



DATE=3/22/2024 TIME=3:52:16 PM  
PART NAME : Lab-5-Demo  
REV NUMBER :  
SER NUMBER :  
STATS COUNT : 1  
GD&T STANDARD : ASME Y14.5 - 2009/2018

```
STARTUP =ALIGNMENT/START,RECALL:USE_PART_SETUP,LIST=YES
ALIGNMENT/END
MODE/MANUAL
FORMAT/TEXT,OPTIONS,,HEADINGS,SYMBOLS,;NOM,TOL,MEAS,DEV,OUTTOL,,
MOVESPEED/300
LOADPROBE/MSU_PROBE_D_3X50MM
TIP/T1A0B0,SHANKIJK=0,0,1,ANGLE=0

$$ NO,
*****
****Define "Manual Alignment" DATUM Features
****(CMM to Part Synchronization)
*****
PLN-MA =FEAT/PLANE,CARTESIAN,TRIANGLE
THEO/<4.3534,2.1122,0.95>,<0,0,1>
ACTL/<11.5084,14.2028,-28.5769>,<-0.0000813,0.0008263,0.9999997>
MEAS/PLANE,4
HIT/BASIC,NORMAL,<2.4115,3.5241,0.95>,<0,0,1>,<9.6986,15.4702,-28.5792>,USE THEO=YES
HIT/BASIC,NORMAL,<7.0249,3.6052,0.95>,<0,0,1>,<14.0504,15.4702,-28.5766>,USE THEO=YES
HIT/BASIC,NORMAL,<6.1916,0.9264,0.95>,<0,0,1>,<13.4181,12.9354,-28.5768>,USE THEO=YES
HIT/BASIC,NORMAL,<1.7856,0.3932,0.95>,<0,0,1>,<8.8665,12.9353,-28.575>,USE THEO=YES
ENDMEAS/
LIN-MB =FEAT/LINE,CARTESIAN,UNBOUNDED
THEO/<1.8649,0,0.5959>,<1,0,0>
ACTL/<8.8667,11.9802,-28.8618>,<0.9999792,0.0064455,0>
MEAS/LINE,2,ZPLUS
HIT/BASIC,NORMAL,<1.8649,0,0.5998>,<0,-1,0>,<8.8667,11.9802,-28.8618>,USE THEO=YES
HIT/BASIC,NORMAL,<5.7278,0,0.5919>,<0,-1,0>,<13.8208,12.0122,-28.8618>,USE THEO=YES
ENDMEAS/
PNT-MC =FEAT/POINT,CARTESIAN
THEO/<0,0.9795,0.1145>,<-1,0,0>
ACTL/<7.1464,13.1836,-29.347>,<-0.9995828,-0.0161521,-0.0239458>
MEAS/POINT,1,WORKPLANE
HIT/BASIC,NORMAL,<0,0.9795,0.1145>,<-1,0,0>,<7.1464,13.1836,-29.347>,USE THEO=YES
ENDMEAS/

$$ NO,
*****
****Manual Aligment
*****
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,

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

\$\$ NO,

```
*****
****Define "DCC Alignment" DATUM Features
****with "avoid crash" Move commands
****(Precision Alignment)
*****
```

PLN-A

```
=FEAT/CONTACT/PLANE/ADAPTIVE_FREE_FORM_PLANE_SCAN,CARTESIAN,NONE,LEAST_SQR
THEO/<4.3303,1.8275,0>,<0,0,1>
ACTL/<4.3784,1.8206,-0.0009>,<0.0001046,-0.0000579,1>
TARG/<4.3303,1.8275,0>,<0,0,1>
ANGLE VEC=<1,0,0>,SQUARE
SHOW FEATURE PARAMETERS=NO
SHOW CONTACT PARAMETERS=YES
  NUMHITS=2842,NUMROWS=3
  SPACER=0
  AVOIDANCE MOVE=BOTH,DISTANCE BEFORE=0,DISTANCE AFTER=0.3937,DIRECTION=ALONG FEATURE VECTOR
  USE BOUNDARY OFFSET=NO
SHOW HITS=NO
MOVE/CLEARPLANE
```

PLN-B

```
=FEAT/CONTACT/PLANE/ADAPTIVE_FREE_FORM_PLANE_SCAN,CARTESIAN,NONE,LEAST_SQR
THEO/<4.3293,0,-0.4563>,<0,-1,0>
ACTL/<4.3366,0,-0.4617>,<0.000013,-0.9999999,-0.0004301>
TARG/<4.3293,0,-0.4563>,<0,-1,0>
ANGLE VEC=<1,0,0>,SQUARE
SHOW FEATURE PARAMETERS=NO
SHOW CONTACT PARAMETERS=YES
  NUMHITS=1358,NUMROWS=3
  SPACER=0
  AVOIDANCE MOVE=BOTH,DISTANCE BEFORE=0,DISTANCE AFTER=0.3937,DIRECTION=ALONG FEATURE VECTOR
  USE BOUNDARY OFFSET=NO
SHOW HITS=NO
MOVE/CLEARPLANE
```

PLN-C

```
=FEAT/CONTACT/PLANE/ADAPTIVE_FREE_FORM_PLANE_SCAN,CARTESIAN,NONE,LEAST_SQR
THEO/<0,1.7153,-0.8022>,<-1,0,0>
ACTL/<0.0018,1.7242,-0.8037>,<-0.9999933,0.0036559,0.000177>
TARG/<0,1.7153,-0.8022>,<-1,0,0>
ANGLE VEC=<0,0,1>,SQUARE
SHOW FEATURE PARAMETERS=NO
SHOW CONTACT PARAMETERS=YES
  NUMHITS=466,NUMROWS=3
  SPACER=0
  AVOIDANCE MOVE=BOTH,DISTANCE BEFORE=0,DISTANCE AFTER=0.3937,DIRECTION=ALONG FEATURE VECTOR
  USE BOUNDARY OFFSET=NO
SHOW HITS=NO
MOVE/CLEARPLANE
```

\$\$ NO,

```
*****
****DCC Alignment
*****
```

A2

```
=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,

```
*****
****Insert Features with "avoid crash" Move Commands
*****
```

CYL1

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

THEO/<1,1,0>,<0,0,1>,1,0.95
ACTL/<0.9865,1.0134,0>,<0.0029203,-0.0000798,0.9999957>,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=1959,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

\$\$ NO,

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

DATDEF/A,FEATURES=PLN-A,,
DATDEF/B,FEATURES=PLN-B,,
DATDEF/C,FEATURES=PLN-C,,

FCFLOC1

=GEOMETRIC\_TOLERANCE/STANDARD=ASME Y14.5,SHOWEXPANDED=YES,
DESCRIPTION=OFF,,
FEATURE MATH=DEFAULT,DATUM MATH=DEFAULT,DISPLAY\_COORDS=DRF,
UNITS=IN,OUTPUT=BOTH,ARROWDENSITY=100,
SIZE/NOMINAL=1,UPPER\_TOLERANCE=0.005,LOWER\_TOLERANCE=0.005,
REPORT\_LOCAL\_SIZE=OFF,
CYL1:
UAME SIZE:1.0006,
SEGMENT 1,POSITION,DIAMETER,0.03,\_,\_,<len>,\_,A,B,\_,C,\_,
TEXT=OFF,CADGRAPH=OFF,REPORTGRAPH=OFF,MULT=10,
MEASURED:
CYL1:0.0350,

FCFLOC2

ADD
FEATURES/CYL1,,
=GEOMETRIC\_TOLERANCE/STANDARD=ASME Y14.5,SHOWEXPANDED=YES,
DESCRIPTION=OFF,,
FEATURE MATH=DEFAULT,DATUM MATH=DEFAULT,DISPLAY\_COORDS=DRF,
UNITS=IN,OUTPUT=BOTH,ARROWDENSITY=100,
SIZE/NOMINAL=1,UPPER\_TOLERANCE=0.005,LOWER\_TOLERANCE=0.005,
REPORT\_LOCAL\_SIZE=OFF,
CYL1:
UAME SIZE:1.0006,
SEGMENT 1,POSITION,DIAMETER,0.03,MMC,\_,\_,<len>,\_,A,B,\_,C,\_,
TEXT=OFF,CADGRAPH=OFF,REPORTGRAPH=OFF,MULT=10,
MEASURED:
CYL1:0.0350,
ADD
FEATURES/CYL1,,

END OF MEASUREMENT FOR

PN=Lab-5-Demo DWG= SN=
TOTAL # OF MEAS =4 # OUT OF TOL =1 # OF HOURS =00:02:21