Product Warranty details of Hema Maschinen- und Apparateschutz GmbH

These product warranty details are part of the Hema General Terms of Business and Supply established on December 1st, 2010, section §6 Liability for Defects. They define all characteristics of HEMA products. Customers and partners are asked to pay special attention to limitations due to material or design options selected.

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1. Warranty conditions for protection systems

Warranty claims may be submitted only within the twelve months following commissioning, at the latest however within the eighteen months following the transfer of risk (delivery).

1.1 Gladiator telescopic steel covers

Warranty claims for telescopic steel covers are valid only under the following conditions.

- Warranty claims may be submitted only within the period of twelve months or an operating time of 2400 hours following commissioning.
- The warranty does not extend to wearing parts (i.e. doctors, slides, rollers, dampers, and Z strips). The warranty claims must be submitted at the latest eighteen months after delivery, i.e. the components may not be left in storage for longer than six months, otherwise the warranty period is reduced. When placing the goods in storage, the Buyer is obliged to observe all of the Seller's instructions and specifications in particular with respect to corrosion protection, effects of temperature, and other environmental effects.
- In the event of any downtime, all circumstances during startup and the machine's operating performance (operating hours counter) must always be documented together with a copy of the relevant page in the logbook. The same applies to the lubrication charts and inspection and maintenance schedules drawn up for the machine and the HEMA products.
- After every 1200 operating hours, the machine's functions must be checked, all visible defects remedied, and the doctors replaced.
- After every 3600 operating hours, the Z guide strips, dampers, slides and pillow blocks must be replaced.
- The machine's functions may be checked, visible defects remedied, and wearing parts replaced only by the Seller's competent, trained, and qualified personnel or by technicians that the Seller has authorised and properly trained. In the latter case, the Buyer must submit within ten days verification in writing that these tasks have been performed.
- Our material tests take into account normal coolants and oils. The customer is obliged to inform HEMA when particularly aggressive substances are used. These substances must then be provided to HEMA for test purposes in the preorder request phase. A list of tested and approved substances is available on request. The warranty becomes void when the customer fails to inform HEMA of aggressive substances.
- The tolerances adopted for the dimensional accuracy of all telescopic steel covers comply with the medium (m) values under DIN 2768 T1 m.

1. 2 Bellows

Warranty claims for bellows are valid only under the following conditions:

- The warranty we grant for bellows is limited by the materials to a period of twelve months or 2400 operating hours.
- The max cycle count may be raised by mutual agreement following tests on specific components and documentation of the findings.
- Fatigue fracture with perforation at the edge of a pleat is a consequence of wear that occurs on all non-lamella designs depending on the material type and load conditions.
- Fatigue perforation is a defect only on bellows with the property "gas tight and/or liquid tight". Warranty cannot be claimed on any other bellows types. We grant the following warranties in the event of fatigue perforation (holes less than 1 mm in diameter) on the following combinations of material kink resistance category / number of cycles: 1=1,200,000 cycles / 2= 800,000 cycles / 3 = 400,000 cycles / 4 = no warranty and for all other materials not listed.

Description Material in English	4	3	2	1
Aluminised Fiberglas silver Fiberglas fabric with aluminium coating	x			
ERA 7810 black Polyester fabric with double-side PU coating			x	
OZ Silver Polyester fabric with PU-coating			x	
ERA 7812 creamy white Polyester fabric with double-side PU coating			x	
ERA 7815 black Polyester fabric with double-side PU coating	x			
OZ PUR S black Polyester fabric with PU-coating	x			
PU-PTF black Polyester fabric with integrated PTFE coating				x
OZ 23 black Polyester fabric with PU-PVC coating	x			
OZ 45 black Polyester fabric with PU-PVC coating			x	
PREOTEX 035 black Kevlar-Aramid-special fibre	x			
PUR 0,18 black Polyurethane fabric	x			
VB 42 Polyester fabric				x
PREOTEX 060 black Kevlar-Aramid-special fibre				x
PREOTEX 030 black Kevlar-Aramid-special fibre		x		
PREOTEX ALU 030 Visible side with aluminium coating (silver)			x	
PERLTEX black PES fabric with double-side PU coating & Lotus effect				x
OZ 35 yellow Polyester fabric with PU-PVC coating				x
OZ 35 white Polyester fabric with PU-PVC coating				x
OZ 35 blue Polyester fabric with PU-PVC coating				x
OZ 35 grey Polyester fabric with PU-PVC coating				x
OZ 35 black Polyester fabric with PU-PVC coating				x
ERA 386 grey PES-fabric with double-side PU coating	x			
PUR-Teflon 0,27 EM black Polyurethane fabric with Teflon coating		x		
PUR-Teflon 0,45 Polyurethane fabric with Teflon coating		x		
PREOTEX SP-PU black Fabric with Modacryl fibers (MAC)				x

- The bellows' movements give rise to wear and tear on the outer material and on the guide and sliding elements. So that the bellows can continue to operate reliably, this wear must be examined at regular intervals, and any visible defects remedied and all defect parts replaced at six month intervals.
- Bellows materials are suitable for use in the most diverse fields. Our material tests take into account normal coolants and oils. The customer is obliged to inform HEMA when particularly aggressive substances are used. These substances must then be provided for test purposes in the preorder request phase. A list of tested and approved substances is available on request. The warranty becomes void when the customer fails to inform HEMA of aggressive substances.
- Protective lamellae on SAMURAI bellows protect against impacts from chips. They are not designed to bear the weight of personnel and can

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be punctured or damaged in certain applications. The customer is obliged to inform HEMA when his machine is used for particularly hard metal materials, particularly high cutting speeds, or high cutting volumes. HEMA must then test these conditions in the preorder request phase. The warranty becomes void when the customer fails to inform HEMA.

- The materials used for the lamellae may exhibit varying surfaces and colours: this does not provide grounds for complaint. This also applies to irregularities in colour and linings.
- The tolerances adopted for the dimensional accuracy of all bellows comply with the rough (g) values under DIN 2768 T1 c (with the exception of lift table bellows with very rough tolerances [sg] under DIN 2768 T1 v), and the tolerances for straightness and planeness comply with DIN ISO 2768 T2 U. The tolerances for metal parts, e.g. metal frames, housings, and lamellae; plastic parts with guides and/or functional lobes; and parts, blanks, and protective strips cut with water jets comply with the medium (m) values under DIN 2768 T1 m.

1.3 Roller cover systems

Warranty claims for roller cover systems are valid only under the following conditions:

- The warranty we grant for roller cover systems is limited to a period of twelve months or 2400 operating hours.
- The max cycle count may be raised by mutual agreement following tests on specific components and documentation of the findings.
- Torsion springs and steel strip spring motors are installed. These actuators are not designed for fast, dynamic changes in direction. The actuator and the strip are wearing parts. The warranty becomes void when accelerations exceed 0.5 g, there is a rapid succession of dynamic load changes without intermediate downtimes, or there are high speeds. The warranty also becomes void when the customer fails to inform HEMA of the speeds and accelerations.
- The movements of the roller cover system give rise to wear and tear on the outer material and on the guide and sliding elements. These wearing parts do not fall under the warranty. So that the roller cover can continue to operate reliably, this wear must be examined at regular intervals, and any visible defects remedied and all defect parts replaced at six month intervals or after every 1200 hours of operation.
- Textile roller cover materials are suitable for a range of applications. Our material tests take into account normal coolants and oils. The customer is obliged to inform HEMA when particularly aggressive substances are used. These substances must then be provided to HEMA for test purposes in the preorder request phase. A list of tested and approved substances is available on request. The warranty becomes void when the customer fails to inform HEMA of aggressive substances.
- Most roller covers with housing are fitted with a doctor that prevents coarse dirt from penetrating the system. Like all contacting seals, doctors are subject to wear and must be optimised for their installation sites and the direction of soiling. There is no warranty for tightness on any of the doctor variants. Soiling in the housing of a roller cover is the most common cause of damage and, as a cause, is not covered by the warranty.
- Roller covers with steel strip protect against impacts from chips. They are not designed to bear the weight of personnel and can be punctured or damaged in certain applications. The customer is obliged to inform HEMA when his machine is used for particularly hard metal materials, particularly high cutting speeds, or high cutting volumes. HEMA must then test these conditions in the preorder request phase. The warranty becomes void when the customer fails to inform HEMA.
- The tolerances adopted for the dimensional accuracy of all roller cover systems comply with the rough (g) values under DIN 2768 T1 c.

1.4 Coil spring systems

Warranty claims for coil spring systems are valid only under the following conditions:

- The warranty we grant for coil springs is limited to a period of twelve months or 2400 operating hours.
- The max cycle count may be raised by mutual agreement following tests on specific components and documentation of the findings.
- Cold worked steel strips are installed. These materials are not designed for fast, dynamic changes in direction. The warranty becomes void when accelerations exceed 0.5 g, there is a rapid succession of dynamic load changes without intermediate downtimes, or there are high speeds. The warranty also becomes void when the customer fails to inform HEMA of the speeds and accelerations.
- Fine materials containing dust and/or small powder like particles may penetrate the steel strips' windings. This soiling does not fall under the warranties, and the cover must be cleaned immediately and subsequently oiled with care. Failing to clean the cover adequately may cause damage.
- Our material tests take into account normal coolants and oils. The customer is obliged to inform HEMA when particularly aggressive substances are used. These substances must then be provided to HEMA for test purposes in the preorder request phase. A list of tested and approved substances is available on request. The warranty becomes void when the customer fails to inform HEMA of aggressive substances.
- They are not designed to bear the weight of personnel and can be punctured or damaged in certain applications. The customer is obliged to inform HEMA when his machine is used for particularly hard metal materials, particularly high cutting speeds, or high cutting volumes. HEMA must then test these conditions in the preorder request phase. The warranty becomes void when the customer fails to inform HEMA.

  The tolerances adopted for the dimensional accuracy of all spiral springs comply with the rough (g) values under DIN 2768 T1 c.

2. Warranty of window systems

2.1 Polycarbonate inspection windows

Polycarbonate inspection windows (PC windows) are installed as isolating guards on machine tools. In this function they are responsible for the following:

- preventing access to hazardous areas (isolating function)
- protecting against parts ejected at speed out of the machine (retaining function).

In according with Section 1.3.3 annexed to the 2006/42/EC Machinery Directive the CE symbol applying to machine tools also obliges the manufacturer to provide protection against parts ejected at speed out of the machine. In addition the machine specific C standards contain actual provisions in the form e.g. of material recommendations and requisite thicknesses based on the stipulated retaining ability (see prEN 12415 for lathes, prEN 12417 for machining centres, and prEN 13218 for grinders). PC windows undergo an aging process and must be classified as wearing parts. This aging cannot be detected by visual inspections, so the machine manufacturer must define a period after which the PC window with safety critical retaining functions must be replaced. PC windows exposed to coolants for longer periods can suffer accelerated aging, i.e. deterioration to their mechanical properties (embrittlement). Also on the operator side coolant vapours, cleaning agents, greases, oils, and other aggressive media can cause aging in the PC windows, leading to deterioration in their retaining ability. If this is not taken into account a critically low level may have been reached in the event of damage.

Immediate replacement is urgently recommended in the following cases:

- plastic deformation (bulging) caused by prior collisions
- cracking
- damage to the edge sealing
- coolant penetrating the composite structure
- destroyed or damaged guard pane (coating) on the working chamber or operator side

Cleaning recommendations

A soft cloth should be used to clean the machine safety window. The following cleaning agents have been tested and approved: Hahnerol Glasreiniger (Hahnerol), Sidolin Streifenfrei (Henkel), Aktiv-Scheiben-Reiniger (Neumann).

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Warranty periods for safety windows

The terms and conditions of Hema Maschinen- und Apparateschutz GmbH of 1 September 2005 apply. We provide the following supplementary warranties for retaining reliability when the glass window is undamaged, the polycarbonate window is unscratched, the sealed frame is undamaged, and there is adequate overlapping on the join between cabin and frame:

- 60 months following the date of manufacture for windows with VA frame
- 24 months following the date of manufacture for windows without VA frame

The valid date of manufacture is that visible on the label inside the window. In a warranty case we shall deliver free of charge replacements of equivalent quality. All other claims are excluded. The operating safety of machine tools is assured only when PC safety windows installed as a guard against parts ejected at speed out of the machine are subjected at regular intervals to a visual inspection by the customer's responsible personnel.
Should you have any questions or notice anything unusual please contact directly HEMA on +496182/773-0 or by email on info@hema-schutz.de.

2.2 VISIPORT® Spin windows

The VISIPORT® Spin window is the leader in its field. It has been produced and delivered to customers all over the world since 15 years. It has become even more outstanding due to its adaptability to high performance under extreme and continuous strain conditions.
In order to guarantee a perfect and permanent function safety, it is indispensable to obtain the following rules regarding maintenance and cleaning of the device:

- VISIPORT® Spin windows must be installed according to the original manual/ handling instructions. Special attention has to be given to the initial cleaning of the glass pane (disc) as well as to the careful and clean mounting and the drying of the bonding tape set.
- When the manufacturer of the machine tool sell it to the customer, it is compulsory that the later receives the original maintenance and handling instruction manual of VISIPORT® Spin window together with the mounting tools belonging to this device.
- The manufacturer of the machine tool has to train his customer regarding maintenance and handling of the VISIPORT® Spin window; special attention must be paid to the regular check of the degree of soiling (chips, coolants) and the regular cleaning of the device.
  This procedure is the only way to ensure a smooth, continuous and perfect functioning of the VISIPORT® Spin window.
  The necessary tightness, the narrow gap in the VISIPORT® Spin window, and the partially high degree of pollution in the machines (especially in 3-shiftoperation) make it to a top priority.
- Should any problems in connection with the VISIPORT® Spin window occur, HEMA Maschinen- und Apparateschutz GmbH as European service partner has to be informed first, service phone number: 0049 6182 773-0.
  An unauthorized dismantling of parts or a complete dismantling of the device compulsorily leads to the loss of guarantee claims.
- Dismantled and returned VISIPORT® Spin window to HEMA without prior consent/authorization of HEMA (e.g. claim “system not tight”) will not be accepted as a right to guarantee claims. It is the right of HEMA to check and determine the exact reason of failure.
  We are pointing strongly once again to the fact that in case of disregarding the above mentioned rules, no guarantee claim will be accepted.

3. Warranty conditions for clamping systems

Warranty claims may be submitted only within the twelve months following commissioning, at the latest however within the eighteen months following the transfer of risk (delivery).

3.1 RotoClamp

- Due to its construction, the tolerance range of the RotoClamp (tolerance: cylindricity) between the shaft and the clamp must be maintained within the defined range. A deviation from this range may result in damage to the housing or the diaphragm when in continuous operation. A deviation from the tolerance range results in loss of the warranty.
- Ambient conditions: ambient temperature indoor min. 10 °C and max. 45°C, pneumatic operating pressure 4 bar +0.5/-0.3 bar or 6 bar +0.5/-0.3 bar, operation preferably with dry and filtered air.
  4 bar types must be operated only at 4 bar +0.5/-0.3 bar, 6 bar types must be operated only at 6 bar +0.5/-0.3 bar. Higher operating pressures cause damage at spring diaphragms. Lower operating pressure (LinClamp Standard types) cause opening malfunctions.
- The warranty period for the standard inside and outside RotoClamp is 12 months from the date of delivery or at most 1,000,000 clamping cycles (no emergency or brake clamping). In the event of warranty, the customer must provide suitable proof of the actual number of clampings.
- The warranty period for the Active Inside and Outside RotoClamp is 12 months from the date of delivery or at most 500,000 clamping cycles (no emergency or brake clamping). In the event of warranty, the customer must provide suitable proof of the actual number of clampings.
- During assembly, reconstruction, maintenance and repairs, the assembly instructions must be observed and the required equipment and accessories must be used. During all work on the clamping elements, the accident prevention regulations as well as the VDE safety and assembly instructions valid in each case must be observed.
- The clamping element is not designed to secure hanging loads. The clamping elements are used properly in accordance with these instructions only when the limits listed in the specifications are observed. HEMA GmbH may refuse to provide services when the clamping elements are put to uses other than those described in these instructions.
- The Inside and Outside RotoClamp systems are ground to the nominal dimension at the manufacturer’s, based on the axial location surface in the open state.
- Only completely assembled Clamping elements are covered by warranty. Any dismantling or subsequent conditioning or rework by customers without prior written notice by HEMA will result in reduction of operating reliability and loss of warranty.
- The specified holding torques are obtained with non-lubricated bores. With greasy lubricants a significant reduction of holding torques must be accepted.
- The operating and assembly instructions must be passed on to the installation engineer, the operator and the user.

3.2 LinClamp

- Ambient conditions: ambient temperature indoor min. 10 °C and max. 45 °C, pneumatic operating pressure 4 bar +0.5/-0.3 bar or 6 bar +0.5/-0.3 bar, operation preferably with dry and filtered air. 4 bar types must be operated only at 4 bar +0.5/-0.3 bar, 6 bar types must be operated only at 6 bar +0.5/-0.3 bar. Higher operating pressures cause damage at spring diaphragms. Lower operating pressure (LinClamp Standard types) case opening malfunctions.
- The LinClamp clamping and braking elements are designed for static and dynamic clamping or braking. LinClamp S and SK safety claming systems have a warranty of 12 months from the date of delivery, or at most 1,000,000 clampings (no emergency stop braking) or 500 emergency stop brakings. Braking only permissible with sinter linings; if other linings are used then this warranty and the features described do not apply. In the case of warranty, the customer must provide suitable proof of the actual number of clampings. The LinClamp A clamping and braking elements are designed for static functional clamping (no precision clamping). LinClamp A safety clamping elements have a warranty of 12 months after the date of delivery, but at most a clamping cycle of maximum 10,000 (no emergency stop braking). In the case of warranty, the customer must provide suitable proof of the actual number of clampings.
- During assembly, reconstruction, maintenance and repairs, the assembly instructions must be observed and the required equipment and accessories must be used. During all work on the clamping

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elements, the accident prevention regulations as well as the VDE safety and assembly instructions valid in each case must be observed.
- The LinClamp clamping elements are preset at the factory to the respective rail dimensions. The contact surfaces of the brake and clamping linings are pressed onto the free surfaces of the respective linear guide rail. The pressing procedure therefore does not influence the accuracy and lifetime of the mounting rail.
- Only completely assembled Clamping elements are covered by warranty. Any dismantling or subsequent conditioning or rework by customers without prior written notice by HEMA will result in reduction of operating reliability and loss of warranty.
- The dimension between the brake shoes is ground by HEMA to an exact measure. This dimension will always be 0.01 mm to 0.03 mm Wider than the max size of rail specified by the rail manufacturer. The max. holding force is obtained at the smallest gap between brake shoe and linear rail; in addition, in the worst case, the system related loss of holding force may be up to 30%.
- LinClamp with sinter metal brake shoe exerts approx. 60% of holding force on oil or grease lubricated linear guides. LinClamp with steel brake shoe exerts 100% of holding force on oil or grease lubricated linear guides.
- The operating and assembly instructions must be passed on to the installation engineer, the operator and the user.

3.3 PClamp

- The PClamp clamping elements are designed for static clamping. PClamp safety clamping elements have a warranty of 12 months after the date of delivery, but at most a clamping cycle of max 1,000,000. In the case of warranty, the customer must provide suitable proof of the actual number of clampings.
- The PClamp clamp elements are preset at the factory to the respective rod length and cylinder size.
- The clamping elements are NOT intended for securing loads. Correct use of the clamping elements complies with the technical specifications. Other uses of the elements invalidate warranty.
- Recommended operating temperature range for clamping systems is between 10°C and 45°C, at pneumatic operating pressure of 4 bar or 6 bar; medium: filtered compressed air (40 µm), dry or oiled.
- During assembly, reconstruction, maintenance and repairs, the assembly instructions must be observed and the required equipment and accessorieS must be used. During all work on the clamping elements, the accident prevention regulations as well as the VDE safety and assembly instructions valid in each case must be observed.
- The operating and assembly instructions must be passed on to the installation engineer, the operator and the user.

3.4 All other Clamp Types not listed

- The clamping elements are designed for special purpose clamping. Clamping elements have a warranty of 12 months after the date of delivery, but at most a clamping cycle of max 10,000. In the case of warranty, the customer must provide suitable proof of the actual number of clampings.
- The clamp elements are preset at the factory to the respective rod length and cylinder size.
- The clamping elements are NOT intended for securing loads. Correct use of the clamping elements complies with the technical pecifications. Other uses of the elements invalidate warranty.
- Recommended operating temperature range for clamping systems is between 10°C and 45°C, at pneumatic operating pressure of 4 bar or 6 bar; medium: filtered compressed air (40 µm), dry or oiled.
- During assembly, reconstruction, maintenance and repairs, the assembly instructions must be observed and the required equipment and accessories must be used. During all work on the clamping elements, the accidentprevention regulations as well as the VDE safety and assembly instructions valid in each case must be observed.
- The operating and assembly instructions must be passed on to the installation engineer, the operator and the user.

4. Warranty conditions for Electric Brakes

- Electric brakes HEMS type electric brakes are subject to a twelve month warranty following the date of delivery, but not in excess of 200,000 cycles. The brake must be protected from the effects of greases, oils, aggressive gases, liquids, and coarse soiling.
- The installation site must have adequate ventilation.
- The firm seat of the brake, its actuation, the air gap width, and the extent of wearing on the brake linings must be inspected at regular intervals. These inspection intervals depend on the brake's operating mode, the effectively converted braking energy, and the actuating frequency. At all events the brakes must be inspected after emergency stops. The brake disc must be examined for thermal effects (blue stains), axial runout, firm seat, wearing (disc thickness), concentricity, and corrosion, and it must be replaced when necessary. If necessary the inspection interval must be agreed with the manufacturer/ supplier and must be based on the average and maximum brake loads expected for the actual application.
- HEMS type brakes are maintenance free, but their linings are subject to wear. Their condition must be examined at intervals based on the intensity and duration of the loads acting on them. This must take into account the unadjusted or max wear limits taken from the documentation for each brake type.
  The brake shoes must be replaced when:
  - the max wear limit has been reached
  - the lining is no longer attached firmly to its support,
  - or the surface of the lining is cracked or chipped.
- After the inspection cycle of 1.5 million actuations the brake must be sent in to the manufacturer for a fee based inspection and possibly reconditioning. Alternatively this inspection/reconditioning can be provided on site. The user can roughly estimate the inspection cycle based on the usual average number of actuations a day.
- When installing and operating HEMS type electric brakes the user must observe the local regulations applying to electrical equipment.
- The brake shoes are wearing parts and can be ordered from the brake supplier or directly from the manufacturer. The order must specify the brake's full designation or the order code. The order codes for brake shoes and other replacement parts are specified in the assembly and operating instructions for each brake type.
- In all other cases we do not accept any warranty claims on the basis of defects occurring as a result of natural wear and tear on the purchased article, of improper or negligent treatment, of inadequate or improperly conducted maintenance, of improper or unsuitable use, of incorrect installation, of excessive loading, of unsuitable operating material following the transfer of risk, or of prejudice incurred through particular external influences following the transfer of risk and not assumed in the agreement. Also, we do not accept any warranty claims when the ordering party, either by itself or through the agency of third parties, conducts repair work that is not absolutely necessary.