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Innovative partner to the
blow-molding technology



Whole Turnkey Solution for Blow Molding Machinery

Innovative Technology with Superior Experience



Blow Molding Machines Technology

32, Saryeom-ro 65beon-gil(Kyungseo-dong), Seo-gu, Incheon, Korea
(7B-2L, Incheon seo-bu Industrial complex)
TEL : +82-32-566-0101~3 / 665-0101~4
FAX : +82-32-561-0220
<http://www.blowtech.co.kr> <http://www.blowmolding.co.kr>
e-mail:youngil@blowtech.co.kr

KorMc (Overseas Division in Korea)

Room 202, 321-14, Jamsilbon-Dong, Songpa-Gu,
Seoul 138-867, Korea
Tel : +822 4242 822 / Fax : +822 4232 822
E-Mail : kormc@kormc.kr





Innovative partner to the blow-molding technology

블로우 몰딩의 기술파트너 - 영일

YOUNGIL solves your problems, based on advanced technology

영일공업은 고객의 다양한 제품생산의 문제점을
진보된 블로우 몰딩 기술을 통하여 해결하여 드릴 것입니다

YOUNGIL strives continuous effort for technical improvement with various top quality types which have concrete productivity and perfect durability.

Following the demands of the marketplace, YOUNGIL has consistently improved its global successful NHBM, YLBT, YELBT series machines.

NHBM-E (Electric Blow) 전동방식

The new fully electric generation of machines NHBM-E convinces on the basic of the proven compact construction of the hydraulic NHBM series machines.

NHBM-D (Double Station) 더블 스테이션방식

Various using and various functions from small size to large size container. It is type for medium, small and various type of production. Reemergence of correct position due to horizontal type movement and direct line bearing structure.

NHBM-S (Single Station) 싱글 스테이션방식

Strong and stable exclusive using production type. It is a type for professional production with strong durability and correct reemergence feature due to professional parts composition which realize high speed operation with high strong structure.

YLBT / YELBT 중-대용량 모델

It is direct pressure type extra-large midair blow molding machine for the automatic production of large size product. It is a extra-large midair blow molding machine considering mechanical safety and working conditions for the production of large size product. Strong forming power and high speed operation for the processing of extra-high molecule resin and engineering plastics.



Innovations by YOUNGIL

영일의 다양한 기술을 만나보십시오

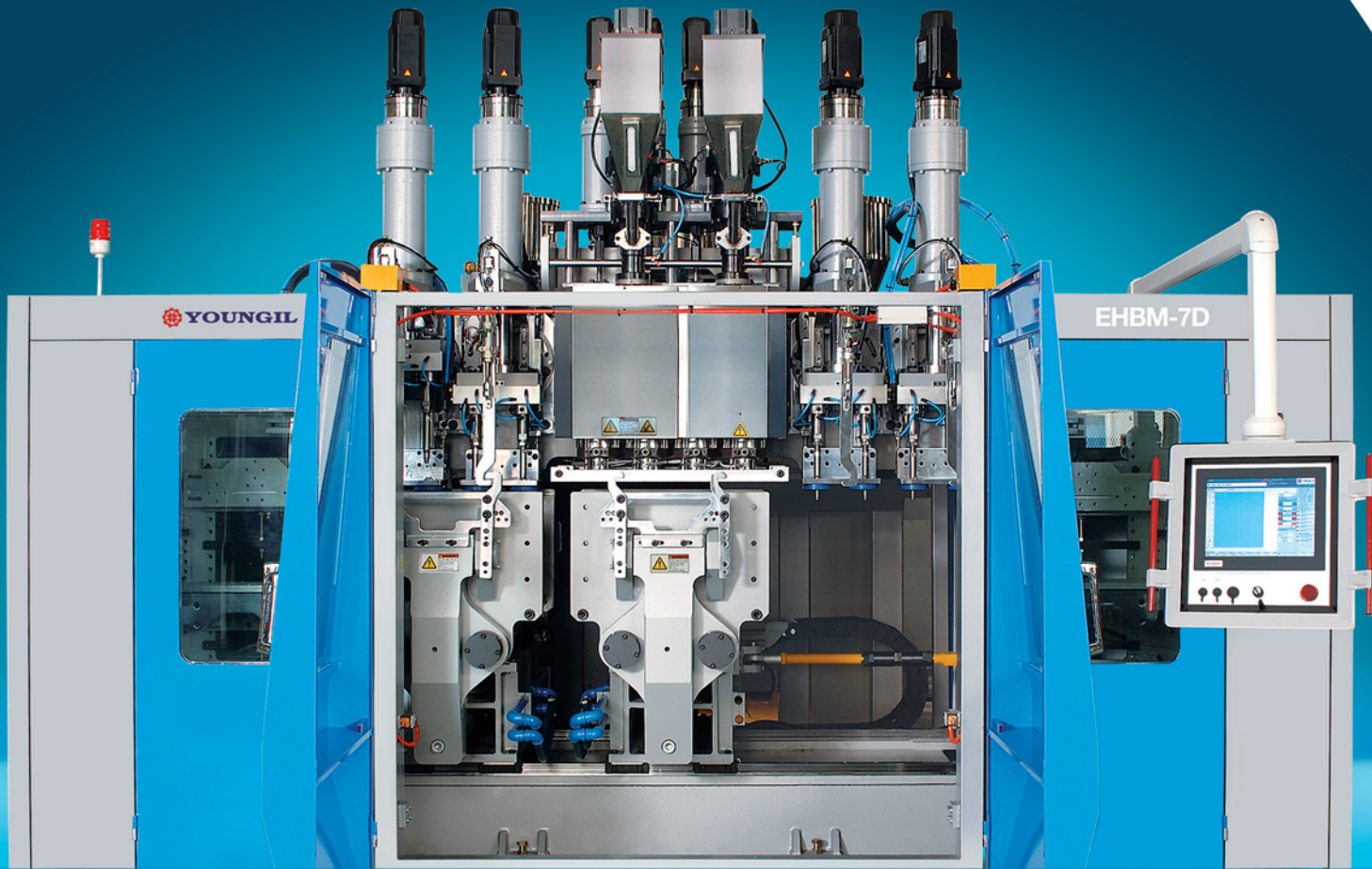
Our support for your quality targets

We supply technically advanced systems that will satisfy your need for consistent excellence in product quality, highest machine availability and minimal control effort.

Our goal is your success

We supply top rate machines and system and we are committed to helping you get the best out of them. We support your success with a complete package of consultancy and technical services.





YOUNGIL provides its customers with solutions in terms of quality, technology and service

영일공업은 고객에게 고품질 고성능과 다양한 서비스를 제공하여 드립니다

With its many years of experience in commercial packaging industrial blow molding machines, YOUNGIL offers several machine series for the production of simple and complex containers with up to 10 liters capacity as well as for the production of commercial container.

The clamping units of the NHBM-E series blow molders share a common basic design and are installed in a closed, distortion-free, rigid frame. The direct-acting electric-servo control system applies the clamping force centrally on the mold platen, and the movement of the two mold platen is precisely synchronized. Large available spaces around the mold area for specialized mold functions and below the mold platen for installation of optional parison manipulation equipment as may be needed for the production of medical bottle and chemical container with multi layers. The NHBM-E series machines are available as single and double clamp models.

NHBM-E Series

Fully Electric Power Shuttle Blow Molding Machines for Packing Containers ranging 0.8~10 Liters

NHBM-E 시리즈 유압을 전혀 사용하지 않는 완전한 전동 방식의 셔틀 타입 블로우 몰딩 생산가능용기 0.8 ~ 10리터

The NHBM-E Series is exceptional machines combine the benefits of servo electric technology and blow molding speed/pressure control algorithm, conformance to safety standards, a toggle clamping system designed by analysis program, and a high speed blow molding mechanism.



Main feature 주요기능

Toggle-link high speed clamping system and highly rigid blow-molding mechanism.

Energy saving, low noise, and clean production

High cycle molding with no time lag is attained by simultaneous operations

Designed in accordance with safety standards

Operational excellence and stable control system

All the modules that make up an NHBM-E series machine control smoothly and efficiently together.

NHBM-E series are the control by electric servo system under blow molding clamp unit, blowing die-head and blow pin system. All NHBM-E series machines operate under the operator-friendly MACO series or BACKHOF microprocessor control system. The process in progress is clearly visualized on the display screen with the emphasis on essential information.



NHBM-E Series

Electric Blow Molding System :

Precision control, Fast response, Flexible upgrade

정밀한 제어, 빠른 응답성, 유연한 업그레이드



- A. Electric-Blow molding clamping system configuration diagram
- B. Electric-Blow pin system
- C. Micro processor controller

Productivity 생산성

The NHBM-E series is engineered to deliver sustained performance under demanding conditions. Fast responses and machine movements, an errorproof, easy-to-use control system and fast cycling it all adds up to a higher yield of zero-defect parts. NHBM-E machines are the fastest on the market in their class.

Reliability 신뢰성

The NHBM-E series is the outcome of systematic further development of the NHBM-E series, already tried and tested thousands of times in tough production situations. YOUNGIL designers and process engineers have not only boosted machine availability, they have also optimized the process for top product quality. The new NHBM-E machines combine high throughput with a very high yield of good parts. Rejects, waste and downstream costs are drastically reduced.

Flexibility 유연한 사이즈 변경

An NHBM-E machine is the right choice for a wide range of applications from simple, standard blow molding to highly complex processes. The basic version offers many outstanding features, for example, a new NHBM-E machine is ready for integration in an existing processing line, using existing moulds.

Modularity 모듈화된 주요 부분

YOUNGIL NHBM-E machines are as modular as they come. This means big benefits for our customers, for example, machine components can be swapped or upgraded quickly and easily. In an intensely competitive market, an easy upgrade path can make all the difference to your success. You can take advantage of a profitable new opportunity, knowing that a quick upgrade will bring your machine.

Customer of YOUNGIL will benefit from the following features:

- Vertically movement of extruder platform by electric cylinder with servo system
- Simple mold change from above with crane by either moving blow pin unit
- Quick product changeover thanks to excellent access to blow mold and head tool

Clamping unit

- Maximum stiffness with minimal distortion of the clamping unit
- Optimal distribution of the clamping force
- Isolation of clamping force from bearing guiding systems
- Large daylight

Extruder

- High output thanks to water cooled, grooved extruder feed zone
- Capability to process a wide range of raw materials thanks to optimized screw geometries utilizing a range of mixing and shearing sections. Custom screw designs available for certain extrusion applications
- Extruder drive with a wide speed range; screw rpm and torque read-out are standard
- Convenient production shutdown and start-up using vacuum hopper loader

Die heads

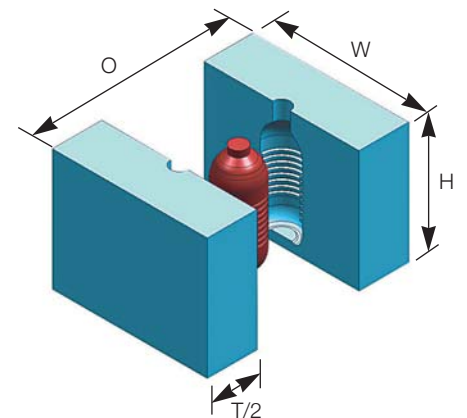
- High-quality product finishes thanks to wide variety of optimized die heads. All heads produce articles with tightly controlled uniform radial wall thickness distribution
- Capability to process a large variety of resins due to rheologically optimized internal flow channels
- Superb parison quality due to short residence times of die-heads
- Uniform circumferential wall thickness distribution thanks to overlapping melt layers
- Quick color change
- Production with multiple die heads possible

Control

- User-friendly BACKHOF control, including software PLC with real-time capability and touch screen
- Flexible visualization with several operator access levels
- Network access via Ethernet / TCP/IP / USB
- Remote diagnostics via modem

EHBM Series (Full Electric Machine)

CONTENT	Unit	EHBM6D		EHBM7D	
Mold clamping force	KN	150		200	
Dry cycle timesec	sec	4		4.5	
Mold transport stroke	mm	650		760	
Mold width Max.(W)	mm	640		750	
Mold height Max.(H)	mm	430		430	
opening distance (O)	mm	560		560	
Mold thickness Max.(T)	mm	280		280	
Extruder		E90	E100	E100	E110
Screw diameter	mm	90	100	100	110
Screw L/D	mm	26/1	26/1	26/1	26/1
Screw speed range	mm	60	60	60	60
Plasticizing capacity HDPE	RPM	110	140	140	180
Driving motor	kg/hr	45	55	55	75
Approximate utilities					
Compressed air requirement(6~8bar)	l/min	3,200		5,000	
Machine Size (W x L x H)	mm	3,960x5,100x3,300		4,400x5,500x3,300	
Weight	ton	15		18	





NHBM 8DL-E140

NHBM Series

High Speed Shuttle Blow Molding Machines for Packing Containers ranging 2 ml~30 Liters

NHBM 시리즈 2ml~30리터 용기를 위한 하이스피드-셔틀방식 블로우 몰딩 성형기

Model Range : 1D, 2D, 3D, 4D, 6D, 7D, 8D

NHBM 1D-E40, E50 / 2D-E60, E70 :
for molding from Min. 2 ml ~ Max. 2 liter

NHBM 3D-E80, 90 :
for molding from Min. 50 ml ~ Max. 4 liter

NHBM 4D-E90 :
for molding from Min. 100 ml ~ Max. 6 liter

NHBM 7S-E90 :
for molding from Min. 1 liter ~ Max. 15 liter

NHBM 8D-E100-E120 :
for molding from Min. 10 liter ~ Max. 30 liter



NHBM 7D-E110



NHBM Series automatic blow molding machines allow you to produce automatically all plastic containers for molding from 0.002liter up to 30liter. Whichever other shape, fully automatically by removing scraps of course, for further processing whether with or without handle, at an excellent quality and a high production output, that will guarantee you a decisive advantage over competitors in managing enterprise. Depending on product size, NHBM Series subdivided into three phrases enable even a machine to produce wide range of article size, due to maximize mutual conversion of machine each stage. NHBM Series automatic blow molding machines are the innovate answer to demands of the blow molding industry.

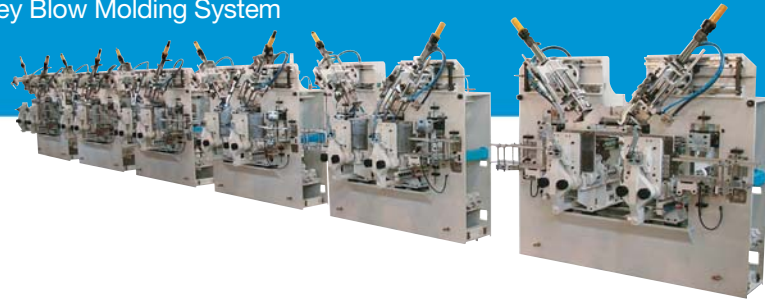
Our range based on single/double station machines with a capacity up to 30liter, have been designed to offer more flexibility to our customers, in order to satisfy all their production needs.



NHBM 8D-E110

The features are 주요기능 :

- High efficiency / productivity =low-container cost
- Clamping unit move horizontally
- Closed-loop proportional hydraulic valves
- Easy to set parameters by Maco 6000 Microprocessor (100 Point parison wallthickness control)
- Quick easy mold change tie bar less clamp system and quick change
- Nitrided screw and barrel
- In-machine Automatic DE flashing with cooling system
- Extruder with AC Moter
- For very competitive quotation and Turnkey Blow Molding System



NHBM 4D



NHBM 2D-E70



NHBM Series

Multi Layer Blow Molding Technology

NHBM 시리즈 다층 블로우 성형기

Solving packaging problems can seem overwhelming at times. YOUNGIL has helped some of customers solve packaging problems such as improving shelf appeal, reducing cost or creating better barrier protections by suggesting different multi-layering blow molding options to them



Food Packing

- Preventing oxygen and water permeability
- Disinfectant contents, High temperature contents
- Preservation life extension of contents

Cosmetic Packing

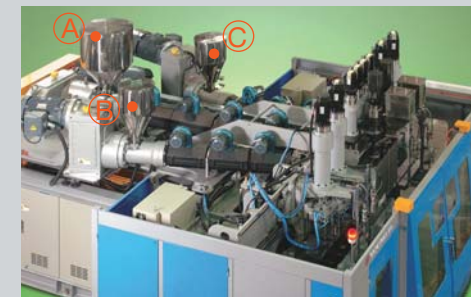
- Cosmetics : preservation of highly effective moisture and perfume
- Oxygen barrier to extend shelf life and protects contents
- Isolation of ultraviolet rays
- Brilliance of surface

Hazardous Packing

- Sterilizer, Insecticide : Isolation against permeation
- Agricultural propose : Anticorrosive effects
- Increase impact intensity and tensile strength

Multi-Purpose Packing

- Reduce cost : Regrind layer for saving waste material
- Longer shelf life and improved product formulations
- Eco-friendly-Re processed material can be sandwiched
- Two-Colored products : Production of value added products
- Prevention of environmental pollution
- Easy printing



*A-Main layer extruder
*B-Sub layer extruder
*C-Sub layer extruder

NHBM Series Technical Specification

Blowing unit	Unit	NHBM1D	NHBM2D	NHBM4D	NHBM6D	NHBM7S	NHBM7D	NHBM8D							
Mold clamping force	KN	25	60	130	150	200	150	200							
Dry cycle timesec	sec	1.8	2	3	4	4	4	4.5							
Mold transport stroke	mm	300	360	480	620	750	700	800							
Mold width max	mm	290	350	470	610	750	690	790							
Mold height max	mm	180	320	370	370	450	450	450							
opening distance	mm	305	360	560	560	560	560	560							
Mold thickness max.	mm	135	180	300	300	300	300	300							
Extruder		E50	E60	E60	E70	E90	E100	E90	E100	E90	E100	E100	E110	E110	E120
Screw diameter & L/D	mm	50	60	60	70	90	100	90	100	90	100	100	110	110	120
Screw L/D	mm	24/1	24/1	24/1	24/1	26/1	26/1	26/1	26/1	26/1	26/1	26/1	26/1	26/1	26/1
Screw speed range	rpm	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Plasticizing capacity HDPE	kg/hr	25	36	36	55	110	140	110	140	110	140	140	180	180	250
Driving motor	kw	7.5	15	15	22	45	55	45	55	45	55	55	75	75	130
Oil pump driving motor	kw		5.5		11		22		30		22		37		37
Approximate utilities															
Compressed air requirement(6~8bar)	l/min		1,000		1,300		2,500		3,200		2,500		5,000		5,000
Cooling capacity requirement hydraulic unit	kcal/h		3,000		4,000		7,500		9,500		7,500		15,000		15,000
Hydraulic oil tank capacity	Liter		120		200		450		450		450		450		450
Machine Size	Width	mm	1,940		2,500		2,760		3,320		3,260		4,140		4,600
	Length	mm	3,300		3,900		5,100		5,100		5,200		5,450		5,700
	Height	mm	2,520		2,520		3,100	3,175	3,100	3,175		3,250		3,175	
Weight	ton		5		7		13	16	13.5	16.5		15		18	20

NHBM Series

In-Mold Labelling Machine System

NHBM 시리즈 인몰드 라벨 블로우몰딩 성형기

YOUNG-IL, In-Mold labelling system is designed to permit easy in-mold-labeling right from the very start. The labelling unit is a separate unit and can simply be docked onto the outside of the machine. The unit also can be attached onto any other NHBM-S series machine of the same type. An electronic servo guarantees precise label positioning inside the mold capacity and reduces the cycle time due to its high speeds.



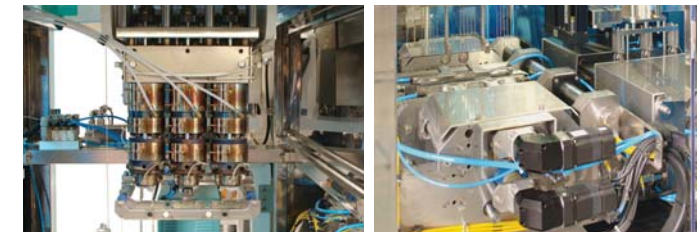
NHBM 8S-E100

YBM AFS Series

Aseptic Blow Fill Seal System



YBM AFS Series Blow/Fill/Seal technology intergrates vacuum blowing, filling and hermetic sealing in one continuous operation to produce aseptically manufactured products more reliable than any other method.



Aseptic Blow Fill Seal System

Aseptic blow molding machine is the machine that blowing, filling and hematic sealing in full automatic one cycle to produce aseptically manufacture products.

Contents in the container to be produced in the aseptic process, does not infect from the outside. So, this machine is the most efficient not only in the pakaging of pharmaceutical fields but also the most cost-effective which happens in the carriage, loading, equipment and labor.

Extrusion

Parison extrusion process through die of mold and mixed resin in extruder

Blow molding

Main mold close and simultaneously seals the blow pin until settles into the neck area forms the parison into container.

Filling

Fixed quantity filling by contents filling pin with exhaust after blow at the same time. Contents filling should be settled for long containers in time of filling decline.

Sealing

Filling pins and blow pins rise and it is grounded and neck sealed by sealing mold.

Product blowing out

Feeding after mold opening for the product which molding and sealing is completed.

Product and trimming

Scrap trimming with punching toos.

STEP 1

Resin is extruded from die-head



STEP 2

Mold is closed and parison is cut. container is vacuum blowing



STEP 3

Seperate sealing mold closes to from the top and hermetically seal the container



STEP 4

Steriled solution is metered into the container through the fill nozzle



STEP 5

The mold opens and the container is taken out



YOUNGIL Blow-molding machines
Continuous Improvement of a
Successful Concept



Hydraulic controls 유압 컨트롤

The hydraulic valve system is equipped with sub-block to minimize energy loss sue to large oil accumulator most by hydraulics components are installed on oil-tank in case they are prepared for oil leak oil filter detecting oil condion oil cooler and the thermostat are minimized to need routing maintenance.

Pneumatic controls 공압 컨트롤

All pneumatic control valves and air regulator are neatly arranged on an internal cabinet, to improve facility and reliance of routing main tenance to increase the stability of article products, in dividually every movement element is operated to con-trol pressure in interrup-ting air pressure the machines stop automatically.

YLBT Series

Large Blow Molding Machines for
Packing Containers & Technical Parts ranging 30~60 Liters

YLBT 시리즈 중,대용량 블로우 몰딩 성형기 생산 가능 용기 범위 : 30 ~ 60리터

YLBT Series are common using machines which have multi-functions for the production of medium and large size product. It is useful for change of size or for intricaded figure product production as very convenient structure and design. For a wide range of medium and large parts, YLBT Series of accumulator head system deliver performance and cost efficiency in single package, from 30liter up to 60liter containers and automobile parts.



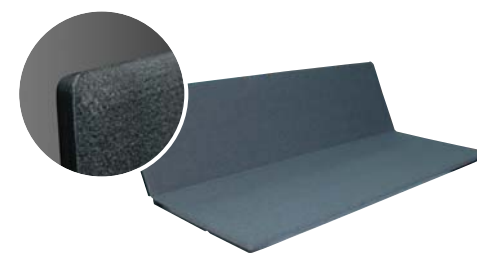
Electric controls 시스템 컨트롤

The machine is controlled by MACO 6000 which is one of micro-processor control modes. All operations of the machine is displayed on LCD monitor and all data such as time, temperature, abnormal condition warnng alarm etc. are set up and output and in-put. As alarm function, there are heater disconnection war-ning, extruding motor ope-ration stop function during low temperature of the cylinder, sensor position verification function, high tem-perature warning for hydraulic unit and detective function for screw rotarion etc. (Basic specification)



With its many years of experience in building industrial blow molding machines, YOUNGIL offers several machine series for the production of simple and complex containers with up to 10 liters capacity as well as for the production of commercial container. Depending on the application, accumulator heads or continuous extrusion heads are used, the latter for coextrusion of up to six layers. In continuous extrusion mode, the parison is either inserted in the mold with a parison feeder

or a shuttling clamping unit receives the parison from the die head. Thanks to their modular design, most machines can be customized to the user's needs by matching clamping platen dimensions, closing speeds, clamping forces or clamp stroke with specific requirements. Also, in terms of additional equipment and control options, YOUNG IL can accommodate virtually every customer requirement so that the optimum blow molding system is supplied for each project.



YELBT Series

Extra Large Blow Molding Machines for
Packing Containers & Technical Parts ranging 100~500 Liters

YELBT 시리즈 대용량 블로우 몰딩 성형기 생산 가능 용기 범위 : 100 ~ 500리터

YELBT Series are extra-large midair blow molding machine considering mechanical safety and working conditions for the production of large size product. It is designed for production of 100liter to 500liter such as Jerricans, open top drum, L-ring and automobile parts.



The extruder is suitable for processing high molecular weight-high density polyethylen (HMW-HDPE), PC, XENOY, NORYL, ABS+PC at very high output-rate. Accumulator head is designed according to the first in first out principal. Parison forming is carried out by two-divided operating die-slide. Application is Jerricans, Drums, Automobile parts, Bumper guard & Side step, Spoiler.

The YELBT series-new benchmarks
for large blow molding machines

YELBT120S / YELBT 120S

is a extra-large midair blow molding machine considering mechanical safety and working conditions for the production of large size product. Strong forming power and high speed operation for the processing of extra-high molecule resin and engineering plastics.

YELBT 65S / 80S / 100S

has multi-functions for the production of medium & large size intricate container or special figure container and it is manufactured as the most suitable structure platen



Extruder part 압출기 파트

- * It is a conveying unit of applied and extruded resin to the accumulator.
- * Reducer unit has very low noise due to high level of precision after heat treatment of helical gear which is made using special stainless steel.
- * The cylinder and screw are manufactured at Hv1000 of hardness through heat treatment of nitrification steel by gas nitrification.
- * Precise temperature control($\pm 2^{\circ}\text{C}$) is available by adaption of PID temperature control mode after heated by band heater and closing by duct and then cooled by ventilator compulsively.
- * Fitting slot has compulsive cooling water circulation unit.

Accumulator head 직압식 헤드 파트

- * It is an compressive unit of parison within a few second accumulating the extracted resin from the screw, therefore it determines the appearance & quality of the molded product.
- * It must be first in-first out Europe style structure, therefore color change is very with small amount of carbide producing.

Hydraulic unit 유압 유니트

- * For the promotion of energy effectiveness and reliable operation, the accumulator and pressure switch are mounted, and molding operation pressure, figure pressure, extraction pressure and other related operation pressure or oil amount control etc. are independent installation and the most safe and suitable conditions can be kept by each safety valve installation.
- * Except moving parts, precise general stainless pipe is used for fixed piping, therefore it has beautiful appearance without oil leakage.



Machine control & option equipment

성형기 시스템 컨트롤 및 옵션 설비

Machine Control System

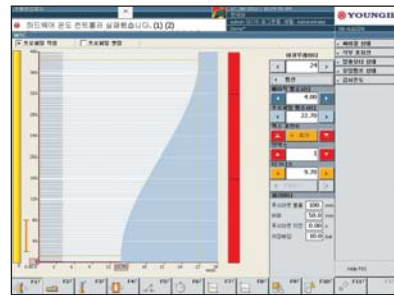


Incorporated all drive controls, sequence control, hardware and software for

- Temperature regulations.
- Parison regulations.
- Speed regulations.
- Timer functions.
- Wall thickness regulations.
- Data display.
- Alarm function and all system parameters are entered via touch screen or key board to store set values and process data in system memory

Options :

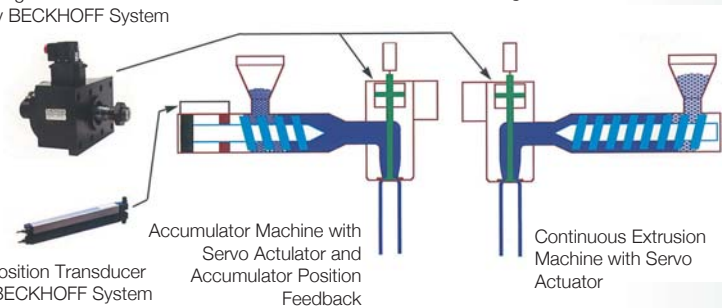
1. Independent blow cylinders.
2. Independent parison control.
3. Blow cylinders controlled by closed loop proportional valve.
4. Parison length control with potocell.
5. Independent moog power pack parison control.
6. Bottle take out system.
7. Leak Tester.
8. In mold labelling machine system.
9. Manual screen changer.
10. Antistatic electricity system.
11. View stripe extruder head.
12. 2~5 layers co-extruder head.
13. Air dehumidification system in mold area.



BECKHOFF System(German)

Die Gap Tooling Actuator Controlled by BECKHOFF System

All of Moog's Parison Programmers will control either Continuous Extrusion or Accumulator Blow Molding Machines



Crystallized



Hopper loader



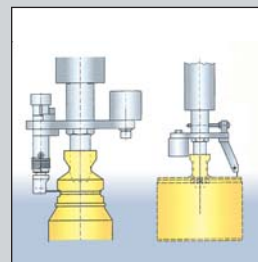
Color mixer



Chiller



Blow mold



Wide neck cutter



Leak tester



Low speed crusher

Technical Specification

기술 사양



NHBM Series

Blowing unit	Unit	NHBM1D	NHBM2D	NHBM3D	NHBM4D	NHBM6D	NHBM7D	NHBM8S	NHBM8D	NHBM8DL	NHBM9DL		
Mold clamping force	KN	25	60	90	120	150	180	180	210	210	280		
Dry cycle time	sec	1.9	3	3.5	4	4.5	4.5	4.5	5	7	8		
Mold transport stroke	mm	260	360	430	500	650	700	800	800	800	900		
Mold width max.	W mm	230	330	400	470	620	670	670	770	500	850		
Mold height max.	H mm	180	320	320	370	370	420	420	420	550	550		
Open distance	O mm	300	360	500	580	580	580	580	580	880	880		
Mold thickness min.	T mm	130	180	250	280	280	280	280	280	450	450		
Extruder		E50	E60	E70	E80	E90	E100	E100	E110	E110	E120	E130	E140
Screw L/D	L/D	26/1	26/1	26/1	26/1	26/1	26/1	26/1	26/1	26/1	26/1	26/1	26/1
Screw diameter & L/D	mm	50	60	60	70	70	80	90	100	100	110	110	120
Plasticizing capacity (HDPE)	kg/hr	25	40	40	60	60	80	110	140	140	180	180	220
Driving motor	kw	10	15	15	22	22	37	45	55	55	75	90	110
Oil pump driving motor	kw	3.7	3.7	7.5	7.5	15	15	30	30	30	30	22	22
Approximate utilities													
Compressed air requirement(6~8bar)	L/min	1,000	1,500	2,500	3,000	3,600	3,600	3,000	4,300	3,000	3,000		
Cooling capacity requirement hydraulic unit	kcal/hr	3,000	4,000	6,000	9,000	9,000	9,000	9,000	12,000	9,000	9,000		
Mold cooling capacity	kcal/hr	15,000	20,000	30,000	60,000	80,000	80,000	60,000	80,000	80,000	80,000		
Machine Size													
Width	mm	2,000	2,700	3,000	3,300	3,900	4,300	3,500	4,700	5,200	5,300		
Length	mm	3,000	3,800	4,200	4,800	5,400	5,800	5,400	5,800	6,100	6,300		
Height	mm	2,500	2,600	2,700	3,000	3,100	3,100	3,100	3,100	3,500	3,500		
Weight	TON	6	8	12	14	16	17	14	21	24	28		

YLBT / YELBT Series

Blowing unit		YLBT60S	YLBT80S	YLBT100S	YELBT110S	YELBT120S	
Mold clamping force	KN	200	300	600	700	950	
Mold clamping speed	Cm/sec	30	30	25	30	30	
Mold wide max.	W mm	550	950	1,090	1,100	1,300	
Mold height max.	H mm	790	1,100	1,600	1,600	1,800	
Open distance	O mm	1,050	1,050	1,350	1,600	1,800	
Mold thickness min.	T mm	350	350	450	600	600	
Extruder		E80	E90	E90	E100	E110	E120
Screw L/D	L/D	26/1	26/1	26/1	26/1	26/1	28/1
Screw diameter	mm	80	90	90	100	100	110
Plasticizing capacity (HDPE)	kg/hr	80	110	110	140	140	180
Driving motor	kw	37	45	45	55	55	75
Oil pump driving motor	kw	22	22	22	22	37	37
Approximate utilities							
Compressed air requirement(6~8bar)	L/min	1,000	1,200	1,500	1,800	2,000	
Cooling capacity requirement hydraulic unit	kcal/hr	9,000	10,000	12,000	9,500	9,500	
Machine Size							
Width	mm	3,200	3,500	4,100	11,000	11,500	
Length	mm	5,000	6,000	8,500	7,000	8,000	
Height	mm	3,900	4,200	5,700	5,700	6,700	
Weight	TON	13	25	32	40	50	