

Machinist – Semester 4 Module 1 - CNC vertical machining centre

Reviewed and updated on: 01st November 2019 Version 1.1

1 : What is the safety sign?



- A : Flammable
- B : Poison
- C : Risk of electric shock
- D : Radio active

2 : Which switch is used to stop the machine suddenly?

- A : Cycle stop
- B : Emergency stop
- C : Toggle switch
- D : Spindle stop

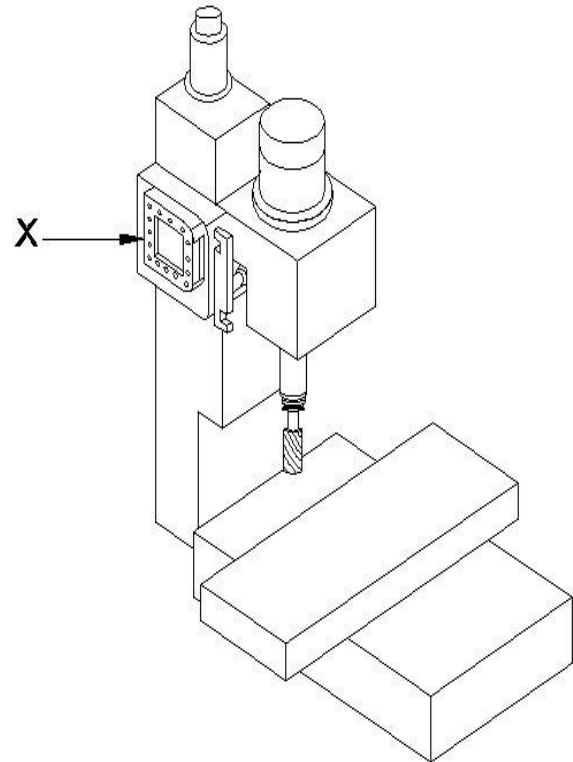
3 : How CNC machine is controlled?

- A : By operator
- B : By program
- C : Control system
- D : Electrical unit

4 : What is part program?

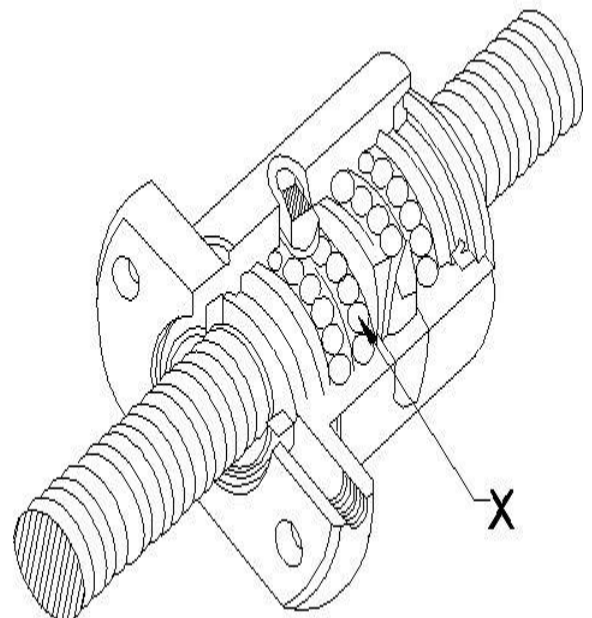
- A : Instruction to machine
- B : Instruction to supervisor
- C : Instruction to manager
- D : Instruction to operator

5 : What is marked as 'x'?



- A : Tool changing arm
- B : Spindle
- C : Tool magazine
- D : Column

6 : What is marked as 'x'?



- A : Screw shaft
- B : Balls
- C : Ball screw nut
- D : Seal

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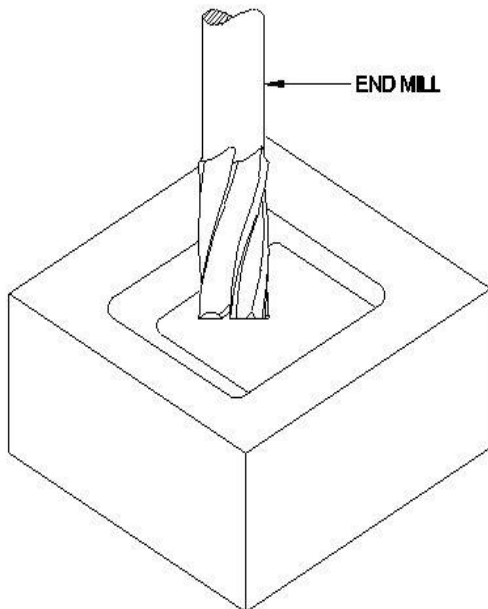
7 : Which code is used for "Circular interpolation clock wise direction"?

- A : G01
- B : G02
- C : G03
- D : G00

8 : Which device is used for feed back system in CNC?

- A : Control unit
- B : Axis motor
- C : Encoder
- D : Spindle motor

9 : What is the operation?



- A : Face milling
- B : Side milling
- C : Pocket milling
- D : Slot milling

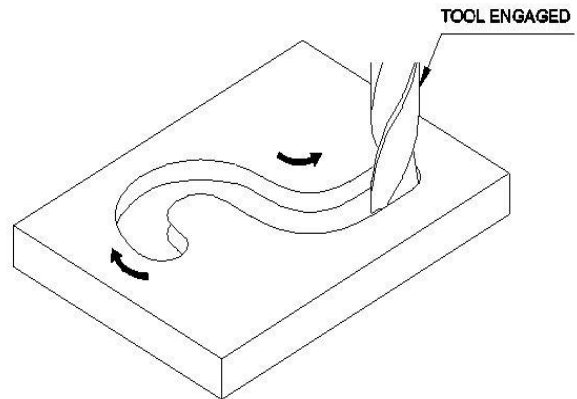
10 : Which machine is used for face milling operation?

- A : CNC lathe
- B : CNC grinding
- C : CNC VMC
- D : CNC wire EDM

11 : What is the operation to produce internal thread in VMC?

- A : Reaming
- B : Tapping
- C : Drilling
- D : Boring

12 : What is name of control system?



- A : Point to point control
- B : Contouring control
- C : 2D control
- D : Straight cut control

13 : Which operation is performed by point-to-point system?

- A : Side milling
- B : Face milling
- C : Drilling
- D : Pocket milling

14 : What is X-axis movement in VMC?

- A : Transverse
- B : Longitudinal
- C : Up
- D : Down

15 : What is ATC?

- A : Automatic Tool Changer
- B : Automatic Pallet Changer
- C : Automatic Gauge Changer
- D : Automatic Tool Setter

16 : Which axis is moving up and down in VMC?

- A : X
- B : Z
- C : Y
- D : B

17 : Which part is used to prevent access into CNC milling?

- A : Door
- B : Control panel
- C : Machine table
- D : Machine spindle

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18 : Which system uses in punched tape?

- A** : NC system
- B** : CNC system
- C** : DNC system
- D** : Conventional system

19 : Which form a program block in CNC?

- A** : Cams
- B** : Levers
- C** : Gears
- D** : Alpha numeric codes

20 : Which motor is used for table movement on CNC milling?

- A** : Spindle motor
- B** : Hydraulic motor
- C** : Coolant motor
- D** : Servo motor

21 : What type of guide way is used in CNC milling?

- A** : Flat
- B** : Dove tail
- C** : V and flat
- D** : LM guide way

22 : What is G code for "Linear interpolation"?

- A** : G91
- B** : G90
- C** : G00
- D** : G01

23 : Which interpolation is joining two points in straight line?

- A** : Circular interpolation
- B** : Linear interpolation
- C** : Helical interpolation
- D** : Parabolic interpolation

24 : Which system provides feed motion along X or Y axis?

- A** : Point -to-point control
- B** : Contouring control

C : Straight cut control

D : 3D contouring control

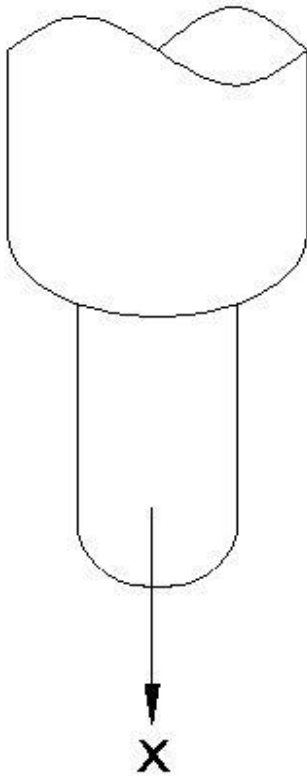
25 : What is the advantage of CNC machine?

- A** : Less flexible
- B** : Less investment
- C** : Less accuracy
- D** : Complicated jobs machining

26 : What is hole finishing operation in VMC?

- A** : Drilling
 - B** : Milling
 - C** : Fine boring
 - D** : Tapping
-

27 : What is the movement marked as 'x'?



- A : X axis Positive
- B : Y axis Positive
- C : Z axis Negative
- D : Y axis Negative

28 : What is "G" code for peck drilling?

- A : G86
- B : G82
- C : G83
- D : G84

29 : What is the code for "absolute programming"?

- A : G91
- B : G28
- C : G90
- D : G00

30 : What is "G91" in VMC?

- A : Absolute co-ordinate
- B : Cartesian co-ordinate
- C : Polar co-ordinate
- D : Incremental co-ordinate

31 : What is "G90" in VMC?

- A : Incremental co-ordinate
- B : Polar co-ordinate

- C : Absolute co-ordinate
- D : Cartesian co-ordinate

32 : How many axes are in basic VMC?

- A : 1
- B : 2
- C : 3
- D : 4

33 : What is "G" code for incremental system?

- A : G91
- B : G00
- C : G01
- D : G90

34 : What is smallest unit in program?

- A : Word
- B : Address
- C : End of block
- D : Character

35 : What is 'H' in part programs?

- A : Tool length offset
- B : Work offset
- C : Wear offset
- D : Geometry offset

36 : What is "N" in the part program?

- A : Program number
- B : Block number
- C : Tool offset number
- D : Work offset number

37 : What is a "Word" in a program?

- A : Address
- B : Line
- C : Combination of characters
- D : End of block

38 : What is a "Block" in a program?

- A : Line
- B : Word
- C : Address
- D : Character

39 : Which code to call sub-program?

- A : M98
- B : M99
- C : M06
- D : M08

- 40** : What is "G40" in program?
A : Cutter radius compensation lift
B : Cutter compensation cancel
C : Cutter radius compensation right
D : Cutter offset outside complex

- 41** : What is "G04" command?
A : Dwell time
B : Rapid motion
C : Linear motion
D : Canned cycle cancel

- 42** : What is "M" in program?
A : Sub-program
B : Sub-routine
C : Miscellaneous function
D : Preparatory function

- 43** : What is "G" in program?
A : Sub-routine
B : Preparatory function
C : Sub-program
D : Miscellaneous function

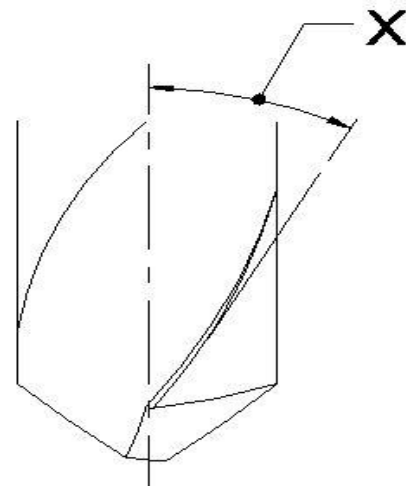
- 44** : What is "G76" code for system?
A : Drilling
B : Fine boring
C : Boring
D : Tapping

- 45** : What is 'Z' value represents in G84 cycle?
A : Feed rate
B : Hole position
C : Reference plane
D : Depth

- 46** : What is "R" represents in G81 cycle?
A : Hole position X-axis
B : Hole position Y-axis
C : Position of reference level
D : Feed rate

- 47** : What is canned cycle?
A : Lengthy program
B : Start program
C : Sub-program
D : Main program

- 48** : What is marked as 'x'?



- A** : Cutting edge angle
B : Helix angle
C : Clearance angle
D : Web angle

- 49** : What is the point angle of twist drill for mild steel?

- A** : 140°
B : 130°
C : 118°
D : 120°

- 50** : How tool life is expressed?

- A** : Minutes
B : Seconds
C : Hours
D : Days

- 51** : What is the unit of cutting speed in VMC?

- A** : Meter/sec
B : Meter/min
C : MM/min
D : Revolution/min

- 52** : What is unit of feed in VMC?

- A** : mm/min
B : mm/rev
C : mm/sec
D : metre/min

- 53** : What is the use of "G01" code?

- A** : Radius milling
B : Concave milling
C : Straight line milling
D : Index milling

54 : Which method is used to avoid machine collision in VMC during initial practice?

- A** : Simulation
 - B** : Auto cycle
 - C** : Manual method
 - D** : Jog method
-

Machinist – Semester 4 Module 3 - VMC tooling system and Part programming

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55 : Which mode is adopted for block by block execution of a CNC programme?

- A : Auto mode
- B : MD mode
- C : Jog mode
- D : Single block mode

56 : What is "T01" in M06T01; in FANUC program?

- A : Tool offset no:1
- B : Tool no:6
- C : Tool no:1
- D : Tool wear offset no:01

57 : Which 'M' code is used to stop in between different operations?

- A : M01
- B : M00
- C : M30
- D : M20

58 : Which record is provided with operation sequence of a component?

- A : Job card
- B : Process planning
- C : Maintenance sheet
- D : Estimation sheet

59 : Which offset is used to adjust the dimension of the component due to tool wear involve?

- A : Work offset
- B : Geometry offset
- C : Wear offset
- D : Zero offset

60 : Which axis do homing first in VMC?

- A : X - axis
- B : Z - axis
- C : Y - axis
- D : B - axis

61 : What do you check mainly in VMC before starting?

- A : Work piece
- B : Tool available
- C : Proper voltage
- D : Gauges

62 : Which mode is used for fine slide movement manually for work offset setting?

- A : JOG

B : MPG

C : MDI

D : Edit

63 : Which mode is used to copy the part program in VMC?

- A : MDI
- B : JOG
- C : AUTO
- D : Edit

64 : Which mode is used to enter part program?

- A : Auto mode
- B : MDI mode
- C : Edit mode
- D : JOG mode

65 : What is "M04S500" in CNC program?

- A : Spindle rotation CW 500 rpm
- B : Spindle rotation CCW 500 rpm
- C : Spindle stop
- D : Spindle orientation

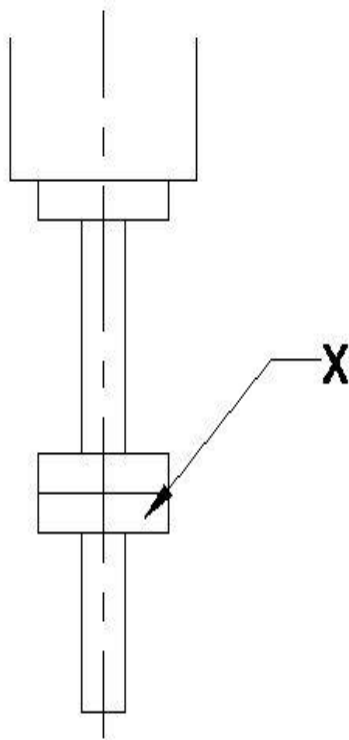
66 : What is "G54" in FANUC VMC?

- A : Tool offset
- B : Work co-ordinate system
- C : Tool radius offset
- D : Tool wear offset

67 : Where to enter the tool length value in VMC?

- A : Work offset
- B : Geometrical offset
- C : Wear offset
- D : Zero offset

68 : What is marked as 'x'?



- A : Test arbor
- B : Edge finder
- C : Cutter arbor
- D : Boring bar

69 : Which knob is used to stop the machine suddenly?

- A : Feed rate over ride
- B : Spindle stop
- C : Cycle stop
- D : Emergency stop

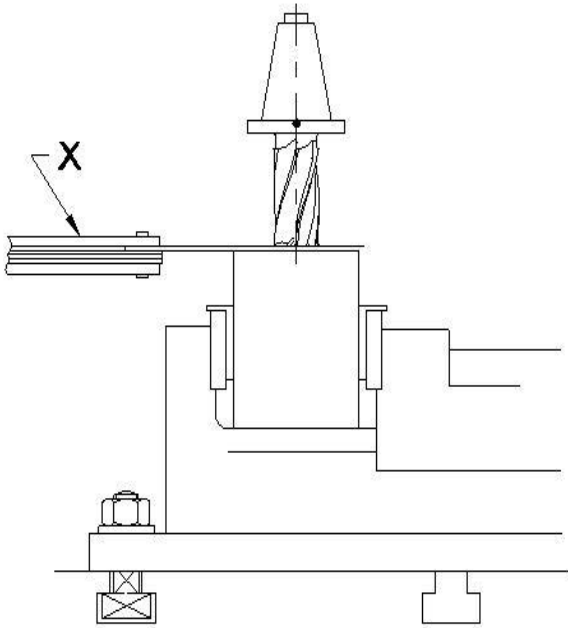
70 : Which knob is used to control rapid motion in VMC?

- A : Mode selection
- B : Rapid traverse
- C : Feed rate over ride
- D : Spindle speed over ride

71 : Where the program numbers stored in VMC?

- A : Directory
 - B : File
 - C : Folder
 - D : Parameter
-

72 : What is the part marked as 'x' ?



- A : Plug gauge
- B : Ring gauge
- C : Feeler gauge
- D : Screw pitch gauge

73 : Which function is used for movement command in part program?

- A : Preparatory function
- B : Miscellaneous function
- C : Speed function
- D : Feed function

74 : What is 'S' in CNC part program?

- A : Feed
- B : Sub program
- C : Spindle speed
- D : Depth of cut

75 : Which button is pressed to select program number from directory?

- A : OSRH
- B : Reset
- C : Measure
- D : Alter

76 : What is "M02" command?

- A : End of program
- B : Optional stop
- C : Program stop
- D : Spindle stop

77 : What is pressed to remove the "word" in program?

- A : Delete
- B : Insert
- C : Reset
- D : Offset

78 : Which mode is used to enter part program in VMC?

- A : Edit
- B : Jog
- C : MDI
- D : Auto

79 : What is pressed to recover axis over travel?

- A : Reset
- B : Delete
- C : Enter
- D : Insert

80 : What is the distance from X0, Y0, Z0 of machine zero to work zero in x,y,z direction?

- A : Tool length offset
- B : Zero offset
- C : Tool wear offset
- D : Wear offset

81 : Which is the offset from nose of the holder to overhanging length of cutter?

- A : Work offset
- B : Wear offset
- C : Tool offset
- D : Geometry offset

82 : Which is an advantage of CNC machine?

- A : High accuracy
- B : Initial cost is high
- C : More expensive
- D : Productivity depends on the programmer

83 : What is "G03" in part program?

- A : Circular inter polation clockwise
- B : Circular inter polation counter clock wise
- C : Helical inter polation
- D : Linear inter polation

84 : Which code is used for "Program end and reset"?

- A : M06
- B : M30
- C : M10
- D : M04

Machinist – Semester 4 Module 4 - Part program execution on VMC

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85 : What is "N" in N100 G00X150.0 Z200.0;?
A : Program number
B : Sequence number
C : Tool number
D : Tool offset number

86 : What is the address to specify "y" axis coordinate arc center?
A : H
B : J
C : K
D : Auto

87 : Which is pressed to stop temporarily during auto mode operation?
A : Cycle stop
B : Feed hold
C : Dry run
D : Machine lock

88 : Which button is used to remove "word" during program editing?
A : Shift
B : Insert
C : Reset
D : Delete

89 : Which button is pressed to cancel an alarm in VMC?
A : Alter
B : Reset
C : Insert
D : Delete

90 : Which mode is to check the movement of tool without work piece?
A : Jog
B : Machine lock
C : Dry run
D : Auto mode

91 : Which mode is to check the program block one by one?
A : Jog mode
B : Edit mode
C : Auto mode
D : Single block

92 : Which function is used to check the program without making any axis movement?
A : Dry run
B : Machine lock

C : Optional stop
D : Jog

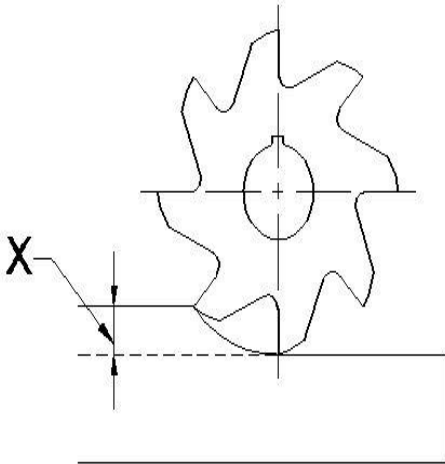
Machinist – Semester 4 Module 5 - VMC - Various cycles

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93 : What is pressed to restart the machine from power shutdown?

- A : CNC ON
- B : CNC OFF
- C : Auto cycle
- D : Zero return

94 : What is marked as 'x'?



- A : Depth of cut
- B : Feed
- C : Cutting speed
- D : rpm

95 : What is expressed as

- A : Cutting speed
- B : Feed
- C : Depth of cut
- D : Cycle time

96 : What is 'D' in

- A : rpm of the cutter
- B : Diameter of the cutter
- C : Cutting speed of the cutter
- D : Feed of the cutter

97 : What is expressed as meter/minute?

- A : Feed
- B : Cutting speed
- C : Depth of cut
- D : Cycle time

98 : What indicates number of repetitions in sub program?

- A : L
- B : X
- C : P
- D : %

99 : What is the G-code for tapping cycle in FANUC system?

- A : G84
- B : G81
- C : G82
- D : G83

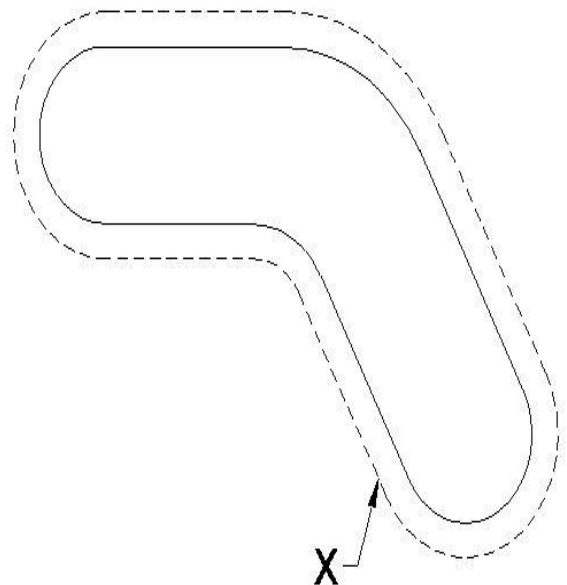
100 : What is CRC?

- A : Cutter Diameter Compensation
- B : Cutter Length Compensation
- C : Cutter Radius Compensation
- D : Cutter Wear Compensation

101 : What is G41?

- A : Cutter radius compensation cancel
- B : Cutter radius Compensation Left
- C : Cutter radius Compensation Right
- D : Cutter Height Compensation

102 : What is marked as 'x'?



- A : Programmed path
- B : Compensated path
- C : Roughing path
- D : Finishing path

103 : What is 'D' command in tool offset?

- A : Wear of cutter
- B : Tool material
- C : Length of cutter
- D : Radius tool

Machinist – Semester 4 Module 5 - VMC - Various cycles

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104 : Which is two dimensional co-ordinate system?

- A : Absolute
- B : Incremental
- C : Polar co-ordinate
- D : Cartesian coordinate

105 : What is wear offset?

- A : Tool length setting
- B : Geometry setting
- C : Tool wear adjustments
- D : Work offset setting

106 : What is perpendicular distance between original and final surface of the work piece?

- A : Feed
- B : Cutting speed
- C : Depth of cut
- D : rpm

107 : What is

- A : Milling time
- B : Driving time
- C : Turning time
- D : Shaping time

108 : What is used to avoid repetition of programme blocks?

- A : Main program
- B : Absolute program
- C : Incremental program
- D : Sub program

109 : What is the "M" code for sub program end in FANUC system?

- A : M98
- B : M18
- C : M19
- D : M99

110 : How sub program is identified in numeric system?

- A : X
- B : L
- C : P
- D : U

111 : What is used to produce identical parts in VMC?

- A : Main program
- B : Sub program

C : Canned cycle
D : Roughing cycle

112 : What is 'F' in "G84 X_Y_Z_R_F_?"

- A : Hole position
- B : Cutting feed rate
- C : Hole depth
- D : Position of R-plane

113 : What is 'Q' in G87 X_Y_R_Z_Q_F_ in FANUC system?

- A : Feed
- B : Depth
- C : Hole position
- D : Shift value

114 : What is G code for back boring cycle in FANUC system?

- A : G83
- B : G85
- C : G87
- D : G89

115 : What is G73 in FANUC system?

- A : High speed peck drilling cycle
- B : Boring cycle
- C : Back boring cycle
- D : Tapping

116 : Where is tool reference point lies in the cutter in VMC?

- A : Outer
- B : Inner
- C : Center
- D : Bottom

117 : Which code makes the compensated path to the right side of programmed path?

- A : G40
- B : G41
- C : G42
- D : G43

118 : Which code makes the compensated path to the left side of programmed path?

- A : G40
- B : G41
- C : G42
- D : G43

119 : What is radius vector in polar co-ordinate system?

- A : Point to arc center
- B : Angle from origin
- C : Point to point
- D : Point to the origin

120 : Which co-ordinate system is used to program hole positions on a bolt circle?

- A : Cartesian
- B : Polar co-ordinate
- C : Point to point
- D : Continuous path

121 : Which co-ordinate system, a point is defined by the distance from a reference point and an angle from a reference direction?

- A : Point to point
- B : Cartesian
- C : Polar
- D : Continuous

122 : What is pressed to stop all motions of machines immediately?

- A : Close feed rate knob
- B : Emergency stop
- C : Close speed knob
- D : Main OFF

123 : What is E-switch?

- A : Emergency
- B : Edit
- C : Enter
- D : Reset

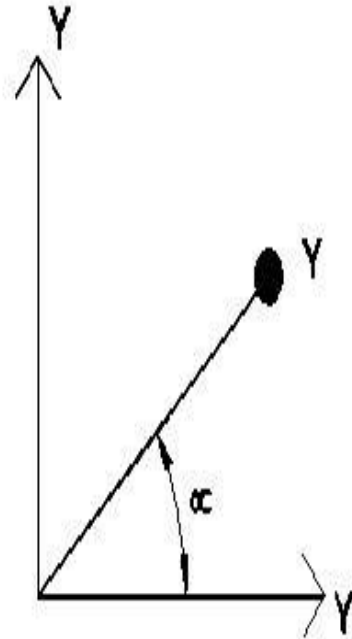
124 : What is 'z' in G81 X-Y-Z-R-K-F-?

- A : Hole position
- B : Hole depth
- C : Feed
- D : Number of repeats

125 : What is radial co-ordinate in polar co-ordinate system?

- A : Angle from the pole
- B : Distance from the pole
- C : Point to point
- D : Point to arc center

126 : What is the type of co-ordinate system?



- A : Continuous
- B : Point to point
- C : Cartesian
- D : Polar

127 : What is "G16" command in part program?

- A : Parabolic interpolation
- B : Polar co-ordinates ON
- C : Corrosion co-ordinate ON
- D : Inch programming

128 : What is the symbol 'O' in process chart documentation?

- A : Transport
- B : Inspection
- C : Operation
- D : Delay

129 : What is the symbol for "Storage" used in process chart documentation?

A :



- B : I
- C :



D : D

130 : Which substance is having oily property available in the form of fluid, semifluid or solid?

- A : Coolant
- B : Cutting oil
- C : Lubricant
- D : Water

131 : What is the purpose of using lubricant?

- A : Increase wear
- B : Increase adhesion
- C : Reduce friction
- D : Increase corrosion rate

132 : What is the program of TPM?

- A : Quality program
- B : Maintenance program
- C : Production program
- D : Marketing program

133 : What is OEE in maintenance?

- A : = Availability x Profit x Quality
- B : = Availability x Planning x Quality
- C : = Availability x Process x Quality
- D : = Availability x Productivity x Quality

134 : What is the symbol indicated to apply monthly lubrication to machine tools?

A :



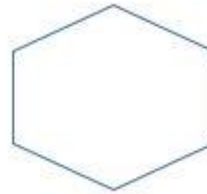
B :



C :



D :



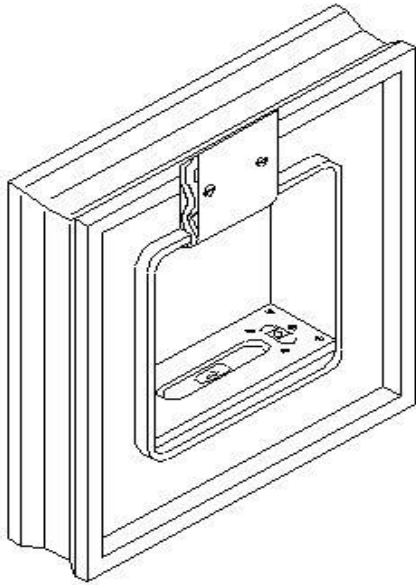
135 : What is the symbol "□" indicated in machine tool lubrication?

- A : Daily
- B : Weekly
- C : Monthly
- D : As per manufacturer

136 : What is the remedy to reduce excessive wear on toothed wheel?

- A : Use of no filter
- B : Sufficient oil supply
- C : Reduce lubricating film thickness
- D : Increase lubricating film thickness

137 : What is the of name instrument?



- A : Spirit level
- B : Block spirit level
- C : Straight edge
- D : Mandrel

138 : What is graphical representation of activities from raw material to the finished product?

- A : Productivity report
- B : Bill of material
- C : Production cycle time
- D : Process chart

139 : What is measured from start time taken to end of machining a job?

- A : Machine cycle time
- B : Overall cycle time
- C : Cycle time
- D : Production cycle time

140 : Which document instructs the work team to take up the production work?

- A : Maintenance card
- B : Job card
- C : Bill of material
- D : Work activity log

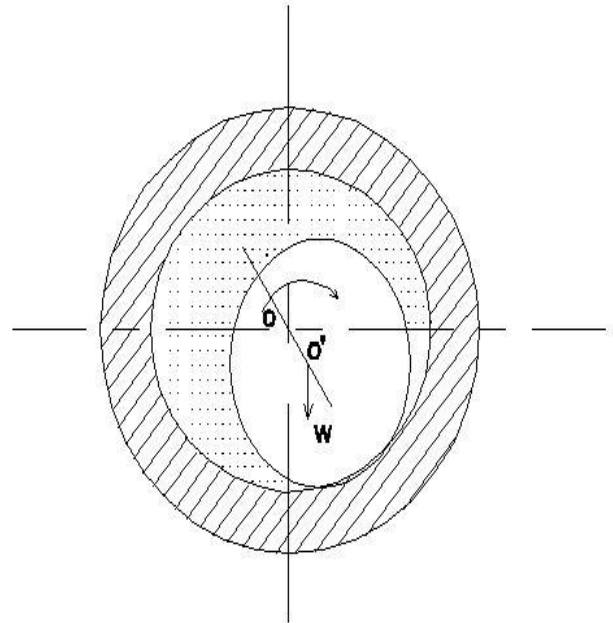
141 : Which property refers to a combination of wettability, surface tension and slipperiness?

- A : Viscosity
- B : Oiliness
- C : Flash point
- D : Fire point

142 : What is the property of lubricant to withstand pressure and remain on bearing surface?

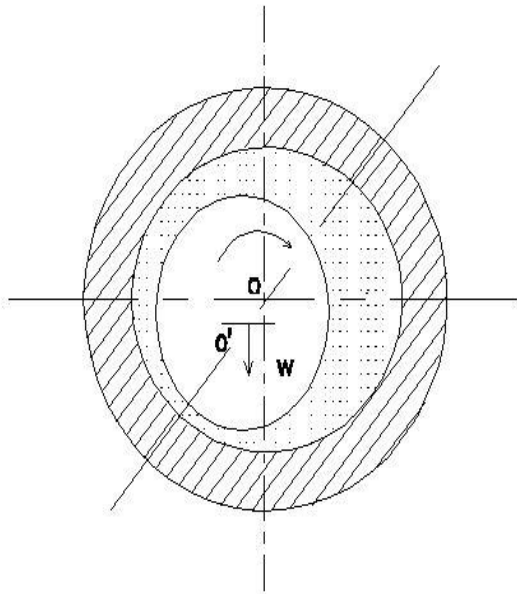
- A : Flash point
- B : Fire point
- C : Viscosity
- D : Oilness

143 : What is the status of journal in hydro dynamic lubrication?



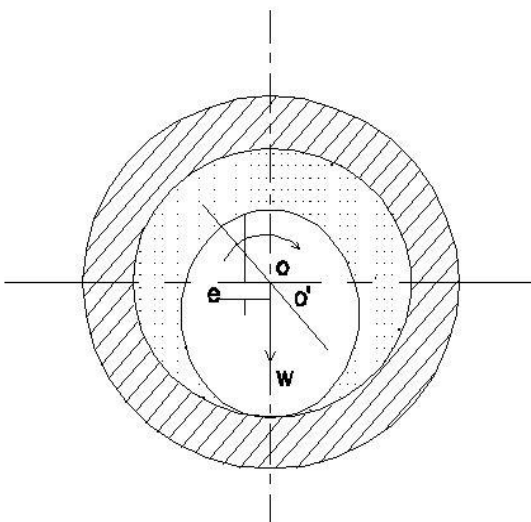
- A : Journal at full speed
- B : Journal at rest
- C : Journal starts to rotate
- D : Journal at middle speed

144 : What is the status of journal in hydro dynamic lubrication?



- A : Journal at rest
- B : Journal at full speed
- C : Journal starts to rotate
- D : Journal at middle speed

145 : What is the status of journal in hydro dynamic lubrication?



- A : Journal at full speed
- B : Journal at rest
- C : Journal starts to rotate
- D : Journal at middle speed

146 : What keeps the vital parts in condition to increase the life of machine?

- A : Lubrication
- B : Coolant

- C : Dry
- D : Water

147 : What is the substance having an oily property?

- A : Lubricant
- B : Coolant
- C : Water
- D : Air

148 : What is the full form of TPM?

- A : Total Productive Management
- B : Total Process Planning Management
- C : Total Productive Maintenance
- D : Total Planned Maintenance

149 : What is the system of finding the faults in any machine and also removal of faults?

- A : Inspection
- B : Production
- C : Maintenance
- D : Marketing

150 : Which type of maintenance involves daily cleaning inspection, oiling and re-tightening?

- A : Breakdown
- B : Preventive
- C : Predictive
- D : Periodic

151 : Which type of maintenance having advantage of reduced equipment failure?

- A : Breakdown maintenance
- B : Predictive maintenance
- C : Preventive maintenance
- D : Corrective maintenance

152 : Which type of maintenance involves, if a machine until it completely breaks down?

- A : Preventive maintenance
- B : Predictive maintenance
- C : Corrective maintenance
- D : Breakdown maintenance

153 : Which department keeps the machines and equipments in good operating condition?

- A : Production
- B : Quality
- C : Maintenance
- D : Tool room

154 : What is the symbol "Δ" indicate in machine tool lubrication?

- A : Daily
- B : Monthly
- C : As per manufacturer
- D : Weekly

155 : What is used to level the machine tools accurately?

- A : Straight edge
- B : Plumb bob
- C : Test mandrel
- D : Sprit level

156 : Which instrument tests the run-out of wheel spindle nose in surface grinding?

- A : Dial test indicator
- B : Straight edge
- C : Mandrel
- D : Sprit level

157 : Which is the property of lubricant that gives off vapour at lowest temperature on heating?

- A : Viscosity
- B : Fire point
- C : Flash point
- D : Pour point

158 : Which type of maintenance should not interface with production schedules?

- A : Breakdown maintenance
- B : Routine
- C : Preventive
- D : Predictive

159 : What is the symbol used to apply daily lubrication in machine tools?

A :



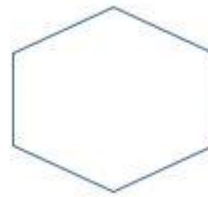
B :



C :



D :



160 : Why failure occurs in bearing?

- A : Proper bearing selection
- B : Improper lubrication
- C : Proper mounting
- D : Sufficient lubricant quantity

161 : What is used for testing straightness of bed in machine tool?

- A : Mandrel
- B : Feeler gauge
- C : Straight edge
- D : Plumb bob

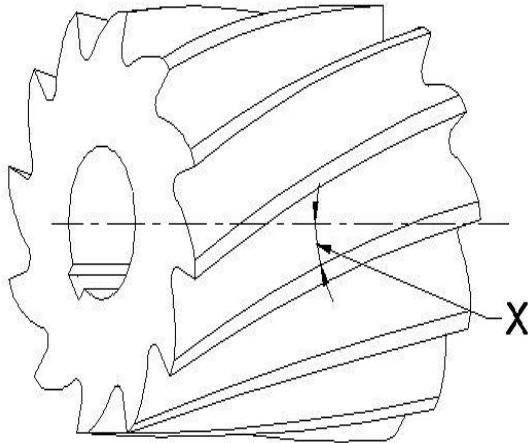
162 : What is used to test the flatness of lathe bed?

- A : Straight edge and gauge blocks
 - B : Test mandrel
 - C : Sprit level
 - D : Plumb bob
-

163 : What is the use of slab milling cutter?

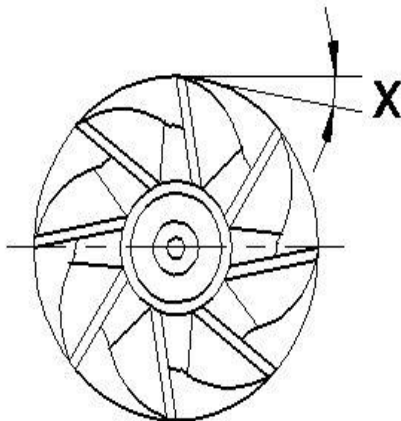
- A : To produce gear
- B : To produce dovetail
- C : To produce slot
- D : To produce plain surface

164 : What is the angle marked as 'X'?



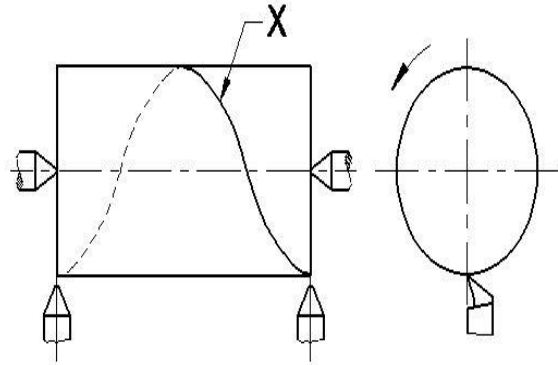
- A : Right hand helix
- B : Left hand helix
- C : Left spiral
- D : Right spiral

165 : What is the angle marked as 'X'?



- A : Radial rake
- B : Primary clearance
- C : Axial rake
- D : Secondary clearance

166 : What is the curve marked as 'X'?

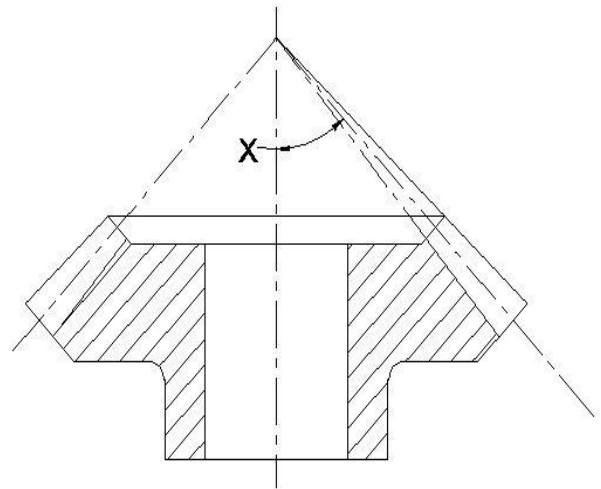


- A : Cycloidal
- B : Spiral
- C : Helix
- D : Involute

167 : Which type of gear the teeth are cut on conical surface of the job?

- A : Spur gear
- B : Helical gear
- C : Worm wheel
- D : Bevel gear

168 : What is marked as 'X' ?



- A : Face angle
- B : Root angle
- C : Pitch cone angle
- D : Addendum angle

169 : What is the formula to find pitch diameter of bevel gear in module?

- A : $2.25m$
- B : $(mz+2 \cos \delta')$
- C : $1.25m$
- D : zm

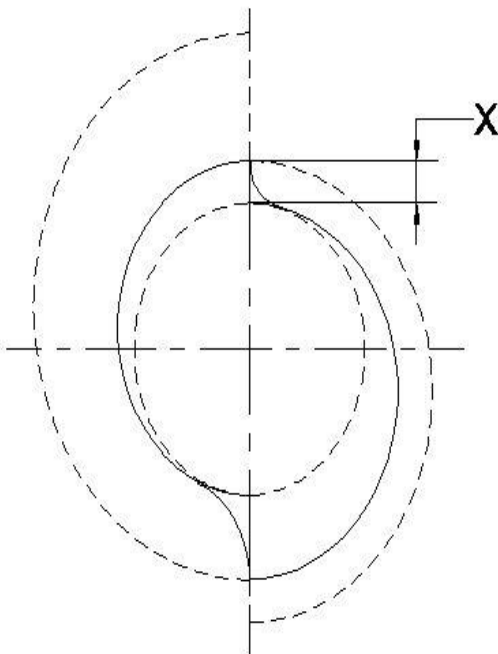
170 : What is the formula to find total depth of bevel gear in module?

- A : 1.25m
- B : 2.25m
- C : 2m
- D : 0.25m

171 : What is the formula to find back cone distance in bevel gear?

- A : $m(z+2\cos \delta')$
- B : zm
- C : $R \tan \delta'$
- D : $z/\cos \delta'$

172 : What is marked as 'X'?



- A : Lobe
- B : Lead
- C : Rise
- D : Uniform rise

173 : What is the formula to find gear ratio to cut a plate cam in milling machine?

A :

$$\frac{DR}{DN} = \frac{\text{Lead of machine}}{\text{rise per revolution of cam}}$$

B :

$$\frac{DN}{DR} = \frac{\text{Lead of machine}}{\text{rise per revolution of cam}}$$

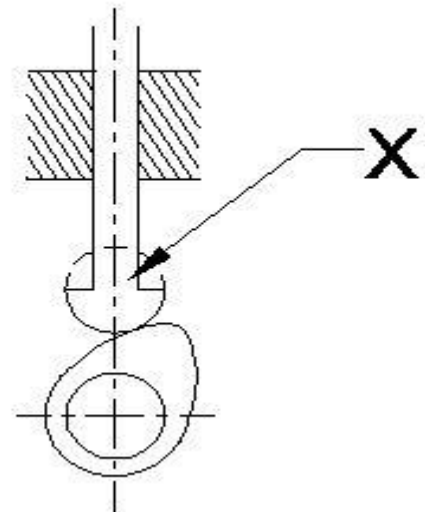
C :

$$\frac{DR}{DN} = \frac{\text{rise per revolution of cam}}{\text{Lead of machine}}$$

D :

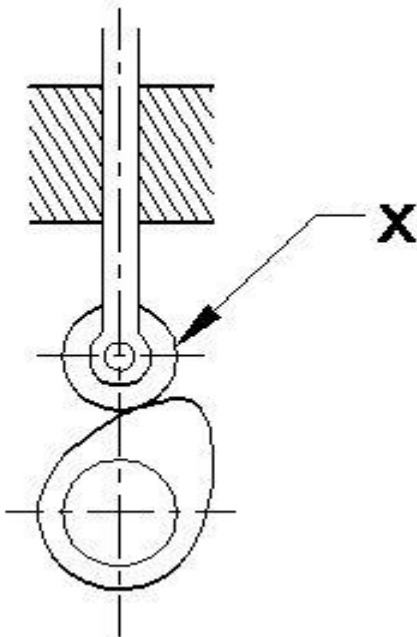
$$\frac{DN}{DR} = \frac{\text{rise per revolution of cam}}{\text{Lead of machine}}$$

174 : What is marked as 'X'?



- A : Knife edge follower
- B : Roller follower
- C : Mush room follower
- D : Flat faced follower

175 : What is marked as 'X'?



- A : Knife edge follower
- B : Mush room follower
- C : Flat faced follower
- D : Roller follower

176 : Which curve line is generated by the progressive rotation of a point around a cylinder?

- A : Spiral
- B : Cycloidal
- C : Helix
- D : Involute

177 : Which formula is used to determine the angle of swivel of the table to cut helical grooves on workpiece?

A :

$$\cos \theta = \frac{\pi D}{\text{Lead of helix}}$$

B :

$$\cos \theta = \frac{\text{Lead of helix}}{\pi D}$$

C :

$$\tan \theta = \frac{\pi D}{\text{Lead of helix}}$$

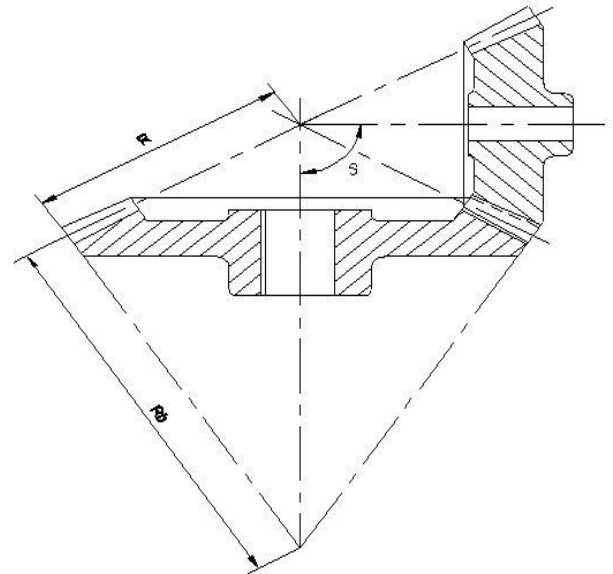
D :

$$\tan \theta = \frac{\text{Lead of helix}}{\pi D}$$

178 : What is the indexing ratio of dividing head used in milling machine?

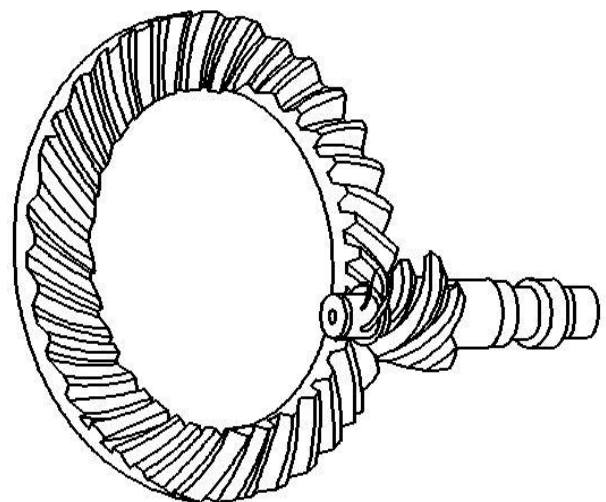
- A : 1:40
- B : 40:1
- C : 80:1
- D : 1.8

179 : Which angle is denoted as 'S' in mating bevel gear?



- A : Root angle
- B : Shaft angle
- C : Pitch cone angle
- D : Dedendum angle

180 : What is name of gear?



- A : Miter bend gear
- B : Straight bevel gear
- C : Spiral bevel gear
- D : Hypoid gear

Machinist – Semester 4 Module 7 - Milling, Cutters, Gear and Cams

Reviewed and updated on: 01st November 2019 Version 1.1

181 : Which type of bevel gear used in machines to transmit power to 90°?

- A : Spur
- B : Straight tooth bevel gear
- C : Hypoid gear
- D : Helical

182 : Which gear has the advantage of smooth operation high speed range and more torque transmission?

- A : Hypoid gear
- B : Straight tooth bevel gear
- C : Spiral bevel gear
- D : Screw bevel gear

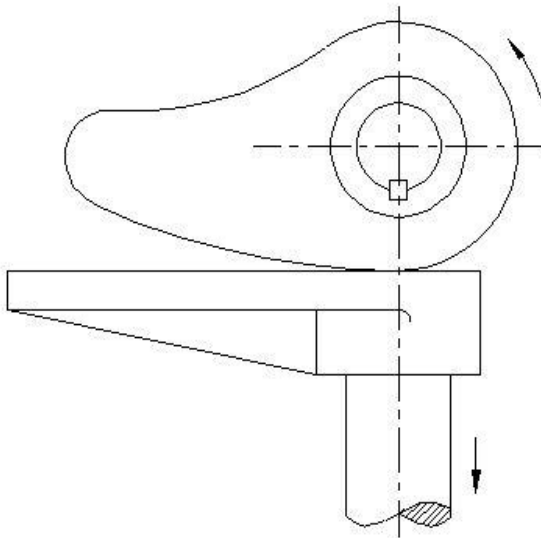
183 : Calculate pitch diameter for milling a bevel gear if module =3 mm and no of teeth = 24.

- A : 76.24
- B : 3
- C : 72
- D : 3.75

184 : Calculate the dedendum of bevel gear if module is 3mm.

- A : 6.75 mm
- B : 6 mm
- C : 3 mm
- D : 3.75 mm

185 : What is the type of cam?



- A : Plate cam
- B : Grooved plate cam
- C : Toe and wiper cam
- D : Drum cam

186 : Which type of follower not often used in cam drive?

- A : Roller
- B : Knife edge
- C : Mush room
- D : Flat faced

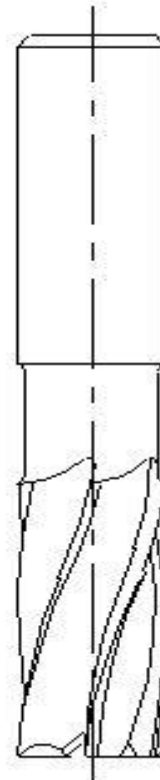
187 : Which follower produces considerable side thrust between the follower and the guide?

- A : Flat faced follower
- B : Mush room follower
- C : Knife edge follower
- D : Roller follower

188 : How followers are classified in cam?

- A : Shape
- B : Size
- C : Weight
- D : Material

189 : What is the name of cutter?

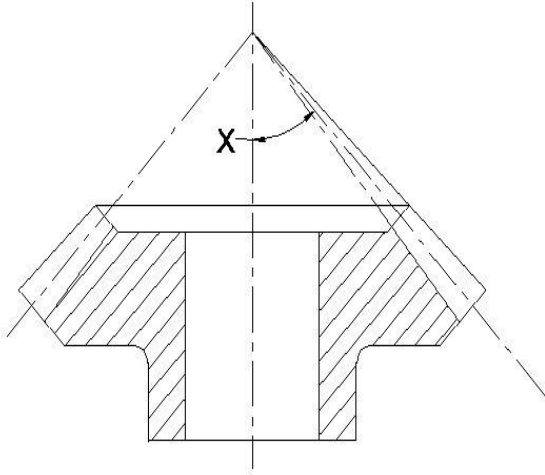


- A : Reamers
- B : Core drill
- C : Slot drill
- D : End mill cutter

190 : Which machine is used to cut helical groove on a workpiece?

- A : Vertical milling
- B : Horizontal milling
- C : Turret head milling
- D : Universal milling

191 : What is marked as 'X' ?

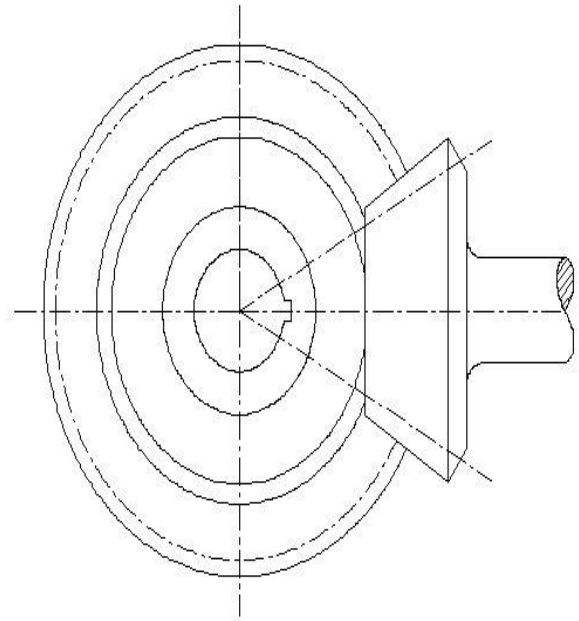


- A : Pitch cone angle
- B : Root angle
- C : Face angle
- D : Shaft angle

192 : Which gear is classified according to the tooth surface and use?

- A : Spur
- B : Helical
- C : Worm
- D : Bevel

193 : What is the name of gear?



- A : Spur
- B : Helical
- C : Bevel
- D : Worm wheel

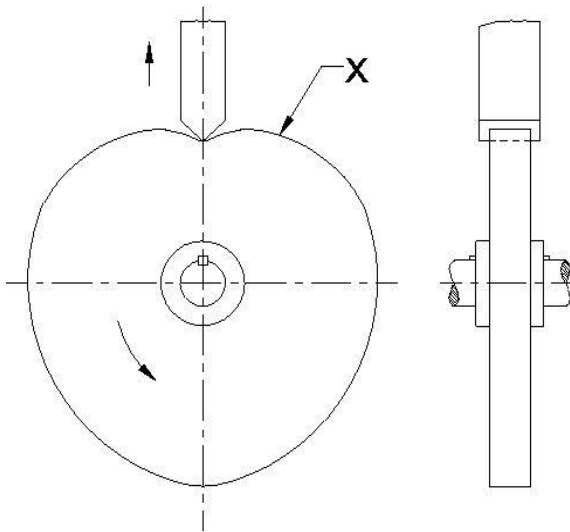
194 : Which type of bevel gear is used to connect shafts that are at an angle but not intersecting?

- A : Spiral bevel
- B : Hypoid gears
- C : Straight bevel gear
- D : Mitre gear

195 : What is the machine element with a surface or groove formed to produce a motion to another part follower?

- A : Roller
- B : Gear
- C : Shaft
- D : Cam

196 : What is marked as 'X' ?



- A : Grooved plate cam
- B : Driven cam
- C : Toe and wiper cam
- D : Plate cam

197 : Which element having a projecting part of the cam imparts a reciprocating motion to the follower?

- A : Lead
- B : Rise
- C : Uniform rise
- D : Lobe

198 : Which element of a cam is the distance one lobe will raise or lower the follower as the cam revolves?

- A : Lobe
- B : Lead
- C : Rise
- D : Uniform rise

199 : Which is used to impart a reciprocating motion to the followers in a machine?

- A : Gear
- B : Shaft
- C : Cam
- D : Clutch

200 : Calculate the lift of the plate cam that has a rise of 15 mm in 90° rotation if the table lead screw has a pitch of 6mm.

- A : 3.75 mm
- B : 0.266 mm
- C : 60 mm
- D : 0.0166 mm

201 : What is the formula to find angle of inclination of the spindle to mill plate cam?

A :

$$\cos \theta = \frac{\text{Lead of table}}{\text{Rise of the cam}}$$

B :

$$\cos \theta = \frac{\text{Rise of the cam}}{\text{Lead of table}}$$

C :

$$\sin \theta = \frac{\text{Lead of table}}{\text{Rise of the cam}}$$

D :

$$\sin \theta = \frac{\text{Rise of the cam}}{\text{Lead of table}}$$

Machinist – Semester 4 Module 8 - Worms and Keys

Reviewed and updated on: 01st November 2019 Version 1.1

202 : What is the formula to calculate pitch diameter of worm wheel?

- A : $0.8 d_1$
- B : ha_2
- C :

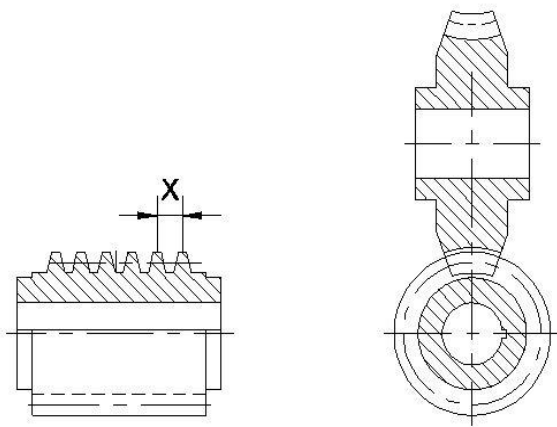
$$\frac{d_1}{2}$$

- D : mz_2

203 : Which gear drive is used for "Large speed reduction and torque transmission"?

- A : Helical
- B : Worm and worm wheel
- C : Bevel
- D : Spur

204 : What is " $\pi m z_1$ ", in worm calculation?



- A : Lead angle of worm
- B : Length of worm
- C : Lead of worm
- D : Tooth thickness

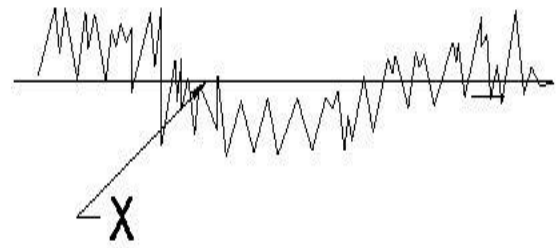
205 : What is the element marked as 'X'?

- A : Root dia
- B : Pitch dia
- C : Axial pitch
- D : Pressure angle

206 : What is the use of splines on a shaft?

- A : To slide along longitudinally
- B : Change the direction of rotation
- C : As idler
- D : Spline hub fixed stationary

207 : What is the arrangement number of keys and key ways formed over the cylindrical shaft?



- A : Leather key
- B : Spline
- C : Wood ruff
- D : Round

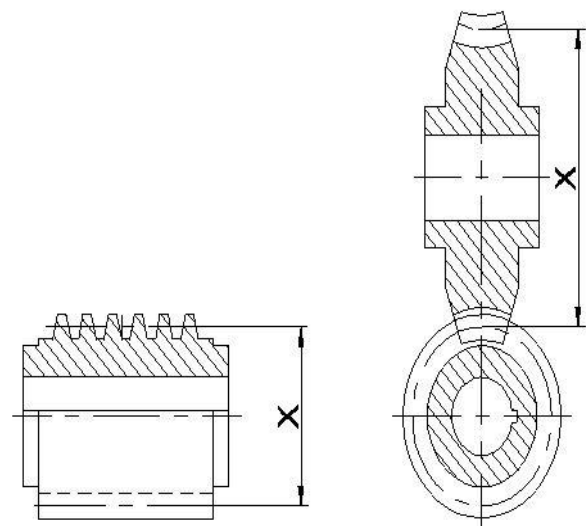
208 : What is marked as 'X'?

- A : Total composite error
- B : Tooth to tooth composite error
- C : Radial run-out
- D : Profile error

209 : Which method is suitable for worm wheel machining?

- A : Shaping
- B : Hobbing
- C : Grinding
- D : Turning

210 : What is marked as 'X'?



- A : Throat dia
- B : Pitch dia
- C : Over dia
- D : Root dia

Machinist – Semester 4 Module 8 - Worms and Keys

Reviewed and updated on: 01st November 2019 Version 1.1

211 : Which surface of a worm gear is termed as throat?

- A : Cylindrical
- B : Flat
- C : Concave
- D : Convex

212 : What is "Normal pitch" in worm wheel?

- A : Axial pitch x sine of helix angle
- B : Axial pitch x cosine of helix angle
- C : Axial pitch x tan of helix angle
- D : Axial pitch x cosec of helix angle

213 : What is the formula to calculate outside diameter of worm wheel?

- A : Throat radius - module
- B : Throat radius + module
- C : Throat diameter + module
- D : Throat dia meter -module

214 : Which gear drive is used to connect "two non-parallel, not intersecting shafts" right angles to each other?

- A : Helical
- B : Bevel
- C : Spur
- D : Worm and worm wheel

215 : Calculate the "Lead of worm" its module is 2 mm and single start.

- A : 6.28
- B : 2
- C : 3.14
- D : 1

216 : What is "Lead of worm/ πd " in worm calculations?

- A : Lead of worm
- B : Lead angle of worm
- C : Length of worm
- D : Tooth thickness

217 : What is 6 in spline designation "6 x 28 x 34", IS:2327?

- A : Inner diameter
- B : Number of keys
- C : Outer diameter
- D : Diametral pitch

218 : Which is used to measure chordal thickness of the gear teeth?

- A : Outside micrometer

B : Inside micrometer

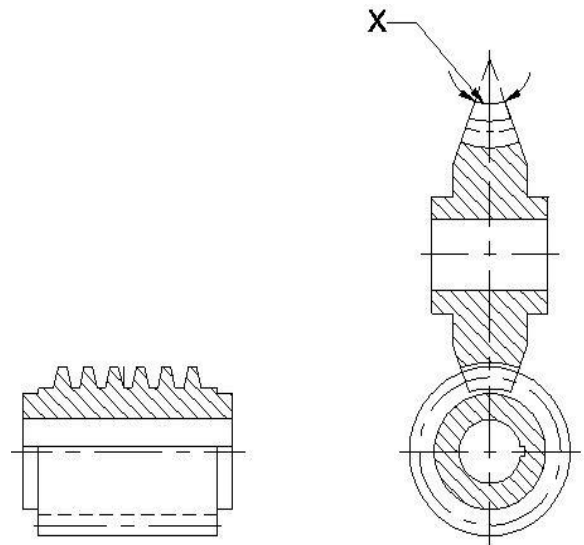
C : Depth micrometer

D : Flange micrometer

219 : Calculate the pitch diameter of worm wheel having module 2 mm and number of teeth is 40.

- A : 20
- B : 80
- C : 40
- D : 160

220 : What is marked as 'x' in worm wheel?



A : Throat

B : Face

C : Face angle

D : Throat radius

Machinist – Semester 4 Module 8 - Worms and Keys

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ANSWERS :

1:C; 2:B; 3:B; 4:A; 5:C; 6:B; 7:B; 8:C; 9:C; 10:C; 11:B;
12:B; 13:C; 14:B; 15:A; 16:B; 17:A; 18:A; 19:D; 20:D;
21:D; 22:D; 23:B; 24:C; 25:D; 26:C; 27:C; 28:C; 29:C;
30:D; 31:C; 32:C; 33:A; 34:D; 35:A; 36:B; 37:C; 38:A;
39:A; 40:B; 41:A; 42:C; 43:B; 44:B; 45:D; 46:C; 47:B;
48:B; 49:C; 50:A; 51:B; 52:A; 53:C; 54:A; 55:D; 56:A;
57:B; 58:B; 59:C; 60:B; 61:C; 62:B; 63:D; 64:C; 65:B;
66:B; 67:B; 68:B; 69:D; 70:B; 71:A; 72:C; 73:A; 74:C;
75:A; 76:A; 77:A; 78:A; 79:A; 80:B; 81:C; 82:A; 83:B;
84:B; 85:B; 86:B; 87:B; 88:D; 89:B; 90:C; 91:D; 92:B;
93:A; 94:A; 95:A; 96:B; 97:B; 98:A; 99:A; 100:C;
101:B; 102:B; 103:D; 104:C; 105:C; 106:C; 107:A;
108:D; 109:D; 110:B; 111:B; 112:B; 113:D; 114:C;
115:A; 116:C; 117:C; 118:B; 119:D; 120:B; 121:C;
122:B; 123:A; 124:B; 125:B; 126:D; 127:B; 128:C;
129:C; 130:C; 131:C; 132:B; 133:D; 134:B ; 135:C;
136:D; 137:B; 138:D; 139:C; 140:B; 141:B; 142:C;
143:C; 144:B; 145:B; 146:A; 147:A; 148:C; 149:C;
150:B; 151:C; 152:D; 153:C; 154:D; 155:D; 156:A;
157:C; 158:B; 159:C; 160:B; 161:C; 162:A; 163:D;
164:B; 165:B; 166:C; 167:D; 168:C; 169:D; 170:B;
171:C; 172:C; 173:A; 174:D; 175:D; 176:C; 177:C;
178:B; 179:B; 180:C; 181:B; 182:C; 183:C; 184:D;
185:C; 186:B; 187:C; 188:A; 189:D; 190:D; 191:C;
192:D; 193:C; 194:B; 195:D; 196:D; 197:D; 198:C;
199:C; 200:C; 201:D; 202:D; 203:B; 204:C; 205:C;
206:A; 207:B; 208:C; 209:B; 210:B; 211:C; 212:B;
213:C; 214:D; 215:A; 216:B; 217:B; 218:D; 219:B;
220:C;