

ASSEMBLY AND SERVICE INSTRUCTIONS
FOR BELLOWS

IIIIHENNIG®
global excellence in machine protection

ASSEMBLY AND SERVICE INSTRUCTIONS FOR BELLOWS

DEAR CUSTOMER,

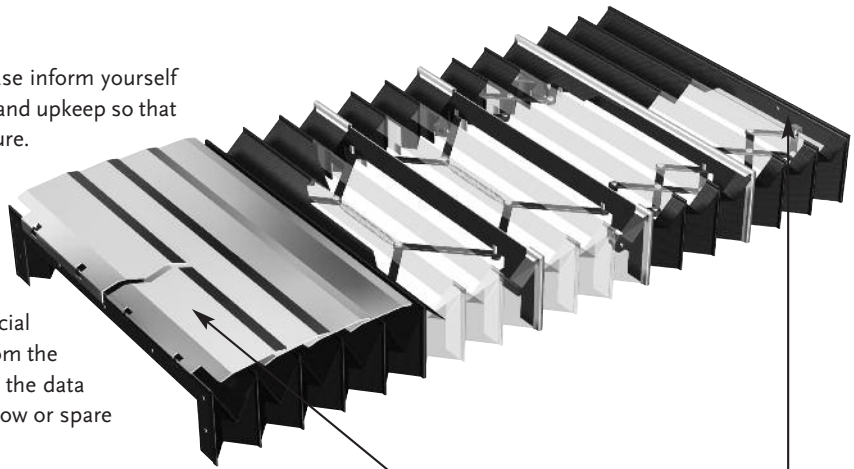
Thank you for choosing Hennig Bellows. Please inform yourself with the following on assembly, maintenance and upkeep so that your bellows will last a long time without failure.

Hennig bellows are used to protect delicate guides and machine components of machines and systems from chips, contaminants, coolant and liquids.

Your Hennig bellows, in general, are a special design to fit your machine and may deviate from the instruction somewhat. Please always give us the data from the name tag when ordering a spare bellow or spare parts.

The name tag includes the commission/sales order number and part number of the bellows, (see figure on right) and is visibly mounted on the outside face of the bellows.

Additionally, the commission/sales order number is stamped on a support frame stiffener inside the bellows.



Name plate



A. DANGER AND SAFETY INSTRUCTION

Do not step on or walk on a bellows. The bellows are not built to withstand heavy weight and will be destroyed immediately. Hennig bellows are designed for industrial use and must be assembled, maintained and repaired by sufficiently trained personnel.

B. WARRANTY

Generally, a bellow must be considered as a wear item. Warranty only includes material and workmanship. If the bellows are subject to aggressive coolant, not known to us when we quoted the bellow and which could damage the bellows material, the warranty will be void.

Also, damage due to improper assembly or handling, insufficient maintenance, and care (frequent cleaning and visual checking is required) and instance of heavy overload and wear and tear will void the warranty.

Please refer to our general warranty, payment and delivery conditions.

C. ASSEMBLY OF THE BELLOWS AND START-UP

1. Please make sure that the ways or guides that the bellows are sliding on are straight, do not deflect, and are suitable for the bellows guides (brass, plastic or rollers). Bellows with steel rollers need hardened guide surfaces. Accurate positioning of the bellow in relation to the guide way mounting is necessary. The guide surface must be smooth and free of paint, to guarantee an optimum gliding of the guides.
2. Bellows are usually mounted in compressed condition.
3. If necessary, existing mounting holes must be modified to fit the bellows on the guides freely.
4. Secure all mounting bolts with Loctite or split rings, lock washers etc.
5. Make sure that the bellows are mounted at right angles to the guides of the machine or according to the mounting specifications, as shown on the drawing.
6. Depending on the application of the bellows, (horizontal, vertical, or crossrail), you must manually test the guide function once the bellows are mounted on one end. If the bellows fishtail, irregularly moves, or sticks on interference points, moves noisily or shows other malfunctions, the causes must be found and corrected to prevent damage of the bellows, before the mounting is completed.

D. MAINTENANCE AND CARE

Regular maintenance is the basis for a long-lasting and functional life of your bellows. Therefore, visually check the bellows on a weekly basis for proper function. Worn components must be replaced regardless of how long the bellows have been used. In case of components wearing prematurely, please check the cause and make the necessary corrections, to avoid repetitive failure.

I. Visual and Functional Test and Cleaning

Based on usage and environment, a daily, maximum weekly, cleaning is recommended. Also, a monthly visual check for damage, wear and functional problems, contamination on the guide surfaces inside the bellows, as well as, on the outer folds, and excessive noise, is strongly recommended.

II. Maintenance and Replacement of Worn Components

Bellows Cover

The material of the bellows cover consists of plastic foils which is especially made for applications on machine tools. This bellows material is maintenance free but must be cleaned of contaminants, such as oil, chips, etc., on a regular basis. If, however, the cover material is damaged, the whole bellows must be exchanged. Patching of the cover generally is not economical.

Steel Lamellas

The lamellas must be checked for damage on a regular basis, which might influence the proper function of sealing. If the lamellas do not seal sufficiently anymore, they must be exchanged. Also, it must be checked that all mounting clips are present and not damaged.

Depending on the type of the lamella, this check should be made by a qualified technician.

Guides, Rollers (Brass, Plastic, Steel)

Components with excessive wear, deformations or embedded chips, limiting the proper function, must be replaced by trained craftsman.

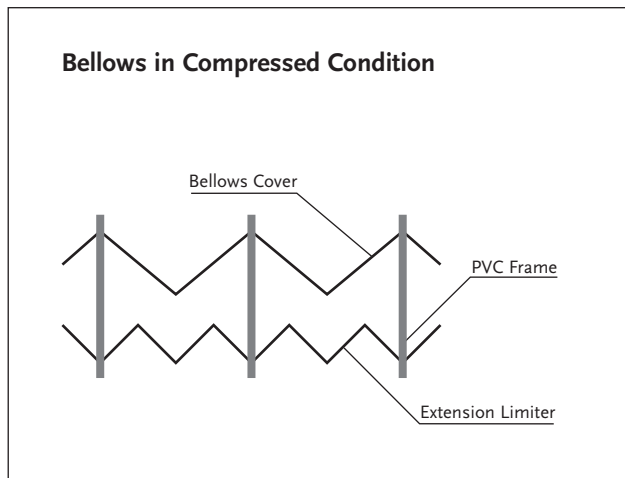
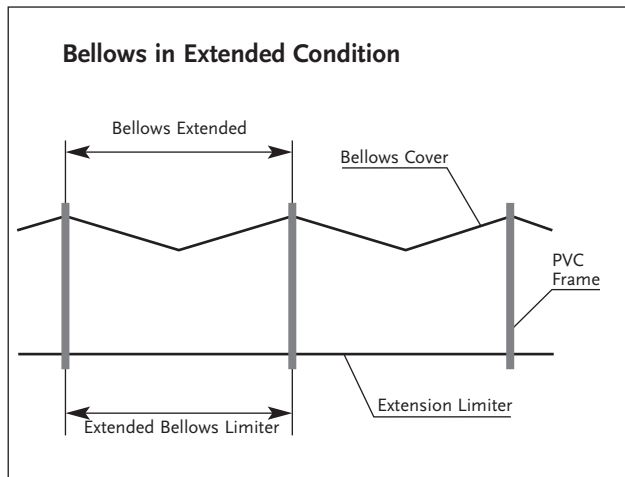
Coupling Links Between the Individual Bellows Sections

Please make sure that the sections are coupled firmly together with a tight fit.

Extension Limiting Devices:

Extension Limiters

If the extension limiters are damaged or torn apart, the bellows must be repaired, or if necessary, replaced by properly trained craftsman.



Scissors

Excessive wear, play of the scissor links, bolts or bearings require repair or exchange of the scissor mechanisms. If necessary, the bellows must be returned to Hennig to be repaired or the scissor system must be replaced.

Mounting Flanges (Plates, Angles, Flats)

1. Check for proper attachment to the bellows.
2. Replace seal material (i.e. silicon) to seal the mounting plate in case that aggressive coolant or mechanical damage has separated the mounting plate from the bellows cover.
3. Depending on condition, the bellows might have to be repaired or exchanged.

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