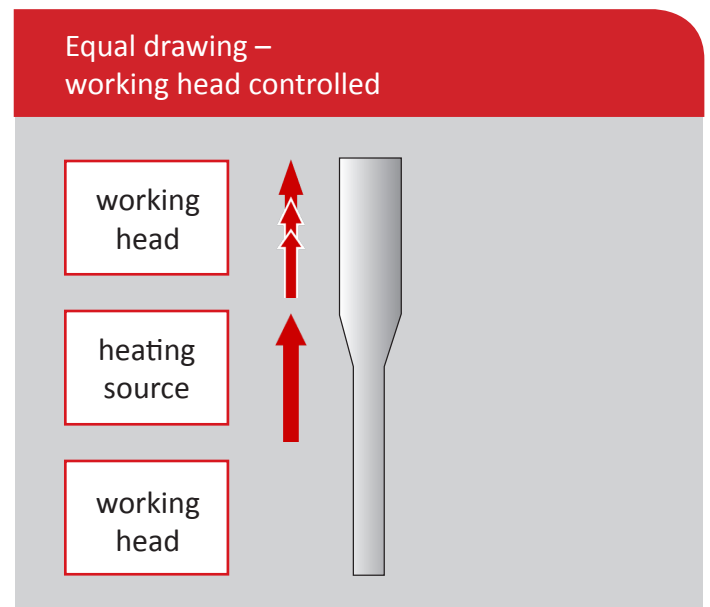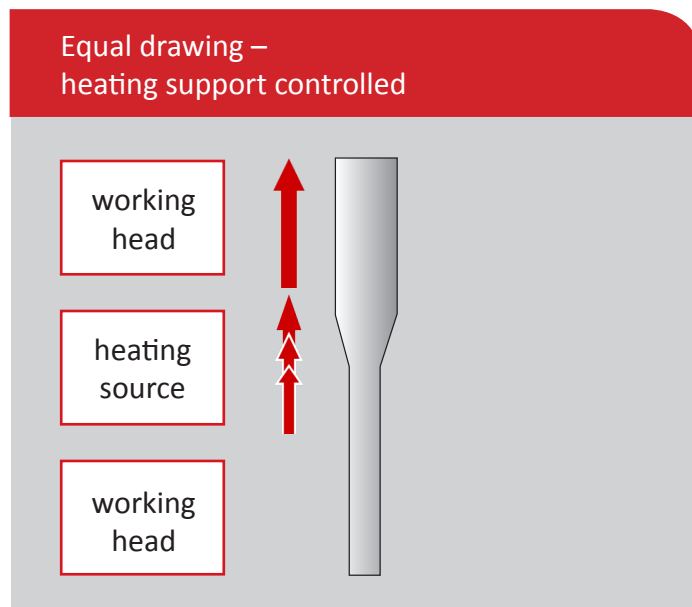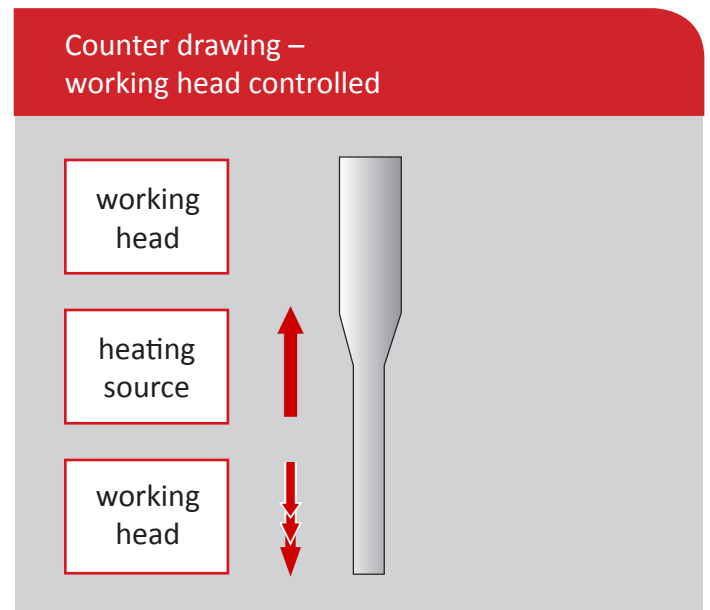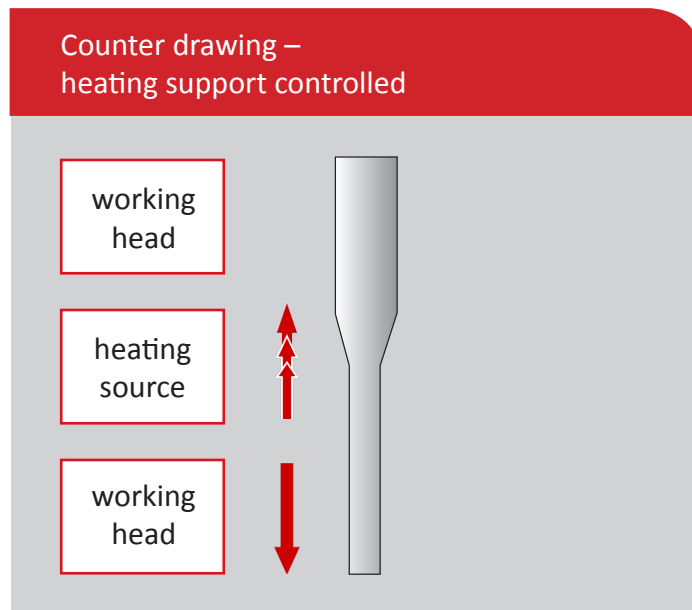# ARNOLD GRUPPE

— SINCE 1950 —
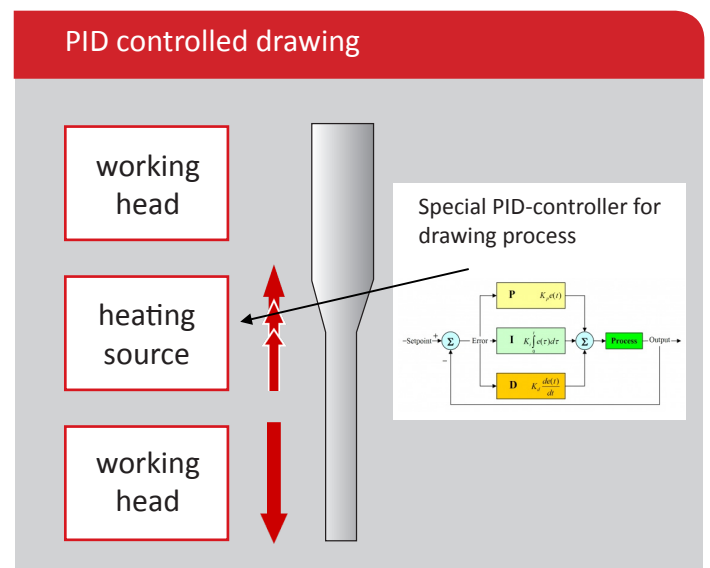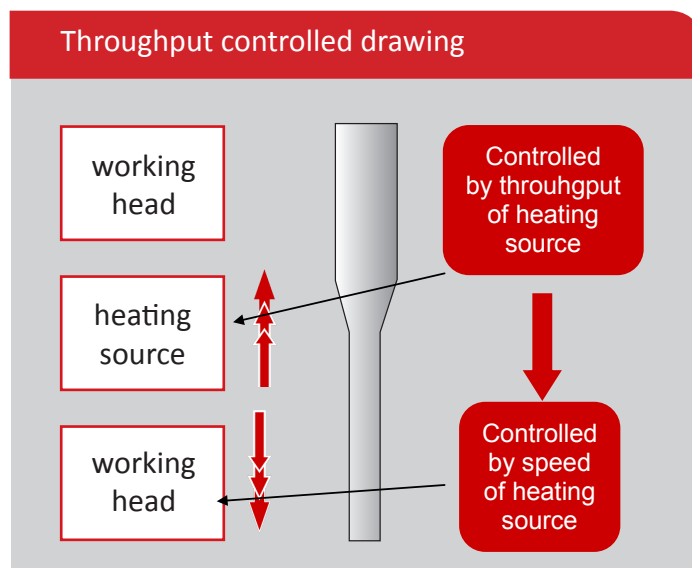
ARNOLD PRECISION STRETCHING LATHES

The Arnold precision stretching lathes are designed for high precision stretching of preforms. The adaptable overgladding system allows customers to increase their core rod size by the rod in tube (RIT) or rod in cylinder (RIC) technology in one working step with the stretching process. The latest technology applied in the Arnold precision stretching lathes results in low cost of ownership and customer orientated solutions. The newest technologies for process monitoring, analyzing and controlling maximize the yield of preform production and enable a wide range of products.

- High precision machine bed
- Integrated temperature supervision by high precision pyrometer
- Integrated flame supervision for safety
- All axis are equipped with AC-servo motors
- Modular heating concept with burner or furnace
- Available in horizontal and vertical execution
- Integrated high precision diameter measuring system for unstreched preform, hot zone and final diameter

Maximum process flexibility by 6 available drawing processes combinable with rod in tube and rod in cylinder technology.

Standard drawing processes

Counter drawing – heating support controlled

working head

heating source

working head

Counter drawing – working head controlled

working head

heating source

working head

Equal drawing – heating support controlled

working head

heating source

working head

Equal drawing – working head controlled

working head

heating source

working head

High performance drawing processes

Throughput controlled drawing

working head

heating source

working head

Controlled by throuhgput of heating source

Controlled by speed of heating source

PID controlled drawing

working head

heating source

working head

Special PID-controller for drawing process

$P \quad K_p e(t)$

$I \quad K_i \int e(\tau)d\tau$

$D \quad K_d \dfrac{de(t)}{dt}$

Setpoint → Σ → Error → Σ → Process → Output
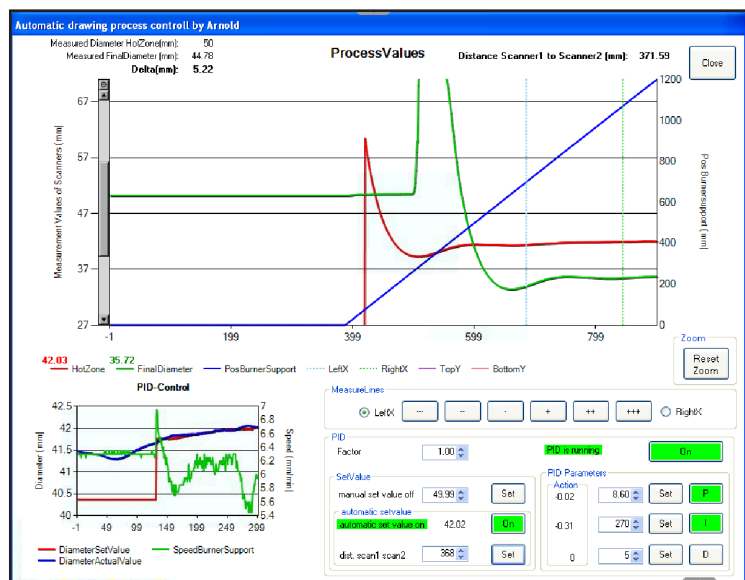
Powerful HMI

- High performance user interface designed through the newest ergonomical knowledge
- Maximum effectiveness for machine operation
- Integrated user management
- Process based status windows - all important information are available at one page
- Graphical trend monitoring for all important process data
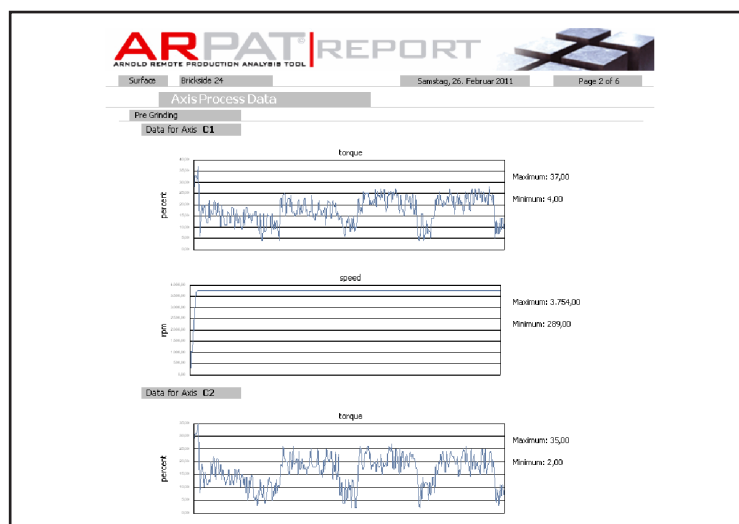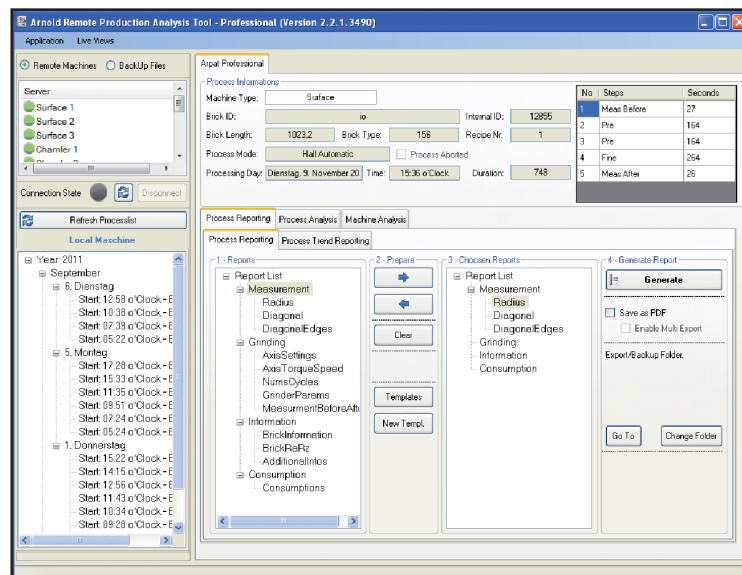

Advanced drawing control

- Process based graphical online monitoring and controlling
- Graphical measurements between hot zone diameter and final diameter during process

ARPAT ©

ARNOLD REMOTE PRODUCTION ANALYSES TOOL

Integrated process based analysing tool

- Integrated SQL-database
- Process based trend analysis over a huge time range
- Detailed quality reports
- Data export to all common file types like MS-Word, MS-Excel, PDF, ...
- Central management for all Arnold machines

Integrated process based analysing tool

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Production

Continuous process optimization

Modify drawing parameters

Analyse production data with ARPAT