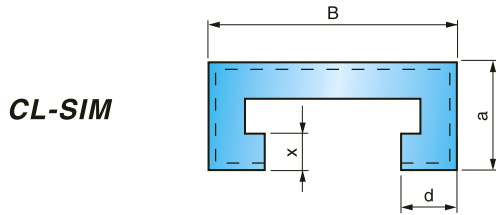
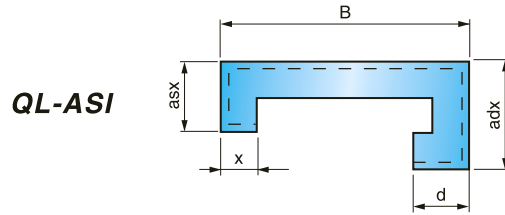
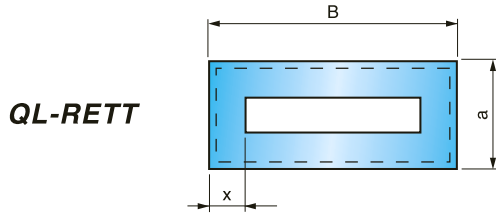
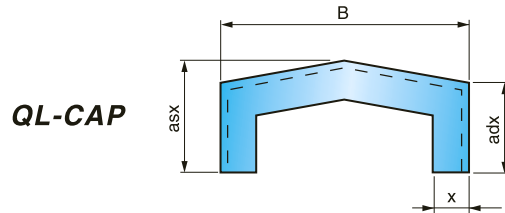
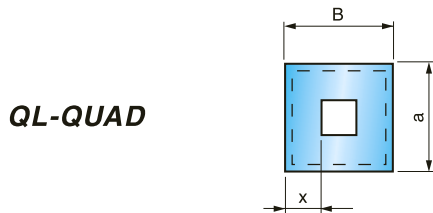
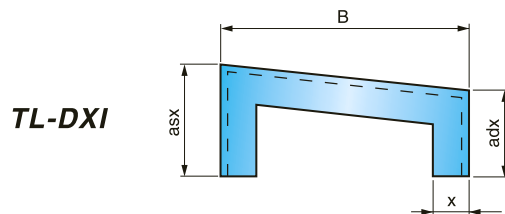
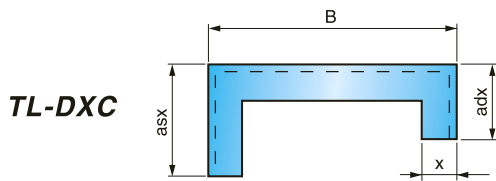
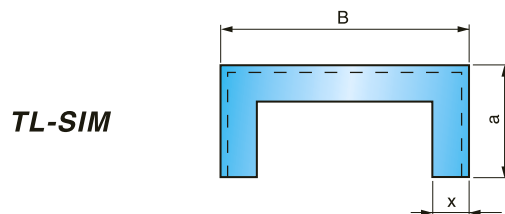
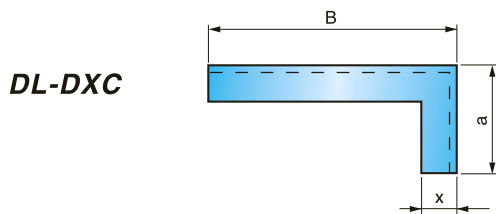
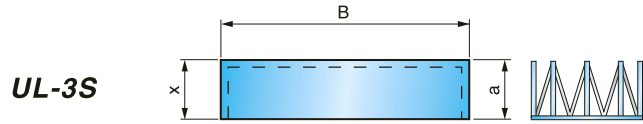
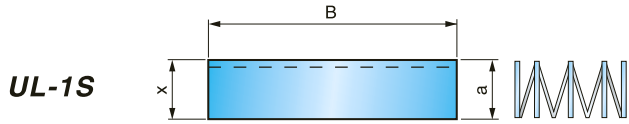
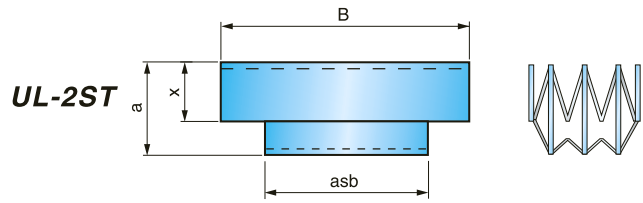
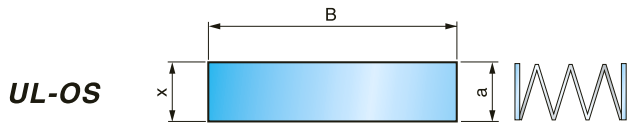
Example

Given that: Fold height = 45 mm
 Open length = 1800 mm
 Opening of 1 fold = $45 \times 2 - 16 = 74$
 Number of folds = $\frac{1800}{74} + 2 = 27$
 Closed length = $(0,35 \times 8 + 1^{**}) \times 27 + (3^{***} \times 2)$
 Closed length = $3,8 \times 27 + 6 = 109$
Closed length = 109 mm

* We hypothesize the fabric material with code "TEMAT151" (see materials list on page 32)
 ** We hypothesize that the stiffener is 1 mm thick
 *** We hypothesize that the flange is 3 mm thick (see materials list on page 31)

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Standard Shapes



NOTE: The above are only the standard shapes of Thermic-Welded Covers. Other shapes available upon request.

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Thermic-Welded Cover materials

Fabric material code	Description			Thickness (mm)	Heat resistance			Primary resistance characteristics
	Visible side	Fabric insert	Internal side		Momentary contact °C	Continuous		
						min. °C	max. °C	
TEMAT 091	PVC	Fiberglass	PVC	0,44	+300	-30	+ 80	Fabric suitable for minor welding splatter. Also appropriate around acids. Self-extinguishing.
TEMAT 106	Ptfe	Polyester	Polyurethane	0,30	+200	-30	+120	Excellent resistance to oils and chemical products. No adhesive surface. Low friction coefficient. Excellent chemical inertia. Excellent resistance to abrasion and bending strength. Mainly used in grinding machines.
TEMAT 015	Polyurethane	Polyester	Polyurethane	0,25	+200	-30	+ 90	Excellent resistance to petroleum products, oils and heavy abrasion. Excellent bending strength.
TEMAT 151	Polyurethane	Polyester	Polyurethane	0,35	+200	-30	+ 90	
TEMAT 164	Polyurethane	Kevlar*	Polyurethane	0,35	+350	-30	+180	Excellent resistance to petroleum products, oils and heavy abrasion. Excellent bending strength. Excellent mechanical strength. Kevlar also has excellent shear strength. Normally used when there is heavy mechanical stress, a large amount of sharp shavings, and at high temperatures.
TEMAT 165	Polyurethane	Nomex*	Polyurethane	0,36	+300	-30	+130	Excellent resistance to petroleum products, oils and heavy abrasion. Excellent bending strength. Excellent mechanical strength. Good resistance to minor welding splatter or hot material. Widely used in laser cutting machines. Self-extinguishing.
TEMAT 169	Polyurethane	Panox*/Kevlar	Polyurethane	0,33	+300	-30	+130	Excellent resistance to petroleum products, oils and heavy abrasion. Excellent bending strength. Excellent mechanical strength. Good resistance to minor welding splatter or hot material. It may be considered as the best fabric on the market for use in laser cutting machines. Self-extinguishing.
TEMAT 017	PVC	Polyester	PVC	0,36	+100	-30	+ 70	Mainly used around heavy ambient dust, minor splatters of coolant and oil. Also suitable for use around acids.
TEMAT 020	PVC	Polyester	PVC	0,25	+100	-30	+ 70	

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Stiffener materials

Stiffener material code	Description	Thickness (mm)	Notes
PVC 05	PVC	0,50 **	Outside width (B) up to 300 mm
PVC 10	PVC	1,00	Outside width (B) from 301 up to 700 mm
PVC 15	PVC	1,50	Outside width (B) from 701 up to 1500 mm

Flange materials

Flange material code	Description	Thickness (mm)
AL	Aluminum	2,0 - 3,0
AC	Steel	2,0 - 3,0 - 4,0
PVC	PVC	2,0 - 3,0

Lamination materials

Lamination material code	Description	Primary applications
AL	Aluminum (Baked Enamel Finish)	For use around welding splatter, small and medium-sized hot shavings. Especially suitable for use around continuous sparks. Appropriate where lightweight materials are necessary.
INOX		In work environments with large shavings. Especially suitable for use around acids.

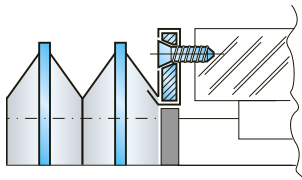
* Kevlar and Nomex are registered Dupont trademarks ** NOT recommended for Thermic-Welded Covers with laminations.

Contact our engineering department for other materials and applications.

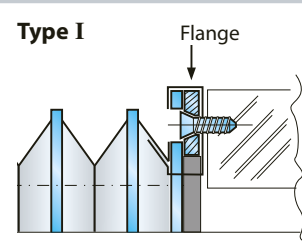
Flange Fastening Systems

- Solution with sheet steel, aluminum or PVC flange
- Shape and holes per customer drawings

Type A

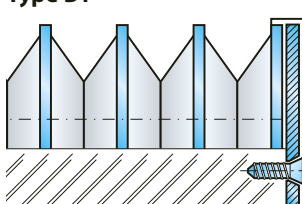


Type I

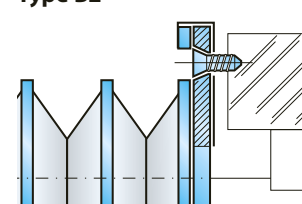


- Solution with sheet steel, aluminum or PVC flange
- Shape and holes per customer drawings
- Solution with connector flange protruding from the cover profile, made of sheet steel, aluminum or PVC

Type B1

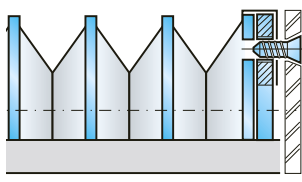


Type B2



- Solution with sheet steel flange
- Shape and holes per customer drawings
- Threaded flange holes

Type C



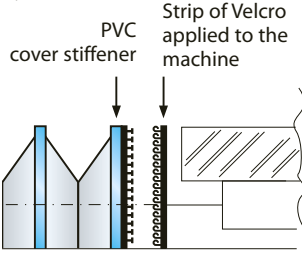
Solution with rapid VELCRO connection.
A PVC support acts as a flange, with VELCRO strips applied to the stiffener and directly to the machine.

This solution offers:

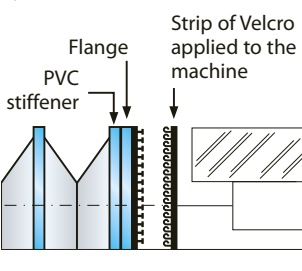
- Rapid application and removal of the cover
- Low cost

Recommended for dry work environments

Type E



Type H

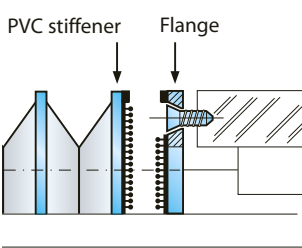


Solution with STRONG HOLD rapid connection.
A PVC support and flange act as a flange, to which the STRONG HOLD rapid connection is applied. The flange is made of sheet steel, aluminum or PVC, shape and holes per customer drawings. This solution offers:

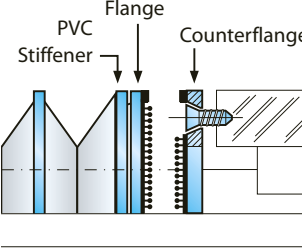
- Rapid application and removal of the cover
- Foam gasket strip provides a tight seal around the connection

Recommended for wet work environments

Type F

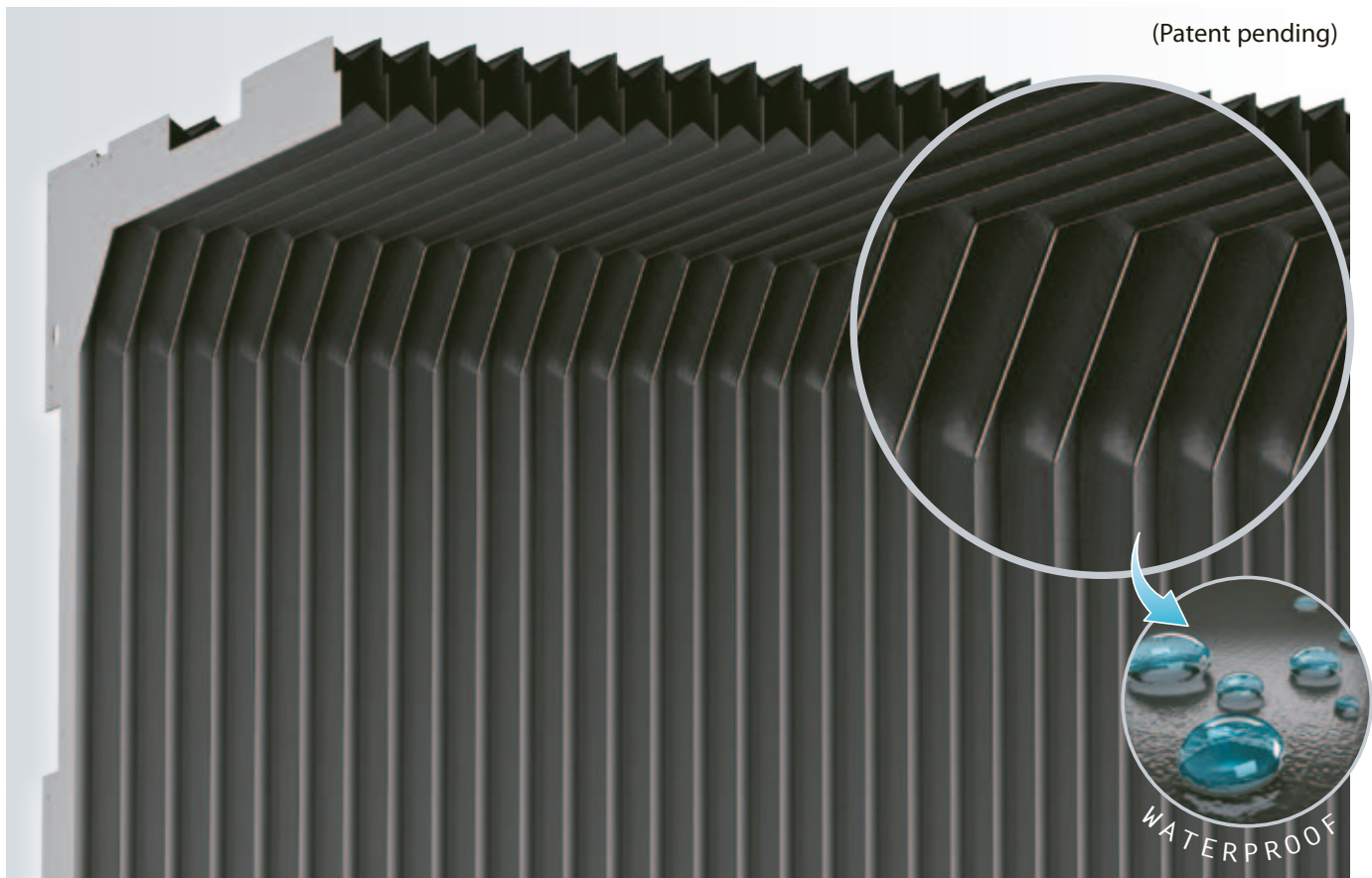


Type G



THERMIC-WELDED COVER: EVER-CLEAN

- The **construction of the corner** is the main feature of this thermic-welded bellow.
- The bellow is guaranteed to be **free from chips and sludge**, there are no creases in the fabric which obstruct the chip conveyor.
- The **closed length** of the bellow is **smaller** than traditional thermic-welded bellows due to the absence of folds of fabric in the corners.
- The **range of geometry** possible for manufacture **has increased**.
- **Structural rigidity** has increased in applications where only one bellow must cover the crossbar and roof of the machinery.



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Formula for calculating the CLOSED LENGTH

Closed Length = Fabric thickness x 4,5

Formula for calculating X1

X1 = X x 2

For this type of bellow consult our technical office.



THERMIC-WELDED COVER WITH LAMINATIONS: MULTI-STEEL

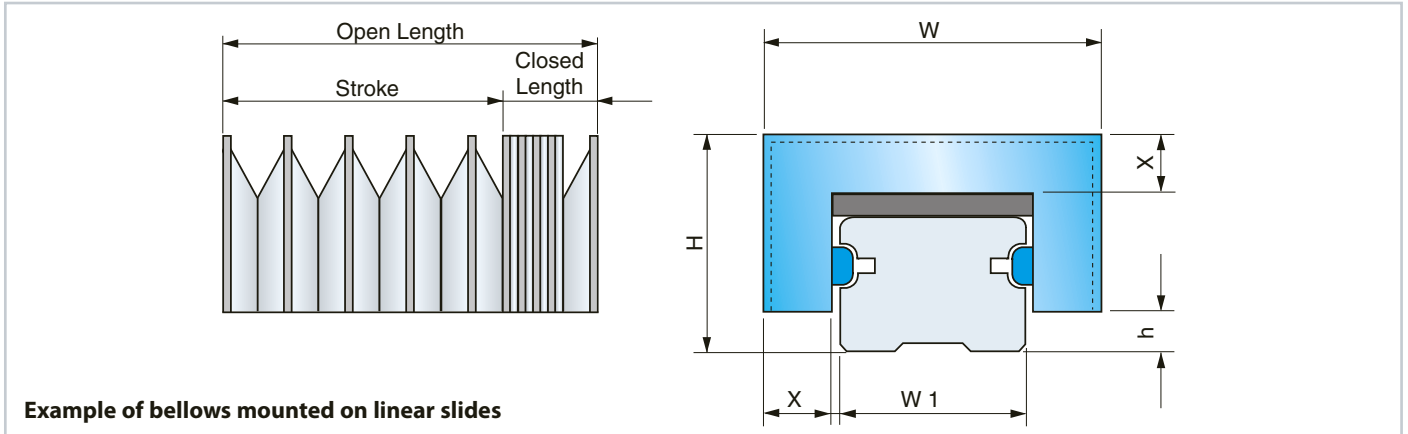
- Thermic-welded bellows with laminations on many sides are the ideal solution for **complete protection of the roof and crossbar** in multi-shaft working centres.
- The corners are closed and steel inox laminations applied with a **perfect 90° fold** in merit of the elastic deformation of the material and a special geometry.
- **More than two sides** can be covered and **with different angles**.



(Patent pending)

For this type of bellow consult our technical office.

Thermic-Welded Covers for Linear Slides



Example of bellows mounted on linear slides

List of Standard Material

Type of material	Stiffener	Fabric material	Closed length for 1000 mm of open length
S1	PVC 0,50	PVC + Polyester + PVC 0,25 (TEMAT020)	90
P1	PVC 0,50	Polyurethane + Polyester + Polyurethane 0,25 (TEMAT015)	90
LX	PVC 1,00	Polyurethane Panox/Kevlar + Polyurethane 0,33 (TEMAT169)	150

Standard Thermic-Welded Covers Size

Slide nominal value	Ply height	Bellow width	Total height	Slide deviation
W1	X	W	H	h
15	19	56	36	5
20	19	61	40,5	5
25	19	67	43	7,5
30	19	72	51	8
35	19	76,5	51	9
45	19	87,5	61	10
55	25	108	73	15
65	32	132	90	15

Example of the identification code of a Thermic-Welded Cover for Linear Slides complete with flange

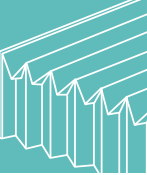
Slide manufacturer	THK
Slide model	HSR
Slide nominal value (W1)	35
Open length (stroke + closed length)	1500
Type of material	P1
Flange fixing system	A-A (see page 37)

NOTE: For the W1 slide over size 65, please contact our Technical Dept.

Questionnaire for Thermic-Welded Covers for Linear Slides

<p>! Slide Manufacturer</p> <p>! Slide Model</p> <p>! Slide Nominal Value (W1) <input type="checkbox"/> 15 <input type="checkbox"/> 20 <input type="checkbox"/> 25 <input type="checkbox"/> 30</p> <p> <input type="checkbox"/> 35 <input type="checkbox"/> 45 <input type="checkbox"/> 55 <input type="checkbox"/> 65</p> <p>! Open length (Stroke + Closed length)mm</p> <p>! Fabric type <input type="checkbox"/> S1 <input type="checkbox"/> P1 <input type="checkbox"/> LX</p> <p>! Fastening system <input type="checkbox"/> Solution A with clamps</p> <p> on guide top <input type="checkbox"/> Solution B1 with flange in PVC</p> <p>! Fastening system <input type="checkbox"/> Solution A with clamps</p> <p> to table <input type="checkbox"/> Solution B2 with flange in PVC</p>	<p>! Company name</p> <p>Phone:.....</p> <p>E-mail:.....</p> <p>Quantity:.....</p> <p>Annual demand:</p> <p>.....</p> <p>Date:.....</p> <p>Notes:.....</p> <p>.....</p> <p>.....</p>
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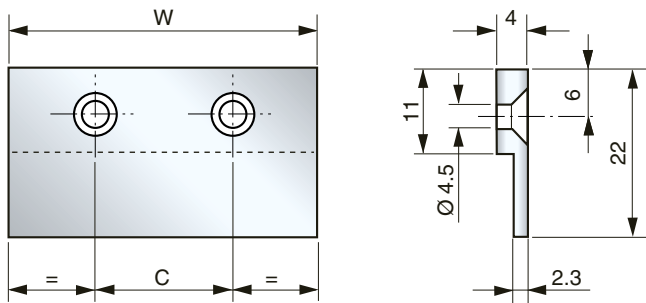
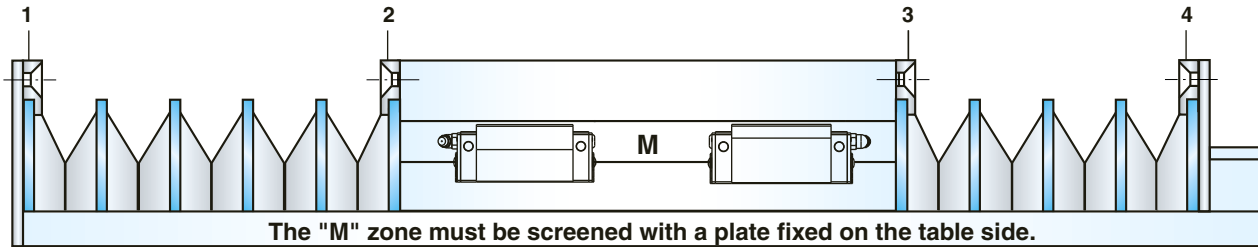
NOTE: The data fields and/or tables marked by ! are the least ones to be filled in order to give you a quotation. Please send an e-mail to info@pei.eu or a fax to +39 051 6464840.



Thermic-Welded Covers Standard Systems for Linear Slides

Solution A: Fastening holdfast

Bellows-fastening standard systems for linear slides

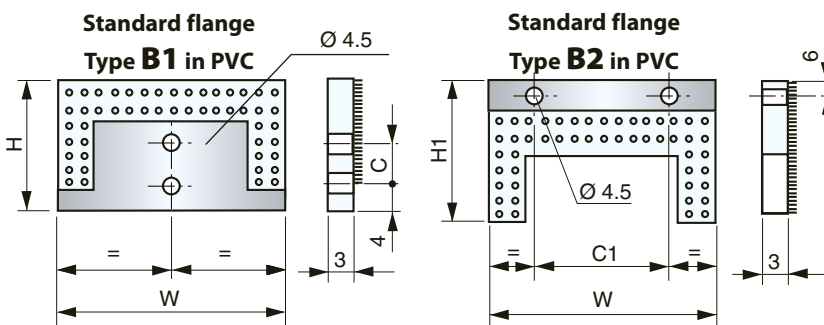
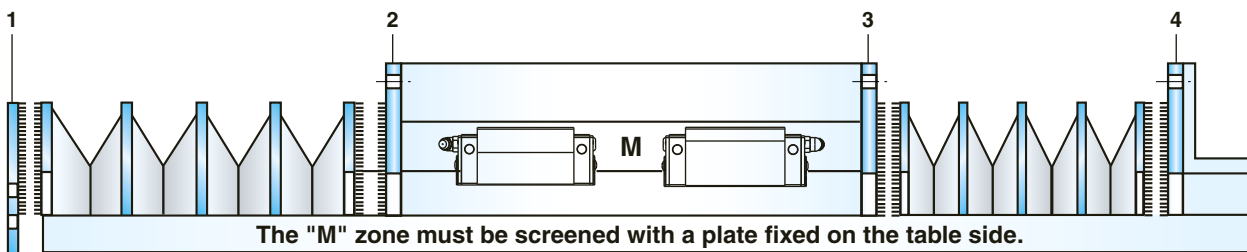


SLIDE	W	C	N. HOLES
15	52	26	2
20	57	29	2
25	63	32	2
30	68	34	2
35	72	36	2
45	83	28	3
55	104	35	3
65	128	32	4

Suitable for bellows fastening in positions 1 - 2 - 3 - 4, with angular or plate supports provided by customers

Solution B: Velcro flange fastening (B1 and B2)

Suitable for dry working places



SLIDE	W	H	C	H1	C1	N. HOLES
15	56	36	0	42	26	2
20	61	40,5	8	46,5	29	2
25	67	43	8	46,5	32	2
30	72	51	8	54	34	2
35	76,5	51	18	53	36	2
45	87,5	61	18	62	28	3
55	108	73	18	69	35	3
65	132	90	18	86	32	4

- Pos.1 a) Fix the type 1 standard flange at the head of the slide.
b) Fix the bellows to the type 1 standard flange by pressing strongly.
- Pos.2-3 a) Fix the table or the mounting plate to the type 2 standard flange by means of screws.
b) Fix the bellows to the type 2 standard flange by pressing strongly.
- Pos.4 a) Fix the type 2 standard flange to the angular support provided by the customer by means of screws.
b) Fix the bellows to the type 2 standard flange by pressing strongly.

N.B. Fastening options showed in Pos. 1-4 are interchangeable

This technical card represents the standard systems used for the fastening of bellows for linear slides we can provide. For different sizes, please contact our technical department.

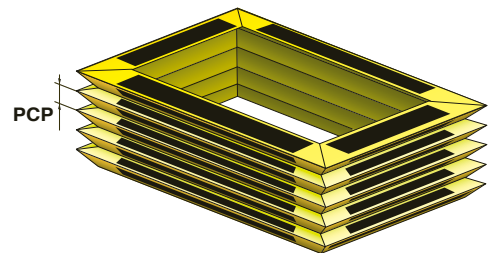
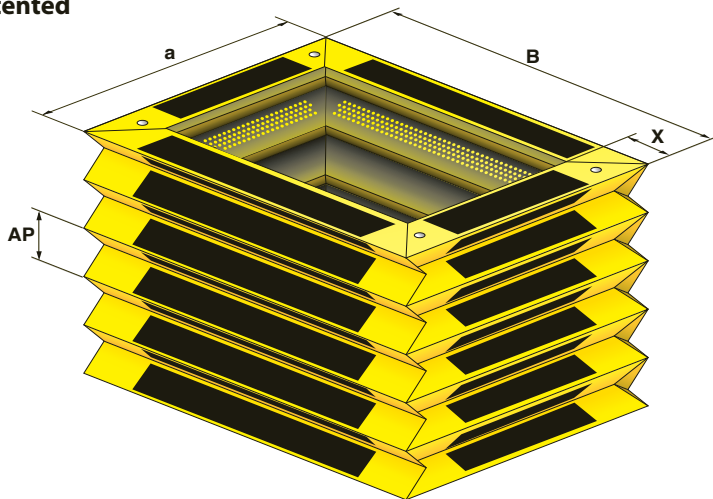
BELLOWS FOR HOISTING PLATFORM

- Prevention of impediment of the hoist pantograph
- Protection from dust, dirt or foreign particles



Bellows Duratite™

Patented

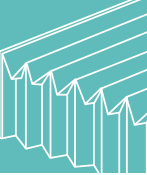


Formula for calculating the CLOSED LENGTH

$$P.C. = NP \cdot PCP + 10 \text{ mm}$$

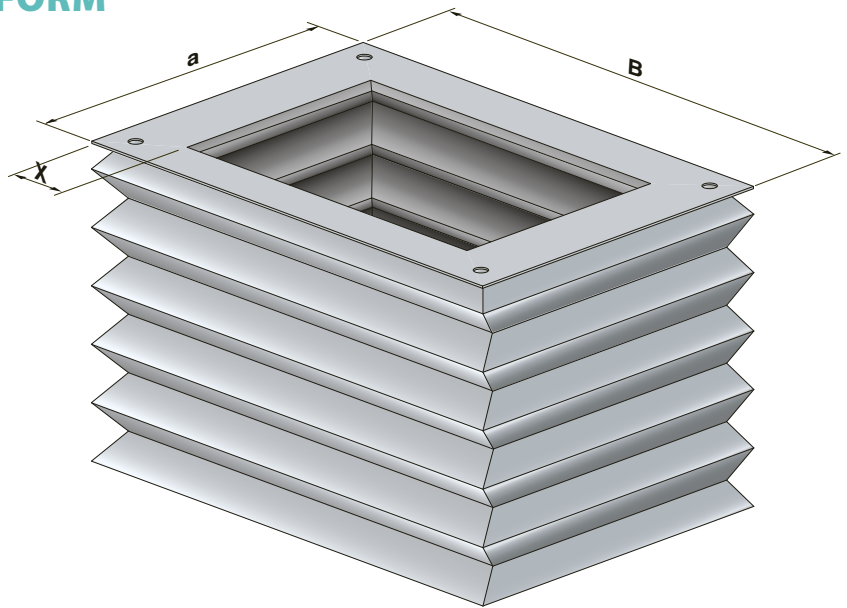
$$NP = \text{Number of folds} = \frac{P.A.}{AP}$$

X	AP	PCP	Material	Color	Reference code
38	55	10	PVC/PU	Yellow/Black	DM-PU-G
			PVC/PU	Black	DM-PU-N
67	100	10	PVC	Yellow/Black	DM-PU-G
			PVC	Black	DM-PU-N
89	125	10	PVC	Yellow/Black	DM-PU-G



BELLOWS FOR HOISTING PLATFORM

Thermic-welded Bellows Type QL-RETT



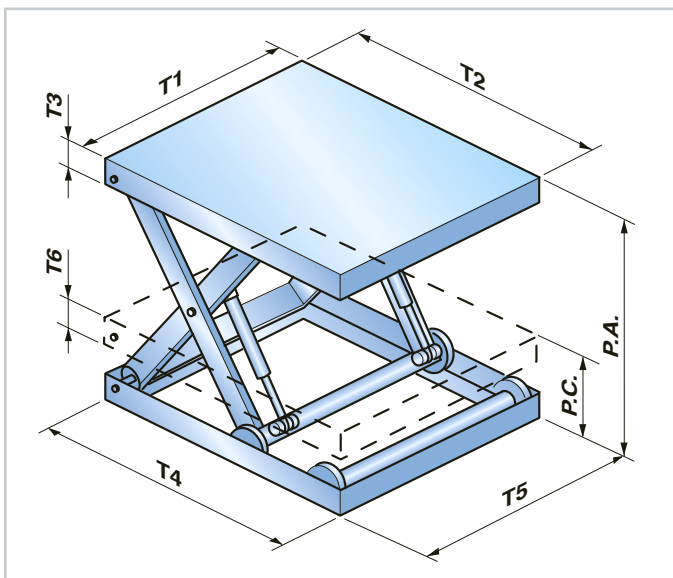
- All calculation formulas are shown on page 27.

Systems for fastening Bellows for Lift Tables

<p>I</p> <p>Solution with sheet steel, aluminum or PVC flange. Shape and holes per customer drawings.</p>	<p>B</p> <p>Solution with sheet steel, aluminum or PVC flange. Shape and holes per customer drawings.</p>	<p>E</p> <p>Solution with rapid VELCRO connection. This solution offers:</p> <ul style="list-style-type: none"> • Rapid application and removal of the cover • Low cost 	<p>CI</p> <p>Bellows inner collar. Suitable for screw fastening.</p>	<p>CE</p> <p>Bellows outer collar. Suitable for screw fastening.</p>
--	--	--	---	---

EXAMPLES OF APPLICATION:

- Closing of upright doors
- Closing of storehouse rooms and interspaces
- Protection of level changing in assembly lines of the manufacturing industry
- Base protection of medical equipment



! Questionnaire for hoisting platforms BELLOWS:

a = mm

B = mm

X = mm

! Questionnaire for HOISTING PLATFORMS:

T1 = mm

T2 = mm

T3 = mm

T4 = mm

T5 = mm

T6 = mm

P.A. = mm

P.C. = mm

NP = mm

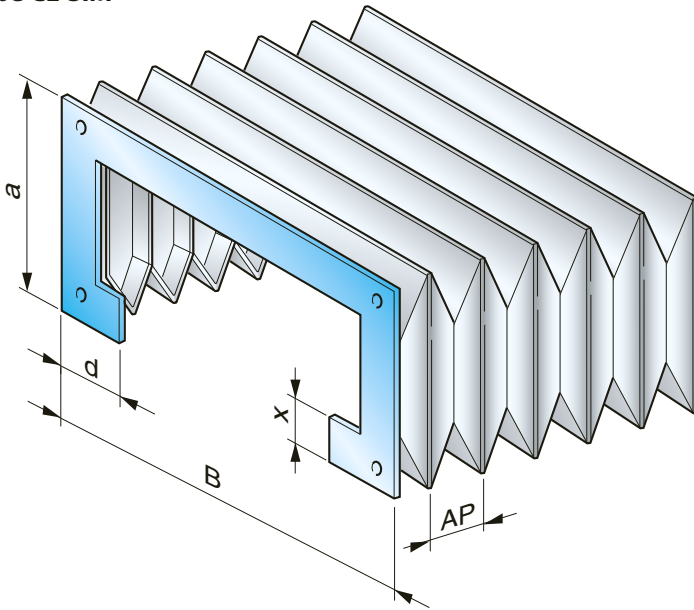
Upper side fastening I B E CI CE

Lower side fastening I B E CI CE

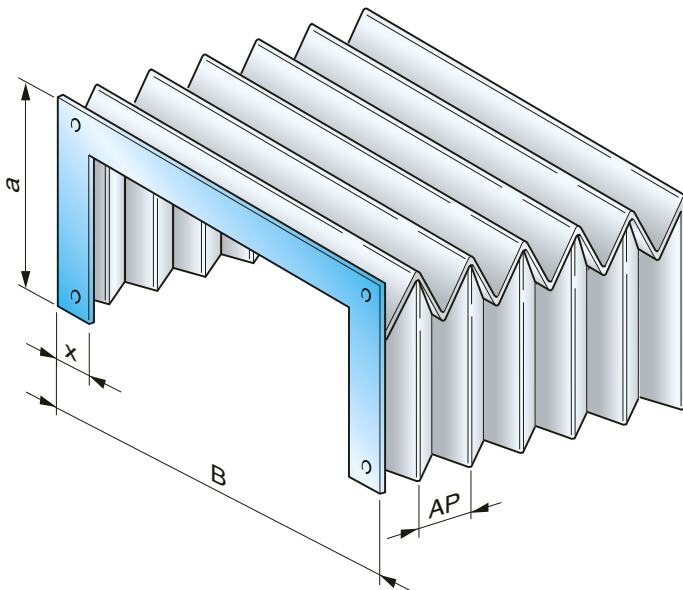
NOTE: The data fields and/or tables marked by **!** are the least ones to be filled in order to give you a quotation. Please send an e-mail to info@pei.eu or a fax to +39 051 6464840.

FLAT COVERS GLUED AND SEWN

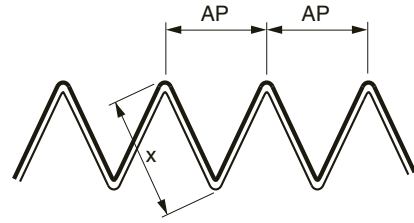
Type CL-SIM



Type TL-SIM



Glued style "A"



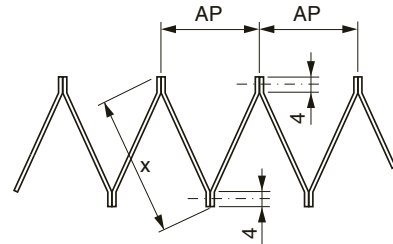
Formula for calculating the CLOSED LENGTH

$$P. C. = NP \cdot 4 + \text{flange thickness}$$

$$NP = \text{Number of folds} = \frac{P.A.}{AP} + 2$$

$$AP = \text{Opening of 1 fold} = x \cdot 1,41$$

Sewn style "C"

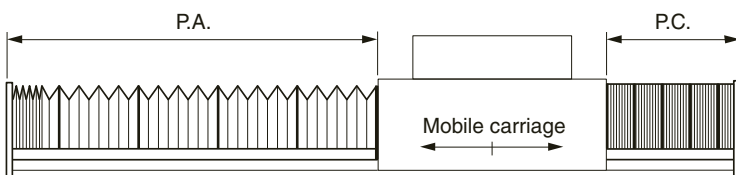


Formula for calculating the CLOSED LENGTH

$$P. C. = NP \cdot 2,5 + \text{flange thickness}$$

$$NP = \text{Number of folds} = \frac{P.A.}{AP} + 2$$

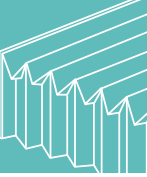
$$AP = \text{Opening of 1 fold} = (x-8) \cdot 1,41$$



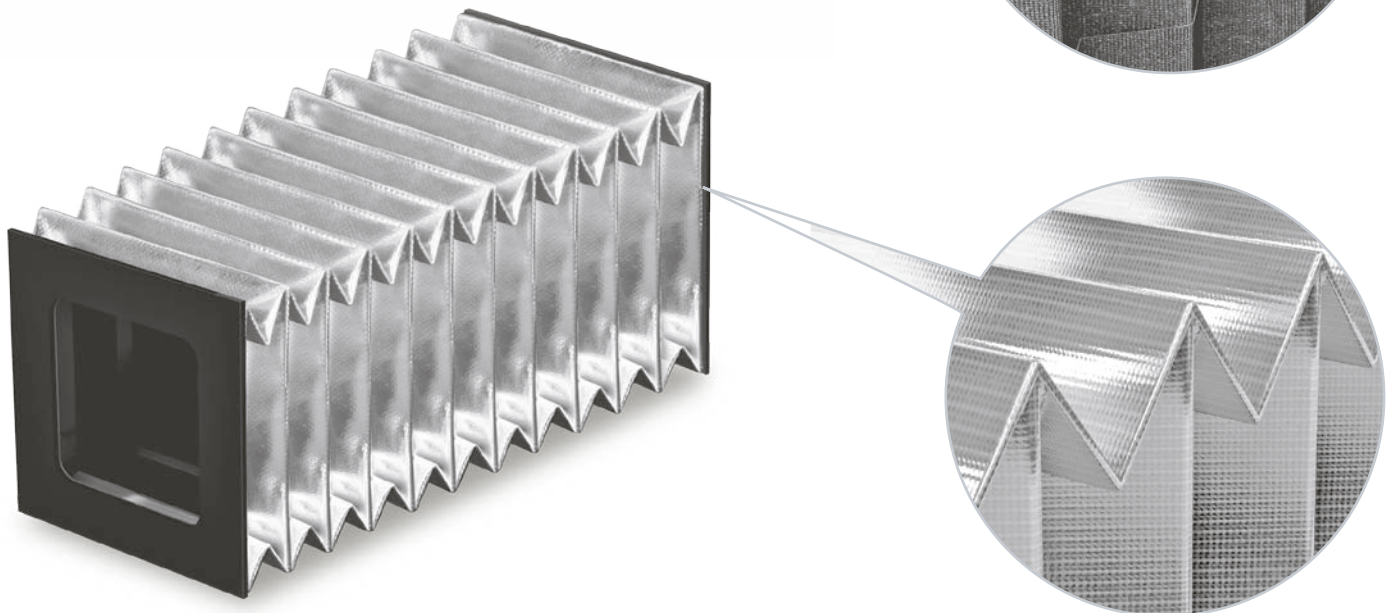
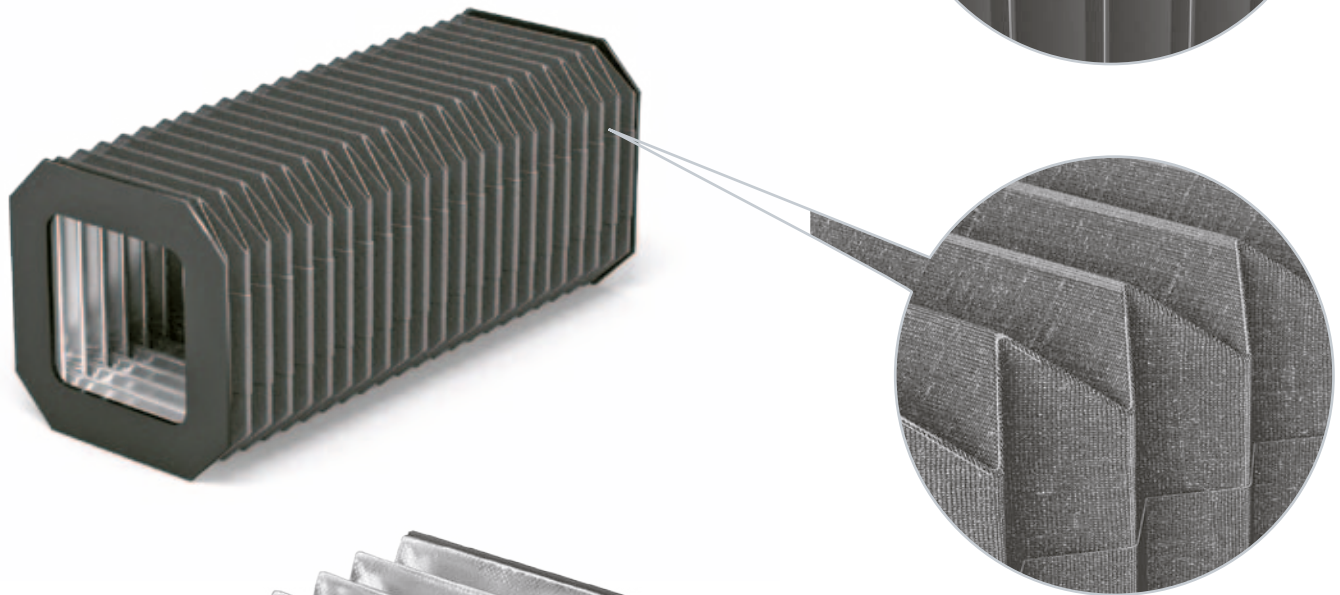
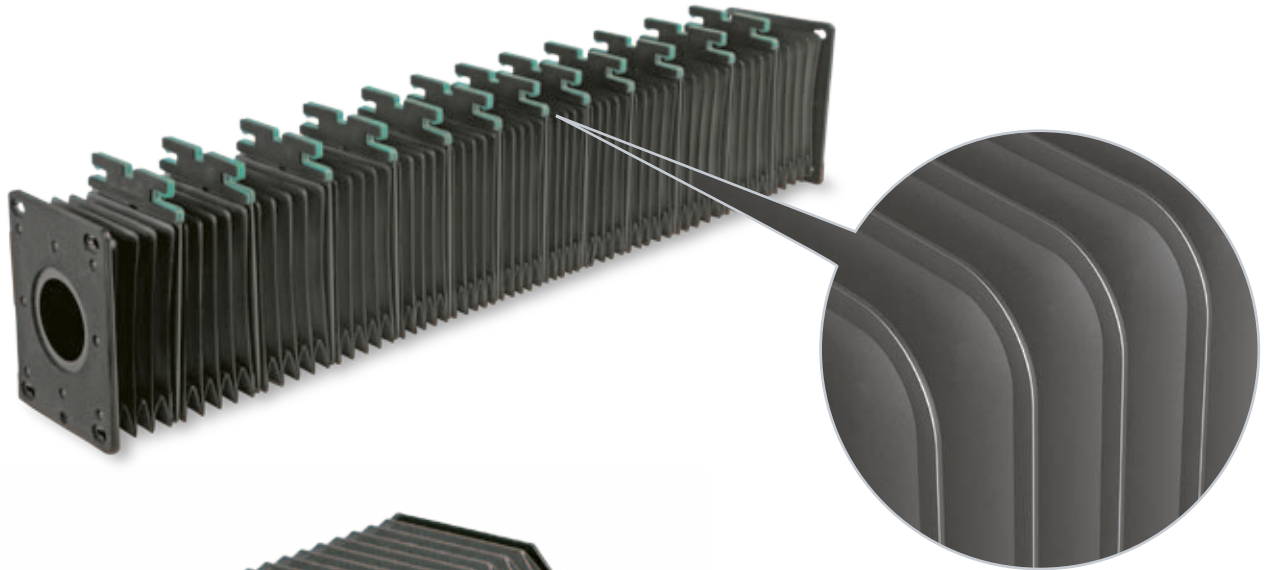
Contact our engineering department for this type of cover.

Ref.	Description	Dim.	Type	Style
! P.A.	Open length			
! P.C.	Closed length			
! Stroke	(P.A. - P.C.)			
! a	Outside height			
! B	Outside width			
! x	Fold height			
! d	Return dimension			
! AP	Fold opening			
! NP	Number of folds			

NOTE: The data fields and/or tables marked by ! are the least ones to be filled in order to give you a quotation. Please send an e-mail to info@pei.eu or a fax to +39 051 6464840.



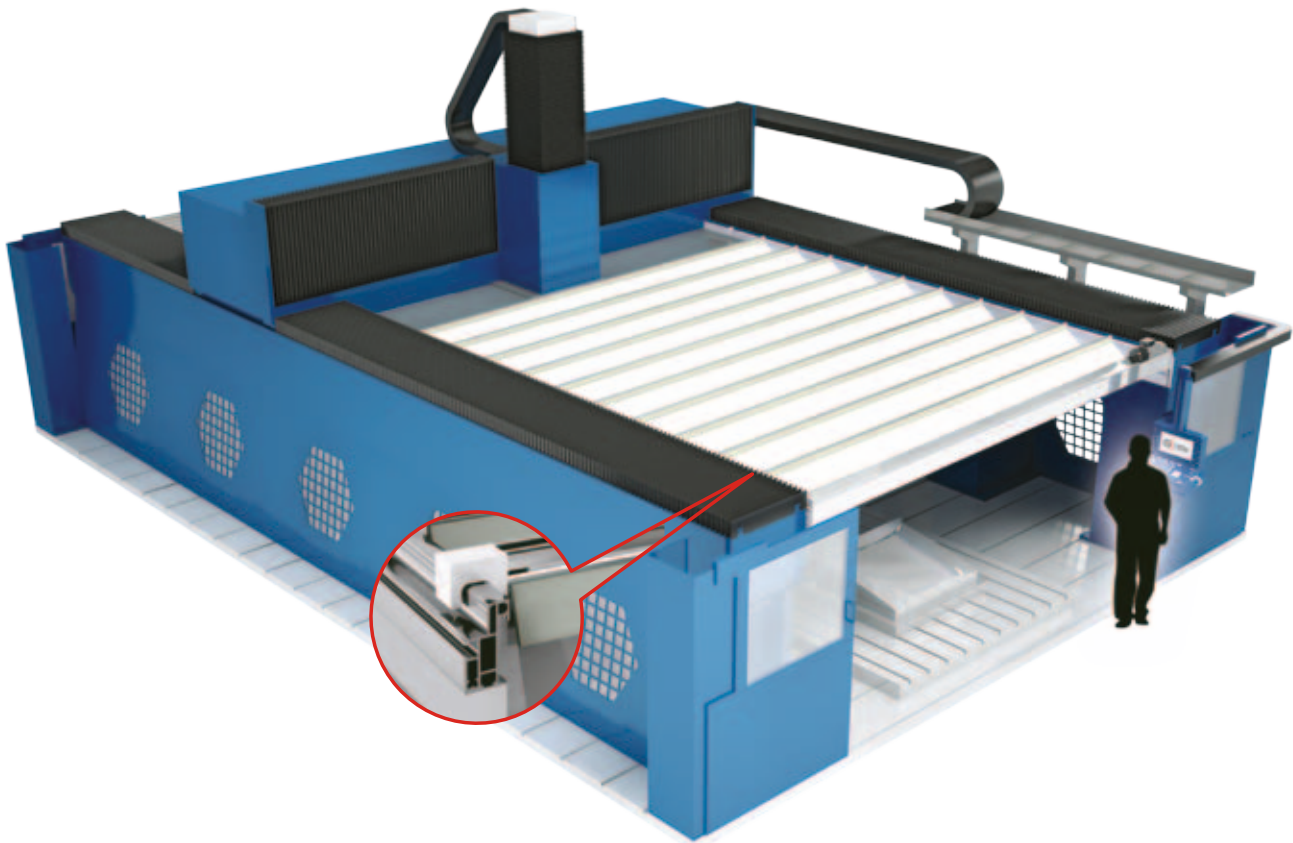
BELLOWS FOR LASER AND PLASMA MACHINES



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BELLOWS FOR OVERHEAD PROTECTION FOR PORTAL MILLING MACHINES: WAVE SKY

- **WAVE SKY** is a bellows that limits the escape of fumes, dust and chips from the workstation area.
WAVE SKY bellows reduces the suction force created during working: carbon fibres, composite materials and vaporised cooling lubricant.
 The special translucent fabric guarantees ample light in the work area.
 The motorised version makes for a quick opening and closing of the overhead apparatus.

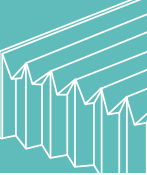


TECHNICAL SPECIFICATIONS

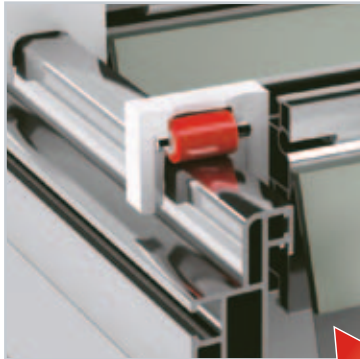
- ✓ **MAX SPEED:** 90 mt/min.
- ✓ **MAX ACCELERATION:** 1g
- ✓ **MAX WIDTH BETWEEN GUIDES:** 8.000 mm
- ✓ **MAXIMUM STROKE:** 25.000 mm
- ✓ **STANDARD FOLD HEIGHT:** 200 / 250 / 300 mm

EXAMPLE OF APPLICATION



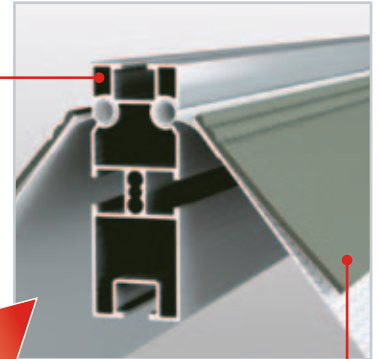


BELLOWS FOR OVERHEAD PROTECTION FOR PORTAL MILLING MACHINES: WAVE SKY

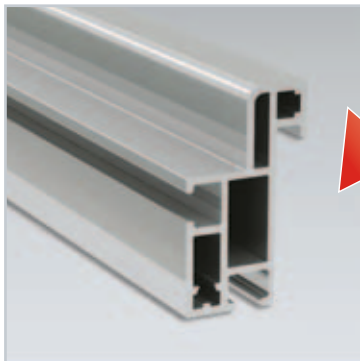
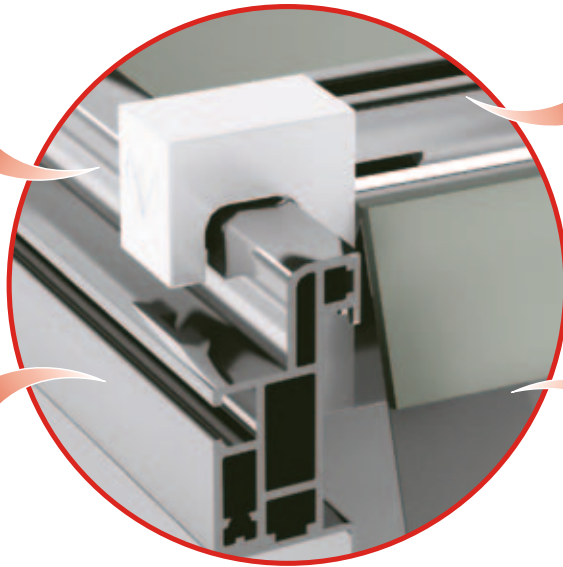


Sliding along the aluminium guides is ensured by **rollers**

Structural **aluminium frames**



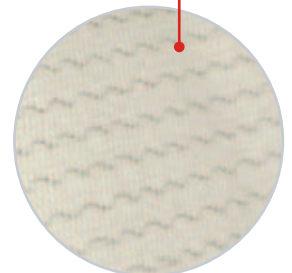
Soundproof fabric for damping at full stroke



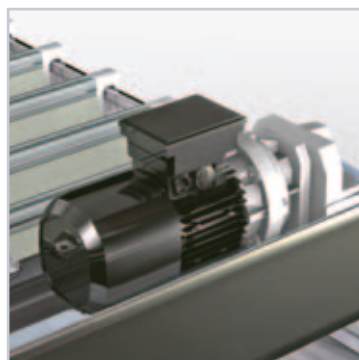
Lateral guides **modular and adjustable**



Bellow cover in **translucent and double weave fabric TEMAT 154**



Guide cover casing



Automatic motorisation opening/closing available on request

Code	Description of materials			Thickness	Heat resistance		Primary resistance characteristics
	Visible side	Fabric insert	Hidden side		Momentary contact °C	Continuous °C	
TEMAT154	Polyurethane	Polyester	Polyurethane	0,9	+130	-30 +90	Excellent resistance to petrol based products, oils and strong abrasion. The textile insert is made of a special fabric with high rigidity in the diagonal weave plus an aesthetically pleasing appearance. It is normally used in environments where there are large quantities of chips. TRANSLUCENT and ANTI-STATIC.
TEMAT180	CPT**	Polyester	-	1,6	+1200	-25 +300	CERAMIX has an excellent abrasion resistance and excellent shear strength. CERAMIX shows excellent resistance to mineral oils and hot temperatures. The two-ply fabric insert gives an high transverse rigidity and a very attractive appearance. In WAVE-SKY only CERAMIX is used in the bellow folds close to the working area, when large quantities of ALUMINUM hot and shearing shavings are produced, in cases of high speed chip-removing dry work environments. ANTISTATIC-PROOF and SELF-EXTINGUISHING.

** Ceramic Polymer Technology



THERMIC-WELDED TIGHT BELLOWS

They are used when watertight protection of the components (i.e. screws, shafts, etc.) is necessary against the contamination made by coolants.

- Economic bellows
- Good resistance to chemicals
- Resistance to heat compatible with the used materials (see characteristics on pages 52-53)
- They can be supplied in a variety of geometrical shapes, with low cost production of moulds (if not already present in our stock).

• **Materials available:**

Code TEMAT 018

Code TEMAT 019

Code TEMAT 153

See the characteristics shown in the tables on pages 52-53.



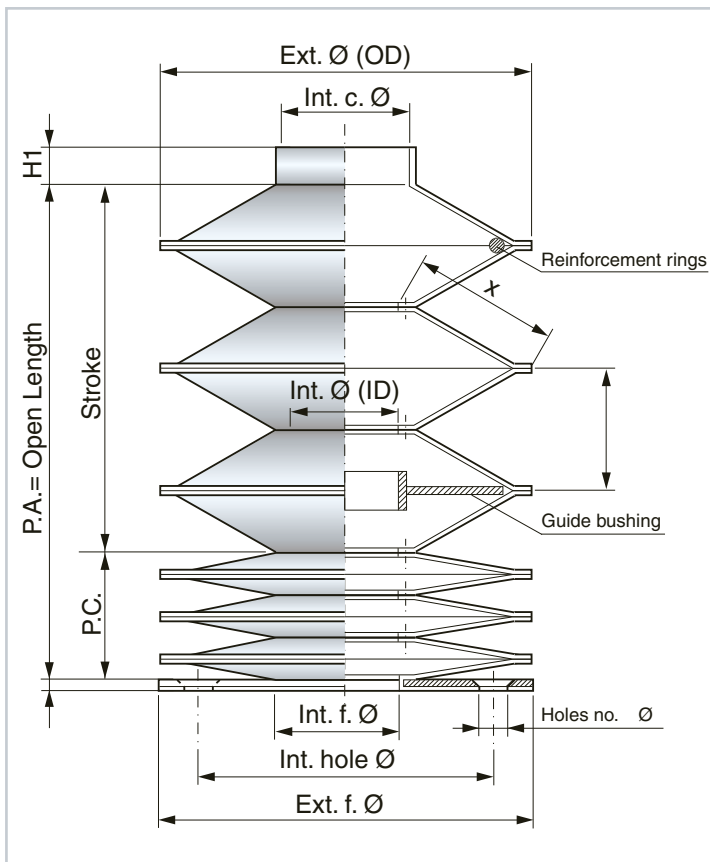
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SEWN ROUND BELLOWS

These are used when strong rotation resistance is required (for instance, to cover ball screws) and where a very compact closed pack is required.

- Highly **reliable** bellows
- High resistance to mechanical and dynamic **stress**
- Resistance to **coolants and oils**
- Suitable for **high temperatures**
- Available with guide **bushings** and reinforcement **rings**
- No tooling **costs**
- With selected **edging** (in safety colors upon request)
- Minimum internal diameter **starting at 20 mm**
- **Any size** external diameter
- Good **price/quality** ratio



Materials available:

- Polyester coated with Neoprene* and Hypalon*
- Polyester coated with Nitril rubber
- Polyester coated with Polyurethane
- Polyester coated with PVC
- Kevlar* coated with Neoprene* and Hypalon*
- Kevlar* coated with Polyurethane
- Fiberglass coated with Silicone and Neoprene*
- Fiberglass coated with PVC
- Aluminum-coated fabrics

* Neoprene, Hypalon and Kevlar are registered Dupont trademarks

(see materials list on pages 52-53)

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Formula for calculating the CLOSED LENGTH

$$\text{P.C.} = \text{Closed Length} = \text{NP} \cdot \text{SP}^*$$

$$\text{NP} = \text{Number of folds} = \frac{\text{P.A.}}{\text{AP}} + 1$$

* **SP**= Thickness of 1 fold; see materials list on page 52-53

$$\text{AP} = \text{Opening of 1 fold} = \left(\frac{\text{Ø e. soff.} - \text{Ø i. soff.}}{2} - 6 \right) \cdot 1,2$$

Note: When steel rings are required inside the folds, the **P.C.** is calculated by our engineering department.



HEAT-FORMED BELLOWS

These are used when high mechanical strength and heat resistance are required.

- Excellent resistance to **mechanical stress**
- Also available cone-shaped
- Resistance to **coolants and oils**
- No tooling **costs**
- Available with guide **bushings** and **reinforcement rings** upon request
- Suitable for **high temperatures**

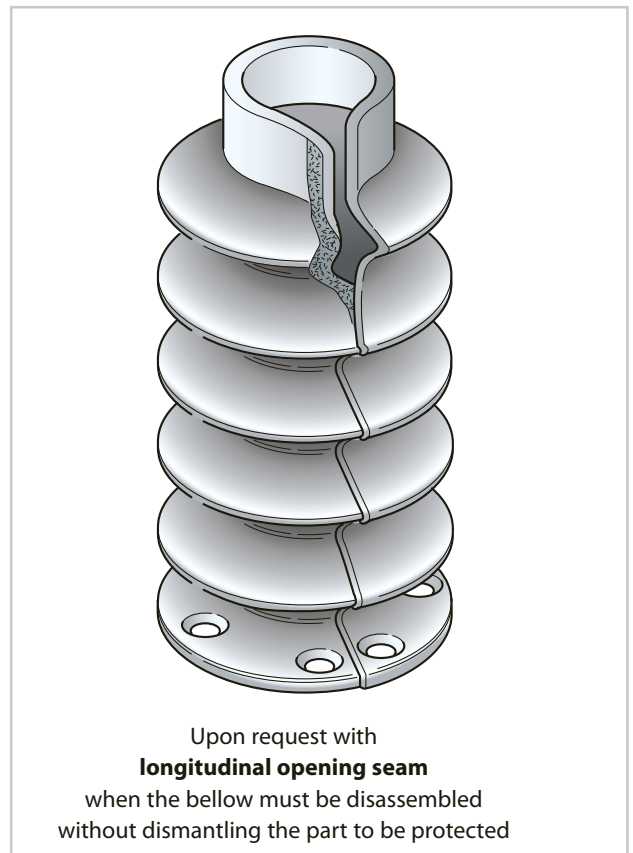
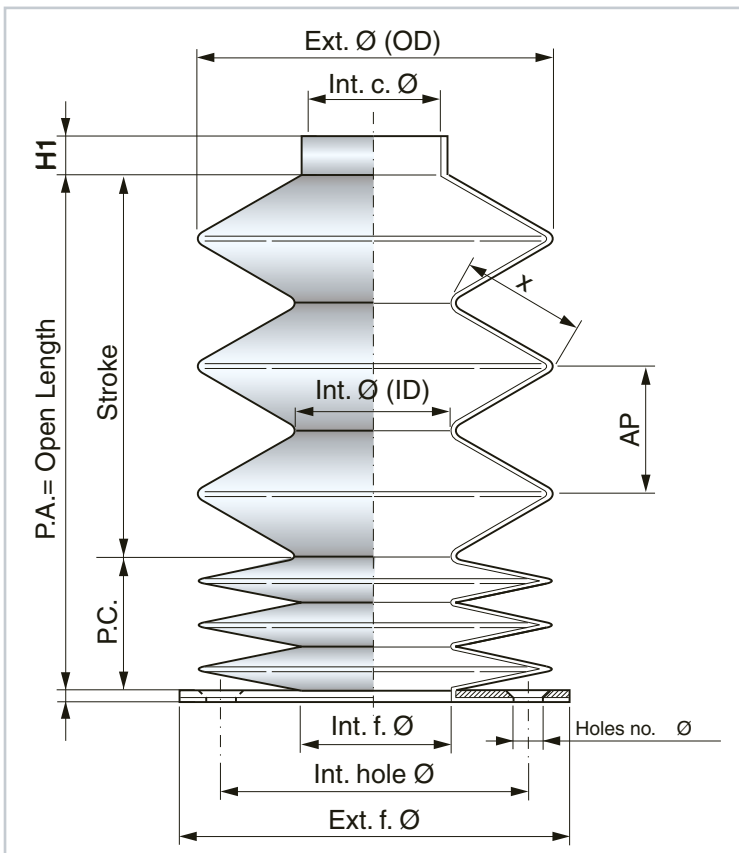
OPEN HEAT-FORMED BELLOWS

Materials available:

- Polyester coated with Neoprene* and Hypalon*
- Polyester coated with Nitril rubber
- Polyester coated with Polyurethane
- Polyester coated with PVC
- Fiberglass coated with Silicone and Neoprene*

* Neoprene and Hypalon are registered Dupont trademarks

(see materials list on pages 52-53)



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Formula for calculating the CLOSED LENGTH

$$\text{P.C.} = \text{Closed Length} = \text{NP} \cdot \text{SP}^*$$

$$\text{NP} = \text{Number of folds} = \frac{\text{P.A.}}{\text{AP}} + 1$$

* **SP**= Thickness of 1 fold; see materials list on pages 52-53

$$\text{AP} = \text{Opening of 1 fold} = \left(\frac{\text{Ø e. soff.} - \text{Ø i. soff.}}{2} \right) \cdot 1,41$$

Note: When steel rings are required inside the folds, the **P.C.** is calculated by our engineering department.



Questionnaire for Round Bellows

! Bellows type

Sewn

Heat-formed

Thermic-welded

! Fastening system

A

B

C

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! Type of machine on which the ROUND BELLOWS is to be installed:

METAL working machine

MARBLE working machine

GOLD working machine

PAPER working machine

FABRIC working machine

GLASS working machine

FOOD processing machine

PHARMACEUTICAL processing machine

AGRICULTURAL processing machine

TANNING machinery

CLAY working machine

WOOD working machine

Other

! Type of material falling on the bellows:

.....

.....

.....

! Liquids to which the bellows will be exposed:

.....

.....

.....

.....

! Working position:

Horizontal Vertical

! Temperature of material falling on the bellows:

..... °C

! Part to be protected:

Stem or shaft:
Diameter.....mm

Screw:
Diameter.....mm
Pitch.....mm

Ball screw:
Diameter.....mm
Pitch.....mm
RPM in rapid travel.....

With longitudinal seam

Other.....

.....

.....

.....

! Company name:

! Contact person:

Phone: **E-mail:**

Quantity:

Annual demand:

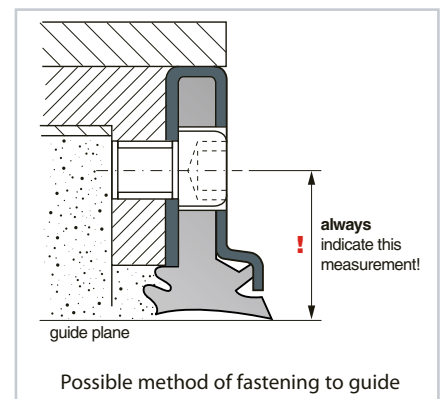
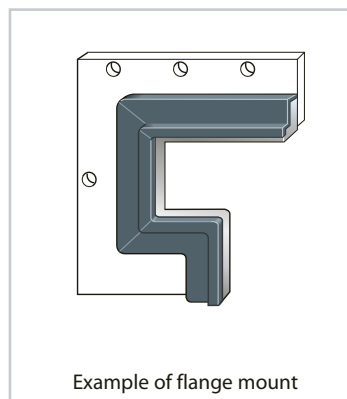
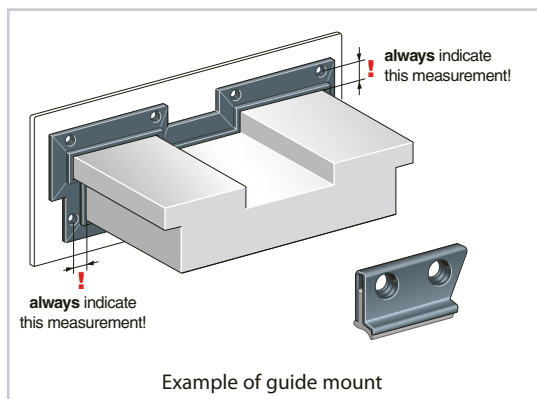
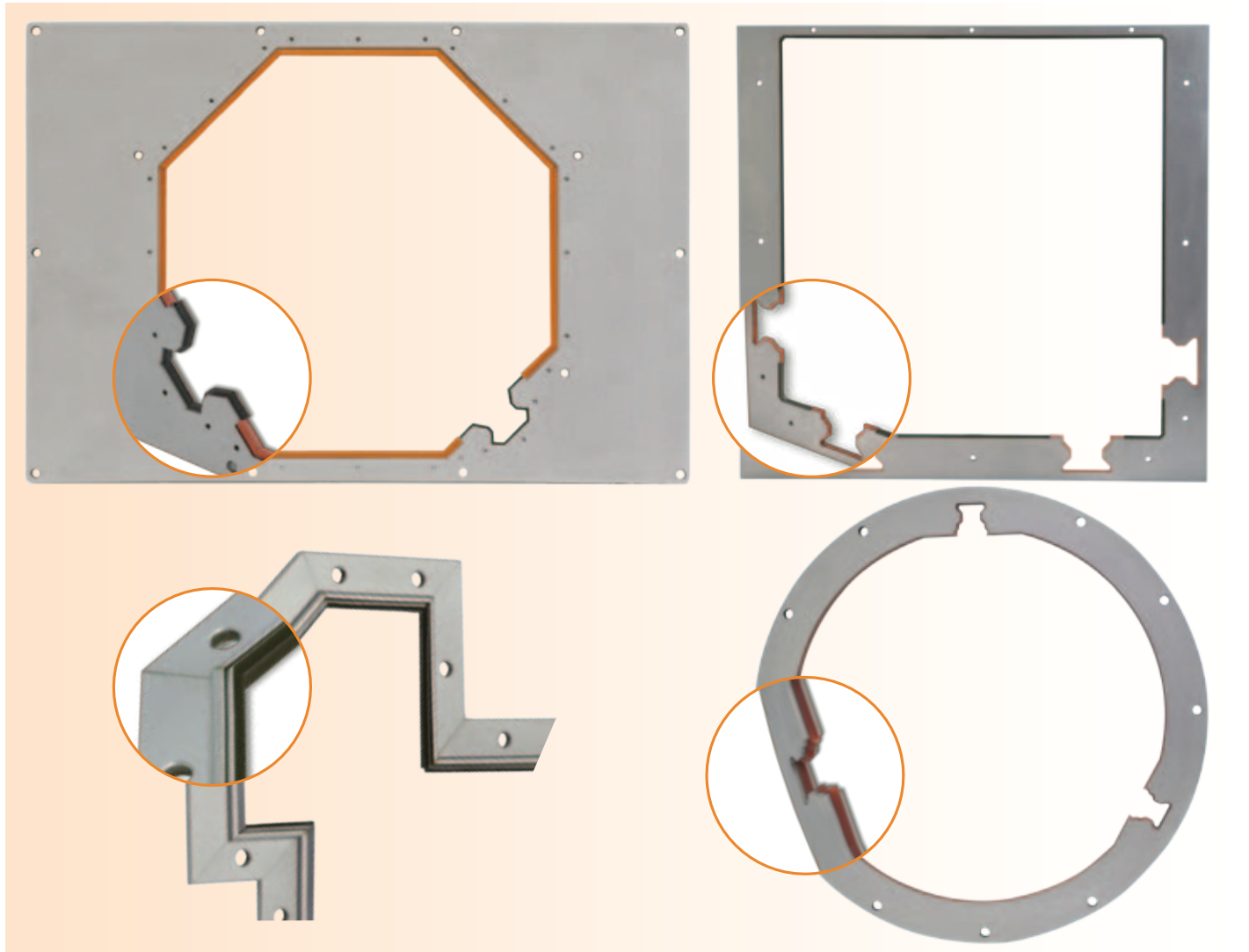
Date:

Notes:

NOTE: The data fields and/or tables marked by ! are the least ones to be filled in order to give you a quotation. Please send an e-mail to info@pei.eu or a fax to +39 051 6464840.

PROFILED WIPERS FOR GUIDES

- Resistant to oils, coolants and hot shavings
- Resistant to wear
- Wiper profile has durable flexibility



- For work environments with a heavy concentration of **sharp shavings**.
- Built to **drawings** in any shape or size.
- **Single pieces or large series** can be manufactured due to no equipment costs.
- **Polyurethane** profile resists abrasion and is easily replaced.
- We must have a drawing with measurements showing the profile of the **guides to wipe**.
- **Pre-loading is determined by our engineering department** based on the shape of the **wiper**.
- The wiper measurements refer to **free position without pre-load** and it is **ALWAYS necessary** to indicate the distance measurement between **fastening bore** and **guide plane** to wear.
- For **fastening**, we recommend counter-sunk hex screws.



BIPLASTIC WIPERS

- PEI **Biplastic** Wipers are modelled on the client drawing.
- Strip-lengths are available in prompt delivery.

RA 01 BP

Profile:
Polyurethane
Length: **2000 mm.**
Rigid polymer insert

RA 03 BP

Profile:
Polyurethane
Length: **2000 mm.**
Rigid polymer insert

RA 05 BP

Profile:
Polyurethane
Length: **2000 mm.**
Steel insert 12x3

FB40FLEX

Profile:
Polyurethane
Length: **2000 mm.**
Steel insert 18x3

FB WIPERS

- **FB** Wipers are modelled on the client drawing or supplied in linear strips.

FB 14

Profile: **Polyurethane ***
Length: **530 mm.**
Stainless steel reinforcement

FB 18

Profile: **Polyurethane ***
Length: **3000 mm.**
Stainless steel reinforcement

FB 18L

Profile: **Polyurethane ***
Length: **1000 mm.**
Stainless steel reinforcement
Shielding in inox steel 301

FB 25

Profile: **Polyurethane ***
Length: **3000 mm.**
Stainless steel reinforcement

FB 25L

Profile: **Polyurethane ***
Length: **1000 mm.**
Stainless steel reinforcement
Shielding in inox steel 301

FB 27

Profile: **NBR ***
Length: **500 mm.**
Galvanized steel insert
Shielding in inox steel 301

* Prompt delivery

RA WIPERS

RA Wipers are modelled on the client drawing or supplied in linear strips.

RA 01

Profile:
NBR * or Viton® *
Length: **500 mm.**
Steel insert

RA 02

Profile:
NBR * or Viton® *
Length: **560 mm.**
Steel insert

RA 03

Profile:
NBR * or Viton®
Length: **560 mm.**
Steel insert

RA 04

Profile:
NBR * or Viton®
Length: **560 mm.**
Steel insert

RA 05

Profile:
NBR * or Viton® *
Length: **560 mm.**
Steel insert

RA 06

Profile:
NBR * or Viton®
Length: **560 mm.**
Steel insert

RA 25L

Profile:
NBR *
Length: **800 mm.**
Steel insert
Thin metal protective plate in inox steel 301

RA 39L

Profile:
NBR * or Viton®
Length: **800 mm.**
Steel insert
Thin metal protective plate in inox steel 301

* Prompt delivery

RA B WIPERS

RA B Wipers are supplied exclusively in linear strips.

RA B1

Profile: **NBR * or Viton®**
Length: **560 mm.**
Steel insert

RA B2

Profile: **NBR * or Viton® ***
Length: **560 mm.**
Steel insert

RA B3

Profile: **NBR * or Viton®**
Length: **560 mm.**
Steel insert

* Prompt delivery



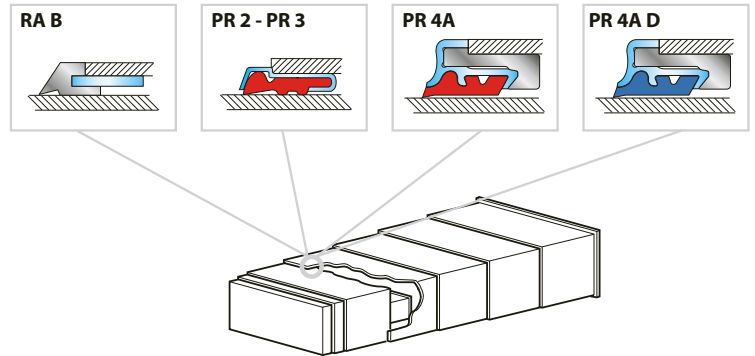
WIPERS FOR TELESCOPIC STEEL COVERS

These types of wipers are normally applied to telescopic steel covers.

Codes **RA B** consists of a metal insert to which an NBR profile has been vulcanized.

Codes **PR 2** and **PR 3** has steel reinforcement and polyurethane profile.

Codes **PR 4A** and **D** can be instantly replaced on the telescopic cover, without disassembling the cover itself. They have a metal reinforcement with a seal designed to clean the cover.



PR 2

Profile: **Polyurethane ***
Length: **3000 mm.**
Steel reinforcement

PR 3

Profile: **Polyurethane ***
Length: **3000 mm.**
Steel reinforcement

PR 4A

Profile: **Polymeric GM2319**
Length: **3000 mm.**
Steel reinforcement

PR 4A D

Profile: **Polymeric GM2357**
Length: **3000 mm.**
Steel reinforcement

For working with **COOLANTS**

For **DRY** working

- **Sold ONLY** in standard strip-lengths.
- **Easy replacement** of wiper profile for codes PR 2, PR 3, PR4A and PR 4A - D.
- **The polyurethane profile is delivered inserted** in the steel reinforcement.

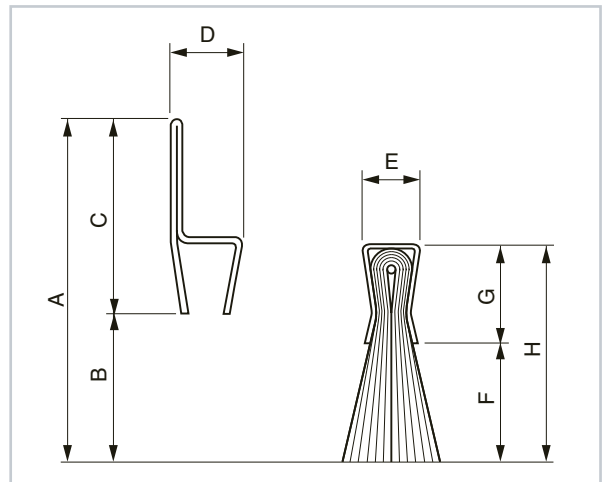
* **Prompt delivery** in strips

MATERIALS	Heat Resistance		Synthetic Oil Resistance			Mineral Oil Resistance			Vegetable Oil Resistance			Wear Resistance		
	Momentary contact °C	Continuous °C	Excellent	Good	Poor	Excellent	Good	Poor	Excellent	Good	Poor	Excellent	Good	Poor
NBR	250	-20 ÷ +100		●			●			●			●	
Polyurethane	200	-30 ÷ +90	●			●			●			●		
VITON®	1000	-20 ÷ +280	●			●			●			●		
Polymeric GM2319 (red) for working with coolants	200	-30 ÷ +90	●			●			●			●		
Polymeric GM2357 (blue) for dry working	280	-30 ÷ +120				●			●			●		

LINEAR BRUSHES WITH SUPPORT FRAME

- **Special shapes** may be created
- **The brush** is easy to replace
- The **support frame** is made of **galvanized steel**
- **Prompt delivery** in strips

Code	A	B	C	D	E	F	G	H	Length	Bristle
SN1	32	11	21	17	14	9	9	18	1000	Nylon Ø 0,15
SN2	42	22	20	9	6	26	5	31	2000	Nylon Ø 0,15
SN3	72	40	32	15	10	40	10	50	2000	Nylon Ø 0,25
SN4	92	60	32	15	10	60	10	70	2000	Nylon Ø 0,50
SN5	112	80	32	15	10	80	10	90	2000	Nylon Ø 0,50
SN6	132	100	32	15	10	100	10	110	2000	Nylon Ø 0,50
S01	40	20	20	9	6	24	5	29	2000	Brass Ø 0,15
S02	70	50	20	9	6	54	5	59	2000	Brass Ø 0,15
S03	100	80	20	9	6	84	5	89	2000	Brass Ø 0,15

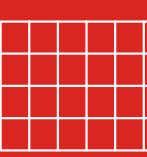


FABRIC MATERIAL LIST

Code	Description of materials			Thickness	Heat resistance		Roll-up Covers			Thermic welded flat covers	Sewn round bellows		Heat-formed round bellows		
	Visible side	Fabric insert	Hidden side		Momentary contact °C	Continuous °C	Material suitable for cover without canister	Material suitable for cover with canister	Min winding diameter mm	Suitable material	Suitable material	Thickness of 1 fold (SP) mm	Suitable material	Thickness of 1 fold (SP) mm	With longitudinal seam thickness of 1 fold (SP) mm
TEMAT001	Neoprene*	Polyamide	Neoprene*	0,3	250	-20 +120	•	•	20		•	1	•	1,5	no
TEMAT002	Neoprene*	Polyester	Hypalon*	0,5	250	-20 +120	•	•	20		•	1,5	•	2,5	5
TEMAT202	Neoprene*	Polyester	Neoprene*	0,5	250	-20 +120	•	•	20		•	1,5	•	2,5	5
TEMAT003	Neoprene*	Polyester	Hypalon*	0,6	250	-20 +120	•	•	20		•	1,8	•	3	5,5
TEMAT004	Neoprene*	Polyester	Hypalon*	0,8	250	-20 +120	•	•	20		•	2,4	•	4	6,5
TEMAT005	Neoprene*	Polyester	Hypalon*	1,0	250	-20 +120	•	•	20		•	3			
TEMAT006	Neoprene*	Polyester	Hypalon*	1,2	250	-20 +120	•	•	50		•	3,5			
TEMAT007	Neoprene*	Kevlar*	Hypalon*	1,15	350	-20 +120	•	•	50		•	3,5			
TEMAT008	NBR	Polyester	NBR	0,33	250	-20 +100	•	•	20		•	1,2	•	2	4,5
TEMAT009	Silicon	Fiberglass	Neoprene*	0,5	350	-60 +250	•	•	20		•	1,5	•	5	10
TEMAT091	PVC	Fiberglass	PVC	0,44	300	-30 +80	•	•	20	•	•	1,5			
TEMAT102	Ptfe	Fiberglass	Ptfe	0,250	320	-200 +260	•	•	20						
TEMAT104	Ptfe	Fiberglass	Ptfe	0,7	320	-200 +260	•	•	70						
TEMAT106	Ptfe	Polyester	Polyurethane	0,32	200	-30 +120	•	•	20	•					
TEMAT011	Aluminium-carbon fabric			0,7	2500	-100 +260	•	•	20		•	2,1			
TEMAT012	AISI 301 Stainless steel			0,2	1200	-250 +400		•	70						
TEMAT013	AISI 301 Stainless steel			0,3	1200	-250 +400		•	90						
TEMAT014	AISI 301 Stainless steel			0,4	1200	-250 +400		•	150						
TEMAT122	304 Stainless steel		Polyester	0,8	1200	-25 +300	•	•	52						
TEMAT015	Polyurethane	Polyester	Polyurethane	0,25	200	-30 +90	•	•	20	•					
TEMAT151	Polyurethane	Polyester	Polyurethane	0,35	200	-30 +90	•	•	20	•					
TEMAT152	Polyurethane	Polyester	Polyurethane	0,8	200	-30 +90	•	•	20						
TEMAT153	Polyurethane	-	-	0,5	200	-30 +70				•					
TEMAT160	Grey Polyurethane	Polyester	Fabric	1,4	200	-30 +90	•	•	70						
TEMAT161	Polyurethane	Polyester	Fabric	0,8	200	-30 +90	•	•	20		•	2,5			
TEMAT162	Polyurethane	Polyester	Fabric	1,4	200	-30 +90	•	•	70						
TEMAT164	Polyurethane	Kevlar*	Polyurethane	0,35	350	-30 +180	•	•	20	•	•	1,5			
TEMAT165	Polyurethane	Nomex*	Polyurethane	0,36	300	-30 +130	•	•	20	•					
TEMAT169	Polyurethane	Panox*/Kevlar*	Polyurethane	0,33	300	-30 +130	•	•	20	•					
TEMAT170	Polyurethane	Polyester	Fabric	1,6	200	-30 +90	•	•	70						
TEMAT180	CPT**	Polyester	-	1,6	1200	-25 +300	•	•	70						
TEMAT017	PVC	Polyester	PVC	0,36	100	-30 +70	•	•	20	•					
TEMAT018	PVC	Polyester	PVC	0,7	100	-30 +70	•	•	20		•	2,1	•	3,5	6
TEMAT019	PVC	Polyester	PVC	0,5	100	-30 +70	•	•	20		•	1,5	•	2,5	5
TEMAT020	PVC	Polyester	PVC	0,25	100	-30 +70	•	•	20	•					
TEMAT022	PVC	Polyester Net	PVC	1,4	100	-30 +70	•	•	40						

* Neoprene, Hypalon, Kevlar, Panox and Nomex are registered Dupont trademarks.

** Ceramic Polymer Technology

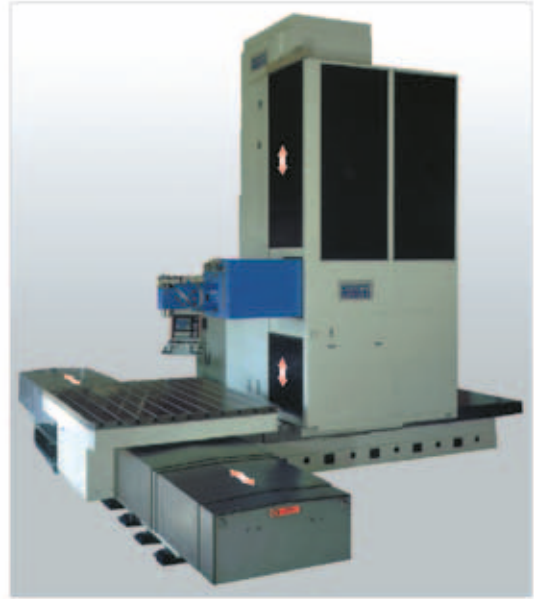


Code	Primary resistance characteristics
TEMAT001	Resists water, oil, coolant, diluted acids, petroleum products, atmospheric agents and ozone. Fair shear strength and abrasion resistance.
TEMAT002	
TEMAT202	
TEMAT003	Resists water, oil, coolant, diluted acids, petroleum products, atmospheric agents and ozone. Good shear strength and abrasion resistance.
TEMAT004	Hypalon is especially resistant to sea water.
TEMAT005	
TEMAT006	
TEMAT007	Same characteristics as above (from 001 to 006). Kevlar has excellent shear strength. Normally used when there is heavy mechanical stress, heavy concentration of sharp shavings, and high temperatures.
TEMAT008	Excellent resistance to mineral and vegetable oils, hydrocarbons, water and gas. Good mechanical properties. Normally used in the food industry since appropriate for use around oil, grease, blood, etc.
TEMAT009	Especially suited to high and low temperatures. Fiberglass has strong temperature resistance, but poor mechanical strength. Silicone is an excellent anti-adhesive and resists chlorides, solvents, UV rays and ozone.
TEMAT091	Fabric appropriate for use around small weld splatter. Also suitable for use around acids. Self-extinguishing.
TEMAT102	Work areas with heavy concentration of acids. Highly anti-adhesive surface. Low friction coefficient. Chemically inert. Resists formation of mold and fungus. Non-toxic. Highly limited thermal expansion. Transparent to microwaves and UV rays. Teflon is suitable for all acids except
TEMAT104	SODIUM-POTASSIUM-FLUORIDE at temperatures beginning at 150°C.
TEMAT106	Excellent resistance to oils and chemical products. No adhesive surface. Low friction coefficient. Excellent chemical inertia. Excellent resistance to abrasion and bending resistance. Mainly used in grinding machines.
TEMAT011	Self-extinguishing by nature. Carbon fibers resist up to 2500°C for short periods. Excellent mechanical strength. The aluminum-coating reflects radiant heat. Resists heavy weld splatter and molten metal; mainly used in foundries.
TEMAT012	
TEMAT013	Used for harsh working environments with heavy concentrations of sharp shavings and high temperatures.
TEMAT014	Excellent resistance to acids.
TEMAT122	STEEL-TEX is a the stainless steel roll-up cover with polyurethane. It is cut resistant on impact with incandescent and sharp metal shavings and offers exceptional resistance during dry working or with coolants. It is compact, weighs 0.9 kg per sq.m and is 0.8mm thick and can be installed on the entire range of P.E.I. roll-up covers.
TEMAT015	
TEMAT151	Good resistance to petroleum products, oils and heavy abrasion. Excellent bending strength.
TEMAT152	
TEMAT153	Good resistance to petroleum products, oils and fair abrasion resistance. Used for manufacturing thermic-welded round bellows.
TEMAT160	Good resistance to petroleum products, oils and heavy abrasion. The two-ply fabric insert gives high transverse rigidity and attractive appearance. Normally used around large quantities of shavings. Not suitable for dry use with hot shavings. Static-proof.
TEMAT161	Good resistance to petroleum products, oils and heavy abrasion. Good transverse rigidity. Normally used around medium quantities of shavings. Not suitable for dry use with hot shavings.
TEMAT162	Good resistance to petroleum products, oils and heavy abrasion. The two-ply fabric insert gives high transverse rigidity and attractive appearance. Normally used around large quantities of shavings. Not suitable for dry use with hot shavings. Static-proof.
TEMAT164	Good resistance to petroleum products, oils and heavy abrasion. Excellent bending strength. Excellent mechanical strength; Kevlar has excellent shear strength. Normally used when there is heavy concentration of sharp shavings, and high temperatures.
TEMAT165	Good resistance to petroleum products, oils and heavy abrasion. Excellent bending strength. Excellent mechanical strength. Good resistance to small weld splatter or hot material. Widely used in laser cutting machines. Self-extinguishing.
TEMAT169	Excellent resistance to petroleum products, oils and heavy abrasion; high abrasion resistance; excellent mechanical strength and bending strength. Good resistance to small weld splatter or hot material; at present considered the best commercial material to be used in laser cutting machines. Self-extinguishing.
TEMAT170	Excellent resistance to petroleum products, oils and heavy abrasion. The two-ply fabric insert gives a very high transverse rigidity and an attractive appearance. Normally used around large quantities of shavings. We recommend the constant use of coolant. SELF-EXTINGUISHING FABRIC.
TEMAT180	CERAMIX has an excellent abrasion resistance and excellent shear strength. CERAMIX shows excellent resistance to mineral oils and hot temperatures. The two-ply fabric insert gives an high transverse rigidity and a very attractive appearance. CERAMIX is used when large quantities of hot and shearing shavings are produced, in cases of high speed chip-removing in wet and dry work environments. ANTISTATIC-PROOF AND SELF-EXTINGUISHING.
TEMAT017	
TEMAT018	
TEMAT019	
TEMAT020	
TEMAT022	This material consists of high-strength polyester netting with a grid of 20 x 20 mm. It is used for special applications. We can provide other types of nettings with different thickness and/or grid.

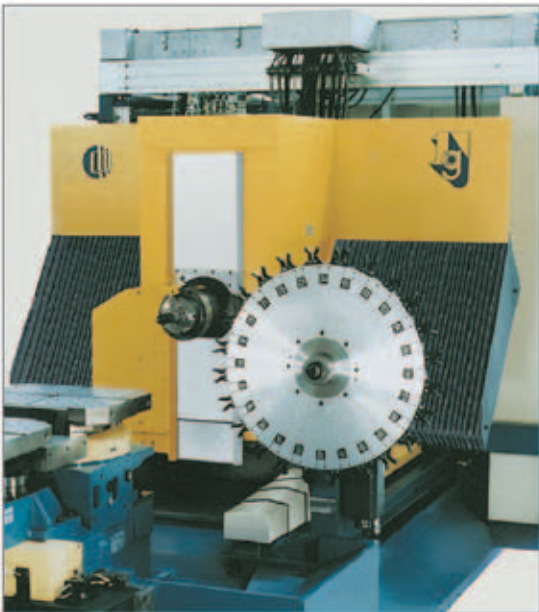
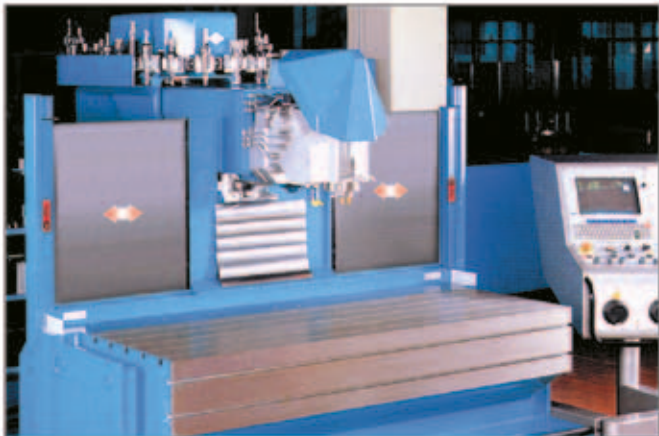
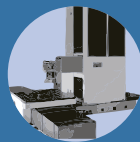
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APPLICATIONS



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01/09/2015



SCUDO X-Y SP montato dalla società PAMA S.p.a. in un centro di lavoro a montante mobile.

ABDECKUNGSSYSTEM X-Y SP von der Firma PAMA S.p.a. auf einem Bearbeitungszentrum mit beweglichem Gegenlagerständer eingesetzt.

X-Y SP SHIELD mounted by the Company PAMA S.p.a. in a mobile column type machining center.

SCUDO SP X-Y installé dans un centre d'usinage à colonne mobile de la Société PAMA S.p.a. composée.

ESCUDO SP X-Y instalado en un centro de mecanizado de columna móvil de la empresa PAMA S.p.a.

PAMA S.p.a. şirketi tarafından hareketli kolon tipi işleme merkezi üzerine **X-Y SP SHIELD** uygulaması yapılmıştır.

Krytovací systém X-Y SP je použit u firmy PAMA S.p.a. na obráběcím centru pohyblivého stojanu.

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