

FUNDAMENTAL MANUFACTURING PROCESSES

PLASTIC BLOW MOLDING

SCENE 1.

tape 402, 08:11:57-08:12:07

blow molded part being ejected
from machine

NARRATION (VO) :

BLOW MOLDING PROCESSES ARE THE MOST POPULAR
METHODS USED TO PRODUCE HOLLOW PRODUCTS OUT OF
THERMOPLASTIC MATERIALS.

SCENE 2.

tape 404, 09:04:45-09:04:52

glass blowing at greenfield
village

tape 403, 01:20:32-01:20:36

blow molding operation

tape 403, 01:20:27-01:20:30

blow molded part produced

tape 407, 01:01:08-01:01:13

stretch blow molding operation

tape 403, 01:13:19-01:13:22

injection blow molding

tape 403, 01:23:21-01:23:25

extrusion blow molding

tape 403, 01:46:21-01:46:25

vertical wheel operation

NARRATION (VO) :

BLOW MOLDING EVOLVED FROM THE ANCIENT ART OF GLASS
BLOWING. TODAY IT IS A LEADING PLASTIC
MANUFACTURING PROCESS BECAUSE OF THE WIDE RANGE OF
PLASTIC RESINS THAT CAN BE BLOW MOLDED, AND THE
MANY POSSIBLE METHODS OF BLOW MOLDING.

SCENE 3.

tape 403, 01:39:01-01:39:05

blow molded part coming out of
machine

tape 403, 01:41:28-01:41:31

small blow molded part

tape 403, 01:36:34-01:36:39

very large blow molded part

NARRATION (VO) :

BLOW MOLDED PARTS RANGE IN SIZE FROM THE VERY
SMALL, TO EXTREMELY LARGE PARTS.

SCENE 4.

tape 403, 01:02:09-01:02:16

2 shots, blow molded bottles &
containers

tape 402, 08:26:04-08:26:08

blow molded highway barrel

tape 402, 08:24:10-08:24:15

blow molded auto part

tape 404, 09:16:23-09:16:26

blow molded case

tape 402, 08:23:21-08:23:27

blow molded toy

tape 402, 08:28:45-08:28:49

blow molded medical item

NARRATION (VO) :

BOTTLES AND CONTAINERS ARE THE MOST COMMON BLOW
MOLDED PRODUCTS, BUT OTHER ITEMS SUCH AS HIGHWAY
BARRELS, AUTOMOTIVE COMPONENTS, DOUBLE WALLED
CASES, TOYS, MEDICAL ITEMS, AND STRUCTURAL PANELS
ARE PRODUCED.

tape 401, 07:09:46-07:09:49
blow molded structural panel

SCENE 5.

tape 408, 10:09:01-10:09:09

blow molded part

tape 399, 04:00:50-04:01:40

blue background

CG: HIGH DENSITY

POLYETHYLENE/HDPE

MEDIUM AND LOW DENSITY

POLYETHYLENE/MDPE, LDPE

POLYETHYLENE

TEREPHTHALATE/PET

POLYPROPYLENE/PP

POLYVINYL CHLORIDE/PVC

THERMOPLASTIC ELASTOMERS/TPE

POLYSTYRENE/PS

POLYCARBONATE/PC

FLUOROPOLYMERS/PTFE

POLYIMIDE/NYLON

NARRATION (VO) :

BLOW MOLDED PRODUCTS ARE FORMED FROM THERMOPLASTIC RESINS SUCH AS HIGH DENSITY POLYETHYLENE, MEDIUM AND LOW DENSITY POLYETHYLENE, POLYETHYLENE TEREPHTHALATE POLYPROPYLENE, POLYVINYL CHLORIDE, THERMOPLASTIC ELASTOMERS, POLYSTYRENE, POLYCARBONATE, FLUOROPOLYMERS, POLYIMIDE AND MANY OTHER MATERIALS.

SCENE 6.

tape 403, 01:37:09-01:37:22

2 shots, extrusion blow molding

CG, SUPER: EXTRUSION BLOW

MOLDING

tape 399, 04:00:50-04:01:40

blue background

CG: EXTRUSION BLOW MOLDING

INJECTION BLOW MOLDING

BIAXIAL STRETCH BLOW MOLDING

CO-EXTRUSION BLOW MOLDING

NARRATION (VO) :

MOST THERMOPLASTIC BLOW MOLDED PRODUCTS ARE PRODUCED VIA EXTRUSION BLOW MOLDING USING HIGH DENSITY POLYETHYLENE OR 'H-D-P-E'. BUT THERE ARE MANY ADDITIONAL BLOW MOLDING PROCESSES, WHICH INCLUDE:

INJECTION BLOW MOLDING,

BIAXIAL STRETCH BLOW MOLDING,

AND CO-EXTRUSION BLOW MOLDING.

SCENE 7.

continue previous shot

tape 403, 01:38:51-01:38:55

extrusion molding

tape 405, 10:01:40-10:01:45

injection molding

NARRATION (VO) :

THESE BLOW MOLDING PROCESSES ALL USE ELEMENTS OF EITHER EXTRUSION,

OR INJECTION MOLDING,

OR A COMBINATION OF THE TWO.

SCENE 8.

tape 399, 04:00:50-04:01:40

blue background

CG: EXTRUSION BLOW MOLDING

NARRATION (VO) :

IN ADDITION, THESE BLOW MOLDING PROCESSES ALL

INJECTION BLOW MOLDING
BIAXIAL STRETCH BLOW MOLDING
CO-EXTRUSION BLOW MOLDING

tape 399, 04:00:50-04:01:40

blue background

CG: PLASTICIZING THE RESIN

PARISON PRODUCTION

OR PREFORM PRODUCTION

PARISON OR PREFORM INFLATION
& COOLING

EJECTION FROM THE BLOW MOLD

tape 403, 01:23:29-01:23:37

2 shots, extrusion blow molded
part, cut to trimming of part

SHARE FOUR COMMON STAGES:

PLASTICIZING OR MELTING THE RESIN,

PARISON PRODUCTION, WHEN REFERRING TO MOST BLOW

MOLDING OPERATIONS; OR PREFORM PRODUCTION, WHEN

REFERRING TO BIAXIAL STRETCH BLOW MOLDING,

PARISON OR PREFORM INFLATION AND COOLING IN THE

BLOW MOLD,

AND EJECTION FROM THE BLOW MOLD.

A FIFTH STAGE IS NECESSARY IN EXTRUSION BLOW

MOLDING FOR TRIMMING AND FINISHING THE PRODUCT.

SCENE 9.

tape 402, 08:05:06-08:05:13

blow molded part being produced

tape 401, 07:02:14-07:02:19

c.u. blow pin

tape 401, 07:23:13-07:23:17

c.u. needle

tape 407, 01:10:54-01:10:58

c.u. stuffer

tape 412, 00:09:17-00:09:24

c.u. core rod

tape 403, 01:35:54-01:35:59

parison production

tape 405, 10:19:43-10:19:50

preform production

NARRATION (VO) :

FOR THE MOST PART, BLOW MOLDING PROCESSES ALL USE

THE SAME BLOWING TECHNIQUE WHETHER IT BE THROUGH A

BLOW PIN,

A NEEDLE,

A STUFFER,

OR CORE ROD.

IT IS IN THE PRODUCTION OF THE PARISON,

OR THE PREFORM WHERE THESE PROCESSES DIFFER.

--- FADE TO BLACK ---