OPERATING MANUAL
METO-FER® AUTOMATION AG

MINI LINEAR UNIT

ML 26-…-0
ML 26-…-A
ML 26-…-B
ML 26-…-C

SERIES FROM 4-50

1. PRODUCT DESCRIPTION

1.1 Introduction

1.1.1. Utilization

The mini linear unit ML 26-... (Type O,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 mini linear unit ML 26-... (Type O,A,B,C), it is necessary to check that no body parts are within the working range of the element.

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	Adjustment Range Between	A (See Sheet 5)	Weight Lb. (kg)
ML 26-025	0-25mm	0-25mm	147mm	3.7 (1.7)
ML 26-050	0-50mm	0-50mm	172mm	4.0 (1.8)
ML 26-075	0-75mm	24-75mm	197mm	4.2 (1.9)
ML 26-100	1-100mm	49-100mm	222mm	4.4 (2.0)
ML 26-125	0-125mm	74-125mm	247mm	4.6 (2.1)
ML 26-150	0-150mm	99-150mm	272mm	4.9 (2.2)
ML 26-200	0-200mm	149-200mm	322mm	5.5 (2.5)

1.2.2. **Performance Characteristics**

Type	Piston force at 5 bar	Lifting force static/dynamic F1	F2	F3	F4	Ma (Nm)	Mb (Nm)	Air Consumption per stroke
ML 26-025	154N	721N	754N	746N	770N	28.0	40.5	0.14NL
ML 26-050	154N	404N	422N	777N	794N	22.5	33.5	0.27NL
ML 26-075	154N	207N	311N	712N	734N	20.0	29.5	0.41NL
ML 26-100	154N	216N	226N	617N	636N	18.0	26.0	0.54NL
ML 26-125	154N	182N	169N	516N	583N	16.0	23.5	0.68NL
ML 26-150	154N	136N	143N	518N	548N	15.5	22.5	0.81NL
ML 26-200	154N	99N	104N	494N	509N	14.5	21.5	1.08NL

NL: Normal Liter

Repetition accuracy +/-0.0004" (0.01mm)

1.2.3 **Operating Source**

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

Operating pressure P_{min} 3 bar

P_{max} 8 bar

1.2.4 **Connections**

Air connections R 1/8 (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 10/50 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:

Mini Linear Unit	Cushions	Type
ML 26-…-O	No cushions	----
ML 26-…-A	Elastomer cushions	KB 08/M14X1
ML 26-…-B	Oil cushions	OB 15/10K
ML 25-…-C	Oil cushions with compensation reservoir	OB 15/10K with KOB 50

1.3.2 **Special Equipment**

The end screws can be fitted with the patented sensing elements (see Meto-Fer® 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

Do not make any changes or modifications to the unit (voids warranty).

3. CONSTRUCTION AND FUNCTION

The stroke adjustment can be made infinitely variable with the end screws AS 10/50 (Pos.101) in order to check the occurred movement, the end screws can be fitted with our sensing elements (see Meto-Fer® 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-R1/8" (see sheet 5.021). Unused air connections must be covered with the R1/8 caps.

4.2 Stroke Adjustment

- loosen security nut on the end screw
- adjust the required stroke with the end screw (Pos.101)
- tighten security nut on the end screw

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 0.0394" (1mm).

5. MAINTENANCE

5.1 Introduction

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

5.2 Air Supply

The mini linear unit 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 dismounting the unit, it is necessary to check that the compressed air supply is turned 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.

6.3 Replacing the Seals

Remove the end plate (Pos.2) by loosening the set screw (Pos.202).

Remove the cylinder tube (Pos.7) with the special wrench. Don't loosen the brass cover.

Loosen and extract the piston rod (Pos.8).

Extract the housing (Pos.1).

Replace the seals.

Lubricate the cylinder bore and piston rod with grease (see Chapter 7.2).

The parts are then assembled in reverse order as described above.

6.4 Replacing the linear ball bushings

Remove the end plate (Pos.2), the cylinder tube and extract the piston rod as described in chapter 6.3.

Extract the housing (Pos.1).

Press out the linear ball bushings (Pos.208).

Press in the new greased linear ball bushings. Take care that the piston seal rings lie on the outside of the housing.

The parts are then assembled in reverse order as described above.

7. SPARE PARTS LIST

7.1 Spare Parts

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

Position	Part Number	Description	Quantity
*206	025.150.0800	Piston Seal	1 piece
*207	025.140.0057	Rod Seal	1 piece
208	045.100.0006	Linear ball bushings	4 pieces
*214	025.100.0585	O-Ring	1 piece

Seal Kit Order No. **460.100.0251** all items marked with (*)
Repair Kit Order No. **460.110.0128** kit includes Pos.208

7.2 Lubrication

Grease for seals	Staburag NBU 4 Atemp. (Klueber Order No. 005 010)
Grease for linear ball bushings	Staburag NBU 4 Atemp. (Klueber Order No. 005 040)