

ASSEMBLY AND SERVICE INSTRUCTIONS  
FOR TELESCOPIC STEEL COVERS

**||| HENNIG®**  
global excellence in machine protection

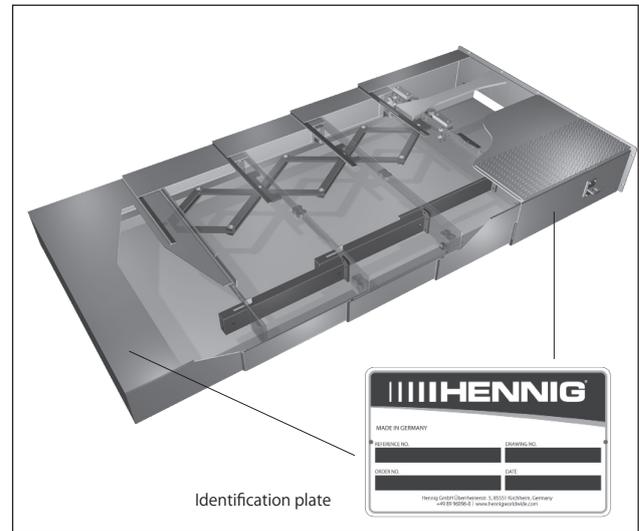
# ASSEMBLY AND SERVICE INSTRUCTIONS FOR TELESCOPIC STEEL COVERS

Dear customer,

We thank you very much for choosing to buy a telescopic steel cover from Hennig. Please read the following sections on installation, maintenance, and care, so that your steel cover can be used for a long time, reliably and without breakdowns.

Hennig telescopic steel covers serve the purpose of protecting sensitive guiding systems on processing machines from swarfs, dust, or liquids. Your Hennig steel cover is generally custom-manufactured and therefore may deviate in its details from the descriptions and illustrations in this instruction guide. When ordering replacement covers or replacement parts, please always provide the information from your steel covers identification plate. Only with original replacement parts from Hennig will you maintain the full value of your cover.

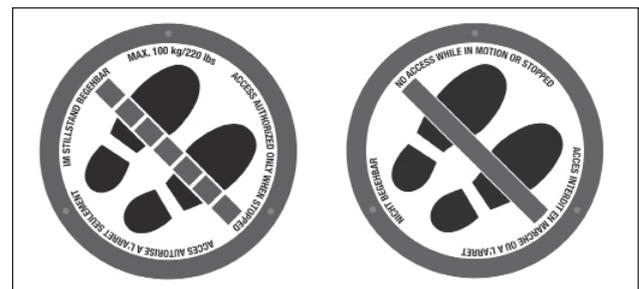
The identification plate of your Hennig steel cover displays the order number and part number of the cover. The identification plate (see illustration on the right side) is visibly installed on the exterior of the largest box. You may also find this information on a second identification plate on the inner side of the small box.



## A. HAZARDS AND SAFETY INSTRUCTIONS

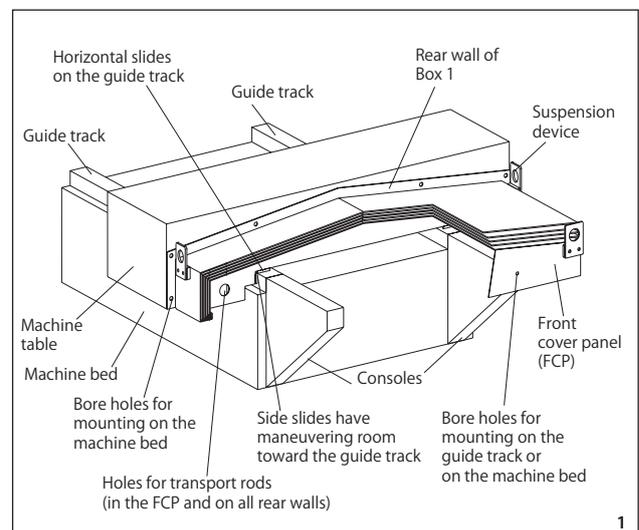
Hennig steel covers cannot normally be stepped on. Steel covers that are designed to be walkable carry a label to this effect, reading "may be stepped on when stationary" (see illustration on the right side). These covers may not be stepped on when in operation, in order to avoid any hazards for your employees and in order to avoid overburdening and damaging individual boxes, slides, rollers, and guide ways.

Hennig steel covers are intended for industrial use and should only be installed, maintained, and repaired by properly trained staff!



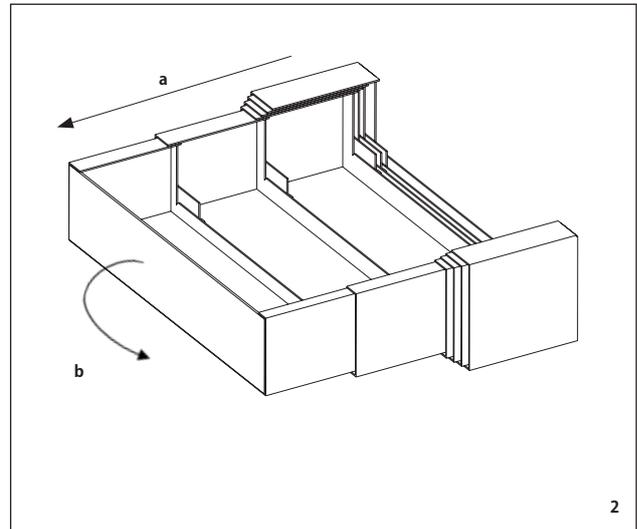
## B. INSTALLING THE STEEL COVER

1. Additional consoles are required if you need to lengthen the guide ways on the machine bed for fitting the steel covers (illustration 1). When doing so, please always make sure that the upper as well as side guide surfaces have smooth transitions.
2. Please ensure that the guide track on which the steel covers moves is straight, not sagging, outfitted with a surface (hardenend in the case of steel rollers).
3. In order to avoid tilting of the individual boxes and the damages that result from that, the covers should only be pulled apart on the guide track.
4. The mounting surfaces must run at a right angle to the direction of movement.
5. When transporting heavy covers with cranes the provided suspension system must be used.



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6. Covers with holes in all rear walls and in the front cover panel (FCP) must be raised with transport rods. Prior to lifting, these rods must be secured in such a way that the cover panel or the burden chains or lifting straps cannot slide out.
7. Please always make sure that burden chains, lifting straps, or rope hooks, do not damage the cover.
8. When fitting the steel covers, the lateral guide slides should not collide with the surface of the guide track, to avoid damage.
9. The steel covers must always be mounted onto the machine in their compressed state. Please anchor first the smallest and then the largest box, respectively, onto the machine bed or machine table, in order to prevent tension during operation.
10. Already existing mounting holes must be adjusted, if necessary.
11. All mounting screws should be secured (e. g. with Loctite).



## I. Horizontal and vertical steel covers and crossbeam covers in normal construction

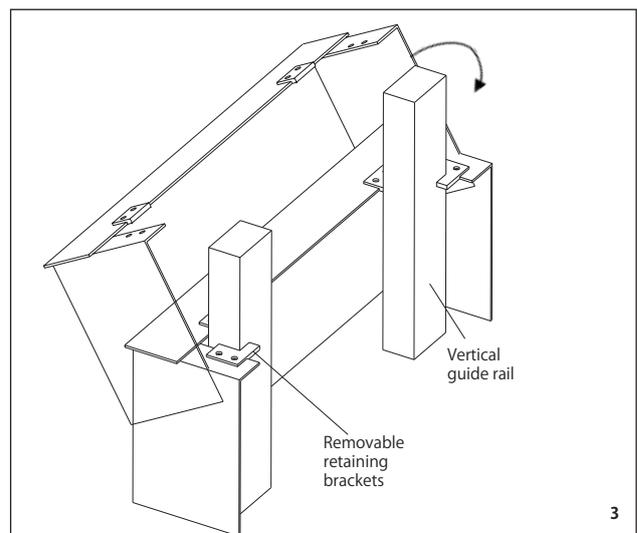
1. The mountings of the smallest box and of the largest box to the machine must be put in place "tension-free".
2. The largest box must be mounted in such a way that no pressure is exerted on the underlying boxes (i. e. elevate slightly).

## II. Vertical steel covers with unscrewable arresters

If the steel cover cannot be pushed onto the stand for installation, it must be outfitted with removable retaining brackets (see illustration 3).

Please take the following actions during installation, while paying attention to illustration 2 and illustration 3:

1. Pull the two smallest boxes out entirely (illustration 2/a), and release the smaller box by tilting it (illustration 2/b).
2. Unscrew the box's retaining brackets.
3. Place the box on the guide track and fasten it onto the machine.
4. Screw the retaining bracket on once again, and tighten the screws sufficiently using a screw locking device.
5. Pull out the next-largest box (illustration 2/a), tilt it downward (illustration 2/b) and unscrew the retaining bracket.
6. Place the box on the guide track and fasten it in place.
7. Screw the retaining bracket on once again, and tighten the screws sufficiently using a screw locking device.
8. Install all the remaining boxes as described in point 5, 6 and 7.
9. Fasten the largest box onto the machine. Perform this installation step only when the telescopic steel cover is compressed together!



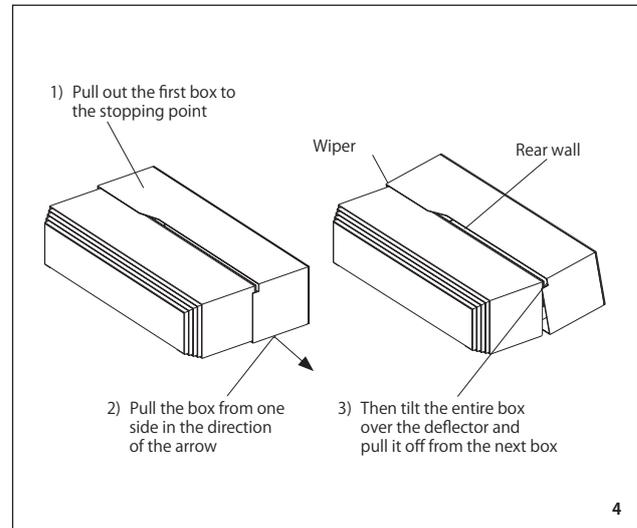
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## III. "Venetian" Blind Covers with Guide Rails

1. When installing the guide rails, make sure they are positioned in parallel.
2. Press the panels into the guide rails.
3. Make sure that they connect at the correct angle and avoid tilting.
4. Fasten the front and rear box of the "Venetian" blind cover in compressed position.

## IV. Steel Covers with Overtravel Mechanism

The overtravel protection and the latching panels must be adjusted in such a way that a longterm and free functioning is ensured in any operational conditions.



## C. ASSEMBLY AND DISASSEMBLY OF STEEL COVERS

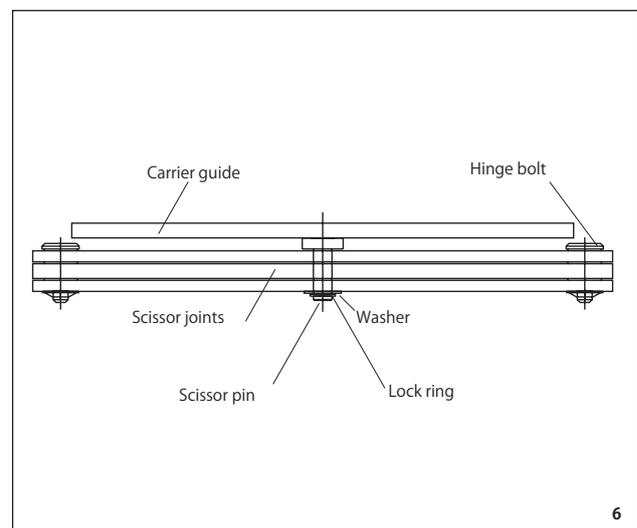
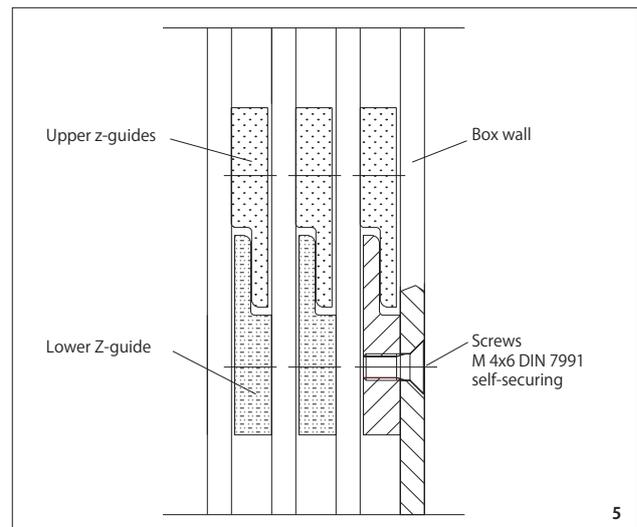
### I. Horizontal Steel Covers and Cross Beam Covers

#### 1. Standard Covers (Illustration 4)

- 1.1 Loosen the mounting of the largest box.
- 1.2 Press the steel covers together.
- 1.3 Pull out the uppermost (largest) box as far as the stop. When proceeding, hold the subsequent boxes firmly in place.
- 1.4 Press lightly against the wiper and tilt the pulled-out box upward. When proceeding, use the wipers base as the point of rotation. Now you can take the box off (illustration 4).
- 1.5 Pull out the next box to the position of the stop and then continue as described in points 1.3 and 1.4.
- 1.6 Should difficulties arise while tilting the individual boxes, press the cover sides a little bit outward so that the rear wall that is in front becomes free. Be extremely careful when proceeding, in order to avoid bending the cover sides.
- 1.7 When assembling please follow the disassembly steps exactly in the reverse order!

#### 2. Covers with Guide (Z) Profiles (Illustration 5)

- 2.1 Loosen the mounting of the largest box.
- 2.2 Push the steel covers together.
- 2.3 Unscrew the M4 screws of the guide (Z) profiles and remove the box upward or forward.
- 2.4 For the subsequent boxes, follow the steps as in item 2.3.
- 2.5 When assembling, please follow the disassembly steps exactly in the reverse order! When installing the guide (Z) profiles, please use new, self-securing screws.



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## **3. Covers with Scissors (Illustration 6)**

- 3.1 Release the mounting of the largest and smallest boxes.
- 3.2 Push the steel covers together.
- 3.3 Remove the cover from the machine and set it carefully on its rear side.
- 3.4 Remove the locking ring from the scissor pins and pull the scissor up and away.
- 3.5 Set the cover in the compressed position back onto the guide track.
- 3.6 Pull out the uppermost (largest) box to the position of the stop. When proceeding, hold the subsequent boxes firmly in place.
- 3.7 Press lightly against the wiper and tilt the pulled-out box upward. In doing so, use the wiper's base as the rotation point. Now you can take the box off (illustration 4).
- 3.8 Pull out the next box to the position of the stop and then continue as described in points 3.6 and 3.7.
- 3.9 Should difficulties arise while tilting the individual boxes out, press the cover sides a little bit outward so that the rear wall on the side becomes free. Be extremely careful in doing so, in order to avoid bending the cover sides.
- 3.10 When assembling, please follow the disassembly steps exactly in the reverse order! When installing the scissors, new locking rings must be used for the scissor pins.

## **4. Horizontal Covers with Screw-Mounted Damping Systems on the Rear Walls**

- 4.1 Loosen the mounting of the largest box.
- 4.2 Compress the steel cover together.
- 4.3 Pull out the uppermost (the largest) box out until the position of the stopper. In so doing, hold the subsequent boxes firmly in place.
- 4.4 Loosen the mounting screws of the retainer panels for the damping elements on the rear wall of the next box.
- 4.5 Remove the retainer panels together with the damping elements.
- 4.6 Pull out the uppermost (the largest) box to the position of the stop. Press lightly against the wiper and tilt the pulled-out box upward. In doing so, use the wiper's base as the rotation point. Now you can take the box off (illustration 4).
- 4.7 Pull out the next box to the stop position and then continue as described in points 4.4 and 4.6.
- 4.8 Should difficulties arise while tilting the individual boxes, press the cover sides a little bit outward so that the rear wall on the side becomes free. Be extremely careful in doing so, in order to avoid bending the cover sides.

- 4.9 When assembling, please follow the disassembly steps exactly in reverse order! Please ensure that the retaining plates are adjusted at an interval of about 1mm to the next box. The screws must be secured in place.

## **5. Covers with High-Speed (HS) Modules**

These covers should not be disassembled. For reasons of safety installing the HS modules can only be done by Hennig. Maintenance work such as exchanging C6 scraper lips, rollers, and slides, however, may be done. When needed, the covers should be sent for maintenance or general overhaul to Hennig.

## **II. Vertical Steel Covers with removable retaining brackets**

Disassembly is done according to the following steps directly on the machine:

1. Release the largest box from the machine with the telescopic steel cover in its compressed position.
2. Release the screws from the retaining bracket of the next-largest box and remove the box from the guide track.
3. For all of the remaining boxes, please continue as described in item 2.
4. Release the smallest box from the machine.
5. When assembling directly on the machine please follow the disassembly steps exactly in the reverse order!

## **III. Venetian Blind Covers with Guide Rails**

1. Release the front and rear boxes of the venetian blind cover in the compressed position from the machine or from the slide.
2. Move the panels up or down off of the guide rails. Alternatively, you can unscrew the guide rails from the machine and lift them out at the machine together with the venetian blind cover.
3. When assembling directly on the machine please follow the disassembly steps exactly in the reverse order!

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## D. PUTTING THEM INTO OPERATION

Prior to being sent, your Hennig telescopic steel cover was coated with a corrosion-protection oil and packaged in a plastic film. This protects your steel cover to a major extent against corrosion during transport and over longer-term storage. Please oil the entire steel cover prior to putting it into operation.

After installing the cover, a functional test must absolutely be performed: Operate the tool slide or machine table first at low speed. In doing so, check that the covers does not bump into any obstruction anywhere, and check whether all the boxes come out uniformly without any tilting. Then continuing the test, increase the speed of the machine until the maximum speed is reached.

When the cover is moving slowly, mild jerking can occur due to friction of the wiper lip against the boxes (the so-called slip stick effect). A similar effect will also occur with covers that have scissors or HS modules, when they are slowly extended.

When the cover extends in an uneven fashion, with individual boxes tilted, strong jerking, getting stuck on obstructions, unusual noises, or other malfunctions, the causes for these issues must absolutely be determined and eliminated in order to keep the covers from being damaged.

## E. MAINTENANCE AND CARE

### I. Visual and Functional Test, Cleaning

Telescopic steel covers only require minimal care when in use. But they must be cleaned on a regular basis in order to avoid damage (at least once a week, depending on the amount of dirt and on operational demand).

Also perform a regular, weekly visual and functional test of the cover, which in case of speeds over 40 m/min should also include an additional test of its noise and damping performance. If malfunctions are encountered during the functional and visual test, they must be eliminated. Worn-out parts must be replaced regardless of their running time. If parts are wearing out quickly, the cause must be found and eliminated, in order to avoid resulting damage.

Please pull the steel cover apart and clean away any dirt. Then the steel cover should be rubbed down with an oil-soaked rag. This prevents premature wear and corrosion. Cleaning should not be done with compressed air, since particles of dirt and shavings will inevitably be blown into the interior of the steel cover.

If a large amount of swarfs fall onto it, you need to check the steel cover frequently and regularly for swarfs that have gotten into it. If there are any swarfs present, you must disassemble the steel cover and clean it carefully, since swarfs between the boxes can lead to the steel cover being destroyed within a short period of time. In order to examine the machine's guide track, please collapse the steel cover together and loosen the mounting on the largest box. Please also take this opportunity to spray down the underside of the steel cover with oil.

When "aggressive" or very thinned-down cooling agents are used, the covers and their movable parts must be handled with special care in order to avoid or decrease corrosion.

In case of prolonged periods of non-use, the covers must absolutely be cleaned and dried (including from below or the

backside). Then the panels must be well oiled, the moving parts lubricated, and the panels dried and stored in a dirt-free environment. Prior to being put back into use, the covers and the movable parts must be checked to see whether they move easily.

If your steel cover has been damaged as a result of colliding with tools or components (including to a minor degree), it must be immediately taken out of use in order to prevent further damages or even total failure.

### II. Maintenance Intervals and Replacement of Wearing Components

Regular preventive maintenance is the basis for long-term, reliable operation. For this reason, please perform a regular, weekly visual and functional test of the cover, which in case of speeds over 40 m/min should also include an additional test of its noise and damping performance. If malfunctions are found, they must be mitigated.

This can be recognized, for example, if there is a streak along wipers, or if lubricating coolant and swarfs are left behind. Wipers, wiper lips, guide (z) tracks, and other brass tracks, buffers, dampers, slides, rollers, and M-units are exempted from the warranty since they are components subject to wear. They must be checked verifiably at least every six months and exchanged if necessary in order to ensure long-term, disruption-free operation. Corrosion damage is also not covered by the warranty.

Please replace the **wipers** or **wiper lips** every six months after operation after the unit is put into use.

Note: C6 wiper lips can generally be exchanged directly without de-installing the cover on the machine (see also the special description on exchanging the C6 wipers under item V). In order to exchange the wiper lips with any other wipers, the cover must be disassembled.

Worn-out **guide (z) tracks** made of steel, brass, or nitrified steel must be replaced if they have become worn down or warped. Worn-down **flat brass tracks** that are built into the cover as lining and as sliding elements within the cover, or else built in as wipers, must also be replaced.

**Buffers** and **dampers** are placed under severe stress when heavy objects are subject to braking at high speed, as well as due to the effect of cooling agents, and must be replaced once the damping effect decreases or noise levels begin to grow louder.

Please replace **gliders** and **plastic rollers** once their running surfaces have become severely worn or deformed, or if swarfs have become embedded in them.

Steel rollers, HS modules, bumpers, scissor systems, and over-travel protection must be checked for the first time after one year, and then at least once every six months, and replaced if necessary. **Steel rollers** must be replaced if the inner needle bearings no longer run properly or if the running surfaces have been worn out.

**HS modules** must be replaced if they no longer run easily or if the chain running within the modules is rubbing. Covers with HS modules should not be disassembled. For reasons of safety, installing the HS modules can only be done by Hennig. When needed, the covers should be sent for maintenance or general overhaul to Hennig.

**Bumpers** must be replaced at least for each box, or better yet

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for the entire cover, if their buffering effect has deteriorated significantly.

**Scissors** must be replaced if they become deformed or if they move too freely on the scissor pins.

**Scissors** must be replaced if they have become worn out. Repairs to scissor bracket systems cannot be self-done, for reasons of safety. When needed, the covers should be sent to Hennig for maintenance or general overhaul.

Faulty **overtravel mechanism** must be completely replaced on both sides, along with the snap-in plates. Newly added overtravel mechanism must be adjusted just like the snap-in plates so that long term problem-free functioning is ensured in all operational modes.

Please check at regular intervals **the connection frames or brackets** that have been insulated with sealant. If the seals should become loose or dissolve, for example due to the presence of aggressive cooling agents, they must be replaced with a suitable sealant.

In case of recognizable or developing problems, elevated noise levels and/or other malfunctions, the causes must be determined and eliminated immediately in order to avoid further damages or even total failure. Damaged parts must also be replaced immediately.

The above mentioned maintenance intervals are guidelines.

If our products are used under conditions that go beyond normal demand levels, the maintenance and cleaning intervals should be shortened accordingly.

Damages to the panels (e.g. due to dropped tools or components) must be repaired immediately. If required, Hennig can supply replacement boxes for any steel cover.

When determining the required box, please begin counting from the uppermost (largest) box.

4. Insert the new eN wiper. The eN wipers come in a standard length of 500mm, such that one or several of them must be cut to the required length. Insert the smaller adapters not on the edge, but instead in the middle of the box. Chamfer the front surfaces in the corners of the boxes to fit precisely.
5. Clamp the wiper in place using tongs.
6. Apply countersunk rivet borings as much as possible in the indicated locations (matching with the recesses on the wiper rubber).
7. Mount the eN wipers onto the box panel using countersunk rivets, and retighten the rivet heads. Mount smaller components in place with at least three rivets.
8. Buff the rivet heads on the upper side of the box. Clean the box.
9. Assemble the cover as described in item C.

### III. C2 / C3 / C5 Wiper Replacement

1. Disassemble the cover as described in item C.
2. Pull the worn-out wiper lip from the wiper profile.
3. Clean the wiper profile and check for damages.
4. Clean the boxes.
5. Insert the new wiper lip into the wiper profile.  
Using the right special tool from Hennig or a borer, press the dovetail profile of the wiper lip into the dovetail guide of the wiper profile. Please take care that the wiper lip does not get elongated.  
(Caution: great risk of injury!)
6. Assemble the cover as described in item C.

### IV. eN Wiper Replacement

1. Disassemble the cover as described in item C.
2. Separate the worn-out wipers using a hammer and chisel from the box panel. Alternatively, the welding points or rivets (depending on the design) can also be drilled open or milled out as necessary. In so doing, care should always be taken that the box panels are not damaged.
3. Clean the box. If necessary, remove welding residue or weld shut the existing rivet holes, and clean them up. Then straighten out the box panels.

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## E. MAINTENANCE AND CARE (CONTINUED)

### V. C6 Wiper Replacement

C6 means: Replacing wipers directly on the machine without dismantling the telescopic steel cover.

1. Remove old spring clamps using disassembly tool # 200.00040. Hold the tool with the handle diagonally upwards. Place the plastic roller of the tool onto the box panel. Hook both claws of the tool into the facing nose of the spring clamps. Then carefully lift the spring clamps out by applying pressure on the handle. If no disassembly tool happens to be available, the clamps can also be levered out with a borer or similar tool by inserting sideways under the clamps. (Caution: great risk of injury!)
2. Pull out the casing with the worn-out wiper lip carefully between the boxes.
3. Pull out the worn-out wiper lip from the casing profile.
4. Clean the casing profile and check it for damages.
5. Insert new wiper lip into the casing profile. In so doing, fix the casing profile to the work bench and use the borer to press the dovetail profile of the wiper lip into the dovetail of the casing profile. Please take care that the wiper lip does not get elongated. (Great risk of injury!)

6. Clean the support profile and boxes.
7. Press the receptacle profile carefully between the boxes into the correct position, and if necessary use a small rubber mallet to press it further into place.
8. Fix the casing in place with new spring clamps. Suspend the spring clamps up in the small nut between the carrier and the box panel, and wedge it into place firmly by tapping lightly with a small rubber hammer on the nut of the receptacle.  
Note: Old used spring clamps should not be reused!
9. Check that all the installed spring clamps have been positioned correctly.

## F. HENNIG SERVICE

Hennig performs the described maintenance work, as well as general maintenance and repairs of telescopic steel covers in its workshop or on your premises.

We also offer training in maintenance and repair. In order for us to be able to quote, please provide us with the data on the cover identification panel.

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