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1. INTRODUCTION

General precautions

This guidelines have been prepared pursuant to the Directive 2006/42/EC and Annexes attached to it. The complete contents of these guidelines must be accessible to all operators of the equipment at all times. The guidelines must be properly archived and easily accessible at the same time.

Please read these guidelines carefully before carrying out the first start-up or before carrying out any work on the equipment.

Applicable regulations

- Machinery Safety Rules (Ur. I. RS, No. 75/2008);
Directive 2006/42/EC on machinery;
- Order on electrical equipment designed to be used within predetermined voltage limits (Ur. I. RS, No. 27/2004);
LVD Directive 2006/95/EC (Low Voltage Directive);
- Rules on Electromagnetic Compatibility (Ur. I. RS, No. 132/2006);
Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility;
- SIST EN 61000-6-2 and SIST EN 61000-6-4 – Electromagnetic Compatibility;
- SIST EN ISO 12100-1 and SIST EN ISO 12100-2 – Safety of machinery;
- SIST EN 60204-1 Electrical equipment of machines.

User Instructions

To ensure correct installation of the separator please observe the above mentioned directives and standards.

Address of the after-sales service provider and supplier of spare parts

For the provision of after-sales service or the supply of spare parts please contact the address stated below:

Hidria TC d.o.o. Koper, Šmarska cesta 4, 6000 Koper, SLO

Warning: These guidelines are the property of Hidria TC d.o.o. Koper; without our knowledge or prior approval it is forbidden to copy or submit these these guidelines to third persons.

2. WARRANTY

The warranty period for the product shall be 12 months from the date of delivery (see the date on the delivery note).

STATEMENT OF WARRANTY

As manufacturer of equipment we hereby guarantee

1. proper function of the product during the length of the warranty provided that the product is operated according to the provided rules for safe operation;
2. adequate after-sales service and delivery of the necessary spare parts to enable repair of the product during the warranty period;
3. remedying of malfunctions and deficiencies within a period not longer than 45 days at our own expense; replacement of the product, if it is not repaired within the above mentioned time limit, with a new product or refund the purchase price if the product was manufactured according to individual customer's requirements. The warranty period shall be extended by the time needed for repair.
4. Defects and faults that occurred as a result of mechanical strain, unsuitable or inappropriate use or maintenance, improper repair or installation of unsuitable spare parts or caused by action of third parties or through Force Major shall be expressly excluded from this warranty.
5. Minor repairs will be carried out in the customer's premises, and major repairs in the premises of Hidria TC d.o.o. in Koper.

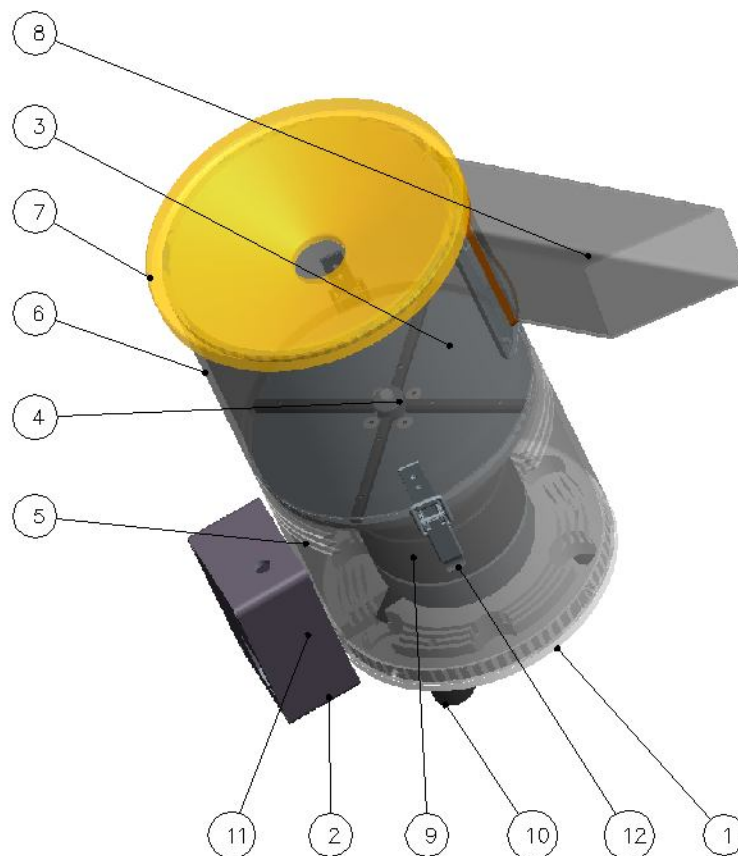
3. DESCRIPTION AND TECHNICAL SPECIFICATIONS

The spring separator is used to untangle the springs for further use, i.e. to enable the feeding of springs to the corresponding machine down the line. It is normally used in combination with a rotary bowl feeder which feeds the parts into a vibratory plate, and an another rotary bowl feeder feeding the untangled springs to further manipulation processes.

The device consists of a metal housing, a driving electric motor and a rotating element (vibratory plate) used to separate the entangled springs.

The spring separator is operated at 220V and 50 Hz.

COMPONENTS:



POSITION	DESCRIPTION
1	Base plate
2	Support
3	Vibratory plate
4	Vibratory plate adaptor
5	Bottom protecting ring
6	Top protecting ring
7	Cover
8	Exit chute
9	Electric motor
10	Antivibration support
11	Dose
12	Clamp closure

Technical properties

	UNIT	Spring separator
Supply voltage	-	220V, 50Hz
Power	W	90
Rated current	A	0.4
number of revolutions	rpm	1350
Protection	-	IP54
Temperature	°C	0-40
Humidity	%	10-90
Weight	kg	12

4. OPERATING PRINCIPLE

The spring separator is operated at 220V and 50 Hz.

The electric motor is driving the vibratory plate. As the entangled springs keep falling on the vibratory plate, they are tossed about the plate and eventually get separated. As the mass of individual springs is smaller than the mass of a cluster of entangled springs, they begin to emerge through the exit chute, one by one. The springs are normally fed to the separator through the opening in the cover by means of a vibratory bowl feeder.

In most cases the spring separator will need calibration depending on spring properties and dimensions, by changing the dimensions of the exit chute, electric motor speed, etc. These changes shall be carried out by the manufacturer (Hidria TC d.o.o.) during each respective calibration of the vibratory plate.

5. RISK OF IMPROPER USE



WARNING: Electrical hazards (HOT TERMINALS) exist if the operator, for whatever reason, removes the protecting dose cover without previously disconnecting the electric power supply (pull the supply lead from the socket).

WARNING: Excessive filling of the spring separator with springs can cause malfunction of the vibratory plate and electric motor or damage them.



WARNING: During normal operating mode or use the protective ring and cover should not be removed from the device.

WARNING: Do not use the device for the separation of other spring types!

WARNING: Any maintenance work may only be performed while the electric power supply is disconnected (the supply cable pulled from the socket). The interventions may be performed only by qualified electricians.

6. TRANSPORT, MANIPULATION AND STORAGE

The unit shall be packed in a specifically designed wooden case. The device shall be fixed to the case bottom by means of three screws driven through blind holes of anti-vibration supports in the case bottom.

During transport and manipulation avoid violent shocks or thrusts.

Store in a dry area.



WARNING: Make sure that all ordered parts have been delivered and that no damage occurred during transport.

WARNING: Check whether the specifications in the name plate attached to the spring separator meet the specifications in your order.

7. INSTALLATION

Before installing the spring separator make sure that the place of installation is properly sized, has sufficient load-bearing capacity and is otherwise suitable for installation.

- The device should not be installed in a room with high relative humidity, in a dusty environment or in an environment with a high concentration of metal particles.
- Enough room should be provided around the device to allow access to servicing personnel and free air circulation through the cooling ribs.
- The surface on which the unit will be attached must be sufficiently stiff and solid to prevent vibration being transmitted to other areas which can also cause malfunction of the unit itself.

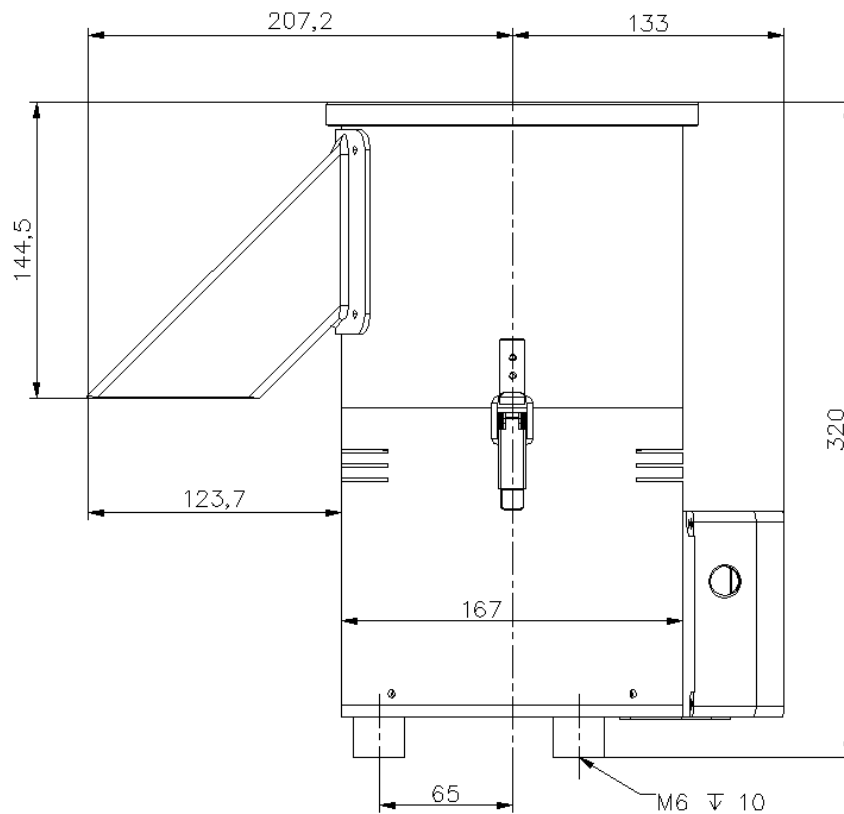


WARNING: Installation should be carried out prior to the unit startup, i.e. before the unit is connected to the mains.

WARNING: When installing the spring separator, it is also necessary to install all the corresponding safety devices to prevent access during operation.

7.1 Installation

The spring separator should be set up on three anti-vibration supports. Blind threaded holes M6 are provided on the bottom side of anti-vibration supports to attach the unit to the foundation. Make sure that the foundation to which the spring separator will be attached, is properly levelled and stiff.



7.2 Wiring of the spring separator

The spring separator has been provided with an industrial power supply cable with a schucko connector.

7.3 Putting into operation



WARNING:

Before connecting the unit to power supply check the following:

- The supply voltage must be equal to the one stated on the spring separator's nameplate.
- The supply voltage must be equal to the one stated on the spring separator's nameplate.
- Earthing must be provided according to regulations.
- Prior to putting into operation, the spring separator must be correctly installed and its safe operation must be provided.

Once the spring separator is connected to power supply, it is started/stopped by turning on/off the main switch on the dose.



WARNING:

- Prior to startup, make sure that the protective cover is in place.
- After disconnecting the spring separator, wait until the vibratory plate stops rotating. Only then it is safe to remove the cover.

8. MAINTENANCE

The spring separator doesn't need any specific maintenance. Regardless of the environment in which the separator is used, occasional cleaning of dirt and dust accumulating inside the separator shall be necessary. The cleaning can be carried out with a pneumatic gun by removing the protective cover and ring, and the vibratory plate. Disconnect electric power supply before cleaning.



WARNING: Adjustments and startup may be carried out only by qualified personnel.

WARNING: Electric power supply should be disconnected before attempting any work on the unit (pull the plug from the socket).

WARNING: While cleaning the machine with the pneumatic gun, wear personal protective equipment (protective goggles).

9. MALFUNCTION, FAULTS OR DAMAGES

Possible causes for reduced performance of the spring separator and tips for troubleshooting are stated below.

Possible faults and elimination of faults:

1. *Defect:* spring separator doesn't work – the electric motor is not turning
Correction: check power supply and all electrical components for proper functioning
2. *Defect:* Springs are not discharged through the exit chute
Possible cause: too many springs in the separator
Correction: configure the dosing unit in such manner that a correct amount of springs are loaded

Possible cause: vibratory plate rotating speed too low or too high
Correction: Recalibrate the spring separator (to be carried out by Hidria TC d.o.o.)
3. *Defect:* Springs discharged through the exit chute are still intertwined
Correction: Recalibrate the spring separator (to be carried out by Hidria TC d.o.o.)
4. *Defect:* Spring operator is overheated
Possible cause: The surrounding area is cluttered by other equipment and material
Correction: Enough room should be provided around the device to allow free air circulation through the cooling ribs
5. *Defect:* Springs get stuck in the separator
Possible cause: damaged vibratory plate or protective ring (springs are stuck in the slot)
Correction: Replace the vibratory plate



WARNING: In the event of malfunction, fault or damage disconnect electric power supply and contact qualified personnel to carry out the repair.

10. DISPOSAL

Materials used for the manufacture of the spring separator are not problematic for dismantling and disposal.

All elements composing the unit are suitable for recycling.

11. REPAIR – SPARE PARTS

In most cases, spring operators are made according to individual customer's requirements, for various spring types.

Due to rotating elements the spring separator needs to be recalibrated after their replacement or repair. All repair operations should be carried out by the manufacturer

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When sending a request for repair or spare parts, please state the serial number provided on the unit's name plate.