



Seminar on

"Extrusion Blow Moulding"
- Trends, Technology & Applications

Indian Plastics Institute

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Hitech Plast Group of Companies

Dr. Harish B. Thorat
Manager, Corporate Quality

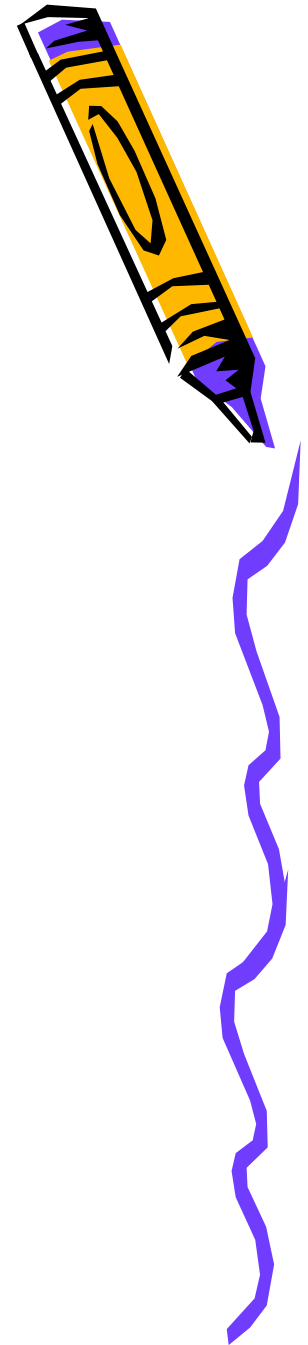


EBM

- Current scenario of Blow moulding in India

POLYMER	KT	%
HDPE	272	71
PET	70	18
Others (PP, PS, PVC, PETG & PC)	39	11
Total	381	100

HDPE Container Size	KT	%
unto 5 Litre	212	78
10 - 80 Litre	39	14
> 80 Litre	21	8



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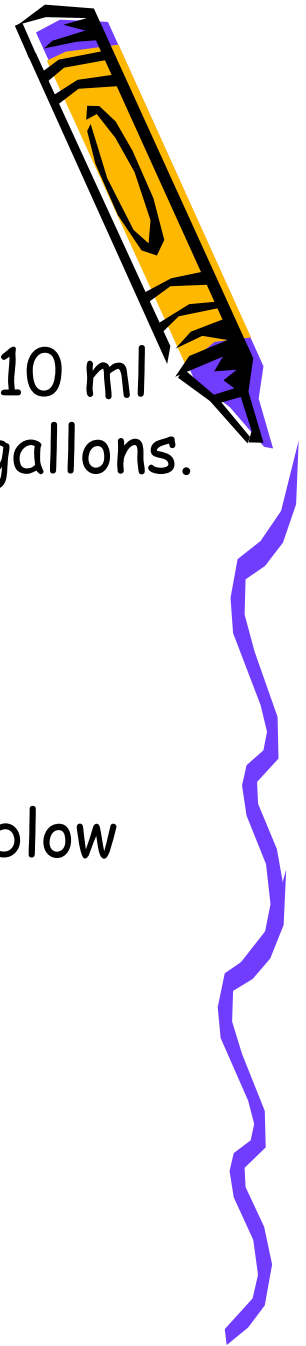
- Process

- Manuf. Of hollow products range from small 10 ml bottle to container holding several hundred gallons.

- Basics -

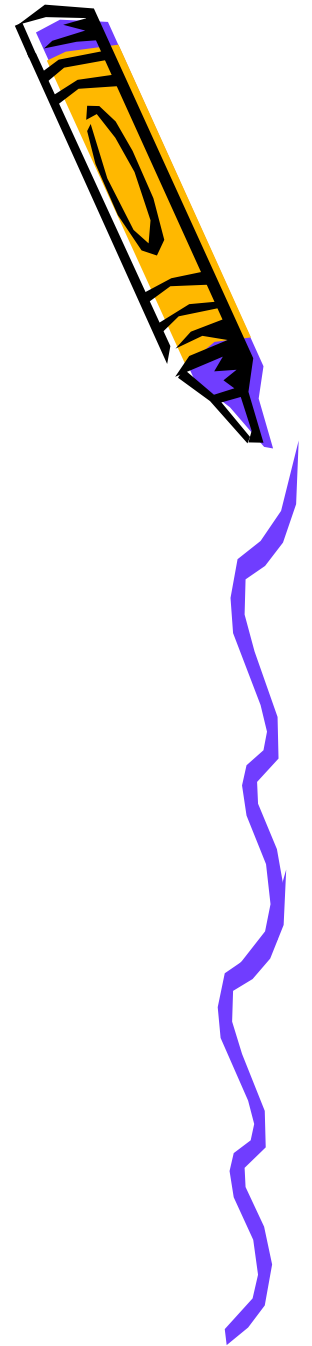
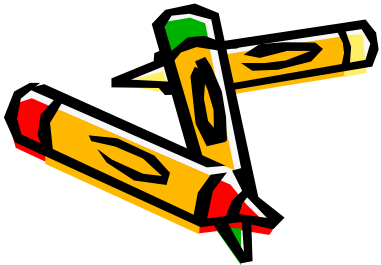
- Melt the plastic
- Form the predetermined length Parison
- In a split die seal one end and at other pass blow pin
- Inflate the Parison to assume mould shape
- Cool the part and eject it

Trim flash if necessary



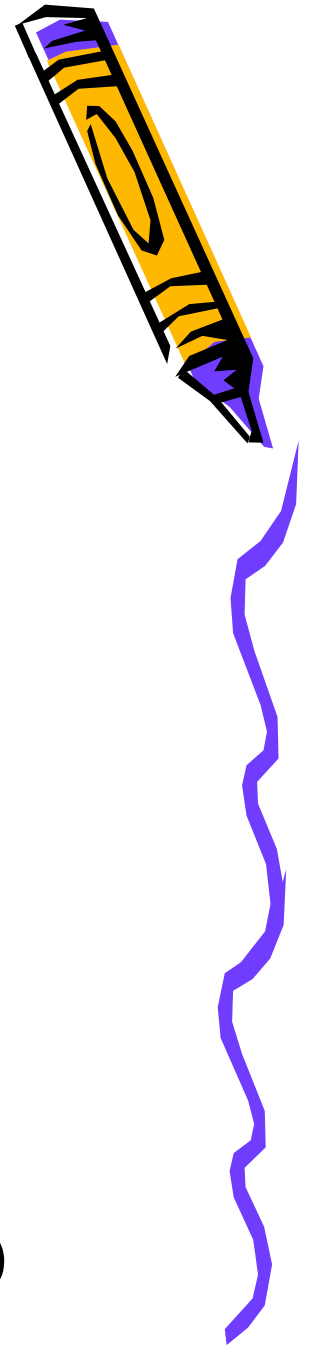
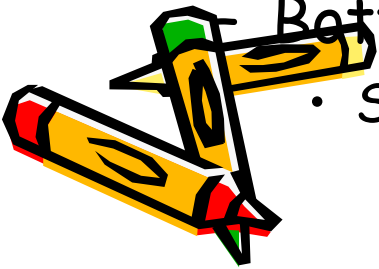
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- Process
 - Continuous
 - Multi Station BM (generally 2)
 - Rotary BM
 - Intermittent, accumulator type
 - Reciprocating screw
 - RAM accumulation
 - Accumulator system
- Head Designs
 - Radial flow die head
 - Axial flow die head
 - Offset spider design



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- M/c. Clamp system
 - Toggle clamp design
 - Direct acting piston clamp
- Die (Cup)
 - Divergent type
 - Convergent type (in small mouth applications)
- Pin Type
 - Top blowing
 - Parison cutting by cutting sleeve (inbuilt for plug application)
 - Bottom blowing
 - Side cutting knife (where uniform height is reqd.)



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- Moulds

- Sand blasted
- Diamond Polished
- Single / Multi cavity
 - Be - Cu bottom and water cooled blow pin (for fast cycle times)
 - All Aluminum mould

- M/c. - Size and specifications

- Extruder melt capacity
- Clamp force and stroke / daylight
- Platen size
- No. of Parison heads
- Accumulator shot capacity



EBM

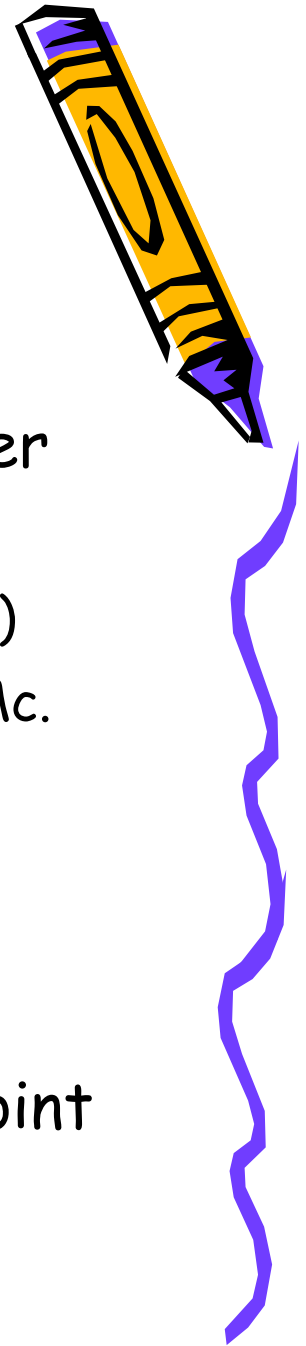
- Parison control
 - Moving type
 - Pneumatic
 - Hydraulic
 - Control system
 - Timer based
 - Microprocessor based
 - No. of points for controlling Parison thickness
 - 32
 - 108
- Major manuf. Players
 - Moog
 - Yuken



EBM

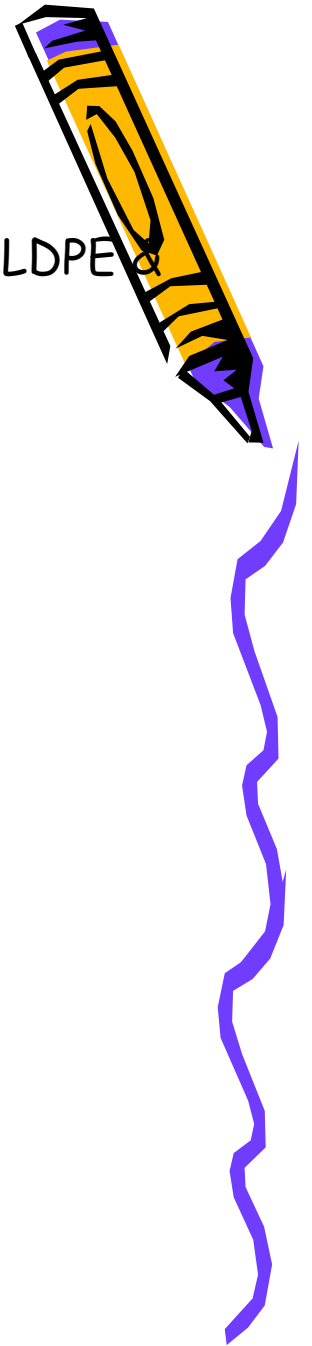
• Facilities at Hitech Plast & Clear Plastics Group Companies

- Product range 10 ml bottle to 5 litre container
- Single and Multi layer (unto 3 layers)
- Total 72 EBM M/cs. (both single & double station)
 - Extruder melt capacity - 18 to 75 kg / hr / Mc.
 - Clamp force - 70 tons
 - Clamp stroke - 125 to 200 mm
 - Platen size - Length / Width / Thickness
(From 175 x 125 x 125 To 430 x 300 x 255)
 - Single & Double Parison head with multi point
parison programming
 - Auto deflashing



EBM

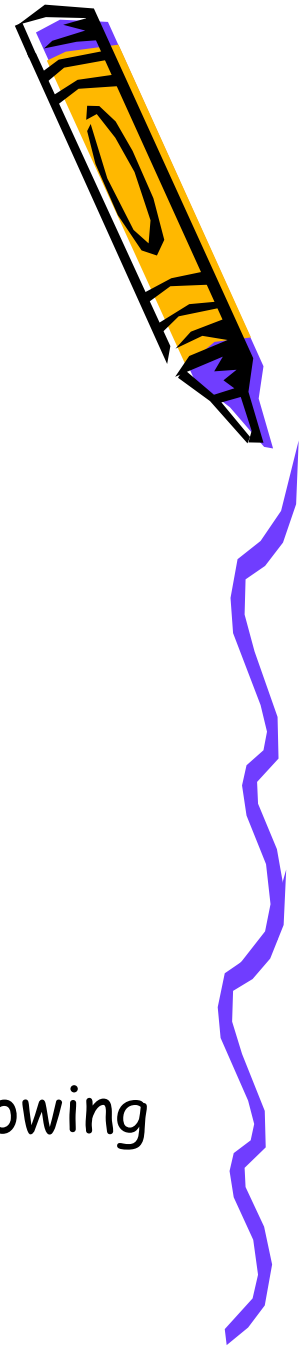
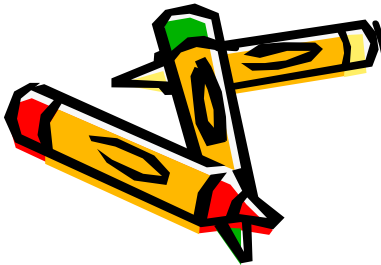
- Materials being processed: PETG, PET, HDPE, PP, LLDPE & PVC
- In house Tool room
- Sectors being catered
 - Pharma
 - Cosmetics
 - Food
 - FMCG
 - Detergents
 - Oils
 - Pesticides & Agrochemicals



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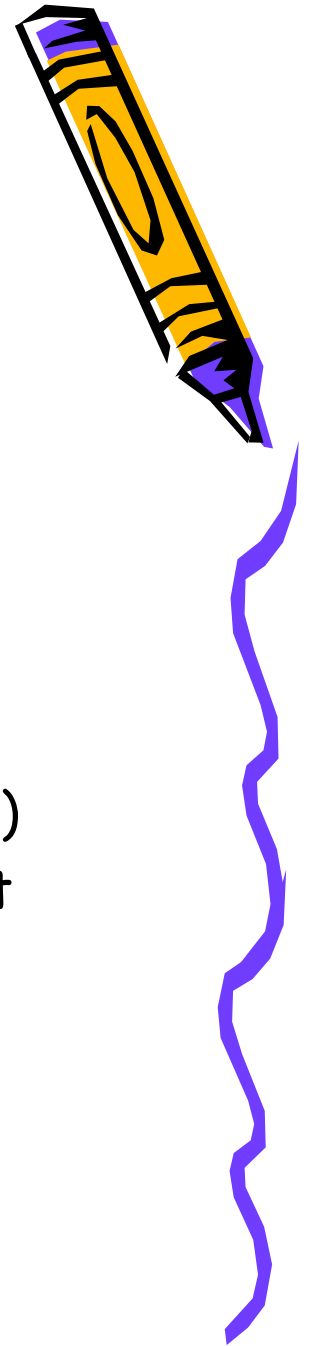
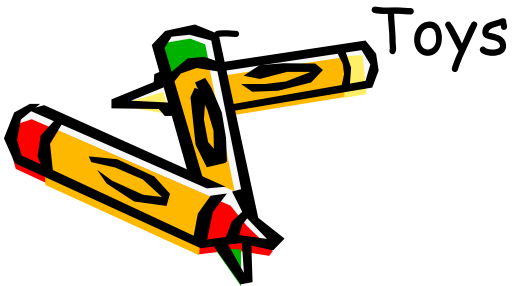
- New technology & trends

- Multi parison (generally 2 - 4)
- Multi layer
- Angular blowing
- Online sealing (in Milk bottles)
- Barrier Bottle technology
- Paint cans
- Blow moulded petrol tanks for cars (of HDPE)
- All electric machines with TMC
- Tandem EBM - simultaneous top & bottom blowing
- Wheel M/c. with electromech. clamp



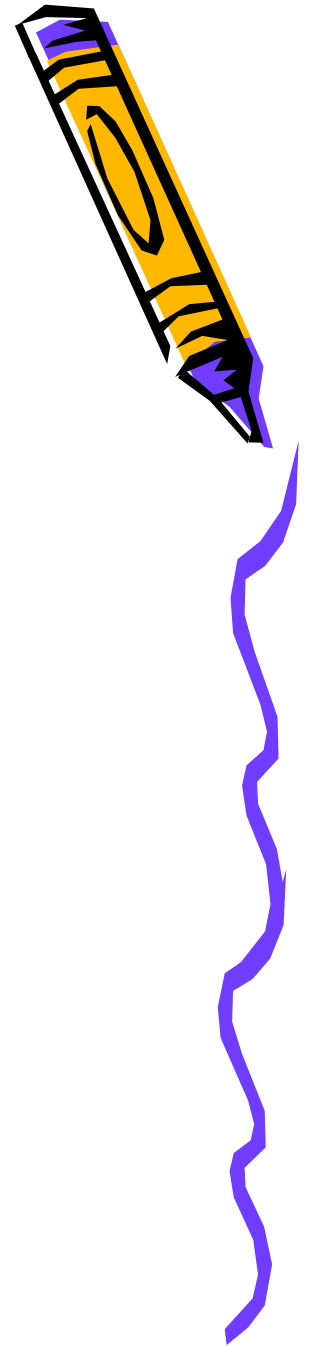
EBM

- New products & applications
 - Fishing floats
 - Graduated viewing strip (in lube oils application)
 - Zebra lining
 - In mould labeling
 - One drop dropper (5 ml capacity)
 - Saline / Glucose bags
 - PVC connectors (micro size, in medical applications)
 - Rubber Gripper at sides (insert moulding, inflight shopping)
 - Nylon - HDPE Pesticide bottles
 - Plastic pipes (in automotive application)



EBM

- Pump bellows (in automotive applications)
- Tea Pots
- Glue tubes (of LDPE)
- Whitener fluid tubes (of Nylon)
- Measuring cup (Inbuilt, 10 ml)
- 20 Litre Jerry cans (in Lubes & Oil application)



END

- THANKS

