













welcome

Born and raised in a glassmaker's family the material glass was since my childhood part of my life. Soon recognizing the efforts of glassblowing during the manufacturing process of masterpieces it occurred to me to develop glass processing machines.

All my professional life was dedicated to achieve this target - to build machines which put out products coming close to handmade masterpieces.



Hence our company's philosophy is "we do not want to be the largest, but the best".

This philosophy drives us continuously to develop, build and optimize machines for the production of glassware at an unique quality level according to the needs of our customers and the markets they serve.







STEP BY STEP TO THE TOP.

- for blown stemware.

• 1968 Forma Glasmaschinen GmbH was founded by Mr. Emil Ilk – Invention of "process 2" by Mr. Ilk – production of seamless footplates for the stemware. Patent-license awarded to Mr. Ilk.

• 1970 setting into operation of the first full-automatic stemware production line at Rosenthal.

• 1975 acquisition of Wilhelm Kutzscher company founded in 1890 in Kiel, Germany – focussing on the development of semi- and full-automatic machines for glass processing.

• 1980 merging of Wilhelm Kutzscher company and Forma Glasmaschinenbau to Forma Glas GmbH located in Zwiesel, Germany. Setting up of a center of competence under the ownership and management of Mr. Ilk - to ensure systematic enhancement and optimisation of processes focussing on the blow/blow technology of full automatic glass processing machines.

• 2007 acquisition of the new headquarter in Neukirchen/Enknach, Austria.

• 2010 setting into operation the first short-stretch stemware line – new unique quality standards

• up to now more than 80 complete production units have been sold worldwide.







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We offer:



WE STAND FOR ENDURING PERFORMANCE!

Our collaboration does not end with the delivery, installation and commissioning of the machines, but goes far beyond that.

- longterm availability of mechanical and electronic spare parts
- upgrades for machines and control systems
- maintenance and repair service after warranty period



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SUSTAINABILITY MEANS FOR US HIGH TECHNOLOGY – AND THIS IS OUR DOMAIN.

- know-how transfer



• application-specific technical and economical solutions

• optimized configuration and implementation of machines and peripheral devices

• sustainable customer relation by training and education support

• technology leader in engineering of energy and cost saving glass processing machines



The modular concept

- We build the machines according to customer's needs.
- The requested capacity of the machine defines the number of modules per machine.
- The modules are mounted on a base frame and can be a spare module will replace the changed module.
- Minimized down times.
- of production curves.
- Optimized inventory holding for spare parts and components.



(RPH) Press machines with gob feeding for heavy pressware.

(RPH) Press machines with stream feeding for pressware with 8-18 stations.

(IBS) Blowing machines for articles up to 300mm height.

(IBS) Blowing machines for high quality tumblers.

Stemware lines for the fully automatic production of high quality stemware.

(IBS) Blowing machines for technical glasses.

(IBS) Big volume item blowing machines.

Single and multiple piece moulds for all types of production.

changed during the production run in less than 10 minutes -

• Each module disposes of a separate electronic control system this guarantees highest flexibility and characteristic adjustments

• Memorized production parameters guarantee shortest setup times.







Presses for optical products: spectacle glasses, lenses.

Finishing machines and peripheral equipment.

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Most important technical features of our new generation of blowing machines IBS:

• single station drive of each module

- servo press transfer station with servo actuator motor
- special moving burner units and servo raising stations in combination with a short stretch equipment a perfectly smooth transition from bowl to stem can be achieved.
- quick change system (module can be changed in less than 10 minutes)
- median adapter
- divided, very sturdy working table
- Siemens Simotion Control System



Туре	IBS 8	IBS 10	IBS 12	IBS 16	IBS 20	IBS 24	IBS 32
Number of stations	8	10	12	16	20	24	32
Number of pieces (per minute)	6-24	6-24	6-24	6-30	10-40	12-45	14-60
Gob weight (g)	90-700	90-700	90-700	90-700	90-700	90-700	90-700
Article diameter (mm)	40-135	40-135	40-135	40-135	40-135	40-135	40-135
Article height with moil (mm)	max. 380	max. 380	max. 380				
Article height without moil (mm)	max. 300	max. 300	max. 300				
max. machine height (mm)	4.400	2.150	2.150	2.150	3.500	3.500	4.000
Machine diameter (mm)	2.600	2.880	2.880	2.880	3.300	4.300	5.800
glass types can be processed	all types	all types	all types				
Wall thickness (mm)	0,7-3	0,7-3	0,7-3	0,7-3	0,7-3	0,7-3	0,7-3
Bottom thickness (mm)	3-30	3-30	3-30	3-30	3-30	3-30	3-30
Weight (t) approx.	6,0	6,6	6,8	7,0	10,2	19,0	35,0



IBS blowing machine

new generation

Most important technical features of our new generation of blowing machines IBS:

- designed for big volume items
- module version
- processor-controlled
- centrally high pressure lubricating equipment raising stations / servo raising stations
- syncronisation equipment



Type (electrical)	IBS 10e	IBS 12e	IBS 16e
Number of stations	10	12	16
Production speed (pieces/minute)	6-24	6-24	6-24
Gob weight (g) depending on feeder	max. 2.500-3.000 g [*]	max. 2.500-3.000 g [*]	max. 1.700 g
Article diameter in mould holder	max. 240mm	max. 240mm	max. 180mm
Article height with moil	max. 450mm	max. 450mm	max. 450mm
Article height without moil	max. 350 mm	max. 350mm	max. 350mm

* The gob weight depends on the type of feeder.



IBS blowing machine big volumes

Most important technical features of our new generation of press machines stems:

driving system with servo-actuator-motors

- parallel shears guarantee optimized
- production speed at highest quality level
- footplates without seam-lines
- mould pre-opening system
- force-speed-control of plunger by servo pump



Туре	RPH 8	RPH 12	RPH 16	RPH 20	RPH 28
Number of stations	8	12	16	20	14 double
Number of pieces (per minute)	5-20	5-30	5-45	5-50	5-60
Gob weight (g) with special feeder	max. 250	max. 250	max. 250	max. 250	max. 250
Article height wiht base (mm)*	max. 130	max. 130	max. 130	max. 130	max. 130
Diameter of base (mm)*	max. 90	max. 90	max. 90	max. 90	max. 90
possible press moulds	one-, two- and thre-part-moulds				
Press feeder	continous stream feeding and gob feeding				
Setting of the feeding point		through motor fine adjustment or chute system			
Machine height (mm)	3.400	3.400	3.400	3.400	3.800
Diameter of mould table (mm)	1.160	1.160	1.870	2.250	2.815
Maximum machine width (mm)	1.600	1.600	2.250	3.200	4.000
Weight (t) approx.	6,0	7,5	9,2	11,5	15,0
Types of glass		all ty	nes can he proc	ecced	

*it is possible to produce with length of 170 mm an a Ø 100 mm with special production tools.



press machines

stems





Most important technical features of our new generation of press machines gift items:

driving system with servo-actuator-motors

- parallel shears guarantee optimized production speed at highest quality level
- mould pre-opening system
 force-speed-control of plunger by servo pump
- integrated firepolishing system



RPH 12-400
8
of glass, article and feeder 15/min. dep. on type of glass, article and feede
nware, stemware, stems, fully pressed stemware, stemware, stem lers, plates, other articles asthtrays, vases tumblers, plates, other article
max. 350 max. 35
max. 300 max. 30
nree and four-part-moulds one, two, three and four-part-mould
Emhart type 144, special feeders such as Emhart type 14 eders or bail type feeders special feeder
all glass types all glass type
processor-controlled processor-controlle
fully automatic fully automat
nic or through of vacuum mechanic or through of vacuu
servo actuator drive servo actuator driv
ustable from 20-400mm adjustable from 20-400m
1.160mm 1.160m
3.000 mm 3.000 m
1.830mm 1.830mm
1.830mm 1.830mm
approx. 3.500 kg approx. 3.500 kg

RPH 8-400	
6	6
der 15/min. dep. on type of glass, article and fee	s, article and feeder
ns, fully pressed stemware, stemware, ste les asthtrays, vases tumblers, plates, other arti	stemware, stems, ates, other articles
50 max. 3	max. 350
DO max. 3	max. 300
ds one, two, three and four-part-mo	nd four-part-moulds
ial feeders such as Emhart type 144, spe ers feeders or bail type feed	t type 144, special or bail type feeders
es all glass ty	all glass types
ed processor-contro	rocessor-controlled
tic fully autom	fully automatic
Im mechanic or through of vac	through of vacuum
ive servo actuator o	ervo actuator drive
nm adjustable from 20-400	from 20-400mm
nm 1.160	1.160 mm
nm 3.000	3.000 mm
nm 1.830	1.830mm
nm 1.830	1.830mm
kg approx. 3.50	approx. 3.500 kg

RPH 6-400
15/min. dep. on type o

fully pressed stemware, asthtrays, vases tumblers, pl

Max. 350
max. 300
one, two, three and four-part-moulds
feeders such as Emhart type 144, special feeders or bail type feeders
all glass types
processor-controlled
fully automatic
mechanic or through of vacuum
servo actuator drive
adjustable from 20-400mm
1.160 mm
3.000 mm
1.830mm

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Number of stations
Capacity - 8 stations max.
Type of articles
Article height max. (mm) approx.
Article diameter (mm) approx.
Press moulds applicable
Feeding of press
Kind of glass
Controllability of press
Operation of press
Article take-out
Machine drive
Stroke of cylinder
Diameter of divided circle
Height of press
Length of press
Width of press

Weight of press

press machines gift items





upgrades

Take out mechanism – E4 (1)

- full-automatic removal of stemware, tumblers... from the blowing machines IBS
- up-side-down positioning on the conveyor belt for safe transportation
- synchronized with blowing machine
- optional clock- or counter-clockwise operation

Transfer station (2)

- faster production cycle 2 to 3 pieces more per min. • exact pressing due to servomotor
- gap-free gob transfer due to servoactuator
- by usage of a rotary distributor no more leakage of flexible hoses during gob transfer
- can be retrofitted onto all FORMA blowing machines

Firepolishing machine (3)

- for the polishing off of seamlines on stems
- for the smooth transition form bowl to stem and stem to footplate
- reheating for the short-stretch process
- can be retrofitted onto all Forma blowing machines

Servohydraulic for pressing (4)

- in the new presses we also use a new method in the Stationary Hydraulics - Hybrid Ram with Closed Loop Oil Circuit. This system permits high power density and high dynamics.
- the new press-unit conists of the following components: • press-cylinder double acting
- servo motor and servo pumps, aligned with the cylinder surfaces
- compensation tank and pressure safety valve
- the new press-unit is fixed on the crossbar of the press

New drive system for presses (5)

- special ring gear drive system with 2 Servoactuators designed for high load and less backlash
- presses with mould radius 30" and max. press capacity 30 kN need no taple support
- 2 rotary serve actuators with water cooling for high speed drive The actuators are combined at acceleration and deceleration – at positioning they work against each other with abt. 30% of its torque – this secures highest precision
- high torsional rigidity and coupling free integration between motor and transmission
- drive system is designed for 0,4 sec for moving presstable with mold radius 38" abt. 22,5 degree

Camera monitoring system (6)

- secures the optimized positioning of the gob on the working table
- secures the 100% centered blowing process
- each individual position of the working table is memorized hence the camera monitoring system can be multiple used on different machines
- can be retrofitted onto all Forma blowing machines for multiple usage









peripheral devices

Platinum feeder (1)

optimized weight-and control technology for stems and small giftitems

cutting and grinding machines (4)

for the production of perfect mouthrim

Mechanical Gob Feeder and Servo Gob Feeder (2)

universal feeder for blow and press machines

conveyor belts with different coatings (5)

available with different coatings to avoid any scratches or any kind of dirtying of the items during transportation

Sandblasting machines (3)

for the decent yet life-long marking of all glass items

heavy-duty mould pastes and cooling and lubrification liquids (6)

adapted to the special needs of our glass processing machines





mould systems

The Forma mould systems allows the production of items with block moulds, split moulds consisting of 2-, 3-, 4- parts and basket moulds.

Unique due to Forma production technology is the possibility of production of cylindrical pressed stems, short stretched stems and pressed stems with nearly all possible designs – even perforated stems can be produced.

The Forma pre-opening mould system leads to a minimization of vacuum blisters.





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