ARBURG
Assistance packages

Support in every operating situation

ARBURG

OVERVIEW

Assistance packages for greater efficiency

Complex requirements can be handled with ease Your operators need to be able to adjust and efficiently control processes intuitively. Depending on the work situation our assistance packages offer all features for greater production efficiency.

Whether you want help with set-up, production start-up, process optimisation, programming freedom, monitoring or service:

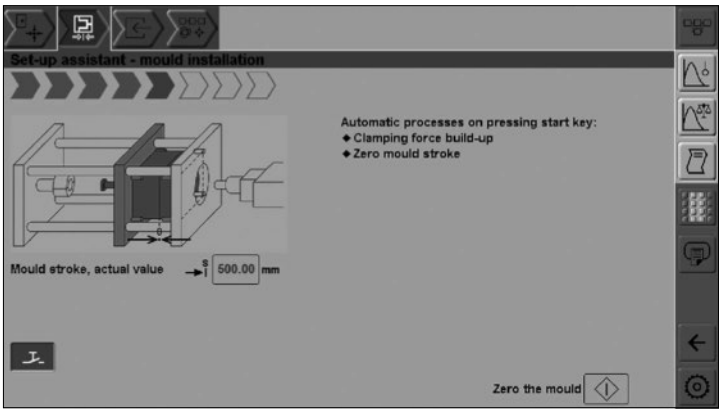
- Suitably oriented to the task at hand
- Unique help in every operating situation
- Assistance functions increase production efficiency
- Armed for the digital transformation

Assistance packages for greater efficiency

4.set-up	Guided set-up: you receive active support during set-up and parameter input, leaving you more time for productive tasks.
4.start-stop	Fast production start-up: start-up and shut-down of complex processes are made easier for you, reducing the number of start-up parts required.
4.optimisation	Assured quality and productivity: allows you to get even more out of your machine in each case – because every split second counts.
4.production	Greater programming freedom: special processes become standard for you and even complex moulds can be quickly mastered.
4.monitoring	Controlled system status: comprehensive monitoring functions enable you to detect deviations early and seamlessly document them.
4.service	Time-saving online-support: have faults analysed quickly, efficiently and safely in a remote process – for even greater machine availability.

4.SET-UP

The ARBURG 4.set-up assistance package (VE 555/40[1)], VE 555/41) offers extensive features for even easier set-up.



Guided set-up: detailed knowledge of the controller for set-up is no longer required.

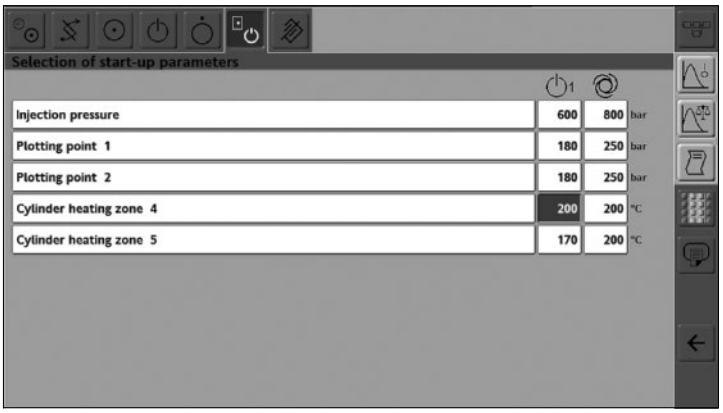
Functions and benefits in detail

Set-up Assistant [1)]	- Guided mould installation - Simplify and standardise the work procedure. - Initial calculation of process parameters based on little product data. - Functions available at a glance and faster start-up, e.g. for moulds without existing data set. - Extensive standard-material database stored - saves set-up time and avoids individual errors. - Teach-in of machine sequence - offers assistance for frequent mould changes and for less experienced employees.
Program-dependent input areas	- Definition of input areas for certain user groups with restricted or completely blocked editability - protects the mould and machine from incorrect entries. - Display of all limited parameters on one central page - provides better clarity. - Defined settings are stored in the data set (not on the machine). - Machine-independent validated processes or input areas are adhered to.
Mould locked when the sliding guard is open	- Build up and maintain mould locking force in set-up mode. - Simplified set-up, better alignment of the mould halves to each other, thus reducing wear.
Mould force limitation during set-up [2)]	- Force- and speed of the clamping unit when opening and closing in „set-up" operating mode limitable - protects mould from damage.
Partial sequence and partial monitoring	- Automatically perform individually configurable sequences in manual- and set-up mode. - Perform entire processes using a single key and thus, for example, simple handling of complex moulds, collision-free disengagement and quick troubleshooting.
Pressure and speed of ejector	- Edit force and speed with which the ejector extends and retracts – this prevents damage to the mould. - Edit in setup mode – requirements of mould optimally considered.
Pressure and speed of hydraulic core pulls	- Edit force and speed with which the hydraulic core pulls extend and retract – this prevents damage to the mould. - Edit in setup mode – requirements of mould optimally considered.

1) not available for ALLROUNDER V and T and multi-component-applications.
2) only available for ALLROUNDERs A, H, S and GOLDEN ELECTRIC

4.START-STOP

The ARBURG 4.start-stop (555/42) simplifies production start-up, reduces the number of start-up parts and increases your production capacity.



Precise start-up: Function "Start-up parameters and -cycles" enables specific setting in the start-up-phase until the injection moulding process is running in a stable manner.

Functions and benefits in detail

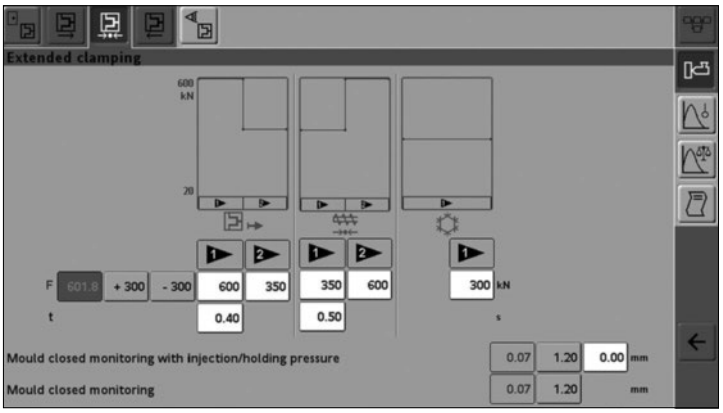
Start-up parameters	- Programming of parameters for start-up cycles with a defined number of-cycles. - Makes it possible to change the start-up without production parameters. - Automatic reset to production values after start-up cycles are completed. - Controlled process start.
Automatic start-up	- Individual start-up (without inserts, injection, part demoulding) of the mould. - Turnkey-systems and multi-component-moulds with inserts can be easily started-up. - Release for next cycle via start button. - Controlled start to production.
Extended standstill monitoring	- Standard standstill monitoring in automatic operating mode. - Protection of the material against thermal damage. - Monitoring between end of dosage and start of injection. - Defined follow-on functions start if the machine comes to a standstill due to an automation fault (protection against thermal damage).
Uniform heat up	- Simultaneous reaching of target temperature for different heating circuits. - Protects material against thermal damage, mechanical stresses are avoided. - The plasticizing cylinder, hot runner and mould cavity of the mould can be programmed interdependently.
Delayed activation of hot runner	- Activation of hot runner nozzles depending on the temperature in the hot runner manifold or a cylinder heating zone. - Protection of material against thermal damage. - Activation of hot runner manifold depending on the cylinder heating. - Reduction of peak loads and savings on energy.
Enable hot runner	- Purging of hot runner only when the release time and set temperature have both been-reached. - Protection of hot runner and shut-off nozzles against damage.

Functions and benefits in detail

Hot runner heat-up sequence	- Mould cavity and/or hot runner start-up programmable in 3 variants. - Moisture present can escape. - Protection of hot runner against damage during heat-up. - Reduction of peak loads and savings on energy.
Hot runner boost	- Brief increase of hot runner temperature profile during start-up. - Number of boost-cycles and maximum boost-time definable. - Controlled start to production. - Gating point reliably open. - Protection of hot runner against damage during start-up. - Low pressure in hot runner.
Uniform energy flow	- Activation time of hot runner evenly distributed over the cycle - for uniform thermal behaviour with fast-reacting hot runner nozzles.
Monitoring of hot runner activation time	- Monitoring of activation time with reference value and tolerance; machine stops at end of cycle if tolerance is exceeded - malfunctions/damage can be detected in good time.

4.OPTIMISATION

The 4.optimisation (555/43) assistance package allows you to get even more out of your machine on a case-by-case basis.



Improved mould venting: Function "Extended clamping program" includes programmable mould locking stages without a time limit.

Functions and benefits in detail

Injection during mould closing (injection on-the-fly) 1)	- Simultaneous start of the injection process with mould closing movement - Reduction in cycle times
Cross-cycle movements 1)	- Dosage across cycles - Ejection across cycles - Cycle-independent material preparation and part demoulding - Shorter cycle times - Careful preparation of material - Reduction of cooling time by reducing the melt temperature - Improvement in part demoulding behaviour
Extended clamping program 1)	- Two programmable mould locking stages without time limit - for better mould venting (active breathing") - Mould closed until end of injection - Start of holding pressure until start of cooling - During cooling - Mould locking stage for moving core pull after cooling - "Active breathing" (mould venting) possible

1) available for ALLROUNDER ALLDRIVE (performance variant L2) and ALLROUNDER HIDRIVE 270-720 mm distance between tie-bars.

4.PRODUCTION

The 4.production (555/44) assistance package offers high levels of flexibility in the creation of individual process sequences.

Reliable process: definable part of the sequence with "Programmable repetition group" function repeatable.

Functions and benefits in detail

Freely programmable mould	- Sequence of core pull movements freely programmable [2)] - Maximum flexibility of process settings for complex sequences. - Definition of mould positions depending on the error analysis (e.g. for bad parts only at intermediate stop).
Freely programmable ejector	- Sequence of ejector movements freely programmable [2)] - Maximum flexibility of process settings for complex sequences. - Ejectors move while the mould is closed.
Freely programmable core pull	- Sequence of core pull movements freely programmable [2)] - Maximum flexibility of process settings for complex sequences. - Movement of core pulls with alternative branches.
Freely programmable needle-type shut-off nozzles **Programmable repetition group**	- Freely programmable needle-type shut-off nozzles [2)] - Maximum flexibility of process settings for complex sequences. - Shut-off nozzle programmable several times per cycle. - Opening and closing of different shut-off nozzles, depending on the counteror an external signal. - Production of different components in the same mould. - Definable part of the production sequence can be repeated - guarantee higher process reliability. - Number of repetition groups and/or input condition can be selected - guarantee trouble-free sequence and protect mould from damage.
Multi-programmable secondary axes	- Multiple programming of core pulls, programmable outputs and air blow in the production sequence - flexible adjustment of complex process sequences.
Functions programmable out of cycle	- Programming of core pull and programmable outputs depending on number of cycles or programmable inputs - flexible adjustment of complex process sequences, e.g. for thermoset processing and turntable-moulds.
Second ejector intermediate stop	- Programming of another intermediate stop while advancing the ejector (an intermediate stop is possible by default) - flexible adjustment of complex process sequences, e.g. for family moulds.
Stop ejector selectable [1)]	- Deactivation of active ejector retraction during mould movement - optimisation of cycle time and avoidance of impact load on ejector.

1) Only available with hydraulic ejector. Standard with electric ejector
2) Plausibility check deactivated in this case; function must be explicitly activated for this axis

4.MONITORING

With the assistance package 4.monitoring (555/45), the system condition can be comprehensively monitored and process deviations can be detected reliably and at an early stage.

Detailed monitoring: use the „Monitoring via actual-value graphic" function to detect process deviations early.

Functions and benefits in detail

Monitoring via actual-value graphic	- Monitoring based on actual values or moving axes (for forces, paths, torques). - Detailed tolerance setting and selection of the follow-on function. - Monitoring axes and processes in detail. - Early detection of process deviations, e.g. ejector stiffness, wear on core pull, screw torque, deviations in the closingforce.
External alarm inputs	- Evaluation of any potential-free peripheral signals - Individual selection of the follow-on function. - Incorporation of peripherals in quality assurance. - Fast troubleshooting through clear fault description in the event of an alarm.
Additional monitoring symbols	- 4 additional monitoring symbols (8 in total). - Control production sequence depending on machine-, mould-, peripheral signals. - Individual selection of the follow-on functions. - Guarantee process reliability and monitor process parameters in the production sequence as a condition for the next process step.
Start of injection monitoring	- Monitoring of the dosage volume with tolerance. - If necessary, prevent injection start in order to protect the mould and hot runner against damage, to avoid flash formations and operating errors, and to ensure safe start-up.
Configurable monitoring of end position of the axis	- End position monitoring of other axes can be switched off for each axis (in manual operating mode). - For faster set-up, faster start-up of complex tools and easier troubleshooting.
Ejector movement monitoring	- Check that the ejector has reached the front position before injecting again. - Ensure part demoulding and avoid damage to the mould.
Minimum distance monitoring of ejector [1)]	- Dynamic clearance monitoring of ejector and nozzle side of mould - Optimisation and monitoring of the minimum-distance based on actual-speeds. - For cycle time optimisation and collision avoidance with fast simultaneous movements.
Production in shift operation	- Monitor good- and bad parts according to shift (for a maximum of 3 shifts). - Enables the shift-related analysis of good- and bad parts. - Monitoring of production in detail by monitoring machine standstill.

1) not available for ALLROUNDER V and T; only available for electric or P/Q controlled ejectors

4.SERVICE

The 4. service assistance package enables machine diagnosis and process support via remote-access to the system via an encrypted data connection after activation by the operator on site.

Time-saving: quick machine diagnosis and process support.

Functions and benefits in detail

ARBURG Remote Service	- High data security access permission is granted by the operator on the machine (key switch). - Time-saving online-Support - Quick machine diagnosis and process support - Fewer service-assignments - Increased machine availability

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