

ROLLER Covers

FLEX Aprons

HEMAFLEX Cable Conduits

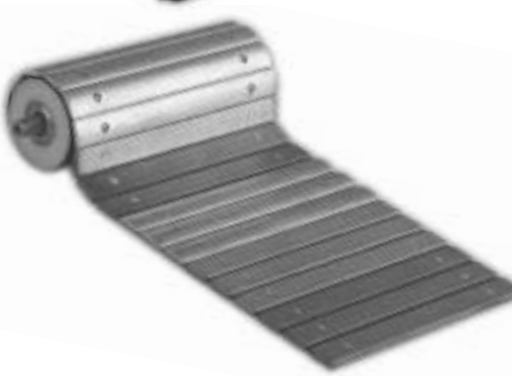
MAXIFLEX Coolant Hoses

Design information on technical layout

Design options	ROLLER with TF drive	ROLLER with SA drive	ROLLER with FM drive
Type of drive: Torsion spring(s)	•		
Type of drive: steel band spring		•	•
Enclosure available	•	•	•
Side mount available	•	•	•
Link apron available	•		•
Outer band made of synthetic material	•		•
Outer band made of stainless steel		•	•
Outer band made of normal steel		•	•
Maximum band width in mm	6,000	300	6,000*
Maximum extension length in mm	8,000	10,000	10,000
Maximum travelling speed*	90 m/min	60 m/min	50 m/min
Rapid change of direction	•	•	limited
Continuous load	very high	average	high
Resistant to dust/dirt	low	average	low
Tension forces	uniform	greatly increased when fully extended	slightly increased when fully extended
Product cost	low	low	average

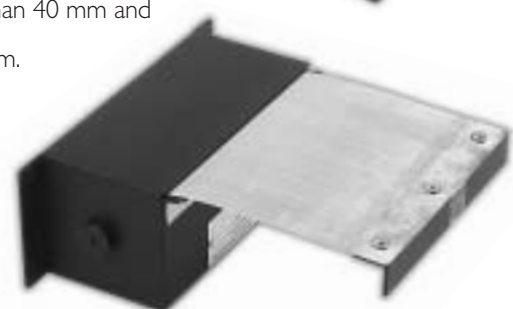
Note: *valid for band made of synthetic material, steel band only up to 1,000 mm

ROLLER Cover Systems



Torsion springs (TF) are very well suited for long working life performance at low loads. We recommend the application of TF drives predominantly with synthetic bands. The torsion springs are manufactured from a special high quality alloyed wire. It is proven by tests and praxis to reach up to 10 times of the working life of common spring wires.

If steel is used for outer band material we recommend for safety reasons a type with housing. For smaller roller diameters and shorter extensions this may be left out. Steel band should not be used for roller diameters smaller than 40 mm and band widths of more than 1 000 mm.



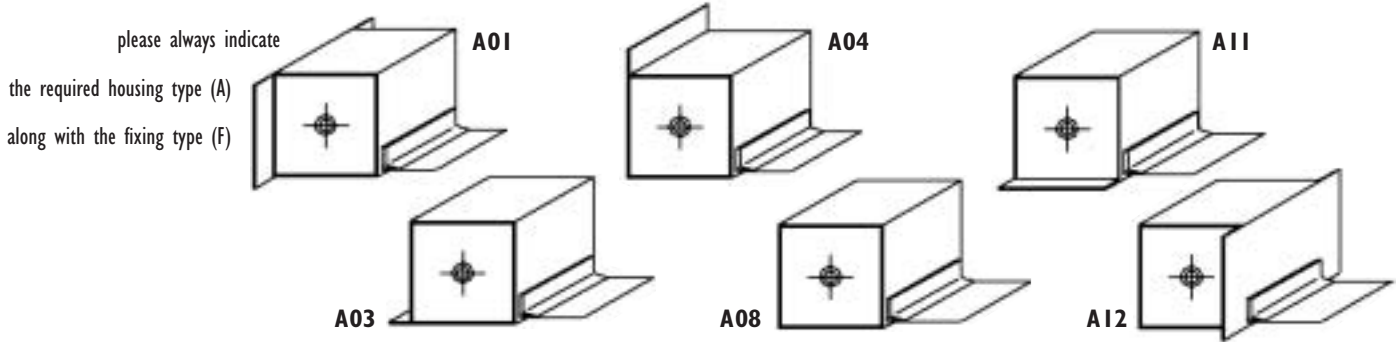
ROLLER Cover Systems

Synthetic band offers a larger selection regarding drive and dimensions for synthetic band. With a synthetic band, you can choose for a smaller amount of dirt and coolant the cost-saving version without housing.

The dimensions of the ROLLER covers depends on several crucial factors, which are shown

in the construction data tables. Basically, they are valid for standard applications, the final design will be determined by HEMA in agreement with the customer.

The outer band is subjected to a wide variety of stresses. For high temperature application, there are steel bands or synthetic bands from glass fibres,



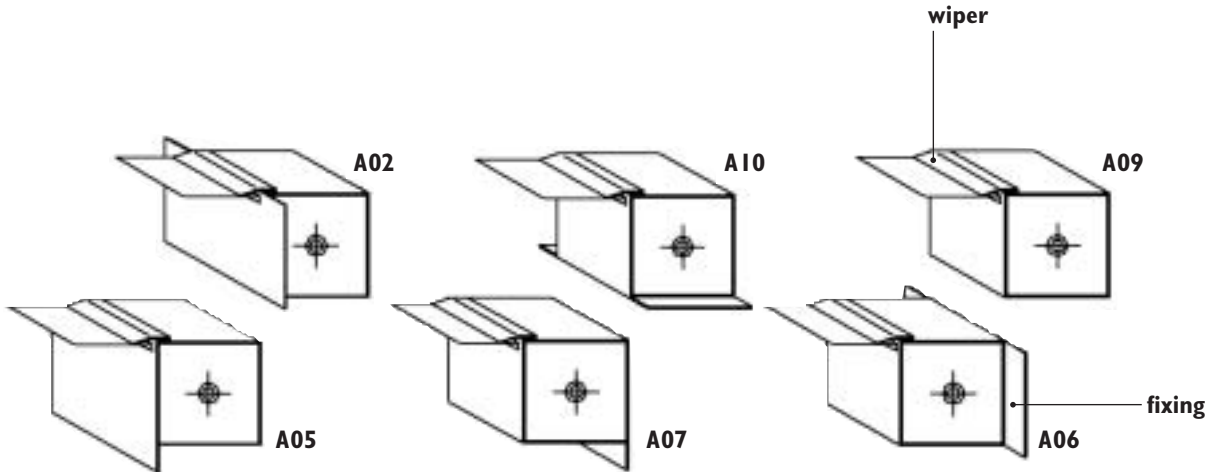
Design data for dimensioning housing and drive

band width	extension	ROLLER with TF drive without housing/ roller diameter	ROLLER with TF drive with housing/ housing dimensions	ROLLER with FM drive without housing/ roller diameter	ROLLER with FM drive with housing/ housing dimensions	ROLLER with SA drive with housing/ housing dimensions
up to 150	up to 300	21 / 28*	40 x 40	40 / 50	60 x 60	40 x 40
up to 150	up to 500	21 / 30	50 x 50	40 / 50	60 x 60	50 x 50
up to 150	up to 1.000	30 / 32	60 x 60	45 / 50	70 x 70	60 x 60
up to 150	up to 1.500	50 / 60	80 x 80	50 / 60	80 x 80	70 x 70
up to 150	up to 2.000	—	—	60 / 70	90 x 90	75 x 75
up to 150	up to 2.500	—	—	70 / 80	110 x 110	80 x 80
up to 150	up to 3.000	—	—	80 / 90	120 x 120	90 x 90
up to 150	up to 4.000	—	—	90 / 100	130 x 130	100 x 100
up to 150	up to 5.000	—	—	100 / 120	140 x 140	110 x 110
up to 150	up to 7.000	—	—	120 / 133	150 x 150	120 x 120
up to 150	up to 9.000	—	—	120 / 133	160 x 160	120 x 120
up to 150	up to 10.000	—	—	120 / 150	170 x 170	120 x 120
up to 300	up to 300	21 / 28	40 x 40	40 / 45	60 x 60	40 x 40
up to 300	up to 500	21 / 28	50 x 50	50 / 60	70 x 70	50 x 50
up to 300	up to 1.000	30 / 32	60 x 60	50 / 60	70 x 70	60 x 60
up to 300	up to 1.500	40 / 45	70 x 70	50 / 60	80 x 80	70 x 70
up to 300	up to 2.000	50 / 60	80 x 80	60 / 70	90 x 90	75 x 75
up to 300	up to 2.500	50 / 60	80 x 80	70 / 80	100 x 100	80 x 80
up to 300	up to 3.000	60 / 70	90 x 90	80 / 90	110 x 110	90 x 90
up to 300	up to 4.000	70 / 80	100 x 100	90 / 100	120 x 120	100 x 100

Viton or Preetex available. For sharp edged chips we use as well BLV 36/70 beside steel bands. In medical technology and leisure time applications, special materials such as E4/1 or awning cloth offer an effective design. The design will be further upgraded by an individually painted metal housing.

In order to keep the case as clean as possible, we use wiper systems as a standard feature. For special applications we offer wipers for guideways and telescopic covers and brush wipers. HEMA provides steel bands with rounded edges, reducing injury risk and increasing work life.

ROLLER Cover Systems



Design data for dimensioning housing and drive

band width	extension	ROLLER with TF drive without housing/ roller diameter	ROLLER with TF drive with housing/ housing dimensions	ROLLER with FM drive without housing/ roller diameter	ROLLER with FM drive with housing/ housing dimensions	ROLLER with SA drive with housing/ housing dimensions
up to 300	up to 5,000	80 / 90	120 × 120	90 / 100	130 × 130	110 × 110
up to 300	up to 7,000	—	—	100 / 120	150 × 150	120 × 120
up to 300	up to 9,000	—	—	100 / 120	160 × 160	140 × 140
up to 300	up to 10,000	—	—	120 / 150	170 × 170	150 × 150
über 300	up to 300	21 / 28	40 × 40	40 / 45	60 × 60	—
über 300	up to 500	21 / 28	50 × 50	45 / 50	70 × 70	—
über 300	up to 1,000	30 / 32	60 × 60	45 / 50	70 × 70	—
über 300	up to 1,500	40 / 45	70 × 70	50 / 60	80 × 80	—
über 300	up to 2,000	50 / 60	80 × 80	60 / 70	90 × 90	—
über 300	up to 2,500	50 / 60	80 × 80	70 / 80	110 × 110	—
über 300	up to 3,000	60 / 70	90 × 90	80 / 90	120 × 120	—
über 300	up to 4,000	70 / 80	100 × 100	80 / 100	130 × 130	—
über 300	up to 5,000	80 / 90	120 × 120	90 / 100	140 × 140	—
über 300	up to 7,000	90 / 100	130 × 130	100 / 120	150 × 150	—
über 300	up to 9,000	100 / 120	150 × 150	100 / 120	160 × 160	—
über 300	up to 10,000	100 / 120	150 × 150	120 / 150	170 × 170	—

Remark:

- all dimensions in mm, special types and dimensions upon request
- square housing outer dimensions
- roller size means outer diameter of the tube

- for types without housing: first number for regular spring force/ second number if higher spring force is required,
- housing dimensions for AIR drives on request*

* Aid for interpretation

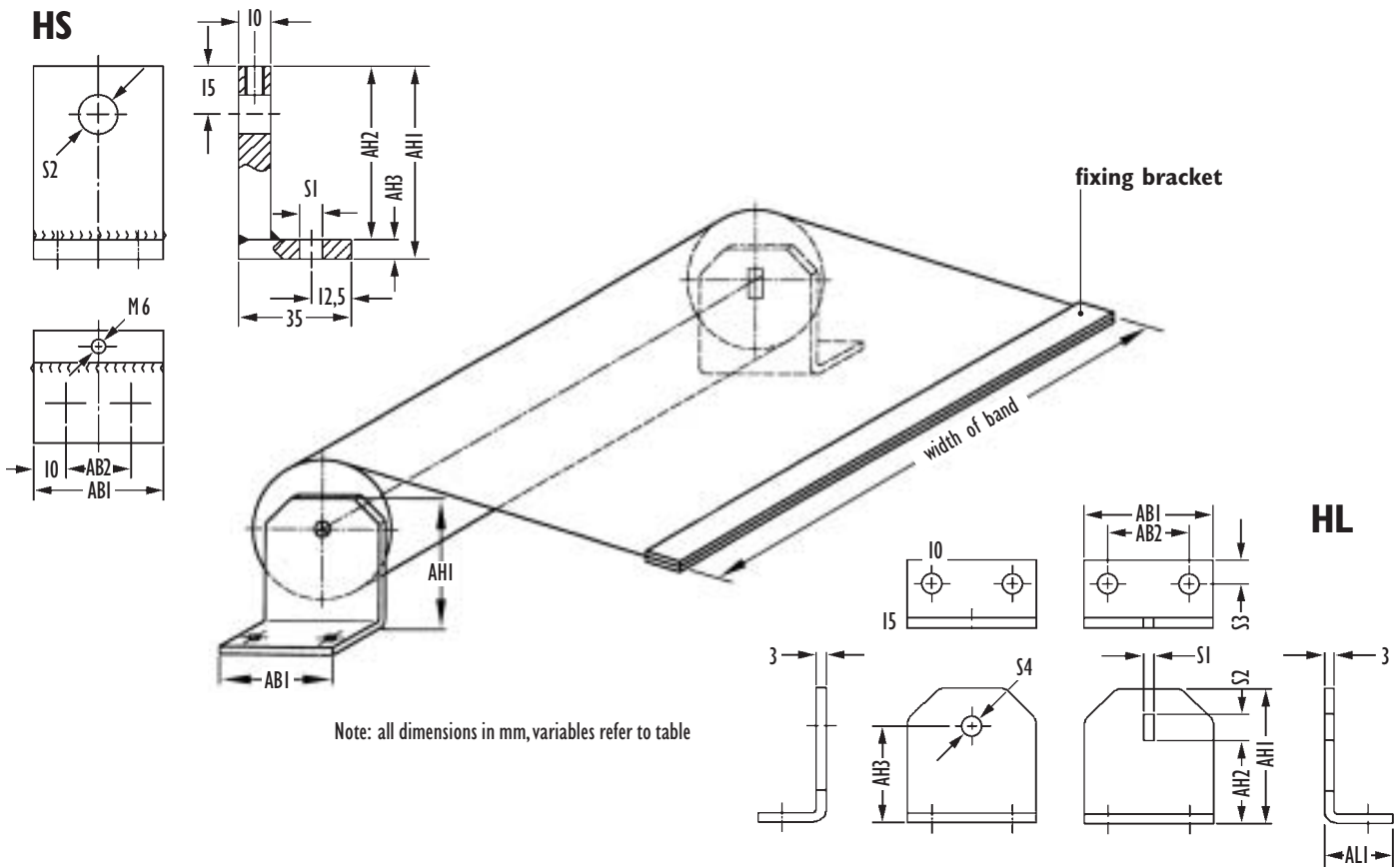
21/28 means a roller diameter of 21 mm for regular and 28 mm for high load

Mounting

ROLLER Cover Systems

All ROLLER systems are pre-tensioned at the factory in conformance with customer specifications or HEMA's own standard, and are ready to install. We offer a wide variety of different mounting possibilities. Mounting is especially easy with the encased models, which enable 12 different standard positions. For ROLLER covers without

housing, standard holders can be used (see drawing), guaranteeing a simple and stable fixing. HEMA has developed two basic types of standard holders which should be applied depending on the type of load. All necessary design data are included in the tables. Upon request we manufacture also special holder systems for you.



Construction data for standard holder systems:

HEMA Holder type	Roller diameter	AH1/AH2/AH3	AB1/AB2	ALI	S1	S2	S3	S4
HL 21-28	21 up to 28 mm	42/26/30	40/25	21	3	8	7,5	8
HL 30-35	30 up to 35 mm	48/32/37	45/30	21	4	10	7,5	8
HL 40-50	40 up to 50 mm	57/40/45	50/35	21	4	10	7,5	10
HL 50-60	50 up to 60 mm	80/49/55	75/50	25	4	12	10	12
HS 40	40 mm	60/54/6	40/20	—	7	12	—	—
HS 45	45 mm	65/59/6	50/30	—	9	12	—	—
HS 50	50 mm	70/64/6	50/30	—	9	12	—	—
HS 60	60 mm	75/65/10	60/40	—	9	12	—	—
HS 70	70 mm	85/75/10	70/50	—	9	12	—	—
HS 80	80 mm	95/85/10	80/60	—	9	12	—	—
HS 90	90 mm	105/95/10	90/70	—	9	12	—	—
HS 100	100 mm	115/105/10	100/80	—	9	12	—	—

Note: Holders HL for normal conditions, holders HS for heavy duty conditions, holders HS all edges are fazed; special holders are available upon request; S2 equals axis diameter

Design data for calculation:

For the design of the ROLLER covers the following factors should be considered:

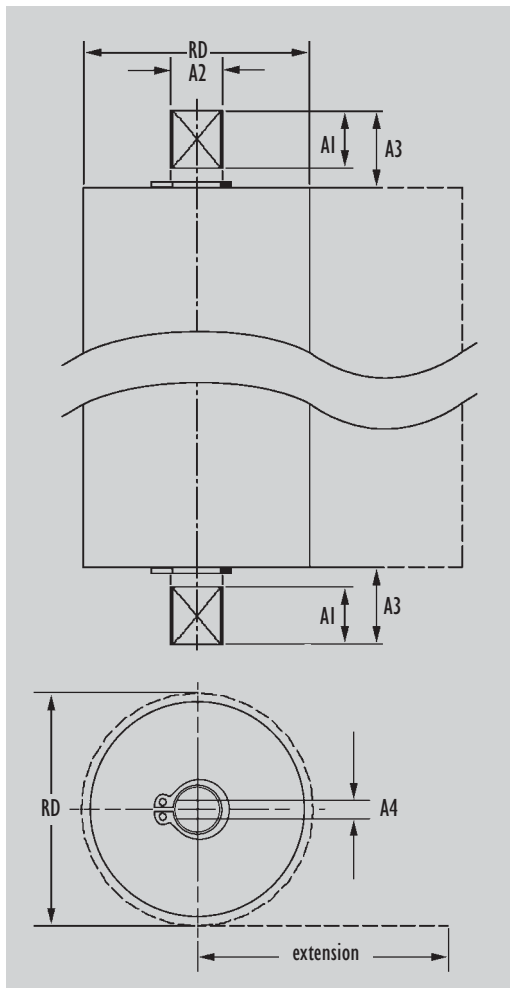
- a speed of travel
- b intended total number of cycles, working life
- c frequency and speed of changes in travel direction
- d mounting position, direction of swarf

Data relating to the axis seat:

For the technical layout of your axle seats, depending on the roller diameter; pay attention to the different parameters given in the following table:

tube diameter	RD	A1	A2	A3	A4
21 - 28 mm	8 mm	8 mm	11 mm	3 mm	
30 - 50 mm	8 mm	10 mm	11 mm	4 mm	
above 50 mm	8 mm	12 mm	11 mm	4 mm	

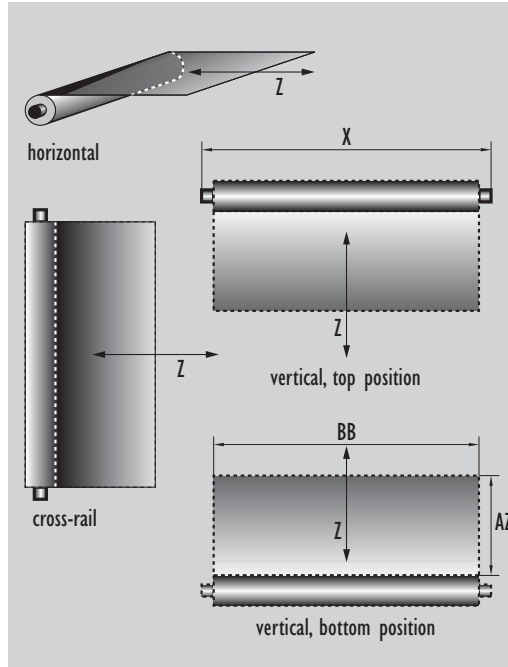
Roller axis:



Fixing of the band

The fixing of the band is achieved according to your demand by flat or angular steel brackets, which are bonded or riveted to the band from one or two sides.

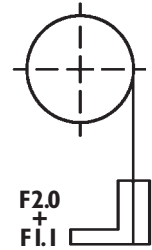
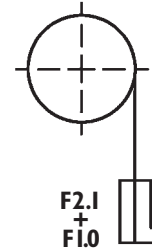
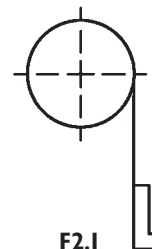
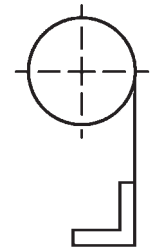
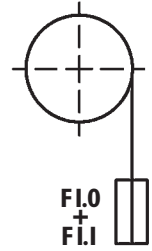
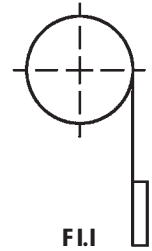
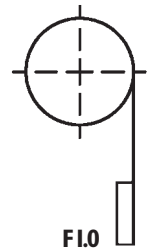
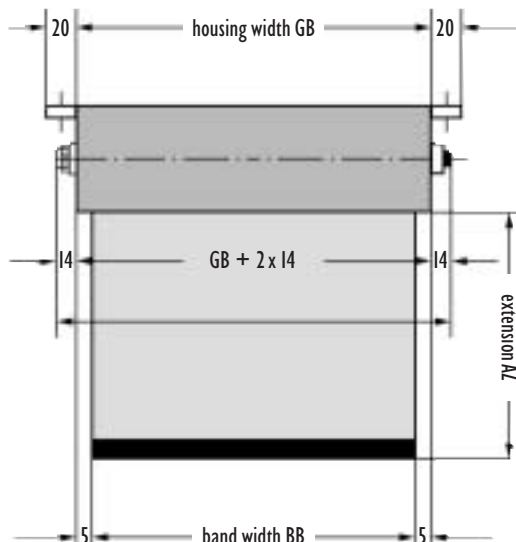
Operating positions:



Operating position

Exact information on the operating position is essential for a perfect operation of the protective cover. Here it is of special importance from which direction – front or rear – the swarfs and coolants are coming.

Housing dimensions

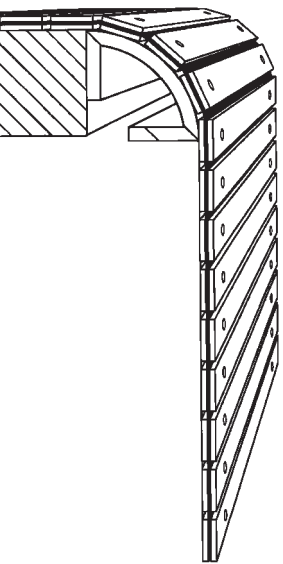


Please always indicate the required band fixing type (F) along with the housing type (A)

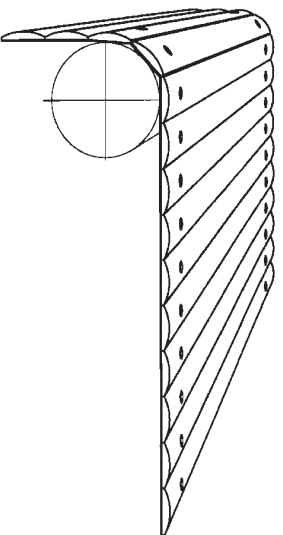
ROLLER Link aprons

Link aprons are a low-priced type of cover. These products provide excellent service in frontal protection against chips and coolant. They offer good flexibility, are mounted easily and require little space.

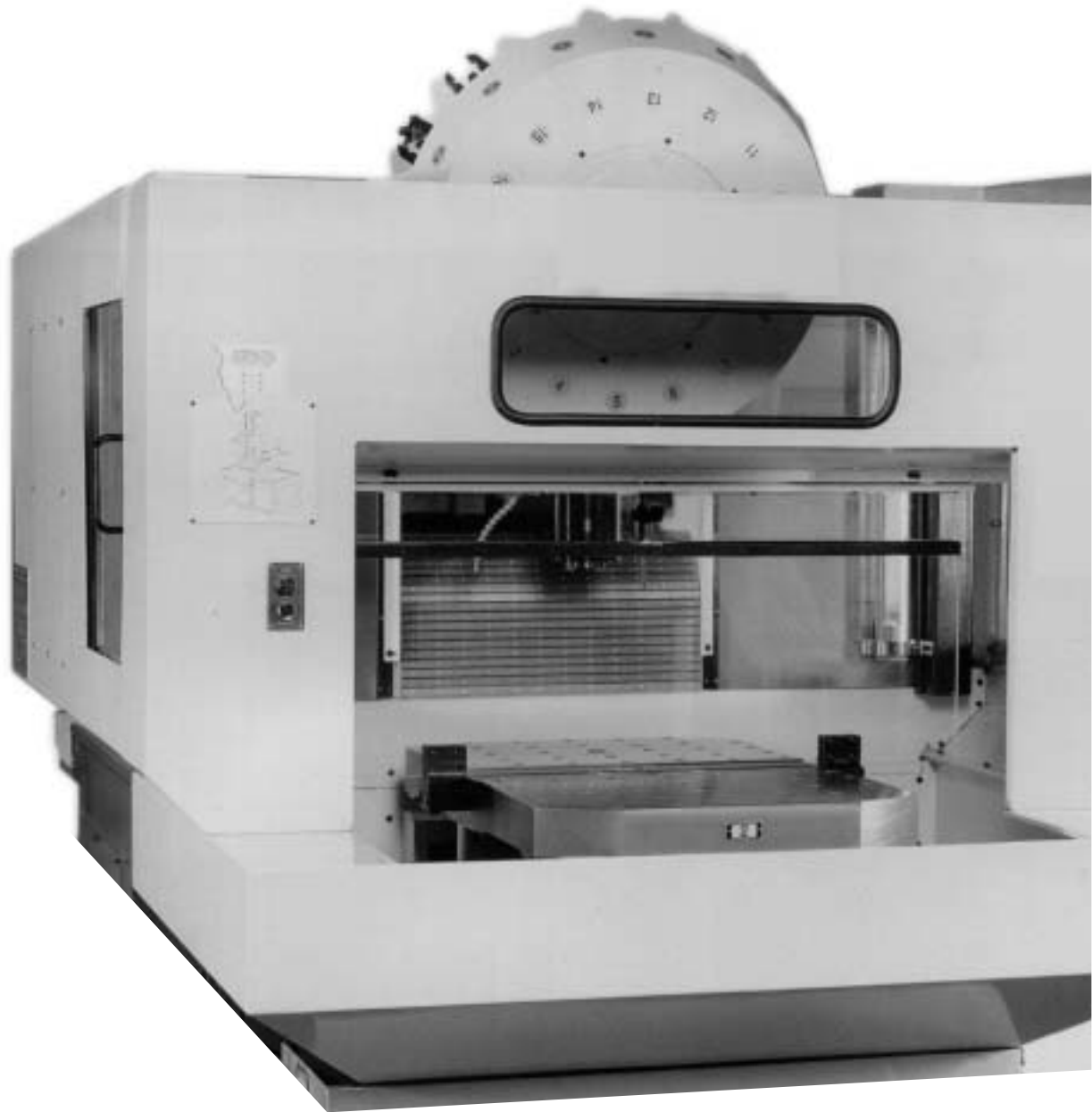
The metal sections are manufactured from aluminium, brass or steel in flat or semi-circular profiles. These sections have a standard width from 14 to 16 mm.



FLEXPRO



FLEXPRO

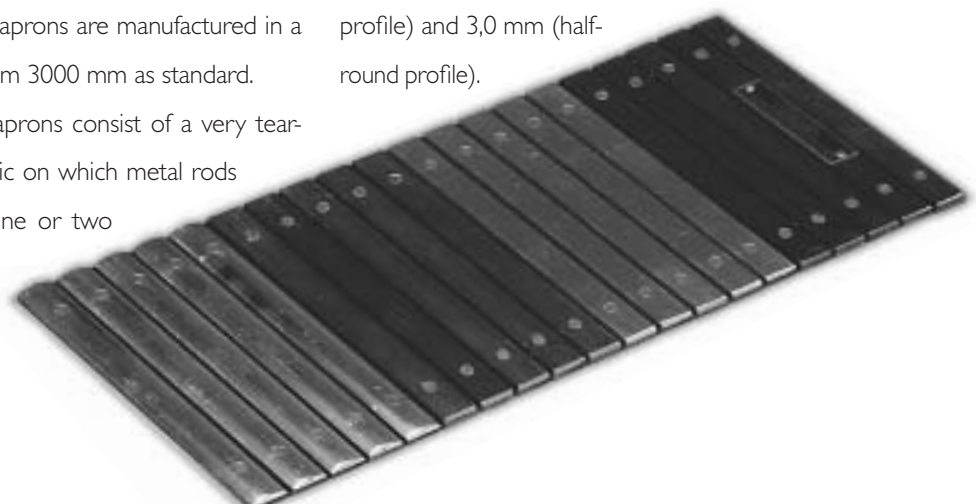


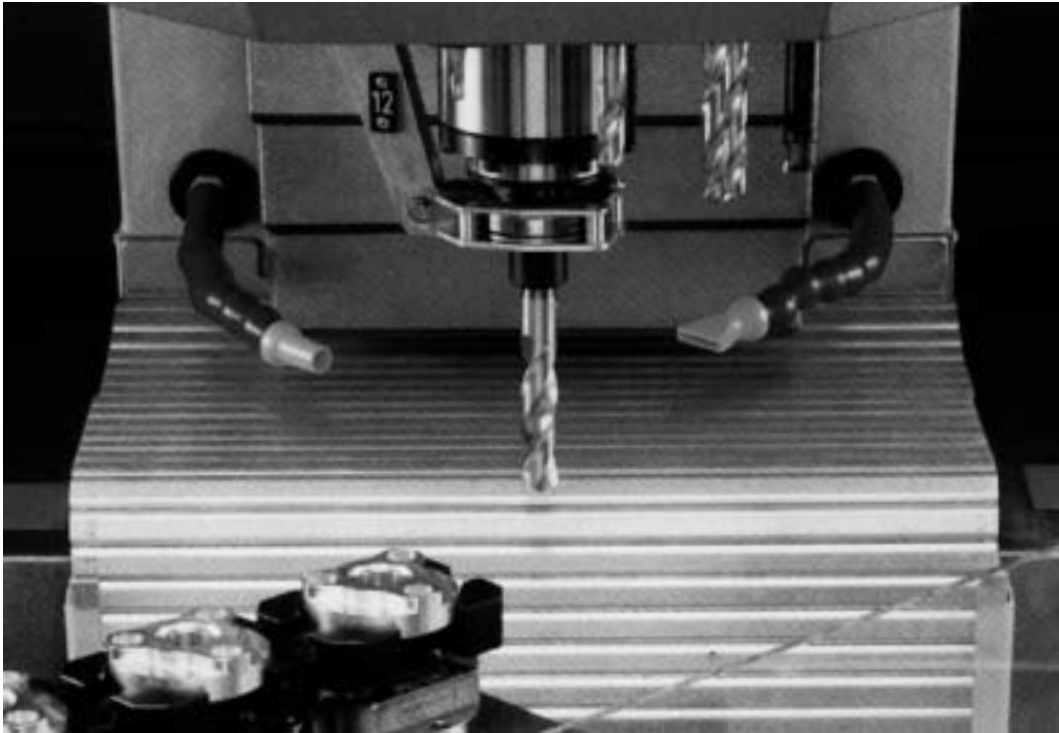
Technical data

The HEMA link aprons are subdivided into several basic types. The link aprons are manufactured in a width up to maximum 3000 mm as standard.

The FLEXPRO aprons consist of a very tear-resistant carrier fabric on which metal rods are bonded from one or two sides and riveted consecutively.

The height of the rods is between 2,0 mm (flat profile) and 3,0 mm (half-round profile).

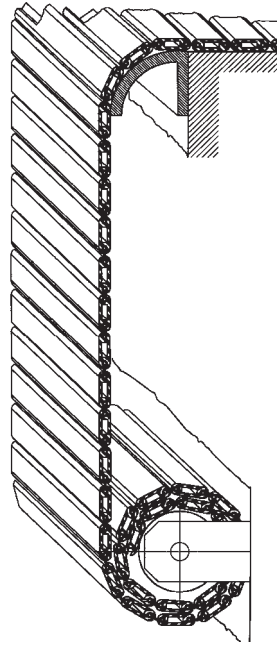




ROLLER Link aprons

The FLEXSTAR type consist of anodised aluminium hollow profiles joined by a polyurethane strip. On the visual side, the glider elements are rounded at the edges (FLEXSTAR-S) or straight

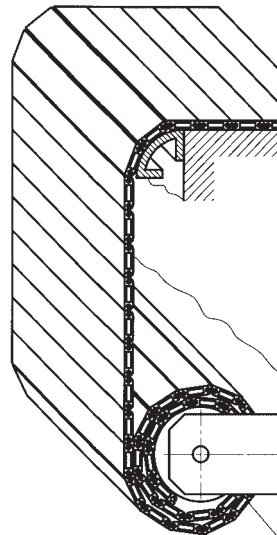
laid out in such a way as to provide the best possible protection for the polyurethane strip. Good protection is offered against coolant and flying chips. By the simple, but effective joining technique of the sections an economic production and a very flexible range of use is enabled.



FLEXSTAR-S



In many cases, link aprons are serving as a protective hanging curtain or run over a guide roller to ensure especially smooth running. They are fastened by an aluminium hollow profile angle, a metal ledge or a metal angle at the end of the apron. These are connected to the machine. Customers are free to choose the shape or fixing hole pattern.



FLEXSTAR-C/CR

(FLEXSTAR-C/CR). Both rod types are fixed by indentation. FLEXSTAR-S is completely movable in both directions, while FLEXSTAR-C/CR permits only a one-sided unwind movement, hereby taking a stable position in the other direction. End caps to be chosen from different colours improve gliding properties and visual appearance.

Both hollow profile solutions are produced with the highest accuracy. The gap dimensions between the profiles are



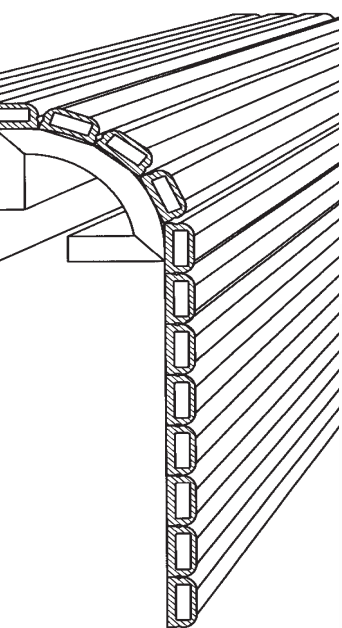
ROLLER Link aprons

For more demanding solutions, the link aprons are combined with a system of roller blinds. The link apron is wound on top of the ROLLER standard system. The roller diameter is considerably increased in wound-up condition (at least by the factor 2 compared to the value given in the table on page 60/61).

The drive unit is exactly matched to the additional weight and forces. We offer complete guide systems basing on travel rails, steel cables or aluminium profiles.

FLEXWALK

Due to the continuously increasing requirements on stability and load capacity of the aprons, HEMA has advanced the existing apron program. We offer the FLEXWALK type in two section sizes. It is a combination of extremely stabile aluminium hollow profiles and a carrier fabric made from synthetic band or stainless steel band. This is used in cases where the customer requires an accessible solution. The aprons with a steel band as carrier material are joined by a high-performance bond guaranteeing after hardening for 30 hours high bonding power combined with the required flexibility. Only in this way the steel band aprons can be used permanently on roller blind systems as well.



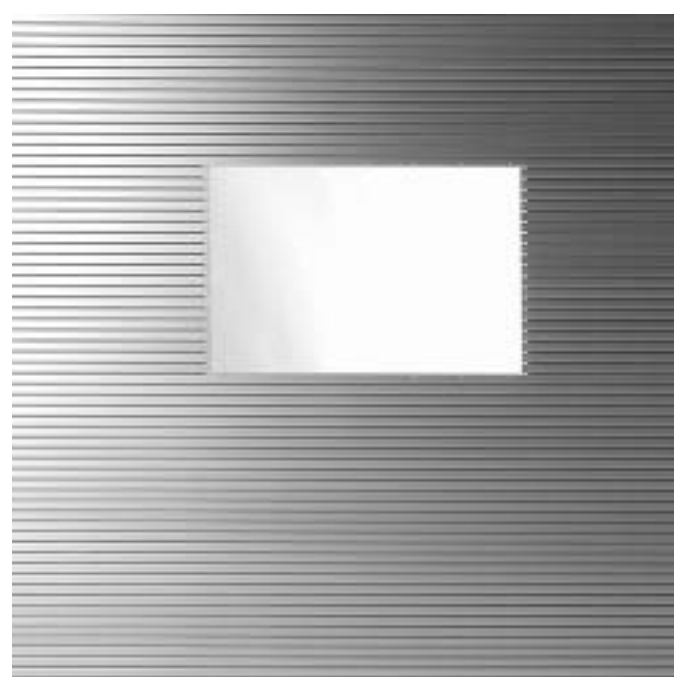
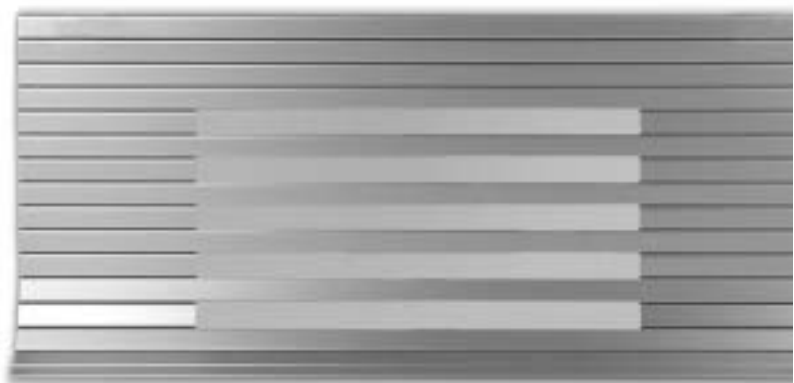
FLEXWALK

FLEXSTAR-CR

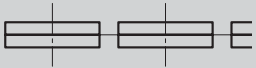

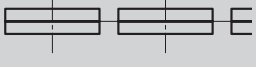





The new aluminium hollow profile FLEXSTAR-CR is the big brother of the C type. It was designed for higher loads. The advantages of the FLEXSTAR series with its flexible profile and the new slanted rear profile provide high stiffness.

FLEXSTAR windows

In the mounting area, FLEXSTAR aprons combined with vision inserts are very popular. We offer different types with rigid polycarbonate inserts or flexible see-through foil. For long extensions lengths stiffeners are required due to the window inserts.



Design data for the layout of link aprons:

link apron type interior/exterior section fixing	connecting material	section width mm	section height mm	smallest unwind radius mm	profile type
FLEXPRO 1 steel/steel bonded and riveted	synthetic carrier band	15/15	2,0/2,0	40	
FLEXPRO 2 steel/brass bonded and riveted	synthetic carrier band	15/15	2,0/2,0	40	
FLEXPRO 3 steel/aluminium bonded and riveted	synthetic carrier band	15/15	2,0/2,0	40	
FLEXPRO 4 half-round aluminium bonded and riveted	synthetic carrier band	16	3,0	21	
FLEXPRO 5 half-round aluminium/ aluminium bonded and riveted	synthetic carrier band	16/15	3,0/2,0	35	
FLEXWALK aluminium hollow profile, eloxed bonded and riveted	synthetic carrier band or stainless steel	22 18	10,0 8,0	40*	
FLEXSTAR-S FLEXSTAR-C aluminium hollow profile, eloxed**, indentation	synthetic rand connection end caps available	20	5,5	35	
FLEXSTAR-CR aluminium hollow profile, eloxed**, indentation	synthetic rand connection end caps available	25	8,0	40	

*only for synthetic band, for steel band 100

** inserts from see-through foil or polycarbonate links (WINDOW) possible



FLEXPRO in application