

# Manual & Operating Instructions

## HUGI MS600



## OPERATING INSTRUCTIONS

### HUGI MS 600

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## 1. General safety rules

- 1.1. Assembly, starting up and adjustment of the machine must be carried out only by trained personnel who have read and understood these operating instructions.
- 1.2. The electricity supply to the machine must be cut off during assembly, cleaning and fitting of spare parts and when the control housing is opened.
- 1.3. The surface of the measurement rollers must never be touched while the machine is running.
- 1.4. The machine must not be started up without belt guards in position.
- 1.5. The machine is equipped with an emergency stop switch

Control variant I : Motor switch (green) = emergency stop

Control variant II : rotary switch (black) or motor switch (green) = emergency stop

- 1.6. The HUGI AG company cannot be held responsible for damage which may occur caused by improper installation or failure to observe the safety regulations.

## 2. Principal data

### 2.1. Total power requirement

(with HG 150 or HG 200 feed)

0,3 kW

### 2.2. Total space requirement

(with HG 150 feed)

1000 x 500 x 400 mm

### 2.3. Weight

with HG 150 feed

116 kg

with HG 200 feed

121 kg

135 kg

### 2.4. Measurement range

standard

0 - 15 mm

augmented

10-25 mm

## 3. Drive

### 3.1. Single-phase AC motor

with phase initiation control

95 W

### 3.2. Double cog belt

16 x 3,4 x 815 mm

### 3.3. Roller rotation speeds

normal

40 - 100 U/Min.

augmented

40 - 200 U/Min.

## 4. Standard part feed

### 4.1. HG 150

Electro-magnetic spiral conveyor

Dia. 150 mm 0,2 A

Progressive receiver in aluminium

Dia. 150/200 mm

### 4.2. HG 200

Electro-magnetic spiral conveyor

Dia. 200 mm 0,2 A

Progressive receiver in aluminium

Dia. 200/300 mm

## 5. Transport

The machine should be transported with care. Hard impacts and above all damage to the measurement rollers should be avoided.

## 6. Installation

The machine can be installed on any work-bench. If desired we can supply special installation appliances for the MS 600 (aluminium stand). The inclination of the machine depends on the nature of the parts to be measured. Parts which roll need a small angle of inclination, parts which slide need a larger angle of inclination. The angle is adjusted by means of the adjustment screw. It should be noted that when the angle of inclination is altered, the spiral conveyor must always be placed horizontally.

**Caution:** The adjustment screw must never be unscrewed too far. A sufficient length of the screw must always stay within the tapped hole.

## 7. Connection

The machine is supplied ready to be connected in accordance with the electrical diagram. A connection for a metering unit (4-pole, Amphenol-Tuchel) is provided in the control housing. This connection is switched on at the same time as the spiral conveyor (Supplied only with built-in SC control).

## 8. Assembly / starting up

### 8.1. Undo the transport safety precautions

- Remove the belt guard and release the blocking of the two front bearing blocks (3 Allen screws each underneath at the side)
- Replace the belt guard

8.2. Assemble and adjust feeds as appropriate.

## 9. Adjustment

### 9.1 Adjustment of measurement rollers

At the right end of the coating the measurement rollers have a mark. These mark must be simultaneously lined up with the marks on the flanges of the bearing blocks (synchronous running), otherwise the machine's precision is not guaranteed.

#### 9.1.1. Setting

- With the machine turned off, turn the front roller by hand so that the marks correspond.
- Hold the front roller in position and turn the rear roller clockwise until the marks on this roller also correspond (the cog wheel can be heard clicking over the cog belt). This adjustment rarely goes out of true without outside influence, but it should be periodically checked and corrected if necessary.

## 9.2. Roller cleaning

See § 11.1 below.

## 9.3. Adjustment of dial gauges

An accurate measuring standard is needed for adjustment (preferably calibration rods, or even gauge blocks where appropriate). Calibration rods dia. 3 mm can be supplied on request.

- Adjust the stationary rollers at such a distance from each other that the measuring standard (e.g. calibration rod dia. 3 mm) does not pass through at the left and right ends of the rollers (within the coated area!) Still while stationary, increase the distance between the rollers until the rod just passes through at the left and right ends. The dial gauges are now mounted in the clamp so that they indicate approximately 3 mm.
- Switch the machine on and at low rotation speed move the rollers together until the rod can move along the whole length of the roller without passing through.
- Open the rollers on left and right by 0,01 mm; the rod should now pass through. The dial gauges can now be set at 3 mm.
- The dial gauges are precisely adjusted if the rod passes through without jumping at an adjustment of 2,99 mm and with parallel adjustment at 3 passes through completely freely.

## 9.4. Readjusting the measurement range of the dial gauges

The standard dial gauges have a measurement range of 0-5 mm. If a setting of more than 5 mm is required, the dial gauges on both sides must be correspondingly readjusted:

- Open the measurement roller in parallel to 5 mm.
- Loosen the fixing screws of the gauge stop and adjust to stop so that the dial shows approximately 0 mm. **Caution:** the sensor point of the dial gauge must not be free, i.e. it must always remain in contact with the stop.
- Tighten the stop and set the scale to 0 mm. The gauge now shows the range 5-10 mm.
- The range 10-15 mm or 0-5 mm is set in the same way (or the same way in reverse).
- If the readjustment is carefully carried out, the precise setting of the dial gauges is retained.
- It may be that the setting should be re-checked with the calibration rod after readjustment (see § 9.3).

## 9.5. Adjustment of vibrator control (control variant I)

For fine adjustment of the spiral conveyor it is necessary to open the control housing by means of the 3 screws at the front and 3 at the back.

**Caution:** Before opening unplug from the mains.

The adjustment of the switches and potentiometers is to be carried out only by qualified personnel and with due care.

Once the control has been adjusted, it should be protected from unauthorized interference by closing the housing.

## 10. Lubrication

The machine is equipped with precision slide bearings which must be regularly oiled (grease nipples on the bearing blocks).

It is vital to use a hydraulic oil of viscosity 2.8 degrees Engler (30 cST/i40 degrees C), DIN/ISO description HL32 or HLT 32.

**Caution :** The use of unsuitable oil or even grease will inevitably lead to damage to the bearings!

With open slide bearings it is unavoidable that oil should leak out. On assembly the bearings are soaked with oil, which leads to higher oil leakage in the first few weeks of use. During these period the machine does not need to be lubricated.

The machine is correctly lubricated when little or no oil leaks out but the bearings are permanently damp.

The lubrication intervals depend on the demands made on the machine, and are best obtained by experiment.

After being idle for several hours (e.g. overnight), lubrication need not be carried out if oil remains clinging to the rollers on the left.

As soon as there is no more oil clinging, lubrication must be carried out (1 squirt of the oil pump per bearing).

## 10.1. Check of condition of bearings

While the machine is running, use the flat of the hand at the left pivot end to push the roller to the right (axial play). If the roller slides back under its own weight without visible resistance, the bearings are as a rule in good condition.

**Caution** : While the machine is running, to not touch the face of the rollers, push only at the pivot end.

If there is visible hesitation in sliding back:

Immediately lubricate, and push the rollers back and forth in the axial direction at full rotation speed. The bearings may have to be dismantled and cleaned.

## 10.2. Other lubrication points (with the same oil) :

- Bearing of the belt tensioning wheel                      Once/twice a year
- Dust scraper pin    Once a year
- exit side    Once a week

While the machine is running, push to rollers away from the bearings towards the right (as described in § 10.1) and apply 1-2 drops of oil at the front end.

In multi-shift operation increase the frequency of lubrication accordingly.

## 11. Cleaning

### 11.1. Measurement rollers

The rollers and the dust scraper must always be kept clean and free of grease, otherwise there will be a negative effect on the grading results.

Pure petrol or spirit are the best. Lint-free cloth or paper should be used for cleaning.

## 11.2. Bearing blocks

The surfaces of the bearing blocks must always be lightly oiled (wiping with an oil rag suffices), since they are not rust-protected. Care should be taken that no parts become wedged between the bearings and the rollers (motor overload).

## 11.3. Rest of machine

- Each day wipe away oil leakage from bearings (if necessary)
- Once a month clean the cog belt and cog wheel (wipe off oil), and wipe the bearing housings at the meeting point of bearing and pivot.

**Caution :** While cleaning the machine must be switched off and isolated from the electricity supply  
Ensure that no solvent gets into the bearings

## 12. Spare parts

Spare parts for the measurement assembly can be seen from the attached drawing 600.02.000 and can be ordered by quoting the appropriate reference number. Other spare parts are shown in the attached spares list.

When unlisted spares are required, we request the following information :

- Serial number of the MS 600
- Required number of parts
- Exact description of function and position in assembly
- All available information from the original part(e.g. motor type and number, etc.)