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DATE=10/15/2024                TIME=3:53:07 PM
PART NAME  : Lab-3-Demo
REV NUMBER :
SER NUMBER :
STATS COUNT : 1
GD&T STANDARD : ASME Y14.5 - 2009/2018
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```
STARTUP    =ALIGNMENT/START,RECALL:USE_PART_SETUP,LIST=YES
           ALIGNMENT/END
           MODE/MANUAL
           FORMAT/TEXT,OPTIONS,,HEADINGS,SYMBOLS,;NOM,TOL,MEAS,DEV,OUTTOL,,
           LOADPROBE/MSU_PROBE_D_3X50MM
           MOVESPEED/ 300
           TIP/T1A0B0,SHANKIJK=0,0,1,ANGLE=0

$$ NO,
*****
****Define "Mauual Alignment" DATUM Features
****(CMM to Part synchronization)
*****

PLN-MA     =FEAT/PLANE,CARTESIAN,TRIANGLE
           THEO/<4.2791,2.207,0.95>,<0,0,1>
           ACTL/<10.7632,12.6695,-28.5755>,<0.0002026,0.0010276,0.9999995>
           MEAS/PLANE,4
           HIT/BASIC,NORMAL,<1.9527,3.507,0.95>,<0,0,1>,<8.3359,13.7064,-28.5762>,USE THEO=YES
           HIT/BASIC,NORMAL,<6.9141,3.6104,0.95>,<0,0,1>,<8.3359,11.7803,-28.574>,USE THEO=YES
           HIT/BASIC,NORMAL,<6.4521,1.0759,0.95>,<0,0,1>,<13.1905,11.7802,-28.5752>,USE THEO=YES
           HIT/BASIC,NORMAL,<1.7974,0.6346,0.95>,<0,0,1>,<13.1905,13.4109,-28.5766>,USE THEO=YES
           ENDMEAS/

LIN-MB     =FEAT/LINE,CARTESIAN,UNBOUNDED
           THEO/<1.8515,0,0.5262>,<1,0,0>
           ACTL/<8.8663,10.7561,-28.8454>,<0.9998565,-0.01694,0>
           MEAS/LINE,2,ZPLUS
           HIT/BASIC,NORMAL,<1.8515,0,0.5383>,<0,-1,0>,<8.8663,10.7561,-28.8454>,USE THEO=YES
           HIT/BASIC,NORMAL,<5.5575,0,0.5141>,<0,-1,0>,<12.3392,10.6972,-28.8454>,USE THEO=YES
           ENDMEAS/

PNT-MC     =FEAT/POINT,CARTESIAN
           THEO/<0,1.1639,0.1013>,<-1,0,0>
           ACTL/<6.6723,13.0079,-29.4268>,<-0.9994856,-0.0176777,-0.0267601>
           MEAS/POINT,1,WORKPLANE
           HIT/BASIC,NORMAL,<0,1.1639,0.1013>,<-1,0,0>,<6.6723,13.0079,-29.4268>,USE THEO=YES
           ENDMEAS/

$$ NO,
*****
****Manual Alignment
*****

A1         =ALIGNMENT/START,RECALL:STARTUP,LIST=YES
           ALIGNMENT/LEVEL,ZPLUS,PLN-MA
           ALIGNMENT/TRANS,ZAXIS,PLN-MA
           ALIGNMENT/ROTATE,XPLUS,TO,LIN-MB,ABOUT,ZPLUS
           ALIGNMENT/TRANS,YAXIS,LIN-MB
           ALIGNMENT/TRANS,XAXIS,PNT-MC
           ALIGNMENT/END
```

\$\$ NO,

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*****
****DCC Mode "ON"
****Define "Active Clear Plane"
*****
MODE/DCC
CLEARP/ZPLUS,0.25,ZPLUS,0,OFF

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\$\$ NO,

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*****
****Define "DCC Alingment" DATUM Features
****with "avoid crash" Move commands
****(Precision Alignment)
*****
MOVE/CLEARPLANE

```

PLN-A

```

=FEAT/CONTACT/PLANE/ADAPTIVE_FREE_FORM_PLANE_SCAN,CARTESIAN,NONE,LEAST_SQR
THEO/<3.9385,1.9013,0>,<0,0,1>
ACTL/<3.9859,1.9016,-0.0021>,<0.0001077,0.0001145,1>
TARG/<3.9385,1.9013,0>,<0,0,1>
ANGLE VEC=<1,0,0>,SQUARE
SHOW FEATURE PARAMETERS=NO
SHOW CONTACT PARAMETERS=YES
  NUMHITS=2334,NUMROWS=3
  SPACER=0
  AVOIDANCE MOVE=BOTH,DISTANCE BEFORE=0,DISTANCE AFTER=0.3937,DIRECTION=ALONG FEATURE VECTOR
  USE BOUNDARY OFFSET=YES,OFFSET=0.2394
SHOW HITS=NO
MOVE/CLEARPLANE

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PLN-B

```

=FEAT/CONTACT/PLANE/ADAPTIVE_FREE_FORM_PLANE_SCAN,CARTESIAN,NONE,LEAST_SQR
THEO/<4.3628,0,-0.4559>,<0,-1,0>
ACTL/<4.4289,0,-0.4502>,<0.0000455,-1,-0.0000935>
TARG/<4.3628,0,-0.4559>,<0,-1,0>
ANGLE VEC=<1,0,0>,SQUARE
SHOW FEATURE PARAMETERS=NO
SHOW CONTACT PARAMETERS=YES
  NUMHITS=2291,NUMROWS=3
  SPACER=0
  AVOIDANCE MOVE=BOTH,DISTANCE BEFORE=0,DISTANCE AFTER=0.3937,DIRECTION=ALONG FEATURE VECTOR
  USE BOUNDARY OFFSET=YES,OFFSET=0.2394
SHOW HITS=NO
MOVE/CLEARPLANE

```

PLN-C

```

=FEAT/CONTACT/PLANE/ADAPTIVE_FREE_FORM_PLANE_SCAN,CARTESIAN,NONE,LEAST_SQR
THEO/<0,1.6726,-0.8122>,<-1,0,0>
ACTL/<-0.0019,1.6723,-0.814>,<-0.9999935,0.0036086,0.0002564>
TARG/<0,1.6726,-0.8122>,<-1,0,0>
ANGLE VEC=<0,0,1>,SQUARE
SHOW FEATURE PARAMETERS=NO
SHOW CONTACT PARAMETERS=YES
  NUMHITS=461,NUMROWS=3
  SPACER=0
  AVOIDANCE MOVE=BOTH,DISTANCE BEFORE=0,DISTANCE AFTER=0.3937,DIRECTION=ALONG FEATURE VECTOR
  USE BOUNDARY OFFSET=YES,OFFSET=0.2394
SHOW HITS=NO
MOVE/CLEARPLANE

```

\$\$ NO,

```

*****
****DCC Alignment
*****

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A2

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=ALIGNMENT/START,RECALL:A1,LIST=YES
  ALIGNMENT/LEVEL,ZPLUS,PLN-A
  ALIGNMENT/TRANS,ZAXIS,PLN-A
  ALIGNMENT/ROTATE,YMINUS,TO,PLN-B,ABOUT,ZPLUS
  ALIGNMENT/TRANS,YAXIS,PLN-B
  ALIGNMENT/TRANS,XAXIS,PLN-C
ALIGNMENT/END

```

\$\$ NO,

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*****
****Insert Features with "avoid crash"Moves commands
*****

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CYL1

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=FEAT/CONTACT/CYLINDER/ADAPTIVE_CYLINDER_SPIRAL_SCAN,CARTESIAN,IN,LEAST_SQR

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THEO/<1,1,0>,<0,0,1>,1,0.95  
ACTL/<0.9863,1.0134,0>,<0.002235,-0.0001369,0.9999975>,1.0009,0.95  
TARG/<1,1,0>,<0,0,1>  
START ANG=0,END ANG=360  
ANGLE VEC=<1,0,0>  
DIRECTION=CCW  
SHOW FEATURE PARAMETERS=NO  
SHOW CONTACT PARAMETERS=YES  
NUMHITS=2261,NUMLEVELS=4,DEPTH=0.1433,END OFFSET=0.063,PITCH=0.1394  
SAMPLE METHOD=SAMPLE\_HITS  
SAMPLE HITS=3,SPACER=0  
AVOIDANCE MOVE=BEFORE,DISTANCE BEFORE=0.3,DIRECTION=ALONG FEATURE VECTOR  
FIND HOLE=DISABLED,ONERROR=NO,READ POS=NO

SHOW HITS=NO  
MOVE/CLEARPLANE  
CYL2 =FEAT/CONTACT/CYLINDER/ADAPTIVE\_CYLINDER\_LINE\_SCAN,CARTESIAN,IN,LEAST\_SQR  
THEO/<1,3,0>,<0,0,1>,1,0.95  
ACTL/<0.9948,3.0133,0>,<0.0032514,0.001138,0.9999941>,1.0008,0.95  
TARG/<1,3,0>,<0,0,1>  
START ANG=0,END ANG=360  
ANGLE VEC=<1,0,0>  
DIRECTION=CCW  
SHOW FEATURE PARAMETERS=NO  
SHOW CONTACT PARAMETERS=YES  
NUMHITS=316,NUMLEVELS=4,DEPTH=0.1433,END OFFSET=0.163,PITCH=0.1394  
SAMPLE METHOD=SAMPLE\_HITS  
SAMPLE HITS=3,SPACER=0  
AVOIDANCE MOVE=BEFORE,DISTANCE BEFORE=0.3,DIRECTION=ALONG FEATURE VECTOR  
FIND HOLE=DISABLED,ONERROR=NO,READ POS=NO

SHOW HITS=NO  
MOVE/CLEARPLANE  
CIR3 =FEAT/CONTACT/CIRCLE/ADAPTIVE\_CIRCLE\_SCAN,CARTESIAN,IN,LEAST\_SQR  
THEO/<8.008,1,0>,<0,0,1>,1  
ACTL/<7.9931,0.9836,0>,<0,0,1>,1.001  
TARG/<8.008,1,0>,<0,0,1>  
START ANG=0,END ANG=360  
ANGLE VEC=<1,0,0>  
DIRECTION=CCW  
SHOW FEATURE PARAMETERS=NO  
SHOW CONTACT PARAMETERS=YES  
NUMHITS=421,DEPTH=0.1,PITCH=0  
SAMPLE METHOD=SAMPLE\_HITS  
SAMPLE HITS=0,SPACER=0  
AVOIDANCE MOVE=BOTH,DISTANCE BEFORE=0.3,DISTANCE AFTER=0.3,DIRECTION=ALONG FEATURE VECTOR  
FIND HOLE=DISABLED,ONERROR=NO,READ POS=NO

SHOW HITS=NO  
MOVE/CLEARPLANE  
CYL-RB =FEAT/CONTACT/CYLINDER/ADAPTIVE\_CYLINDER\_CONCENTRIC\_CIRCLE\_SCAN,CARTESIAN,IN,LEAST\_SQR  
THEO/<8.008,3,0>,<0,0,1>,1,0.95  
ACTL/<8.0011,2.9836,0>,<-0.0029021,0.0003365,0.9999957>,1.0007,0.95  
TARG/<8.008,3,0>,<0,0,1>  
START ANG=0,END ANG=360  
ANGLE VEC=<1,0,0>  
DIRECTION=CCW  
SHOW FEATURE PARAMETERS=NO  
SHOW CONTACT PARAMETERS=YES  
NUMHITS=1601,NUMLEVELS=4,DEPTH=0.1433,END OFFSET=0.063,PITCH=0.1394  
SAMPLE METHOD=SAMPLE\_HITS  
SAMPLE HITS=3,SPACER=0  
AVOIDANCE MOVE=BEFORE,DISTANCE BEFORE=0.3,DIRECTION=ALONG FEATURE VECTOR  
FIND HOLE=DISABLED,ONERROR=NO,READ POS=NO

SHOW HITS=NO  
MOVE/CLEARPLANE  
PLN-TOP =FEAT/CONTACT/PLANE/ADAPTIVE\_FREE\_FORM\_PLANE\_SCAN,CARTESIAN,NONE,LEAST\_SQR  
THEO/<4.6122,1.9044,0>,<0,0,1>  
ACTL/<4.6915,1.9034,0.001>,<-0.0005407,-0.000128,0.9999998>  
TARG/<4.6122,1.9044,0>,<0,0,1>  
ANGLE VEC=<1,0,0>,SQUARE  
SHOW FEATURE PARAMETERS=NO

SHOW CONTACT PARAMETERS=YES
NUMHITS=3257,NUMROWS=3
SPACER=0
AVOIDANCE MOVE=BOTH,DISTANCE BEFORE=0,DISTANCE AFTER=0.3937,DIRECTION=ALONG FEATURE VECTOR
USE BOUNDARY OFFSET=YES,OFFSET=0.2394
SHOW HITS=NO
MOVE/CLEARPLANE

\$\$ NO,

\*\*\*\*\*
\*\*\*\*Insert Dimensions
\*\*\*\*\*

FCFFLAT1 =GEOMETRIC\_TOLERANCE/STANDARD=ASME Y14.5,SHOWEXPANDED=YES,
DESCRIPTION=OFF,,
UNITS=IN,OUTPUT=BOTH,ARROWDENSITY=100,
SEGMENT\_1,FLATNESS,0.01,TOL\_ZONE\_MATH=DEFAULT,
TEXT=OFF,CADGRAPH=OFF,REPORTGRAPH=OFF,MULT=10,
MEASURED:
PLN-TOP:0.0073,

ADD
FEATURES/PLN-TOP,,
FCFCIRTY1 =GEOMETRIC\_TOLERANCE/STANDARD=ASME Y14.5,SHOWEXPANDED=YES,
DESCRIPTION=OFF,,
FEATURE\_MATH=DEFAULT,
UNITS=IN,OUTPUT=BOTH,ARROWDENSITY=100,
SIZE/NOMINAL=1,UPPER TOLERANCE=0.005,LOWER TOLERANCE=0.005,
REPORT\_LOCAL\_SIZE=OFF,
CIR3:
UAME SIZE:1.0008,
SEGMENT\_1,CIRCULARITY,0.005,TOL\_ZONE\_MATH=DEFAULT,
TEXT=OFF,CADGRAPH=OFF,REPORTGRAPH=OFF,MULT=10,
MEASURED:
CIR3:0.0003,
FEATURES/CIR3,,

FCFCYLY1 =GEOMETRIC\_TOLERANCE/STANDARD=ASME Y14.5,SHOWEXPANDED=YES,
DESCRIPTION=OFF,,
FEATURE\_MATH=DEFAULT,
UNITS=IN,OUTPUT=BOTH,ARROWDENSITY=100,
SIZE/NOMINAL=1,UPPER TOLERANCE=0.005,LOWER TOLERANCE=0.005,
REPORT\_LOCAL\_SIZE=OFF,
CYL1:
UAME SIZE:1.0005,
SEGMENT\_1,CYLINDRICITY,0.005,TOL\_ZONE\_MATH=DEFAULT,
TEXT=OFF,CADGRAPH=OFF,REPORTGRAPH=OFF,MULT=10,
MEASURED:
CYL1:0.0005,
FEATURES/CYL1,,

END OF MEASUREMENT FOR

PN=Lab-3-Demo DWG= SN=
TOTAL # OF MEAS =5 # OUT OF TOL =0 # OF HOURS =00:06:16