



DATE=10/28/2024 TIME=11:50:39 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/<10.8488,12.8153,-28.5756>,<0.0000504,0.0009131,0.9999996>
MEAS/PLANE,4
HIT/BASIC,NORMAL,<1.8567,3.4388,0.95>,<0,0,1>,<8.3884,14.0324,-28.5766>,USE THEO=YES
HIT/BASIC,NORMAL,<5.2823,3.5115,0.95>,<0,0,1>,<8.3883,12.0204,-28.5747>,USE THEO=YES
HIT/BASIC,NORMAL,<6.1904,0.8603,0.95>,<0,0,1>,<13.3092,12.0204,-28.575>,USE THEO=YES
HIT/BASIC,NORMAL,<1.8793,0.4705,0.95>,<0,0,1>,<13.3092,13.1881,-28.576>,USE THEO=YES
ENDMEAS/

LIN-MB =FEAT/LINE,CARTESIAN,UNBOUNDED
THEO/<1.6589,0,0.5075>,<1,0,0>
ACTL/<8.6715,10.8112,-28.9543>,<0.9996809,-0.0252613,0>
MEAS/LINE,2,ZPLUS
HIT/BASIC,NORMAL,<1.6589,0,0.555>,<0,-1,0>,<8.6715,10.8112,-28.9543>,USE THEO=YES
HIT/BASIC,NORMAL,<6.4573,0,0.4601>,<0,-1,0>,<12.0941,10.7247,-28.9543>,USE THEO=YES
ENDMEAS/

PNT-MC =FEAT/POINT,CARTESIAN
THEO/<0,1.2481,0.1397>,<-1,0,0>
ACTL/<6.6624,11.7564,-29.3618>,<-0.9992347,-0.0224349,-0.0320429>
MEAS/POINT,1,WORKPLANE
HIT/BASIC,NORMAL,<0,1.2481,0.1397>,<-1,0,0>,<6.6624,11.7564,-29.3618>,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
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\$\$ 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 Alignment" DATUM Features
****with "avoid crash" Move commands
****(Precision Alignment)
*****
MOVE/CLEARPLANE

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PLN-A

```

=FEAT/CONTACT/PLANE/ADAPTIVE_FREE_FORM_PLANE_SCAN,CARTESIAN,NONE,LEAST_SQR
THEO/<4.5458,1.9073,0>,<0,0,1>
ACTL/<4.6284,1.9048,-0.0015>,<-0.0003042,-0.0000713,1>
TARG/<4.5458,1.9073,0>,<0,0,1>
ANGLE VEC=<1,0,0>,SQUARE
SHOW FEATURE PARAMETERS=NO
SHOW CONTACT PARAMETERS=YES
  NUMHITS=3109,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/<4.4289,0,-0.4532>,<0,-1,0>
ACTL/<4.4876,0.0002,-0.4511>,<-0.00018,-1,-0.000136>
TARG/<4.4289,0,-0.4532>,<0,-1,0>
ANGLE VEC=<1,0,0>,SQUARE
SHOW FEATURE PARAMETERS=NO
SHOW CONTACT PARAMETERS=YES
  NUMHITS=2393,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-C

```

=FEAT/CONTACT/PLANE/ADAPTIVE_FREE_FORM_PLANE_SCAN,CARTESIAN,NONE,LEAST_SQR
THEO/<0,1.7028,-0.8173>,<-1,0,0>
ACTL/<0.0031,1.7235,-0.8172>,<-0.9999926,0.0038417,-0.0000512>
TARG/<0,1.7028,-0.8173>,<-1,0,0>
ANGLE VEC=<0,0,1>,SQUARE
SHOW FEATURE PARAMETERS=NO
SHOW CONTACT PARAMETERS=YES
  NUMHITS=480,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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PLN-BACK

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

```

THEO/<5.1932,3.95,-0.4021>,<0,1,0>
ACTL/<5.184,3.8602,-0.4028>,<-0.0000926,0.9999999,0.0003514>
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=1262,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/<4.9019,1.8298,0.0001>,<-0.0001106,0.000025,1>
TARG/<4.8478,1.834,0>,<0,0,1>
ANGLE VEC=<1,0,0>,SQUARE
SHOW FEATURE PARAMETERS=NO
SHOW CONTACT PARAMETERS=YES
NUMHITS=3313,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/<0.9867,1.0135,0>,<0.0031424,0.0000723,0.9999951>,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:0.0013,
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:0.0087,
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:1.0006,

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:1.0006,

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 =00:05:55