

Cryogenic media-blast deflashing

Cryogenic drum deflashing

Washing and drying systems



MASCHINEN- & ANLAGENTECHNIK

TARGET GROUPS

MANUFACTURER OF RUBBER
AND PLASTIC MOULDED
PARTS AND NON-FERROUS
METAL PARTS



CONSISTENT MATERIAL CHARACTERISTICS

NO CHANGE TO THE SURFACE STRUCTURE

MAINTAINS THE SHAPE – WITHOUT WARPING

UNCHANGED COMPONENT DIMENSIONS

YOU KNOW THE REQUIREMENTS

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You yourself know best what you need in order to optimise your production processes as well as possible. That's why you decide what you get from us. Bet on custom-made machines.

To fulfil your individual requirements as a manufacturer of rubber and plastic moulded parts and non-ferrous metal parts, we give you the highest level of flexibility. This means, that with us, you receive exactly the machine, that is precisely adapted to the requirements of your operation. You determine the specifications – we build the right system. In the design, size, capacity and accessories, that you require.

AW Maschinen- und Anlagentechnik offers you the full range: the entire production chain can be covered with our systems portfolio. First deflashing, then washing, and finally drying. In combination with our comprehensive spare parts service, you therefore benefit from the highest degree of reliability and the quickest possible readiness for use.



THE INNOVATIVE MEDIA-BLASTING ANGLE ADJUSTMENT



 UNIVERSITÄT SIEGEN

LABORATORY TESTED QUALITY

AWS: Optimal media-blasting results – patented.

With the innovative and patented media-blasting angle adjustment, the processing times can be significantly reduced. By adjusting the blasting grain launch direction, the media-blasting operating area can be optimised for a wide range of requirements – exactly how you need it for your material.

(German patent number 10 2011 003 102)

WHY WE ARE THE RIGHT PARTNER FOR YOU



ECONOMICAL AND EFFICIENT thanks to short media-blasting times and low consumption



INNOVATIVE thanks to cooperation with the University of Siegen and our own patent



EXPERTISE AND COMPETENCE thanks to many years of professional experience



LOW MAINTENANCE COSTS thanks to high-quality and long-lasting wear parts made from modern materials



CUSTOMER ORIENTED in development and finding solutions



PRICE-PERFORMANCE RATIO convinces thanks to fairness



FLEXIBLE thanks to individual customisation

BENEFIT FROM OUR INNOVATIONS.

Constant progress with added value for our customers – that's how it works, day after day, with us. In the field of cryogenic deflashing, we see ourselves not only as a developer and producer but also as a pioneer in the matter of the individual solution-oriented approach. Based on our many years of knowledge, we build highly efficient systems which

work to save resources based on intelligent technologies and thus make a contribution to the preservation and protection of the environment.

We simply want to offer our customers more: More performance, more experience, more service, more savings potential, more effective communication.

SAVE TIME

SAVE ON NITROGEN

THE BEST DEFLASHING RESULTS

EXPERT ADVICE

ONE CONTACT PERSON

EXPERIENCED SERVICE

SHORT REACTION TIMES

DESIGN & DEVELOPMENT

„Anyone who stops improving has stopped being good.“ In accordance with this motto, we are constantly striving for further innovative developments which are optimally adapted to our customers' requirements. Working together with our customers and the in-house design and electrical planning department, we find the optimal solutions for high-performance and long-lasting products.

PRODUCTION & TECHNICAL DEPARTMENT

Each of our machines and systems is precisely tested within the technical department. This allows us to check and optimise the process parameters. When producing our systems, we work with the latest materials and place a great deal of value on precision. The core components are manufactured and assembled in our factory.

COMMISSIONING

Naturally we undertake the professional installation of your system. Our trained employees instruct you in detail in the operation after commissioning so that you are quickly able to operate your machines by yourself.

SERVICE

You should be more than just satisfied with our products and services and take advantage of the benefits of a fixed contact person who is specifically responsible for looking after your interests. You benefit from short reaction times thanks to the use of our own service technicians and availability of spare parts – even from different manufacturers.



YOUR COMPONENT– YOUR MATERIAL

OUR SOLUTION



**ELASTOMERE (GUMMI) · KUNSTSTOFFE (THERMOPLASTE UND DUROPLASTE)
FASERVERSTÄRKTE KUNSTSTOFFE · ZINK · ALUMINIUM // MAGNESIUM
TITAN · VERBUNDWERKSTOFFE · SINTERWERKSTOFFE
POLYURETHAN · SCHAUMSTOFFE**

CRYOGENIC DEBURRING – THE PROCESS

During cryogenic blasting deburring, the components to be processed are subcooled in a processing room with a suitable coolant, and therefore the burrs become brittle, and are blasted with a blasting medium. The aim of this is to remove the unwanted burrs from the components. These can be efficiently removed up to a thickness of 0.2mm – and even thicker according to the component composition.

Due to processing the components in a processing drum, additional deburring of the components takes place, due to their relative movement to each other. This procedure is also carried out without blasting medium, in systems with and without corresponding charge – e.g. steel balls. This is called cryogenic drum deburring. This is used for pre-deburring of components (separation of moulded parts and sprue elements) and for the deburring of polyurethane moulded parts. The process can also be used for complete deburring, according to quality requirement.

PROCESS PARAMETERS FOR CRYOGENIC BLASTING DEBURRING:

-  Temperature level (as a rule -20 °C to -150 °C)
-  Drum speed (rolling speed)
-  Cooling time
-  Drum time (with and without blasting)
-  Dropping speed of the blasting medium (shot blasting speed)
-  Grain size of the blasting medium
-  Blasting time
-  Separation time

Due to the very cold temperature in the processing area, and the necessary accessory aggregates, icing is the biggest challenge in plant engineering, due to air humidity – particularly to guarantee continual 3 shift operation.

THE AWS PERFORMANCE FAMILY: RELIABLE, TAILOR-MADE.



AW offers innovative systems at fair prices. Economical, environmentally friendly, low-maintenance and user-friendly. With the best insulation values and optimal tightness. We search for tailor-made solutions according to your individual specifications and produce high-performance, long-lasting and high-quality systems.

- > Compact design with the control cabinet on a forklift-adapted machine bed frame
- > Insulated cryogenic cell with 120 mm thick walls
- > Integrated 2-stage cyclone dust extraction
- > Energy-conscious thanks to modern materials and innovative sealing designs

- > Optimal flywheel geometry allows for the best media-blasting performance
- > State-of-the-art forward-looking controls
- > Continuous operation possible

AWS 08

AW 10
BATCH VOLUMES
IN LITRES

10



THE STANDARD FEATURES OF THE AWS 08



PROCESSING DRUM

- > Removable basket with selectable perforation



FLYWHEEL

- > Speed 1,000 – 10,000 rpm
- > Blasting media launch speed up to 104 m/sec
- > Active media-blasting angle adjustment



CONTROLS

- > Siemens S7-1500 with KP 700 Comfort button panel



DUST EXTRACTION EXHAUST SYSTEM

- > Integrated, isolated 2-stage cyclone dust extraction



MOULDED PART COOLING

- > Temperatures as low as -150 °C



INSULATION

- > 120 mm thick insulation cell
- > 60 mm thick machine enclosure



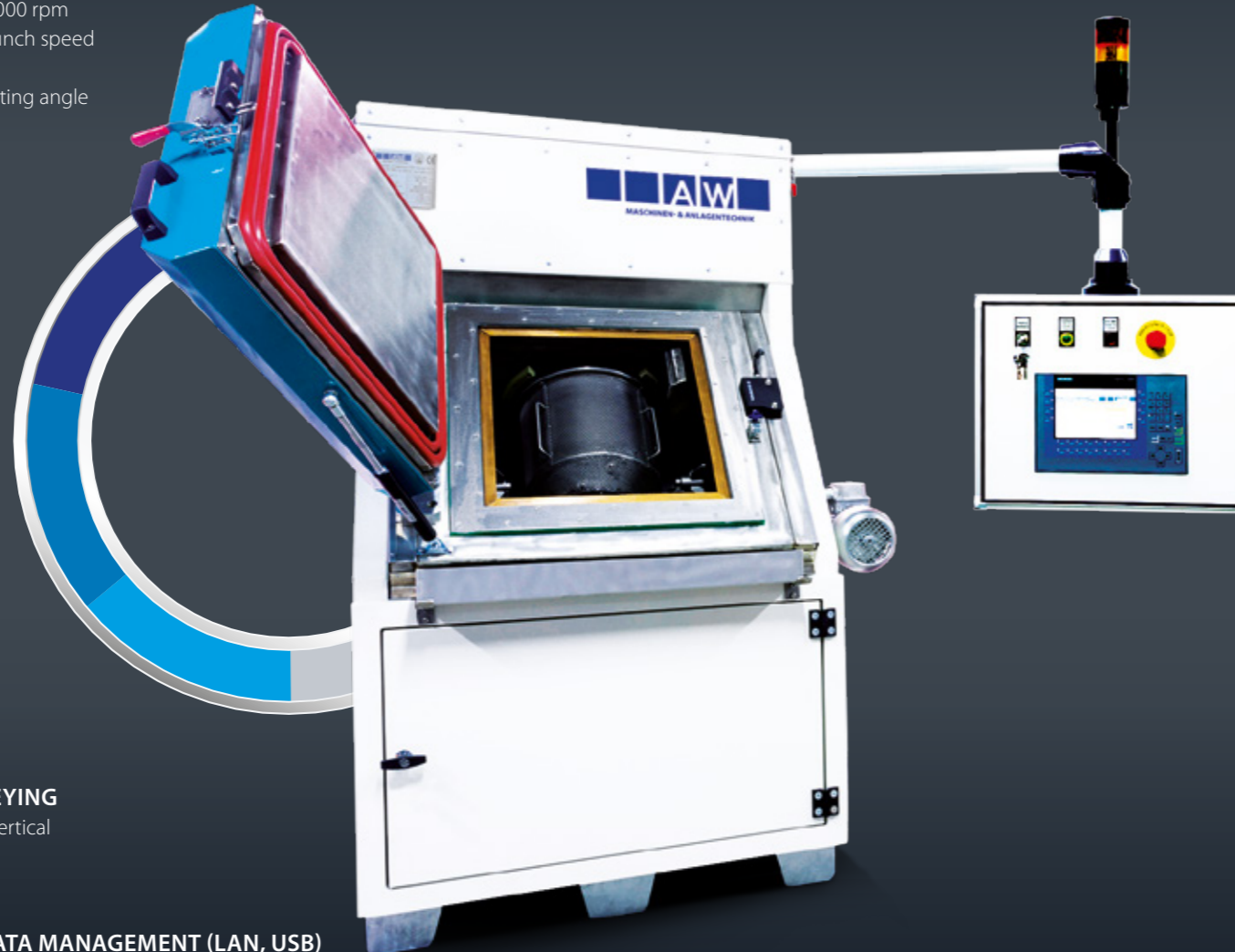
GRANULATE CONVEYING

- > Steplessly adjustable vertical screw conveyor



DATA MANAGEMENT (LAN, USB)

- > External protection of the formulas
- > Complete batch documentation

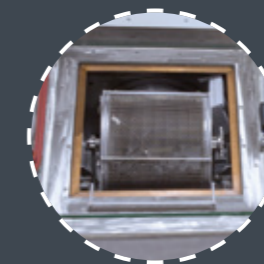


OBJECTIVE

The AWS 08 is optimised for the economical cryogenic deflashing of batch volumes of up to 10 litres. As a result, it obtains optimal media-blasting results on a wide range of moulded part geometries. Thanks to the patented media-blasting angle adjustment, it is possible to flexibly employ the machine in two operating modes. In addition, frames for holding moulded parts or special components can be installed in the media-blasting areas in both media-blasting variants.

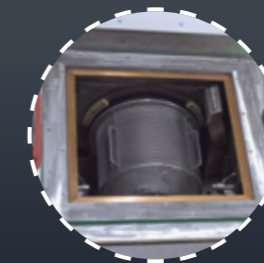
The AWS 08 particularly excels with small batches thanks to its speed, clean media-blasting results and its operating efficiency, as well as its flexibility in horizontal and vertical media-blasting operation.

ONE MACHINE, TWO OPERATING MODES



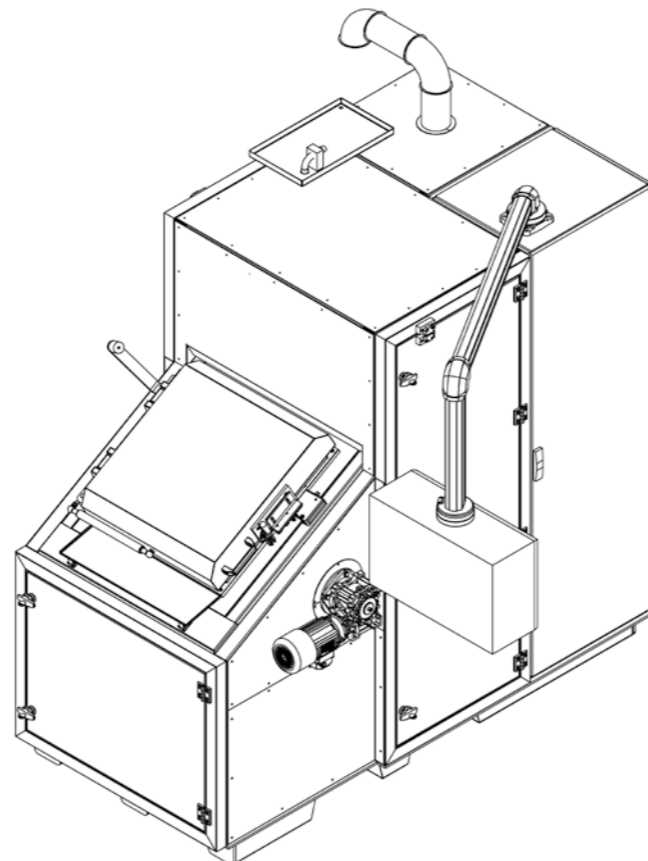
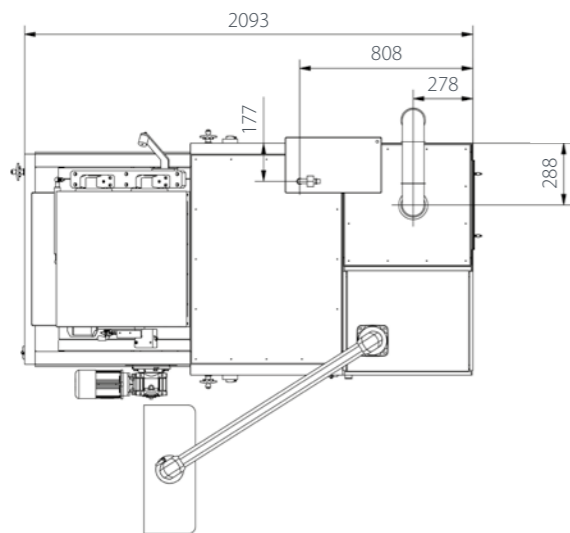
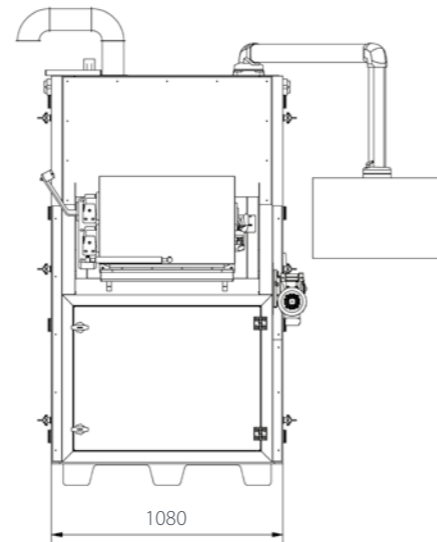
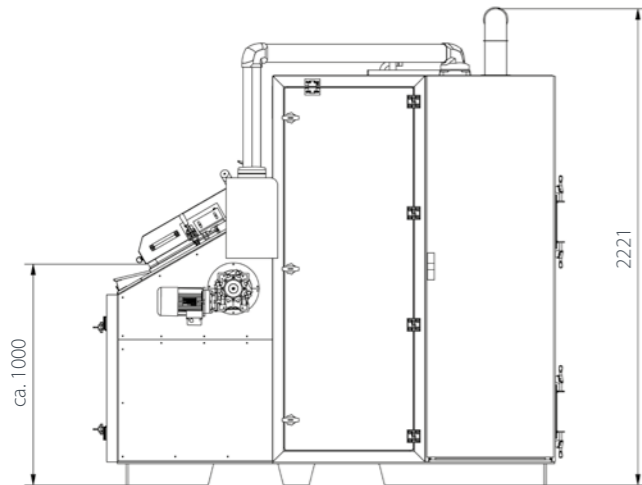
Horizontal media-blasting operation

- > Horizontal, closed removable basket (wire mesh cylinder)
- > Gentle media-blasting process in closed basket system
- > Optimal circulation of the components



Vertical media-blasting operation

- > Vertical open removable basket (perforated basket)
- > High performance media-blasting with optimal blasting pattern
- > Adjustment of the media-blasting angle to the fill level



TECHNICAL DETAILS FOR THE AWS 08

Insulation	media-blasting area made from stainless steel cell with 120 mm PU foam insulation; additional machine enclosure with 60 mm Styrodur insulation
Access doors	left and right
Controls	Siemens S7-1500 with KP 700 Comfort button panel incl. barcode reader
Control cabinet positioning	as a unit with machines on floor palettes back right
Process documentation	data management via LAN and/or USB
Batch volumes	up to 10 litres
Basket volumes	vertical 24 litres // horizontal 22 litres
Basket geometry	vertical 8-sided // horizontal cylindrical
Basket speed	8 – 50 rpm
Flywheel speed	1.000 – 10.000 rpm
Blasting media launch speed	up to 104 m/sec
Blasting media	0,3 – 1,5 mm polycarbonate
Blasting media supply	steplessly adjustable vertical spiral conveyor
Feeding door	manually operated
Dust extraction	integrated, isolated 2-stage cyclone dust extraction with service doors
Seals	low-wear metal alloy / special door seal
Compressed air supply	not required
Heat output	300 Watts
Article memory	4.000 items
Temperature regulation	PID regulator down to -150 °C
Construction	solid base plate incl. forklift slots
Weight	approx. 1.000 kg
Dimensions	2.100 W x 1.100 D x 2.100 H
Electrical connection	400/230/24 V/50 Hz/N/PE/3Ph/16A
Nitrogen input	1/2", 4,5 bar
Exhaust	DN 100

AWS 08 DETAILS

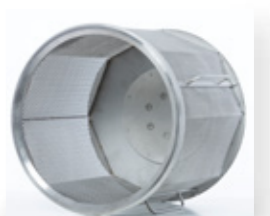
DATA MANAGEMENT

Simple and secure data handling with integrated USB and LAN interfaces. Formulas can be called up simply and securely using the barcode reader.



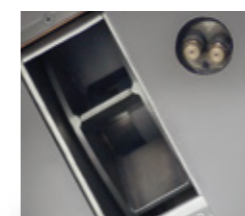
QUICK-CHANGE BASKET SYSTEM

With the quick-change basket system for horizontal and vertical operation, baskets with freely selectable perforations/mesh widths are available. The media-blasting basket is mounted manually into the media-blasting system and is filled and emptied outside the machine. Set-up times can be minimised using additional baskets. Alternative receiving frames or basket structures are possible.



ACTIVE MEDIA-BLASTING ANGLE ADJUSTMENT

The entire processing area can be media-blasted thanks to the patented active media-blasting angle adjustment.



AWS 20

AW 20
BATCH VOLUMES
IN LITRES
30



THE STANDARD FEATURES OF THE AWS 20



PROCESSING DRUM

- > Removable basket with selectable perforation



FLYWHEEL

- > Speed 1,000 – 10,000 rpm
- > Blasting media launch speeds of up to 131 m/sec
- > Active media-blasting angle adjustment



CONTROLS

- > Siemens S7-1500 with KP 700 Comfort button panel



DUST EXTRACTION EXHAUST SYSTEM

- > Integrated, isolated 2-stage cyclone dust extraction



MOULDED PART COOLING

- > Temperatures as low as -150 °C



INSULATION

- > 120 mm thick insulation cell



GRANULATE CONVEYING

- > Steplessly adjustable vertical and horizontal spiral conveyor



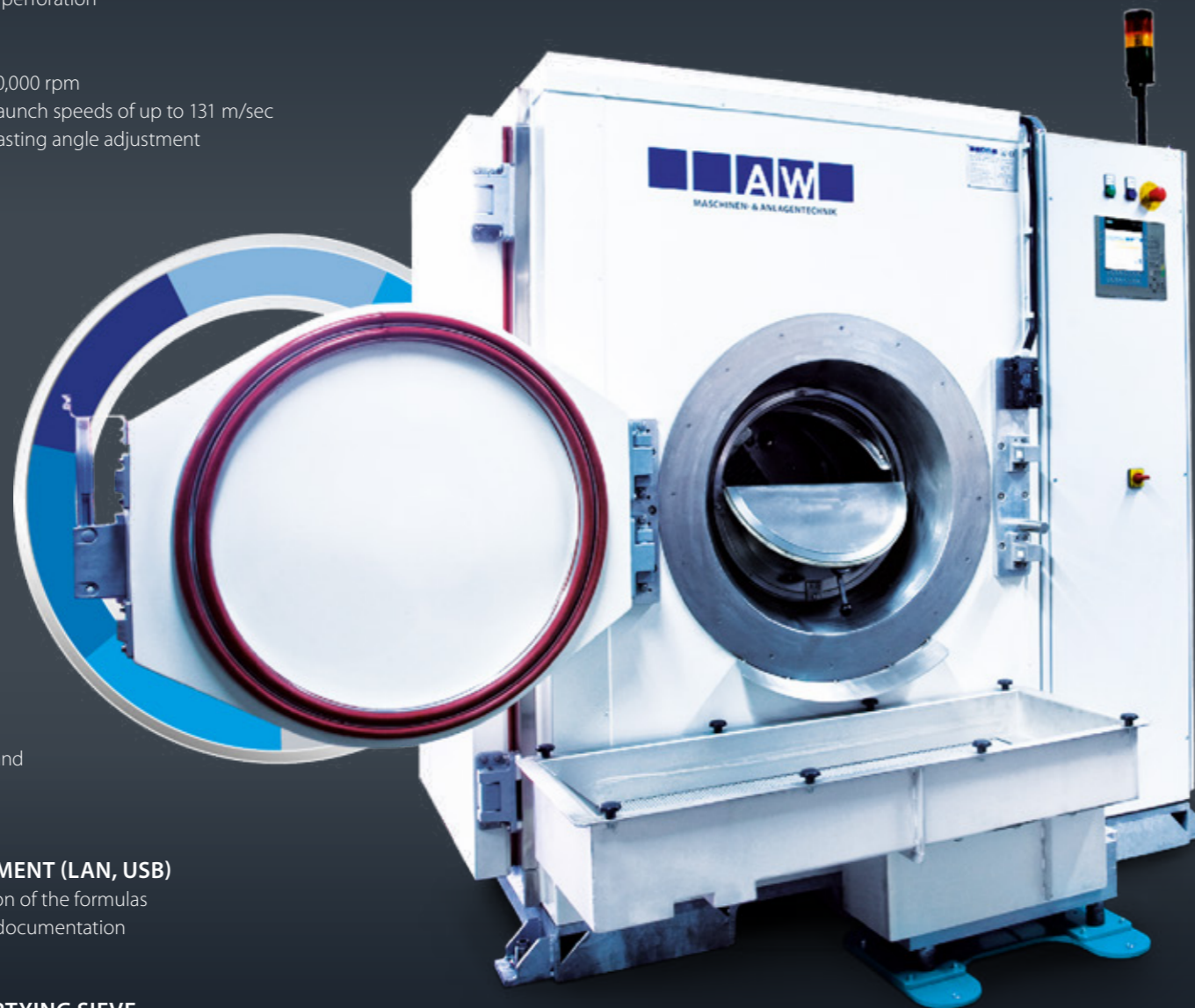
DATA MANAGEMENT (LAN, USB)

- > External protection of the formulas
- > Complete batch documentation



EMPTYING SIEVE

- > External vibration sieve with magnetic oscillation technology
- > Changeable sieve inserts

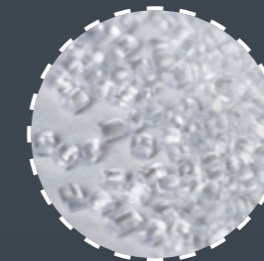


OBJECTIVE

The AWS 20 is a media-blasting machine for the cryogenic deflashing of rubber or plastic moulded parts. The very well-insulated machine cell, in combination with 2-stage dust extraction, guarantees low nitrogen consumption with effective deflashing. Energy-efficient drives and high-quality materials, good media-blasting performance and thus short batch times, as well as low space requirements, are other features of the AWS 20.

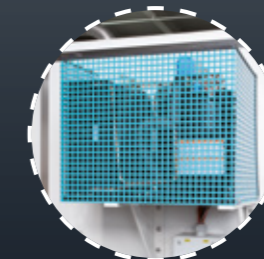
The S7-1500 controls, in combination with the button panel and barcode reader, allow for user-friendly operation of the system. The entry and saving or external saving of formula data records guarantee a high degree of reproducibility and security.

SUSTAINABLE RELIABILITY



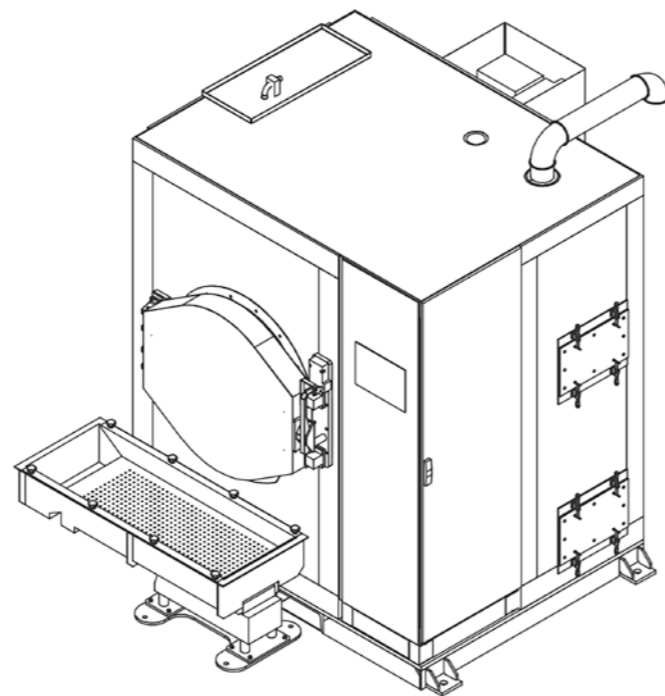
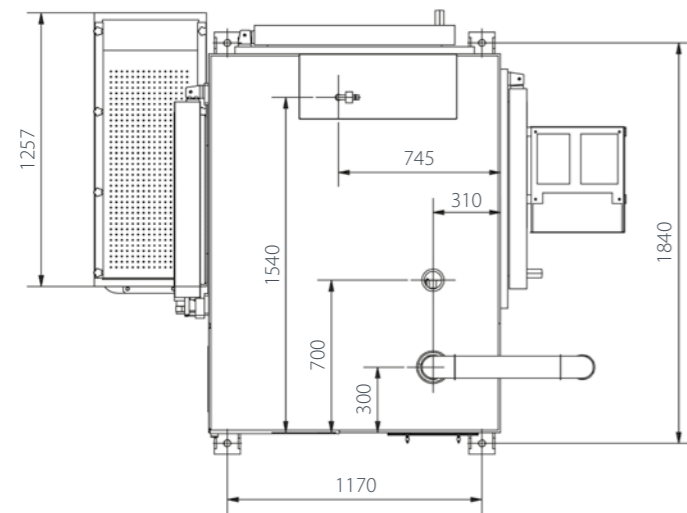
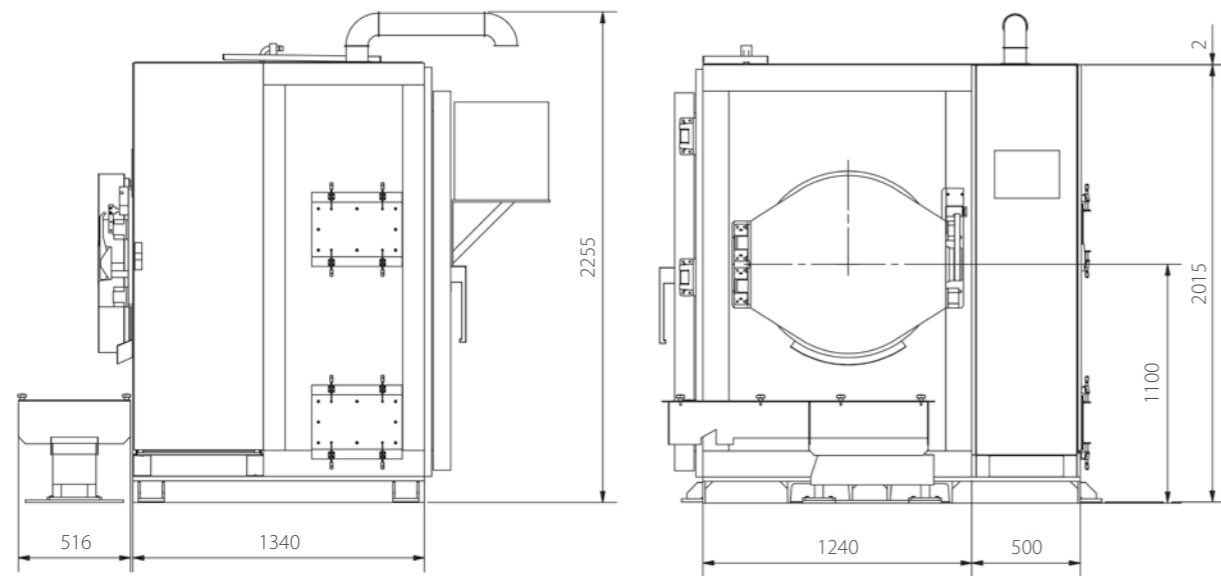
Internal granulate sifting

- > Continuous separation of dust and residual flashing from the blasting media
- > Blasting grain in the correct size and purity for effective abrasive media-blasting
- > Sustainable, reproducible media-blasting performance even in multi-shift operation



Additional cooling

- > Cooling and absorbing of moisture within the machine
- > Compensation for the air humidity which enters during the loading and unloading process
- > Minimisation of the set-up and auxiliary process times for downtimes of more than 8 hours



TECHNICAL DETAILS FOR THE AWS 20

Insulation	efficient stainless steel cryogenic cell with 120 mm thick walls, exterior powder coated in RAL9002, interior stainless steel
Access doors	left and back
Controls	Siemens S7-1500 with KP 700 Comfort button panel incl. barcode reader
Control cabinet positioning	as a unit with machines on floor palettes front right
Process documentation	data management via LAN and/or USB
Batch volumes	up to 30 litres
Basket volumes	67 litres
Basket geometry	cylindrical with roller rails
Basket speed	5 – 30 rpm
Flywheel speed	1.000 – 10.000 rpm
Blasting media launch speed	up to 131 m/sec
Blasting media	0,5 – 1,5 mm polycarbonate
Internal sieving	two sieve inserts (0,5 – 0,75 mm PC // 1 – 1,5 mm PC)
Blasting media supply	steplessly adjustable vertical and horizontal spiral conveyor
Feeding door	manually operated
Dust extraction	integrated, isolated 2-stage cyclone dust extraction with service doors
Seals	low-wear metal alloy / special door seal
Compressed air supply	not required
Heat output	1.500 Watts
Article memory	4.000 items
Temperature regulation	PID regulator down to -150 °C
Construction	solid base plate incl. forklift slots
Weight	approx. 1.500 kg
Dimensions	1.900 B x 1.800 D x 2.300 H
Electrical connection	400/230/24 V/50 Hz/N/PE/3Ph/32A
Nitrogen input	1/2", 4,5 bar
Exhaust	DN 100

AWS 20 DETAILS

DATA MANAGEMENT

Simple and secure data handling with integrated USB and LAN interfaces. Formulas can be called up simply and securely using the barcode reader.



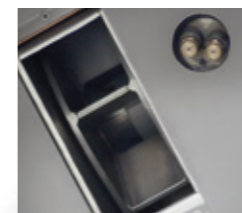
PROCESSING BASKET

The basket can be swapped and a variety of basket perforations are therefore available. Tailored exactly to your requirements according to the moulded part sizes. Loading occurs manually using the loading aid provided through the manually operated exterior door and the two-part interior door. The basket is automatically emptied onto the emptying sieve by means of the integrated roller rails.



ACTIVE MEDIA-BLASTING ANGLE ADJUSTMENT

The patented active media-blasting angle adjustment allows the media-blasting operating area to be adjusted automatically within the processing basket.



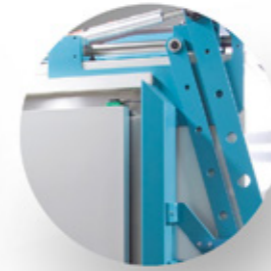
EMPTYING SIEVE

The external vibration sieve works with frequency-controlled modern magnet oscillation technology. This allows the supply and sieve speeds to be set optimally. As standard, the emptying sieve is single-level with a changeable sieve so you can respond to a variety of moulded parts. We can also offer customised multi-level emptying sieves.



AWS 40

AW 40
BATCH VOLUMES
IN LITRES
60



THE STANDARD FEATURES OF THE AWS 40



PROCESSING DRUM
> Removable basket with selectable perforation



FLYWHEEL
> Speed 1,000 – 10,000 rpm
> Blasting media launch speeds of up to 157 m/sec
> Active media-blasting angle adjustment



CONTROLS
> Siemens S7-1500 with KP 900 Comfort button panel



DUST EXTRACTION EXHAUST SYSTEM
> Integrated, isolated 2-stage cyclone dust extraction



MOULDED PART COOLING
> Temperatures as low as -150 °C



INSULATION
> 120 mm thick insulation cell



GRANULATE CONVEYING
> Steplessly adjustable vertical and horizontal spiral conveyor



DATA MANAGEMENT (LAN, USB)
> External protection of the formulas
> Complete batch documentation



EMPTYING SIEVE
> External sieve with vibration motor
> Changeable sieve inserts

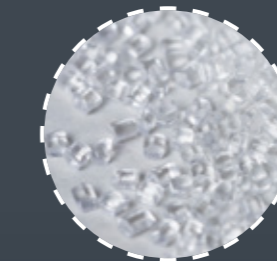


OBJECTIVE

The AWS 40 is a media-blasting machine for the cryogenic deflashing of rubber or plastic moulded parts. The very well-insulated machine cell, in combination with 2-stage dust extraction, guarantees low nitrogen consumption with effective deflashing. Loading occurs fully automatically via a motor-operated door. Furthermore, the AWS 40 features energy-efficient drives, high-quality materials, great media-blasting performance and thus low batch times, as well as low space requirements.

The S7-1500 controls, in combination with the button panel and barcode reader, allow for user-friendly operation of the system. The entry and saving or external saving of formula data records guarantee a high degree of reproducibility and security.

SUSTAINABLE RELIABILITY



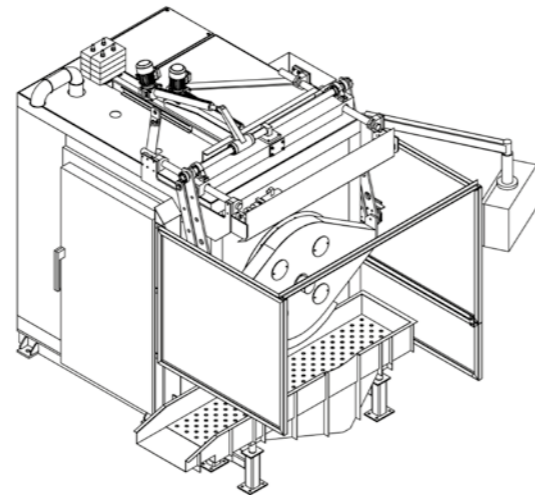
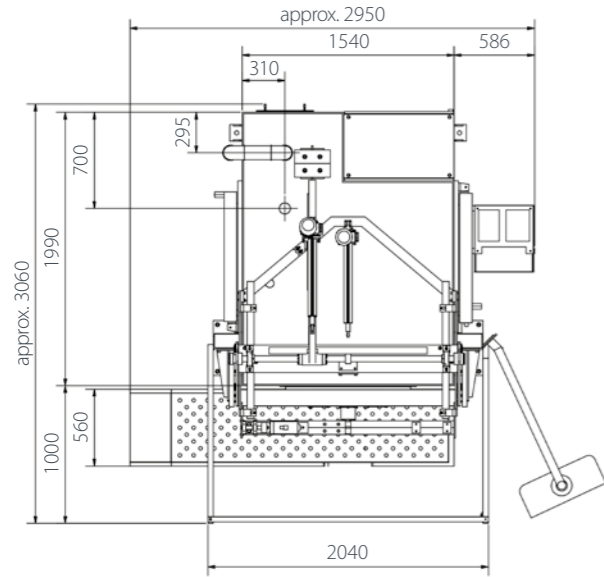
Internal granulate sifting
> Continuous separation of dust and residual flashing from the blasting media
> Blasting grain in the correct size and purity for effective abrasive media-blasting
> Sustainable, reproducible media-blasting performance even in multi-shift operation



Additional cooling
> Cooling and absorbing of moisture within the machine
> Compensation for the air humidity which enters during the loading and unloading process
> Minimisation of the set-up and auxiliary process times for downtimes of more than 8 hours

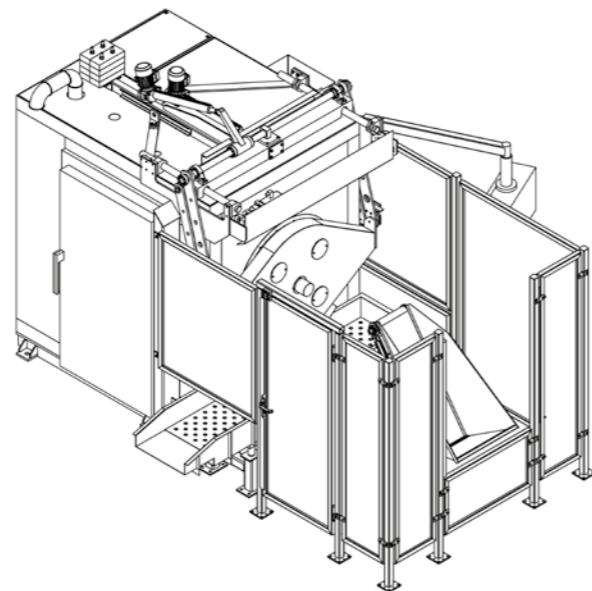
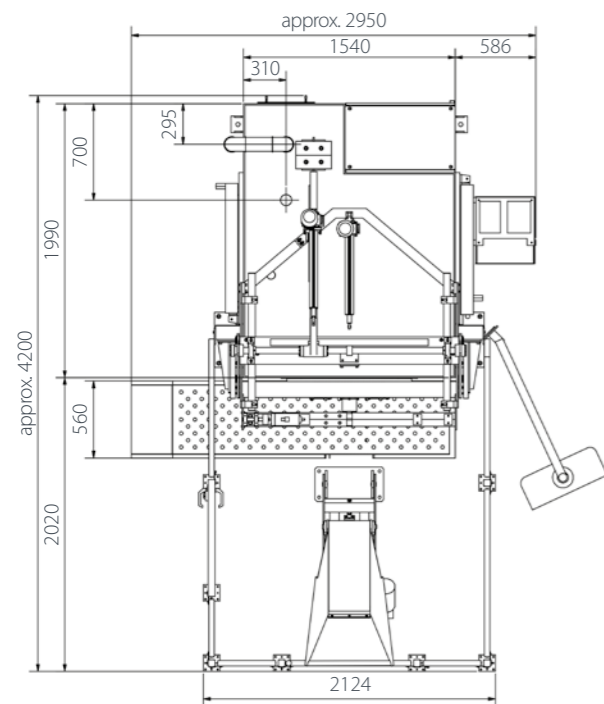
AWS 40 WITH FULLY AUTOMATED LOADING DOOR

The motor-operated automatic loading door, in combination with the light gate provided, quickly moves between open and closed. It can consequently reduce set-up times in semi-automatic operation.



AWS 40 WITH FULLY AUTOMATED LOADING DOOR AND LOADING

Fully automated operation of the machine can be implemented here. The moulded parts to be media-blasted are automatically fed into the machine via a conveyor belt system. Emptying after the end of the batch and refilling then occurs automatically. This can also be combined with upstream and downstream conveyor technology through to batch tracking by means of barcodes or RFID technology. In combination with the safety technology supplied, we naturally comply with all of the safety regulations here.



TECHNICAL DETAILS FOR THE AWS 40

Insulation	efficient stainless steel cryogenic cell with 120 mm thick walls, exterior powder coated in RAL9002, interior stainless steel
Access doors	left and right
Controls	Siemens S7-1500 with KP 900 Comfort button panel incl. barcode reader
Control cabinet positioning	as a unit with machines on floor palettes back right
Process documentation	data management via LAN and/or USB
Batch volumes	up to 60 litres
Basket volumes	150 litres
Basket geometry	cylindrical with roller rails
Basket speed	5 – 40 rpm
Flywheel speed	1.000 – 10.000 rpm
Blasting media launch speed	up to 157 m/sec
Blasting media	0,5 – 1,5 mm polycarbonate
Internal sieving	two sieve inserts (0,5 – 0,75 mm PC // 1 – 1,5 mm PC)
Blasting media supply	steplessly adjustable vertical and horizontal spiral conveyor
Loading door	operated manually or automatically by an electric motor
Loading	swivelling conveyor belt
Dust extraction	integrated, isolated 2-stage cyclone dust extraction with service doors
Seals	low-wear metal alloy / special door seal
Compressed air supply	not required
Heat output	1.700 Watts
Article memory	4.000 items
Temperature regulation	PID regulator down to -150 °C
Construction	solid base plate incl. forklift slots
Weight	approx. 4.318 kg
Dimensions	2.500 B x 3.000 D x 2.800 H
Electrical connection	400/230/24 V/50 Hz/N/PE/3Ph/50A
Nitrogen input	1/2", 4,5 bar
Exhaust	DN 100

AWS 40 DETAILS

DATA MANAGEMENT

Simple and secure data handling with integrated USB and LAN interfaces. Formulas can be called up simply and securely using the barcode reader.



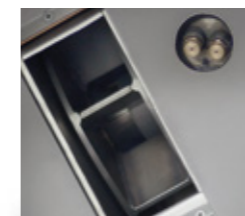
PROCESSING BASKET

The basket can be swapped and a variety of basket perforations are therefore available. Tailored exactly to your requirements according to the moulded part sizes. Loading occurs manually or automatically through the fully automated loading door. The basket is automatically emptied onto the emptying sieve by means of the integrated roller rails.



ACTIVE MEDIA-BLASTING ANGLE ADJUSTMENT

The patented active media-blasting angle adjustment allows the media-blasting operating area to be adjusted automatically within the processing basket.



EMPTYING SIEVE

The external vibration sieve works with frequency-controlled modern vibration motor technology. This allows the supply and sieve speeds to be set optimally. As standard, the emptying sieve is single-level with a changeable sieve so you can respond to a variety of moulded parts. We can also offer customised multi-level emptying sieves.



AWS 60 // AWS 60+

120
AWS 60
BATCH VOLUMES
IN LITRES

150
AWS 60+
BATCH VOLUMES
IN LITRES



THE STANDARD FEATURES OF THE AWS 60



PROCESSING DRUM
> Removable basket with selectable perforation



FLYWHEEL
> Speed 1,000 – 10,000 rpm
> Blasting media launch speeds of up to 167 m/sec
> Active media-blasting angle adjustment



CONTROLS
> Siemens S7-1500 with KP 900
Comfort button panel



DUST EXTRACTION EXHAUST SYSTEM
> Integrated, isolated 2-stage cyclone dust extraction



MOULDED PART COOLING
> Temperatures as low as -150



INSULATION
> 120 mm thick insulation cell



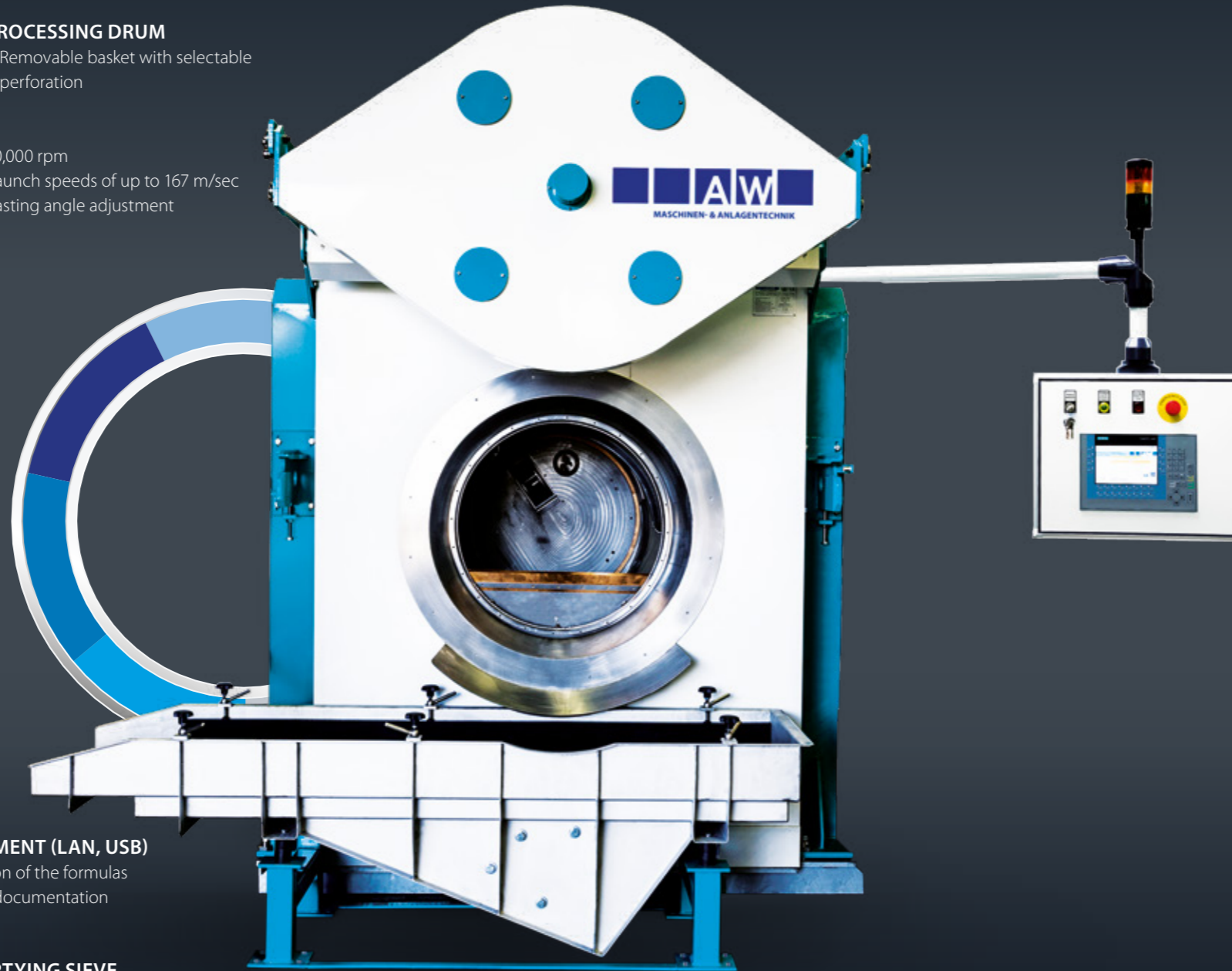
GRANULATE CONVEYING
> Steplessly adjustable vertical and horizontal spiral conveyor



DATA MANAGEMENT (LAN, USB)
> External protection of the formulas
> Complete batch documentation



EMPTYING SIEVE
> External sieve with vibration motor
> Changeable sieve inserts

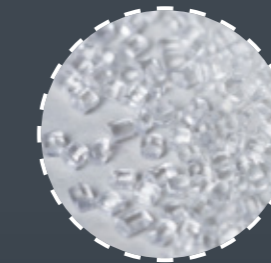


OBJECTIVE

The AWS 60 is a media-blasting machine for the cryogenic deflashing of rubber or plastic moulded parts. The very well-insulated machine cell, in combination with 2-stage dust extraction, guarantees low nitrogen consumption with effective deflashing. Loading occurs fully automatically via a motor-operated door. Energy-efficient drives and high-quality materials, good media-blasting performance and thus short batch times, as well as low space requirements, are other features of the AWS 60.

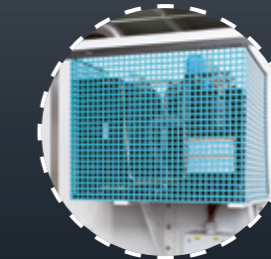
The S7-1500 controls, in combination with the button panel and barcode reader, allow for user-friendly operation of the system. The entry and saving or external saving of formula data records guarantee a high degree of reproducibility and security.

SUSTAINABLE RELIABILITY



Internal granulate sifting

- > Continuous separation of dust and residual flashing from the blasting media
- > Blasting grain in the correct size and purity for effective abrasive media-blasting
- > Sustainable, reproducible media-blasting performance even in multi-shift operation

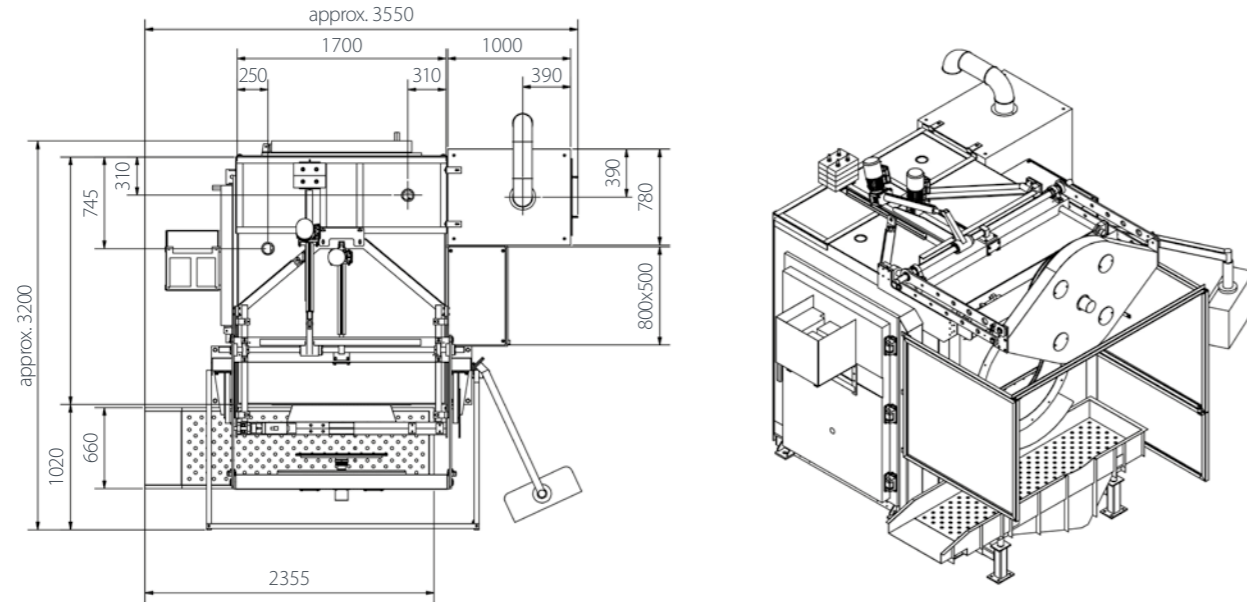


Additional cooling

- > Cooling and absorbing of moisture within the machine
- > Compensation for the air humidity which enters during the loading and unloading process
- > Minimisation of the set-up and auxiliary process times for downtimes of more than 8 hours

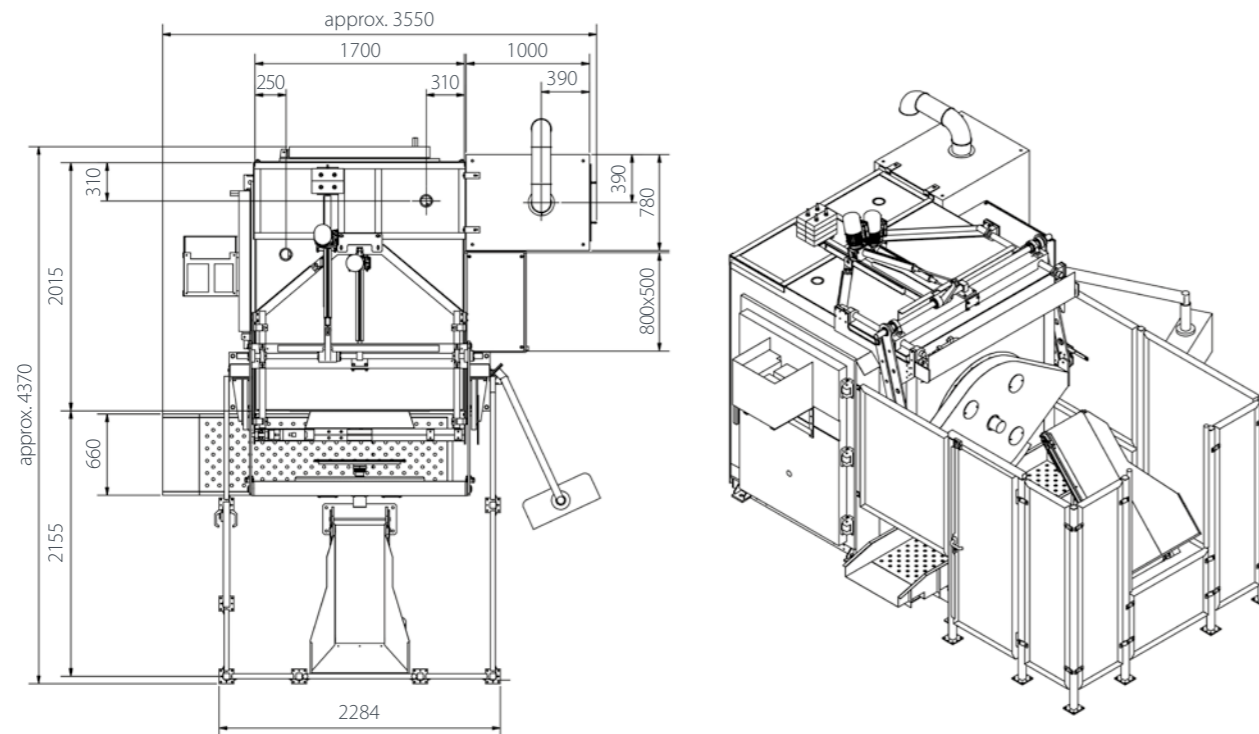
AWS 60 WITH FULLY AUTOMATED LOADING DOOR

The motor-operated automatic loading door, in combination with the light gate provided, quickly moves between open and closed. It can consequently reduce set-up times in semi-automatic operation.



AWS 60 WITH FULLY AUTOMATED LOADING DOOR AND LOADING

Fully automated operation of the machine can be implemented here. The moulded parts to be media-blasted are automatically fed into the machine via a conveyor belt system. Emptying after the end of the batch and refilling then occurs automatically. This can also be combined with upstream and downstream conveyor technology through to batch tracking by means of barcodes or RFID technology. In combination with the safety technology supplied, we naturally comply with all of the safety regulations here.



TECHNICAL DETAILS FOR THE AWS 60 and AWS 60+

Insulation	efficient stainless steel cryogenic cell with 120 mm thick walls, exterior powder coated in RAL9002, interior stainless steel
Access doors	left and back
Controls	Siemens S7-1500 with KP 900 Comfort button panel incl. barcode reader
Control cabinet positioning	as a unit with machines on floor palettes right
Process documentation	data management via LAN and/or USB
Batch volumes	up to 120 litres (AWS 60+: up to 150 litres)
Basket volumes	310 litres (AWS 60+: 352 litres)
Basket geometry	cylindrical with roller rails
Basket speed	5 – 30 rpm
Flywheel speed	1.000 – 10.000 rpm
Blasting media launch speed	up to 167 m/sec
Blasting media	0,5 – 1,5 mm polycarbonate
Internal sieving	two sieve inserts (0,5 – 0,75 mm PC // 1 – 1,5 mm PC)
Blasting media supply	steplessly adjustable vertical and horizontal spiral conveyor
Loading door	operated manually or automatically by an electric motor
Loading	swivelling conveyor belt
Dust extraction	integrated, isolated 2-stage cyclone dust extraction with service doors
Seals	low-wear metal alloy / special door seal
Compressed air supply	not required
Heat output	1.900 Watts
Article memory	4.000 items
Temperature regulation	PID regulator down to -150 °C
Construction	solid base plate incl. forklift slots
Weight	approx. 4.500 kg
Dimensions	3.350 B x 4.200 D x 3.300 H (AWS 60+: Dimensions on request)
Electrical connection	400/230/24 V/50 Hz/N/PE/3Ph/50A
Nitrogen input	1/2", 4,5 bar
Exhaust	DN 150

AWS 60 and AWS 60+ DETAILS

DATA MANAGEMENT

Simple and secure data handling with integrated USB and LAN interfaces. Formulas can be called up simply and securely using the barcode reader.



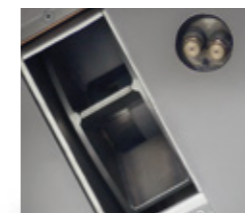
PROCESSING BASKET

The basket can be swapped and a variety of basket perforations are therefore available. Tailored exactly to your requirements according to the moulded part sizes. Loading occurs manually or automatically through the fully automated loading door. The basket is automatically emptied onto the emptying sieve by means of the integrated roller rails.



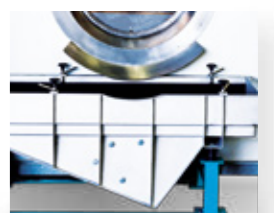
ACTIVE MEDIA-BLASTING ANGLE ADJUSTMENT

The patented active media-blasting angle adjustment allows the media-blasting operating area to be adjusted automatically within the processing basket.



EMPTYING SIEVE

The external vibration sieve works with frequency-controlled modern vibration motor technology. This allows the supply and sieve speeds to be set optimally. As standard, the emptying sieve is single-level with a changeable sieve so you can respond to a variety of moulded parts. We can also offer customised multi-level emptying sieves.



THE AWT CONCEPT: DEFLASHING WITHOUT MEDIA-BLASTING.

SOLUTION-ORIENTED, FLEXIBLE AND RELIABLE:

Since it's ultimately all about the finished, flawless product, we build our drum deflashing machines exactly to your specifications. Of course, they're always energy efficient and user-friendly.

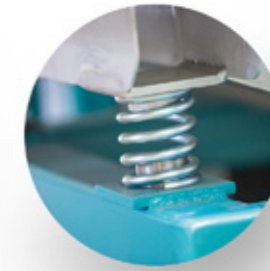
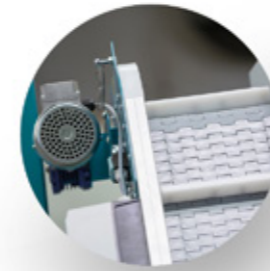


- > Compact, process-optimised design
- > Fully automated loading and emptying
- > Innovative agglomerate management
- > Various drum geometries
- > Welded insulation cell with 120 mm of insulation
- > LN₂ direct spraying procedure allows for the shortest cooling times
- > State-of-the-art forward-looking controls
- > Modular structure, individual customisation possible
- > Fully automated operation
- > Multi-level emptying sieve with agglomerate return and residual flashing separation
- > Conveyor system for automatic agglomerate feeding
- > Integrated cyclone dust extraction and additional extraction

AWT 300 // AWT 300+

AWT 300
BATCH VOLUMES
IN LITRES
300

AWT 300+
BATCH VOLUMES
IN LITRES
400



DIE STANDARDS DER AWT 300



BEARBEITUNGSTROMMEL
> Variante wählbar
(zylindrisch oder eckig)



STEUERUNG
> Siemens S7-1500 mit Tastenpanel
KP 900 Comfort



ABGASSYSTEM ENTSTAUBUNG
> Integrierte, isolierte Zyklonentstaubung
> Zusatzabsaugung



FORMTEILKÜHLUNG
> Temperaturen bis -150 °C
> LN2-Direkteinsprühung



ISOLIERUNG
> 120 mm starke Isolierzelle



BEISCHLAG-MANAGEMENT
> Automatische Beischlagsrückführung
> Optimale Separierung



DATENVERWALTUNG (LAN, USB)
> Externe Sicherung der Rezepturen
> Lückenlose Chargendokumentation



ENTLEERSIEB
> Externes Sieb mit Vibrationsmotor
> Austauschbare Siebeinsätze
> Mehrstufig



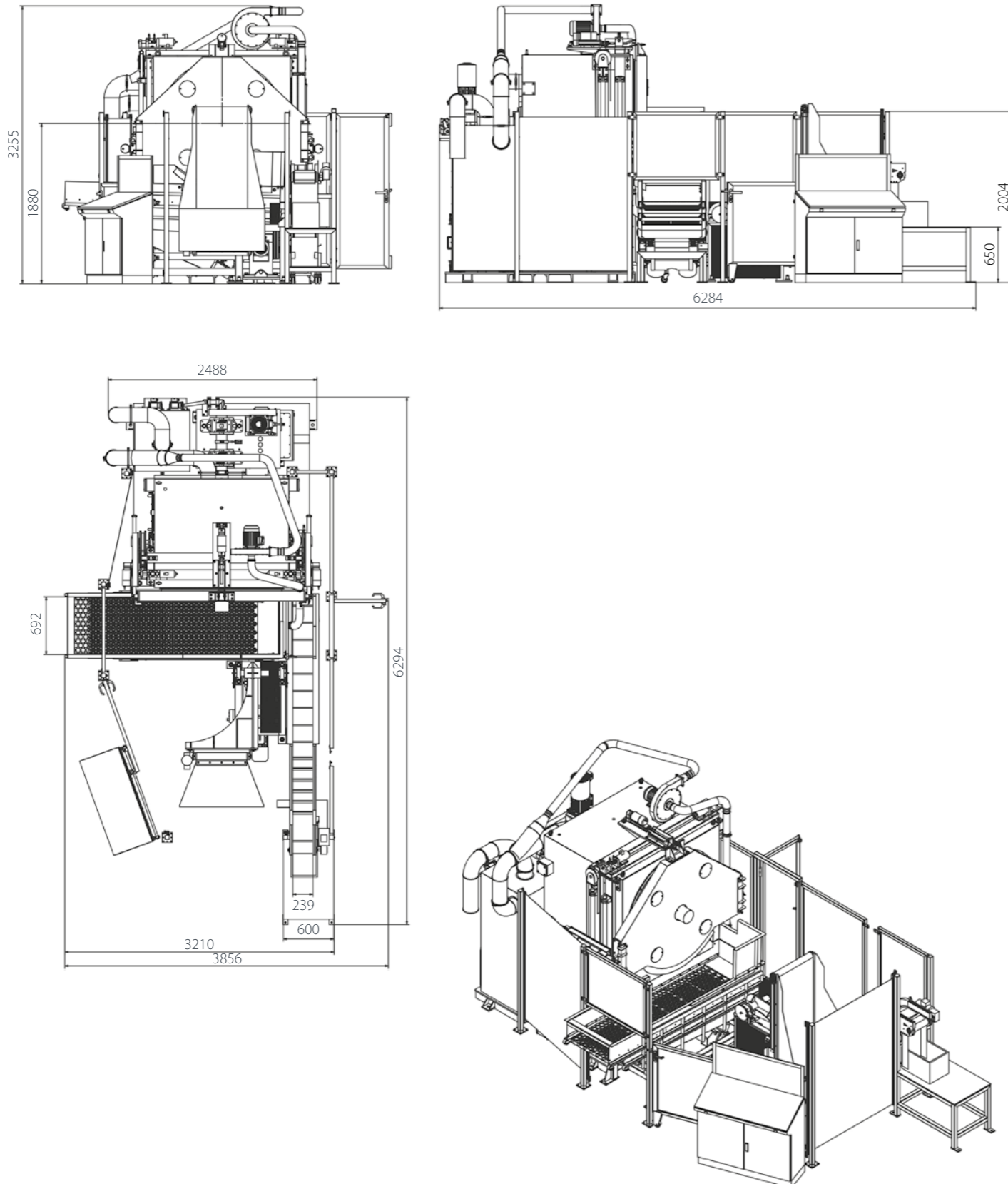
ZIELSETZUNG

Die AWT 300 bietet eine optimale Lösung für die kryogene Trommelentgratung von Gummi- und PUR-Elastomer-Formteilen. Durch eine auf Ihr Produkt optimierte Trommelgeometrie und der innovativen LN2-Direkteinsprühung können hier in kürzesten Zeiten bei minimiertem Stickstoffverbrauch beste Entgratungsergebnisse erzielt werden. Hochwertig verarbeitete Materialien und eine sehr robuste Bauweise bieten dem Anwender ein Maximum an Sicherheit.

Die AWT 300 ist geeignet für große Volumina und wird durch Stahlkugelbeischlag zur Vorentgratung von Gummiformteilen oder zur Endbearbeitung von PUR-Elastomerbauteilen verwendet. Die S7-1500 Steuerung in Verbindung mit einem modernen HMI Tastenpanel und Barcodelesegerät ermöglicht eine bedienerfreundliche Handhabung der Anlage.

TECHNICAL DETAILS FOR THE AWT 300 and AWT 300+

Insulation	welded stainless steel cell with 120 mm PU foam insulation
Controls	Siemens S7-1500 with KP 900 Comfort button panel incl. barcode reader
Control cabinet positioning	as a console
Process documentation	data management via LAN and/or USB
Batch volumes	up to 300 litres (AWT 300+: up to 400 litres)
Drum volumes	540 litres (AWT 300+: 950 litres)
Drum geometry	cylindrical or square with roller rails
Drum speed	5 – 60 rpm
Loading door	operated manually or automatically by an electric motor
Loading	swivelling conveyor belt
Dust extraction	integrated, isolated cyclone dust extraction with service door
Seals	low-wear metal alloy / special door seal
Compressed air supply	not required
Heat output	9.700 Watts
Article memory	4.000 items
Temperature regulation	PID regulator down to -150 °C
Construction	solid base plate incl. forklift slots
Weight	approx. 3.500 kg
Dimensions	2.900 B x 6.300 D x 3.300 H (AWT 300+: Dimensions on request)
Electrical connection	400/230/24 V/50 Hz/N/PE/3Ph/50A
Nitrogen input	1/2", 4,5 bar
Exhaust	DN 175



AWT 300 and AWS 300+ DETAILS

DATA MANAGEMENT

Simple and secure data handling with integrated USB and LAN interfaces. Formulas can be called up simply and securely using the barcode reader.



PROCESSING DRUM

The overhung processing drum can be implemented as a cylindrical or square drum according to the customer's requirements. The solid mounting allows for maintenance-free operation of the drive system. The innovative door seal achieves the longest possible service life and optimal sealing of the processing area.



LN2 DIRECT SPRAYING

The vacuum insulated and central liquid nitrogen direct spraying allows for the shortest cooling times and low nitrogen consumption.



EMPTYING SIEVE

The external, multi-level vibration sieve works with frequency-controlled vibration motor technology. The moulded parts and residual flashing are separated efficiently thanks to the changeable sieve inserts. The agglomerate (steel balls) is separated automatically. Additional extraction carries dust-like residual flashing particles into the integrated cyclone.



AUTOMATIC LOADING

The loading door is opened and closed at high speed by an electric motor. The moulded parts to be deburred are automatically fed into the machine via a conveyor belt system. Emptying after the end of the batch and refilling then occurs automatically. This can also be combined with upstream and downstream conveyor technology through to batch tracking by means of barcodes or RFID technology. In combination with the safety technology supplied, we naturally comply with all of the safety regulations here.



THE AWW RANGE: WASHING AND DRYING.



In order to fully cover the process chain for the manufacturing of rubber and plastic moulded parts, you can get modern and efficient washing and drying systems from

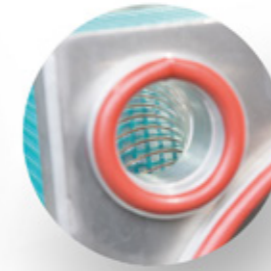
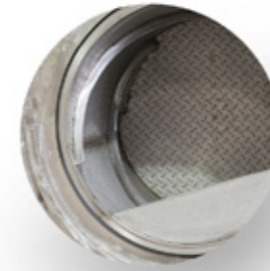
us. Our washing machine design is based on tried and tested technology.

- > High pressure rinsing
- > Batch volumes from 20 to 40 litres
- > Water temperature from 20 to 60 °C

- > Drying at up to 90 °C
- > Drum speed max. 60 rpm
- > Removable basket system

AWW 20

BATCH VOLUMES
IN LITRES
20



THE STANDARD FEATURES OF THE AWW 20

CONTROLS
> Siemens S7-1500 with TP 700 Comfort touch panel

WATER HEATING
> Using a flow heater
> 20 °C – 60 °C, steplessly adjustable

DRYING
> High pressure ventilator and heat register
> 30 °C – 90 °C, steplessly adjustable

HOUSING
> Sound-insulating enclosure

PROCESSING DRUM
> Perforated removable basket

DRUM SPEED
> 7 – 60 rpm

DATA MANAGEMENT (LAN, USB)
> External protection of the formulas
> Complete batch documentation



OBJECTIVE

The simple and robust construction offers an economical solution for washing and drying components here. And this with optimal process documentation. The S7-1500 controls, in combination with a modern HMI touch panel and barcode reader, allow for user-friendly operation of the system.

We also manufacture machines with individual batch volumes and moulded part requirements according to your remit.

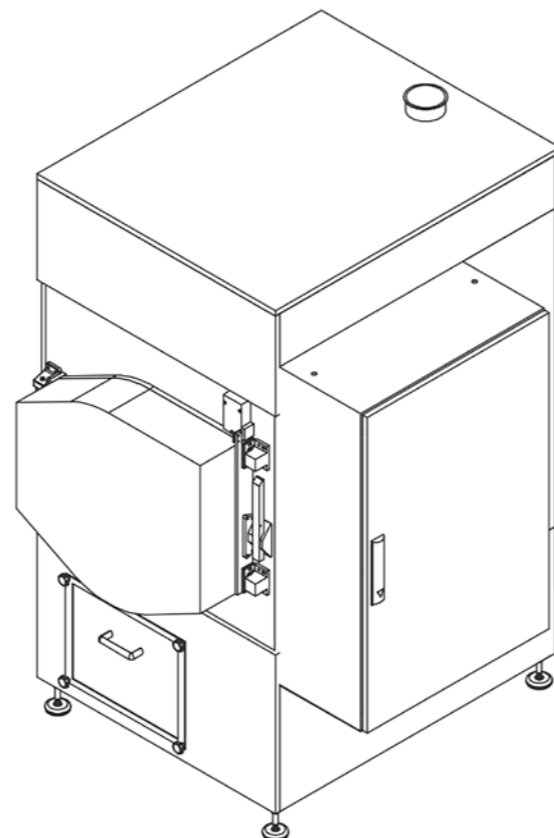
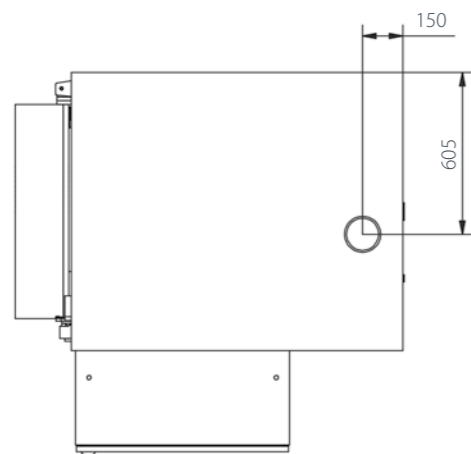
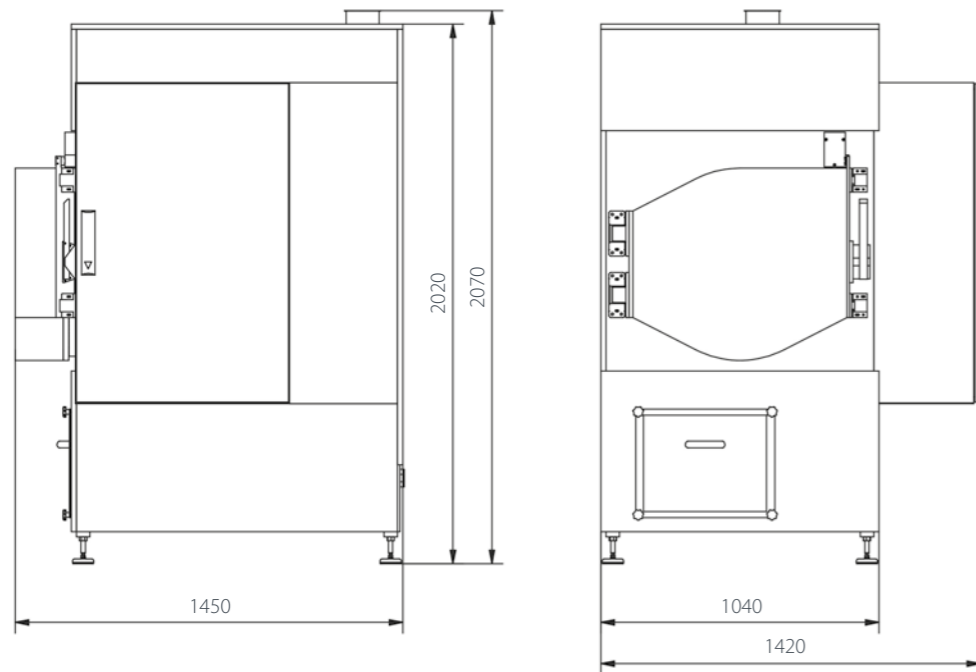
CONSTANTLY CLEAN



High pressure rinsing
> High performance pendulum nozzle up to 200 bar
> Integrated high-pressure pump
> Low water consumption with optimal cleaning efficiency



Dosing pumps
> 2 integrated dosing pumps freely programmable
> 2 reservoirs (e. g. washing agent, silicone oil, antistatic agent)



TECHNICAL DETAILS FOR THE AWW 20

Housing	sound-insulating enclosure
Controls	Siemens S7-1500 with TP 700 Comfort touch panel incl. barcode reader
Control cabinet positioning	integrated into the side of the housing
Process documentation	data management via LAN and/or USB
Batch volumes	up to 20 litres
Basket volumes	84 litres
Basket geometry	cylindrical with roller rails
Basket speed	7 – 60 rpm
High pressure rinsing	high pressure pendulum nozzle up to 200 bar
Feeding door	manual
Water temperature	20 °C – 60 °C, steplessly adjustable
Drying temperature	30 °C – 90 °C, steplessly adjustable
Dosing pumps	2 dosing pumps incl. reservoirs (washing agent, silicone oil, antistatic agent, etc.)
Seals	low-wear sprung PTFE seal / special door seal
Compressed air supply	not required
Article memory	4.000 items
Construction	solid base frame with levelling foot, suitable for forklifts
Weight	approx. 600 kg
Dimensions	1.500 B x 2.200 D x 2.100 H
Electrical connection	400/230/24 V/50 Hz/N/PE/3Ph/50A
Water connection	1/2"
Waste water connection	2"
Exhaust	DN 120
Heat output	16 kW

AWW 20 DETAILS

DATA MANAGEMENT

Simple and secure data handling with integrated USB and LAN interfaces. Formulas can be called up simply and securely using the barcode reader.



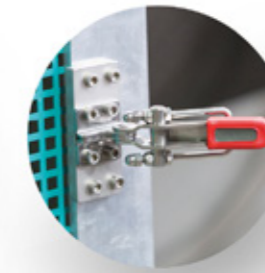
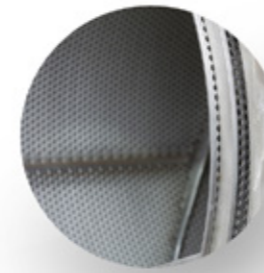
PROCESSING BASKET

The basket can be swapped and a variety of basket perforations are therefore available. Tailored exactly to your requirements according to the moulded part sizes. Loading occurs manually via the manually operated exterior door. The basket is automatically emptied by means of the integrated roller rails.



AWW 40

40 BATCH VOLUMES
IN LITRES



THE STANDARD FEATURES OF THE AWW 40

CONTROLS
> Siemens S7-1500 with TP 700 Comfort touch panel

WATER HEATING
> Using a flow heater
> 20 °C – 60 °C, steplessly adjustable

DRYING
> High pressure ventilator and heat register
> 30 °C – 90 °C, steplessly adjustable

HOUSING
> Sound-insulating enclosure

PROCESSING DRUM
> Perforated removable basket

DRUM SPEED
> 7 – 60 rpm

DATA MANAGEMENT (LAN, USB)
> External protection of the formulas
> Complete batch documentation



OBJECTIVE

The simple and robust construction offers an economical solution for washing and drying components here. And this with optimal process documentation. The S7-1500 controls, in combination with a modern HMI touch panel and barcode reader, allow for user-friendly operation of the system.

We also manufacture machines with individual batch volumes and moulded part requirements according to your remit.

CONSTANTLY CLEAN



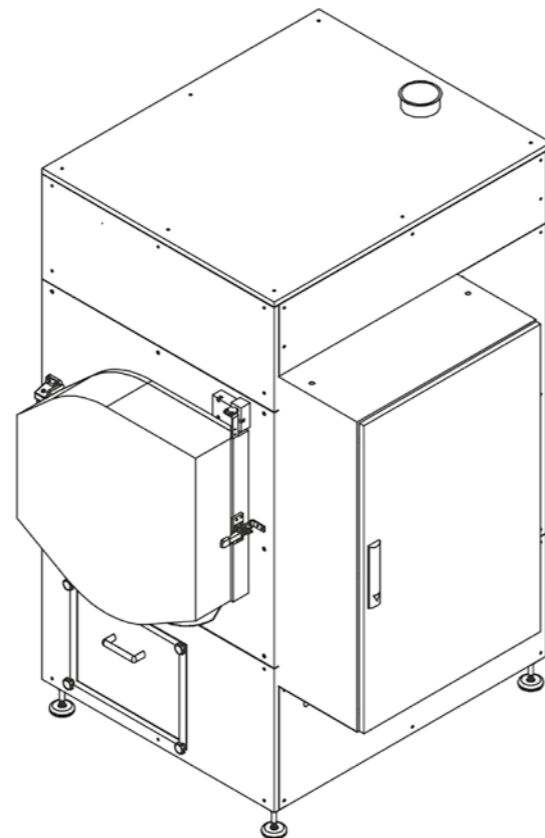
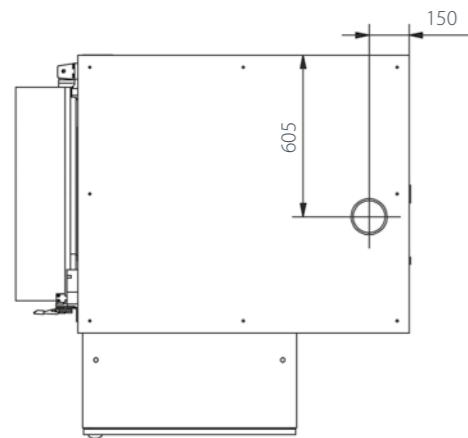
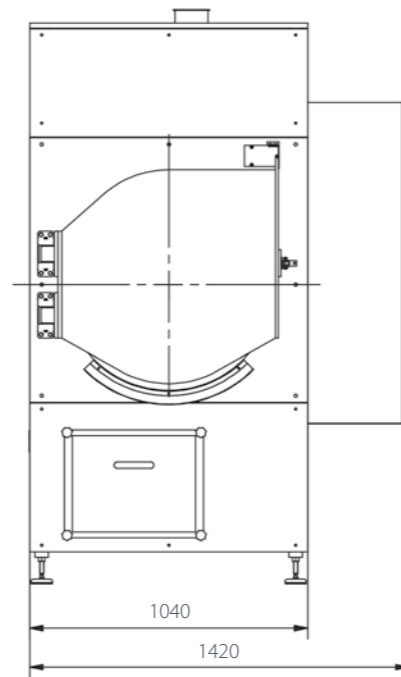
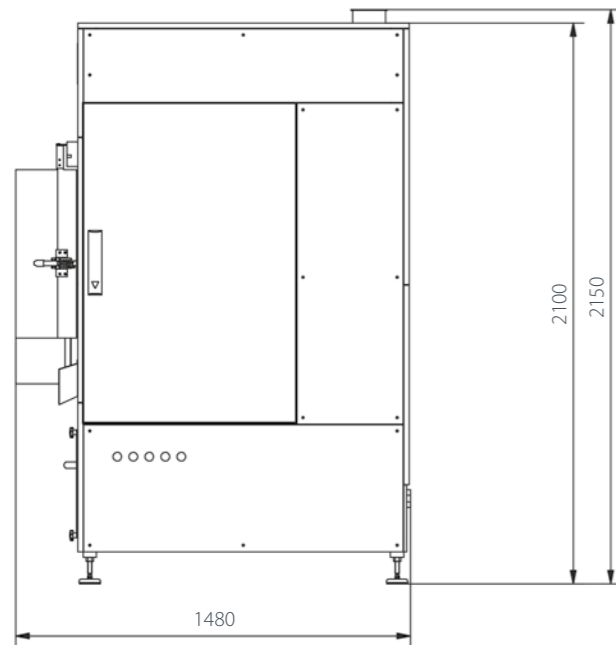
High pressure rinsing
> High performance pendulum nozzle up to 200 bar
> Integrated high-pressure pump
> Low water consumption with optimal cleaning efficiency



Dosing pumps
> 2 integrated dosing pumps freely programmable
> 2 reservoirs (e. g. washing agent, silicone oil, antistatic agent)

TECHNICAL DETAILS FOR THE AWW 40

Housing	sound-insulating enclosure
Controls	Siemens S7-1500 with TP 700 Comfort touch panel incl. barcode reader
Control cabinet positioning	integrated into the side of the housing
Process documentation	data management via LAN and/or USB
Batch volumes	up to 40 litres
Basket volumes	146 litres
Basket geometry	cylindrical with roller rails
Basket speed	7 – 60 rpm
High pressure rinsing	high pressure pendulum nozzle up to 200 bar
Feeding door	manual
Water temperature	20 °C – 60 °C, steplessly adjustable
Drying temperature	30 °C – 90 °C, steplessly adjustable
Dosing pumps	2 dosing pumps incl. reservoirs (washing agent, silicone oil, antistatic agent, etc.)
Seals	low-wear sprung PTFE seal / special door seal
Compressed air supply	not required
Article memory	4.000 items
Construction	solid base frame with levelling foot, suitable for forklifts
Weight	approx. 660 kg
Dimensions	1.500 B x 2.300 D x 2.200 H
Electrical connection	400/230/24 V/50 Hz/N/PE/3Ph/50A
Water connection	1/2"
Waste water connection	2"
Exhaust	DN 120
Heat output	16 KW



AWW 40 DETAILS

DATA MANAGEMENT

Simple and secure data handling with integrated USB and LAN interfaces. Formulas can be called up simply and securely using the barcode reader.

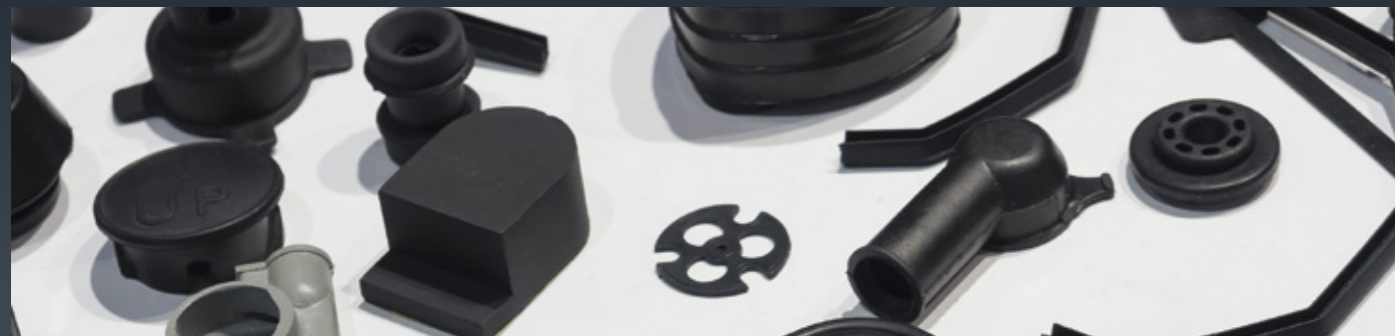


PROCESSING BASKET

The basket can be swapped and a variety of basket perforations are therefore available. Tailored exactly to your requirements according to the moulded part sizes. Loading occurs manually via the manually operated exterior door. The basket is automatically emptied by means of the integrated roller rails.



DETAILS ABOUT THE PROCESS OF CRYOGENIC DEBURRING



REFRIGERANT

As a rule, liquid nitrogen is used as a refrigerant, which boils at -196°C (77 K) in this aggregate condition. The clear, colourless liquid has a density of 807 g/l at the boiling point. The label for liquid nitrogen is LN.

The liquid nitrogen is sprayed onto the components to be processed, via nozzles in the processing area. Due to a temperature sensor in the processing area, and an upstream liquid nitrogen valve, the temperature is regulated in there.

The liquid nitrogen is provided by an appropriately insulated tank. The expansion rate from liquid to gaseous state is 1:691. This means that corresponding excess pressure occurs in the processing area. The use of liquid nitrogen as a refrigerant has proven itself in practice, as it is simple and field tested – and therefore can be provided cheaply.

Theoretically, only the burrs should be cooled with the refrigerant, in order to be able to separate them mechanically. In practice howe-

ver, the components are completely cooled, particularly in the edge zone. The brittleness of most materials increases with the falling temperature.

PROCESSING AREA

In the processing area, round and polygonal drums and alternative belt troughs are used. Here, the components are cooled, mixed and blasted.

The mixing serves to feed the refrigerated components in the working direction of the blasting medium. Also, due to the mixing, a relative movement of the components takes place, where abrasion of the burrs also occurs.

The drums are the perforated variants, to transport the abrasion (burr residues) and the blasting medium out of the processing area. At this point, the expansion rate of the liquid nitrogen must also be considered. The gas that develops here must be dissipated. This occurs through the perforated processing drum. In the processing drum, the components are conveyed into an area, via roller rails,

during the rotating movement, where the refrigerated components are transported in the working direction of the blasting medium. In doing so, the components are mixed.

At the same time, the components are transported out of the processing drum with these roller rails, after processing, if it is horizontally aligned. With the process parameter of speed of the processing drum, the rolling behaviour and the optimum mixing of the components must be considered. According to the machine structure, it will be blasted into the drum, or blasted through the outer drum wall, made of wire mesh.

BLASTING MEDIUM

With cryogenic deburring, steel shot or polycarbonate granulate is used as a blasting medium. With steel shot, a granulation of 0.3–0.4mm is used. Due to the high specific weight of 7.85 kg/dm^3 , a very high kinetic energy can be achieved here.

Due to the steel abrasion, the parts can be easily soiled, which is why washing is necessary.

Furthermore, the wear to the components guiding the blasting medium (screws, blasting wheel etc.) is very high, and wear protection materials such as hard manganese steel are used. However, these also only have a limited service life.

Polycarbonate granulate can be acquired in various forms (Pentacorn, cylindrical, cuboid) and the following granulations are used:
0.3 mm · 0.5 mm · 0.75 mm · 1 mm · 1.5 mm

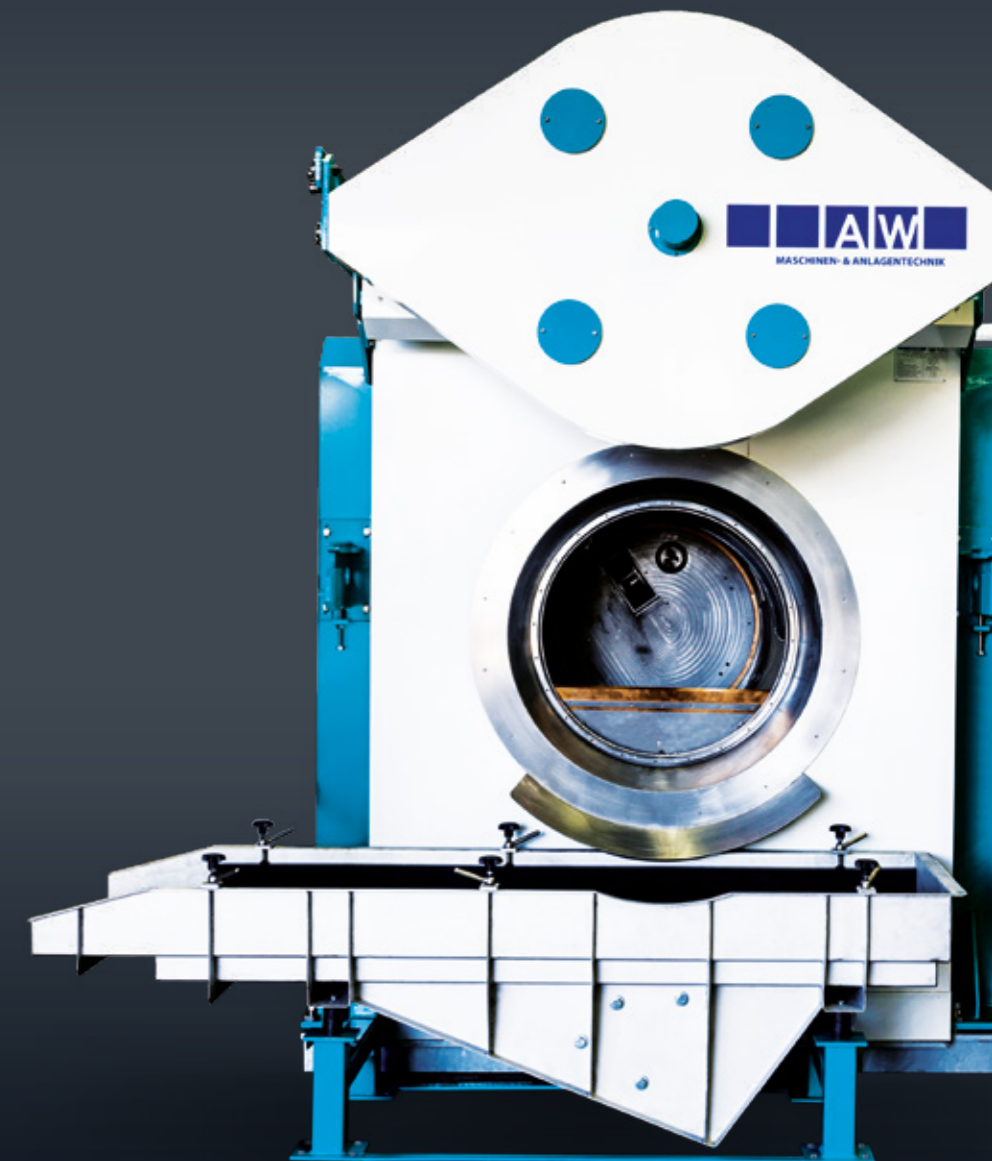
According to the burr composition and required deburring quality, these different granulates are used. With smaller granulates, a better deburring with less residual burrs can be achieved.

Polycarbonate has a very low moisture absorption, a density of 1.02 kg/dm^3 and a good low temperature resistance of up to -150°C .

The system wear to the machine is very low with polycarbonate. In the deburring system, residual burrs are cleaned off the revolving granulate in a two step vibration screen. Smaller granulate particles (wear) are also removed here. Impact speed, blasting distance, blasting impact angle and blasting medium throughput, coverage level and exposure time are influences on the blasting result.

BLASTING WHEEL

The acceleration of the blasting medium can occur pneumatically via a gas flow (mostly pressurised air), and mechanically with a blasting wheel. The speed of the blasting wheel determines the kinetic energy of the granulate.



SERVICE

WITH AW MASCHINEN- UND ANLAGENTECHNIK, YOU CAN GET ALL SERVICES SURROUNDING CRYOGENIC DEFLASHING TECHNOLOGY IN ONE PLACE:



One contact person and short reaction times



Spare parts for cryogenic deflashing systems



Development and delivery as well as refurbishment and optimisation of existing systems and machine parts



Repairs to systems and machines as well as machine overhaul



The highest quality machines and spare parts, consistently made in Germany





MASCHINEN- & ANLAGENTECHNIK

ALWAYS THERE. FOR YOU.

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