

25 TYPES OF METAL FORMING TECHNOLOGY

KNOWLEDGE TEST

TEST YOUR METAL FORMING KNOWLEDGE. MATCH THE TYPE OF METAL FORMING AT THE TOP OF THE PAGE WITH THE DESCRIPTION BELOW.



1	Die-casting	9	TIG Welding	17	Milling
2	Plamsa Cutting	10	Bottoming	18	Planning
3	Blanking	11	Folding	19	Grinding
4	Air Bending	12	MIG Welding	20	Selective Laser Melting
5	Forging	13	Drawing	21	Selective Laser Sintering
6	Stamping	14	Punching	22	Machining
7	Pressure Casting	15	Coining	23	Roll Forming
8	Notching	16	Shearing	24	Die Cutting
				25	Mold Cutting

- ___ [A] Method using a _____ press to exert pressure so deformation obtains certain mechanical properties, shapes and sizes; it is one of two components of stamping
- ___ [B] In this method the material makes contact with the punch tip and the side walls of the die but there is not enough tonnage to imprint or thin the material; spring back must also be accounted for
- ___ [C] In this method the material is conformed to the exact angle of the punch and die by using enough tonnage to do so; the material is thinned by the impact of the punch and die and compressed along the bending surfaces
- ___ [D] Very similar to using a cookie cutter; the process of cutting out and retaining a piece of metal
- ___ [E] A shearing process during which a metal scrap piece is removed from the outside edge of a metal workpiece; typically a manually operated, low-production process
- ___ [F] A blanking technology using a cutting die; the thin film panel is positioned on the base plate - the machine is used to control the blade to cut off the material
- ___ [G] Known as SLM, a computer controls a high-power carbon dioxide laser which scans the surface of the metal powder - where the laser goes, the surface of the metal is completely fused together
- ___ [H] Using a cutter with high speed to move the knife on the blank and cut out the shape/characteristics which are needed
- ___ [I] A form of metal separation accomplished partially by the slicing action of a dropping blade, followed by a clean fracture along the cut
- ___ [J] A variation of permanent mold casting; this casting method uses air pressure to force the metal through the gating system and the metal casting's cavity
- ___ [K] Use a mold cavity to apply high pressure to molten metal; mold is usually made of stronger alloys, process is similar to injection molding
- ___ [L] In this method of bending the material only comes into contact with the tooling at 3 points; it requires the least amount of tonnage for a bend since the depth stroke, not the tooling, determines the angle; spring back must be accounted for
- ___ [M] In this method, a gas is employed to shield the material being welded in order to prevent it from being affected by oxygen and other natural elements
- ___ [N] Also called face milling; machining method of cutting the workpiece with the planer tool in the horizontal linear reciprocating motion; It is mainly used for the contour machining of parts
- ___ [O] Known as SLS, uses a laser as the power source to compact and form powdered material through heat
- ___ [P] The process of removing unwanted material from the block of metal to get the desired shape
- ___ [Q] Most commonly performed with a press brake, a set of dies are used to pinch the metal until it forms a desired crease
- ___ [R] A process that cuts through electrically conductive materials by means of an accelerated jet of hot plasma
- ___ [S] A type of blanking technology, the preformed film is positioned on the punching male die and retains the 3D shape of the product and match the mold cavity
- ___ [T] Also called Cold Drawn, this method applies external force to the front end of the pulled metal; the metal billet is pulled from the die hole to obtain the corresponding shape and size of the product
- ___ [U] An arc welding process that uses a non-consumable tungsten electrode to produce the weld
- ___ [V] Uses a series of continuous frames to make the stainless steel into a complex shape; the roll type of each rack can deform the metal continuously until the desired final shape is obtained
- ___ [W] Refers to the process of removing excess material from the workpiece by abrasive materials and tools
- ___ [X] Method similar to punching, except the material is not cut; the die used creates a raised portion of material rather than penetrating entirely
- ___ [Y] The forming of workpiece with a desired shape and size by applying an external force on the plate, strip, pipe, and profile to produce plastic deformation (or separation) by pressing machine and die

25 TYPES OF METAL FORMING TECHNOLOGY ANSWER SHEET



Die-casting	1K	Use a mold cavity to apply high pressure to molten metal; mold is usually made of stronger alloys, process is similar to injection molding
Plasma Cutting	2R	A process that cuts through electrically conductive materials by means of an accelerated jet of hot plasma
Blanking	3D	Very similar to using a cookie cutter; the process of cutting out and retaining a piece of metal
Air Bending	4L	In this method of bending the material only comes into contact with the tooling at 3 points; it requires the least amount of tonnage for a bend since the depth stroke, not the tooling, determines the angle; spring back must be accounted for
Forging	5A	Method using a _____ press to exert pressure so deformation obtains certain mechanical properties, shapes and sizes; it is one of two components of stamping
Stamping	6X	Method similar to punching, except the material is not cut; the die used creates a raised portion of material rather than penetrating entirely
Pressure Casting	7J	A variation of permanent mold casting; this casting method uses air pressure to force the metal through the gating system and the metal casting's cavity
Notching	8E	A shearing process during which a metal scrap piece is removed from the outside edge of a metal workpiece; typically a manually operated, low-production process
TIG Welding	9U	An arc welding process that uses a non-consumable tungsten electrode to produce the weld (Tungsten Inert Gas - TIG)
Bottoming	10B	In this method the material makes contact with the punch tip and side walls of the die but there is not enough tonnage to imprint or thin the material; spring back must also be accounted for
Folding	11Q	Most commonly performed with a press brake, a set of dies are used to pinch the metal until it forms a desired crease
MIG Welding	12M	In this method, a gas is employed to shield the material being welded in order to prevent it from being affected by oxygen and other natural elements (Metal Inert Gas - MIG)
Drawing	13T	Also called Cold Drawn, method applies external force to the front end of the pulled metal; the metal billet is pulled from the die hole to obtain the corresponding shape & size of the product
Punching	14Y	The forming of workpiece with a desired shape and size by applying an external force on the plate, strip, pipe, and profile to produce plastic deformation (or separation) by pressing machine and die
Coining	15C	In this method the material is conformed to the exact angle of the punch and die by using enough tonnage to do so; the material is thinned by the impact of the punch and die and compressed along the bending surfaces
Shearing	16I	A form of metal separation accomplished partially by the slicing action of a dropping blade, followed by a clean fracture along the cut
Milling	17H	Using a cutter with high speed to move the knife on the blank and cut out the shape/ characteristics which are needed
Planing	18N	Also called face milling; machining method of cutting the workpiece with the planer tool in the horizontal linear reciprocating motion; It is mainly used for the contour machining of parts
Grinding	19W	Refers to the process of removing excess material from the workpiece by abrasive materials and tools
Selective Laser Melting	20G	Known as SLM, a computer controls a high-power carbon dioxide laser which scans the surface of the metal powder - where the laser goes, the surface of the metal is completely fused together
Selective laser Sintering	21O	Known as SLS, uses a laser as the power source to compact and form powdered material through heat
Machining	22P	The process of removing unwanted material from the block of metal to get the desired shape
Roll Forming	23V	Uses a series of continuous frames to make the stainless steel into a complex shape; the roll type of each rack can deform the metal continuously until the desired final shape is obtained
Die Cutting	24S	A type of blanking technology, the preformed film is positioned on the punching male die and retains the 3D shape of the product and match the mold cavity
Mold Cutting	25F	A blanking technology using a cutting die; the thin film panel is positioned on the base plate - the machine is used to control the blade to cut off the material