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## **SPIRAL FREEZER - SVR 400/600/900 -**

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## SPIRAL FREEZER - SVR 400/600/900 -

### 2. DISCRIPTION

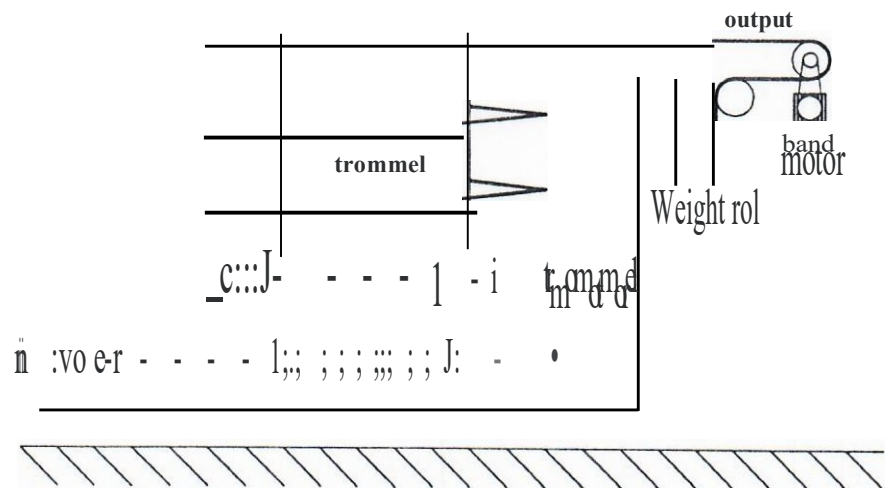
#### 2.1 GENERAL

The most important part of the installation is the rotating drum. This drum is driven by a motor. The conveyor belt is wound around the drum like a spiral and is driven by the friction between the belt and the drum. The friction force takes up most of the tape drive for his account. The drum is lined with plastic strips to prevent excessive wear on the belt.

In addition to the drum, the belt is also driven by a motor. This tape drive has a dual function :

- Regulating the belt speed in relation to the drum motor.
- Provide a certain belt tension, so that the belt lies tightly around the drum and experiences sufficient frictional force.

A weight roller is mounted behind the belt motor to collect the excess tire. This weight roller is loosely suspended in a guide so that it can move up and down freely. Due to the weight of the roll, the slack part of the belt is held taut



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## SPIRAL FREEZER - SVR 400/600/900 -

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### 2. DISCRPTION

#### 2.1 GENERAL

The ratio between the speed of the drum and the belt is very important. The drum should spin faster than the belt. This is called the "positive slip" or the "overdrive".

The "overdrive" is required to have a good driving force to the tire to be whic ikkelen. Without "overdrive" or even with a negative slip, the drum will brake the tire, causing excessive tension in the tire and serious damage.

The degree of "overdrive" depends on the friction between the belt, tr o mmel and guide. Also, changes in temperature, v o chtigheid or oil, and other impurities have an influence. The v o o ring suggested "o verdrive" is 3 times the height difference of the belt in a for w enteling. With this setting, the belt tension is not too ho o g, and the band will be a constant, "shock-free" loop v e r t o n e n.

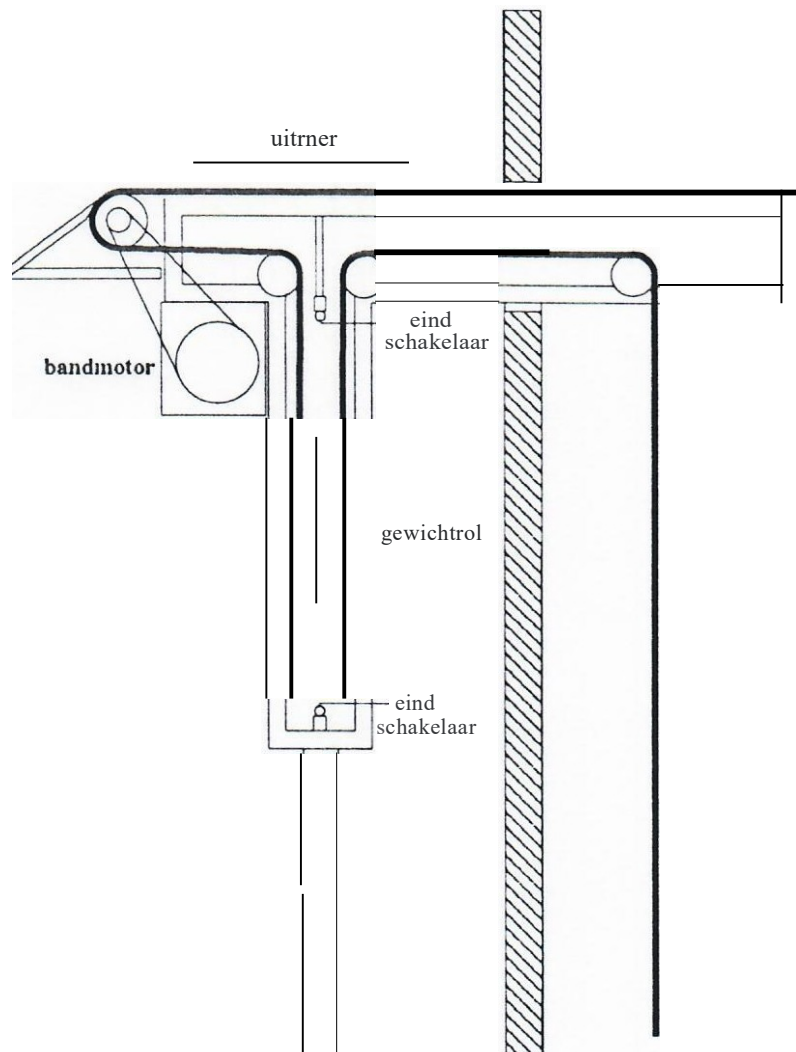
D o o r wear will alter the belt pitch after a period of time. H i with it verand e rd is also the "overdrive". It is therefore important, that when n o r male ond e rh o ud t e monitor and, if necessary, to be set. (see hiervo o r p . 3.7 . : The determining and balancing of the "overdrive").

*For w e INIG overdrive (= high belt tension), the band will ernslig b e damage.*

*A high overdrive will cause the band to jerk visibly. However, the belt tension is low.*

**SPIRAL FREEZER - SVR 400/600/900 -****2. DISCRPTION****2.2 MACHINE PARTS****Belt tensioning unit**

The belt tensioning unit consists of a drive motor and a weight roller . The gewichtrol is a role that loose in a vertical guide has been suspended. The roller can move freely from top to bottom in this guide . Due to this movement, the roll can take up an excess of tape within certain limits . Upon crossing of the border is the machine by the limit switch stops. The drive motor provides for a certain band tension. Due to the gewichtrol is the band tightly held.



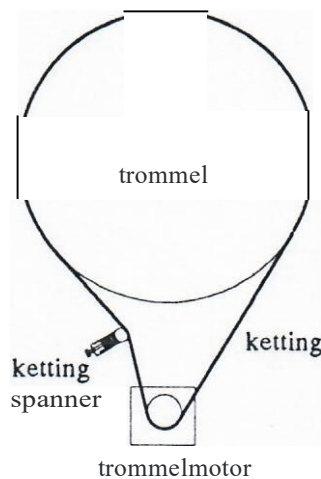
## 1. SPIRAL FREEZER - SVR 400/600/900 -

### 2. DISCRIPTION

#### 2.2 MACHINE PARTS

##### Drive motors

The spiral freezer is standard equipped with two drive motors.

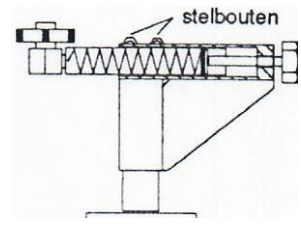


##### - Drum motor

This is mounted in the girlf srui m to . Depending on the dimensions and capa ca pacity of the machine, it is provided with a dub bele, single or angled re ductiekast.

The drum is supplied via a by the motor chain of driven. The chain is automatically kept under tension.

DThe tensioner consists of 2 bushes that move together, with a compression spring. With a set screw at the rear, the spring is given a certain pre-tension. Further, the treatment may spe between the inner - and outer sleeve are set with two brass screws.



##### - Belt motor

The belt motor is mounted at the exit of the freezer, just in front of the weight roll. In special cases it is possible that the motor is mounted in the freezer compartment

The motor is equipped with a variator box as standard. With a hand wheel on the variator can , the speed controlled to be. See page 3.7, how to determine and adjust the "overdrive" .

After the setting of the rate is the wise, the handwheel to remove. So is preventing it an established motor ontre money is.

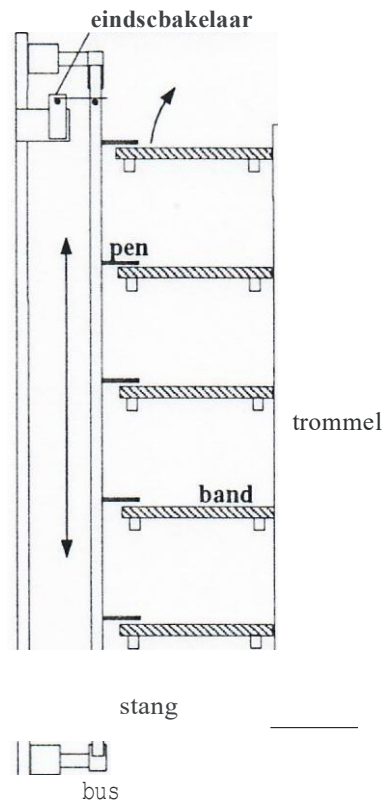
# SPIRAL FREEZER - SVR 400/600/900 -

## 2. DISCRIPTION

### 2.2 MACHINEPARTS

#### Belt running protections

The belt run is protected by various limit switches .



- *In the freezer.*

These limit switches serve

to secure the tape loop around the drum. If the clamping voltage of the tire to be high is, will be the outside of the tire up blows. (Christmas tree effect)

The tapetravel protection exists from a vertical rod with pen s, which is just above the band

hange n . The bar is suspended at the top and bottom of a bus . (In the latest versions with a leaf spring to prevent freezing .)

When the belt folds up, it pushes up a pin , the bar moves up and the limit switch is activated.

The tape run stops when the end switch is activated .

- *[lee exports . (See strap tensioning unit drawing , page 2.3)*

The weight roller has a free play within a guide . A limit switch is mounted at the top and bottom of the guide .

If the belt becomes too long or breaks due to wear , the roller weight drops down, the limit switch is operated and the belt run stops.

If the belt continues to stabbing, will by too little flow of the role upward movement. The rising roller activates the upper limit switch , which stops the tape running .

*The remedy of the above faults is further be attributed to p. 3.4 and 3.5.*

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### 2. DISCRPTION

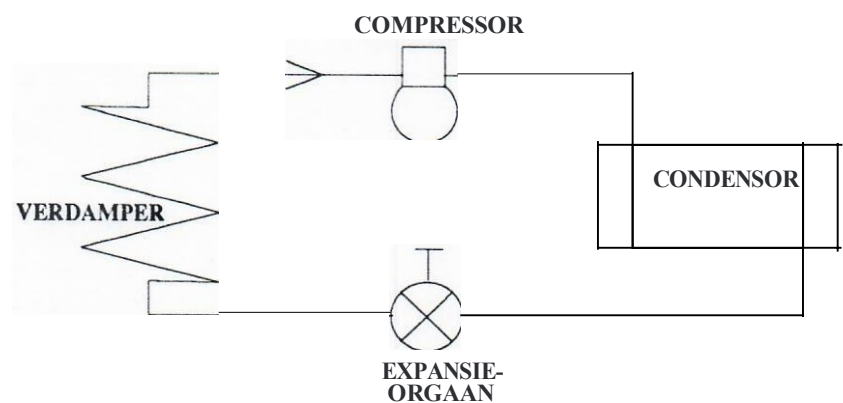
#### 2.2 MACHINE PARTS

##### Cooling system

The spiral freezer is equipped with an evaporator and fans as standard. This evaporator must be connected to a refrigeration system.

The cooling system is based on the principle of an evaporating liquid. Evaporation requires heat, which is extracted from the environment, resulting in a temperature drop.

The basic principle of the cooling system is as follows :



The coolant is evaporated in the freezer. This takes place in the evaporator. The vapor is extracted by the compressor, compressed and fed to the condenser. In the condenser, the vapor is cooled with cooling water or air (or combination) so that it condenses. (becomes liquid). So here the opposite happens as in the evaporator.

The liquid refrigerant is returned to the evaporator via the expansion device, which reduces the pressure in the line. This way the process starts all over again.

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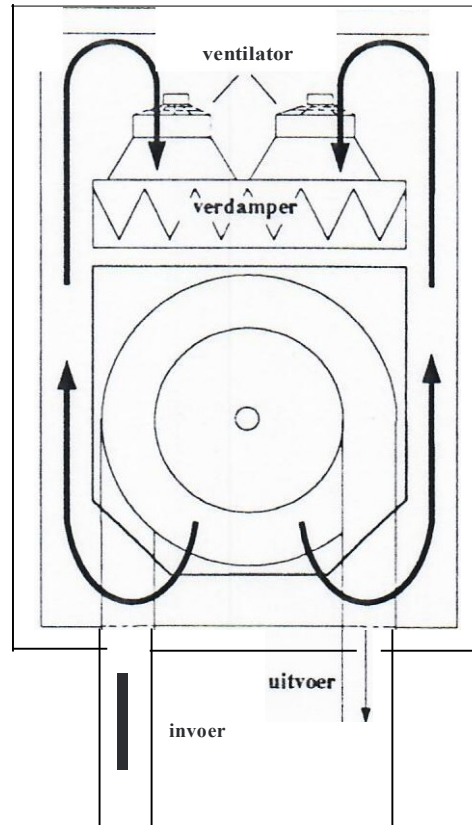
### 2. DISCRIPTION

#### 2.2 MACHINE PARTS

##### Air circulation

The fans initiate forced air circulation in the freezer compartment .

The fans suck air from the freezer compartment and blow it through the evaporator to go, in the spiral tower. The air is cooled in the evaporator . In the tower, the cooled air is guided over the products through plating . The air heats this up. On the front left the air the tower and is by the fans sucked.





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## 2. DISCRPTION

### 2.2 MACHINE PARTS

#### **Belt** washing machine

The belt washing machine has been specially developed for cleaning the endless belt of the spiral freezer .

the machine consists of 3 sections:

#### - Washing section .

In the scrubbing section the band is under high pressure hosed . This is done by 4 spray pipes on which flat jet nozzles are mounted. The wash water circulating e rt from the collecting container via detachable z ff and using ee n impeller pump.

The tank via a float valve connected to the cold water network through

which the contents of the tank at level maintained is. An excess of water is discharged via the overflow .

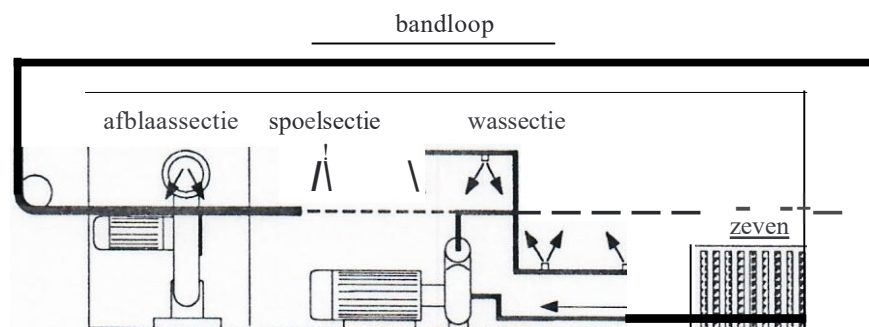
The washing water is heated in the tank by standard built-in electrical plug-in elements.

#### - Rinse section .

In the post rinse section is the band with clean water hosed . This is done by a spiro e ipijp on which flat jet nozzles ge mounted to be. The spray nozzle is connected are in the cold or hot water system. The spray water flows back to the . tank of the washing section and ensure that to change. The excess water is discharged to the sewer via an overflow .

#### - A fblaassectie .

In the blow-off section, the water droplets hanging on the belt are blown away so that the belt enters the freezer compartment drip-free.



**Note : During freezing should the tire washing machine will not be used or filled ge are with water.**