



DATE=3/19/2024 TIME=9:46:27 AM
PART NAME : Lab-4-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,,
LOADPROBE/MSU_PROBE_D_3X50MM
MOVESPEED/ 300
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/<3.8022,2.0703,0.95>,<0,0,1>
ACTL/<11.2806,14.0643,-28.5763>,<0.0001555,0.0004074,0.9999999>
MEAS/PLANE,4
HIT/BASIC,NORMAL,<1.8567,3.4388,0.95>,<0,0,1>,<8.931,15.3395,-28.5771>,USE THEO=YES
HIT/BASIC,NORMAL,<5.2823,3.5115,0.95>,<0,0,1>,<14.1033,15.2262,-28.5765>,USE THEO=YES
HIT/BASIC,NORMAL,<6.1904,0.8603,0.95>,<0,0,1>,<13.2747,12.8457,-28.5769>,USE THEO=YES
HIT/BASIC,NORMAL,<1.8793,0.4705,0.95>,<0,0,1>,<8.8136,12.8457,-28.5746>,USE THEO=YES
ENDMEAS/
LIN-MB =FEAT/LINE,CARTESIAN,UNBOUNDED
THEO/<1.6589,0,0.5075>,<1,0,0>
ACTL/<8.8153,11.9794,-28.9275>,<0.9998008,-0.0199567,0>
MEAS/LINE,2,ZPLUS
HIT/BASIC,NORMAL,<1.6589,0,0.555>,<0,-1,0>,<8.8153,11.9794,-28.9274>,USE THEO=YES
HIT/BASIC,NORMAL,<6.4573,0,0.4601>,<0,-1,0>,<13.0953,11.894,-28.9275>,USE THEO=YES
ENDMEAS/
PNT-MC =FEAT/POINT,CARTESIAN
THEO/<0,1.2481,0.1397>,<-1,0,0>
ACTL/<7.1351,13.724,-29.323>,<-0.9995185,-0.014964,-0.0271835>
MEAS/POINT,1,WORKPLANE
HIT/BASIC,NORMAL,<0,1.2481,0.1397>,<-1,0,0>,<7.1351,13.724,-29.323>,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
```

\$\$ NO,

```
*****
****Define "DCC Alignment" 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/<4.5458,1.9073,0>,<0,0,1>
ACTL/<4.613,1.9048,-0.0013>,<-0.0003114,0.0002392,0.9999999>
TARG/<4.5458,1.9073,0>,<0,0,1>
ANGLE VEC=<1,0,0>,SQUARE
SHOW FEATURE PARAMETERS=NO
SHOW CONTACT PARAMETERS=YES
  NUMHITS=3120,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-B

```
=FEAT/CONTACT/PLANE/ADAPTIVE_FREE_FORM_PLANE_SCAN,CARTESIAN,NONE,LEAST_SQR
THEO/<4.4289,0,-0.4532>,<0,-1,0>
ACTL/<4.4939,0.0002,-0.4515>,<-0.0000946,-1,0.0001463>
TARG/<4.4289,0,-0.4532>,<0,-1,0>
ANGLE VEC=<1,0,0>,SQUARE
SHOW FEATURE PARAMETERS=NO
SHOW CONTACT PARAMETERS=YES
  NUMHITS=2395,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/<0,1.7028,-0.8173>,<-1,0,0>
ACTL/<0.0003,1.7493,-0.8165>,<-0.999993,0.0037527,0.00011>
TARG/<0,1.7028,-0.8173>,<-1,0,0>
ANGLE VEC=<0,0,1>,SQUARE
SHOW FEATURE PARAMETERS=NO
SHOW CONTACT PARAMETERS=YES
  NUMHITS=469,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
*****
```

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" Moves commands
*****
```

PLN-BACK

```
=FEAT/CONTACT/PLANE/ADAPTIVE_FREE_FORM_PLANE_SCAN,CARTESIAN,NONE,LEAST_SQR
```

THEO/<5.1932,3.95,-0.4021>,<0,1,0>
ACTL/<5.2033,3.8602,-0.4012>,<-0.0000981,0.9999999,0.0003651>
TARG/<5.1932,3.95,-0.4021>,<0,1,0>
ANGLE VEC=<-1,0,0>,SQUARE
SHOW FEATURE PARAMETERS=NO
SHOW CONTACT PARAMETERS=YES
NUMHITS=1273,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

PLN-TOP
=FEAT/CONTACT/PLANE/ADAPTIVE_FREE_FORM_PLANE_SCAN,CARTESIAN,NONE,LEAST_SQR
THEO/<4.8478,1.834,0>,<0,0,1>
ACTL/<4.8882,1.8293,0.0001>,<-0.0001125,0.0000274,1>
TARG/<4.8478,1.834,0>,<0,0,1>
ANGLE VEC=<1,0,0>,SQUARE
SHOW FEATURE PARAMETERS=NO
SHOW CONTACT PARAMETERS=YES
NUMHITS=3318,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

CYL1
=FEAT/CONTACT/CYLINDER/ADAPTIVE_CYLINDER_SPIRAL_SCAN,CARTESIAN,IN,LEAST_SQR
THEO/<1,1,0>,<0,0,1>,1,0.95
ACTL/<0.9866,1.0135,0>,<0.0031083,0.0001277,0.9999952>,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,,

FCFPARL1
=GEOMETRIC_TOLERANCE/STANDARD=ASME Y14.5,SHOWEXPANDED=YES,
DESCRIPTION=OFF,,
DATUM_MATH=DEFAULT,
UNITS=IN,OUTPUT=BOTH,ARROWDENSITY=100,
SEGMENT 1,PARALLELISM,PLANAR,0.004,_,B,<dat>,
TEXT=OFF,CADGRAPH=OFF,REPORTGRAPH=OFF,MULT=10,
MEASURED:
PLN-BACK:0.0010,
FEATURES/PLN-BACK,,

FCFPERP3
=GEOMETRIC_TOLERANCE/STANDARD=ASME Y14.5,SHOWEXPANDED=YES,
DESCRIPTION=OFF,,
DATUM_MATH=DEFAULT,
UNITS=IN,OUTPUT=BOTH,ARROWDENSITY=100,
SEGMENT 1,PERPENDICULARITY,PLANAR,0.005,_,B,<dat>,
TEXT=OFF,CADGRAPH=OFF,REPORTGRAPH=OFF,MULT=10,
MEASURED:
PLN-TOP:0.0079,
FEATURES/PLN-TOP,,

FCFPERP1
=GEOMETRIC_TOLERANCE/STANDARD=ASME Y14.5,SHOWEXPANDED=YES,
DESCRIPTION=OFF,,
FEATURE_MATH=DEFAULT,DATUM_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,PERPENDICULARITY,DIAMETER,0.003,__,__,<len>,A,<dat>,
TEXT=OFF,CADGRAPH=OFF,REPORTGRAPH=OFF,MULT=10,

MEASURED:

CYL1:0.0025,

FEATURES/CYL1,,

FCFPERP2 =GEOMETRIC TOLERANCE/STANDARD=ASME Y14.5,SHOWEXPANDED=YES,

DESCRIPTION=OFF,,

FEATURE MATH=DEFAULT,DATUM 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,PERPENDICULARITY,DIAMETER,0.003,MMC,__,__,<len>,A,<dat>,
TEXT=OFF,CADGRAPH=OFF,REPORTGRAPH=OFF,MULT=10,

MEASURED:

CYL1:0.0025,

FEATURES/CYL1,,

END OF MEASUREMENT FOR

PN=Lab-4-Demo

DWG=

SN=

TOTAL # OF MEAS =6

OUT OF TOL =1

OF HOURS =00:04:33