

## Product Information

### BUP 400 / BUP 600 Sheet Metal Testing Machines for testControl II

CTA: 142348 139700



BUP 600 Sheet Metal Testing Machine



Display for BUP 400 / 600 / 1000 (1048583)

#### Applications

Testing the ductility of sheet metals in accordance with established standards and customers' requirements.

Testing the influence of surface treatments, coatings, and lubricants for typical types of forming such as cupping and earing tests. Checking the effect of tool and process parameters on the forming process.

#### Advantages and features

- Fast, easy tool and fixture changes, including drawing-punch, drawing-die, blank-holder, cutting-punch, cutting-ring and scraper-ring. Numerous modular expansion options
- Test tools/fixtures for established test methods available "off-the-shelf", special tools upon request. Test tools/fixtures from earlier-generation machines can mostly still be used.
- Open-design tool head for tests on long sheet metal strips.
- Low piston-actuator friction, proportional valve technology and non-contact digital travel sensor positioned centrally enable accurate measurement recording and outstanding reproducibility
- The PLC controls the deep drawing speed (position controlled) and the clamping force permanently
- Deep drawing speed or clamping force can be changed manually during the test sequence.

- Program-controlled change of deep drawing speed and clamping force during the test.
- Automatic piston withdrawal and switch-off after end of test due to crack detection or on reaching maximum ram stroke (s-limit).
- Easy operation: Illuminated push-buttons guide the operator intuitively through the test sequence.
- Electrical and hydraulic protection for all functions.
- Innovative testControl II with 500Hz measured-value acquisition-rate for high data transmission rate, together with 24-bit resolution and 2-channel safety circuit. Development based on experience gained from over 12,000 installations of testControl electronics.
- Specification of test parameters and recording of measurement data in parallel with the display using the optional testControl II and testXpert III testing software. Time-synchronized display of clamping, ram force and ram stroke measurement channels.
- testXpert III software: Test preparation and task execution, results analysis, and general system settings are grouped together logically so that users can easily find what they are looking for and navigate the software with confidence, and also to prevent user input errors.
- Clean and quiet in operation. Easily transportable thanks to compact design.

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- Accommodation of individual requests: As an alternative to the standard version, the testing machine, tools and accessories can be adapted to suit your requirements: Examples: Piezo load cell, differing deep drawing speeds, separate hydraulic power-pack, U-bending tool etc.
- Mechanical two-handed operation for opening and closing tool head - no risk of accident due to tool head falling through accidental jolt.
- Display for parameter input and test result read-out has a swivel mount and can be aligned to suit the operator. Instead of the display, the testing system can optionally be operated with testControl II electronics and testXpert III testing software.
- The BNC connectors option (Item No. 1048584) is used to read clamping force, drawing force, and travel via an electrically isolated 10 volt signal or to send a start signal to an external device via an electrically isolated contact. The BNC connectors are installed in a separate enclosure with a connecting cable to the electrical cabinet. BNC signals are calibrated and are transmitted in 16 bit resolution.
- The resolution of the measurement travel is 0.001 mm (old: 0.005 mm).
- A remote control unit (Item No. 1048587) is available for simultaneous manual setting of clamping force and speed during the test sequence. Two potentiometers and a key switch for enabling manual operation are housed in the casing. The remote control is also required on site at the customer for calibration tasks
- The housing is welded oil-tight and also serves as an oil drip pan.
- Set-up stroke for easy tool change.
- Low testing machine overall height plus convenient positioning of controls enables fatigue-free, operator-friendly working.

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Type Item No.	BUP 400 1043581	BUP 600 1043583	
Test load, max. (ram force, max.)	400	600	kN
Machine dimensions			
Total height, approx.	1380	1380	mm
Table height	983	983	mm
Height to tool head	1185	1185	mm
Width	1100	1100	mm
Depth	1775	1775	mm
Weight, approx.	1600	1600	kg
Punch force, max.	400	600	kN
Clamping force, max.	400	600	kN
Specimen dimensions			
Blank (punchable)	Ø 250	Ø 250	mm
Blank, insertable, max.	Ø 250	Ø 250	mm
Blank, insertable (with centering finger), max.	Ø 220	Ø 220	mm
Sheet metal strip width, max.	260	260	mm
Sheet metal thickness, max.	10	10	mm
Test tool measurements			
Drawing die, outer, max.	Ø 250	Ø 250	mm
Drawing die, max.	Ø 120	Ø 120	mm
Read-off accuracy, ram stroke	0.01	0.01	mm
Read-off accuracy, ram force	0.01	0.01	kN
Read-off accuracy, clamping force	0.01	0.01	kN
Read-off accuracy, deep drawing speed	0.01	0.01	mm/s
Ram stroke (travel of deep drawing piston)	0 ... 120	0 ... 120	mm
Deep drawing speed, max.	1000	1000	mm/min
Coolant			
Coolant connection	G1/2"	G1/2"	
Required coolant temperature	15 ... 28	15 ... 28	°C
Coolant requirement at 20 °C water temperature	7	7	l/min
Noise level in idle mode at 1.8 meter height	53	53	dB(A)
<b>Power specifications</b>			
Electrical connection	3 x 400	3 x 400	V (3Ph, N, PE)
Electrical connection with option tC II	3 x 400	3 x 400	V (3Ph, N, PE)
Power consumption	17.5	17.5	kVA
Frequency	50	50	Hz
Back-up fuse	32	32	A