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**GLADIATOR**  
**Telescopic Steel Covers**  
**Wiper Systems**

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## GLADIATOR Telescopic steel covers

Telescopic steel covers are the traditional cover of machining tools. They are used wherever the effective protection against the intrusion of chips and other sharp-edged particles is essential. The intrusion of coolant can be effectively reduced by design techniques and suitable wiper systems.

### THE OFFER:

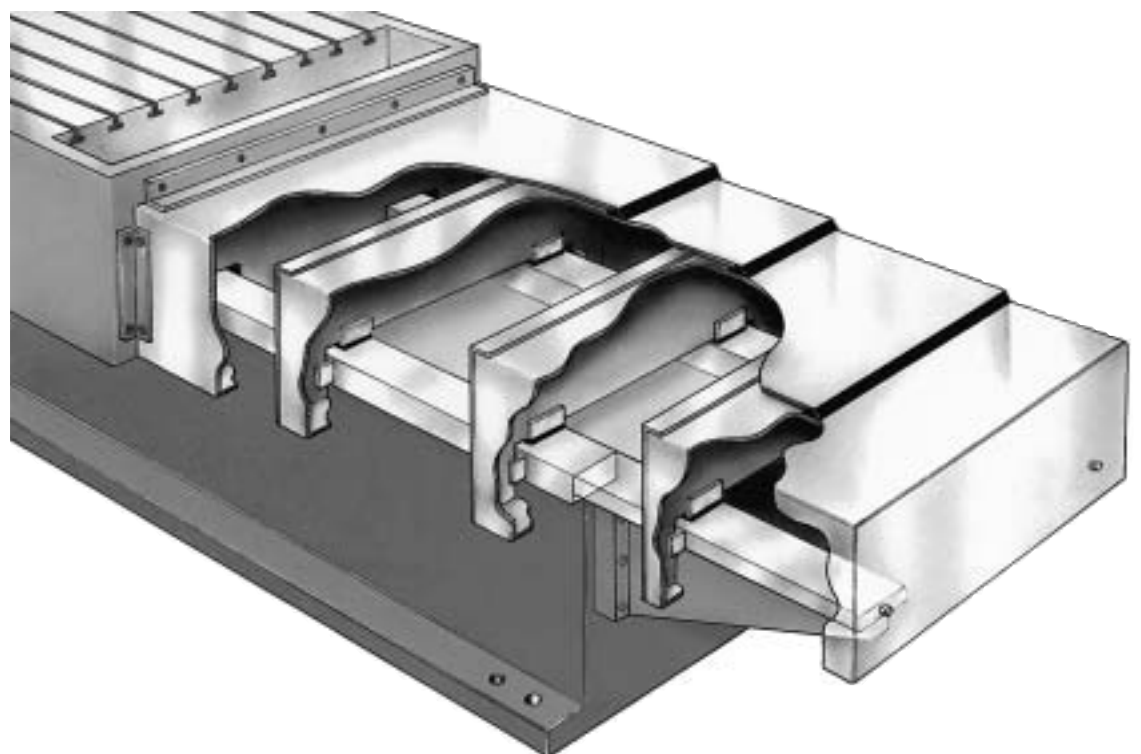
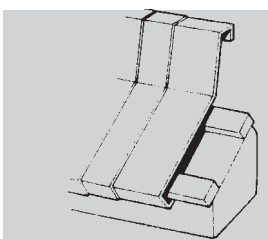
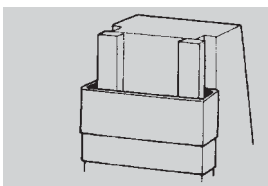
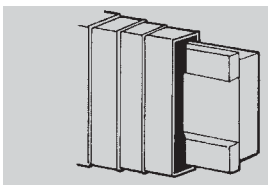
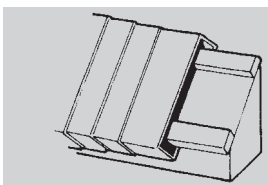
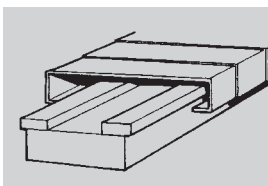
- cost efficient production at our partner HESTEGO in the Czech Republic, where production facilities are of the latest standard
- redesigned wiper systems
- high quality of production
- innovative solutions in the area of telescopic steel covers
- support and advice by the HEMA distributors network
- repair service and spare parts ex stock
- short design and delivery times

THE RESULT: high level of quality and good service at a fair price.

### Basics of design

- prices are almost directly proportional to the number of cover boxes, the more boxes are required, the higher the price

- the depth of one box should not be larger than 750 mm
- the relation of box depth to box width should not exceed 1:6
- the lateral cover height should not be larger than the depth of the box because of danger of overturning
- principally, use only graded types (structure graded in length), because otherwise dirt will get into the cover by protruding wipers
- with coolant exposure, the top side of the covers should be inclined by an angle of 5°
- principally, allow space for an under-return of the boxes, this will stiffen the structure and will provide a constant pretension
- the minimum distance of the smallest box to the guiding should be 12 mm
- for calculating the travel of the cover, add 5 mm of reserve per box to the travel of the machine
- for covers used in vertical position, gliders should be used for the undergrip, which should be screwed on at least to one side for later (dis)mounting
- the general rule is: maximum extension and minimum compression should be at least in the relation 10:1



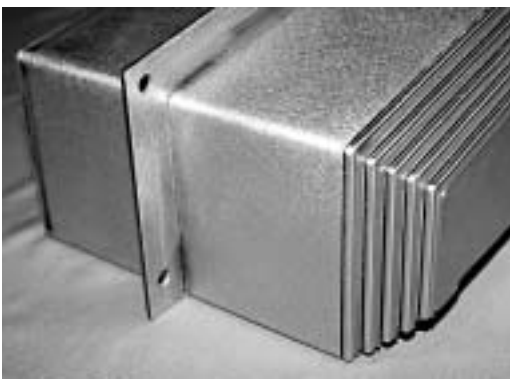
## Material and impermeability

The steel covers are produced from high quality cold-worked sheet steel in material thickness from 1,5 to 3 mm, on demand in stainless steel quality as well. By special treatment of the surface the design of the cover is additionally upgraded. We offer the suitable type of cover (horizontal, vertical, inclined, traversal) for all common types of machines together with the corresponding guide way solutions.

Due to the design of the steel covers a complete impermeability to fluids is guaranteed. The standard types generally provide sufficient protection, for extreme loads help is available by a special channel system or a thermal bonded ELASTIC bellow as further protection. By additional sealing solutions which will require regular service, the intrusion of coolant can be prevented.

## Material and impermeability

### Wiper profiles:



Redesigned wipers with exchangeable lip and lip protection (DSP 8/12, DV 12) as well as standard wipers (P 01/P 02). Both come with optimised wiper profiles and differing degree of hardness for dry and wet machining.

### Supporting rollers:



required for covers with more than 50 kg of unloaded weight; hardened guide ways (> 58 HRC) or separate support/guide ways, no matter how large the total number of rollers is, the total weight should not be spread on more than 4 rollers.

## Components

### Support and guide gliders:



Special profiled brass parts with sufficient contact width (appr. 5 mm) suitable for hardened and soft guide ways, also with PUR lips

### Checker plate/tool deposit plate:



Walk-on is optionally possible, please make note when ordering.

## Components

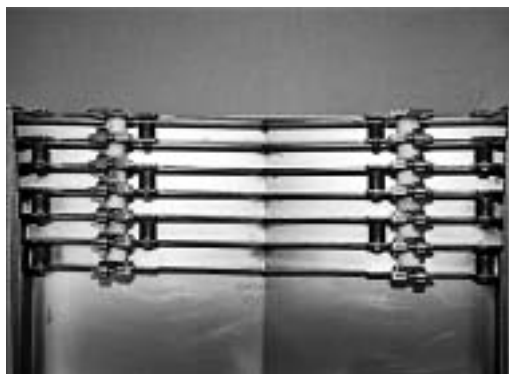
### Pantograph systems:

For high speed of more than 30m/min we build in pantograph systems (graded versions as well), the required space is enlarged in this case.



### Glide and damper systems:

Glide and damper systems reduce impact, noise and friction, optionally, wipers with dampers can be used as well.



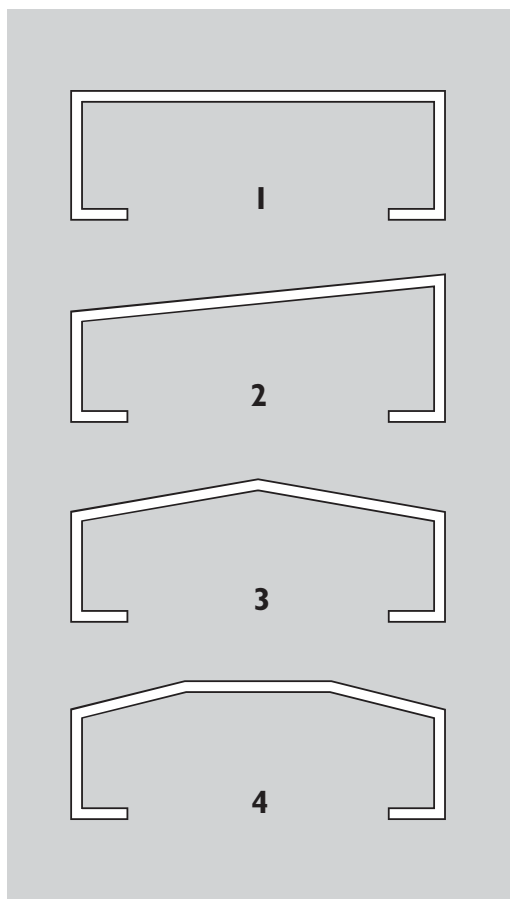
### Suspensions:

For mounting/dismounting and transport suitable suspensions can be used.

## Design versions

For most applications the cost-efficient standard design is suited (1). It can be used without any problem up to a width of 900 mm. For larger widths, additional edges are required to raise the traversal stiffness. This is guaranteed by the roof shape with single (3) or double edges (4). Furthermore, it provides along with the inclined shape (2) an optimal draining of liquids and chips.

### Standard shapes:



If the compression exceeds the available free bearing length, a support has to be created by extension supports. For the reversed case, the smallest front box section may be extended by a

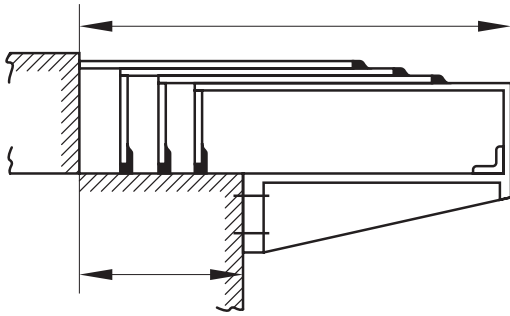


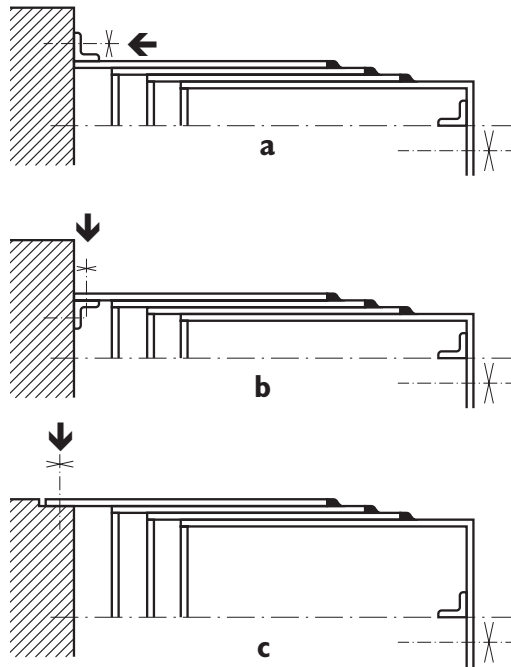
plate. The problem here is that chips and dirt may accumulate impairing the functioning of the cover:

Pay attention to a gapless transition from the guide way to the machine bed extension. Extensions are required only in the area of guide or support gliders. They can be manufactured from common steel (i.e. St37K).

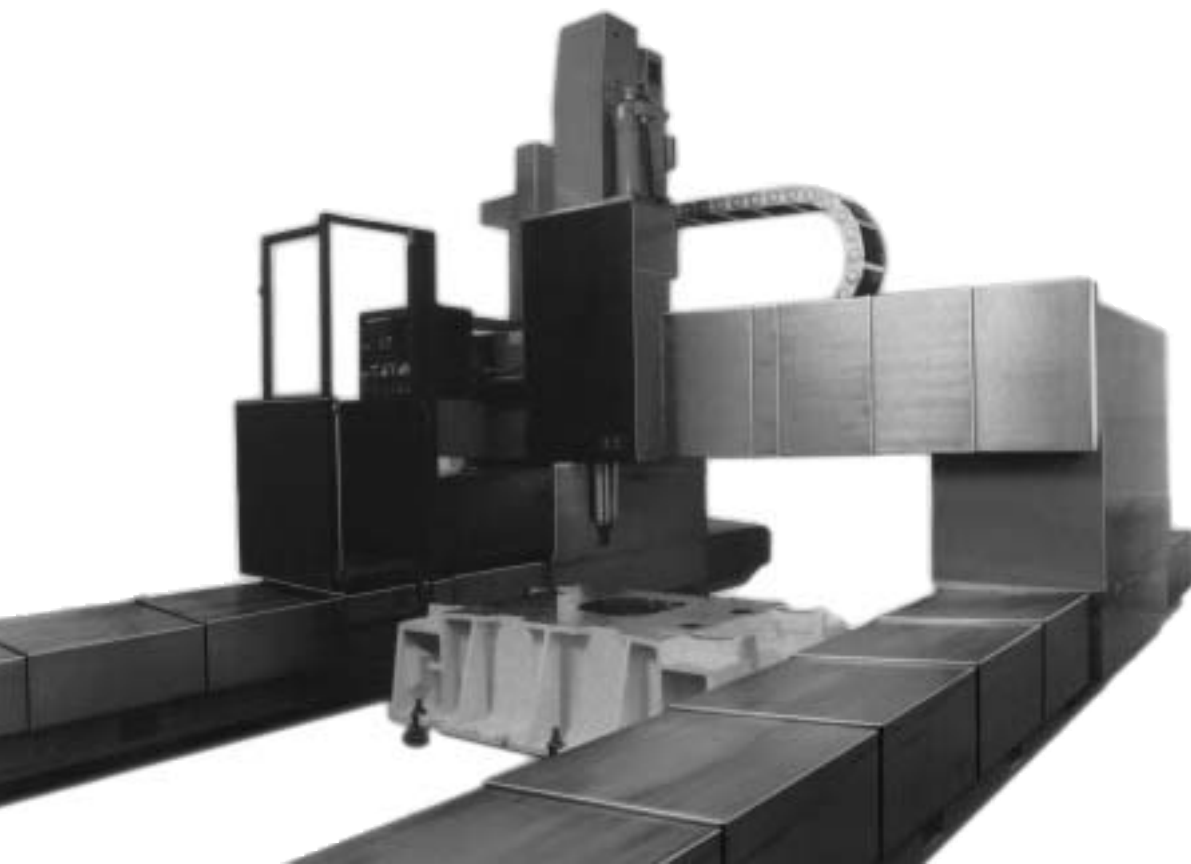
## Engine bed extension

For mounting and fixing of the steel covers we offer you solutions specifically to the customer's individual situation. The covers are fixed either directly to the corresponding starting or final box section or by additional fixing shoulders/knee which may be attached internally or externally.

- The optimum:  
fixing by lateral external knee **(a)**
- must be without strain:  
fixing by upper internal knee **(b)**
- requires high accuracy for mounting:  
fixing the box directly from the top **(c)**



## Mounting and fixing



## Set-up and transport

The covers are transported in the closed position, additionally they should be stored in an environment free of humidity.

Before shipping, the telescopic steel covers are sprayed with an anti-corrosion oil and wrapped

into plastic foil. This will protect your steel cover against corrosion during transport and longer storage periods. Please lubricate the entire steel cover from the outside before operation.

## Service and maintenance

Telescopic steel covers require only minimum maintenance during deployment. To avoid damages, you should give them a regular inspection and cleaning (depending on the degree of pollution). Please observe the following topics:

### Surface of the steel covers:

Please extend the steel covers and clean off any dirt. Next you should rub the steel cover with an oil-soaked rag. This will prevent early wear and corrosion.

Do not clean by compressed air, because foreign particles will be forced into the interior of the steel cover.

### Steel covers and chip exposure:

When heavily exposed to chips, the steel cover should be checked frequently and regularly for intruded chips. If chips have intruded to the inside, e.g. by swirling, the steel cover is to be disassembled and cleaned carefully.

Chips located in between the boxes will cause destruction of the steel cover.

## Wearing parts and service:

Regular, preventive maintenance is the basic for long-term reliable operation. Please assure that the following wearing parts are exchanged at regular intervals, depending on wear:

- wipers
- rollers
- pantographs
- gliders
- guiding ledges

### Glider:

Please renew the gliders when their bearing surface shows heavy wear or deformation or when chips have been included.

### Guide ways:

For inspecting the guide ways of the machine, fold the steel cover together and disconnect the joint at the largest box. Please spray at this opportunity the lower surface of the cover with oil.

### Seals:

Check regularly joints which had been treated with sealant. Should these spots detach or dissolve, e.g. by aggressive coolants, they have to be sealed with appropriate sealant (e.g. PU or silicon).

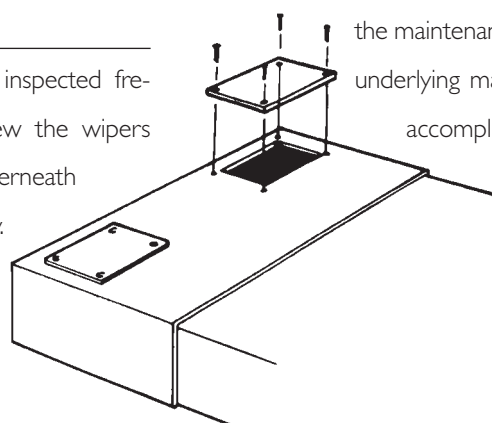
### Wiper lips:

Wipers and their lips should be inspected frequently and regularly. Please renew the wipers and lips if the covering boxes underneath them are no longer wiped properly.

This can be recognised by smear formation or remaining coolant and chips.

### Access windows (option):

By building in access windows into the largest box, the maintenance and repair of the underlying machine parts can be accomplished without having



to remove the complete cover.

The current program range comprises slide way wipers, wipers for telescopic steel covers and sealing wipers for guides. For inquiries/orders simply specify the desired type, area of application and order quantity or send a drawing.

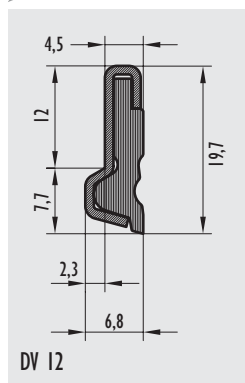
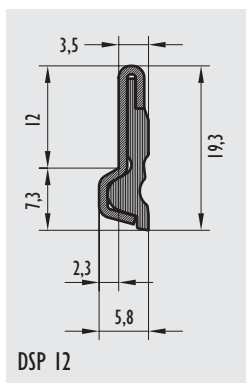
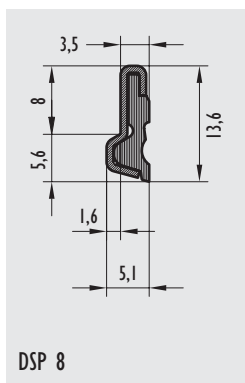
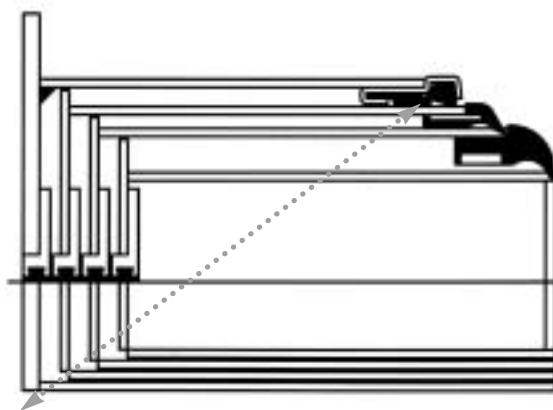
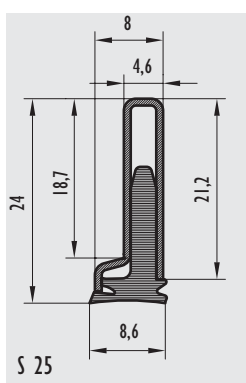
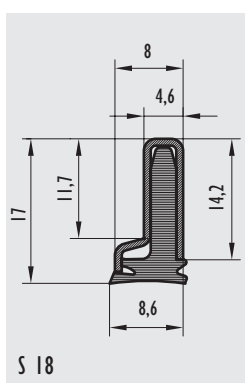
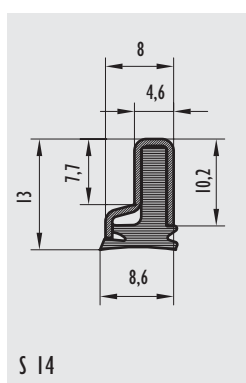
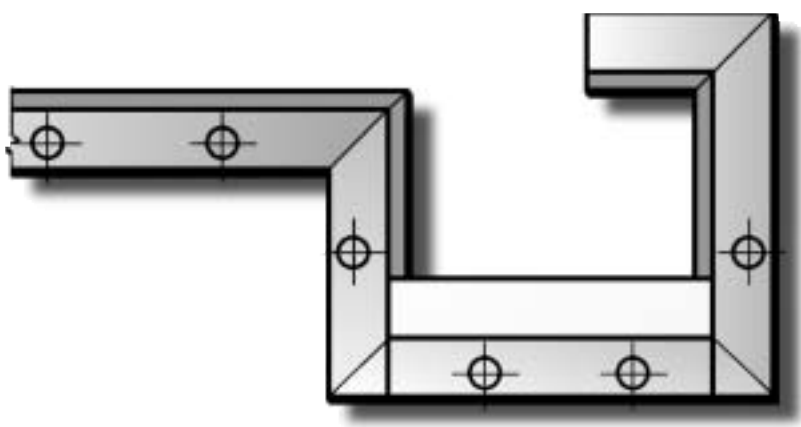
The lips of the wipers are manufactured from high-grade polyurethane or synthetic rubber showing excellent mechanical and chemical properties. They are temperature resistant up to maximum 130°C (rubber 135°C), continuously up to 90°C (rubber 100°C).

## Data of guideway wipers

The guideway wipers – specially suited to be build into limited space – are manufactured in many shapes, sizes and different materials. We offer profiled wipers ready for installation according to customer's specifications. Standard wipers are usually available ex stock starting from a length of 500 mm. All wipers can be cut to length by the customer himself.

The basic S-line possess a specially designed two-sided lip serving as an additional rear sealing against under-flushing by coolant. Its outer support of nickel chromium steel offers high rigidity and stability under load.

Telescopic wipers can be used in vertical position for guideways, too.



## Technical data

### Wiper data for telescopic steel covers

The wiper systems for steel covers can be subdivided into two main groups.

The P 01/P 02 series can be used universally. It can be used horizontally for telescopic steel covers or vertically for guideways. A polyurethane wiper lip is vulcanised onto one or two steel profiles and thus permanently bonded. Therefore the complete wiper must be replaced when worn. They are available in lengths starting from 500 mm.

In contrast to these, the wipers DSP and DV differ due to easy replaceability of the wiper lips and high compatibility with systems common in the market.

The lips of the P 01/P 02 wipers are manufactured from high-grade polyurethane and show good mechanical and chemical properties. They are temperature resistant up to maximum 130°C, continuously up to 90°C. Fixing is possible by screwing, welding or riveting.

The wipers are available ex stock as a rule. The wiper lips and metal profiles may be ordered separately for the series P 01 and P 02. The wiper lips are delivered in lengths from 1,000 up to 10,000 mm, the metal profiles from 1,000 to 3,000 mm.

**Vulcanised wiper systems are available according to customer's drawing. Further wiper types on demand.**

