

# OPERATING MANUAL METO-FER<sup>®</sup> AUTOMATION AG

ELEVATING TABLE TYPE

HT 20 A

HT 20 B

HT 20 C

SERIES FROM 5-52

## 1. PRODUCT DESCRIPTION

### 1.1 Introduction

#### 1.1.1. Utilization

The elevating table HT 20 (Type A, B, C) is able to execute linear movements in any position. This linear movement can be adjusted in its working area (stroke).

#### 1.1.2. Safety Precautions

Before starting to operate the elevating table (Type A, B, C), it is necessary to check that no body parts are within the working range of the element. In such a case the unit must not be operated.

The maximum supply pressure of 8 bar must not be surpassed.

#### 1.1.3. Danger Area

Any body parts are to be kept out of the working area (stroke area) of the unit in order to avoid mangling.

### 1.2 Technical Data

#### 1.2.1 Weights and Measurements

See also Sheet 5

Type	Stroke (mm)	A (mm)	B (mm)	C (mm)	Piston force at 5 bar	Air consumption*	Weight Lb.(kg)
HT 20 A,B,C	0-20	135	9	45	267N	0.19 NL	10.14(4.6)

NL: Normal Liter

\*Air consumption per each double stroke at 72.5 PSI (5 bar).

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### 1.2.2. Performance Characteristics

Repetition accuracy                    +/-0.0004" (0.01mm)

### 1.2.3 Operating Source

40mm filtered, unoiled or oiled air (dew point 6°C)

Operating pressure                    P<sub>min</sub> 3 bar

P<sub>max</sub> 8 bar

### 1.2.4 Connections

Air connections                    M-5 (see sheet 6)

### 1.2.5 Environment

Temperature                    50°F to 122°F (+ 10°C to + 50°C)

Relative humidity                    95% (without condensation of water)

Purity of the environment air                    regular working place atmosphere

## 1.3 Features

### 1.3.1 Standard Features (included in delivery)

The unit delivered will have two patented end screws type AS 08/15 with fine thread. These end screws adjust the stroke within its working area. According to the type, the units are equipped with the following cushions:

<b>Elevating Table</b>	<b>Cushions</b>	<b>Type</b>
HT 20 A	Elastomer cushions	KB 07/12/5
HT 20 B	Oil cushions	OB 9/10
HT 20 C	Oil cushions with compensation reservoir	OB 9/10 and KOB 50

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### **1.3.2 Special Equipment**

The end screws can be fitted with the patented sensing elements (see Meto-Fer<sup>®</sup> Electronic catalog, pages 22 and 23) in order to check the end position.

## **2. SAFETY REGULATIONS**

### **2.1 In general**

See chapters            1.1.1  
                                 1.1.2  
                                 1.1.3

### **2.2 Specifically**

Under no circumstances are any changes or modifications to be made on the unit.

## **3. CONSTRUCTION AND FUNCTION**

The stroke adjustment can be made infinitely variable with the end screw AS 08/15 (Pos.107) in order to check the occurred movement, the end screws can be fitted with our sensing elements (see Meto-Fer<sup>®</sup> Electronics catalog).

## **4. INITIAL OPERATION**

### **4.1 Compressed Air**

Remove the safety caps from the air connections. In order to regulate the velocity of the movement, we recommend our flow controls DV-M5 (see sheet 5.021). Unused air connections must be covered with the M-5 caps.

### **4.2 Stroke Adjustment**

- loosen security nut on the end screw
- adjust the required stroke with the end screw (Pos.107)
- tighten security nut on the end screw

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### **4.3 Cushion Adjustment**

The basic adjustment of the cushions has to be optimized by the user upon his special requirements.

The position of the cushions can be seen on the construction drawing.

The brake resistance can be changed by adjusting the length of the brake path.

When using oil and elastomer cushions, it must be checked that the end stop is not made by the cushions. The cushions should show a remainder stroke of 0.039" (1mm).

## **5. MAINTENANCE**

### **5.1 Introduction**

The elevating table does not require any special maintenance procedure. Never use any type of solvents in order to clean the unit.

### **5.2 Air Supply**

The elevating table is equipped with **oil-free seals** and can be operated with dry and non-oiled compressed air. If oiled compressed air is used, we recommend:

- Airpress compound SAE 5 (Klueber Order No. 063027)

## **6. REPAIR**

### **6.1 Introduction**

If the unit no longer meets the requirements (leakage, wear, etc.) the defective parts must be replaced.

### **6.2 Safety Precautions**

Before dismantling the unit, it is necessary to check that the compressed air supply is off. It is best to disconnect the compressed air supply from the unit.

When repair work is done, only the original spare parts and lubrication must be used.

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### **6.3 Replacing the Seals**

- Loosen the screw (Pos.114).
- Remove the stop holder (Pos.4) by loosening the screws (Pos.110).
- Remove the clip (Pos.106).
- Extract the piston rod with the piston (Pos. 12 and 13).
- Replace the seals.
- Grease the cylinder bore and piston rod. (See Chapter 7.2.)
- The parts are then assembled in reverse order as described above.

### **6.4 Replacing the linear ball bushings**

- Remove the stop holder, safety clip and extract the guide block as in Chapter 6.3.
- Remove the plate (Pos.5) by loosening the screws (Pos.113).
- Press out the linear ball bushings (Pos.109).
- Press in the new greased ball bushings. Make sure to press them in all the way to the bearing block cover (see page 6).
- Assemble the remaining parts as described in Chapter 6.3.

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### 7. SPARE PARTS LIST

#### 7.1 Spare Parts

When ordering spare parts, the type and serial number of the unit must be stated.

Position	Part Number	Description	Amount
*105	025.100.0590	O-Ring	1 piece
106	015.160.0180	Retaining Ring	1 piece
109	045.100.0007	Linear Ball Bushings	4 pieces
*121	025.150.0810	Piston Seal	1 piece
*122	025.140.0057	Rod Seal	1 piece

Seal Kit

Order No. **460.100.0012** all items marked with (\*)

Repair Kit

Order No. **460.110.0202** kit includes Pos.106 and 109.

#### 7.2 Lubrication

Grease for seals

Staburag NBU 4 Atemp.  
(Klueber Order No. 005 040)

Grease for linear ball bushings

Staburag NBU 4 Atemp.  
(Klueber Order No. 005 040)