

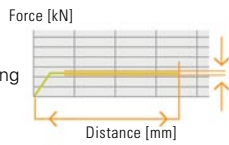
# ELECTRO MECHANICAL ASSEMBLY UNITS

- Integrated Force-Distance monitoring for optimal quality assurance
- Precise and flexible assembling, pressing and jointing for a broad area of applications



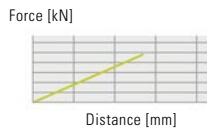
### PRESSING

bearings in at a distance without stops with monitoring of the pressing force.



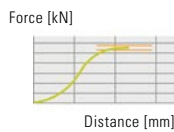
### JOINTING

rotor shafts with exact press in position.



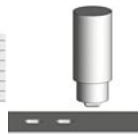
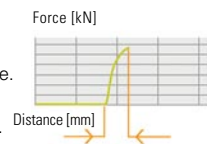
### RIVETS

with programmed pressing force.



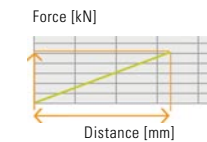
### MOLDING/SHAPING

detection of the part height and relative shaping distance. repeat accuracy of the programmed force of  $\pm 1\%$ .



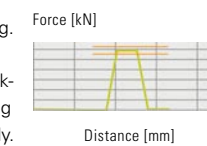
### SPRING TESTING

Measuring and reporting the spring resistance in certain positions and with monitored linearity.



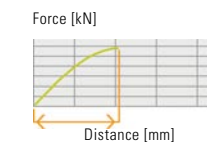
### STAMPING

with cutting force monitoring. Stamping with continuous stampforce monitoring: Thickness of the sheet and cutting state is monitored constantly.



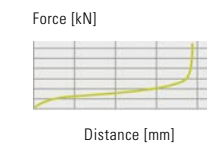
### PRECISE THROUGHPUT

thanks to very exact tolerance ram positioning.



### BENDING

as a standard operation for prototypes and series.



## MANUFACTURING VALUE FOR MONEY, INTELLIGENT ASSEMBLY

The universal electro mechanical assembly unit was developed for demanding applications in the Heavy Industry Environment. Its use in automated assembly lines or in manual work-places offers the user countless advantages:

- Extremely robust set-up, suitable for long periods of use
- High speeds and high acceleration for fast cycles and short cycle times
- Integrated force distance monitoring for optimum Quality Assurance
- Low repair and maintenance work reduces shutdown times and costs
- High functionalities due to transparent technology, thus requiring less training
- Fast setting-up, also for small and medium production runs
- Low noise development and clean use
- Low radial play
- Flexible and precise for a broad area of applications

## APPLICATION EXAMPLES

The product was incidentally at the time of its introduction to the market in the late 80's the first innovative manufacturing unit with an NC-control integrated in the PC and an operator interface in MS-Windows. In the meantime it has become a highly functional unit meeting all requirements.

Numerous reliable Electro Mechanical Assembly Units are in heavy industrial use all over the world. The Application Areas for the assembly units are diverse:

- Pressing rotors into sheet metal packages
- Pressing rubber dampers into metal bearings
- Setting and testing springs
- Molding rings to exactly 0.001 mm
- Pressing winding packages into the housing
- Use in riveting technology as well as in butt-welding plants
- Crimping of Electrodes
- Pressing bearing jewels into clockwork mechanism
- Assembly of injectors, bending of valves

Close relations with our well-known customers in the automotive and electrical industry lead to continuous improvement and extension of the functionalities and performance of our products. As an innovative company we are in constant search for new opportunities of use for our customers.



## SET-UP OF THE MECHANICS

The robust mechanics of the electro mechanical assembly units are put together from the following components:

Press housing, Ball gear drive/Roller gear drive, Force transducer, Axial bearing, Press ram, AC-Servomotor

Promess Electro Mechanical Assembly Units are available in different versions:

### ELECTRO MECHANICAL ASSEMBLY UNIT

- Large selection of force ranges
- Round steel housing with mounting flange
- Angled motor for small installation heights

### COMPACT ASSEMBLY UNIT

- Slim design, minimum dimensions
- Roller gear drive for high forces at small dimensions
- Weight reduced design

### PRECISION ASSEMBLY UNIT

- Additional precision guidance
- Direct coupling of motor for high dynamics
- Piezo or Strain gauge measurement technology

For units with angled motor the synchronous belt connects the motor with ball/roller gear drive directly and guarantees the greatest possible positioning accuracy.



## THE CONTROL: MODULAR AND NETWORKABLE

The mechanics are triggered via a power amplifier with an integrated NC-Module. The Riskprocessor fitted in the NC-Module takes over control and monitoring of the assembly unit. It can be programmed comfortably and easily with the PROMESS software using a commercially available PC and thus guarantees the user the highest operating comfort as well as maximum reliability.

Using standard components simplifies the integration of our electro mechanical assembly unit in production lines with open communication.

### BUS SYSTEMS:

Ethernet, Profibus, Can Open, Interbus, DeviceNet, CT-Net

Integrated quality assurance due to process monitoring and documentation. The Force-Distance course of a process is displayed on the monitor. Process values are compared with an envelope, monitored and stored. For serial production the necessary quality assurance data is available for the user in the control.



# ELECTRO MECHANICAL ASSEMBLY PRESS

Dimensions and Specifications

Module EMAP	Force [kN]	Stroke [mm]	Vmax [mm/s]	Art.-No.
<b>PRECISION ASSEMBLY UNIT</b>				
UFM	0,2	60	250	365802
UFM	0,5	100	400	364025
UFM	1	100	400	364830
UFM	1	200	400	364030
UFM	3	200	250	366030
<b>COMPACT ASSEMBLY UNIT</b>				
UFM	1	100	400	364046
UFM	25	250	240	378025
UFM	50	250	150	378050
UFM	50	250	240	378055
<b>ELECTRO MECHANICAL ASSEMBLY UNIT</b>				
UFM	3	100	120	374003
UFM	5	200	240	374005
UFM	12	200	240	374012
UFM	20	180	150	374020
UFM	20	350	230	374023
UFM	30	180	150	374021
UFM	30	350	230	374030
UFM	40	180	150	374040
UFM	40	330	240	374043
UFM	60	180	150	374060
UFM	60	330	240	374065
UFM	80	180	150	374081
UFM	80	330	200	374091
UFM	100	330	200	374103
UFM	150	400	145	374151
UFM	240	350	120	374243
UFM	300	350	100	374291
UFM	500	400	70	374294

**SCOPE OF SUPPLY:**

Electro Mechanical Assembly Unit with motor, Servo Amplifier, Strain gauge Amplifier, NC-Module, Operator Software, Memory Card, Motor and Resolver connector

**ACCESSORIES:**

Mounting plate for cabinet, Press rack, Cable sets, Interfaces, external Position or Force transducer, additional Memory

**SERVICE:**

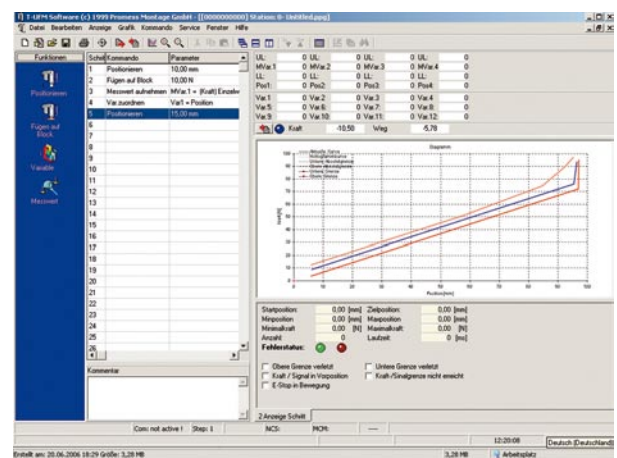
Installation and Start-up support, Pre-Tests, Maintenance, Process analysis, Consulting

## SOFTWARE

The visualization and programming of the process takes place using a PC. A transparent and easy to see interface under Windows 2000/XP provides problem-free and simple operation. All important information and functions are shown in the main menu in a way that is structured and easy to understand. A precise compensation against bending moment is offered in the software. Pressing of axles in stamping packages using different forces is recognized by the press and compensated automatically. The measurement is correct even after the press moves away in hundredths!

Parameters and input details necessary for programming can be processed quickly using a very simple and self-explanatory window technology.

To create a program is very easy. Different function windows are used one by one to insert the process data until the whole program is set up. All program steps with their specific functions are displayed in the main window.



Subject to change.

