PEI

Protezioni
E laborazioni
I ndustriali

The numbers of P.E.I. Group

420 Employees

7 Manufacturing sites

50% Export

20 Countries of sales network

The strategy of success of the **P.E.I. Group** emerges from the intuition of the founding partners in recognising the importance of workplace safety, which has lead, beginning from the 1980s, to the significant development of the market for protective covers in machine tools.

Innovation, quality and constantly keeping an eye on the sales prices are the driving values of the **P.E.I. Group**, a leading manufacturer in Italy and Europe of protective covers for machine tools.

The experience gained in over 30 years presence on the market has lead to an amalgamation of commercial and managerial competence with extensive know-how in production engineering.

By striving for constant technical innovation, the Group has succeeded in attaining over 70 international patents up to the end of 2020.

In order to offer bellows, aprons, roll-up and telescopic covers suitable for the continuously evolving customer or market requirements, the **P.E.I. Group** invests more than 4% of its annual turnover in **Research and Development**.

The commercial structure of the **P.E.I. Group** consists of a widespread network of commercial technicians and thus guarantees coverage across the whole of Italy and Germany as well as a major part of the rest of Europe. Through trade agreements, products "**made by P.E.I.**" are distributed worldwide. The past few years the Group has experienced a strong growth and turnover abroad has reached 50% of the total turnover.

The Bologna-based Group now has 420 employees who operate at seven production sites:

P.E.I. Srl based in Calderara di Reno, Bologna that in 2017, as a result of the increase in roll-up protection volumes, has doubled its production site in Calderara di Reno (BO); **S.P.E.R. Srl** a company which produces glued bellows, round sewn o heat-sealed bellows and telescopic steel covers based in Cremona; **Zanini Srl** which produces light structural work in Zola Predosa (Bologna); since 2011 the production unit of **Serbia** is active and since 2013 the factory in **Brazil**: both manufacture bellows for articulated buses; at the beginning of 2018 starts **PEI V.M. Srl**, with headoffice in Bologna, which deals with the design and development of technologies related to acoustics, metrology and oscillations; in July 2018 the Group strengthens its manufacturing capacity by acquiring **Nuova Metal Srl**, a company specialized in the construction of carpentry based in Cremona.

Head Offices and Factories of P.E.I. GROUP

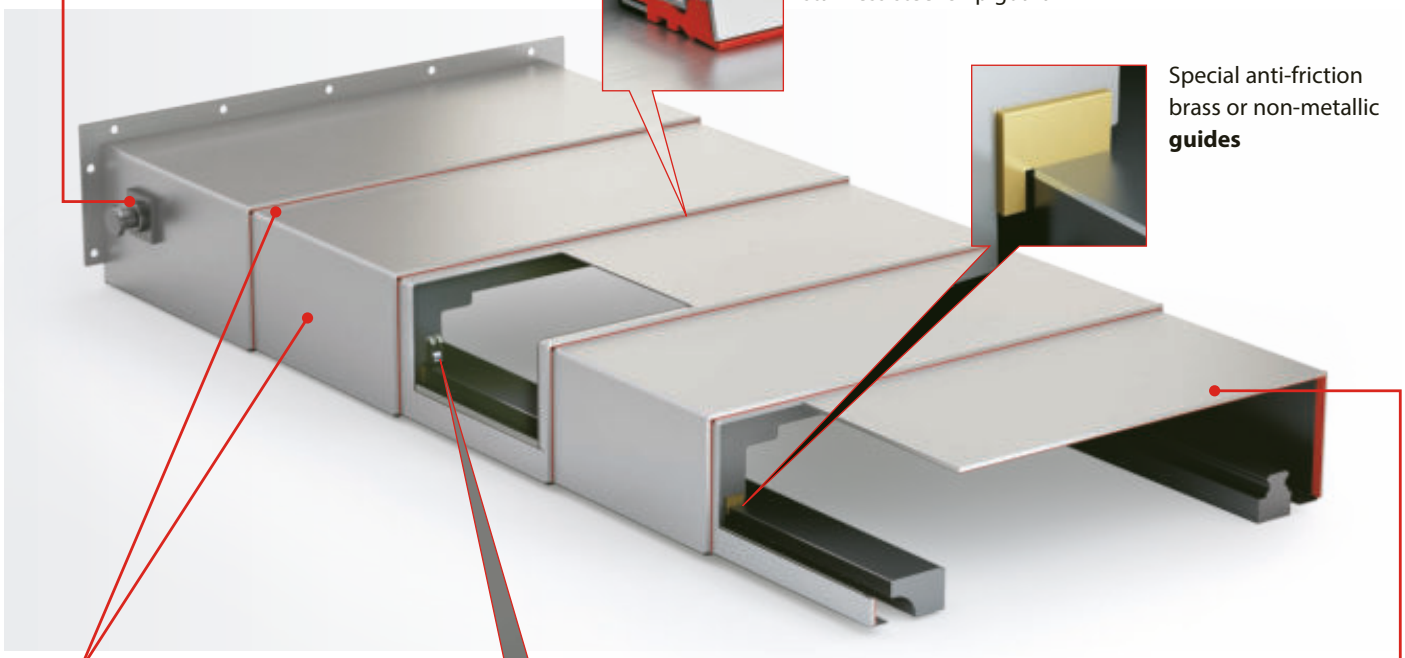
Contents

Telescopic Steel Covers for all types of machine tools

Special **supports** for lifting heavy covers

Wipers made of polyurethane, with or without a protective stainless steel chip guard

Special anti-friction brass or non-metallic **guides**



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.

For high speeds or weights, special **bearings** are inserted for smooth, silent movement

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

MULTIBEND The A++ cover for horizontal axes

MATHEMATICAL MODEL

In-house calculation software specially developed by **P.E.I.** to calculate bending of the boxes and for consequently optimising geometry and cost savings.

WEIGHT REDUCTION

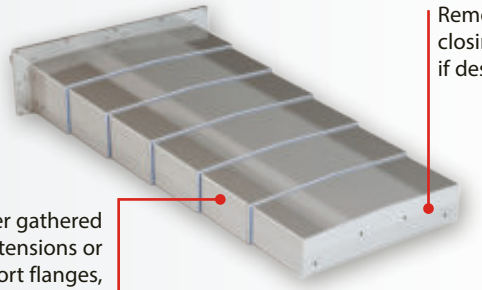
Weight reduction of the cover by up to 50 percent compared to a standard telescopic cover.

ENERGY SAVING

Reduction of the power required for driving the machine tool and abatement of CO_2 emissions.

Working Positions

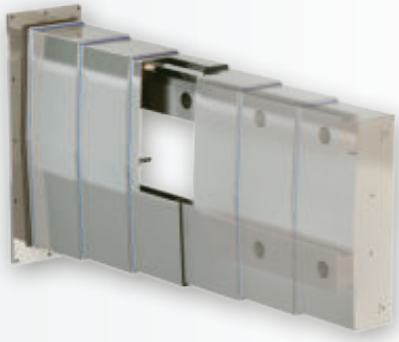
Horizontal position



Vertical position

Snap-on guides available upon request for rapid frontal installation

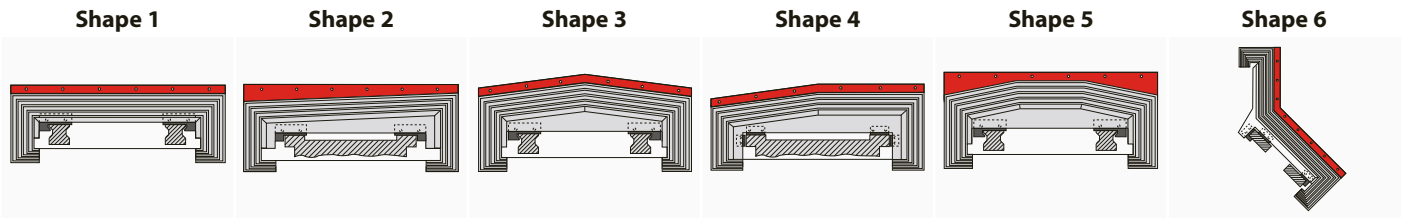
Transverse position



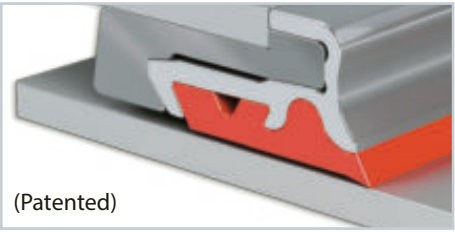
Transverse LATHE cover

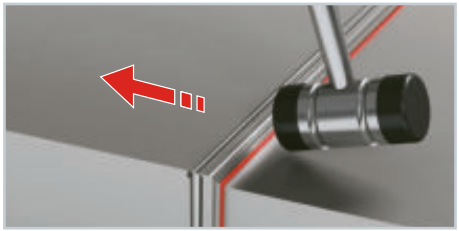
Configurations

Only a few standard configurations of Telescopic Steel Covers are shown below:



PR4A, the instantly replaceable and easily dismantable wiper

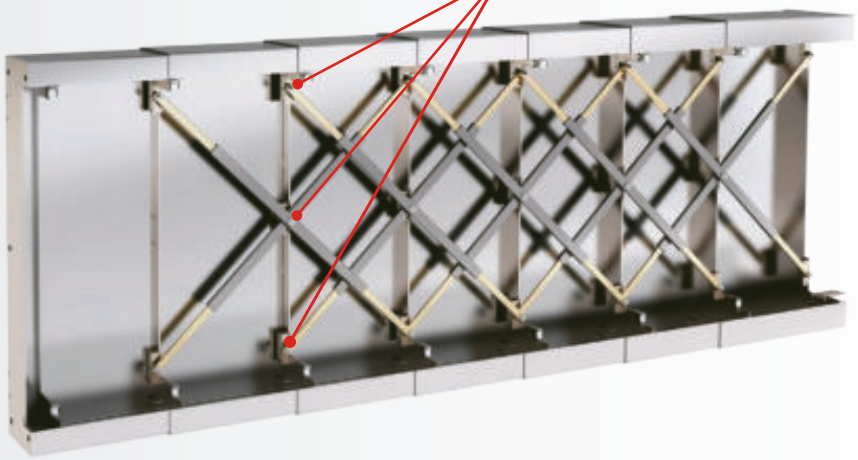




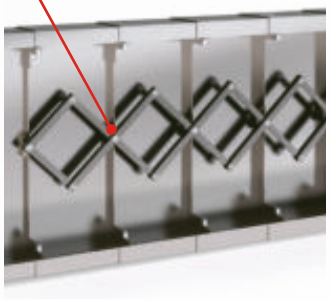
- **WIPER PR4A** is made of 3 independent elements: a solid metal profile on the telescopic cover box, a removable metal profile and a seal designed to clean the cover.
- The seal offers various technical features depending on the working conditions it is subjected (e.g. a working environment that uses coolants or a dry working environment in the **PR4A D** version).
- Telescopic covers equipped with **WIPER PR4A** allow the client to independently replace the wiper profile.

SYNCHRO-TEL The mechanical brace system that synchronizes movement in telescopic covers

SYNCHRO-TEL TECH:
(3) pivots attached to the box



TRADITIONAL PANTOGRAPH:
(1) pivot attached to the box



(Patented)

SYNCHRO-TEL TECH: a perfect fit.

P.E.I. has reduced the fit tolerance of the metal braces.
All pivots are attached to the boxes, avoiding sway of the braces.

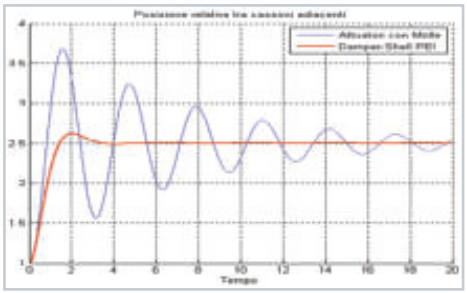
- **SYNCHRO-TEL TECH** synchronizes the opening and closure of medium sized telescopic covers and is ideal for working at high speeds and acceleration. It generates minimum stress on the pivots.
- It is convenient, **SYNCHRO-TEL TECH** eliminates any collision between the boxes.
- Guaranteed stability of the telescopic shafts secured by three pivots to the boxes.
- Mathematical testing and calculations prove **SYNCHRO-TEL TECH** to be the most reliable and durable synchro system on the current market.

DAMPER-SHELL viscoelastic shock absorbers for energy dissipation in large scale telescopic covers working in horizontal and frontal positions

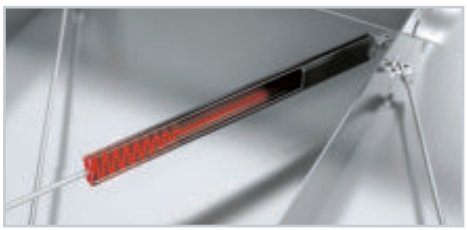
(Patented)

DAMPER-SHELL EVO

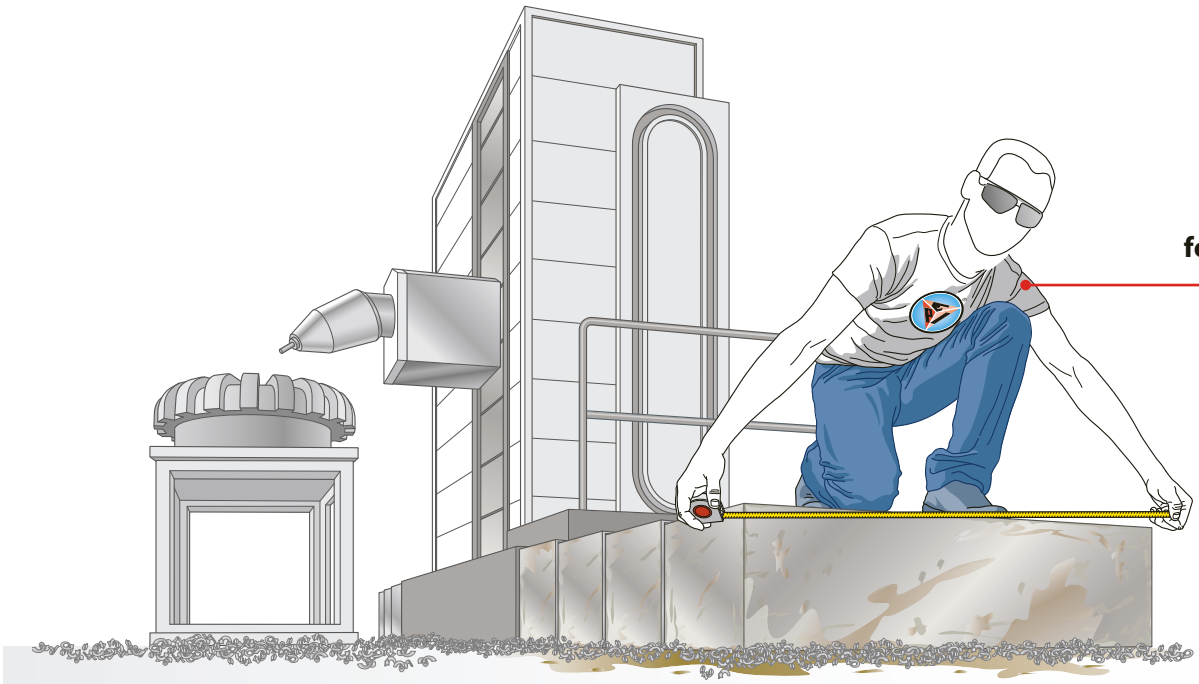
the energy dissipation is calculated for each project by means of a P.E.I. software and depending on the weight, speed and acceleration of the cover.



- **DAMPER-SHELL EVO is made of a special P.E.I. formulation polymer fabric and is produced in two geometric dimensions.**
- **DAMPER-SHELL EVO guarantees up to 2.000.000 cycles.**
- **DAMPER-SHELL EVO** is ideal for working speeds up to 100m/min and acceleration up to 1g.
- **DAMPER-SHELL EVO** is free from boost residue whether the telescopic cover is closed or in resting position.
- **DAMPER-SHELL EVO** opens smoothly during expansion without causing friction on the boxes.
- **DAMPER-SHELL EVO** has an excellent dimension/cost ratio.
- **DAMPER-SHELL EVO** is ideal for long strokes being a silent, durable and reliable solution.
- **DAMPER-SHELL EVO** is maintenance-free.



Metal telescopic cover OVERHAULING



Inspection of **P.E.I.** staff for field surveys

- 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
- If the telescopic cover cannot be repaired, we can offer you a completely new one.

- **SHORT DELIVERY TIME**

Telescopic Steel Covers Questionnaire

Type of machine .....

Trade mark: .....

Model: ..... **Axis:**.....

Cover code: .....**Canister qt.** .....

Acceleration: ..... **m/sec^2** **Speed:** .....**m/min**

Working Position	☐ Horizontal	☐ Vertical
	☐ Crosspiece	☐ Inclined
Sliding	☐ by skids	☐ by rollers
Treadability	☐ Yes	☐ No
Coolant	☐ Yes	☐ No

Customer: .....

Street: **no.**.....

Town **Land** .....

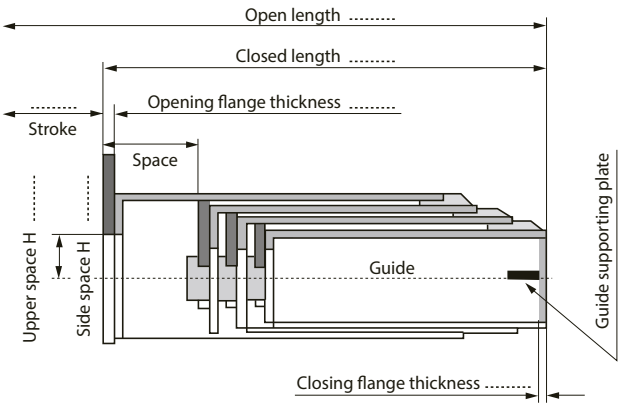
Reference person: .....

Phone: .....

Fax: .....

E-mail: .....

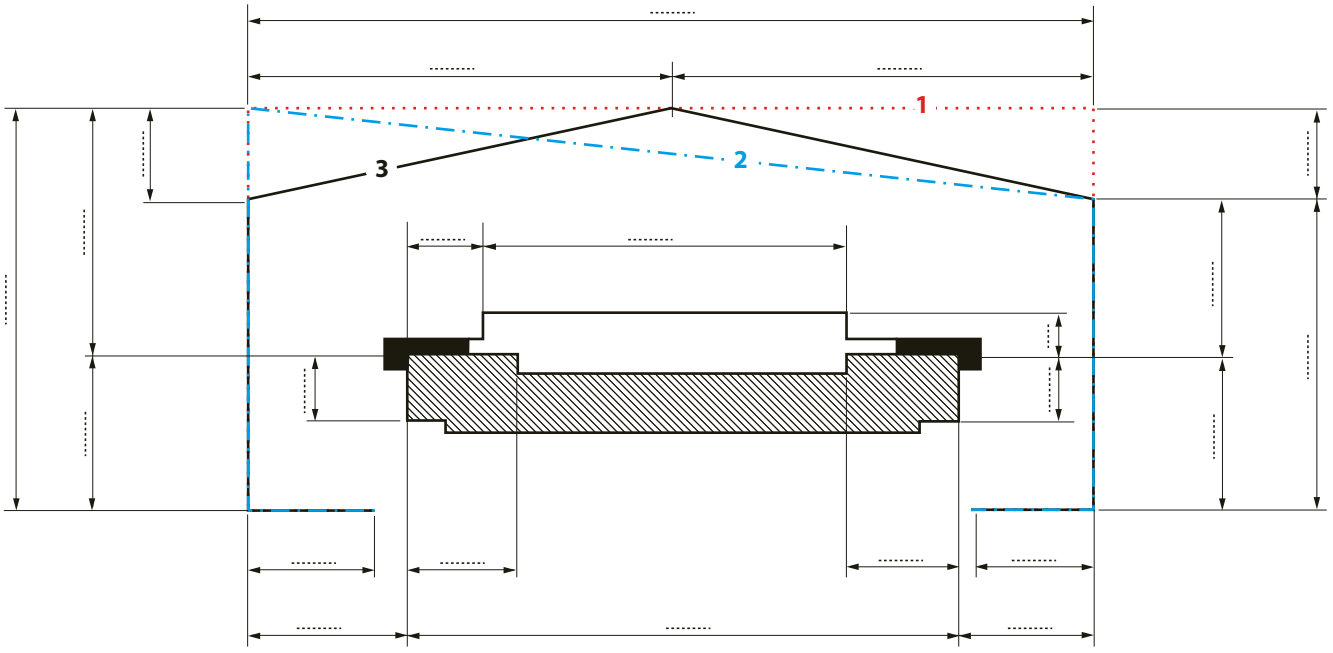
Required quantity Pcs:..... **Right:**..... **Left:**.....



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

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.

SNAP TELESCOPIC COVER The "EASY-ACCESS" Cover

This innovative cover **can be totally dismantled** and is ideal for protecting frontal and vertical axles in small to medium working centres, transfer machines, lathes and milling borers.

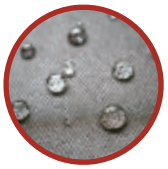
(Patent Pending)

- **MAINTENANCE**: easy access to both the whole cover and machine tool
- **DISASSEMBLY**: the components can be disassembled directly on the machine
- **ASSEMBLY**: manual, as there are no welded parts
- **MATERIAL**: highly resistant steel
- **DIMENSIONS**: up to 1 metre wide and 4.5 metres high
- **SPEED**: up to 150m/min and acceleration up to 2g

Disassembly

The panels which form the **Snap Telescopic Cover** can be detached and reassembled on the machine without removing the head of the milling machine, columns or multi-tool spindles. The external frame base remains fixed on the machine allowing the panels to be remounted without requiring alignment or calibration.

DUAL BARRIER - 2EVO



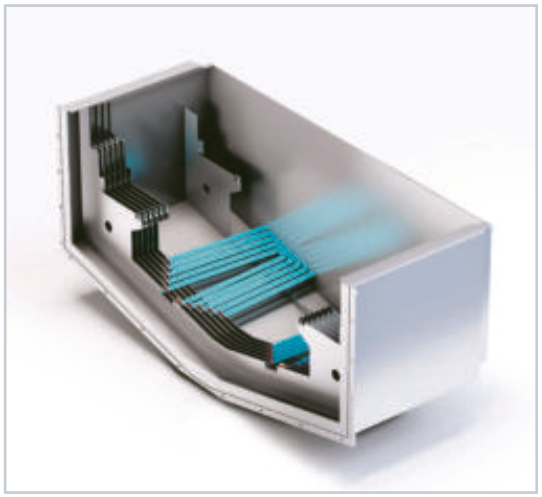
A complete protection system consisting of a telescopic cover with integrated bellow sections.

The telescopic cover and the thermic-welded water-repellent bellow are combined to form an absolutely leak- tight protective cover.

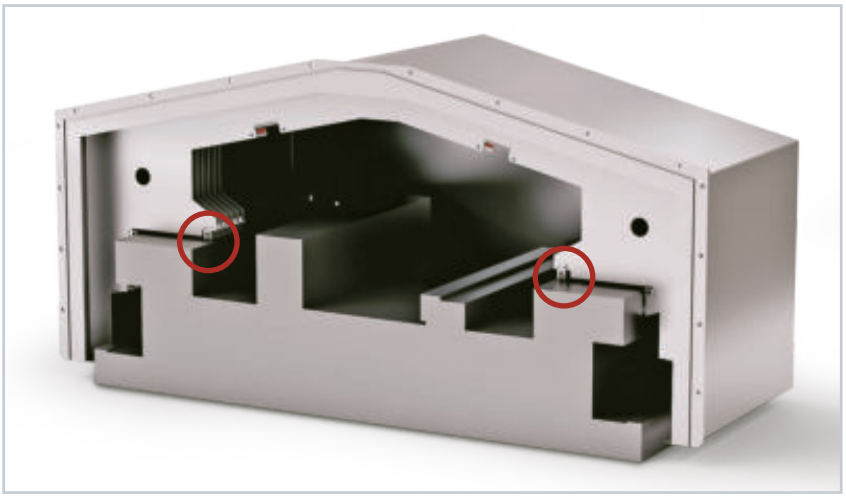
The bellow conveys the coolant to the conveyor or to the cooling tank, thus preventing the coolant from mixing with the hydrostatic oil.

new

CLOSED LENGTH:
Same closed length as the telescopic cover without integrated bellow sections.



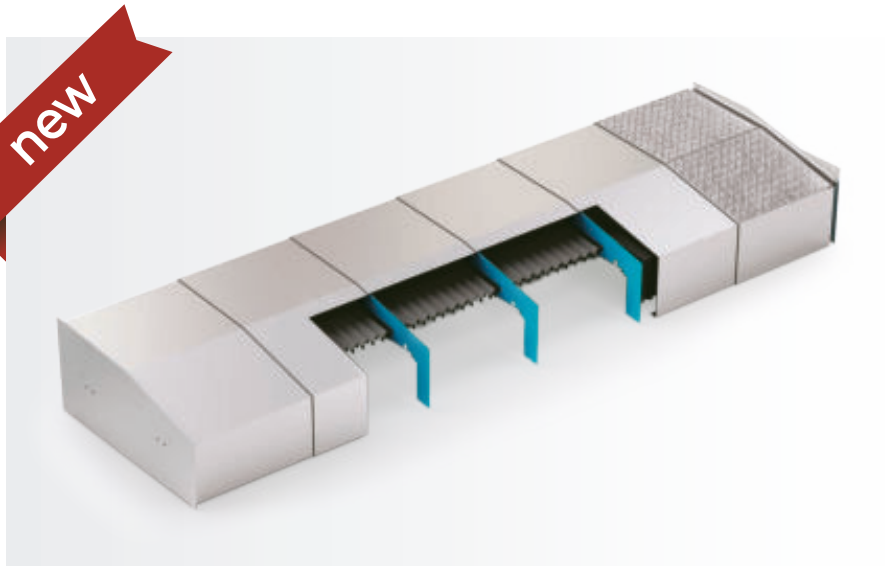
PROPERTIES:
DUAL BARRIER - 2EVO has only the telescopic cover running on the **2 slideways**, the bellow sections are sustained by the telescopic cover.



(Patent Pending)

DUAL BARRIER - 4SPC

A complete protection system consisting of a telescopic cover with integrated bellow sections

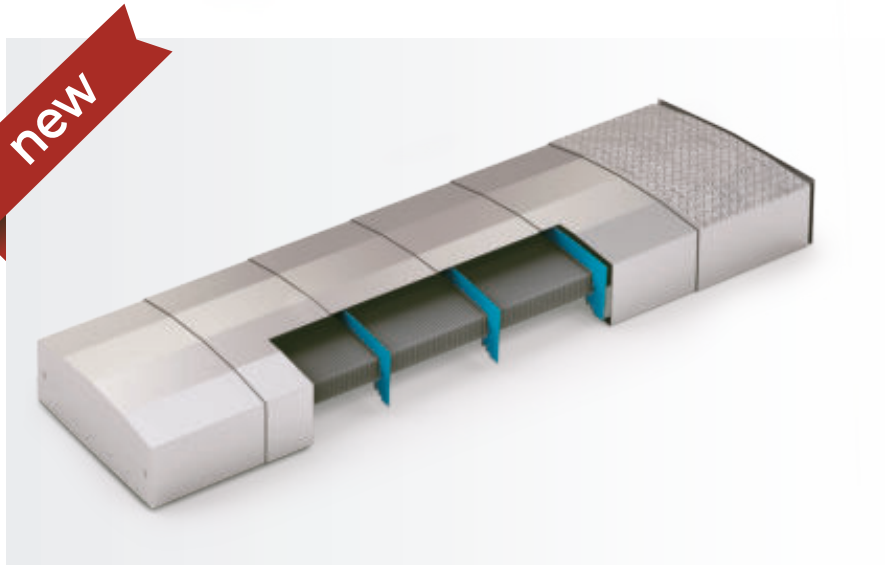


CLOSED LENGTH:
The closed length of the complete cover is made up of the combined closed lengths of the telescopic cover and the bellow sections.

PROPERTIES:
DUAL BARRIER - 4SPC requires **2 slideways** with **2 bearings** for the telescopic cover and further **2 bearings** for the bellow sections.

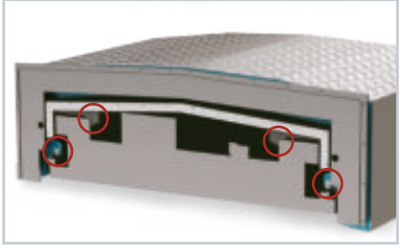
DUAL BARRIER - 4STD

A complete protection system consisting of a telescopic cover with an integrated bellow



CLOSED LENGTH:
Same closed length as a telescopic cover without integrated bellow sections.

PROPERTIES:
DUAL BARRIER - 4STD requires **2 slideways** for the support of the telescopic cover and further **2 slideways** for the bellow.

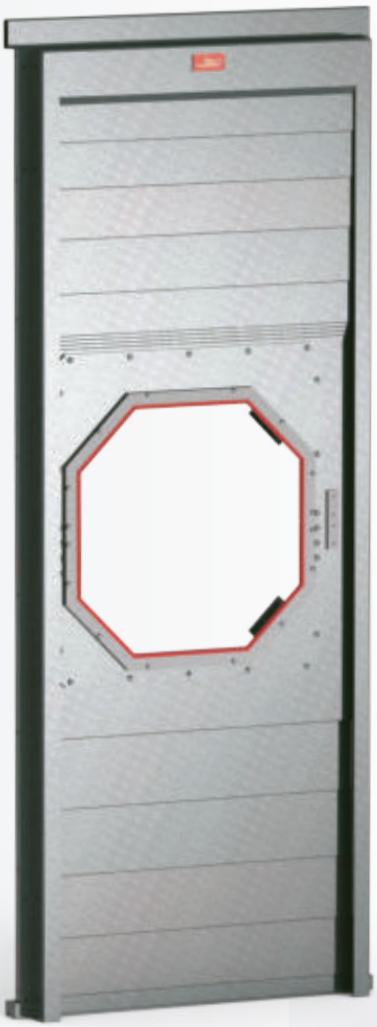


SHEET-POCKET™

The **SHEET-POCKET™** Telescopic Steel Cover is the most effective solution for shielding the Y-axis (vertical) in horizontal machining centers. 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.

- Speeds up to 150 m/min
- Accelerations of 2 g.

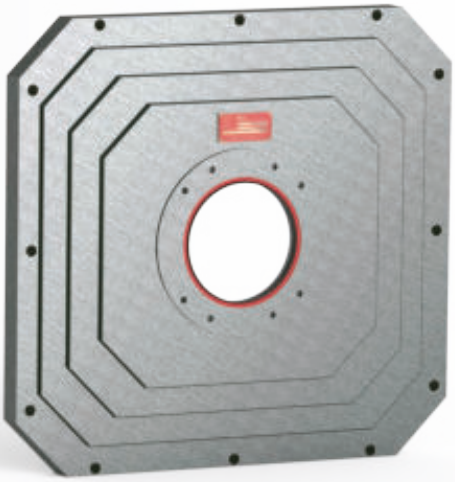
The **SHEET-POCKET™** Telescopic Steel Cover can be easily combined with **SURE-SPRING®** roll-up covers.



Spindle opening with edges guarded by **protected wipers**, with polyurethane profile.

Telescopic Steel Cover **casing** designed to allow easy installation and rapid disassembly for maintenance.

Sequence of **moving panels**, made of special high-resistance steel, fully adhering to one another to prevent shavings from penetrating inside.



(Patented)

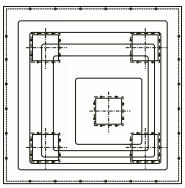
SHEET-POCKET™ PROSHD

The **SHEET-POCKET™ PROSHD** is a protective shield which in a machine tool separates the working area from the motor while allowing the spindle to move freely.

The **Telescopic Steel Covers SQUARE™ and ROUND SLIDING COVER™** were designed to meet special needs that frequently arise on SPECIAL or TRANSFER machines and small machining centers.

SQUARE SLIDING COVER™

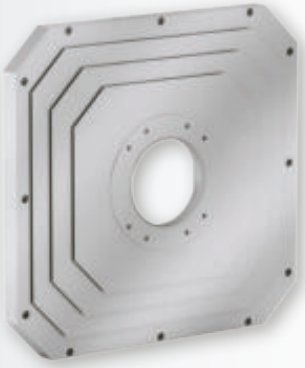
- For dual-axis operation
- High speed
- Compact size
- Easy to install
- Maximum use of available space

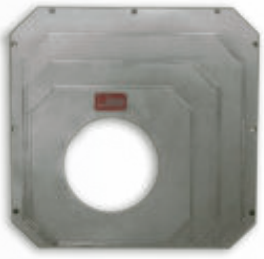


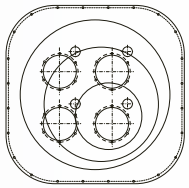
(Patented)

ROUND SLIDING COVER™

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

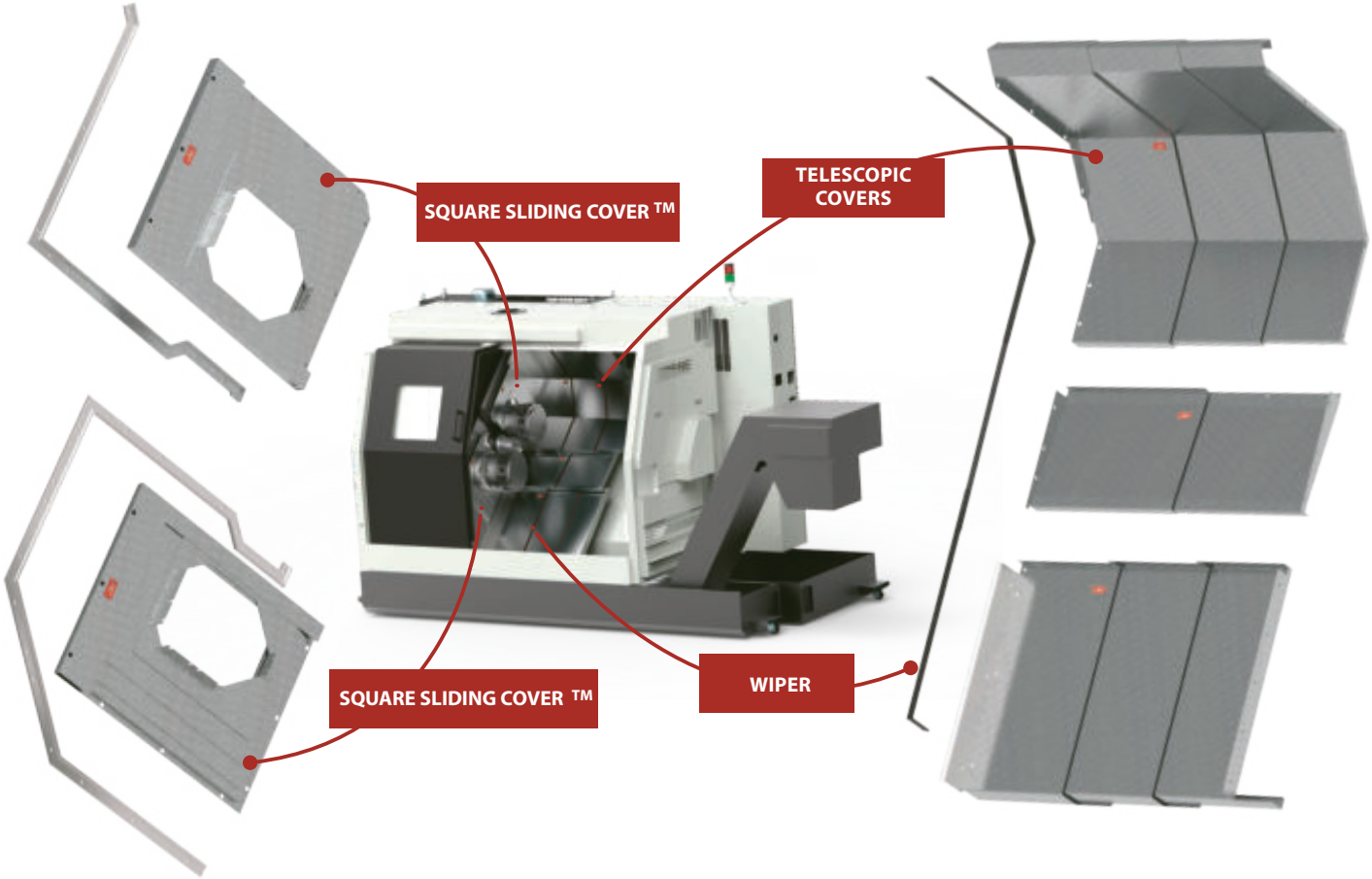


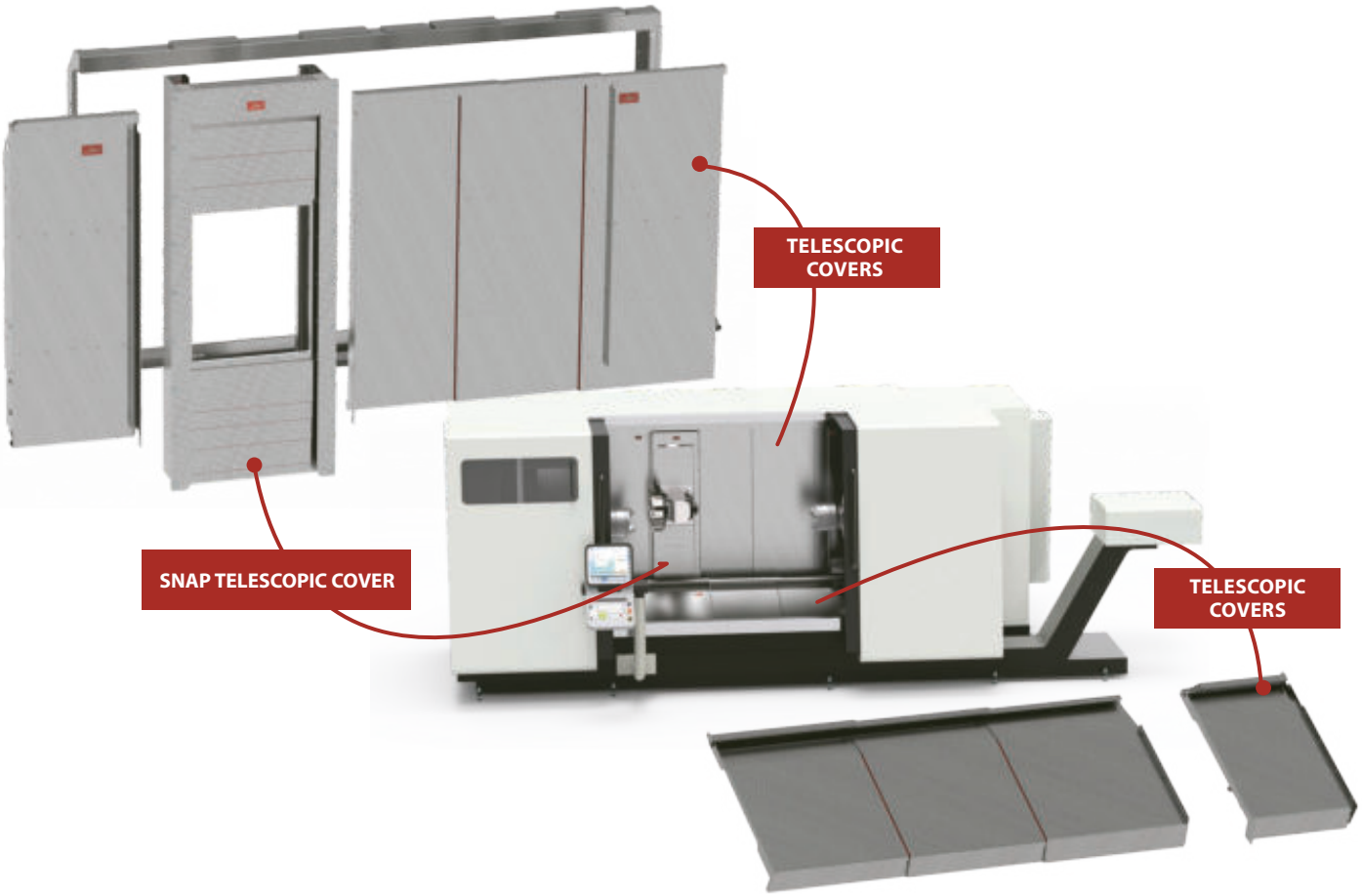




(Patented)

TELESCOPIC COVERS FOR LATHES

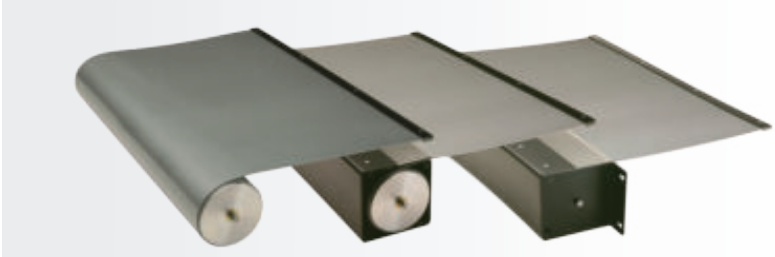




Roll-up Covers

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

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



CERAMIX Band

AEROSPACE TECHNOLOGY IN MACHINE TOOLS: a potent and cost-effective innovation

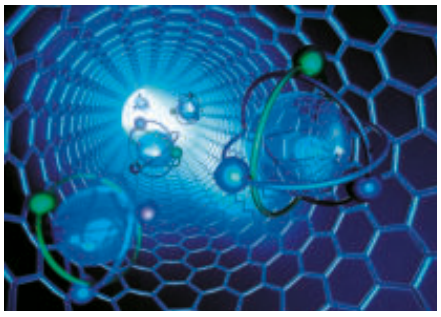
- **CERAMIX** is a band material covered by a high ceramic polymer coating.
- **CERAMIX** is highly resistant against the impact of hot shavings during dry-working.
- **CERAMIX** has an excellent abrasion resistance and shear strength and is recommended for the use of mineral oils.
- **CERAMIX** band material has a **thickness of 1,6 mm and weights 2 kg/sqm**. It is self-extinguishing and antistatic.
- **CERAMIX** can be installed on any **P.E.I.** roll-up cover with mechanisms starting from 70 mm of roller diameter.

CERAMIX LIGHT Band

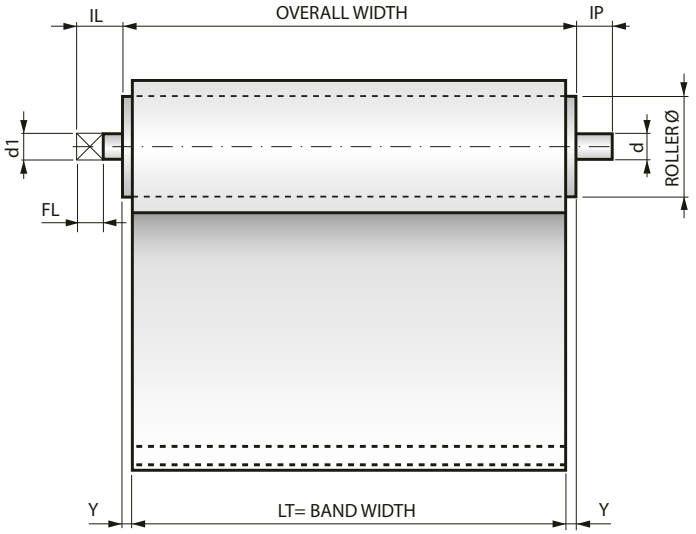
Identical resistance at half the weight

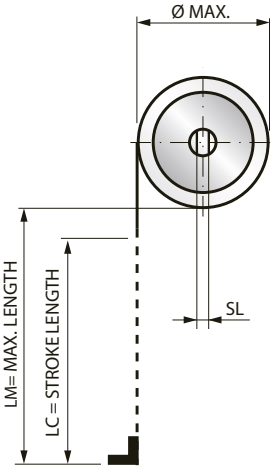
- **CERAMIX LIGHT** offers all the characteristics of CERAMIX but at a **thickness of 0,9 mm and 1 kg weight per sqm**.
- **CERAMIX LIGHT** is self-extinguishing and antistatic.
- **CERAMIX LIGHT** is suitable for mechanisms with a tube diameter starting from 20 mm.

A glance through the microscope shows a **mesh of ceramic particles** which protect their own composite material against the strong impact of shavings.



Roll-up Covers without Canister





LM		2 . Y =
from	to	
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 80-90-100-120	10	15	12	4	10	10

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

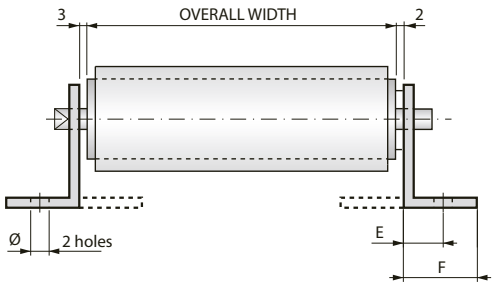
SURE-SPRING® Roll-up Covers

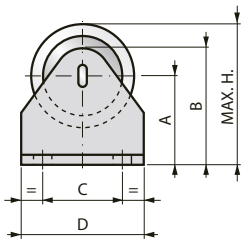
Ø ROLLER	d1	IL	FL	SL	d	IP
39-52-71	10	15	12	4	10	10

Formula for calculating the OVERALL WIDTH

OVERALL WIDTH = LT + 2Y

Example:
LM = 1000 LT = 500 2Y = 8
OVERALL WIDTH = 508





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

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

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

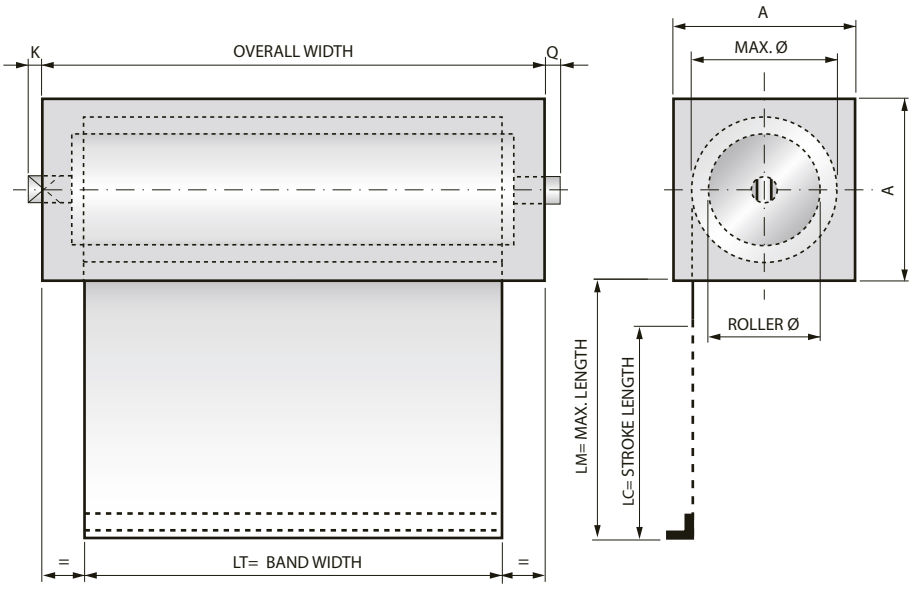
(* see materials list on pages 60-61)

Dimensions in mm.

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.

Ø ROLLER 30	OVERALL WIDTH	150	250	350	500	750	1000	1250	1500
	MAX. LENGTH	300	500	650	800	1000	1200	1350	1500
Ø ROLLER 40	OVERALL WIDTH	150	250	350	500	750	1000	1250	1500
	MAX. LENGTH	400	600	900	1200	1500	1800	2000	2200
Ø ROLLER 50	OVERALL WIDTH	150	250	350	500	750	1000	1250	1500
	MAX. LENGTH	450	700	1050	1350	1650	2000	2250	2450
Ø ROLLER 60	OVERALL WIDTH	150	250	350	500	750	1000	1250	1500
	MAX. LENGTH	500	1000	1600	1900	2200	2500	2750	3000
Ø ROLLER 70	OVERALL WIDTH	150	250	350	500	750	1000	1250	1500
	MAX. LENGTH	550	1100	1750	2050	2350	2600	2900	3150
Ø ROLLER 80	OVERALL WIDTH	150	250	350	500	750	1000	1250	1500
	MAX. LENGTH	700	1300	2000	2350	2700	3100	3400	3700
Ø ROLLER 90	OVERALL WIDTH	150	250	350	500	750	1000	1250	1500
	MAX. LENGTH	750	1400	2150	2500	2850	3200	3550	3850
Ø ROLLER 100	OVERALL WIDTH	150	250	350	500	750	1000	1250	1500
	MAX. LENGTH	800	1500	2300	2650	3000	3300	3700	4000
Ø ROLLER 120	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

Ø ROLLER 39	OVERALL WIDTH	250	350	500	750	1000	1250	1500
	MAX. LENGTH	850	1250	1650	2000	2500	3000	3850
Ø ROLLER 52	OVERALL WIDTH	250	350	500	750	1000	1250	1500
	MAX. LENGTH	1000	1500	2000	2500	3000	3850	4700
Ø ROLLER 71	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 = MAX Ø + 8

Formula for calculating the OVERALL WIDTH

With Steel and Stainless Steel canister

OVERALL WIDTH =

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

Example with Steel canister:
LT= 500 2Y= 8 LM =1000
LM/100 =10 Z= 13

OVERALL WIDTH = 531
(* see 2Y table on page 14)

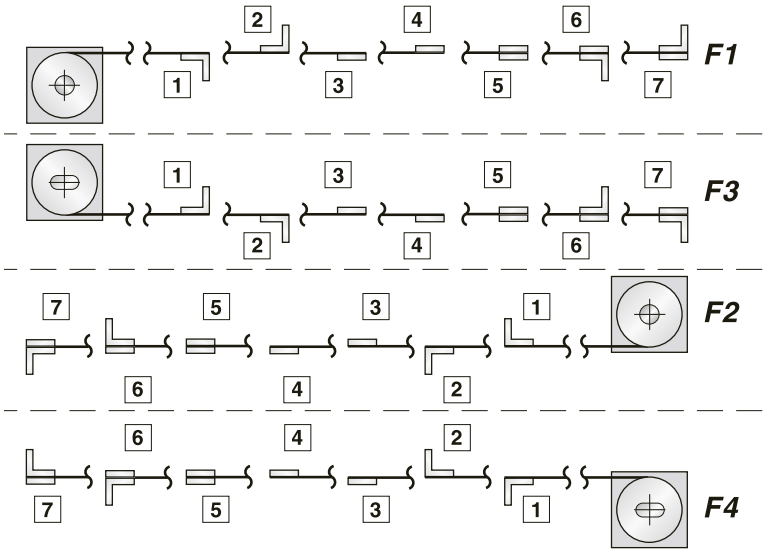
Dimensions in mm.

Installing Roll-up Covers

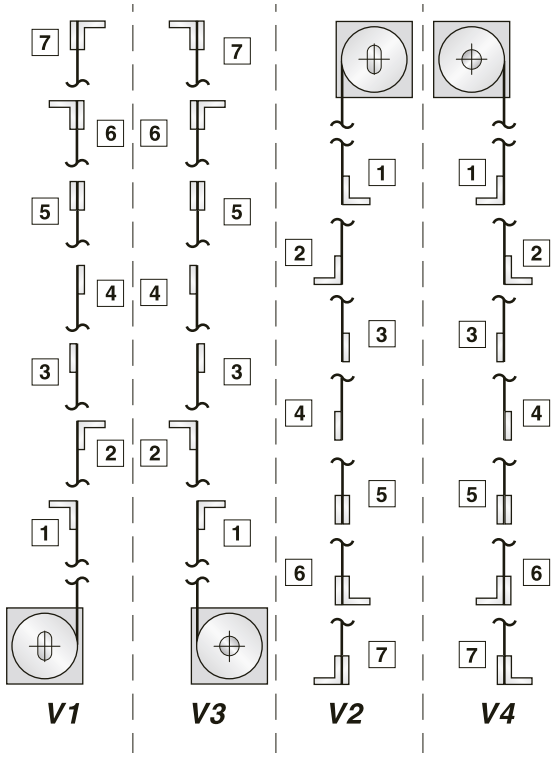
This diagram is valid for all Roll-up Covers, and shows:

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

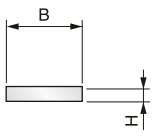
Horizontal and frontal positions



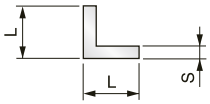
Vertical positions



Terminal materials: Aluminum, Steel

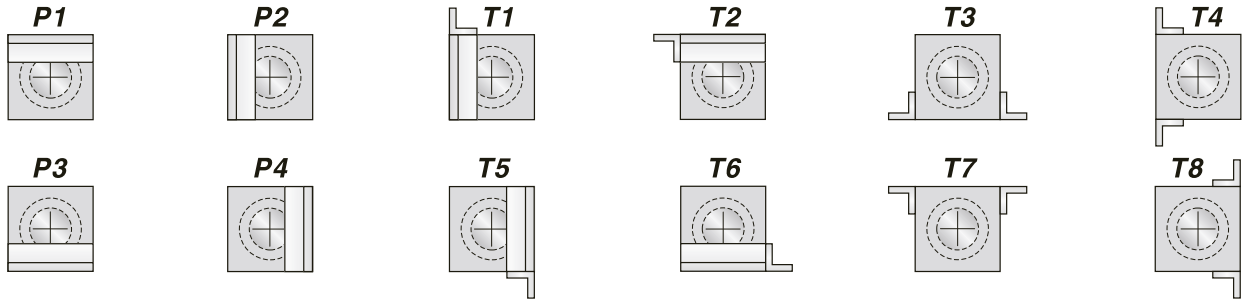


B x H
15 x 3
20 x 3
30 x 3

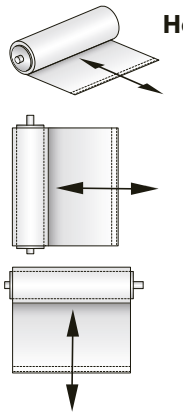


L x L x S
15 x 15 x 3
20 x 20 x 3
30 x 30 x 3

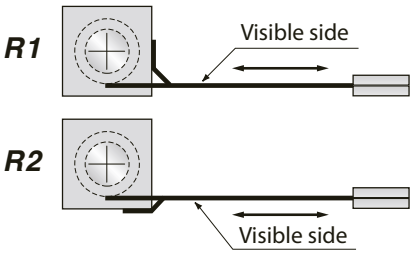
Standard canister mounting systems: To describe the canister attachment system, place one of the drawings below over the selected roll-up cover position, above. Do not rotate either drawing.



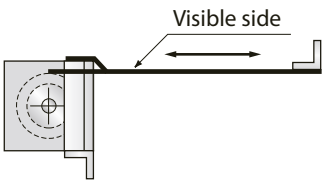
Positions



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

Type of machine on which the ROLL-UP COVER 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 band:

- ❑ Steel shavings
- ❑ Cast iron shavings
- ❑ Brass shavings
- ❑ Aluminum shavings
- ❑ Wood shavings
- ❑ Ambient dust
- ❑ Grinding swarf
- ❑ Welding splatter
- ❑ Other .....

Liquids to which the band will be exposed:

- ❑ Water/steam
- ❑ Coolant/oils
- ❑ Oils with a viscosity of ISO.....
- ❑ Other .....

Amount of material falling on the band:..... Kg

Temperature of material falling on the band:..... °C

Temperature of work area: ..... °C

Max. rapid travel speed:

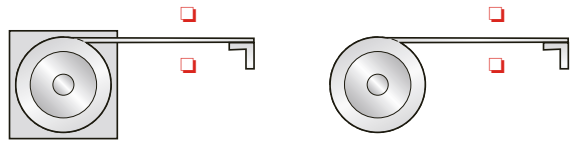
..... m/min.

Max. acceleration:.....g

Max. working motions per hour:.....

Max. daily working hours: .....

Please mark the visible side of the band



Sketch

❑ **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 ❑ 003 ❑ 004 ❑ 005 ❑ 007 ❑ 009

❑ 011 ❑ 012 ❑ 013 ❑ 014 ❑ 015 ❑ 017 ❑ 018

❑ 019 ❑ 020 ❑ 022 ❑ 081 ❑ 091 ❑ 101 ❑ 102

❑ 104 ❑ 105 ❑ 106 ❑ 151 ❑ 152 ❑ 159 ❑ 160

❑ 161 ❑ 162 ❑ 164 ❑ 165 ❑ 167 ❑ 169 ❑ 180

❑ 181 ❑ 202 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%

Company name.....

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

Quantity:.....

Annual demand: .....

Date: .....

Notes .....

.....

.....

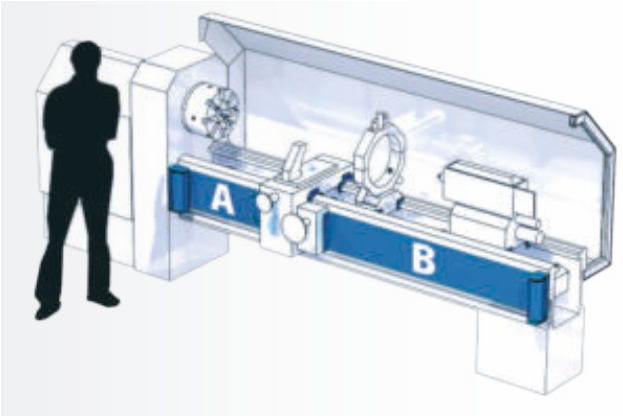
NOTE: The data fields and/or tables marked by are the least ones to be filled in order to give you a quotation. Please send an e-mail to info@pei.eu or a fax to +39 051 6464840.

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 (Conforming to norm for Machinery Directives 2006/42/CE).

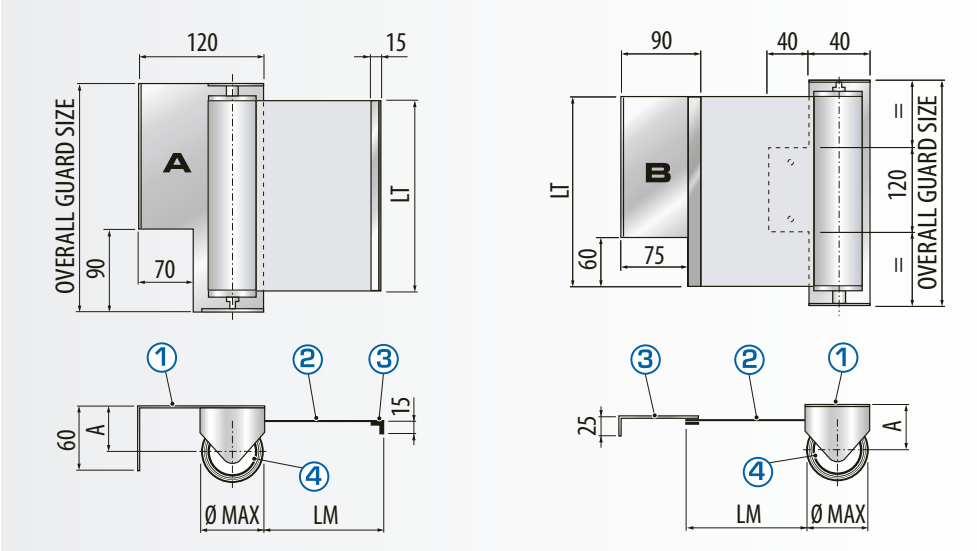
P.E.I. ROLL-UP COVERS for LATHES offer the following advantages:

- 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.
- **CANISTER UPON REQUEST**
- 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

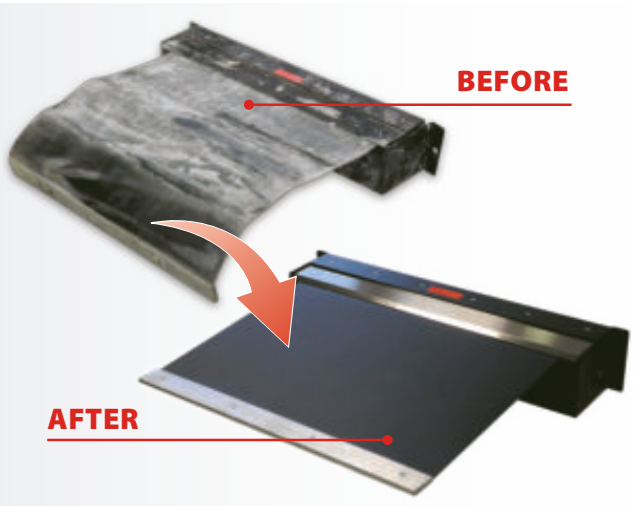
④ **RETURN MECHANISM:** with single or multiple springs

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

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.



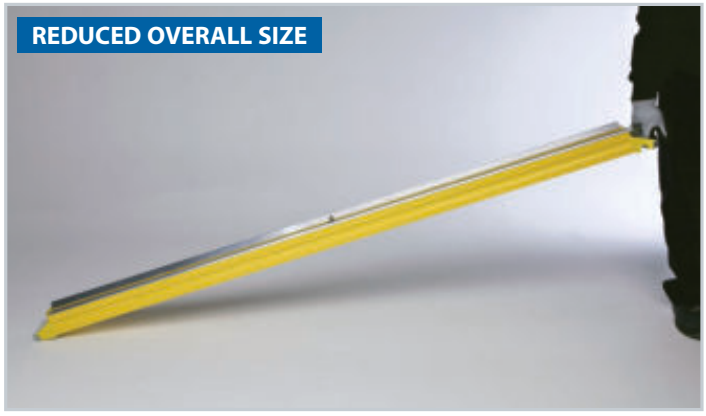
SHORT DELIVERY TIME

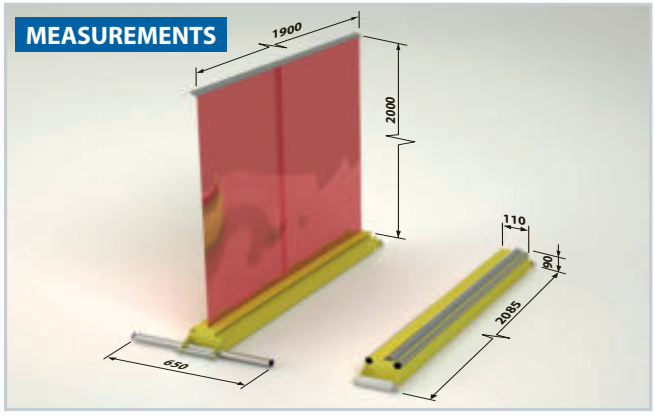
Dimensions in mm.

WELD SCREEN

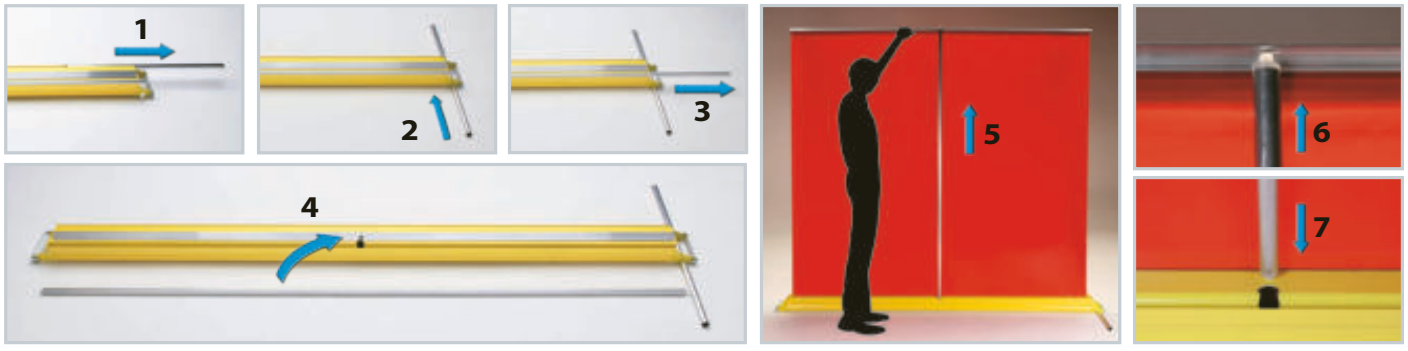
WELD SCREEN: A mobile safeguard for welding work stations.

- **WELD SCREEN** is equipped with an anti-glare foil which can be unwound and used as a separating blind between welding and honing work stations.
- **WELD SCREEN** serves as a safety barrier and screen protecting uninvolved personnel from the harmful effect of welding radiation and reflections on the eyes and skin. The semi-transparent protective shield also offers optimal protection against weld spatter and flying sparks. Due to its foldaway construction, it has limited external measurements and is therefore easily transportable (weight: 8,9 kg).
- **WELD SCREEN** is a safety curtain mounted on a portable pedestal. It is available in semi-transparent **ORANGE** version or in opaque **GREEN** version. Both materials of the welding guards are according to norm EN-25980.





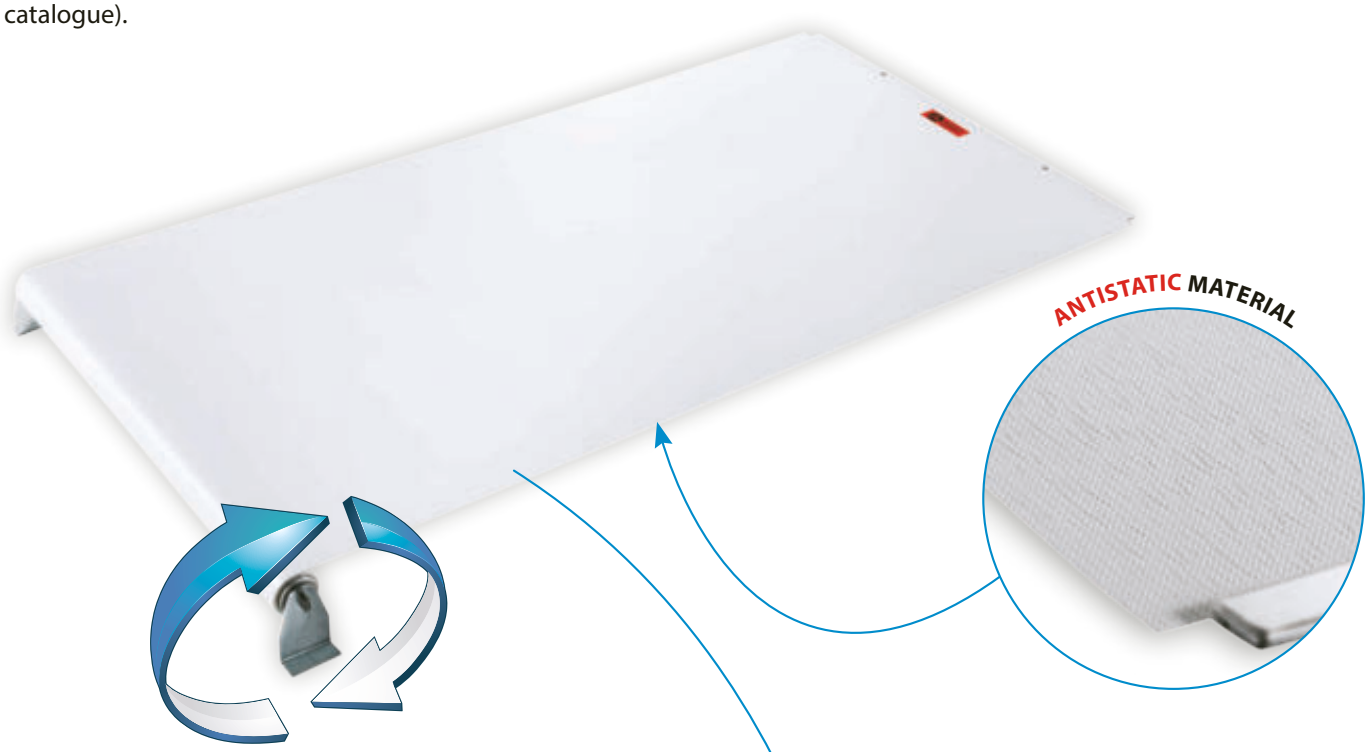
ASSEMBLY INSTRUCTIONS



Also available via our online-shop: ***https://www.pei.it/index.php/en/shop/weld-screen***

ROLL-UP COVER FOR THE FOOD INDUSTRY

P.E.I. roll-up covers are also used in the food packaging industry.
Our special band material Temat159 is **FDA approved** and antistatic (please refer to the fabric material list at the end of this catalogue).



ROLL-UP COVERS FOR FRUIT HARVESTING PLATFORMS

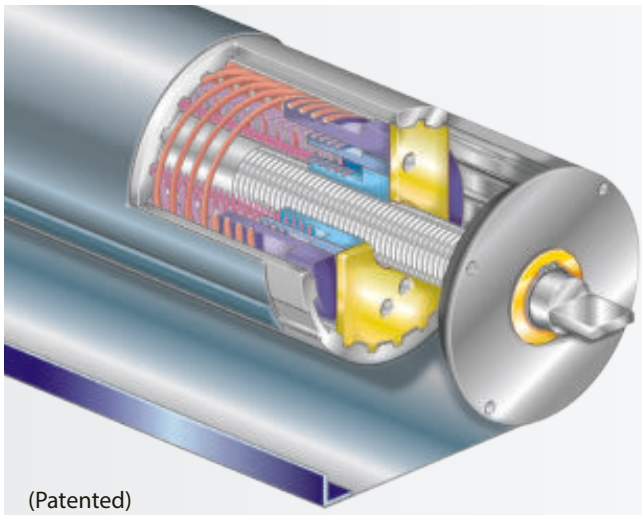
P.E.I. Roll-up Covers are also used to offer lateral protection of the lifting mechanism of agricultural wagons (pantographs), as well as for all situations in which a lifting platform must be covered in order to avoid accidental contact and the danger of shearing.

It also protects the lifting mechanism from dirt, such as leaves, branches, etc., which could enter and interfere with the mechanism's operation.

Fabrics are available in several variants and colours.

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.

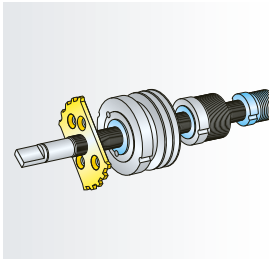


(Patented)

- **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**

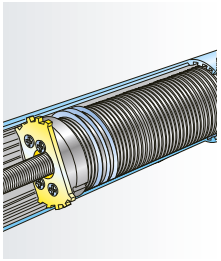
SURE-SPRING® Technical Specifications

Transmission



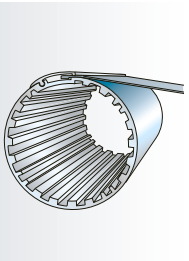
The rotary movement of the tube in relation to the fixed central shaft is transmitted by a sliding spline. This system compensates for the elongation of the multiple springs by moving the spring mounting point axially along a threaded shaft.

Innovative features

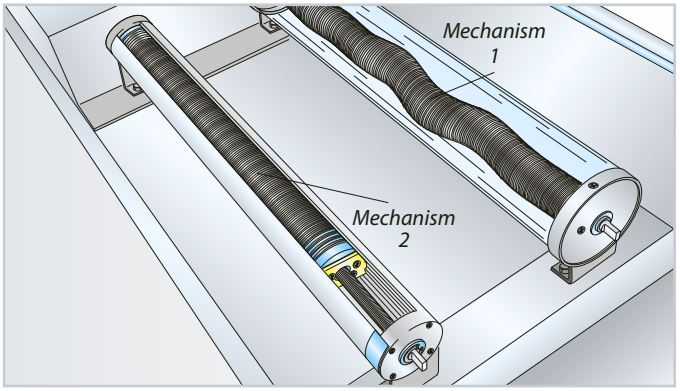


This new system allows the multiple springs to work according to an ideal geometry, keeping their coils properly spaced.

Mechanical system attaching the band to the tube

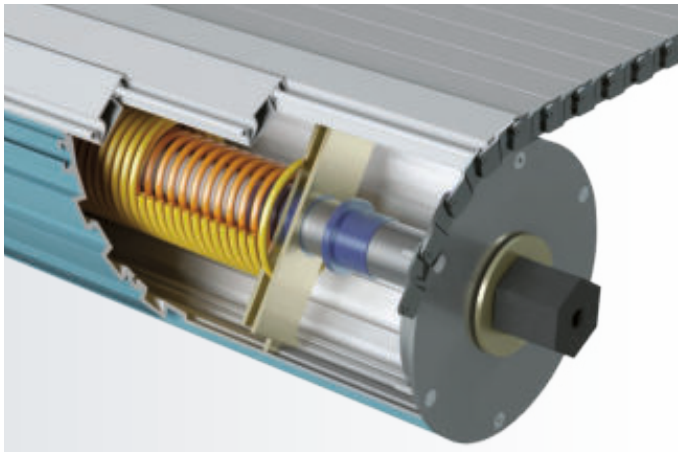


This is the most reliable system for insuring a secure attachment between the band to the tube.



SURE-SPRING® Operating diagram

- 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 15).



SURE-SPRING®, HP VERSION

The **SURE-SPRING HP** winding mechanism is the answer to the elevated power required to wind up large size protective covers. An optimal dimensioning of the springs guarantees the tensile force required for moving **"J"-series apron covers**.

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 **X-Y 4R SHIELD** allows the spindle to move freely in all directions.
- The **X-Y 4R SHIELD** uses four **SURE-SPRING**® roll-up covers.

Application examples

X-Y SP-2R 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 picture, this system is mounted on a **SHEET-POCKET™** Steel Cover (patented - see page 10) on the Y-axis and two rollers on X-axis with **Ceramix*** bands.
- 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.
- During the design of this system access and ease of inspection are taken into account. By talking with the client we agree on how to to achieve quick and easy assembly during the design phase of the machinery.

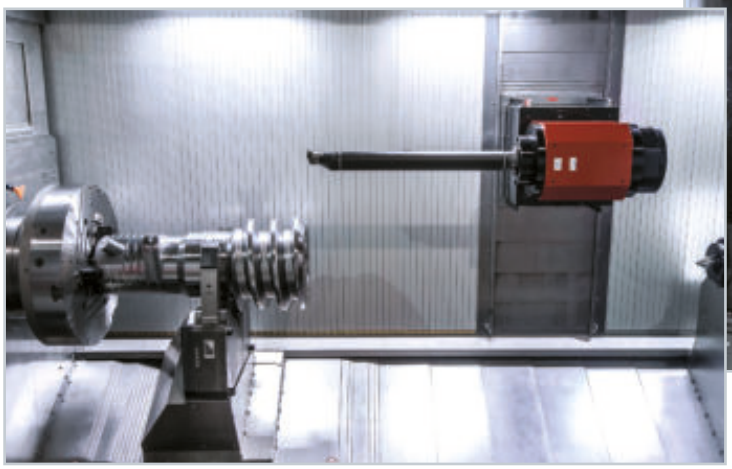
*) The roll-up covers represented here are equipped with a **Ceramix** band. Other types of bands are available depending on requirements.
See Technical Characteristics of **Ceramix** band on pages 60-61 under code TEMAT181.

Application examples

WALL ROLL-UP COVER Roll-up covers for FRONTAL application

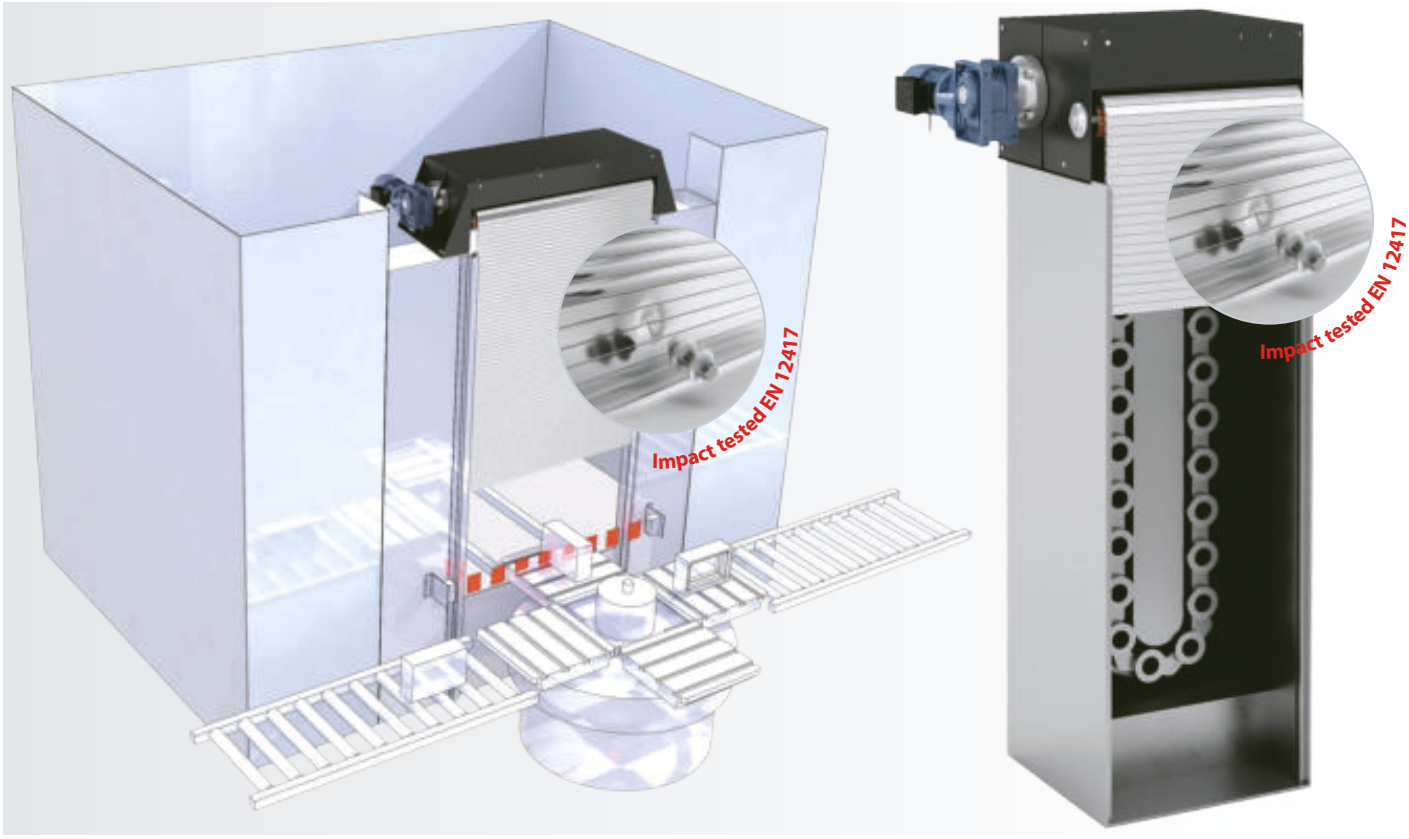
WALL ROLL-UP COVER is a dividing wall between the working area and the machine room in large lathes. **WALL ROLL-UP COVER** consists of special **P.E.I.** roll-up covers.
The X-axis is equipped with a **"J"-series apron**, the Y-axis with a **telescopic Sheet-Pocket™ cover** with way wipers. Our design department is pleased to help you with any questions.

Application example



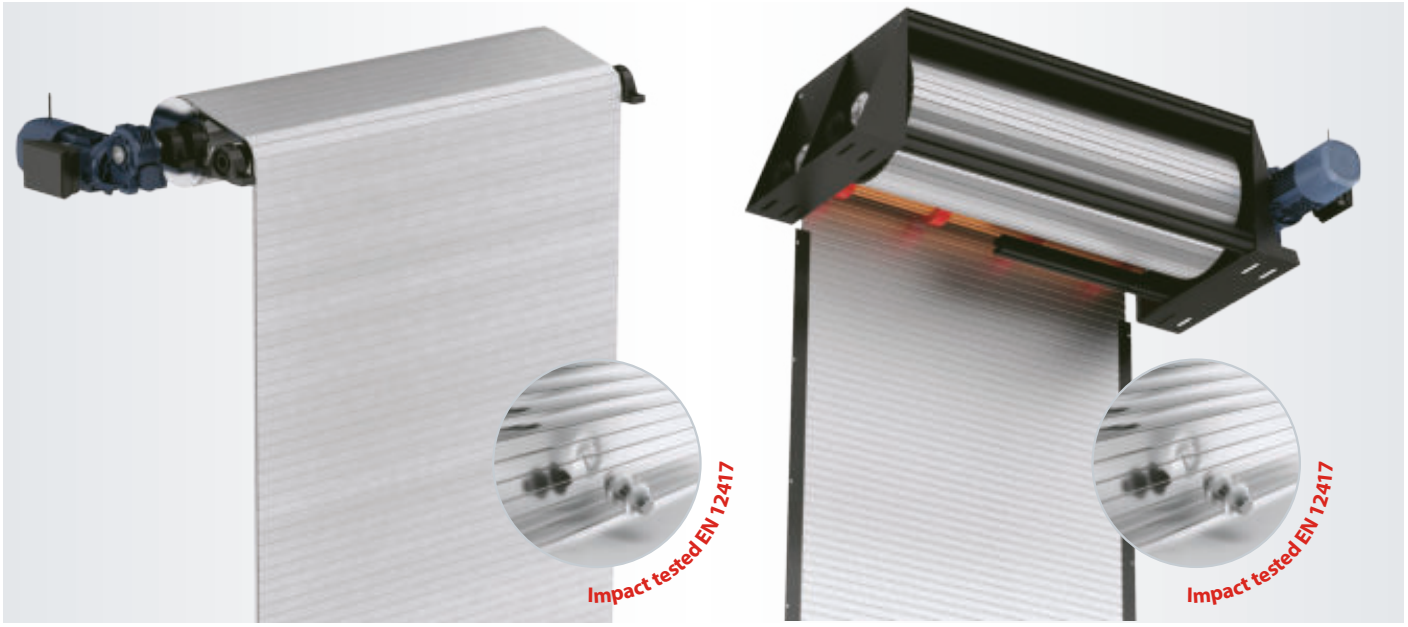
MOTOR ROLL-UP COVER Roll-up cover for VERTICAL application

All **P.E.I.** apron covers can be equipped with a **motor** and serve as a dividing wall between the working area and the machine operator. This allows for a **fast change of the tool or the workpiece**. The apron cover works in a **vertical** position and can be designed with or without canister. The **motor** can be installed on the left or the right side, vertically or horizontally. Our design department is pleased to help you with any questions.



APPLICATION FOR CHANGING THE WORKPIECE

APPLICATION FOR THE TOOL CHANGE



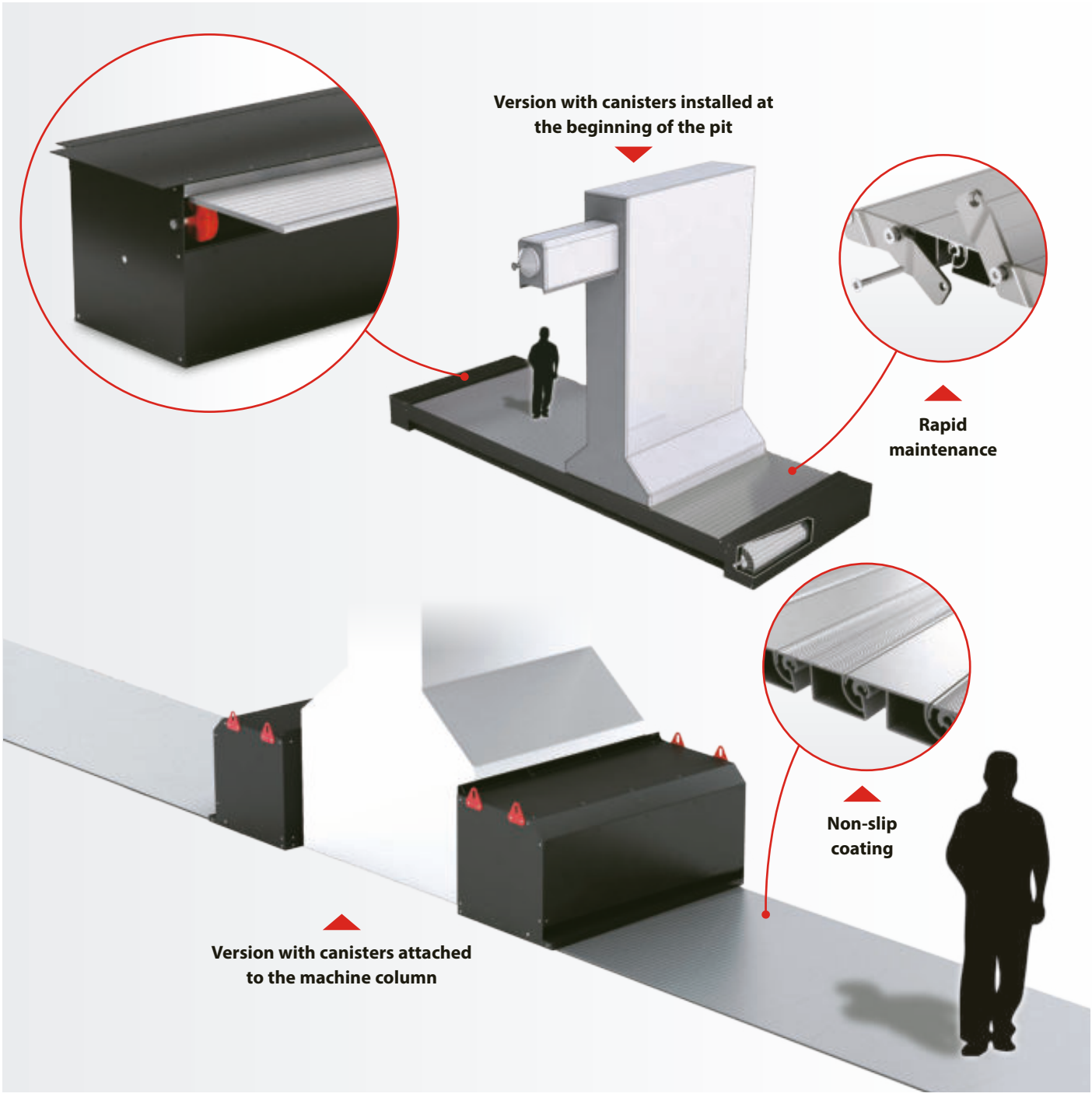
VERSION WITHOUT CANISTER AND WITH DIVERTER PULLEY

EXAMPLE OF A COVER WITH CANISTER AND SLIDE BEARING

PIT ROLL-UP COVER Roll-up covers for HORIZONTAL application

PIT ROLL-UP COVER closes the upper part of the pit of machines whose base (or other parts) lie below the tread. By use of this **horizontally** installed apron, current accident prevention regulations can be complied with.
By installing the **"J"-series apron cover**, the machine pit can be walked-on at any time.

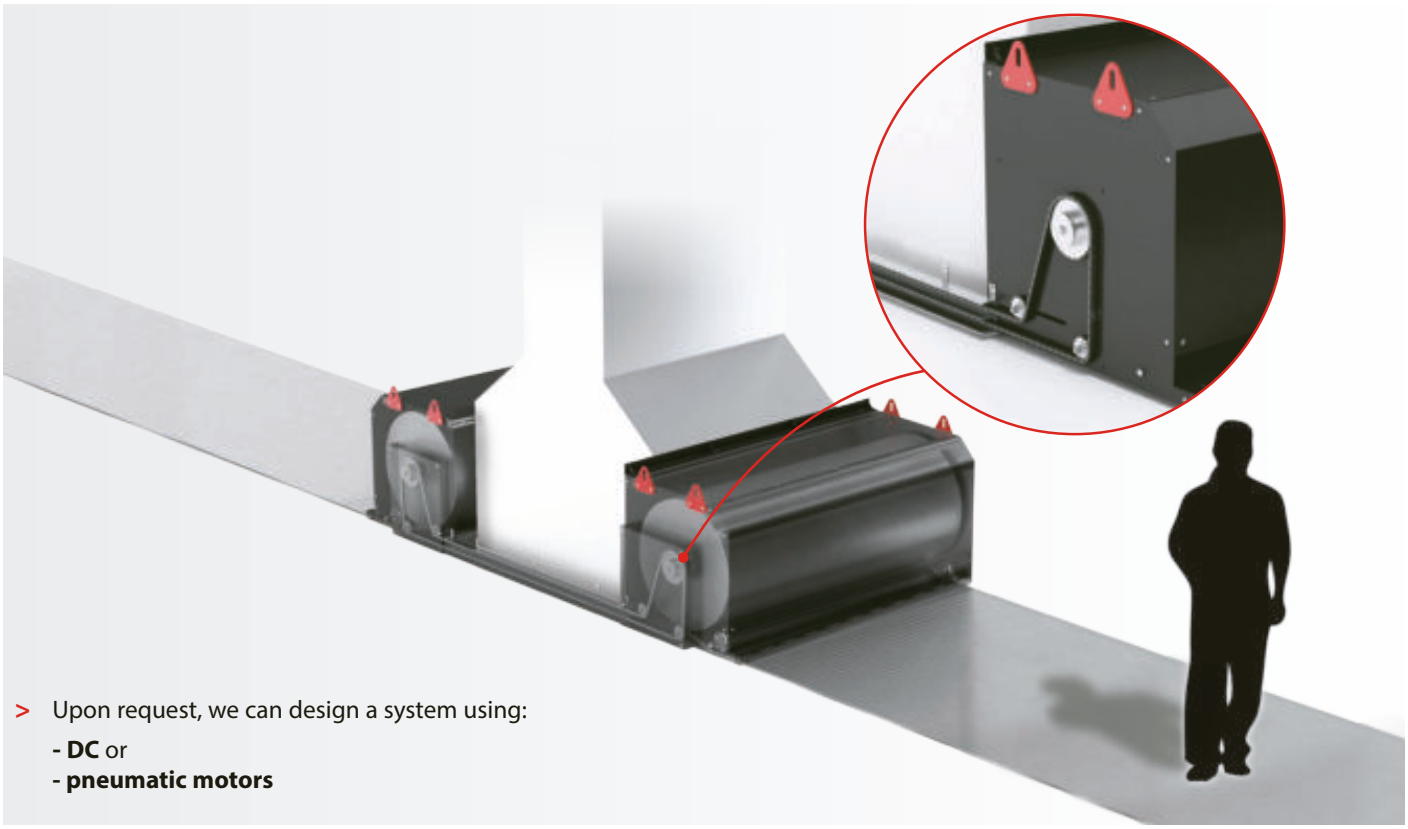
- **Velocity**: up to 120 m/min; suitable for wet and dry machining
- Guaranteed service life: 1.000.000 movements
- **Highly resistant**: particularily suitable for walk-on surfaces
- **Entirely** made of **metal**
- The side facing the flying chips has an **absolutely even** surface
- **Cleaned** by way wipers
- The mechanical winding mechanism produces **no impact or vibration noise**
- The **lateral apron guide** is designed in such a way that the chips fall into the chip conveyor
- Closed lateral steel plates produce a "**chain effect**"
- Modular system with single exchangeable elements
- Joint **protected** by an integrated labyrinth
- **Reinforced** version with steel profiles



CHAIN ROLL-UP COVER Roll-up covers for HORIZONTAL application

P.E.I. Roll-up covers with **Chain Movement** (patented system).
They 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**.
- The **winding tubes** incorporated in the canisters are attached to the machine column. A **system compensating** the diametre automatically allows for a concerted unwinding of the aprons.
- The dimensions, layout, and speed of travel are **developed for each order** and can meet your exact needs.

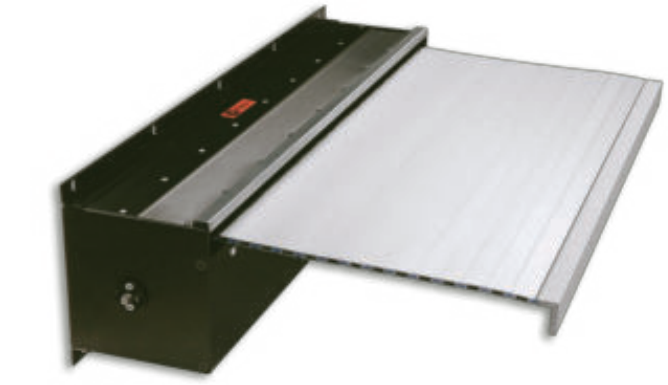


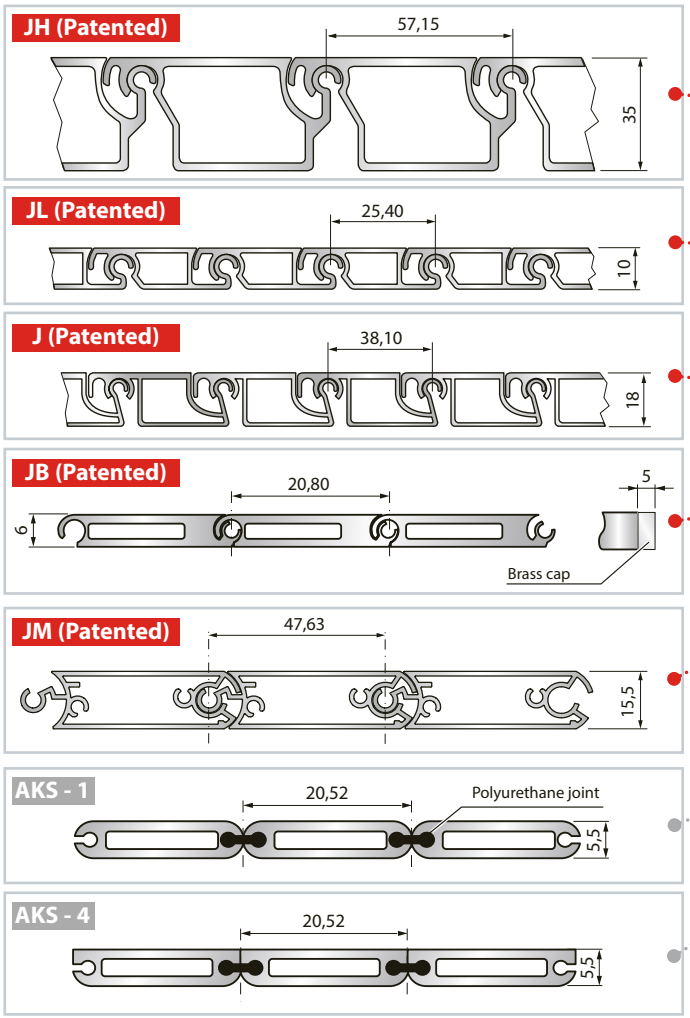
> Upon request, we can design a system using:
- DC or
- pneumatic motors

Application Example

FLEXIBLE ALUMINIUM COVERS

All **"J"-series apron covers** are **IMPACT TESTED** according to **EN 12417.**





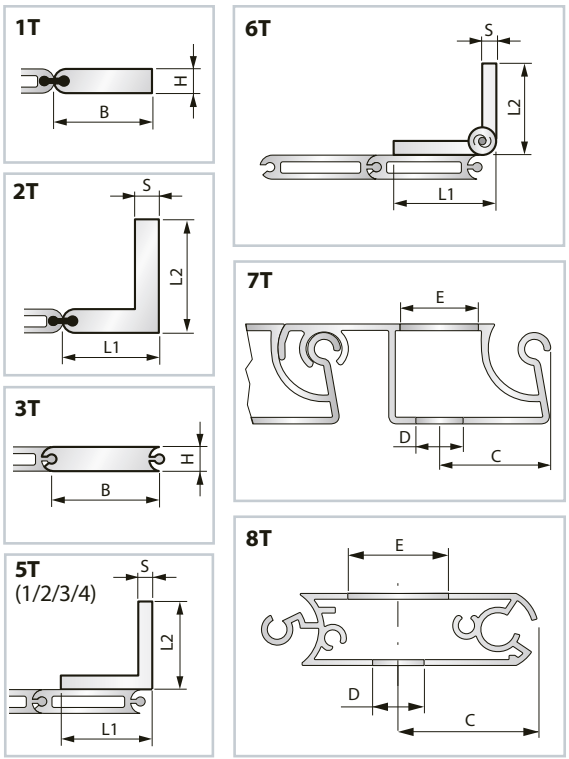
Terminal sizes:

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
5T/1	15x15x3					Al-Ac	Corner	JB
5T/2	20x20x3					Al-Ac	Corner	JB
5T/3	30x30x3					Al-Ac	Corner	J / JB / JL / JM
5T/4	40x40x5					Ac	Corner	J / JH / JM
6T	30x30x2					Ac	Hinged	AKS-1/AKS-4 J/JL/JH/JB/JM
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
8T			30	11	22	Al-Ac	Corner	JM

Al = Aluminum Stl = Steel

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

Standard end mount profiles:



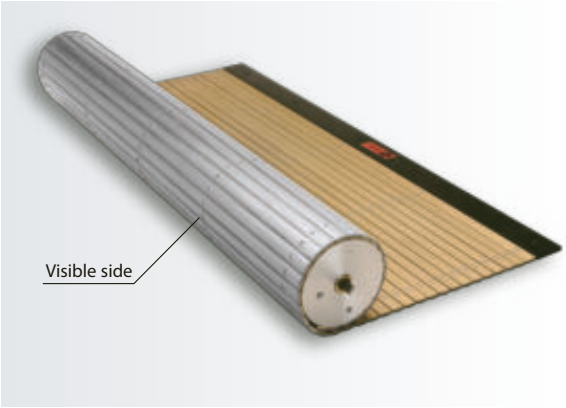
Dimensions in mm.

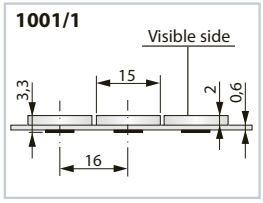
Technical Specifications

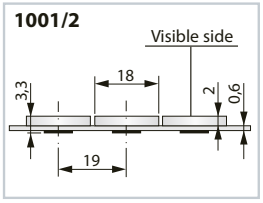
Code	Minimum winding diameter		Cover weight	Cover cleaning	Bending strength, support distance*		Max. charge permitted	Impact tested EN12417	Anti-slip treatment	Traction strength kN/m
	With upper roller mm	With lower roller mm	Kg/m²		mm	(150 Kg) mm	kg each wheel Ø100	Joule		
JH	200	200	25,0	Wiper	4500	4000	75	250	Upon request	2
JL	100	100	12,2	Wiper	1200	1000	50	90	Upon request	2
J	150	150	12,5	Wiper	2200	1750	50	150	Upon request	2
JB	/	60	9,5	Wiper	750	600	50	150	Not available	2
JM	/	150	14,8	Wiper	2250	1850	50	150	Not available	2
AKS1	50	50	9,0	Brush	750	600	/	-	Not available	1,2
AKS4	/	50	9,0	Wiper	750	600	10	-	Not available	1,2

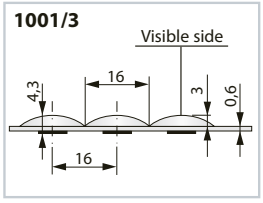
MATERIAL: Anodized silver aluminum * Max. bending 1% of the support distance **MAX. FEASIBLE WIDTH**: 6000 mm

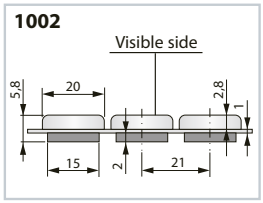
RIVETED APRON COVERS

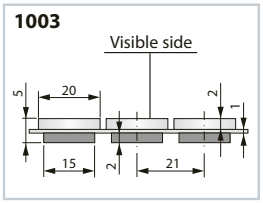


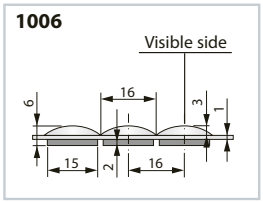










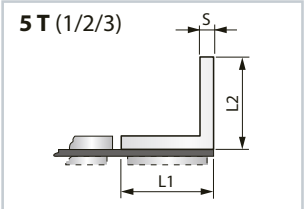


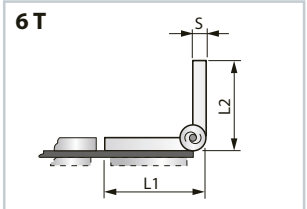
Code	Possible combinations of materials		Minimum winding diameter (mm)		Max. feasible width
	Upper elements	Lower elements	With upper roller	With lower roller	mm
1001/1	Al-Stl-Br		50	30	2000
1001/2	Al-Stl-Br		70	30	2000
1001/3	Al		70	30	2000
1002	Al	Al-Stl-Br	40	40	2000
1003	Al-Stl-Br	Al-Stl-Br	70	40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

Al= Aluminum Stl= Steel Br= Brass

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

Standard end mount profiles:



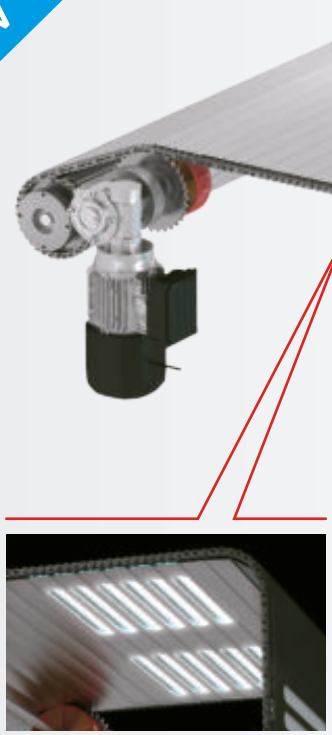


Terminal Code	L1xL2xS	Material
5T/1	15x15x3	Al - Ac
5T/2	20x20x3	Al - Ac
5T/3	30x30x3	Al - Ac
6T	30x30x2	Stl hinge

CORNER ROLL-UP COVER Roll-up cover for HORIZONTAL / VERTICAL application

CORNER ROLL-UP is a new **P.E.I** application: a roll-up cover that protects more than one side, both **vertically** and **horizontally**. It is rolled up using a **P.E.I** winding mechanism driven by a motor with integrated side chains fixed to the shutter, creating a rack effect. This roll-up cover is provided with a new, 15.5 mm thick **JM** aluminium profile.
Suitable for walk-on applications, with superior performance than the J-Type apron (more information on page 29 of our General Catalogue).

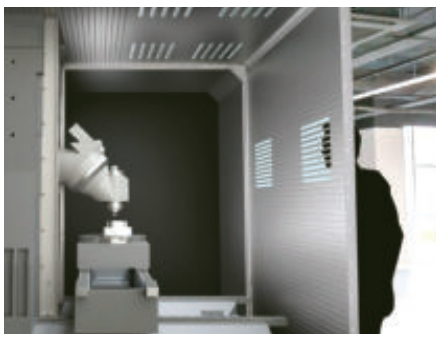
new

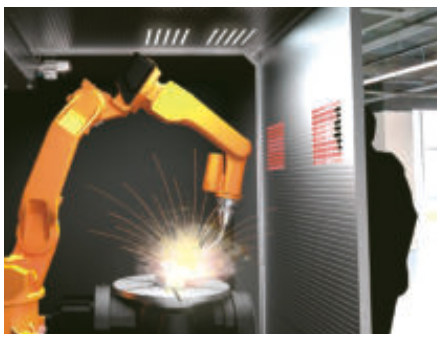


It is possible as a standard to equip the **cover** with **illumination inside**

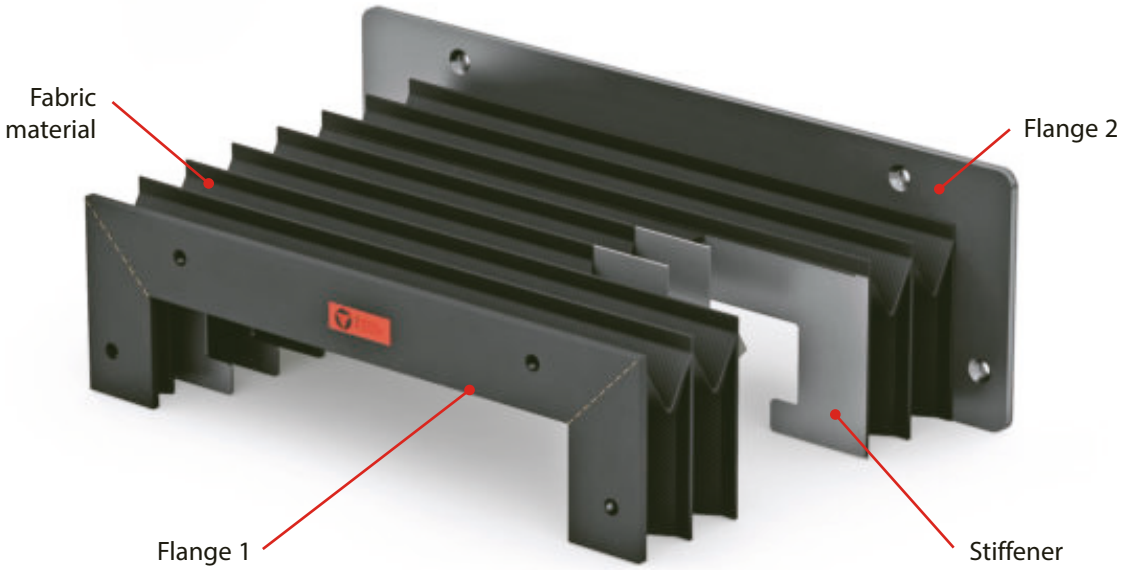
Option of viewing panel in versions:
- **transparent**
- **tinted for welding work**
- **tinted for laser working,**

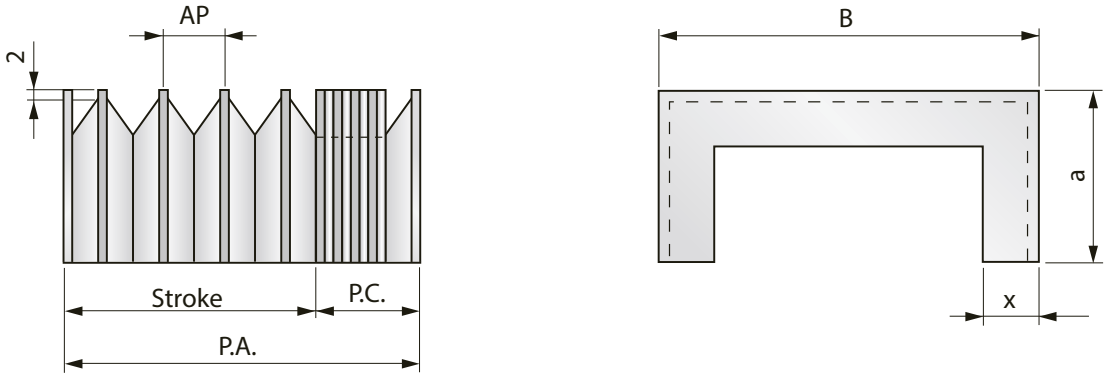
after specification of equipment type and radiant source





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 34.

This data sheet shows only one type of Thermic-Welded Cover that we manufacture.
Contact our engineering department for other types.

DImensions in mm.

Example:

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

Opening of 1 fold = 15 x 2 - 8 = 22

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

Closed length = (0,25* x 8 + 1**) x 48 + (2*** x 2)

Closed length = 3 x 48 + 4 = 148

Closed length = 148 mm

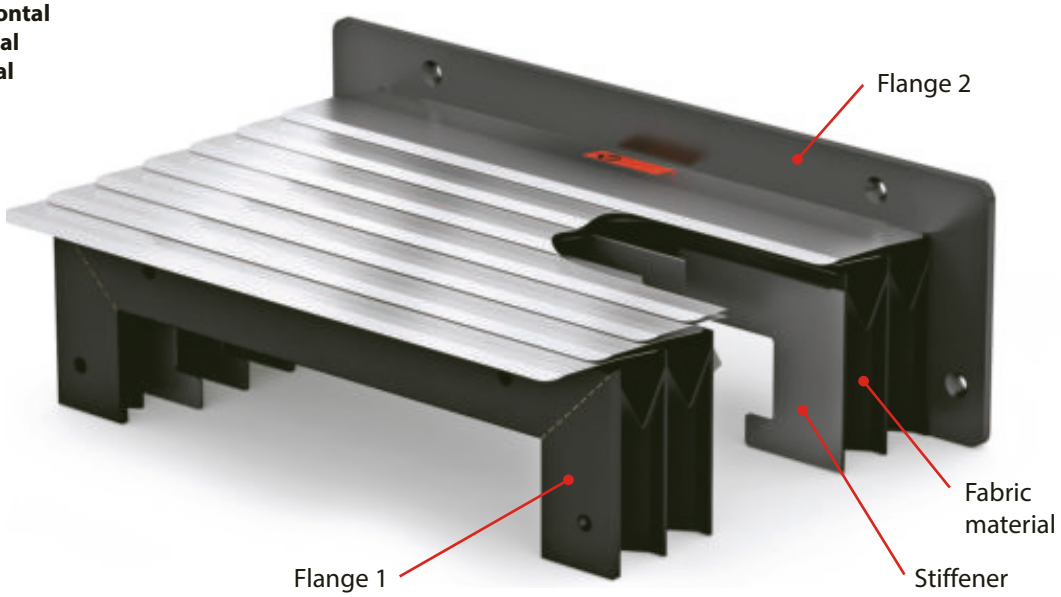
* We hypothesize the fabric material with code "TEMAT015" (see materials list on page 34)

** We hypothesize that the stiffener is 1 mm thick

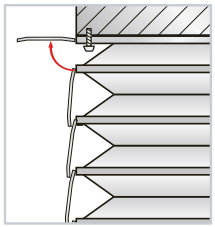
*** We hypothesize that the flange is 2 mm thick (see materials list on page 34)

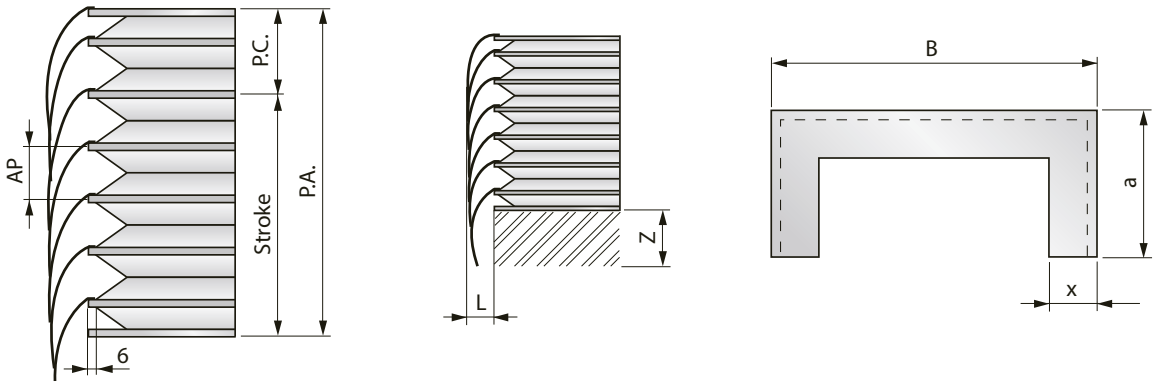
THERMIC-WELDED COVER WITH FIXED LAMINATIONS

Working position:
Horizontal
Vertical
Frontal



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





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

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 = $x \cdot 2 - 16$

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 34

This data sheet shows only one type of Thermic-Welded Cover that we manufacture.
Contact our engineering department for other types.

DImensions in mm.

Example

Given that: Fold height = 45 mm
Open length = 1800 mm

Opening of 1 fold = 45 x 2 - 16 = 74

Number of folds = $\frac{1800}{74} + 2 = 27$

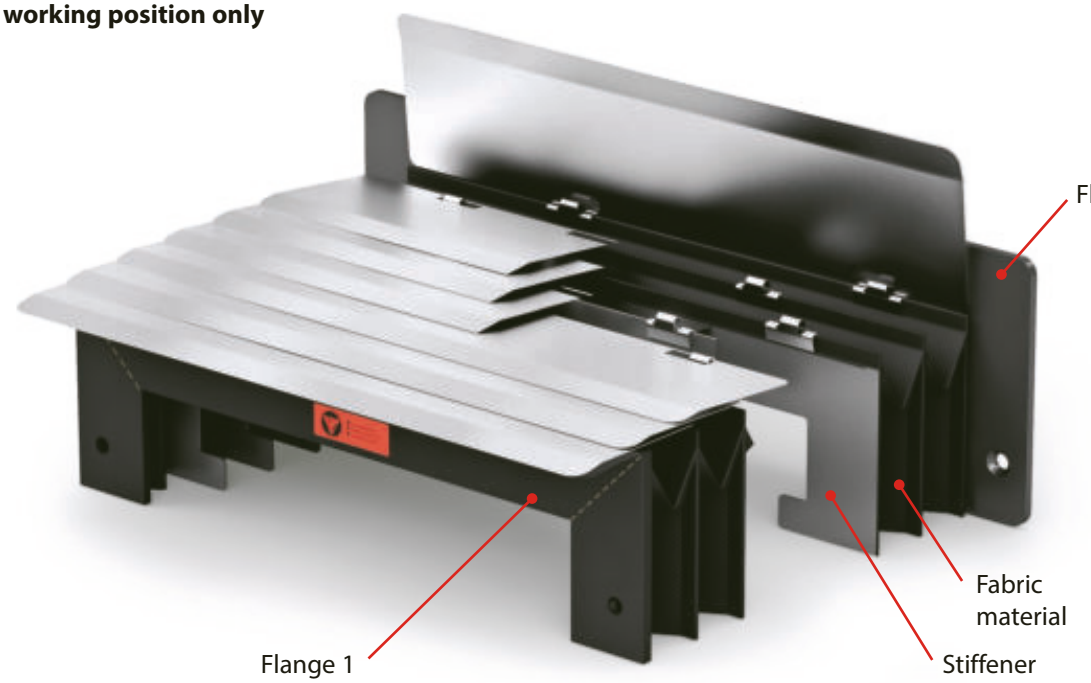
Closed length = (0,35* x 8 + 1**) x 27 + (3*** x 2)
Closed length = 3,8 x 27 + 6 = 109

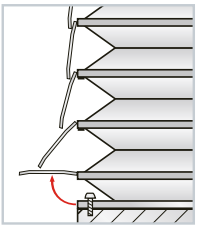
Closed length = 109 mm

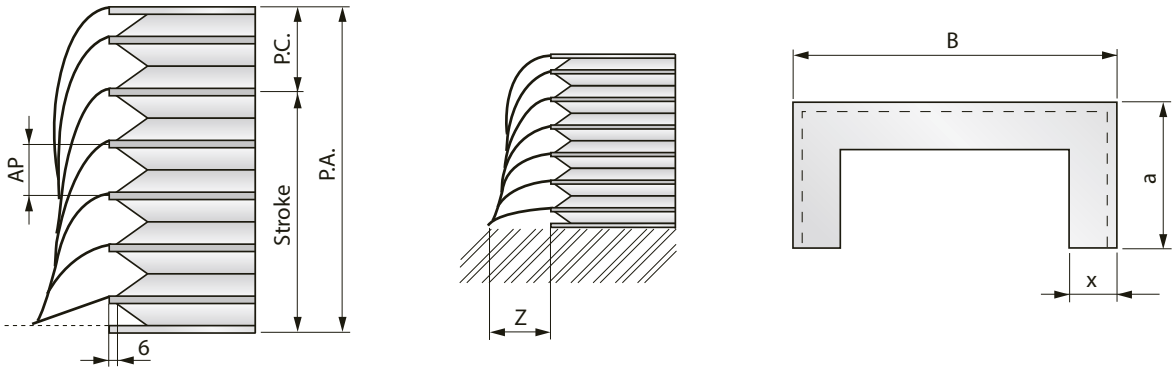
* We hypothesize the fabric material with code "TEMAT151" (see materials list on page 34)
** We hypothesize that the stiffener is 1 mm thick
*** We hypothesize that the flange is 3 mm thick (see materials list on page 34)

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·2) - 16

SM = Fabric thickness *

SS = Stiffener thickness *

SF = Flange thickness *

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

P. C. = (SM · 8 + SS) · NP + (SF · 2)

* See materials list on page 34

This data sheet shows only one type of Thermic-Welded Cover that we manufacture.
Contact our engineering department for other types.

DImensions in mm.

Example

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

Opening of 1 fold = (30 x 2) - 16 = 44

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

Closed length = (0,25* x 8 + 1**) x 25 + (2*** x 2)

Closed length = 3 x 25 + 4 = 79

Closed length = 79 mm

* We hypothesize the fabric material with code "TEMAT015" (see materials list on page 34)

** We hypothesize that the stiffener is 1 mm thick

*** We hypothesize that the flange is 2 mm thick

(see materials list on page 34)

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	Continuous max. °C	
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	

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

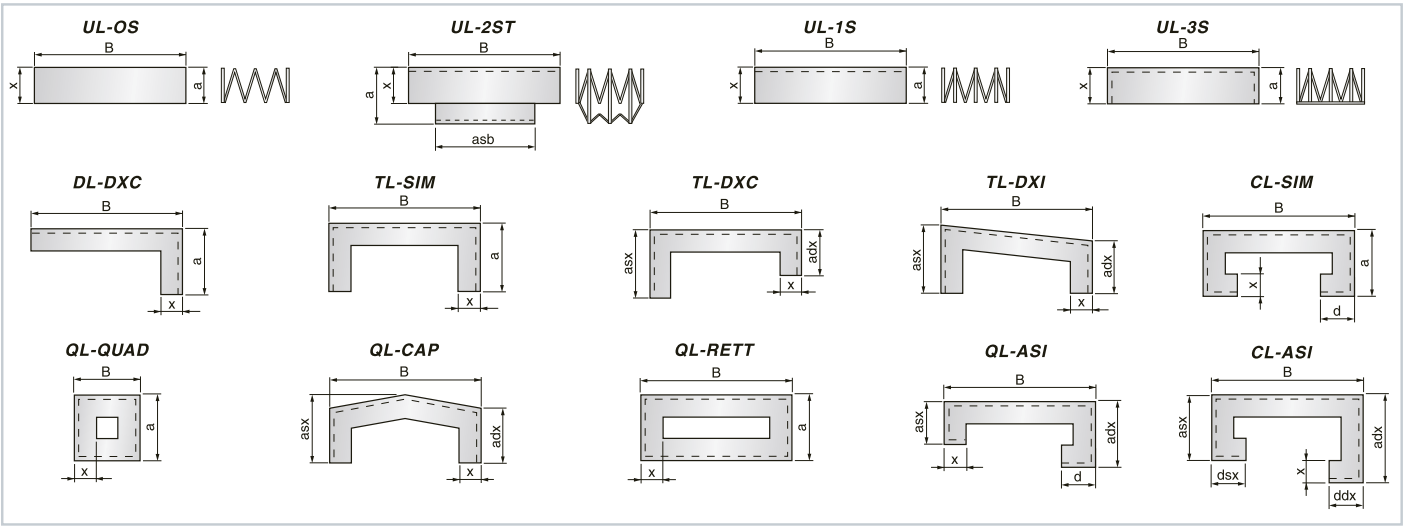
Lamination material code	Description	Primary applications
AL	Aluminum (Baked Enamel Finish)	For use around welding splatter, small and medium-sized hot shavings. Especially suitable for use around continuous sparks. Appropriate where lightweight materials are necessary.
INOX	Stainless Steel	In work environments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

DImensions in mm.

Standard Shapes

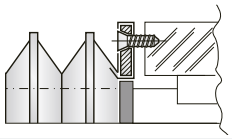


NOTE: The above are only the standard shapes of Thermic-Welded Covers. Other shapes available upon request.

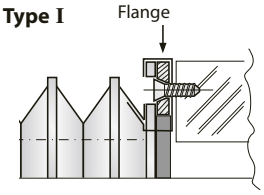
Flange Fastening Systems

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

Type A

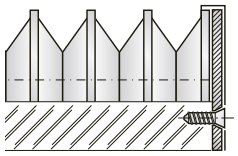


Type I

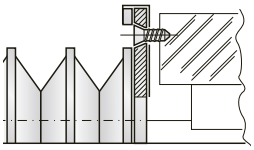


- Solution with sheet steel, aluminum or PVC flange
- Shape and holes per customer drawings
- Solution with connector flange protruding from the cover profile, made of sheet steel, aluminum or PVC

Type B1

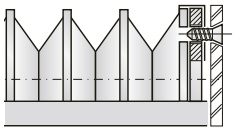


Type B2



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

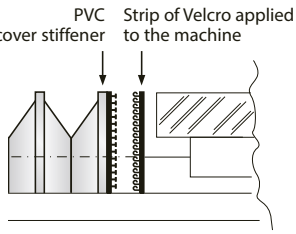
Type C



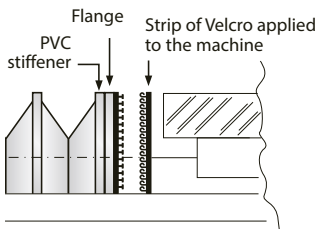
Solution with rapid VELCRO connection.
A PVC support acts as a flange, with VELCRO strips applied to the stiffener and directly to the machine.
This solution offers:
- Rapid application and removal of the cover
- Low cost

Recommended for dry work environments

Type E



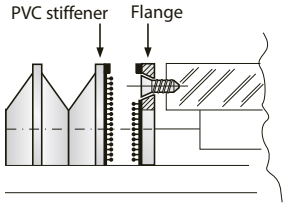
Type H



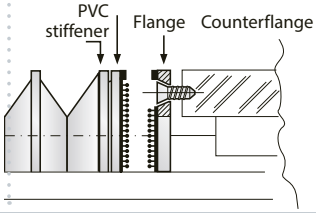
Solution with STRONG HOLD rapid connection.
A PVC support and flange act as a flange, to which the STRONG HOLD rapid connection is applied. The flange is made of sheet steel, aluminum or PVC, shape and holes per customer drawings. This solution offers:
- Rapid application and removal of the cover
- Foam gasket strip provides a tight seal around the connection

Recommended for wet work environments

Type F



Type G **Entire fold in PVC**



Questionnaire for Thermic-Welded Covers

Type of machine on which the COVERS are to be installed:

- ❑ METAL working machine
- ❑ MARBLE working machine
- ❑ GOLD working machine
- ❑ PAPER working machine
- ❑ FABRIC working machine
- ❑ GLASS working machine
- ❑ FOOD working machine
- ❑ PHARMACEUTICAL working machine
- ❑ AGRICULTURAL working machine
- ❑ TANNING working machine
- ❑ CLAY working machine
- ❑ WOOD working machine
- ❑ Other .....

Type of material falling on the covers:

- ❑ Steel shavings
- ❑ Cast iron shavings
- ❑ Brass shavings
- ❑ Aluminum shavings
- ❑ Wood shavings
- ❑ Ambient dust
- ❑ Grinding swarf
- ❑ Welding splatter
- ❑ Other .....

Liquids to which the covers will be exposed:

- ❑ Water/steam
- ❑ Coolant/oils
- ❑ Oils with a viscosity of ISO.....
- ❑ Other .....

Amount of material falling on the covers:..... Kg

Temperature of material falling on the covers:..... °C

Temperature of work area: ..... °C

Max. rapid travel speed: ..... m/min.

Max. acceleration:..... g

Max. working motions per hour: .....

Max. daily working hours: .....

Type of cover: ❑ Thermic-Welded ❑ Thermic-Welded with fixed laminations ❑ Thermic-Welded with flexible laminations

Working position: ❑ Horizontal ❑ Vertical ❑ Frontal

Cover shape: ❑ UL-OS ❑ UL-3S ❑ TL-DXC ❑ QL-CAP
❑ UL-1S ❑ DL-DXC ❑ TL-DXI ❑ QL-RETT ❑ CL-SIM
❑ UL-2ST ❑ TL-SIM ❑ QL-QUAD ❑ QL-ASI ❑ CL-ASI

TEMAT Fabric material: ❑ 106 ❑ 015 ❑ 151 ❑ 164 ❑ 165 ❑ 169 ❑ 017 ❑ 020

Stiffener material: ❑ PVC 0,5 ❑ PVC 1,0 ❑ PVC 1,5

Flange material: ❑ AL 2,0 ❑ AL 3,0 ❑ AC 2,0 ❑ AC 3,0 ❑ AC 4,0
❑ PVC 2,0 ❑ PVC 3,0

Lamination material: ❑ AL ❑ STAINLESS

Flange 1 connection system: ❑ A ❑ B1 ❑ B2 ❑ C ❑ E ❑ F ❑ G ❑ H ❑ I

Flange 2 connection system: ❑ A ❑ B1 ❑ B2 ❑ C ❑ E ❑ F ❑ G ❑ H ❑ I

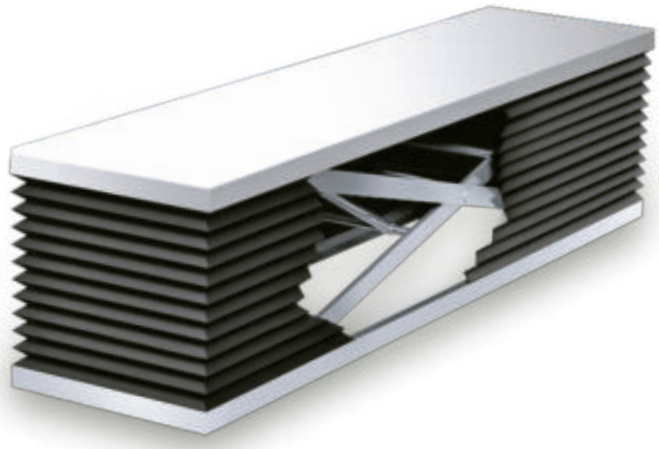
P.A.= Open length ..... mm
P.C.= Closed length ..... mm
Stroke=..... mm
a= Outside height..... mm
B= Outside width ..... mm
x= Fold height ..... mm
adx= Outside height, rt. ..... mm
asx= Outside height, lt. ..... mm
d= Return ..... mm
ddx= RT. return..... mm
dsx= LT. return..... mm
asb= Overall drive dimensions ..... mm
L= Lamination height ..... mm
Z= Overall lamination dimensions ..... mm

Company name.....
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.

BELLOWS FOR HOISTING PLATFORM

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

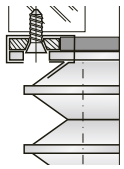


EXAMPLES OF APPLICATION:

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

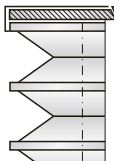
Systems for fastening Bellows for Lift Tables

I



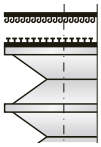
Solution with sheet steel, aluminum or PVC flange. Shape and holes per customer drawings.

B



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

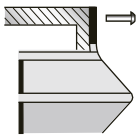
E



Solution with rapid VELCRO connection. This solution offers:

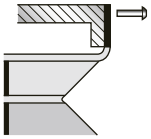
- Rapid application and removal of the cover
- Low cost

CI

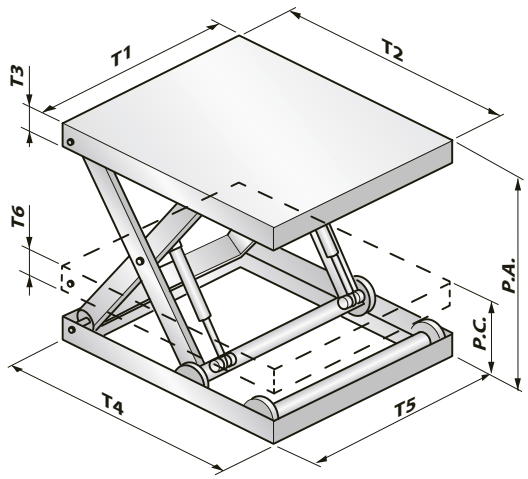


Bellows inner collar. Suitable for screw fastening.

CE

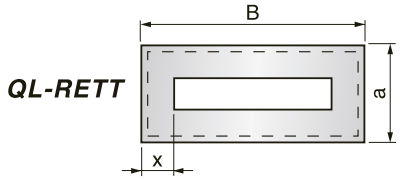


Bellows outer collar. Suitable for screw fastening.



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 ❑ C I ❑ CE
Lower side fastening ❑ I ❑ B ❑ E ❑ C I ❑ CE

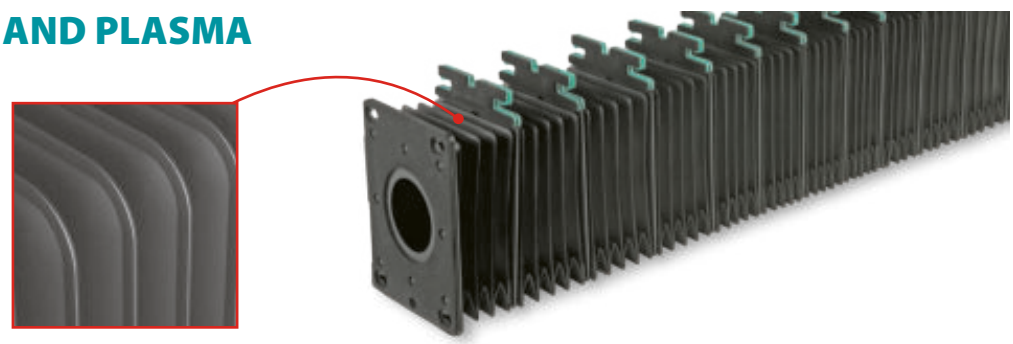


Questionnaire for hoisting platforms BELLOWS:

a = ... mm
B = ... mm
X = ... mm

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.

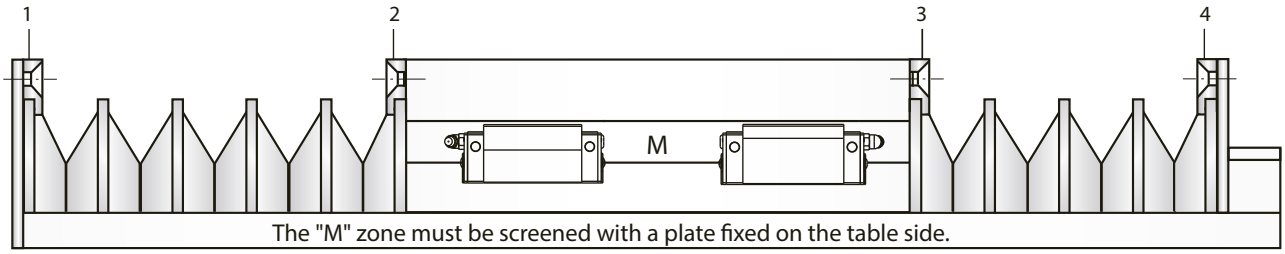
BELLOWS FOR LASER AND PLASMA MACHINES

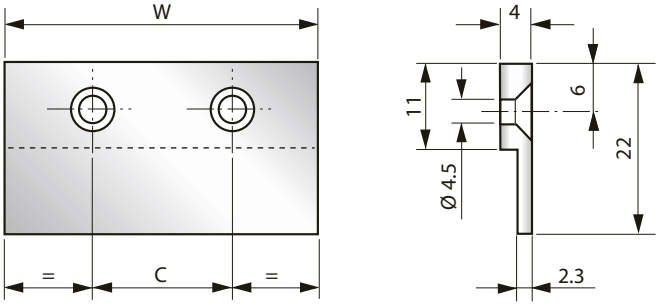


Thermic-Welded Covers Standard Systems for Linear Slides

Solution A: Fastening holdfast

Bellows-fastening standard systems for linear slides



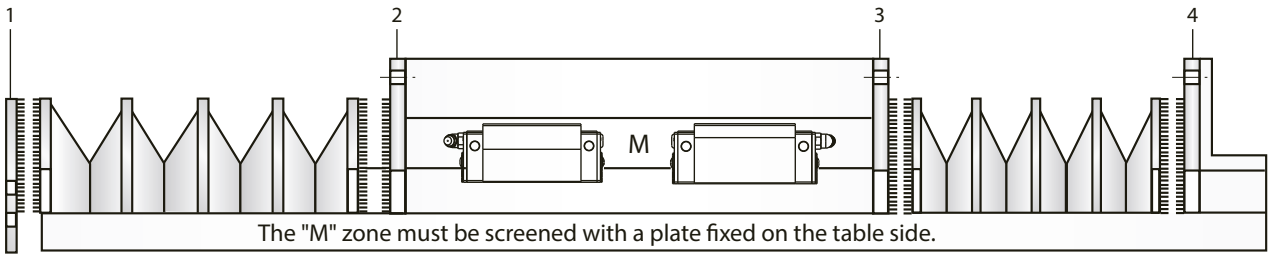


Suitable for bellows fastening in positions 1 - 2 - 3 - 4,
with angular or plate supports provided by customers

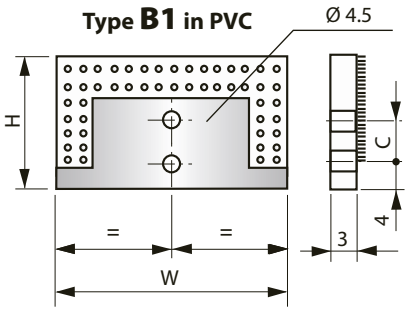
SLIDE	W	C	N. HOLES
15	52	26	2
20	57	29	2
25	63	32	2
30	68	34	2
35	72	36	2
45	83	28	3
55	104	35	3
65	128	32	4

Solution B: Velcro flange fastening (B1 and B2)

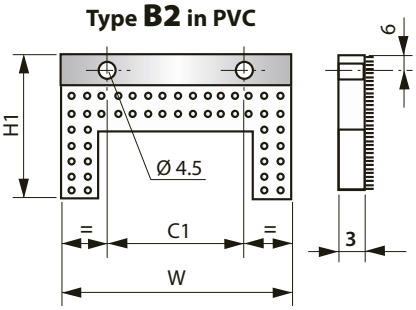
Suitable for dry working places



Standard flange Type B1 in PVC



Standard flange Type B2 in PVC



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.

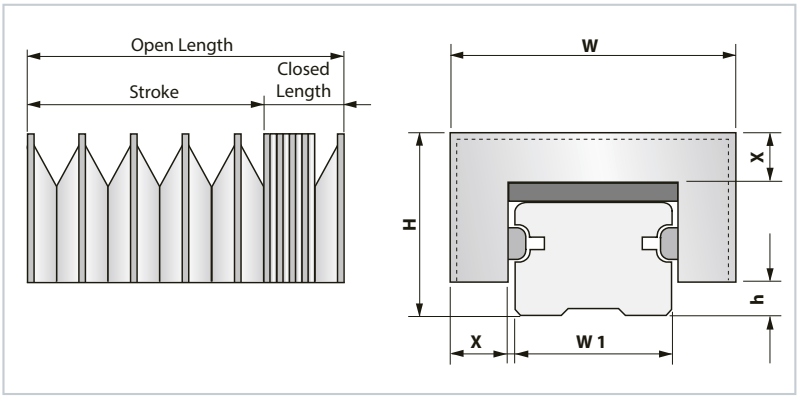
N.B. Fastening options showed in Pos. 1-4 are interchangeable

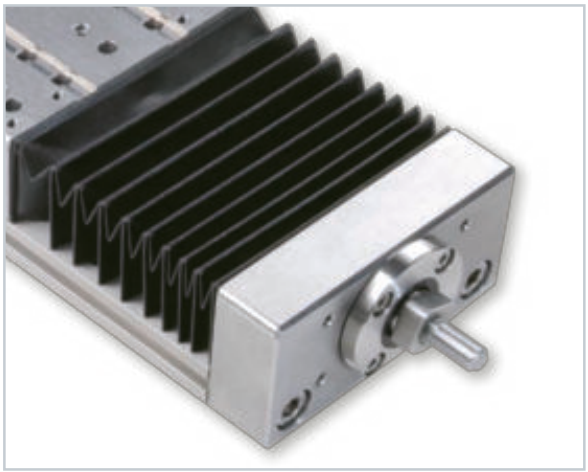
This technical card represents the standard systems used for the fastening of bellows for linear slides we can provide. For different sizes, please contact our technical department.

DImensions in mm.

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 **W1**	Ply height **X**	Bellow width **W**	Total height **H**	Slide deviation **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

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

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 38)

Questionnaire for Thermic-Welded Covers for Linear Slides

Slide Manufacturer .....

Slide Model .....

Slide Nominal Value (W1) ❑ 15 ❑ 20 ❑ 25 ❑ 30 ❑ 35 ❑ 45 ❑ 55 ❑ 65

Open length (Stroke + Closed length) .....**mm**

Fabric type ❑ S1 ❑ P1 ❑ LX

Fastening system on guide top ❑ Solution A with clamps ❑ Solution B1 with flange in PVC

Fastening system to table ❑ Solution A with clamps ❑ Solution B2 with flange in PVC

Company name .....

Phone:.....

E-mail:.....

Quantity:.....

Annual demand: .....

.....

Date:.....

Notes:.....

.....

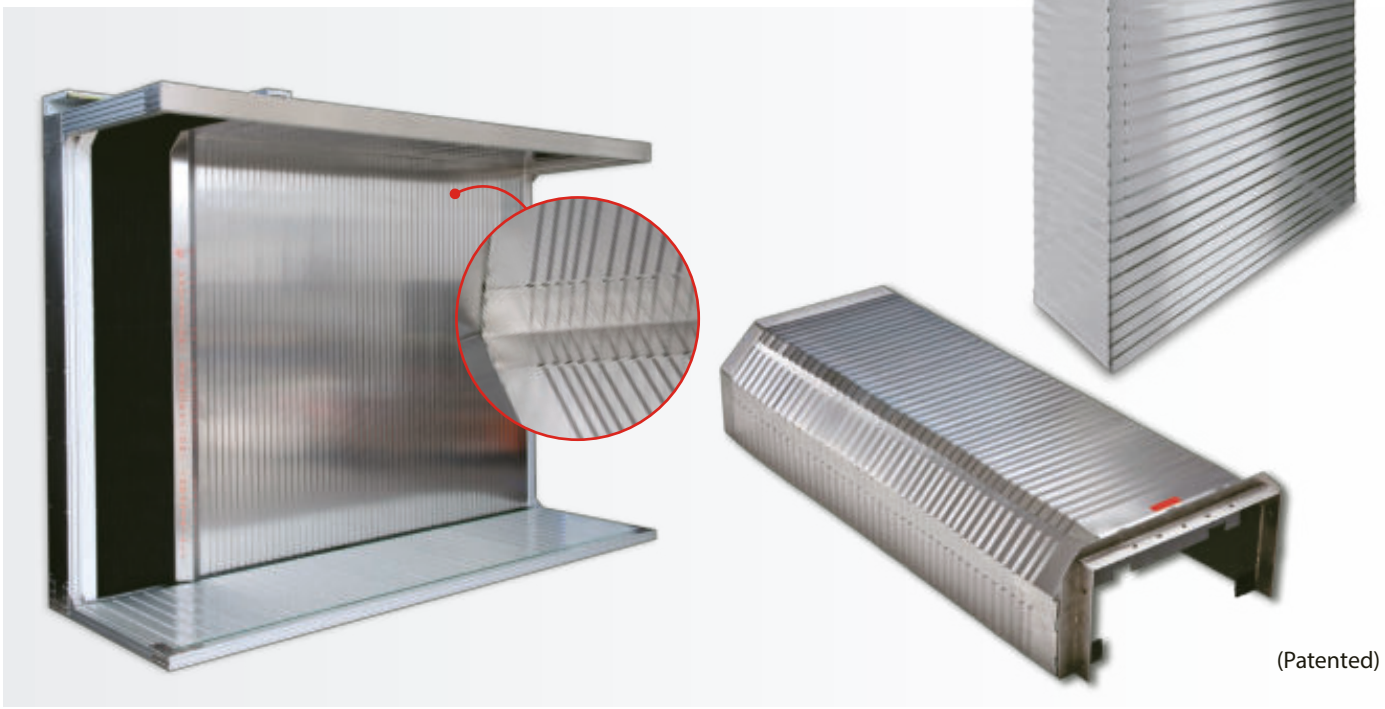
.....

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.

DImensions in mm.

MULTI-STEEL Thermic-welded Cover with Laminations

- 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**.

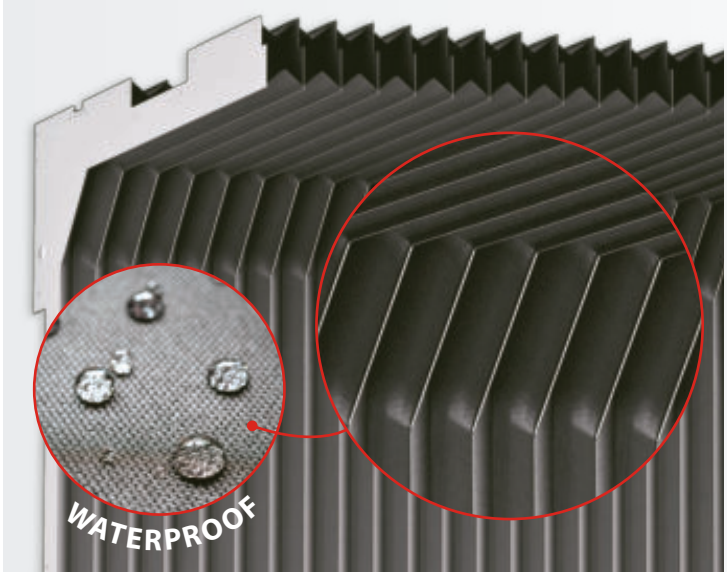


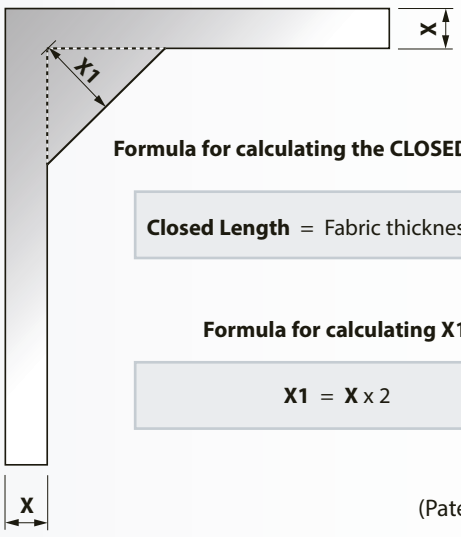
(Patented)

EVER-CLEAN Thermic-welded Cover

- 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.

For this type of bellow consult our technical office.





Formula for calculating the CLOSED LENGTH

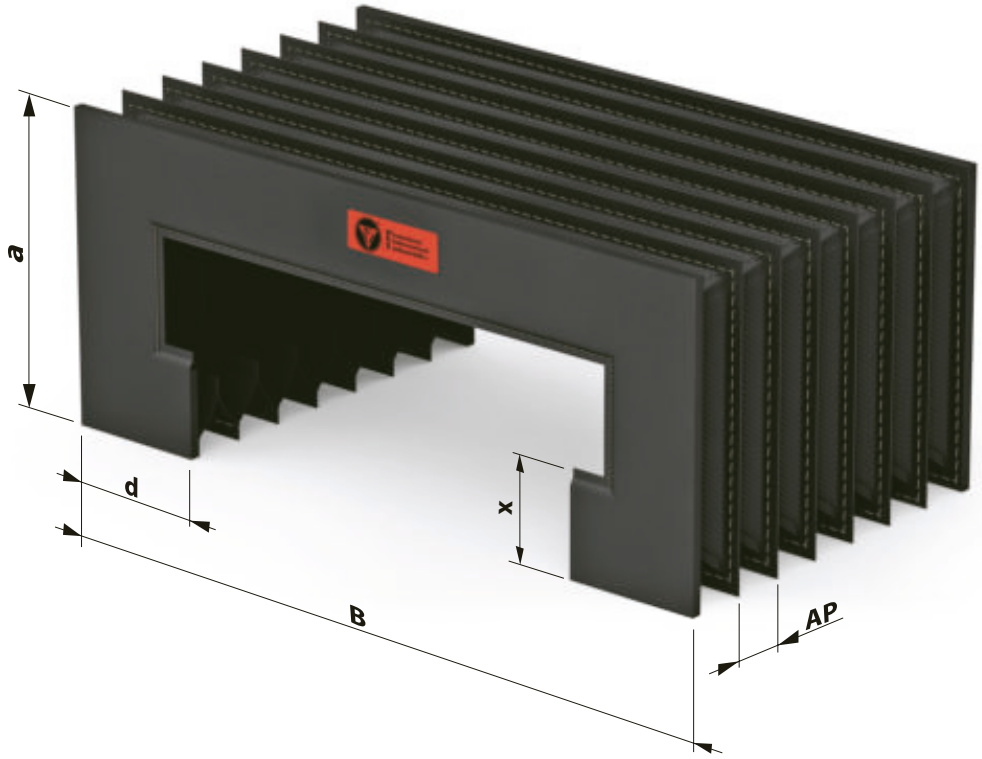
Closed Length = Fabric thickness x 4,5

Formula for calculating X1

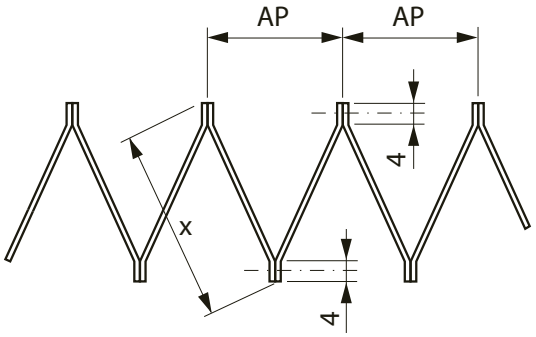
X1 = **X** x 2

(Patent Pending)

SEWN FLAT COVERS



Sewn style

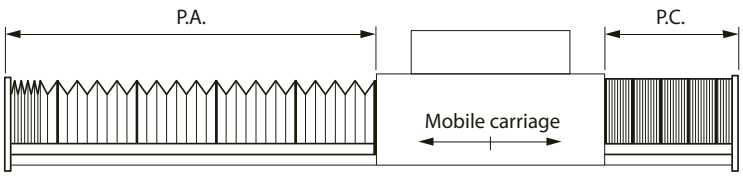


Formula for calculating the CLOSED LENGTH

P. C.= NP . 2,5 + flange thickness

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

AP= Opening of 1 fold = (x-8) · 1,41



Contact our engineering department for this type of cover.

Ref.	Description	Dim.
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	

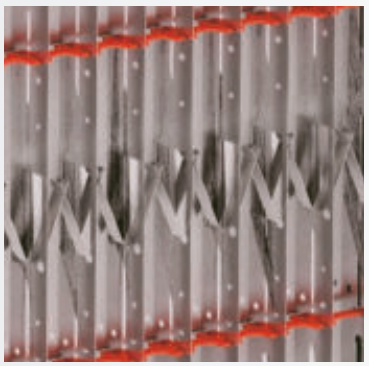
NOTE: The data fields and/or tables marked by ! are the least ones to be filled in order to give you a quotation. Please send an e-mail to info@pei.eu or a fax to +39 051 6464840.

DImensions in mm.

UNIQUE STEEL COVER The LIGHT protective cover consisting of stainless steel plates

- **UNIQUE STEEL COVER** with synchronisation system.
- **UNIQUE STEEL COVER** has a defined tensile stress.
- **UNIQUE STEEL COVER** transfers only minimal tractive forces to the machine axis.
- **UNIQUE STEEL COVER** is designed for frontal working positions.

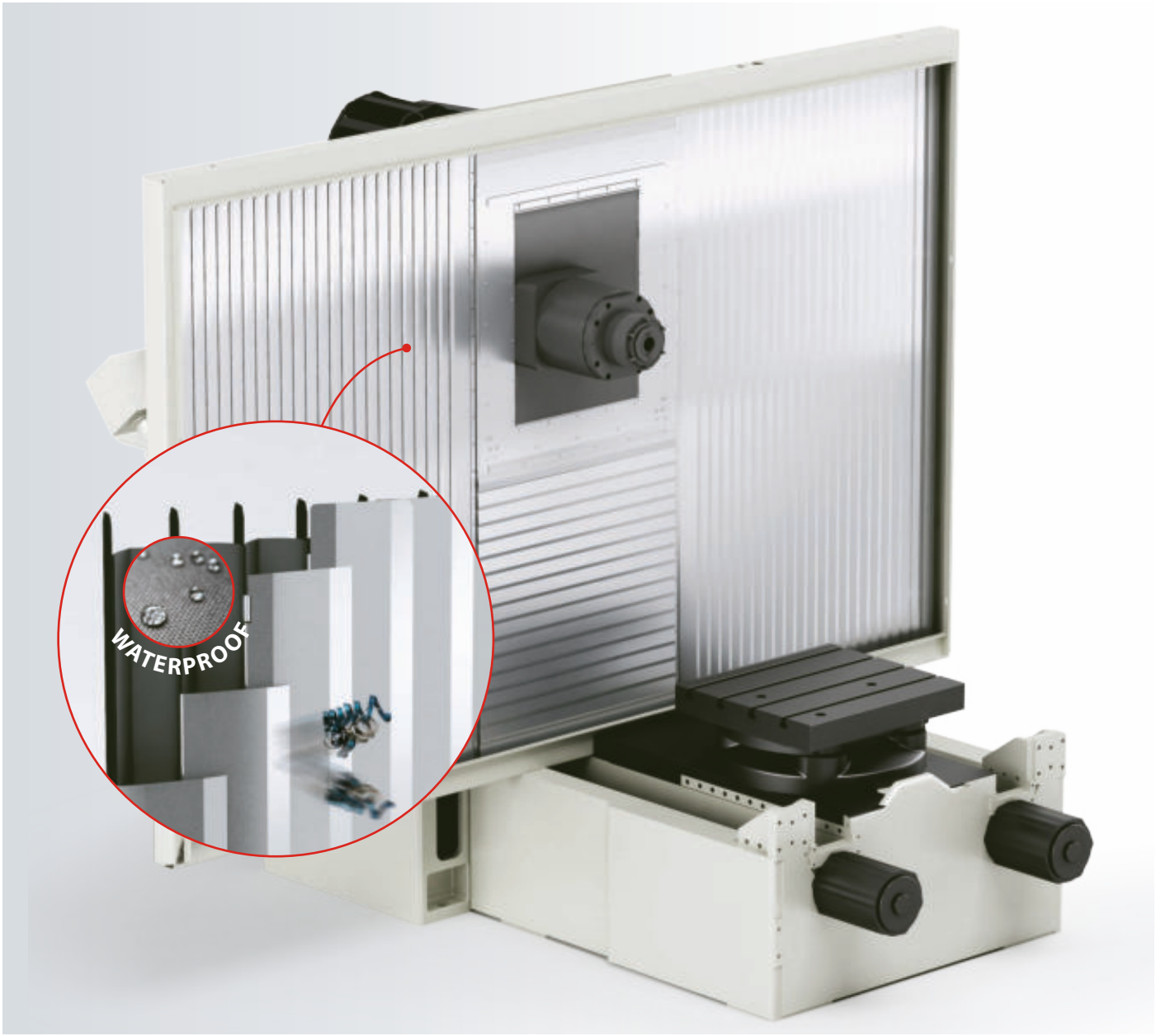
new



(Patent Pending)

X-Y SHIELD Thermic-welded Cover with Laminations

- **X-Y SHIELD** is a complete protection system for separating the working area from the motor compartment.
- **X-Y SHIELD** is composed of 4 thermic-welded bellows built into a supporting structure which allows the machine head to move freely. This solution is conceived to combine **ease of assembly, maintenance, cost effectiveness and sturdiness.**
- This system guarantees **double protection**, as the laminations shield the bellow from hot and sharp shavings while the bellow enfolds and defends the guideways from liquids and coolants.



TECHNICAL SPECIFICATIONS

✔ **MAX SPEED:** 120 m/min.

✔ **MAX ACCELERATION:** 1g

EXAMPLE OF APPLICATION

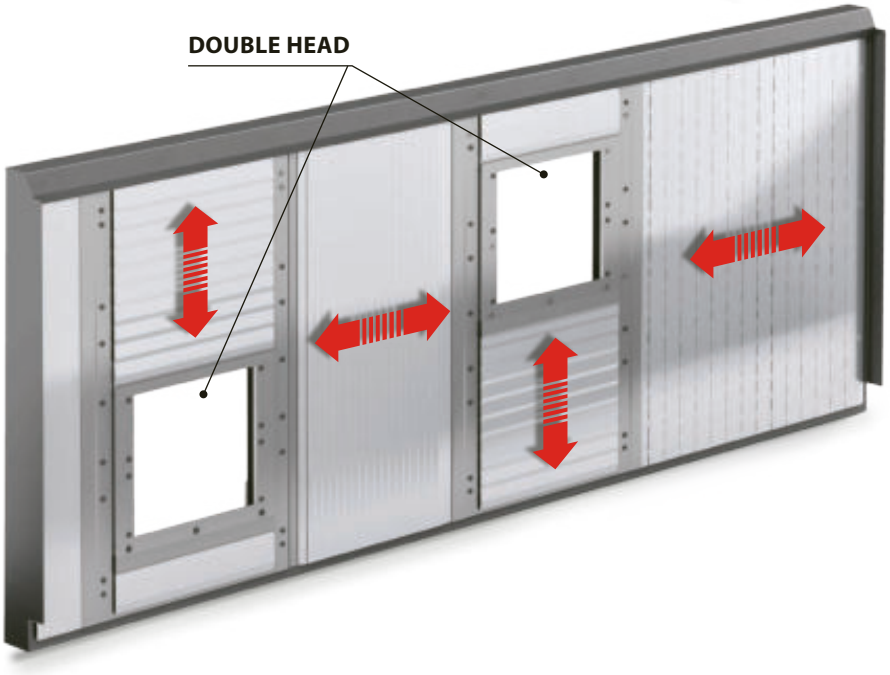
X-Y SHIELD Thermic-welded Cover with Laminations

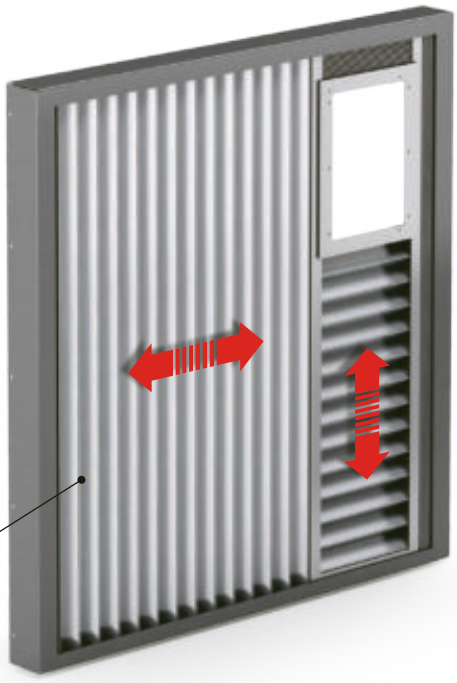
SOME OF MANY AVAILABLE OPTIONS

FIXED LAMINATIONS bellows

FLEXIBLE LAMINATIONS bellows

DOUBLE HEAD

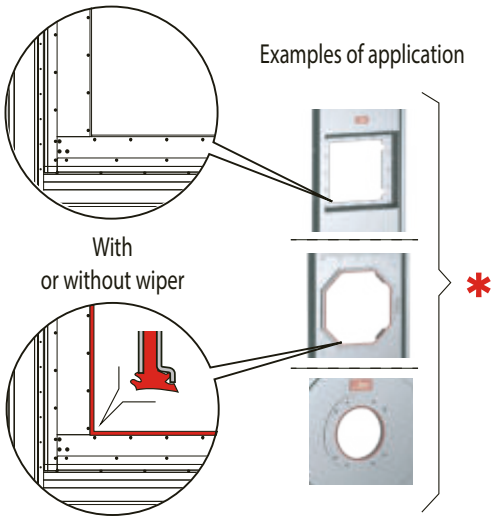


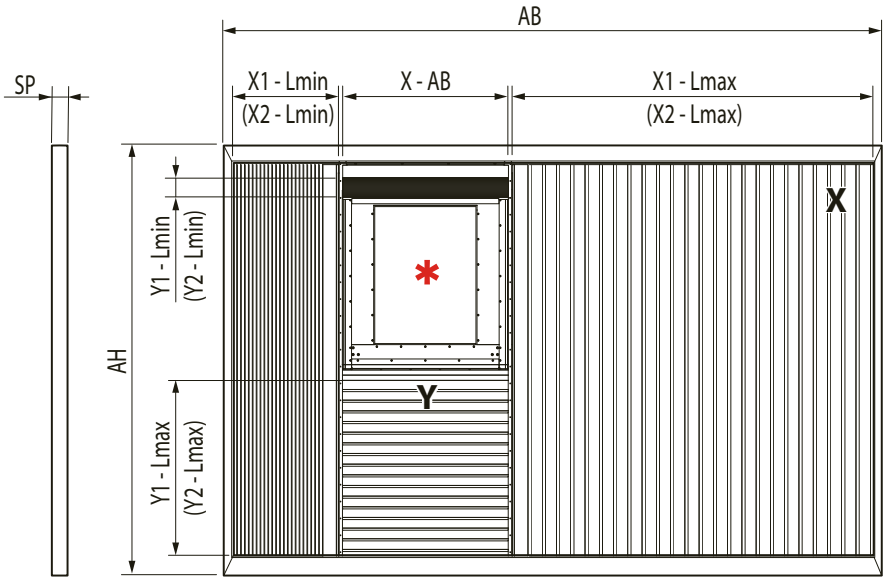


HIGH TEMPERATURE resistant bellows

X-Y SHIELD Thermic-welded Cover with Laminations

Questionnaire for X-Y Shields





*** Spindle opening upon Customer's drawing**

Company name.....

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

Quantity.....

Annual demand.....

Date.....

Notes.....

Outside structure:

YES ❑ NO ❑

Available outside space:

AB.....mm / AH.....mm

Available depth (SP):.....mm

Type of bellows:

With lamination ❑ Without lamination ❑ High temperature ❑

Axis X:

X1 - Lmax (open length or stroke)..... mm

X1 - Lmin (closed length)..... mm

X2 - Lmax (open length or stroke)..... mm

X2 - Lmin (closed length)..... mm

X-AB width..... mm

Axis Y:

Y1 - Lmax (open length or stroke)..... mm

Y1 - Lmin (closed length)..... mm

Y2 - Lmax (open length or stroke)..... mm

Y2 - Lmin (closed length)..... mm

Wiper:

YES ❑ NO ❑

Max. travel speed: .....m/min.

Max. acceleration:.....g

Type of shavings:.....

.....

Liquids to which the covers will be exposed:.....

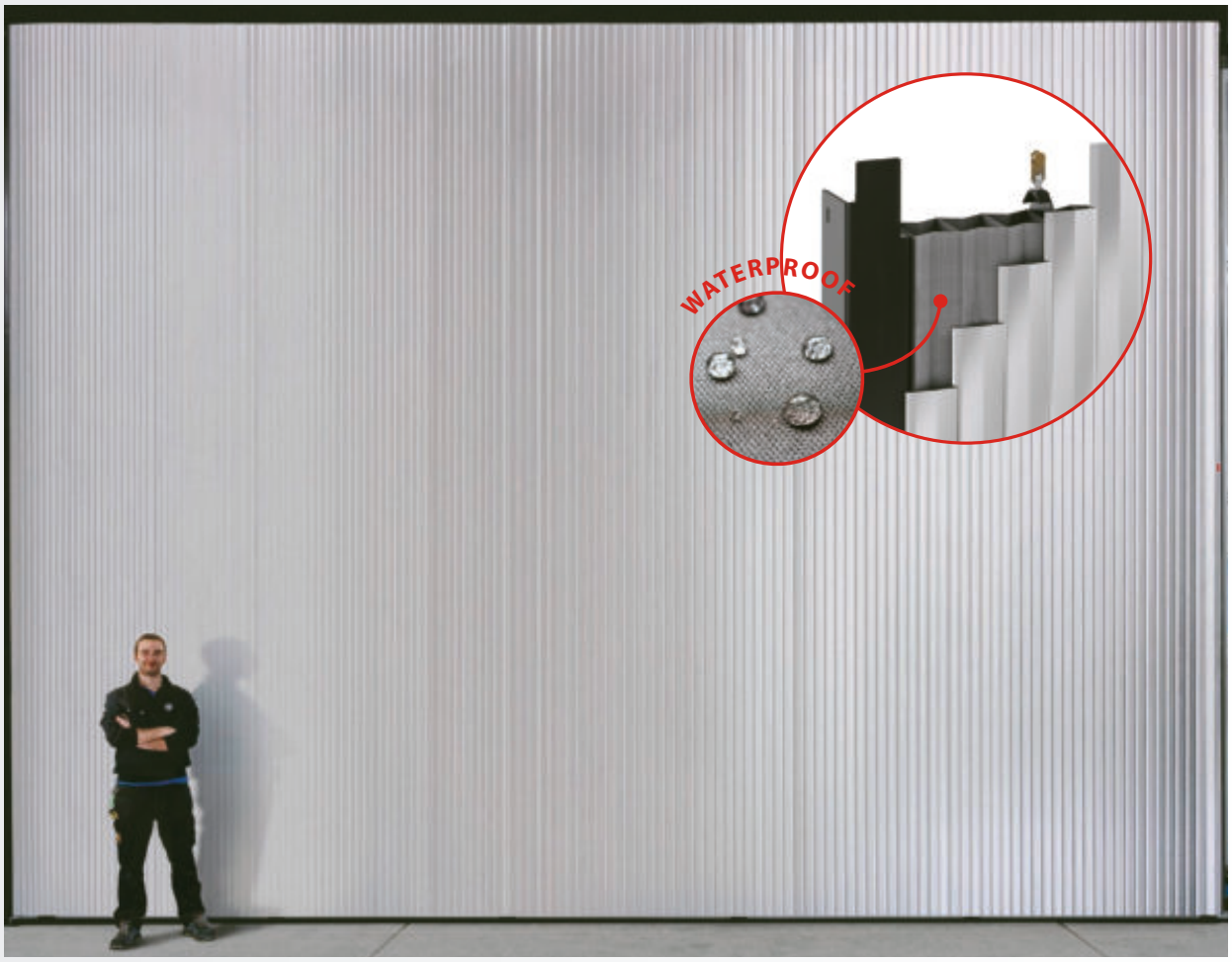
.....

Working hours:.....h

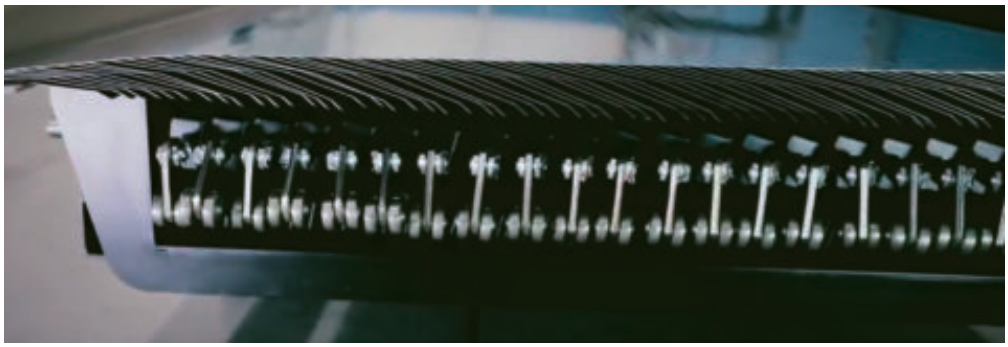
NOTE: The data fields and/or tables marked by are the least ones to be filled in order to give you a quotation. Please send an e-mail to info@pei.eu or a fax to +39 051 6464840.

GIANT SHIELD A gigantic protective wall

- **GIANT SHIELD**, a gigantic protective wall characterised by its dimensions beyond normal standards, which is suited for huge machine tools where large parts are machined.



- The 0,3 mm thick laminations represent the rigid part of the cover, a protective barrier against incandescent chips escaping during the machining of work pieces. **GIANT SHIELD** can be built up to a height of 6000 mm. The special properties of its laminations allow for a dynamic movement with elasticity, rigidity and ease. The bellow behind the laminations is thermally welded along its entire height and made of special fabric, all of which prevents the coolant from permeating.
  The steel laminations on their own would not have been able to guarantee such impermeability. **GIANT SHIELD** follows each transverse movement of the machine head.



WAVE SKY Bellows for Overhead Protection for Portal Milling Machines

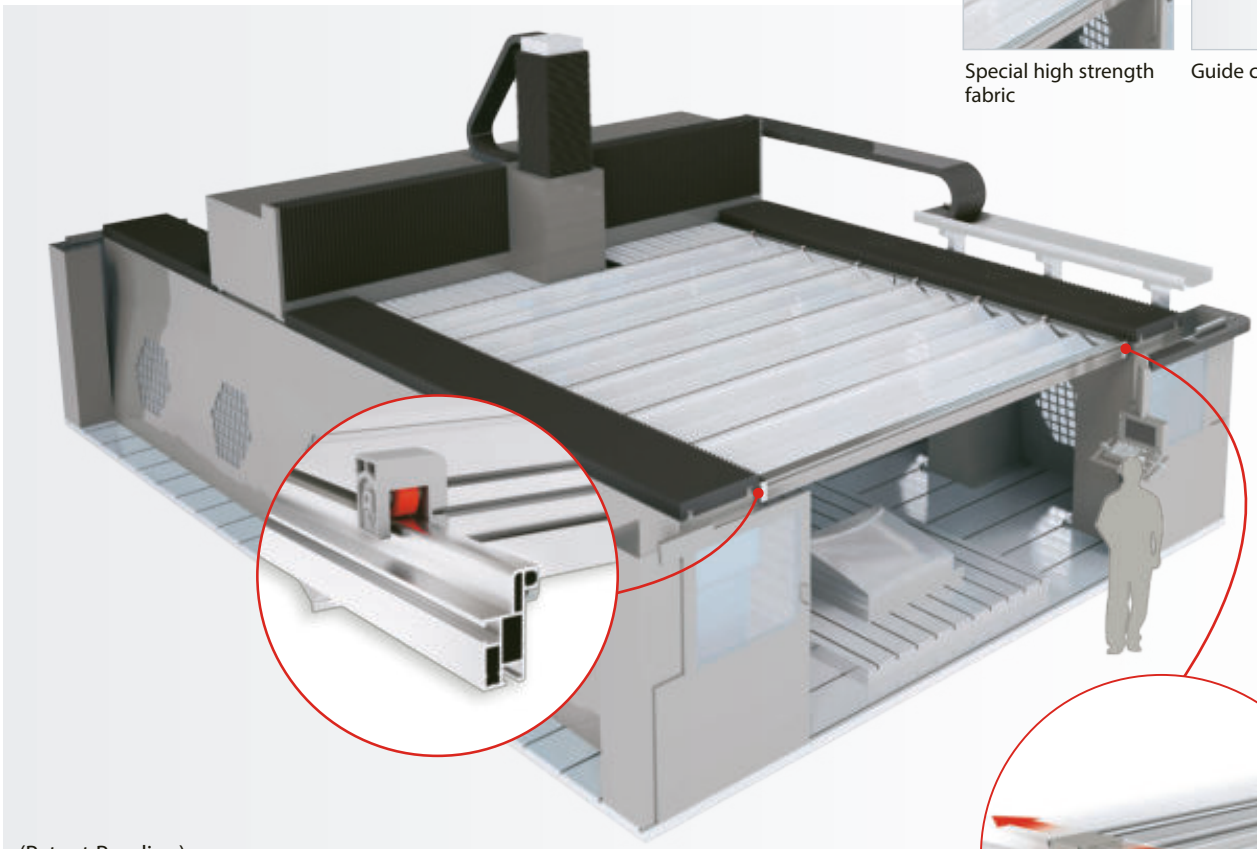
- **WAVE SKY** is a bellow that limits the escape of fumes, dust and chips from the workstation area.
  WAVE SKY bellow reduces the suction force created during working: carbon fibres, composite materials and vaporised cooling lubricant.
  The special translucent fabric guarantees ample light in the work area.
  The motorised version makes for a quick opening and closing of the overhead apparatus.
- **FABRIC**: It shows excellent resistance to petroleum products, oils and heavy abrasion. The two-ply fabric insert gives an high transverse rigidity and a very attractive appearance. Normally used around large quantities of shavings. **TRANSLUCENT AND ANTISTATIC.**


Movement using rollers


Modular support made of aluminium


Special high strength fabric


Guide cover casing


(Patent Pending)

MOTORISATION

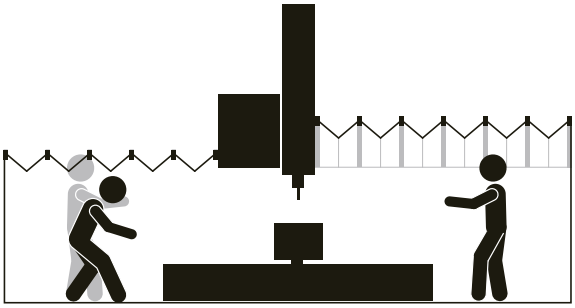
SMART DRIVE is the new motorised solution for **WAVE SKY** roof protection. Its aluminum extrusion profile is designed to obtain the best weight / resistance ratio.

TECHNICAL SPECIFICATIONS

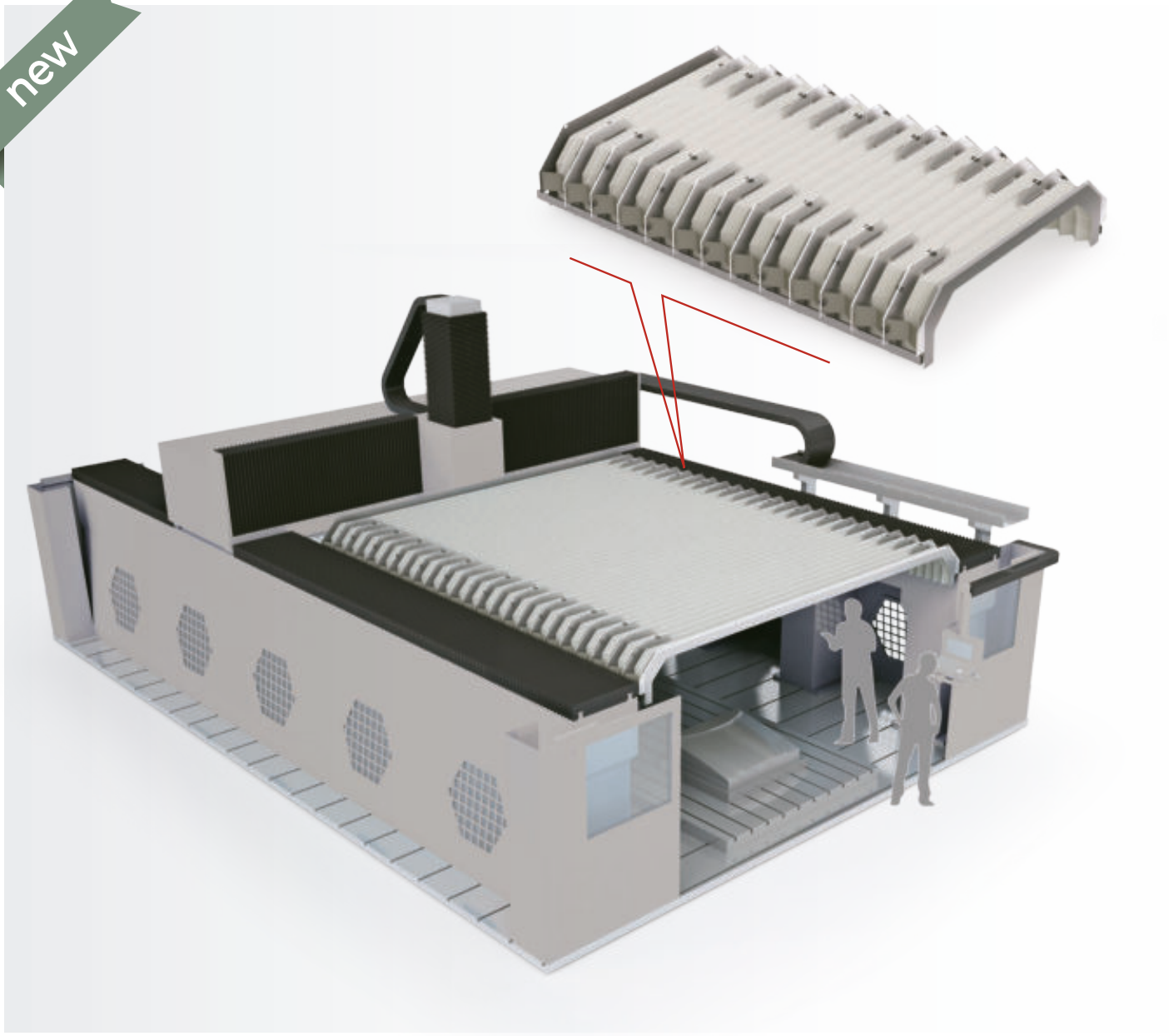
- ✔ **MAX SPEED:** 90 m/min.
- ✔ **MAX ACCELERATION:** 1g
- ✔ **MAX WIDTH BETWEEN GUIDES:** 8.000 mm
- ✔ **MAXIMUM STROKE:** 25.000 mm
- ✔ **STANDARD FOLD HEIGHT:** 200 / 250 / 300 mm

WAVE COVER Overhead protection for portal machines with a reduced Z-axis

- This **P.E.I.** solution is a complete roof cover for Gantry and Portal machines with a reduced Z-axis that allows the machine operators to access the machining chamber without opening the cover.
  WAVE COVER is based on a similar modular system as **Wave Sky** with a shape that increases the internal space of the machining chamber and which allows to install the guides in a lower position. Please contact our Engineering dept.for feasability and further information.



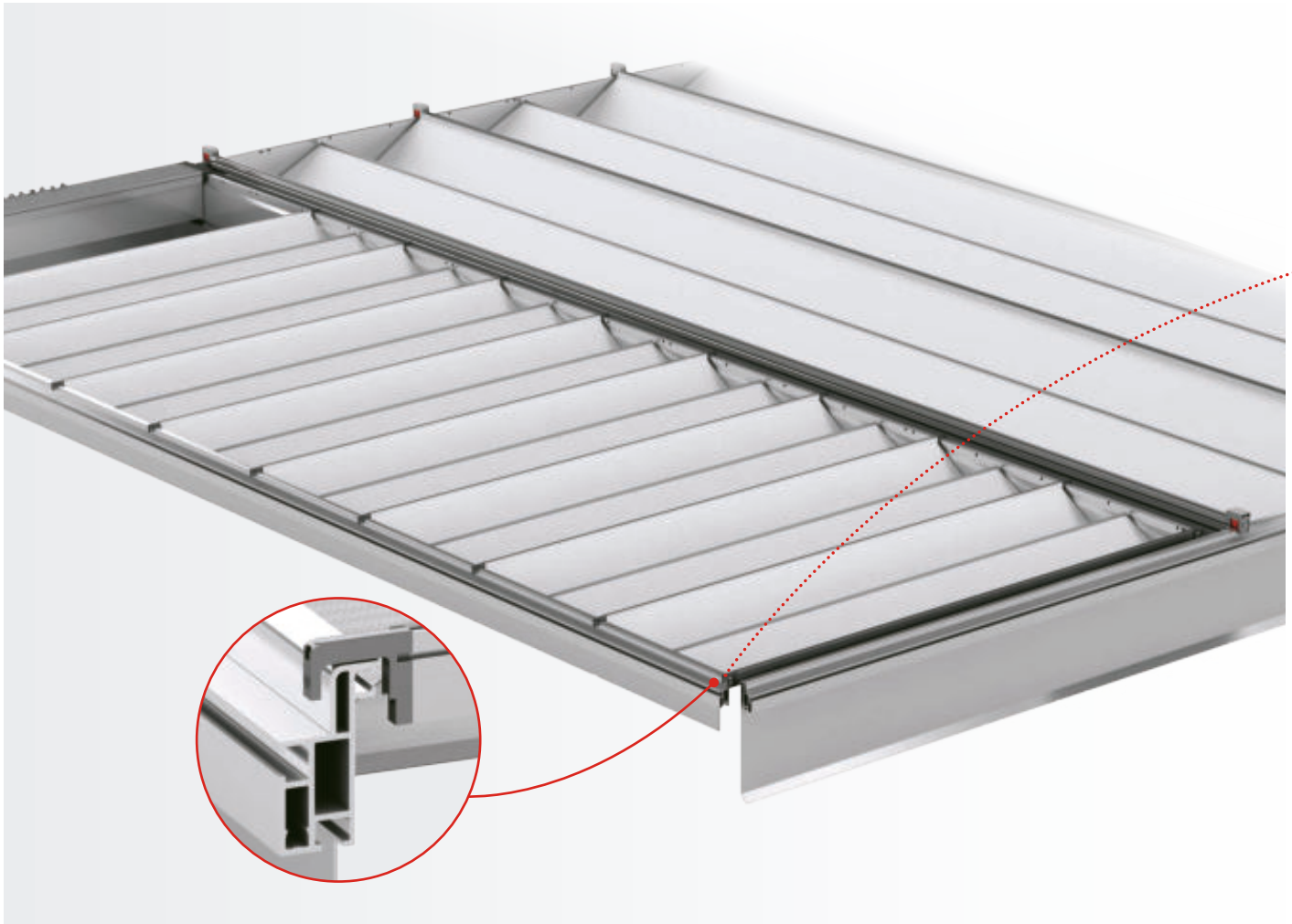
new



(Patent Pending)

WAVE SKY LIGHT Overhead Protective Cover

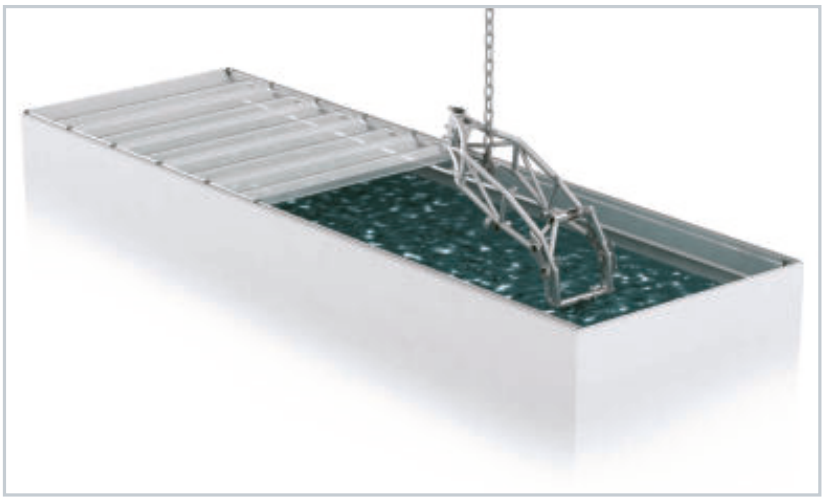
- **WAVE SKY LIGHT** is a version of Wave Sky suitable for applications where despite long strokes a small closed length is required. Stability and durability are the same as for the traditional Wave Sky.
  The translucent fabric is suitable not only for machine tools, but also for other applications.



TECHNICAL SPECIFICATIONS

- ✔ **MAX SPEED:** 60 m/min.
- ✔ **MAX ACCELERATION:** 1g
- ✔ **MAX WIDTH BETWEEN GUIDES:** 2.000 mm
- ✔ **MAXIMUM STROKE:** 8.000 mm
- ✔ **STANDARD FOLD HEIGHT:** 150 mm

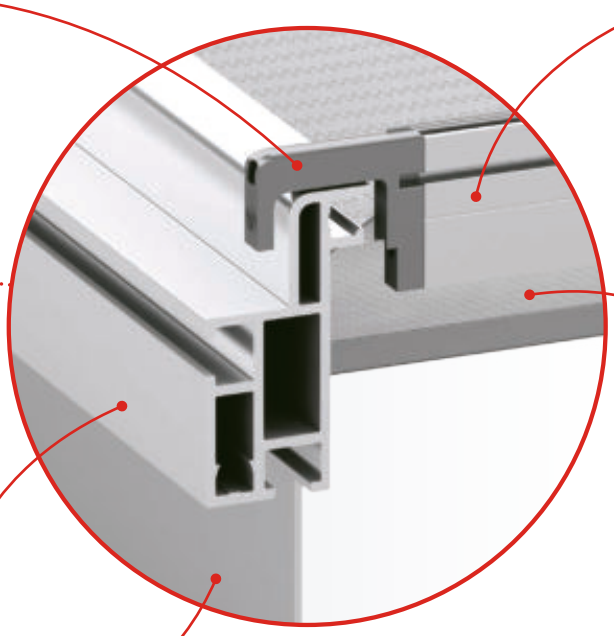
EXAMPLE OF APPLICATION: for surface treatment tanks

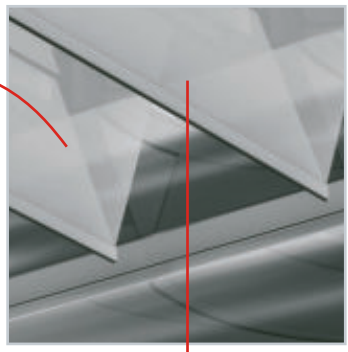


WAVE SKY LIGHT Overhead Protective Cover

Sliding on guides

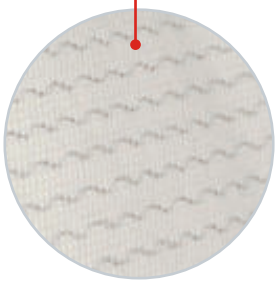
Structural
aluminium frames





Lateral guides
modular and **adjustable**

Guide cover casing



Bellow cover in
translucent and
double weave fabric
TEMAT 154

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**

MATERIALS FOR SPECIAL APPLICATIONS

Code	Description of materials			Thickness	Heat resistance		Primary resistance characteristics
	Visible side	Fabric insert	Hidden side		Momentary contact °C	Continuous °C	
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.**
TEMAT181	CPT**	Polyester	-	0,9	+1200	-25 +300	**CERAMIX LIGHT** has an excellent abrasion resistance and excellent shear strength. The fabric insert is made by an **ANTISTATIC-PROOF** material with good transverse rigidity and a very attractive appearance. **CERAMIX LIGHT** is normally used in case of hot and shearing shavings, or in high speed chip-removing dry or wet work environments. **SELF-EXTINGUISHING FABRIC.**

** 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 60-61)
- 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 60-61.

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.

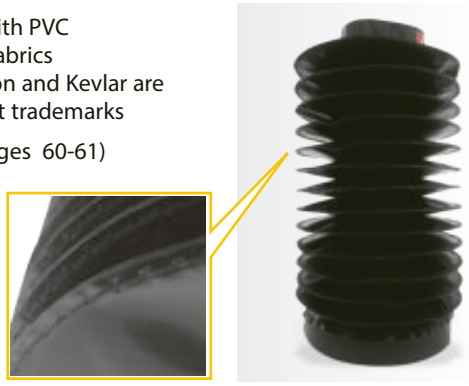
- Highly **reliable** bellows
- High resistance to mechanical and dynamic **stress**
- Resistance to **coolants and oils**
- Suitable for **high temperatures**
- Available with guide **bushings** and reinforcement **rings**
- No tooling **costs**
- With selected **edging** (in safety colors upon request)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

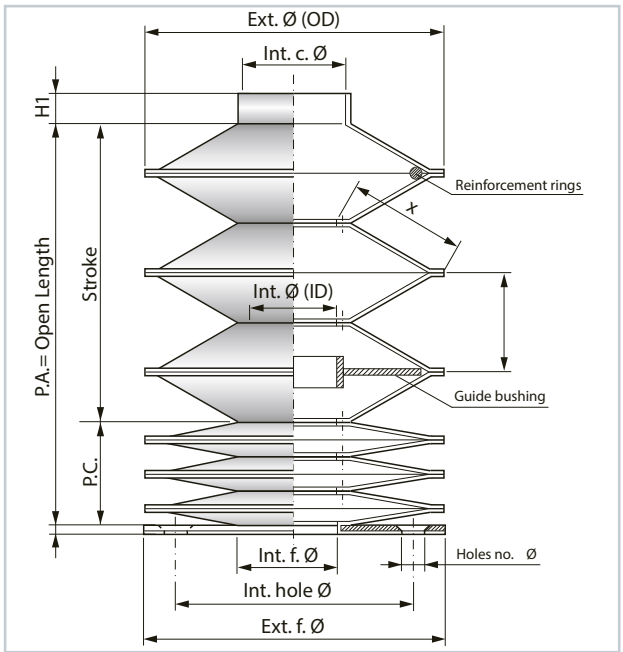
Materials available:

- 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 60-61)





DImensions in mm.

Formula for calculating the CLOSED LENGTH

P.C.= Closed Length = NP · SP*

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

* **SP**= Thickness of 1 fold; see materials list on pages 60-61

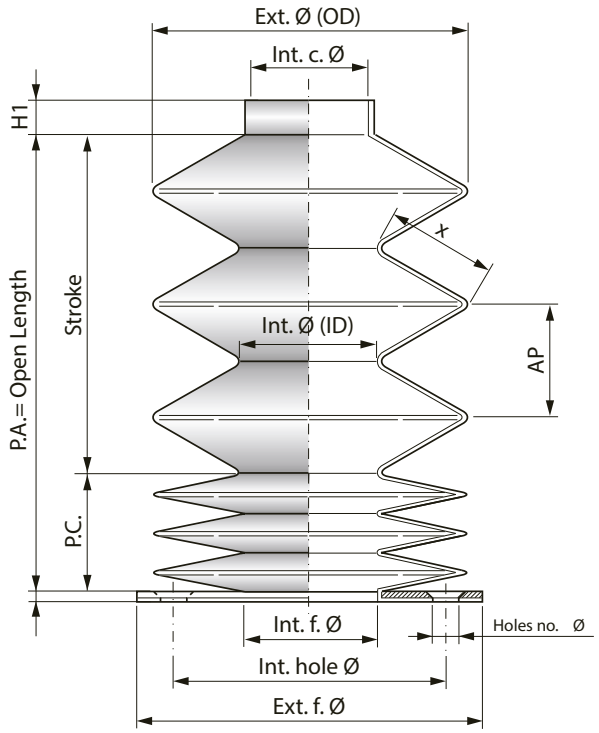
$$\textbf{AP}\text{= Opening of 1 fold} = \left(\frac{\text{Ø e. soff.} - \text{Ø i. soff.}}{2} - 6\right) \cdot 1{,}2$$

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**



Formula for calculating the CLOSED LENGTH

P.C.= Closed Length = NP · SP*

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

* **SP**= Thickness of 1 fold; see materials list on pages 60-61

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

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

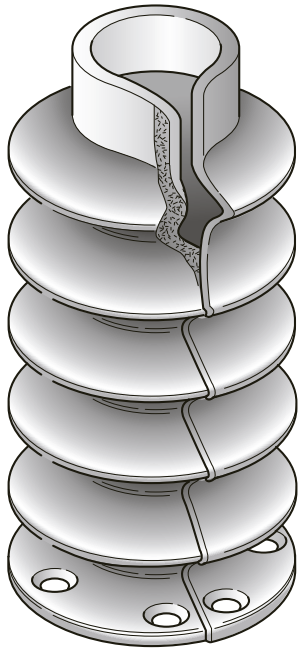
OPEN HEAT-FORMED BELLOWS

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*

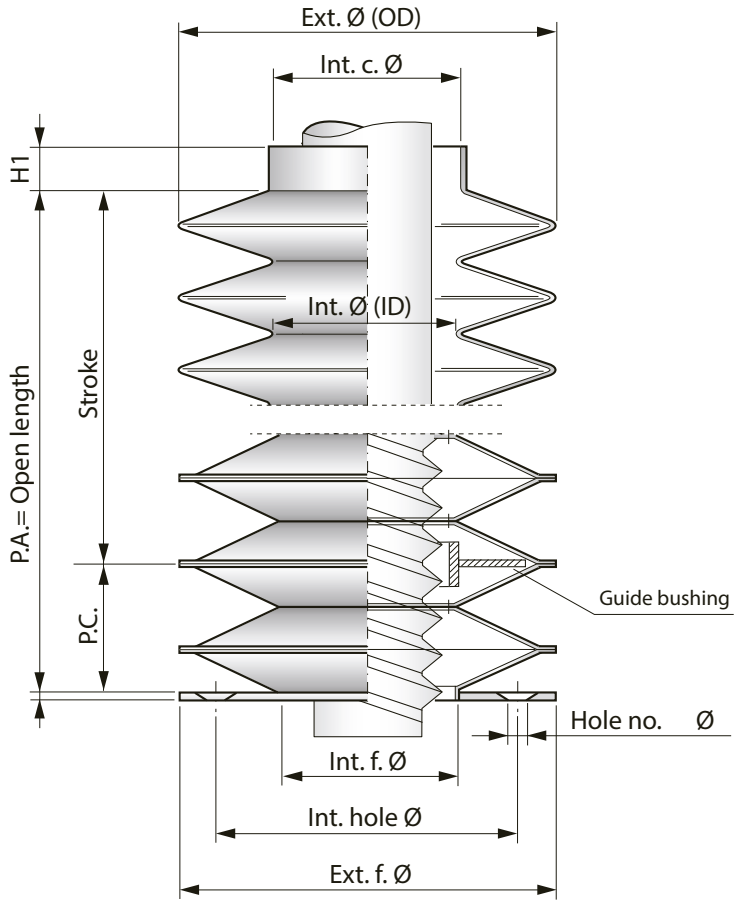
* Neoprene and Hypalon are registered Dupont trademarks

(see materials list on pages 60-61)



Upon request with **longitudinal opening seam** when the bellow must be disassembled without dismantling the part to be protected

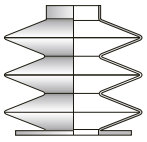
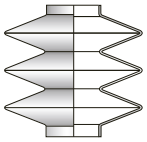
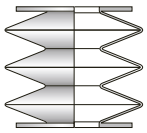
Questionnaire for Round Bellows



Bellows type

- ❑ Sewn
- ❑ Heat-formed
- ❑ Thermic-welded

Fastening system

- ❑ A 
- ❑ B 
- ❑ C 

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 .....

.....

.....

.....

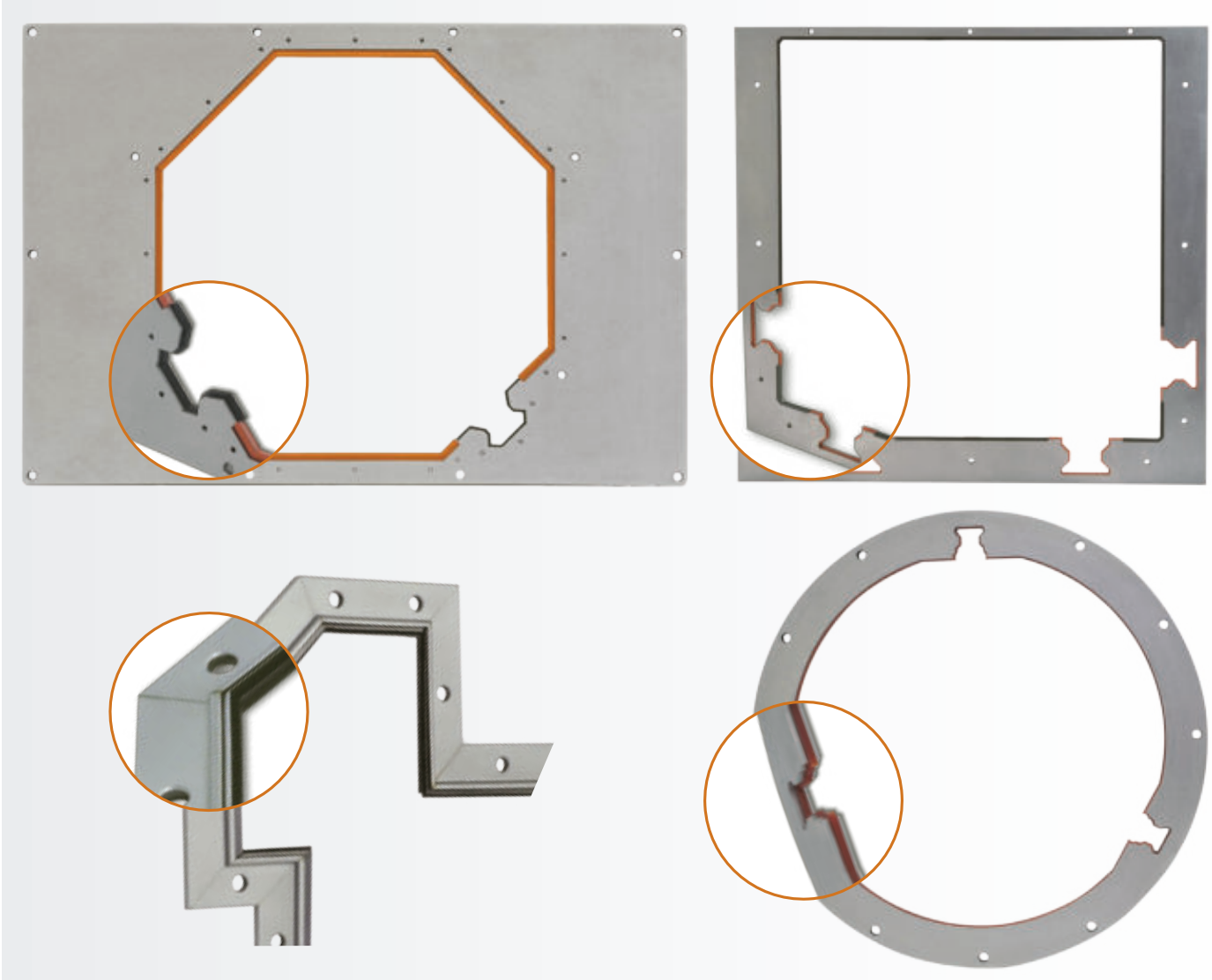
.....

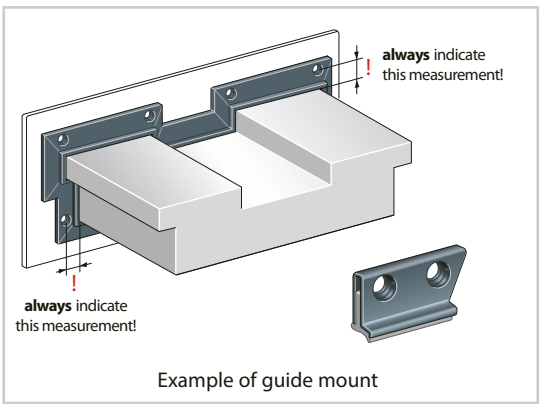
Company name: .....
Contact person: .....
Phone: ..... **E-mail:** .....
Quantity: .....
Annual demand: .....
Date: .....
Notes: .....

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.

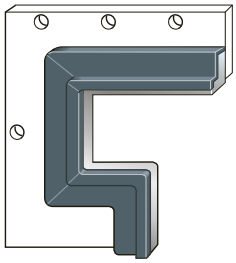
PROFILED WIPERS FOR GUIDES

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

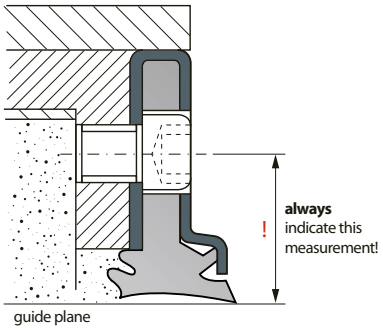




Example of guide mount



Example of flange mount



Possible method of fastening to guide

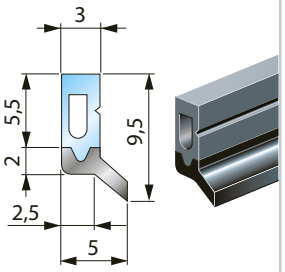
- For work environments with a heavy concentration of **sharp shavings**.
- Built to **drawings** in any shape or size.
- **Single pieces or large series** can be manufactured due to no equipment costs.
- **Polyurethane** profile resists abrasion and is easily replaced.
- We must have a drawing with measurements showing the profile of the **guides to wipe**.
- **Pre-loading is determined by our engineering department** based on the shape of the **wipe**.
- 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 weap.
- For **fastening**, we recommend counter-sunk hex screws.

BIPLASTIC WIPERS

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

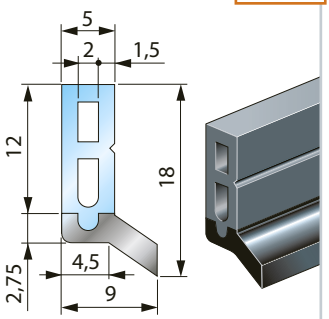
Also available via our online-shop: ***https://www.pei.it/index.php/en/shop/wipers***

RA 01 BP



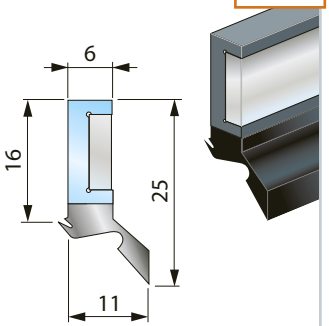
Profile:
Polyurethane
Length: **2000 mm.**
Rigid polymer insert

RA 03 BP



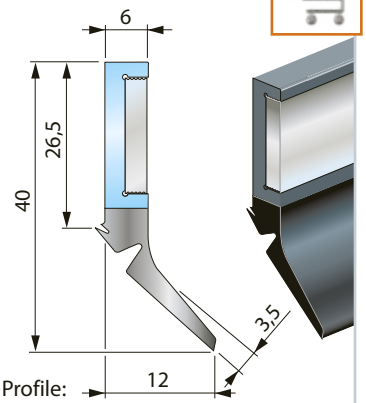
Profile:
Polyurethane
Length: **2000 mm.**
Rigid polymer insert

RA 05 BP



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

FB40FLEX

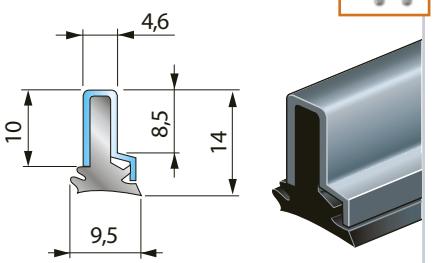


Profile:
Polyurethane
Length: **2000 mm.**
Steel insert 18x3

FB WIPERS

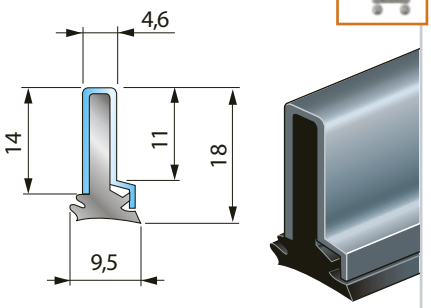
- **FB** Wipers are modelled on the client drawing or supplied in linear strips.

FB 14



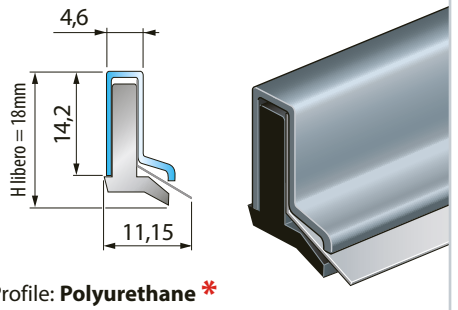
Profile: **Polyurethane** *
Length: **530 mm.**
Stainless steel reinforcement

FB 18



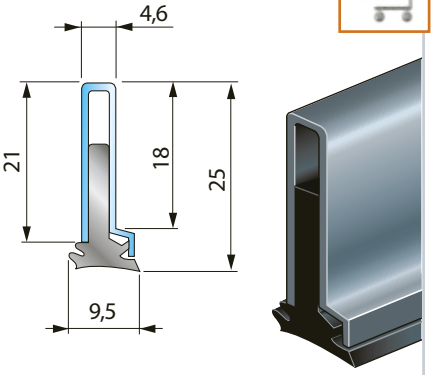
Profile: **Polyurethane** *
Length: **3000 mm.**
Stainless steel reinforcement

FB 18L



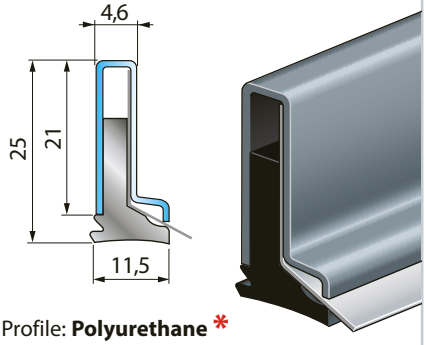
Profile: **Polyurethane** *
Length: **1000 mm.**
Stainless steel reinforcement
Shielding in inox steel 301

FB 25



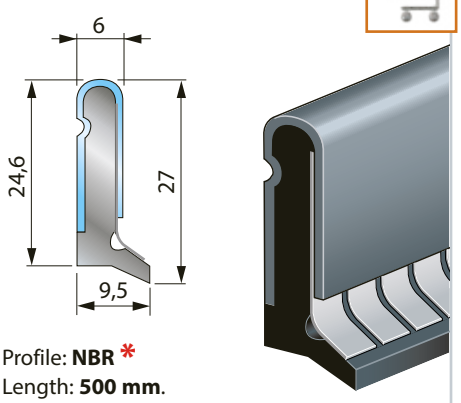
Profile: **Polyurethane** *
Length: **3000 mm.**
Stainless steel reinforcement

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**

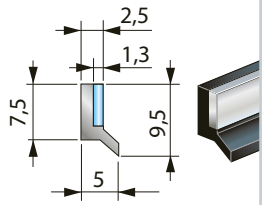
DImensions in mm.

RA WIPERS

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

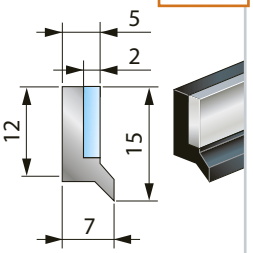
Also available via our online-shop: ***https://www.pei.it/index.php/en/shop/wipers***

RA 01



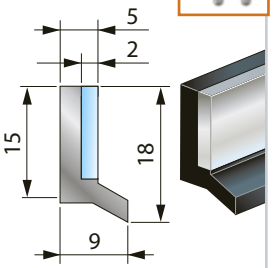
Profile:
NBR * or **Viton®** *
Length: **560 mm.**
Steel insert

RA 02



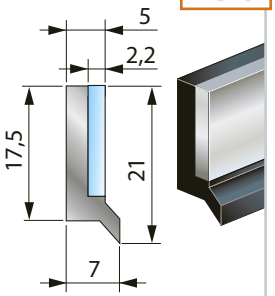
Profile:
NBR * or **Viton®** *
Length: **560 mm.**
Steel insert

RA 03



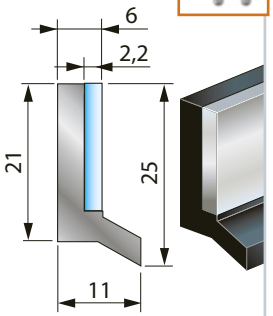
Profile:
NBR *
Length: **560 mm.**
Steel insert

RA 04



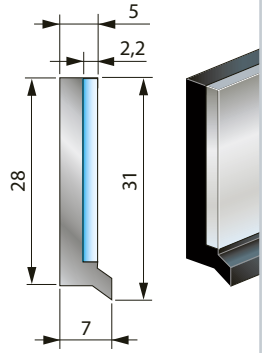
Profile:
NBR *
Length: **560 mm.**
Steel insert

RA 05



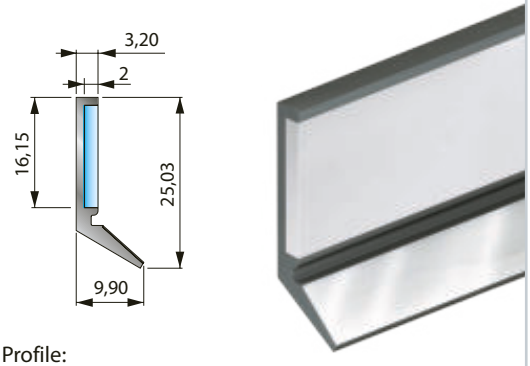
Profile:
NBR * or **Viton®** *
Length: **560 mm.**
Steel insert

RA 06



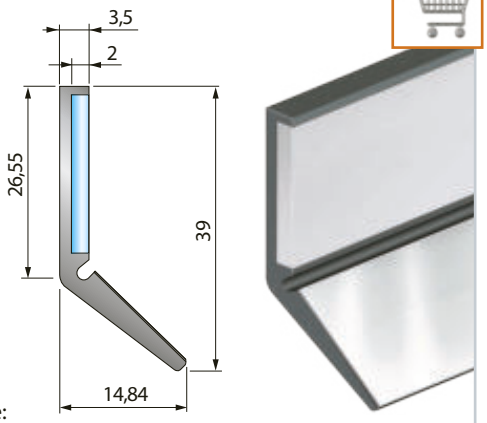
Profile:
NBR *
Length: **560 mm.**
Steel insert

RA 25L



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

RA 39L



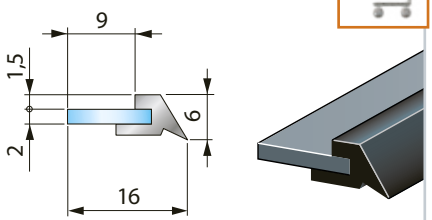
Profile:
NBR *
Length: **800 mm.**
Steel insert
Thin metal protective plate in inox steel 301

*** Prompt delivery**

RA B WIPERS

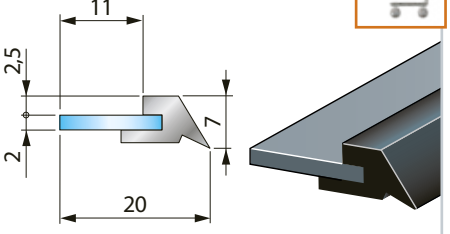
RA B Wipers are supplied exclusively in linear strips.

RA B1



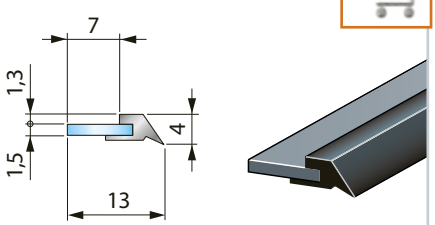
Profile: **NBR** *
Length: **560 mm.**
Steel insert

RA B2



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

RA B3



Profile: **NBR** *
Length: **560 mm.**
Steel insert

*** Prompt delivery**

DImensions in mm.

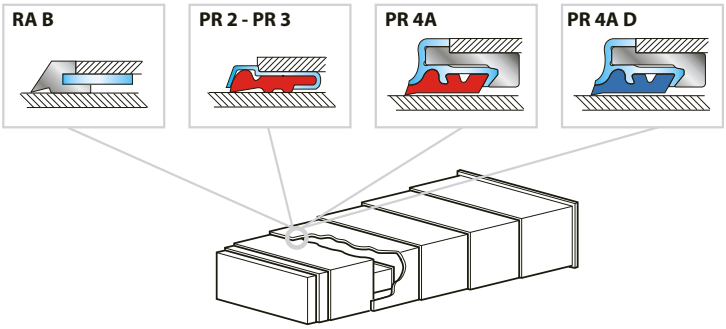
WIPERS FOR TELESCOPIC STEEL COVERS

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

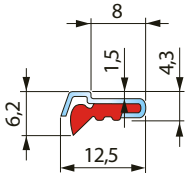
Codes **RA B** consists of a metal insert to which an NBR profile has been vulcanized.

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.

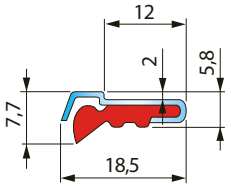


PR 2



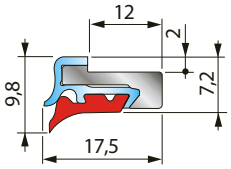
Profile: **Polyurethane** *
Length: **3000 mm.**
Steel reinforcement

PR 3



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

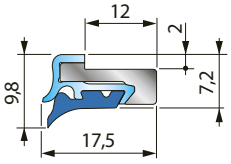
PR 4A



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

For working with COOLANTS

PR 4A D



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

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**

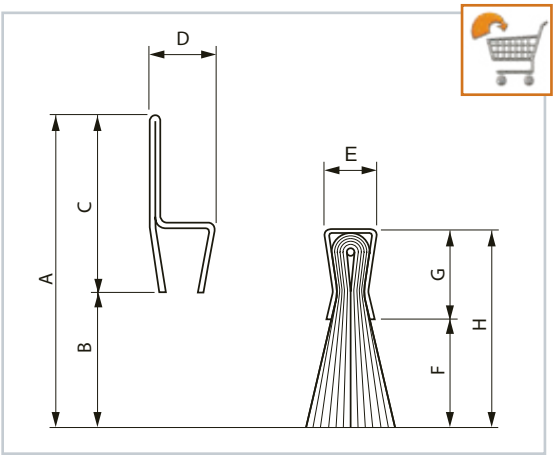
MATERIALS	Heat Resistance		Synthetic Oil Resistance			Mineral Oil Resistance			Vegetable Oil Resistance			Wear Resistance		
	Momentary contact °C	Continuous °C	Excellent	Good	Poor	Excellent	Good	Poor	Excellent	Good	Poor	Excellent	Good	Poor
NBR	250	-20 ÷ +100		●			●			●			●	
Polyurethane	200	-30 ÷ +90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

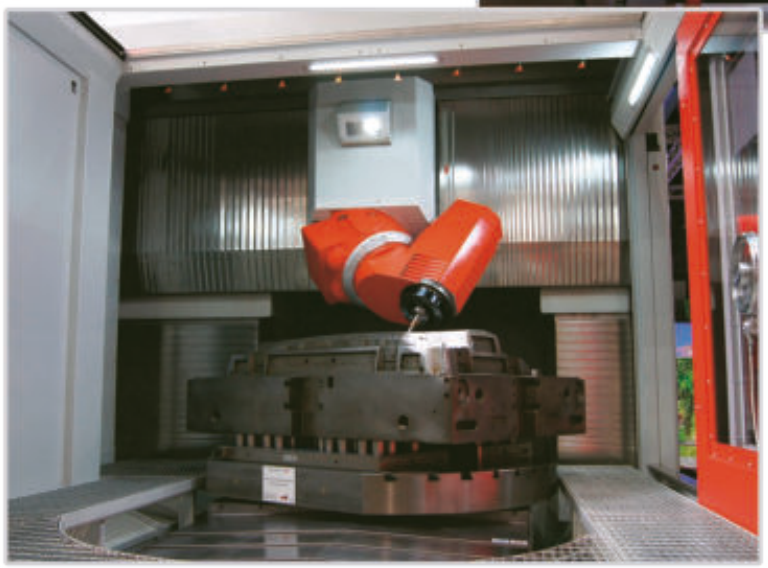
LINEAR BRUSHES WITH SUPPORT FRAME

Also available via our online-shop: ***https://www.pei.it/index.php/en/shop/brushes***

- **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





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	not
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			
TEMAT081	White PVC	Polyester	White PVC	0,5	200	-30 +70	•	•	20		•	1,5			
TEMAT009	Silicon	Fiberglass	Neoprene*	0,5	350	-60 +250	•	•	20		•	1,5	•	5	10
TEMAT091	PVC	Fiberglass	PVC	0,44	300	-30 +80	•	•	20						
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						
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				•					
TEMAT159	White Polyurethane	Polyester	White Polyurethane	0,7	120	-30 +100	•	•	20		•	2,1			
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	-30 +90	•	•	70						
TEMAT181	CPT**	Polyester	-	0,9	1200	-30 +90	•	•	20						
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	Resists water, oil, coolant, diluted acids, petroleum products, atmospheric agents and ozone. Good shear strength and abrasion resistance. Hypalon is especially resistant to sea water.
TEMAT202	
TEMAT003	
TEMAT004	
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.
TEMAT081	It is used in the food industry since appropriate for use around oil, grease, blood, etc... Also suitable for resisting small splashes of cooling lubricant and in presence of acids. **FDA approved.**
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 SODIUM-POTASSIUM-FLUORIDE at temperatures beginning at 150°C.
TEMAT104	
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	Used for harsh working environments with heavy concentrations of sharp shavings and high temperatures. Excellent resistance to acids.
TEMAT013	
TEMAT014	
TEMAT015	Good resistance to petroleum products, oils and heavy abrasion. Excellent bending strength.
TEMAT151	
TEMAT152	
TEMAT153	Good resistance to petroleum products, oils and fair abrasion resistance. Used for manufacturing thermic-welded round bellows.
TEMAT159	It is used in the food industry since appropriate for use around oil, grease, blood, etc... **FDA approved.** Excellent resistance to petroleum products, oils and heavy abrasion. Excellent bending resistance.
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. **Antistatic.**
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. **Antistatic.**
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; 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 AND SELF-EXTINGUISHING.**
TEMAT181	**CERAMIX LIGHT has an excellent abrasion resistance and excellent shear strength. The fabric insert is made by an ANTISTATIC material with good transverse rigidity and a very attractive appearance. CERAMIX LIGHT is normally used in case of hot and shearing shavings, or in high speed chip-removing dry or wet work environments. SELF-EXTINGUISHING FABRIC.**
TEMAT017	Mainly used around heavy ambient dust, small splatter of coolant and oil. Also appropriate for use around acids.
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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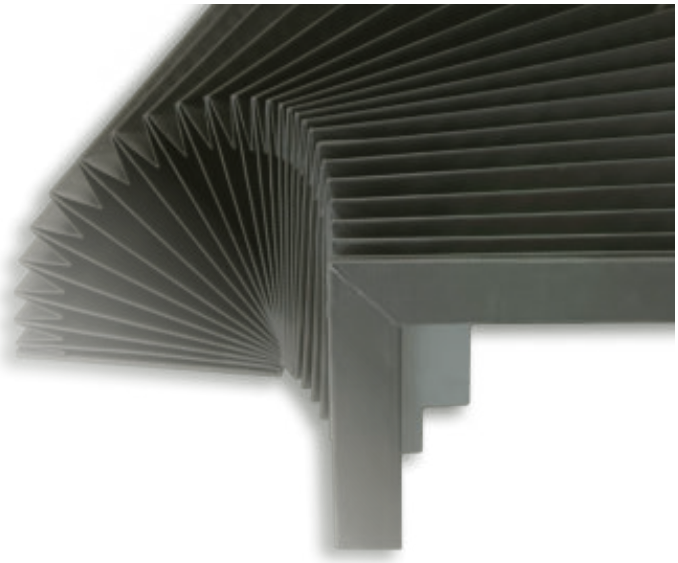

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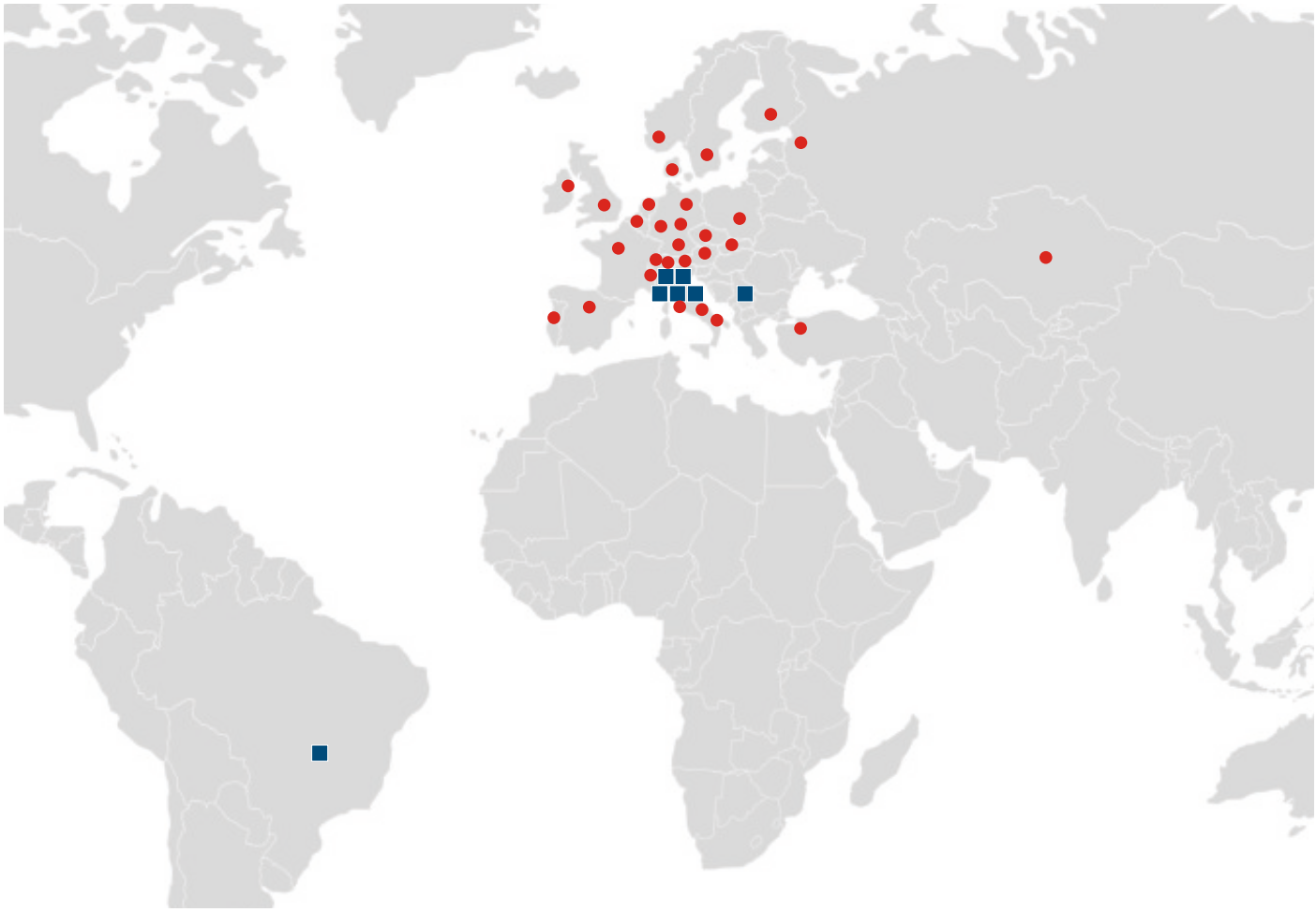

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