

# OPERATIONS MANAGEMENT

MANUFACTURING SYSTEM

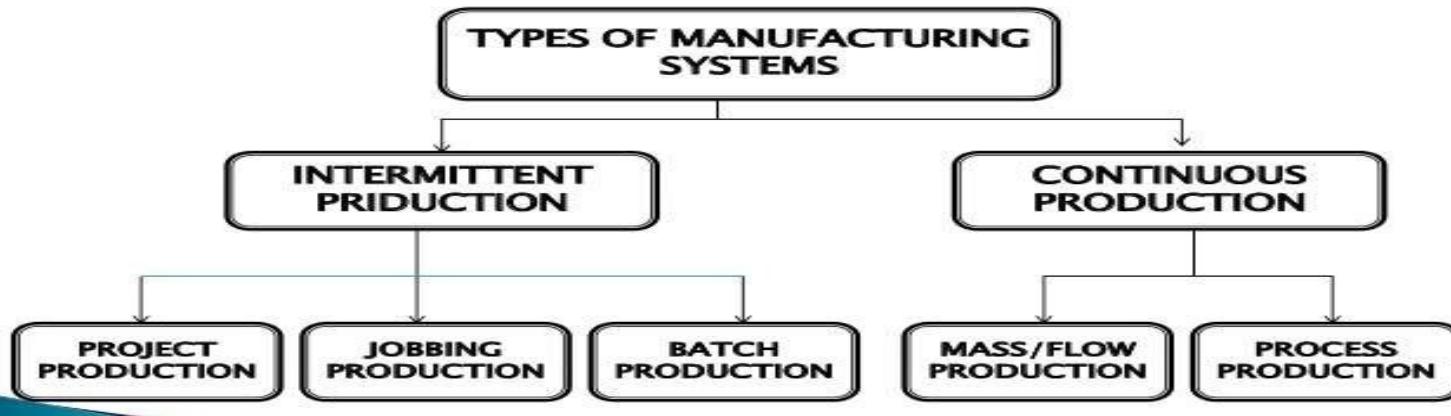
Types of Process Design

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# Types of Manufacturing Systems



Nishant Wasatkar MOM

# JOBSHOP

EXAMPLE: TOOL AND DIE



# JOBSHOP

EXAMPLE: TOOL AND DIE



# JOBSHOP

EXAMPLE: TOOL AND DIE



# JOBSHOP

EXAMPLE: TOOL AND DIE



# JOBSHOP

EXAMPLE: MACHINE



# JOBSHOP

EXAMPLE: PLANT



# ASSEMBLY LINE

EXAMPLE: PRODUCT MOVING WITH ELECTRICAL BELT – FOUR WHEELER



CHINA KINGCO MACHINERY AUTOMATION  
[HTTP://WWW.CNKINGCO.COM](http://www.cnkingco.com)

# ASSEMBLY LINE

EXAMPLE: PRODUCT MOVING WITH ELECTRICAL BELT – MOTOR CYCLE



CHINA KINGCO MACHINERY AUTOMATION  
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# BATC H

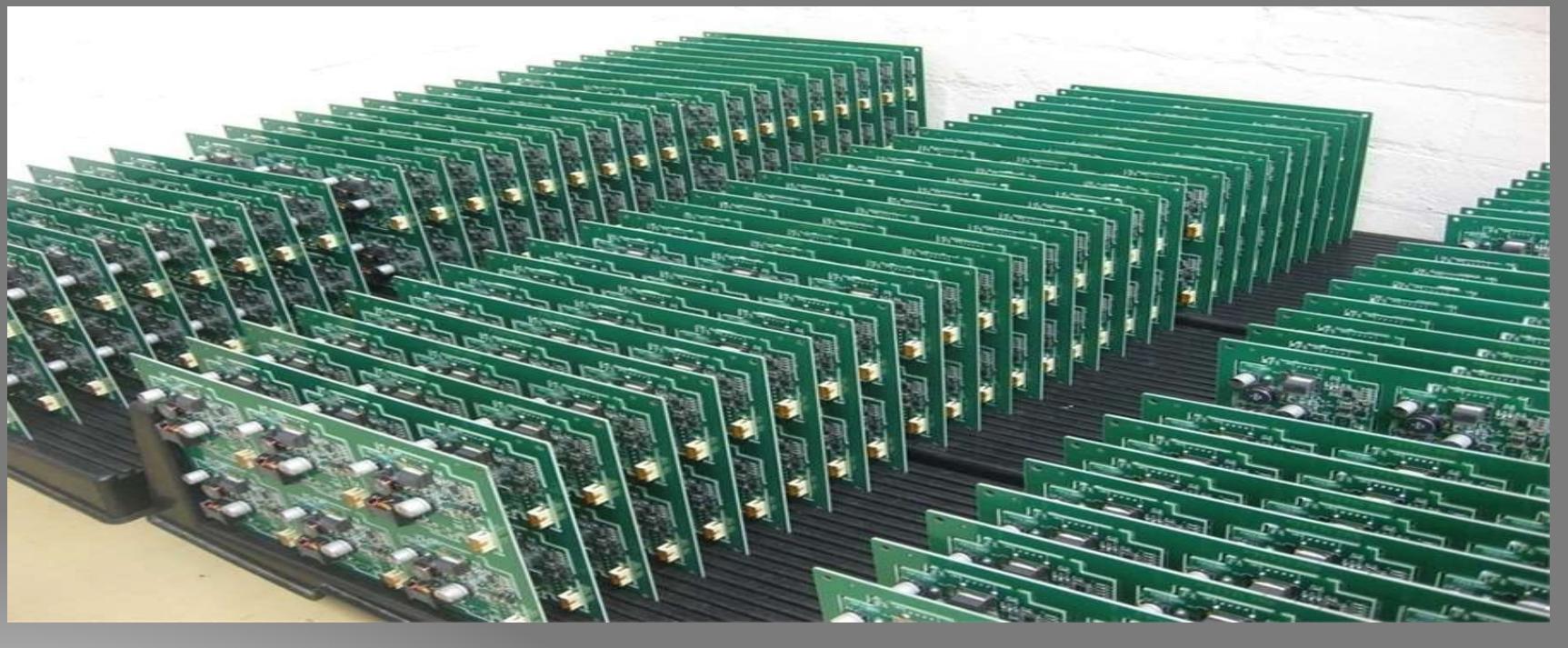
EXAMPLE: BAKERY ITEMS



# BATC

# H

EXAMPLE: CHIP BOARD / ELECTRO PLATE



# BATC H

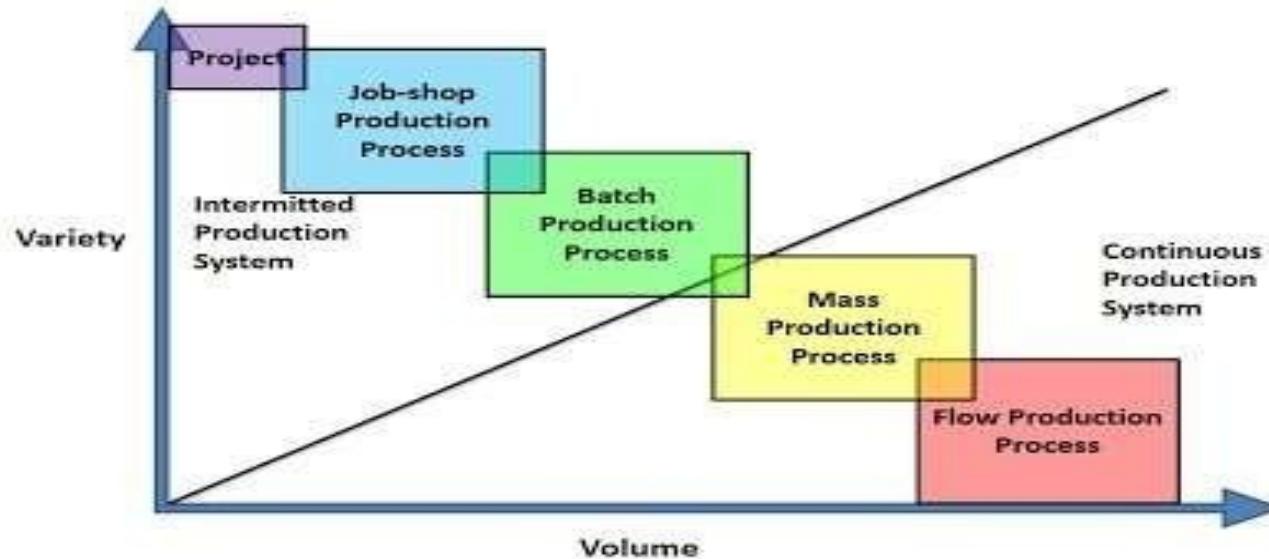
EXAMPLE: BATCH OF BOTTLES



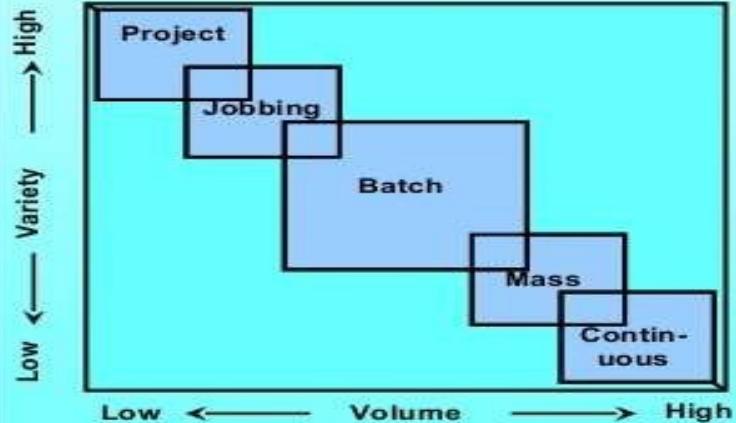
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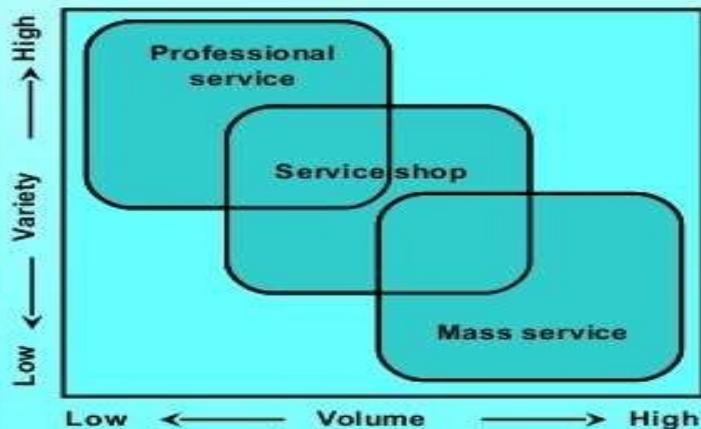
# Types of Production Processes

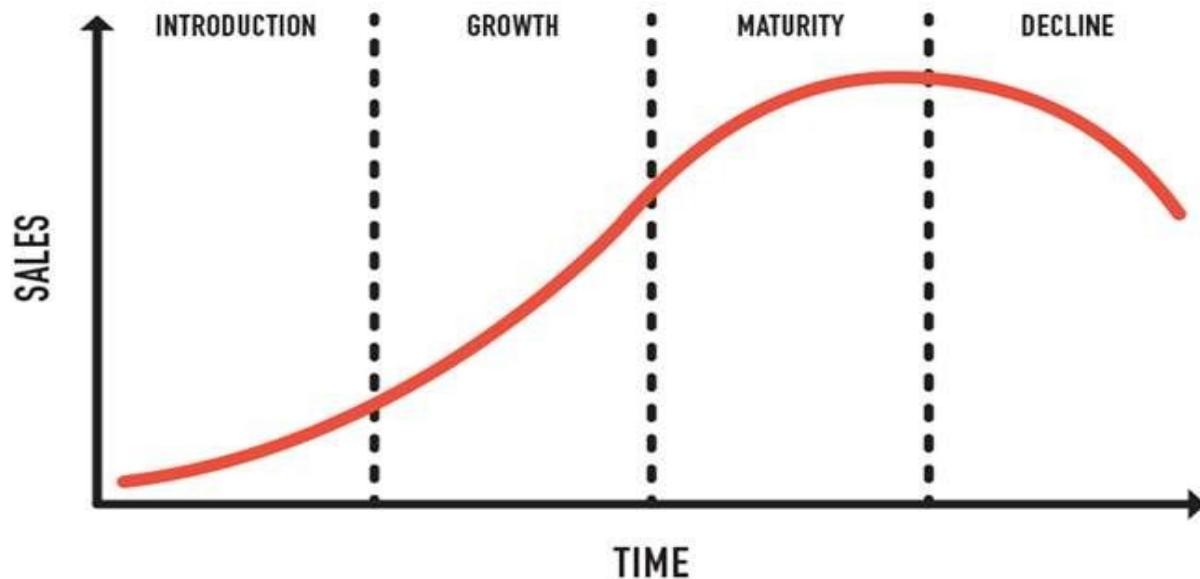


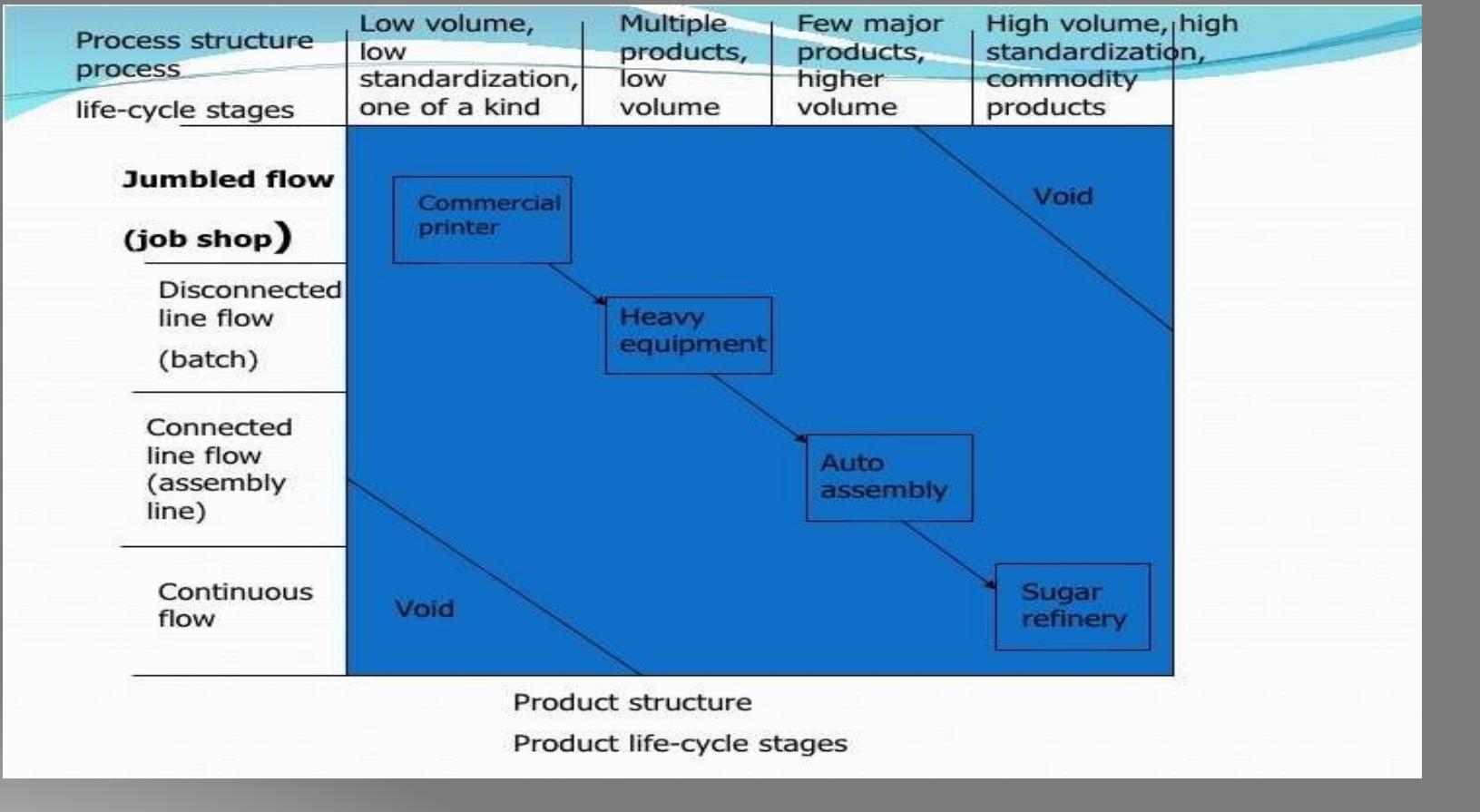
### Manufacturing process types



### Service process types







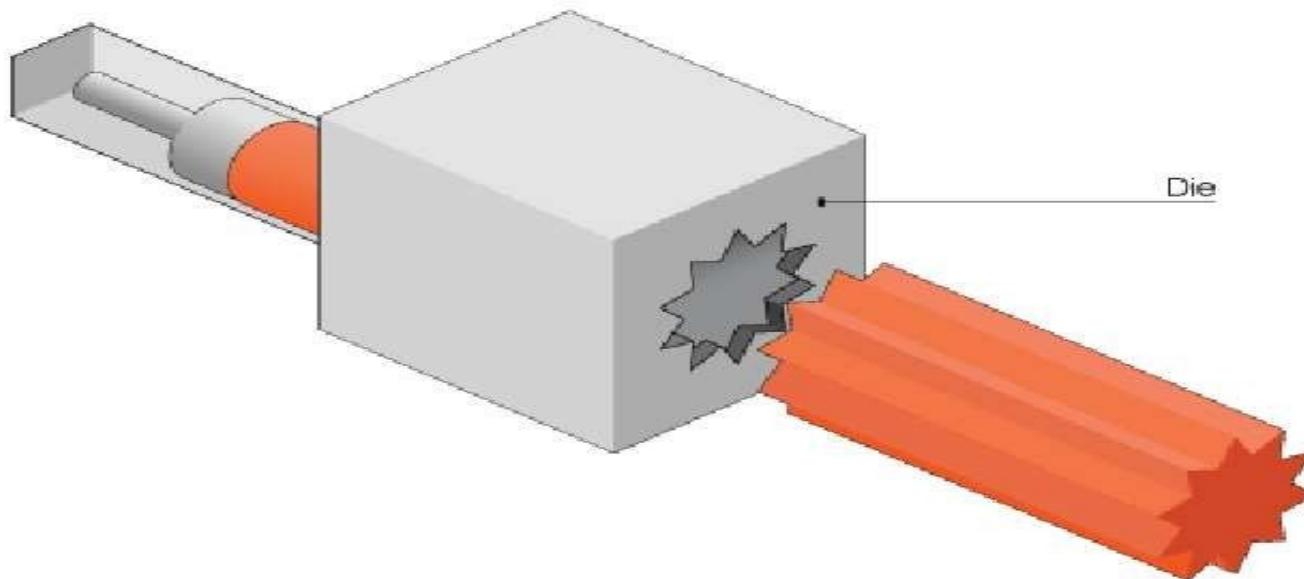
# **TRADITIONAL MACHINING PROCESS**

# MACHINING PROCESS:

*Extrusion* is a process used to create objects of a fixed cross-sectional profile. A material is pushed through a die of the desired cross-section.

# EXTRUSION

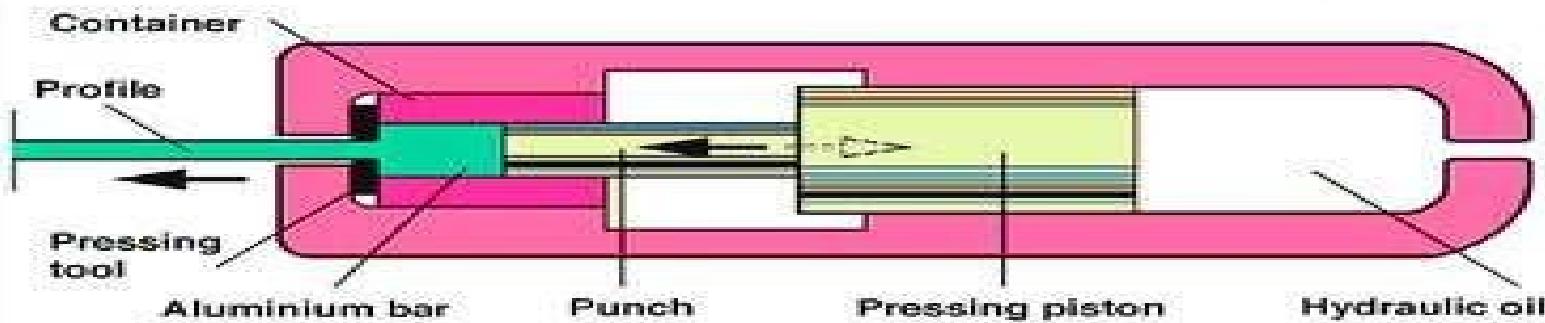
EXAMPLE:



# EXTRUSION

PROCESSING MACHINE

## The Extrusion Process



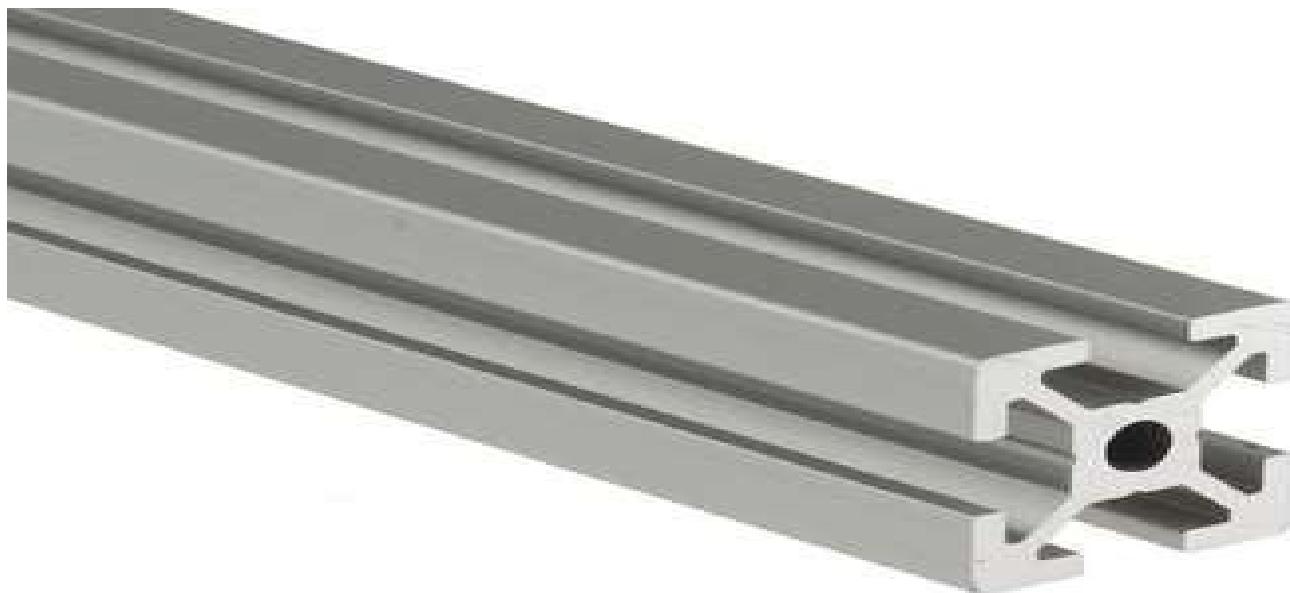
# EXTRUSION

EXAMPLE:



# EXTRUSION

EXAMPLE:



# MACHINING PROCESS:

**Casting** is a manufacturing process in which a liquid material is usually poured into a mold, which contains a hollow cavity of the desired shape, and then allowed to solidify. The solidified part is also known as a *casting*, which is ejected or broken out of the mold to complete the process. Casting materials are usually metals or various *cold setting* materials that cure after mixing two or more components together; examples are epoxy, concrete, plaster and clay.

# MACHINING PROCESS:

EXAMPLE: SHAPES AND MOULDS



MOTOR PART(CAST IRON)

AUTO PART(CAST STEEL)



# MACHINING PROCESS:

EXAMPLE: COLD CASTING



# MACHINING PROCESS:

**Shearing**, also known as die cutting, is a process which cuts stock without the formation of chips or the use of burning or melting. Strictly speaking, if the cutting blades are straight the process is called shearing; if the cutting blades are curved then they are shearing-type operations.

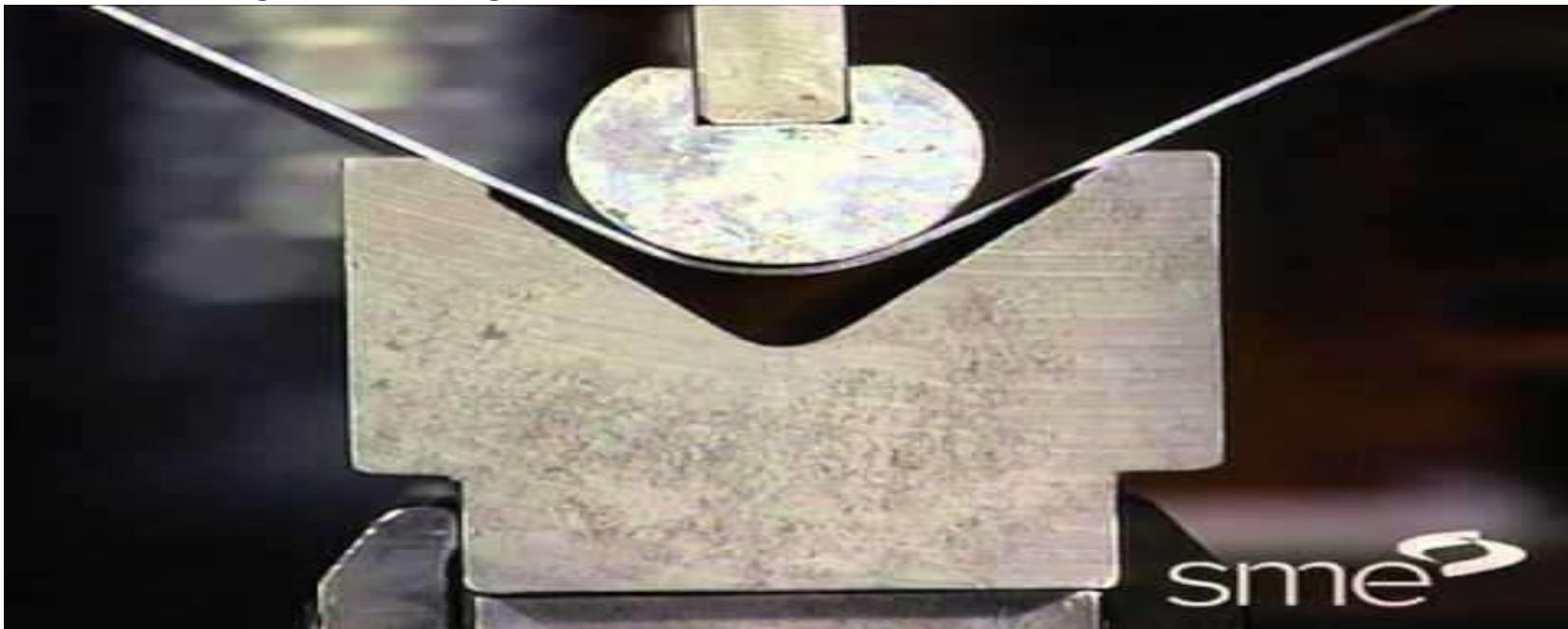
# MACHINING PROCESS:

EXAMPLE



# MACHINING PROCESS:

EXAMPLE – SHARP BLADES



# MACHINING PROCESS:

SHEARING MACHINE



## MACHINING PROCESS:

***Welding*** is a fabrication or sculptural process that joins materials, usually metals or thermoplastics, by causing fusion, which is distinct from lower temperature metal-joining techniques such as brazing and soldering, which do not melt the base metal.

# MACHINING PROCESS:

WELDING



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# MACHINING PROCESS:

WELDING



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# **NON - TRADITIONAL MACHINING PROCESS**

# UN-CONVENTIONAL MACHINING PROCESS:

An unconventional machining process (or non-traditional machining process) is a special type of machining process in which there is no direct contact between the tool and the work piece. In unconventional machining , a form of energy is used to remove unwanted material from a given work piece.

Unconventional machining is used to overcome poor quality work piece with poor surface finish in conventional machining,

Example : Laser, Force of water, ultrasonic waves, light etc.

A large industrial ultrasonic machining rig is shown operating in a water bath. The machine features a vertical column with a cylindrical metal part being machined. A blue and orange probe is positioned above the workpiece, emitting a stream of water. The water bath is filled with numerous small, bright reflections from the machined surface. The background is dark.

# Ultrasonic

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## Machining

# LASERPROCES S:

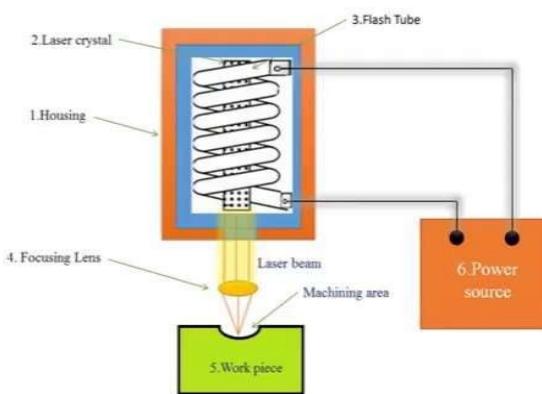


# **CONVENTIONAL (Traditional)**



**VS.**

# **UNCONVENTIONAL (Nontraditional)**



BEST RENGINEER