

TOTAL PRESS CONTROL PLUS



Application example

Applications

Today, jointing and assembly tasks on presses must be performed reliably and – as far as possible – without subsequent checking. Specified parameters, which define the pressing-in process, must be maintained in production. Only in this way can the quality and reliability of the manufactured product be guaranteed. For this reason, TPC Plus is used wherever consistent jointing processes are required, the progression of which has to be monitored and, if necessary, documented using software.

TPC PLUS monitors the pressing-in process and the actual course of events is compared with the requirements and subsequently assessed. In this way, rejects are reliably identified and can be eliminated.

TPC PLUS is supplied with a PLC control system, onto which the hard-wired two-hand safety control MPS-1 is superimposed.

TPC PLUS is also available as a pure system module if a PLC environment is already available, e.g. in an automation system.

Operation

TPC PLUS can be easily programmed using the convenient membrane keypad or by using PC software. Logically constructed menu sequences enable you to find your way around quickly.

TPC PLUS stores 32 different measuring programmes, each with a maximum of 10 windows. TPC PLUS is therefore suitable for the wide range of models and the resulting shorter production cycles that are called for today.

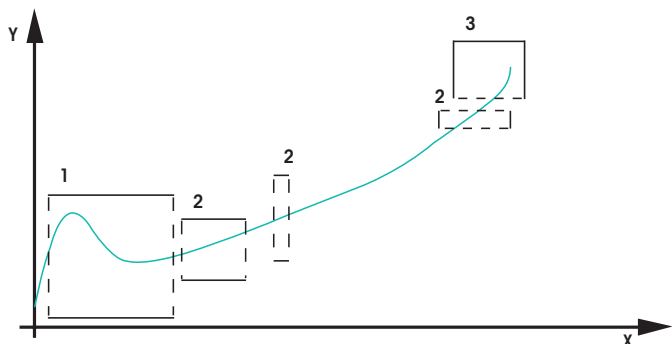
TPC PLUS is equipped with a large, high-contrast display, which displays the entered or measured values either graphically or numerically. The graphical representation of characteristic curves is particularly helpful in the development phase. A reference curve can be stored and used as a basis for programming in later production.



Front panel, TPC unit

Evaluation

Different types of windows and the transition of the force/displacement curve can be freely selected with **TPC PLUS**. Insertion windows, pass-through windows, and block windows are available.



Insertion windows (1) are used with pressing-in and jointing processes where it is necessary to check that both parts join correctly. If they are not aligned, the force rises steeply and the curve leaves the insertion window by the upper edge. A real-time signal stops the press cycle and initiates the return stroke.

Pass-through windows (2) check the path of the force/displacement curve. The entry and exit sides can be freely defined. If a different window boundary is infringed, then this is detected as an error.

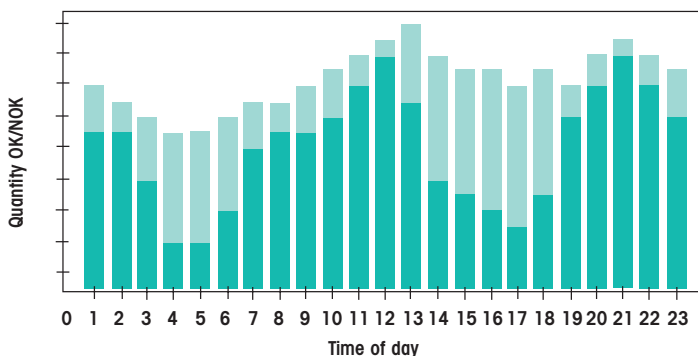
Block windows (3) monitor the force at the end stop. The curve must enter the window on the side defined and must not leave it again. Only one block window per program can be specified.

The processes measured, can be shown as a graphic or numeric display. For production runs, the system can be set to display the required processes on an external display via the serial interface.

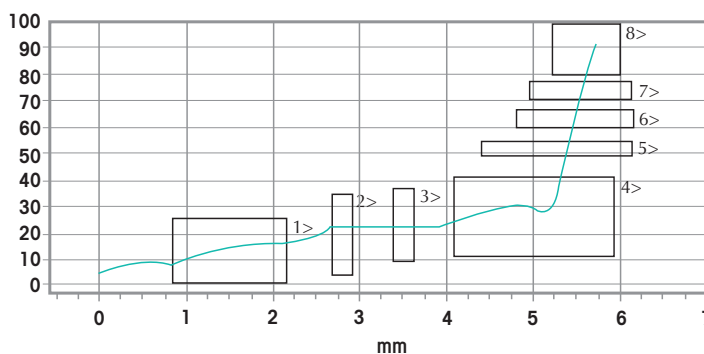
We would be happy to provide you with more detailed documentation on the TPC system on request.

Software

TPC PLUS is a self-sufficient unit and can, in principle, be used without additional resources. The PC program, available as an accessory, allows external programming and back-up of measurement programs and configuration data and, in its measuring mode, also enables each press-in process to be documented.



The software then also provides the data for statistical analyses.



Displacement measuring by potentiometer	Total error	< 0.1 %
Force measuring by strain gage	Total error	< 0.5 % typ.
		ref. to 10 kN
		ref. to 20 kN
		ref. to 50 kN
Reduction of daylight due to	strain gage holder up to 10 kN	80 mm
	strain gage holder up to 20 kN DMS	91 mm
	strain gage holder up to 50 kN DMS	98 mm