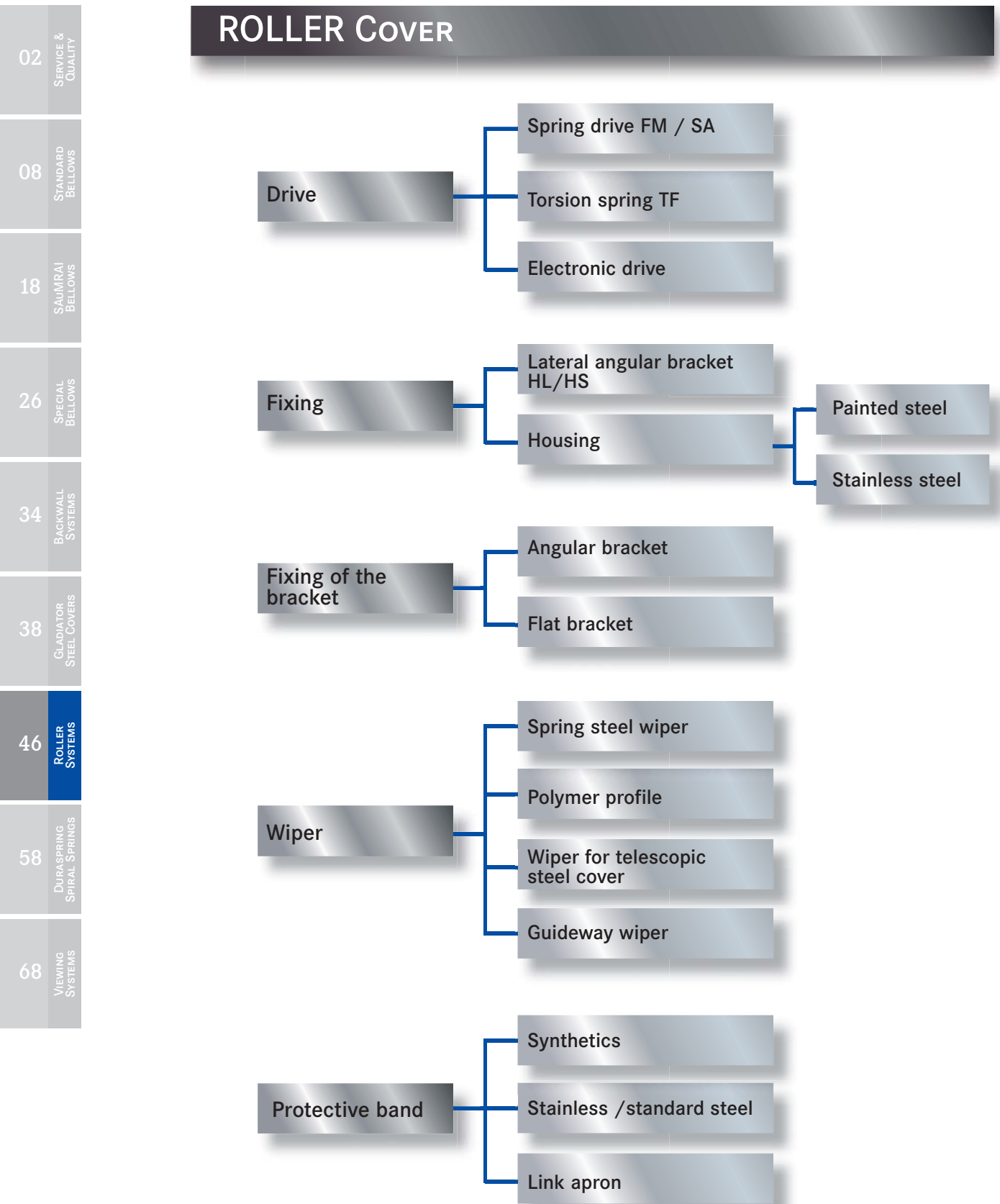


MODULAR CONCEPT

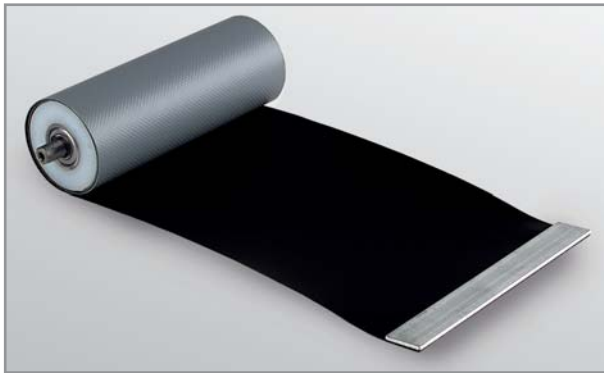


ROLLER COVERS

ROLLER cover systems are a possible substitute for bellow covers in very narrow spaces when only general sealing is required.

Two different types are available:

- ROLLER blind without housing - this type needs less space, best used with smaller diameters and short extensions
- ROLLER blind with housing - we recommend this type for safety reasons when longer extensions are used and especially when steel is used for the band material. They are available in many variants.



ROLLER blind cover without housing

Drives

The ROLLER systems come with different drive concepts:

- Torsion springs TF: Drive separate to cover band
- Steel band drives SA: Cover band forms drive
- Steel band spring drive FM: Drive separate to cover band
- Electrical drive: to customers specifications (see page 62)

Design option	ROLLER with TF drive	ROLLER with SA drive	ROLLER with FM drive
Housing available	■	■	■
Side mount available	■		■
Link Apron available	■ (limited)		■
Outer band synthetic material	■		■
Outer band stainless steel	■ (limited)		■
Outer band normal steel		■	■
Maximum band width in mm	1,500*	300	1,500*
Maximum band extension in mm	3,000	7,500	6,000*
Maximum travelling speed	60 m/min	30 m/min	40 m/min
Rapid change of direction	■	■	limited
Continuous load	very high	average	high
Resistance to dust/dirt	low	average	low
Tension forces	slightly increased when fully extended	increased when fully extended	slightly increased when fully extended
Product costs	low	low	average

*other dimensions on request



ROLLER blind cover with steel band and housing

Torsion springs TF

Torsion springs are very well suited for a long working life performance at low loads. We recommend torsion spring drives primarily with synthetic material covers.

The torsion springs are manufactured from a high quality alloyed wire. This wire material has been proved to reach ten times the service life of a conventional wire spring.

Steel band drive SA

For higher tension forces we recommend SA steel band drives. The steel band for the outer cover also serves as a spring motor. Steel is selected for the band.

Steel band spring drive FM

Also suitable for higher tension forces are the FM steel band spring drives.

SERVICE & QUALITY 02

STANDARD BELLOWS 08

SAUWRAI BELLOWS 18

SPECIAL BELLOWS 26

BACKWALL SYSTEMS 36

GLADIATOR STEEL COVERS 38

ROLLER SYSTEMS 47

DURASPRING SPIRAL SPRINGS 58

VIEWING SYSTEMS 68

ROLLER COVERS

			ROLLER, drive torsion spring (TF) without housing Ø Roller	ROLLER,drive torsion spring (TF) with housing housing LxW	ROLLER, drive spring motor (FM) without housing Ø Roller	ROLLER, drive spring motor (FM) with housing housing LxW	ROLLER drive steel band (SA) with housing housing LxW	
02	SERVICE & QUALITY	Band width#	extension	ROLLER, drive torsion spring (TF) without housing Ø Roller	ROLLER,drive torsion spring (TF) with housing housing LxW	ROLLER, drive spring motor (FM) without housing Ø Roller	ROLLER, drive spring motor (FM) with housing housing LxW	ROLLER drive steel band (SA) with housing housing LxW
		over 150	bis 300	21 / 28* ●	40 x 40 ●	50 ●	60 x 60 ●	40 x 40 ■
08	STANDARD BELLOWS	over 150	bis 500	21 / 30 ●	50 x 50 ●	50 ●	60 x 60 ●	50 x 50 ■
		over 150	bis 1.000	40 ●	60 x 60 ●	45 / 50 ●	70 x 70 ●	60 x 60 ■
		over 150	bis 1.500	-	-	50 / 60 ●	80 x 80 ●	70 x 70 ■
		over 150	bis 2.000	-	-	60 / 70 ●■	90 x 90 ●■	75 x 75 ■
18	SAUMRAI BELLOWS	over 150	bis 2.500	-	-	70 / 80 ●■	110 x 110 ●■	80 x 80 ■
		over 150	bis 3.000	-	-	80 / 90 ●■	120 x 120 ●■	90 x 90 ■
		over 150	bis 4.000	-	-	90 / 100 ●■	130 x 130 ●■	100 x 100 ■
		over 150	bis 5.000	-	-	100 / 120 ●■	140 x 140 ●■	110 x 110 ■
		over 150	bis 7.000	-	-	120 / 133 ●■	150 x 150 ●■	120 x 120 ■
26	SPECIAL BELLOWS	over 150	bis 9.000	-	-	120 / 133 ●■	160 x 160 ●■	120 x 120 ■
		special dimensions	on request					
		up to 300	up to 300	21 / 28 ●	40 x 40 ●	45 ●■	60 x 60 ●■	40 x 40 ■
34	BACKWALL SYSTEMS	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 ●	60 ●■	70 x 70 ●■	60 x 60 ■
		up to 300	up to 1,500	40 / 45 ●	70 x 70 ●■	60 ●■	80 x 80 ●■	70 x 70 ■
		up to 300	up to 2,000	-	80 x 80 ●■	60 / 70 ●■	90 x 90 ●■	75 x 75 ■
38	GLADIATOR STEEL COVERS	up to 300	up to 2,500	-	80 x 80 ●■	70 / 80 ●■	100 x 100 ●■	80 x 80 ■
		up to 300	up to 3,000	-	90 x 90 ●■	80 / 90 ●■	110 x 110 ●■	90 x 90 ■
		up to 300	up to 4,000	-	100 x 100 ●■	90 / 100 ●■	120 x 120 ●■	100 x 100 ■
		up to 300	up to 5,000	-	120 x 120 ●■	90 / 100 ●■	130 x 130 ●■	110 x 110 ■
		up to 300	up to 7,000	-	-	100 / 120 ●■	150 x 150 ●■	120 x 120 ■
48	ROLLER SYSTEMS	up to 300	up to 9.000	-	-	100 / 120 ●	160 x 160 ●	140 x 140 ■
		special dimnsions	on request					
		over 300 up to 1,000	up to 300	21 / 28 ●	40 x 40 ●■	40 / 45 ●■	60 x 60 ●■	-
58	DURASPRING SPIRAL SPRINGS	over 300 up to 1,000	up to 500	21 / 28 ●	50 x 50 ●■	45 / 50 ●■	70 x 70 ●■	-
		over 300 up to 1,000	up to 1,000	30 / 32 ●	60 x 60 ●■	45 / 50 ●■	70 x 70 ●■	-
		over 300 up to 1,000	up to 1,500	45 ●	70 x 70 ●■	50 / 60 ●■	80 x 80 ●■	-
		over 300 up to 1,000	up to 2,000	60 ●■	80 x 80 ●■	60 / 70 ●■	90 x 90 ●■	-
68	VIEWING SYSTEMS	over 300 up to 1,000	up to 2,500	50 / 60 ●■	80 x 80 ●■	70 / 80 ●■	110 x 110 ●■	-
		over 300 up to 1,000	up to 3,000	60 / 70 ●■	90 x 90 ●■	80 / 90 ●■	120 x 120 ●■	-
		over 300 up to 1,000	up to 4,000	70 / 80 ●■	100 x 100 ●■	80 / 100 ●■	130 x 130 ●■	-
		over 300 up to 1,000	up to 5,000	80 / 90 ●■	120 x 120 ●■	90 / 100 ●■	140 x 140 ●■	-
		over 300 up to 1,000	up to 7,000	90 / 100 ●■	130 x 130 ●■	100 / 120 ●■	150 x 150 ●■	-
		over 300 up to 1,000	up to 9,000	100 / 120 ●■	150 x 150 ●■	100 / 120 ●■	160 x 160 ●■	-
		special dimensions	on request					

All dimensions in mm.

The band with is depending on the kind of drive FM or TF), a FM drive requests a band width of 50 mm min., a TF type : 50 mm min.

* 21/28 means a roller diameter of 21 mm for regular load and 28 mm for high load. Other types and sizes on request. Square outer housing, rollo size is equivalent to outer dimension of the tube. Type without housing: first number: standard spring force/second number: enlarged spring force is required.

● non-metallic band possible

■ steel band possible

ROLLER COVERS

Dimensions of housings

The measurements for the ROLLER System housings must take into account the band width, length of extension and also type of drive.

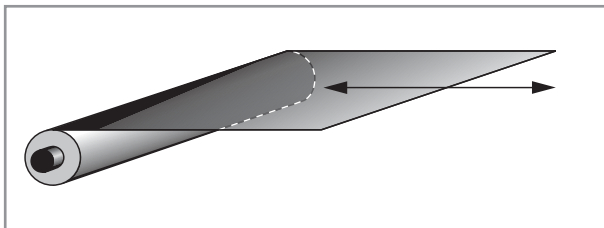
Design data for calculation

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

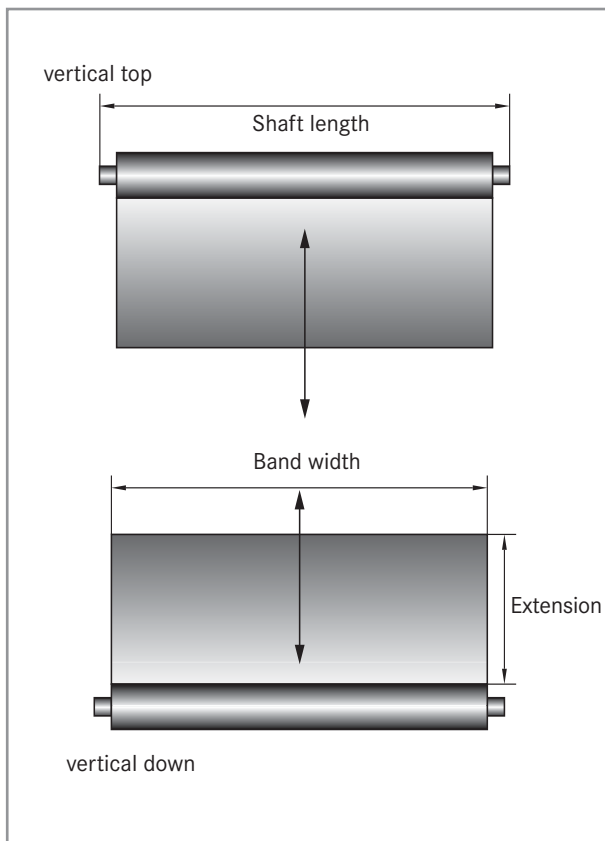
- speed of travel
- intended total number of cycles, working life
- frequency and speed of changes in travel direction
- mounting position, direction of swarf

Operating position

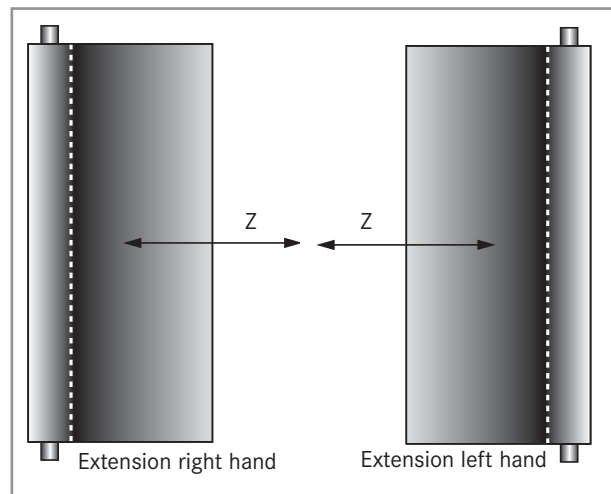
The operating position can be vertical, horizontal or transverse, with an extension to the left, right, top or bottom side.



Operating position: horizontal flat



Operating position: vertical flat



Operating position: horizontal upright, e.g. for X axis covers

Pre-loading

- ROLLER systems with housing are pre-loaded at the factory to customer or HEMA specifications and are ready to install.
- ROLLER systems without housing are not pre-loaded.



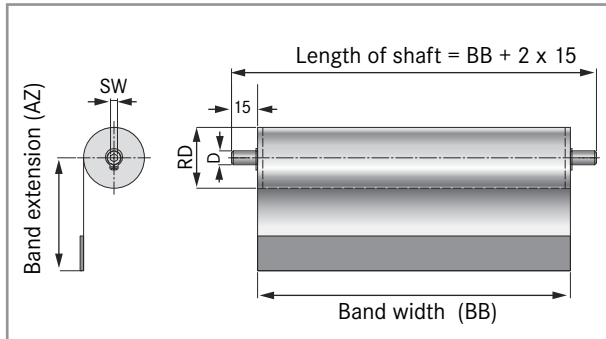
Roller blind with cover band

Cover material

The outer band is subjected to a wide variety of stresses; the material chosen depends on the field of application:

- Steel bands with rounded edges (standard and stainless steel): Protection from cold and hot chips, coolants. Maximum width of steel band standard 300 mm, steel band stainless 1000 mm
- Synthetic bands, e.g. Preotex, awning cloth, Neoprene, etc., Protection from dust, coolants, contact guard
- Link aprons: Protection from large chips, coolants: Recommended for applications requiring additional lateral stability

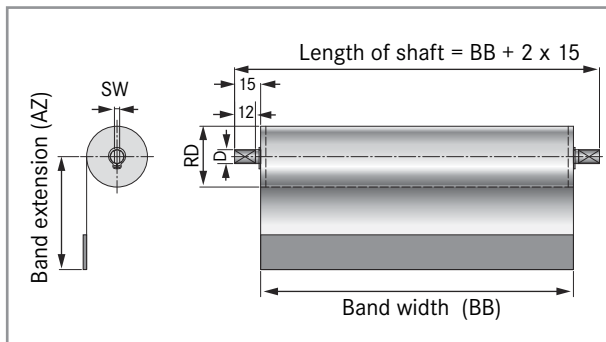
ROLLER COVERS



Standard shaft for ROLLER blind without housing

Type of shaft	inner hexagon (SW)	Projecting
E1-08	4	2 x 15
E1-10	4 / 6 optional	2 x 15
E1-12	6	2 x 15

Standard shaft for ROLLER blind without housing



Shaft for ROLLER blind without housing (optional)

Type of shaft	inner hexagon (SW)	Maximum width across flats
E2-08	4	3 x 12
E2-10	4 / 6 optional	4 x 12
E2-12	6	6 x 12

Shaft for ROLLER blind without housing (optional)

Mounting

A variety of mounting positions is available. ROLLER covers with housing can be mounted at the standard positions shown in the next column.

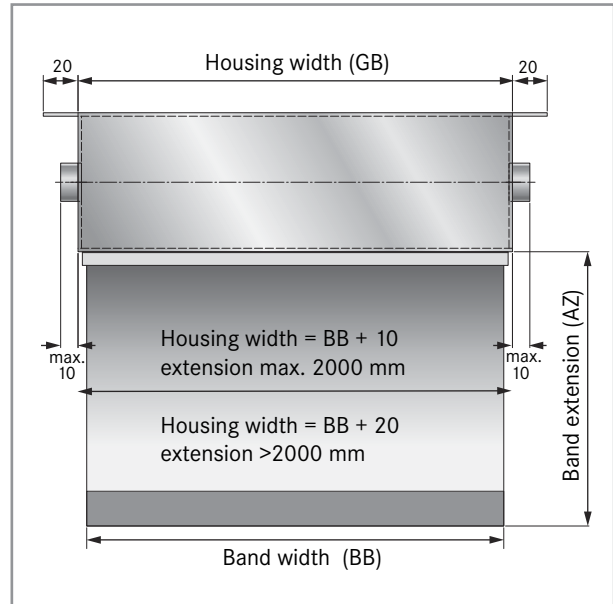
For mounting roller covers without housing two holder types are available for easy and permanent fixing:

- Standard holder (HL)
- Heavy duty holder (HS)

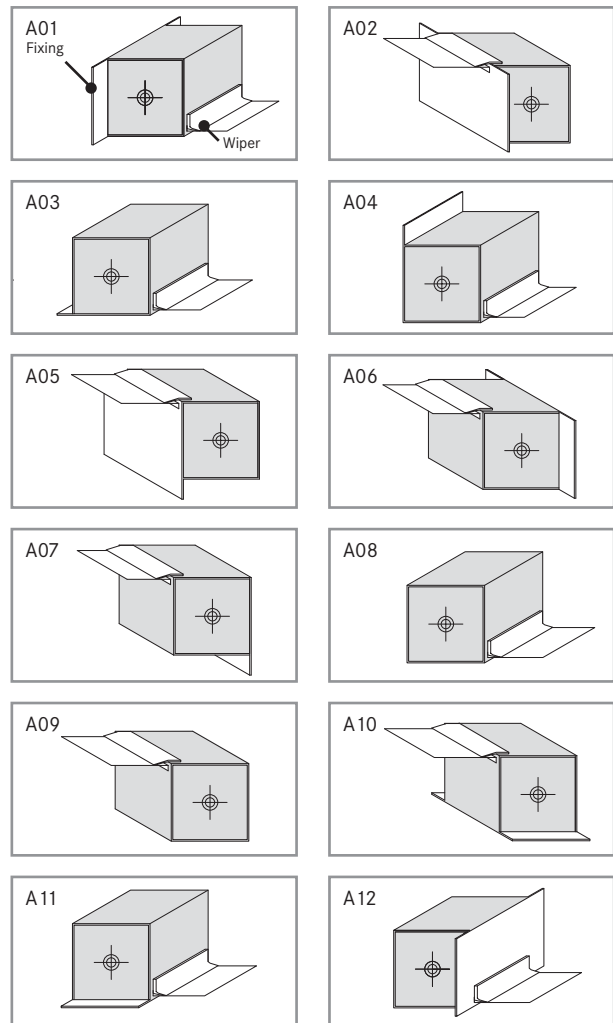
Customized holders can be produced for special requirements.

Please note

ROLLER covers ordered without housing are produced with round shafts as standard.

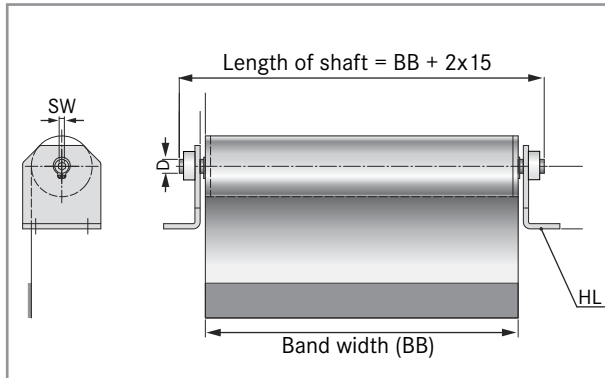


Calculation of housing dimension

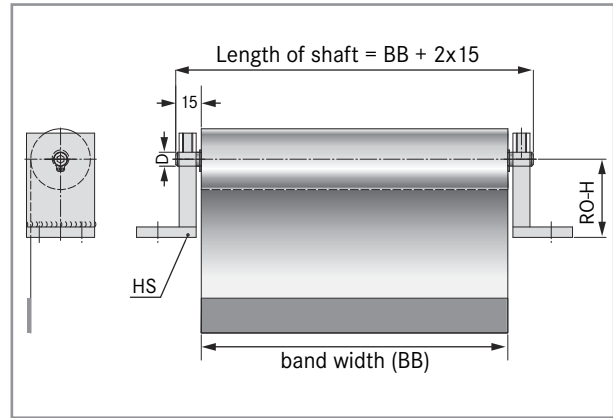


Fixing types for ROLLER with housing

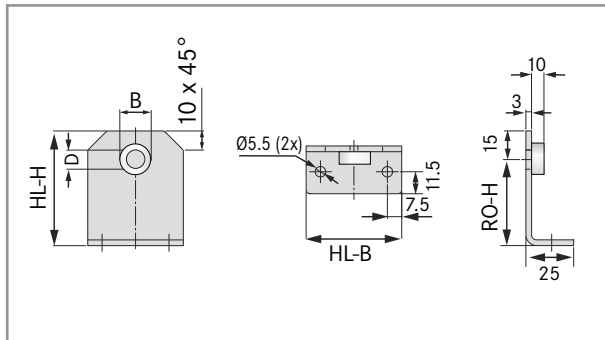
ROLLER COVERS



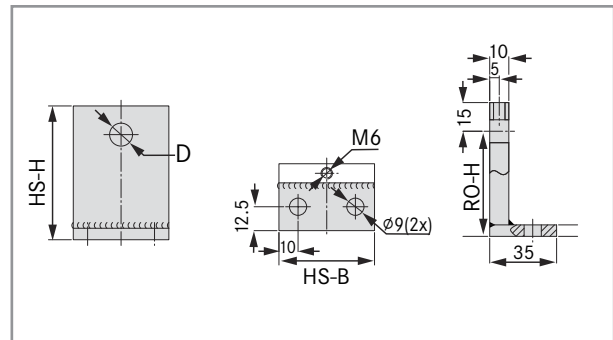
Standard holder (HL)



Heavy duty holder (HS)



Standard holder (HL)



Heavy duty holder (HS)

Legend

D	Diameter of axle
B	Collar
SW	Wrench size
RO-H	Space axis to holder
HL-B/HS-B	Width holder standard/holder heavy duty
HL-H/HS-H	Height holder standard/holder heavy duty

Halter-Typ	RO-H	D	B	HL-B	HL-H
HL-30/8	30	8	16	40	45
HL-30/10	30	10	20	40	45
HL-30/12	30	12	22	40	45
HL-40/8	40	8	16	45	55
HL-40/10	40	10	20	45	55
HL-40/12	40	12	22	45	55
HL-45/8	45	8	16	50	60
HL-45/10	45	10	20	50	60
HL-45/12	45	12	22	50	60
HL-50/8	50	8	16	65	65
HL-50/10	50	10	20	65	65
HL-50/12	50	12	22	65	65
HL-60/10	60	10	20	65	75
HL-60/12	60	12	22	65	75
HL-70/10	70	10	20	65	85
HL-70/12	70	12	22	65	85
HL-80/10	80	10	20	65	95
HL-80/12	80	12	22	65	95

Type of holder	RO-H	D	HS-B	HS-H
HS-45/10	45	10.2	50	60
HS-45/12	45	12.2	50	60
HS-50/10	50	10.2	50	65
HS-50/12	50	12.2	50	65
HS-60/10	60	10.2	70	75
HS-60/12	60	12.2	70	75
HS-70/10	70	10.2	70	85
HS-70/12	70	12.2	70	85
HS-80/10	80	10.2	90	95
HS-80/12	80	12.2	90	95
HS-90/10	90	10.2	90	105
HS-90/12	90	12.2	90	105
HS-100/10	100	10.2	100	115
HS-100/12	100	12.2	100	115
HS-120/10	120	10.2	100	135
HS-120/12	120	12.2	100	135
HS-140/10	140	10.2	100	155
HS-140/12	140	12.2	100	155
HS-150/10	150	10.2	100	165
HS-150/12	150	12.2	100	165

All dimensions in mm if not marked otherwise. Errors and omissions excepted.

SERVICE & QUALITY	02
STANDARD BELLOWS	08
SAUWRAI BELLOWS	18
SPECIAL BELLOWS	26
BACKWALL SYSTEMS	36
GLADIATOR STEEL COVERS	38
ROLLER SYSTEMS	51
DURASPRING SPIRAL SPRINGS	58
VIEWING SYSTEMS	68

ROLLER COVERS

Fixing the band

The band is fixed to your requirements with flat or angular steel brackets bonded or riveted to the band on one or both sides.

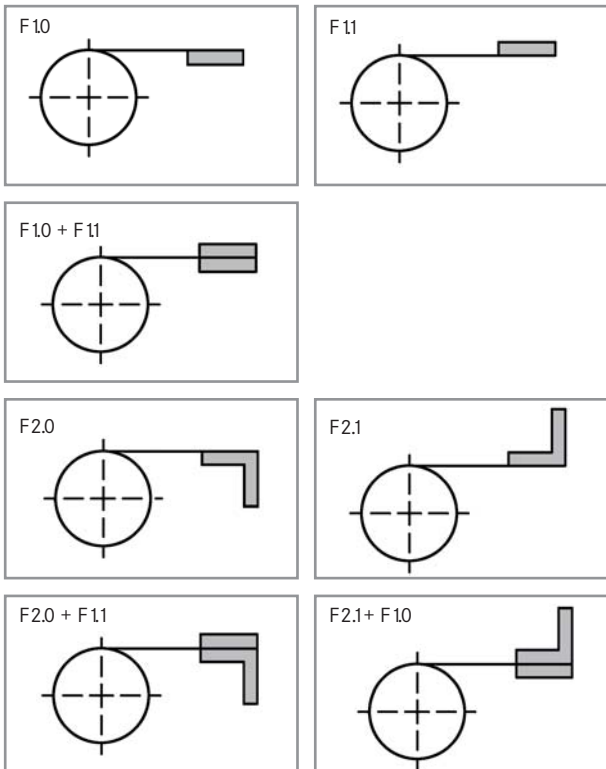


ROLLER with bonded fixing bracket F.1.1



Link Apron with fixing bracket F.2.1, riveted

Variety of band fixing types



Wiper

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.

Replacement

When ordering replacement rollers please quote the serial number for the ROLLER cover.

This number can be found either on the roller blind itself or on a label on the housing.



Rollo with housing and HEMA serial number

Security information

Please observe the mounting and maintenance information supplied with each ROLLER cover.



Mounting and maintenance information for ROLLER

ROLLER COVERS AND LINK APRONS

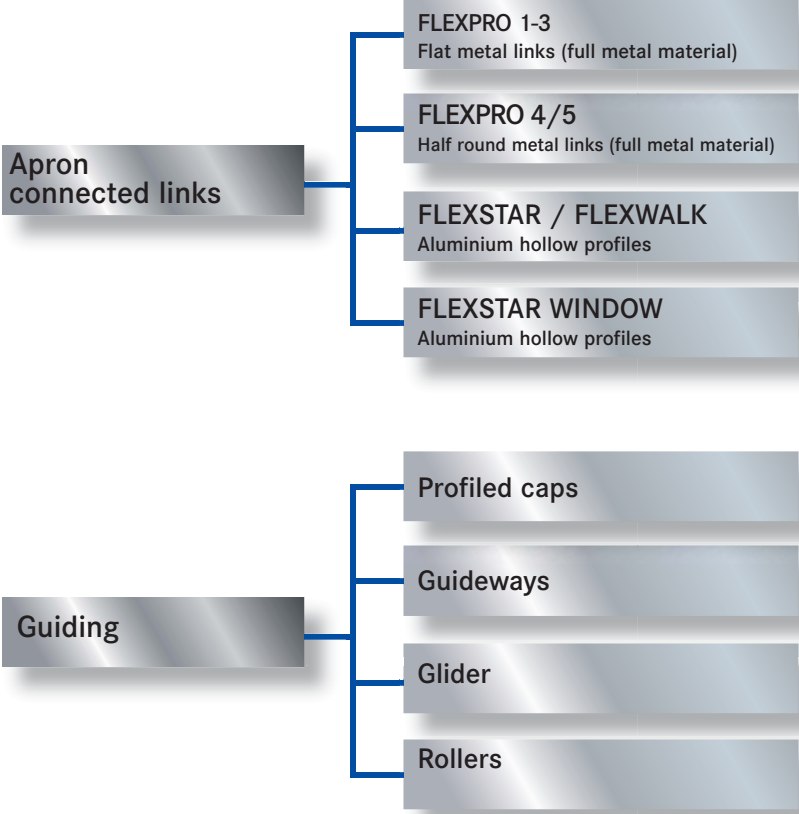


SERVICE & QUALITY	02
STANDARD BELLOWS	08
SAUWRAI BELLOWS	18
SPECIAL BELLOWS	26
BACKWALL SYSTEMS	36
GLADIATOR STEEL COVERS	38
ROLLER SYSTEMS	53
DURASPRING SPIRAL SPRINGS	58
VIEWING SYSTEMS	68

MODULAR CONCEPT

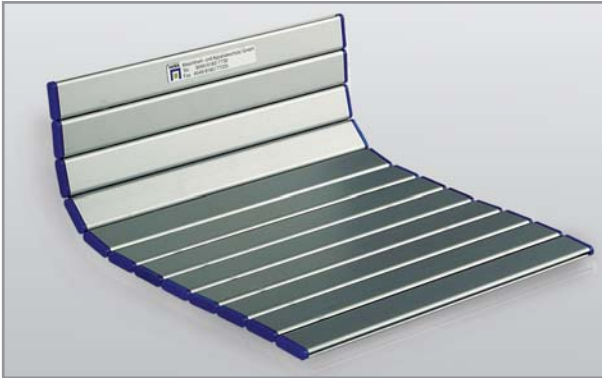
02	SERVICE & QUALITY
08	STANDARD BELLOWS
18	SAUMRAI BELLOWS
26	SPECIAL BELLOWS
34	BACKWALL SYSTEMS
38	GLADIATOR STEEL COVERS
54	ROLLER SYSTEMS
58	DURASPRING SPIRAL SPRINGS
68	WEAVING SYSTEMS

LINK APRONS

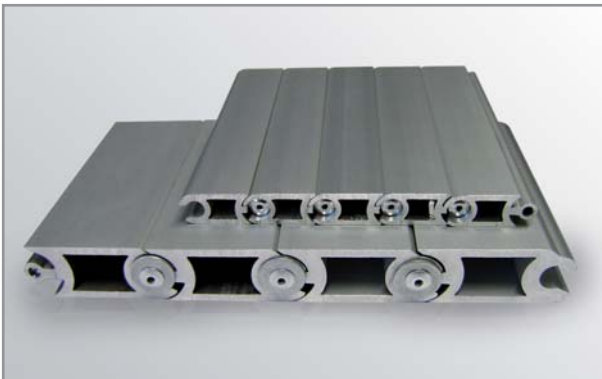


LINK APRONS

Link aprons are a low-priced type of cover, providing excellent service in front line protection against chips and coolant. In many cases, link aprons serve as a protective hanging curtain or run over a guide roller for especially smooth running. They offer good flexibility, are mounted easily and require little space.



FLEXSTAR Link apron aluminium



FLEXSTAR ALC Aluminium-Profil

Combination with ROLLER system

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 its wound-up state. The drive unit is exactly matched to the additional weight and forces. We offer complete guide systems based on travel rails, steel cables or aluminium profiles.



FLEXSTAR Link apron with holder and fixing bracket

HEMA link aprons are subdivided into the basic types:

- FLEXPRO aprons
- FLEXSTAR aprons
- FLEXWALK
- FLEXSTAR Windows

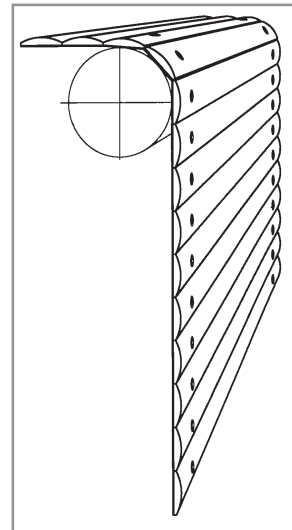
Link aprons

The metal sections are flat or semi-circular aluminium, brass or steel sections. They are bonded and riveted on a very tear resistant synthetic carrier material

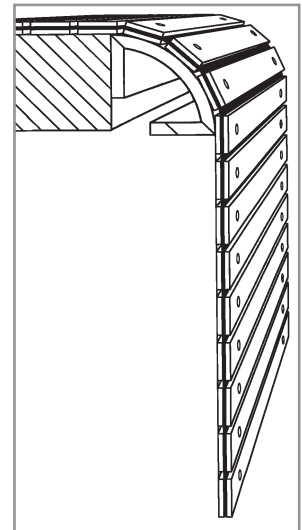
The sections have a standard width of 15 or 16 mm, the height of the rods is between 2.0 mm (flat) and 3.0mm (semi-circular). The link aprons are manufactured in a width up to 3000 mm.



FLEXPRO link apron, different combinations



FLEXPRO (Type 4/5)



FLEXPRO (Type 1/2/3)

FLEXSTAR aprons

These aprons are made up of anodised hollow aluminium sections joined with a polyurethane strip. On the visual side the glider elements are rounded at the edges (FLEXSTAR-S) or straight (FLEXSTAR-C/CR).

SERVICE & QUALITY	02
STANDARD BELLOWS	08
SAUWRAI BELLOWS	18
SPECIAL BELLOWS	26
BACKWALL SYSTEMS	36
GLADIATOR STEEL COVERS	38
ROLLER SYSTEMS	55
DURASPRING SPIRAL SPRINGS	58
VIEWING SYSTEMS	68

LINK APRONS

02

SERVICE & QUALITY

08

STANDARD BELLOWS

18

SAUMIRAI BELLOWS

26

SPECIAL BELLOWS

34

BACKWALL SYSTEMS

38

GLADIATOR STEEL COVERS

56

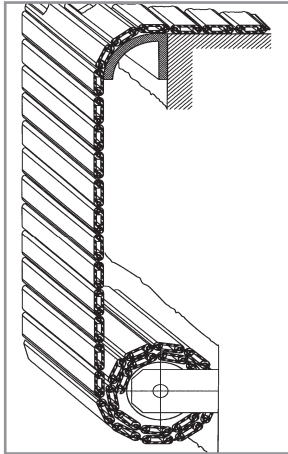
ROLLER SYSTEMS

58

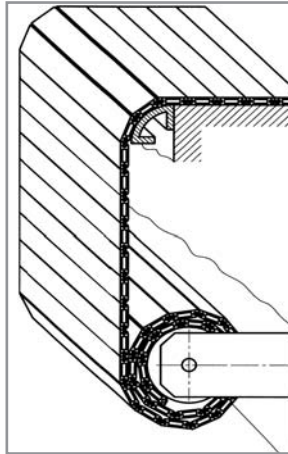
DURASPRING SPIRAL SPRINGS

68

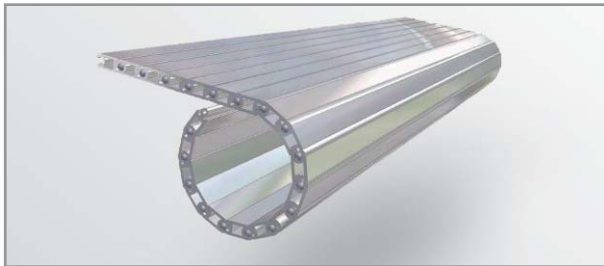
VIEWING SYSTEMS



FLEXSTAR-S



FLEXSTAR-C/CR



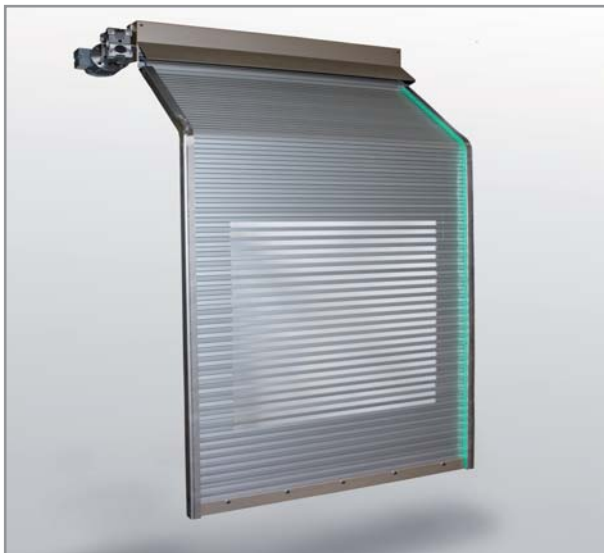
FLEXSTAR ALC14/ALC25

Both extrusion have bending restraints

- FLEXSTAR-S can move freely in both directions
- FLEXSTAR-C/CR permits only one-way bending, adopting a stable flat position in the other direction

Example for a customized solution

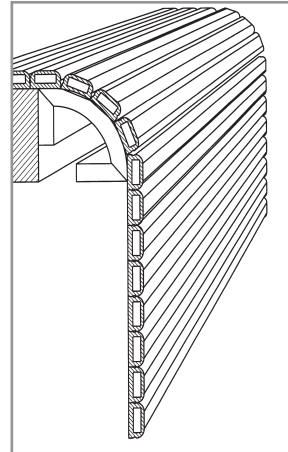
For an application in the packaging industry a combination of electric drive, FLEXSTAR apron covers, and steel band was designed as a kind of Faraday cage. A mechanical drive can be integrated as an option.



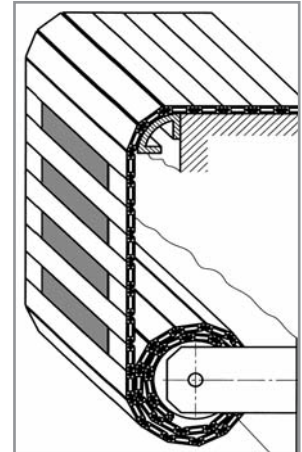
Example of link apron with electric drive

FLEXWALK

The FLEXWALK type is available in two section sizes. It is a combination of extremely stable hollow aluminium sections and a carrier fabric of synthetic or stainless steel band. This is used when the customer requires an accessible solution. The aprons with a steel band as carrier material are joined with a high-performance bond of the required flexibility. These steel band aprons can therefore be used permanently on roller blind systems as well.



FLEXWALK



FLEXSTAR-Windows

FLEXSTAR Windows

FLEXSTAR aprons combined with vision inserts are very popular on the assembly sectors. We offer different types with rigid polycarbonate inserts or flexible see-through foil



FLEXSTAR Windows with see-through foil



FLEXSTAR Windows with polycarbonate inserts

Material

These link aprons consist of hollow section solutions manufactured to the greatest precision. The gap dimensions between the sections provide the best possible protection for the polyurethane strip. End caps improve the gliding properties. The standard colour of these caps is blue, but other colours are available on request.

LINK APRONS

Mounting

The link aprons can be fastened with

- hollow aluminium section angles
- metal ledges
- metal angles at the end of the apron

Customers are free to choose the shape or fixing hole pattern.



FLEXSTAR with synthetic band connection, end caps blue

link apron type exterior / interior section fixing	connecting material	section with in mm	section height in mm	smallest unwind radius in 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 semicircular alu./aluminium bonded and riveted	synthetic carrier band	16/15	3.0/2.0	35	
FLEXWALK 1 Hollow alu. section, anodised bonded and riveted	synthetic carrier band or stainless steel	22 22	10.0 10.0	40 100	
FLEXWALK 2 Hollow alu. section, anodised bonded and riveted	synthetic carrier band or stainless steel	18 18	8.0 8.0	40 100	
FLEXSTAR-S Alu. hollow profile, anodised* indentation	synthetic band connection end caps available	20	5.5	35	
FLEXSTAR-C Hollow alu section, anodised* indentation	synthetic band connection end caps available	20	5.5	35	
FLEXSTAR-CR Hollow alu section, anodised* indentation	synthetic band connection	25	8.0	70	
FLEXSTAR ALC14 Hollow alu section, anodised indentation	rivet aluminium	25	14.0	40	
FLEXSTAR ALC25 Hollow alu section, anodised indentation	rivet aluminium	50	25.0	90	

*Inserts of see-through foil or polycarbonate (Windows) possible

All dimensions in mm if not marked otherwise. Errors and omissions excepted.

SERVICE &
QUALITY 02

STANDARD
BELLOWS 08

SAUWRAI
BELLOWS 18

SPECIAL
BELLOWS 26

BACKWALL
SYSTEMS 36

GLADIATOR
STEEL COVERS 38

ROLLER
SYSTEMS 57

DURASPRING
SPIRAL SPRINGS 58

VIEWING
SYSTEMS 68