

Press Release

August 31st, 2011
Press Release 10/11
1/3

High Productivity, High Lifetime, High Cost Effectiveness

Arnold presents new machines for mono-crystalline ingot processing

Arnold Gruppe, Weilburg/Deutschland now has transferred their successful machine concept for multi-crystalline silicon bricks also to the mono-crystalline brick production. In September 2011 Arnold Gruppe will present for the first time ever, during one of the most important international industrial exhibitions for photovoltaics in Hamburg (PVSEC), two new processing machines enlarging their scope of supply. Both novelties, the newly developed fully automated cropping center type 72/454 as well as the cropping saw type 72/476 working at high production accuracy, are completing the processing and automation technology for mono-crystalline ingot processing already available from Arnold Gruppe.

The new cropping center, designed for ingot length up to 3,000 millimetres, has been designed for automated cutting of cones (top and tail pieces), test wafers as well as cutting to length of mono-crystalline ingots into defined segments between 250 and 1,000 millimetres. Optionally it is possible to crop either raw ingots (as grown) or already squared ingots, depending on the type of pre-process chosen by the manufacturer. The work flow of the machine is configured in a way that the operator will be able to load and unload the machine in a most flexible manner avoiding interruption of the production cycle. Thanks to continuous production in the sawing area the machine will achieve an excellent utilisation rate. Based on „Failure Mode and Effect Analysis“ (FMEA) the vertical construction principle of the machine bed and sawing unit have been developed. Hence optimal accessibility of all machine guidances, drives, electrical installations and cutting disc is guaranteed.

The new ingot squaring saw is characterized by its high production accuracy, productivity, cost effectiveness as well as high life time. The vibration reducing stiff machine basis, consequent further development of thin plate sawing technology, easy handling and continuous process control are only a few features which excel this machine. The flexible clamping concept allows to either square an ingot as a whole (as grown) or cropped ingot segments. The enormous loading capacity of 3,000 millimetres for either one complete ingot or up to five single - already cropped – segments from 180 to 1,000 millimetres is an enormous advantage as optimal machine load is

Press Release

August 31st, 2011
Press Release 10/11
2/3

always possible.

Both novelties are equipped with the Arnold thin blade sawing technology. This leads to an enormous reduction in kerf loss due to sawing blade thickness of only 1.5 millimetres. Compared to commercially available blade thickness of up to 3.5 millimetres loss of silicon will be more than halved. Both machines incorporate the Arnold process analysis tool with an open interface to the higher-ranking MES (Manufacturing Executing System). Arpat, the Arnold Remote Production Analysis Tool, collects, analyses, records and visualises the individual processes and parameters.

The robust and low-maintenance machine design of both product novelties results in high machine availability and extremely low operating costs (TCO). The squaring saw is immediately available and will be realized including automation concepts on request. The cropping saw will be available by end of 2011. Further details, prices and delivery time are to be inquired from supplier.

Image caption

Fully automated cropping center for mono-crystalline ingot processing
New cropping machine type 72/454

Image caption

High production accuracy and cost effectiveness
New squaring machine type 72/476

Image Source

Arnold Gruppe, Weilburg/Germany

Company Profile:

Herbert Arnold GmbH & Co. KG, founded 1950 in Weilburg/Germany, is one of the world-wide leading manufacturers of burners, tools and machines as well as ready-to-use systems for customers in the area of photovoltaic, glass and quartz glass processing, fibre-optic and the automotive production.

The core competence in the area of photovoltaics is the mechanic cutting and grinding/polishing of poly-, mono and multi-crystalline silicon-ingots and blocks. Traditional values and experiences are the base of thermal and mechanical glass production which, next to a wide range of burners and tools are nowadays also incorporated into the solar thermal glass tube production.

The Arnold Gruppe consists of the following companies: Herbert Arnold GmbH & Co. KG, Helmich Automationstechnik (1998); B&C (2005) und Heathway Ltd. (2004). The foundation stone was laid by Herbert Arnold. The realisation of innovative production technologies for glass and later for quartz glass processing, turned the one-man company within a short time into an enterprise with an international reputation. The Arnold Gruppe nowadays employs 208 employees and exports to all the key markets of the world.

Press Release

August 31st, 2011
Press Release 10/11
3/3



Company Contact

Arnold Gruppe
Herbert Arnold GmbH & Co. KG
Wolfgang Schürgers
CSO
Weilstraße 6
35781 Weilburg
Germany
Phone +49 (0)6471 9394126
Fax +49 (0)6471 2065
wolfgang.schuergers@arnold-gruppe.de
www.arnold-gruppe.de

Press Contact

Benson GmbH
Agentur für angewandte
Kommunikation
Gisela Benson
Brucker Straße 4
82266 Inning am Ammersee
Germany
Phone +49 (0)8143 44 44 73
Fax +49 (0)8143 44 47 61
info@agentur-benson.de
www.agentur-benson.de

Links and prints to the agency, please.