



DATE=2/20/2024 TIME=9:17:18 AM  
PART NAME : Lab-2-Demo  
REV NUMBER : 1  
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
            TIP/T1A0B0,SHANKIJK=0,0,1,ANGLE=0

$$ NO,

*****
****Define "Manual Alignment" DATUM Features
*****

PLN-MA    =FEAT/PLANE,CARTESIAN,TRIANGLE
            THEO/<10.4803,15.2903,-24.7641>,<0.0086394,-0.0040229,0.9999546>
            ACTL/<11.1785,13.7903,-28.5771>,<0.0001935,0.0006278,0.9999998>
            MEAS/PLANE,4
            HIT/BASIC,NORMAL,<8.5356,16.7148,-24.7428>,<0.0086394,-0.0040229,0.9999546>,<8.9291,15.2016,-28.577
            7>,USE THEO=YES

            HIT/BASIC,NORMAL,<13.4988,16.7148,-24.7832>,<0.0086394,-0.0040229,0.9999546>,<8.929,12.6572,-28.575
            8>,USE THEO=YES

            HIT/BASIC,NORMAL,<11.9595,13.8658,-24.7841>,<0.0086394,-0.0040229,0.9999546>,<13.4279,12.6572,-28.5
            77>,USE THEO=YES

            HIT/BASIC,NORMAL,<7.9275,13.8659,-24.7462>,<0.0086394,-0.0040229,0.9999546>,<13.428,14.6453,-28.577
            9>,USE THEO=YES

LIN-MB    ENDMEAS/
            =FEAT/LINE,CARTESIAN,UNBOUNDED
            THEO/<7.9312,13.2015,-25.0697>,<0.9996762,-0.0254449,0>
            ACTL/<8.6182,11.8887,-28.9038>,<0.9999729,-0.0073662,0>
            MEAS/LINE,2,ZPLUS
            HIT/BASIC,NORMAL,<7.9312,13.2015,-25.0697>,<-0.0254449,-0.9996762,0>,<8.6182,11.8887,-28.9038>,USE
            THEO=YES

            HIT/BASIC,NORMAL,<11.9168,13.1,-25.0696>,<-0.0254449,-0.9996762,0>,<12.9937,11.8565,-28.9038>,USE T
            HEO=YES

PNT-MC    ENDMEAS/
            =FEAT/POINT,CARTESIAN
            THEO/<6.1928,14.0029,-25.473>,<-1,0,0>
            ACTL/<7.0822,12.5473,-29.3628>,<-0.9989623,-0.0424994,-0.0163729>
            MEAS/POINT,1,WORKPLANE
            HIT/BASIC,NORMAL,<6.1928,14.0029,-25.473>,<-1,0,0>,<7.0822,12.5473,-29.3628>,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,

```
*****
*****DCC Mode "on"
*****Define "Active Clear Plane"
*****Move Speed set to 300 mm/sec
*****
MODE/DCC
CLEARP/ZPLUS,0.5,ZPLUS,0,OFF
MOVESPEED/ 300
```

\$\$ NO,

```
*****
*****Define "DCC Alignment" DATUM Features
*****
MOVE/CLEARPLANE
```

```
PLN-A =FEAT/PLANE,CARTESIAN,TRIANGLE
    THEO/<4.288,1.941,-0.0011>,<-0.0000788,0.0002717,1>
    ACTL/<4.288,1.9411,-0.0009>,<-0.0001305,0.0000537,1>
    MEAS/PLANE,7
        HIT/BASIC,NORMAL,<1.925,3.3994,-0.0008>,<-0.0000788,0.0002717,1>,<1.9251,3.3996,-0.0005>,USE THEO=Y
    ES
        HIT/BASIC,NORMAL,<4.2146,3.533,-0.0044>,<-0.0000788,0.0002717,1>,<4.2145,3.5331,-0.0039>,USE THEO=Y
    ES
        HIT/BASIC,NORMAL,<6.7795,3.5041,0.0005>,<-0.0000788,0.0002717,1>,<6.7795,3.5042,0.0011>,USE THEO=YES
        HIT/BASIC,NORMAL,<6.4809,1.5236,0.0002>,<-0.0000788,0.0002717,1>,<6.4809,1.5237,0.0004>,USE THEO=YES
        HIT/BASIC,NORMAL,<5.7266,0.5981,-0.0016>,<-0.0000788,0.0002717,1>,<5.7266,0.5982,-0.0016>,USE THEO=
    YES
        HIT/BASIC,NORMAL,<3.2568,0.5352,-0.0026>,<-0.0000788,0.0002717,1>,<3.2569,0.5352,-0.0028>,USE THEO=
    YES
        HIT/BASIC,NORMAL,<1.6322,0.4937,0.0012>,<-0.0000788,0.0002717,1>,<1.6323,0.4937,0.0008>,USE THEO=YES
```

```
ENDMEAS/
MOVE/CLEARPLANE
```

```
PLN-B =FEAT/PLANE,CARTESIAN,TRIANGLE
    THEO/<3.9449,0,-0.4041>,<-0.0000444,-1,0.0000778>
    ACTL/<3.945,0,-0.404>,<-0.000015,-1,0.0000791>
    MEAS/PLANE,6
        HIT/BASIC,NORMAL,<1.6517,0.0002,-0.444>,<-0.0000444,-1,0.0000778>,<1.6519,0.0002,-0.4439>,USE THEO=
    YES
        HIT/BASIC,NORMAL,<2.4788,0,-0.2215>,<-0.0000444,-1,0.0000778>,<2.479,0,-0.2213>,USE THEO=YES
        HIT/BASIC,NORMAL,<3.2307,-0.0002,-0.6041>,<-0.0000444,-1,0.0000778>,<3.2309,-0.0001,-0.604>,USE THE
    O=YES
```

```
        HIT/BASIC,NORMAL,<4.3822,0,-0.2781>,<-0.0000444,-1,0.0000778>,<4.3824,0.0002,-0.278>,USE THEO=YES
        HIT/BASIC,NORMAL,<5.5548,0,-0.6048>,<-0.0000444,-1,0.0000778>,<5.5549,0,-0.6047>,USE THEO=YES
        HIT/BASIC,NORMAL,<6.3708,-0.0002,-0.272>,<-0.0000444,-1,0.0000778>,<6.371,0,-0.2719>,USE THEO=YES
    ENDMEAS/
    MOVE/CLEARPLANE
```

```

PLN-C =FEAT/PLANE, CARTESIAN, TRIANGLE
      THEO/<0.0026,1.503,-0.7787>,<-0.9999896,0.0038343,0.0024787>
      ACTL/<0.003,1.5031,-0.7787>,<-0.9999898,0.0037382,0.0025475>
      MEAS/PLANE,6
      HIT/BASIC,NORMAL,<-0.0024,0.2468,-0.7623>,<-0.9999896,0.0038343,0.0024787>,<-0.0018,0.2468,-0.7622>
      ,USE THEO=YES

      HIT/BASIC,NORMAL,<-0.0011,0.5009,-0.8031>,<-0.9999896,0.0038343,0.0024787>,<-0.0008,0.501,-0.8031>
      USE THEO=YES

      HIT/BASIC,NORMAL,<0.0009,0.9591,-0.7175>,<-0.9999896,0.0038343,0.0024787>,<0.0012,0.9592,-0.7175>,U
      SE THEO=YES

      HIT/BASIC,NORMAL,<0.0039,1.8755,-0.8063>,<-0.9999896,0.0038343,0.0024787>,<0.0044,1.8756,-0.8062>,U
      SE THEO=YES

      HIT/BASIC,NORMAL,<0.0065,2.5192,-0.7602>,<-0.9999896,0.0038343,0.0024787>,<0.0067,2.5193,-0.7602>,U
      SE THEO=YES

      HIT/BASIC,NORMAL,<0.008,2.9166,-0.8229>,<-0.9999896,0.0038343,0.0024787>,<0.0081,2.9167,-0.8228>,US
      E THEO=YES

      ENDMEAS/
      MOVE/CLEARPLANE

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\$\$ NO,

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*****
*

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

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```

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 Feature(s) with "avoid crash" Move commands
*****
MOVE/CLEARPLANE

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```

PLN-BOTTOM =FEAT/PLANE, CARTESIAN, TRIANGLE
      THEO/<4.5937,1.7653,-0.9454>,<-0.0000873,-0.0004394,0.9999999>
      ACTL/<4.5937,1.7654,-0.9465>,<-0.0000195,-0.0005047,0.9999999>
      MEAS/PLANE,4
      HIT/BASIC,NORMAL,<-0.3306,2.9145,-0.9453>,<-0.0000873,-0.0004394,0.9999999>,<-0.3306,2.9146,-0.946>
      ,USE THEO=YES

      HIT/BASIC,NORMAL,<-0.2907,0.3324,-0.9464>,<-0.0000873,-0.0004394,0.9999999>,<-0.2907,0.3324,-0.9474>
      ,USE THEO=YES

      MOVE/CLEARPLANE
      HIT/BASIC,NORMAL,<9.5199,0.4837,-0.9455>,<-0.0000873,-0.0004394,0.9999999>,<9.52,0.4838,-0.947>,USE
      THEO=YES

      HIT/BASIC,NORMAL,<9.476,3.3308,-0.9442>,<-0.0000873,-0.0004394,0.9999999>,<9.476,3.3309,-0.9457>,US
      E THEO=YES

      ENDMEAS/
      MOVE/CLEARPLANE

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```

PLN-LIP_L =FEAT/PLANE, CARTESIAN, TRIANGLE
THEO/<0.0838,1.4508,-0.6903>,<0.0034092,-0.0005292,0.999994>
ACTL/<0.0839,1.4509,-0.691>,<0.0023841,-0.0003458,0.9999971>
MEAS/PLANE,5
HIT/BASIC,NORMAL,<0.0382,0.1629,-0.6909>,<0.0034092,-0.0005292,0.999994>,<0.0384,0.1629,-0.6915>,USE
E THEO=YES

HIT/BASIC,NORMAL,<0.1174,0.7493,-0.6908>,<0.0034092,-0.0005292,0.999994>,<0.1175,0.7494,-0.6914>,USE
E THEO=YES

HIT/BASIC,NORMAL,<0.0598,1.3809,-0.69>,<0.0034092,-0.0005292,0.999994>,<0.0599,1.381,-0.6907>,USE T
HEO=YES

HIT/BASIC,NORMAL,<0.123,2.1267,-0.69>,<0.0034092,-0.0005292,0.999994>,<0.1231,2.1268,-0.6909>,USE T
HEO=YES

HIT/BASIC,NORMAL,<0.0805,2.8342,-0.6897>,<0.0034092,-0.0005292,0.999994>,<0.0806,2.8343,-0.6907>,USE
E THEO=YES

ENDMEAS/
MOVE/CLEARPLANE
PLN-LIP_R =FEAT/PLANE, CARTESIAN, TRIANGLE
THEO/<8.8619,1.7066,-0.6901>,<0.0007042,-0.0005683,0.9999996>
ACTL/<8.8619,1.7067,-0.6901>,<0.001755,-0.0005654,0.9999983>
MEAS/PLANE,4
HIT/BASIC,NORMAL,<8.8378,0.2354,-0.691>,<0.0007042,-0.0005683,0.9999996>,<8.8378,0.2355,-0.691>,USE
THEO=YES

HIT/BASIC,NORMAL,<8.888,1.0444,-0.6905>,<0.0007042,-0.0005683,0.9999996>,<8.888,1.0445,-0.6904>,USE
THEO=YES

HIT/BASIC,NORMAL,<8.8465,2.2423,-0.6897>,<0.0007042,-0.0005683,0.9999996>,<8.8464,2.2425,-0.6895>,U
SE THEO=YES

HIT/BASIC,NORMAL,<8.8754,3.3042,-0.6893>,<0.0007042,-0.0005683,0.9999996>,<8.8754,3.3044,-0.6894>,U
SE THEO=YES

ENDMEAS/
MOVE/CLEARPLANE
PLN-MID =FEAT/PLANE, CARTESIAN, TRIANGLE
THEO/<4.2881,2.0097,-0.5001>,<-0.0003291,-0.0000395,0.9999999>
ACTL/<4.2881,2.0098,-0.5>,<-0.000336,-0.0000116,0.9999999>
MEAS/PLANE,5
HIT/BASIC,NORMAL,<3.7401,2.8851,-0.5004>,<-0.0003291,-0.0000395,0.9999999>,<3.7401,2.8852,-0.5003>,
USE THEO=YES

HIT/BASIC,NORMAL,<3.3394,2.1795,-0.5001>,<-0.0003291,-0.0000395,0.9999999>,<3.3394,2.1796,-0.5001>,
USE THEO=YES

HIT/BASIC,NORMAL,<3.5638,1.3124,-0.5004>,<-0.0003291,-0.0000395,0.9999999>,<3.5639,1.3124,-0.5003>,
USE THEO=YES

HIT/BASIC,NORMAL,<5.3144,1.3572,-0.4998>,<-0.0003291,-0.0000395,0.9999999>,<5.3144,1.3573,-0.4997>,
USE THEO=YES

HIT/BASIC,NORMAL,<5.4829,2.3144,-0.4995>,<-0.0003291,-0.0000395,0.9999999>,<5.4829,2.3146,-0.4994>,
USE THEO=YES

ENDMEAS/
MOVE/CLEARPLANE

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PLN_R      =FEAT/PLANE, CARTESIAN, TRIANGLE
            THEO/<8.9968,1.7867,-0.7976>,<0.9999925,-0.0037216,-0.0010567>
            ACTL/<8.9968,1.7869,-0.7976>,<0.999993,-0.003689,0.0006067>
            MEAS/PLANE,4
            HIT/BASIC,NORMAL,<8.9914,0.3094,-0.7816>,<0.9999925,-0.0037216,-0.0010567>,<8.9914,0.3095,-0.7816>,
            USE THEO=YES

            HIT/BASIC,NORMAL,<8.9955,1.4731,-0.8435>,<0.9999925,-0.0037216,-0.0010567>,<8.9956,1.4734,-0.8435>,
            USE THEO=YES

            HIT/BASIC,NORMAL,<8.9985,2.2508,-0.7355>,<0.9999925,-0.0037216,-0.0010567>,<8.9984,2.251,-0.7354>,U
            SE THEO=YES

            HIT/BASIC,NORMAL,<9.0018,3.1133,-0.83>,<0.9999925,-0.0037216,-0.0010567>,<9.0018,3.1135,-0.83>,USE
            THEO=YES

            ENDMEAS/
            MOVE/CLEARPLANE
PLN_RI     =FEAT/PLANE, CARTESIAN, TRIANGLE
            THEO/<8.7452,1.3922,-0.3314>,<0.9999905,-0.0042047,0.0011105>
            ACTL/<8.7453,1.3924,-0.3312>,<0.999991,-0.0041589,0.0008179>
            MEAS/PLANE,5
            HIT/BASIC,NORMAL,<8.7403,0.2451,-0.214>,<0.9999905,-0.0042047,0.0011105>,<8.7405,0.2452,-0.2139>,US
            E THEO=YES

            HIT/BASIC,NORMAL,<8.7421,0.604,-0.5338>,<0.9999905,-0.0042047,0.0011105>,<8.7421,0.6043,-0.5337>,US
            E THEO=YES

            HIT/BASIC,NORMAL,<8.7448,1.3235,-0.1952>,<0.9999905,-0.0042047,0.0011105>,<8.7448,1.3237,-0.1951>,U
            SE THEO=YES

            HIT/BASIC,NORMAL,<8.7487,2.1521,-0.5282>,<0.9999905,-0.0042047,0.0011105>,<8.7487,2.1523,-0.528>,US
            E THEO=YES

            HIT/BASIC,NORMAL,<8.7503,2.6361,-0.1856>,<0.9999905,-0.0042047,0.0011105>,<8.7504,2.6363,-0.1855>,U
            SE THEO=YES

            ENDMEAS/
            MOVE/CLEARPLANE
PLN-LI     =FEAT/PLANE, CARTESIAN, TRIANGLE
            THEO/<0.238,1.6413,-0.2989>,<-0.9999913,0.0039754,0.0012863>
            ACTL/<0.2402,1.6414,-0.2988>,<-0.9999921,0.0039474,0.0004599>
            MEAS/PLANE,6
            HIT/BASIC,NORMAL,<0.2328,0.3024,-0.1463>,<-0.9999913,0.0039754,0.0012863>,<0.2351,0.3024,-0.1462>,U
            SE THEO=YES

            HIT/BASIC,NORMAL,<0.2324,0.3027,-0.4557>,<-0.9999913,0.0039754,0.0012863>,<0.2348,0.3027,-0.4555>,U
            SE THEO=YES

            HIT/BASIC,NORMAL,<0.2381,1.7058,-0.4546>,<-0.9999913,0.0039754,0.0012863>,<0.2404,1.706,-0.4545>,US
            E THEO=YES

            HIT/BASIC,NORMAL,<0.2384,1.7056,-0.119>,<-0.9999913,0.0039754,0.0012863>,<0.2405,1.7058,-0.1189>,US
            E THEO=YES

            HIT/BASIC,NORMAL,<0.2433,2.9155,-0.1182>,<-0.9999913,0.0039754,0.0012863>,<0.2454,2.9157,-0.118>,US
            E THEO=YES

            HIT/BASIC,NORMAL,<0.2427,2.9158,-0.4996>,<-0.9999913,0.0039754,0.0012863>,<0.2452,2.9159,-0.4995>,U
            SE THEO=YES

            ENDMEAS/
            MOVE/CLEARPLANE

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PLN-BACK =FEAT/PLANE, CARTESIAN, TRIANGLE
THEO/<5.3322,3.8599,-0.4591>,<-0.0001359,0.9999998,0.0005942>
ACTL/<5.3322,3.8604,-0.459>,<-0.0000919,0.9999999,0.0003795>
MEAS/PLANE,6
HIT/BASIC,NORMAL,<7.2865,3.8601,-0.0782>,<-0.0001359,0.9999998,0.0005942>,<7.2865,3.8605,-0.0781>,U
SE THEO=YES

HIT/BASIC,NORMAL,<7.2917,3.8605,-0.6819>,<-0.0001359,0.9999998,0.0005942>,<7.2916,3.8607,-0.6818>,U
SE THEO=YES

HIT/BASIC,NORMAL,<5.5759,3.86,-0.6972>,<-0.0001359,0.9999998,0.0005942>,<5.5759,3.8604,-0.6971>,USE
THEO=YES

HIT/BASIC,NORMAL,<5.5725,3.8596,-0.3249>,<-0.0001359,0.9999998,0.0005942>,<5.5724,3.8601,-0.3248>,U
SE THEO=YES

HIT/BASIC,NORMAL,<3.1321,3.8597,-0.3465>,<-0.0001359,0.9999998,0.0005942>,<3.1321,3.8602,-0.3464>,U
SE THEO=YES

HIT/BASIC,NORMAL,<3.1345,3.8598,-0.6262>,<-0.0001359,0.9999998,0.0005942>,<3.1345,3.8603,-0.6261>,U
SE THEO=YES

ENDMEAS/
MOVE/CLEARPLANE
PLN1-ANGLE =FEAT/PLANE, CARTESIAN, TRIANGLE
THEO/<0.9754,3.6489,-0.5076>,<-0.2722006,0.9622396,-0.0013677>
ACTL/<0.9754,3.6492,-0.5075>,<-0.272231,0.962231,-0.0013748>
MEAS/PLANE,6
HIT/BASIC,NORMAL,<1.3623,3.7582,-0.7559>,<-0.2722006,0.9622396,-0.0013677>,<1.3622,3.7585,-0.7559>,
USE THEO=YES

HIT/BASIC,NORMAL,<1.3576,3.7576,-0.2965>,<-0.2722006,0.9622396,-0.0013677>,<1.3576,3.7579,-0.2964>,
USE THEO=YES

HIT/BASIC,NORMAL,<0.993,3.6538,-0.2991>,<-0.2722006,0.9622396,-0.0013677>,<0.9929,3.6541,-0.2991>,U
SE THEO=YES

HIT/BASIC,NORMAL,<0.9963,3.6541,-0.7127>,<-0.2722006,0.9622396,-0.0013677>,<0.9962,3.6544,-0.7126>,
USE THEO=YES

HIT/BASIC,NORMAL,<0.5735,3.5351,-0.7161>,<-0.2722006,0.9622396,-0.0013677>,<0.5734,3.5354,-0.716>,U
SE THEO=YES

HIT/BASIC,NORMAL,<0.57,3.5347,-0.2655>,<-0.2722006,0.9622396,-0.0013677>,<0.57,3.535,-0.2654>,USE T
HEO=YES

ENDMEAS/
MOVE/CLEARPLANE
LIN-ANGBACK=FEAT/LINE, CARTESIAN, UNBOUNDED, NO
THEO/<1.7196,3.8595,-0.4935>,<0.0071281,0.0005951,-0.9999744>
ACTL/<1.7205,3.86,-0.4924>,<0.0063937,0.0003801,-0.9999795>
CONSTR/LINE, INTOF, PLN1-ANGLE, PLN-BACK
CIR1 =FEAT/CIRCLE, CARTESIAN, IN, LEAST_SQR
THEO/<0.9865,1.0132,-0.1883>,<0,0,1>,1.0008
ACTL/<0.9869,1.0136,-0.1882>,<0,0,1>,1.001
MEAS/CIRCLE,4,ZPLUS
HIT/BASIC,NORMAL,<0.975,1.5135,-0.1897>,<0.0230116,-0.9997352,0>,<0.9752,1.5139,-0.1896>,USE THEO=Y
ES

HIT/BASIC,NORMAL,<0.9988,0.5129,-0.1868>,<-0.0246371,0.9996965,0>,<0.9987,0.5132,-0.1867>,USE THEO=
YES

HIT/BASIC,NORMAL,<0.4863,1.0265,-0.1921>,<0.9996464,-0.0265917,0>,<0.4865,1.0268,-0.192>,USE THEO=Y
ES

HIT/BASIC,NORMAL,<1.4854,1.0517,-0.1846>,<-0.9970302,-0.0770112,0>,<1.4859,1.0519,-0.1845>,USE THEO
=YES

ENDMEAS/

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```
MOVE/CLEARPLANE
CIR2 =FEAT/CIRCLE,CARTESIAN,IN,LEAST_SQR
      THEO/<0.9943,3.0128,-0.2196>,<0,0,1>,1.0008
      ACTL/<0.9948,3.0132,-0.2195>,<0,0,1>,1.001
      MEAS/CIRCLE,4,ZPLUS
      HIT/BASIC,NORMAL,<0.9912,3.5131,-0.2209>,<0.0063309,-0.99998,0>,<0.9913,3.5135,-0.2208>,USE THEO=YES
S

      HIT/BASIC,NORMAL,<1.0151,2.5129,-0.218>,<-0.0414886,0.999139,0>,<1.015,2.5132,-0.2179>,USE THEO=YES

      HIT/BASIC,NORMAL,<0.4962,3.0609,-0.2234>,<0.9953731,-0.0960851,0>,<0.4964,3.0611,-0.2233>,USE THEO=
YES

      HIT/BASIC,NORMAL,<1.4894,3.086,-0.2159>,<-0.9892353,-0.1463334,0>,<1.4901,3.0864,-0.2159>,USE THEO=
YES

      ENDMEAS/
      MOVE/CLEARPLANE
CIR3 =FEAT/CIRCLE,CARTESIAN,IN,LEAST_SQR
      THEO/<7.9937,0.9835,-0.1786>,<0,0,1>,1.0011
      ACTL/<7.994,0.9838,-0.1785>,<0,0,1>,1.001
      MEAS/CIRCLE,4,ZPLUS
      HIT/BASIC,NORMAL,<8.0035,1.4839,-0.1799>,<-0.0195891,-0.9998081,0>,<8.0037,1.4842,-0.1798>,USE THEO
=YES

      HIT/BASIC,NORMAL,<8.0273,0.4841,-0.177>,<-0.0672267,0.9977377,0>,<8.0272,0.4844,-0.1769>,USE THEO=Y
ES

      HIT/BASIC,NORMAL,<8.4934,1.011,-0.1749>,<-0.9984886,-0.0549584,0>,<8.4938,1.0112,-0.1749>,USE THEO=
YES

      HIT/BASIC,NORMAL,<7.4931,0.9858,-0.1824>,<0.9999891,-0.0046723,0>,<7.4936,0.9861,-0.1823>,USE THEO=
YES

      ENDMEAS/
      MOVE/CLEARPLANE
CIR4 =FEAT/CIRCLE,CARTESIAN,OUT,LEAST_SQR
      THEO/<7.7495,2.9847,-0.2031>,<0,0,1>,2.0004,0
      ACTL/<7.7495,2.9851,-0.203>,<0,0,1>,2.0012,0
      MEAS/CIRCLE,6,ZPLUS
      HIT/BASIC,NORMAL,<8.3287,3.8001,-0.2029>,<0.5790999,0.8152566,0>,<8.329,3.8007,-0.2028>,USE THEO=YES
S

      MOVE/CIRCULAR
      HIT/BASIC,NORMAL,<8.4206,3.7263,-0.2017>,<0.6709903,0.7414661,0>,<8.421,3.7268,-0.2016>,USE THEO=YES
S

      MOVE/CIRCULAR
      HIT/BASIC,NORMAL,<8.4901,3.6569,-0.2008>,<0.7404565,0.6721043,0>,<8.4905,3.6574,-0.2007>,USE THEO=Y
ES

      MOVE/CIRCULAR
      HIT/BASIC,NORMAL,<8.5301,3.6103,-0.2009>,<0.7802772,0.6254338,0>,<8.5304,3.6107,-0.2008>,USE THEO=Y
ES

      MOVE/CIRCULAR
      HIT/BASIC,NORMAL,<8.5868,3.5317,-0.2029>,<0.8371482,0.5469762,0>,<8.5872,3.532,-0.2028>,USE THEO=YES
S

      MOVE/CIRCULAR
      HIT/BASIC,NORMAL,<8.6469,3.4266,-0.2094>,<0.8971347,0.441757,0>,<8.6472,3.4269,-0.2093>,USE THEO=YES
S

      ENDMEAS/
      MOVE/CLEARPLANE
```

CIR5 =FEAT/CIRCLE,CARTESIAN,IN,LEAST\_SQR  
 THEO/<4.4403,1.9985,-0.1076>,<0,0,1>,2.5021  
 ACTL/<4.4405,1.999,-0.1075>,<0,0,1>,2.5022  
 MEAS/CIRCLE,5,ZPLUS  
 HIT/BASIC,NORMAL,<3.7552,3.0442,-0.1015>,<0.5479871,-0.8364868,0>,<3.7552,3.0448,-0.1014>,USE THEO=YES

HIT/BASIC,NORMAL,<5.1531,3.0266,-0.0897>,<-0.5697034,-0.8218504,0>,<5.1534,3.0271,-0.0895>,USE THEO=YES

HIT/BASIC,NORMAL,<5.6913,2.0359,-0.0979>,<-0.9995529,-0.0299009,0>,<5.6917,2.0359,-0.0978>,USE THEO=YES

HIT/BASIC,NORMAL,<3.1886,1.9724,-0.1186>,<0.9997835,0.0208073,0>,<3.1887,1.9725,-0.1185>,USE THEO=YES

HIT/BASIC,NORMAL,<4.5299,0.7513,-0.1305>,<-0.0716029,0.9974332,0>,<4.5298,0.7518,-0.1304>,USE THEO=YES

ENDMEAS/  
 MOVE/CLEARPLANE

CIR6 =FEAT/CIRCLE,CARTESIAN,IN,LEAST\_SQR  
 THEO/<4.4402,1.9992,-0.6529>,<0,0,1>,2  
 ACTL/<4.4403,1.9998,-0.6528>,<0,0,1>,2.0001  
 MEAS/CIRCLE,5,ZPLUS  
 HIT/BASIC,NORMAL,<3.891,2.8341,-0.6261>,<0.5496231,-0.8354127,0>,<3.8909,2.8347,-0.626>,USE THEO=YES

HIT/BASIC,NORMAL,<4.9797,2.8409,-0.6172>,<-0.5396195,-0.841909,0>,<4.9801,2.8413,-0.617>,USE THEO=YES

HIT/BASIC,NORMAL,<5.4377,2.0793,-0.667>,<-0.9967888,-0.0800759,0>,<5.438,2.0795,-0.6669>,USE THEO=YES

HIT/BASIC,NORMAL,<3.4398,2.0287,-0.6833>,<0.999565,-0.0294935,0>,<3.4399,2.0289,-0.6832>,USE THEO=YES

HIT/BASIC,NORMAL,<4.5375,1.0047,-0.6711>,<-0.0973698,0.9952483,0>,<4.5375,1.0052,-0.671>,USE THEO=YES

ENDMEAS/  
 MOVE/CLEARPLANE  
 MOVE/POINT,NORMAL,<0,0,3.5>

\$\$ NO,

\*\*\*\*\*  
 \*\*\*\*

\*\*\*\*\*Insert Dimension

\*\*\*\*\*  
 \*\*\*\*

DIM LOC\_01= 3D DISTANCE FROM PLANE PLN-LIP L TO PLANE PLN-BOTTOM,SHORTEST=ON,NO\_RADIUS UNITS=IN,\$

GRAPH=OFF TEXT=OFF MULT=10.00 OUTPUT=BOTH

AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL
M	0.2556	0.0004	0.0004	0.2558	0.0002	0.0000 -----#--

DIM LOC\_02= 3D DISTANCE FROM PLANE PLN-LIP R TO PLANE PLN-BOTTOM,SHORTEST=ON,NO\_RADIUS UNITS=IN,\$

GRAPH=OFF TEXT=OFF MULT=10.00 OUTPUT=BOTH

AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL
M	0.2549	0.0004	0.0004	0.2564	0.0015	0.0011 ----->

DIM LOC\_03= LOCATION OF PLANE PLN-BOTTOM UNITS=IN,\$

GRAPH=OFF TEXT=OFF MULT=10.00 OUTPUT=BOTH HALF ANGLE=NO

AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL
Z	-0.9454	0.0020	0.0020	-0.9465	-0.0012	0.0000 -#-----

END OF DIMENSION LOC\_03

DIM LOC\_04= LOCATION OF PLANE PLN-LI UNITS=IN,\$

GRAPH=OFF TEXT=OFF MULT=10.00 OUTPUT=BOTH HALF ANGLE=NO

AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL
X	0.2380	0.0020	0.0020	0.2402	0.0023	0.0003 ----->

END OF DIMENSION LOC\_04

PART NUMBER=Lab-2-Demo      DATE=2/20/2024      TIME=9:17:19 AM      PAGE#=9

DIM DIST\_05= 3D DISTANCE FROM PLANE PLN\_RI TO PLANE PLN\_R,SHORTEST=OFF,NO\_RADIUS      UNITS=IN,\$

GRAPH=OFF TEXT=OFF MULT=10.00 OUTPUT=BOTH

AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL
M	0.2506	0.0004	0.0004	0.2497	-0.0009	0.0005 <-----

DIM LOC\_06= LOCATION OF PLANE PLN-MID UNITS=IN,\$

GRAPH=OFF TEXT=OFF MULT=10.00 OUTPUT=BOTH HALF ANGLE=NO

AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL
Z	-0.5001	0.0020	0.0020	-0.5000	0.0001	0.0000 ----#----

END OF DIMENSION LOC\_06

DIM LOC\_07= LOCATION OF CIRCLE CIR1 UNITS=IN,\$

GRAPH=OFF TEXT=OFF MULT=10.00 OUTPUT=BOTH HALF ANGLE=NO

AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL
X	0.9865	0.0020	0.0020	0.9869	0.0004	0.0000 -----#---
Y	1.0132	0.0020	0.0020	1.0136	0.0004	0.0000 -----#---
D	1.0008	0.0020	0.0020	1.0010	0.0002	0.0000 -----#---
R	0.5004	0.0010	0.0010	0.5005	0.0001	0.0000 -----#---

END OF DIMENSION LOC\_07

DIM LOC\_08= LOCATION OF CIRCLE CIR2 UNITS=IN,\$

GRAPH=OFF TEXT=OFF MULT=10.00 OUTPUT=BOTH HALF ANGLE=NO

AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL
X	0.9943	0.0020	0.0020	0.9948	0.0004	0.0000 -----#---
Y	3.0128	0.0020	0.0020	3.0132	0.0004	0.0000 -----#---
D	1.0008	0.0020	0.0020	1.0010	0.0002	0.0000 -----#---
R	0.5004	0.0010	0.0010	0.5005	0.0001	0.0000 -----#---

END OF DIMENSION LOC\_08

DIM LOC\_09= LOCATION OF CIRCLE CIR3 UNITS=IN,\$

GRAPH=OFF TEXT=OFF MULT=10.00 OUTPUT=BOTH HALF ANGLE=NO

AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL
X	7.9937	0.0020	0.0020	7.9940	0.0004	0.0000 -----#---
Y	0.9835	0.0020	0.0020	0.9838	0.0003	0.0000 -----#---
D	1.0011	0.0020	0.0020	1.0010	0.0000	0.0000 -----#---
R	0.5005	0.0010	0.0010	0.5005	0.0000	0.0000 -----#---

END OF DIMENSION LOC\_09

DIM LOC\_10= LOCATION OF CIRCLE CIR4 UNITS=IN,\$

GRAPH=OFF TEXT=OFF MULT=10.00 OUTPUT=BOTH HALF ANGLE=NO

AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL
X	7.7495	0.0020	0.0020	7.7495	0.0000	0.0000 ----#----
Y	2.9847	0.0020	0.0020	2.9851	0.0004	0.0000 -----#---
D	2.0004	0.0020	0.0020	2.0012	0.0007	0.0000 -----#---
R	1.0002	0.0010	0.0010	1.0006	0.0004	0.0000 -----#---

END OF DIMENSION LOC\_10

DIM LOC\_11= LOCATION OF CIRCLE CIR5 UNITS=IN,\$

GRAPH=OFF TEXT=OFF MULT=10.00 OUTPUT=BOTH HALF ANGLE=NO

AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL
X	4.4403	0.0020	0.0020	4.4405	0.0001	0.0000 ----#----
Y	1.9985	0.0020	0.0020	1.9990	0.0006	0.0000 -----#---
D	2.5021	0.0020	0.0020	2.5022	0.0002	0.0000 -----#---
R	1.2510	0.0010	0.0010	1.2511	0.0001	0.0000 ----#----

END OF DIMENSION LOC\_11

DIM LOC\_12= LOCATION OF CIRCLE CIR6 UNITS=IN,\$

GRAPH=OFF TEXT=OFF MULT=10.00 OUTPUT=BOTH HALF ANGLE=NO

AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL
X	4.4402	0.0020	0.0020	4.4403	0.0001	0.0000 ----#----
Y	1.9992	0.0020	0.0020	1.9998	0.0006	0.0000 -----#---
D	2.0000	0.0020	0.0020	2.0001	0.0001	0.0000 -----#---
R	1.0000	0.0010	0.0010	1.0001	0.0001	0.0000 ----#----

END OF DIMENSION LOC\_12

DIM DIST\_13= 3D DISTANCE FROM PLANE PLN\_R TO CIRCLE CIR4,SHORTEST=OFF,NO\_RADIUS      UNITS=IN,\$

GRAPH=OFF TEXT=OFF MULT=10.00 OUTPUT=BOTH

AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL
M	1.2524	0.0004	0.0004	1.2514	-0.0010	0.0006 <-----

DIM LOC\_14= LOCATION OF PLANE PLN-BACK UNITS=IN,\$

GRAPH=OFF TEXT=OFF MULT=10.00 OUTPUT=BOTH HALF ANGLE=NO

AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL
Y	3.8599	0.0020	0.0020	3.8604	0.0004	0.0000 -----#---

END OF DIMENSION LOC\_14

PART NUMBER=Lab-2-Demo DATE=2/20/2024 TIME=9:17:19 AM PAGE#=10

DIM LOC 15= LOCATION OF PLANE PLN R UNITS=IN , \$

GRAPH=OFF TEXT=OFF MULT=10.00 OUTPUT=BOTH HALF ANGLE=NO

AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL
X	8.9968	0.0020	0.0020	8.9968	0.0000	0.0000 ----#----

END OF DIMENSION LOC\_15

DIM LOC 16= LOCATION OF LINE LIN-ANGBACK UNITS=IN , \$

GRAPH=OFF TEXT=OFF MULT=10.00 OUTPUT=BOTH HALF ANGLE=NO

AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL
X	1.7232	0.0020	0.0020	1.7237	0.0006	0.0000 -----#---

END OF DIMENSION LOC\_16

DIM ANGL 17= 2D ANGLE FROM PLANE PLN-BACK TO PLANE PLN1-ANGLE SUPPLEMENTAL ANGLE=NO , \$

GRAPH=OFF TEXT=OFF MULT=10.00 OUTPUT=BOTH

AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL
A	15.7875	0.0004	0.0004	15.7918	0.0043	0.0039 ----->

\$\$ NO,

\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*Extra Demo  
\*\*\*\*\*  
\*\*\*\*\*

COMMENT/OPER,NO,FULL SCREEN=NO,AUTO-CONTINUE=NO,OVC=NO,

Do you want the see a probe change?

LOADPROBE/MSU\_PROBE\_A\_3X20MM

TIP/T1A30B-90, SHANKIJK=0.4999, 0.0071, 0.8661, ANGLE=-89.214

MOVE/POINT,NORMAL,<10,2.3,2.5>

PNT-R

=FEAT/POINT,CARTESIAN

THEO/<8.7539,2.3,-0.5>,<1,0,0>

ACTL/<8.7449,2.3001,-0.5>,<1,0,0>

MEAS/POINT,1,WORKPLANE

HIT/BASIC,NORMAL,<8.7539,2.3,-0.5>,<1,0,0>,<8.7449,2.3001,-0.5>,USE THEO=YES

ENDMEAS/

MOVE/POINT,NORMAL,<10,2.3,2.5>

TIP/T1A30B90, SHANKIJK=-0.5, -0.0083, 0.866, ANGLE=90.7439

MOVE/POINT,NORMAL,<-2,2.3,2.5>

PNT-L

=FEAT/POINT,CARTESIAN

THEO/<0.249,2.3,-0.5>,<-1,0,0>

ACTL/<0.2394,2.2999,-0.5001>,<-1,0,0>

MEAS/POINT,1,WORKPLANE

HIT/BASIC,NORMAL,<0.249,2.3,-0.5>,<-1,0,0>,<0.2394,2.2999,-0.5001>,USE THEO=YES

ENDMEAS/

MOVE/POINT,NORMAL,<-2,2.3,2.5>

TIP/T1A0B0, SHANKIJK=-0.0001, -0.0007, 1, ANGLE=0.8833

PNT-L\_S

=FEAT/POINT,CARTESIAN

THEO/<0.2513,2.3,-0.5>,<-1,0,0>

ACTL/<0.2384,2.3,-0.5>,<-1,0,0>

MEAS/POINT,1,WORKPLANE

HIT/BASIC,NORMAL,<0.2513,2.3,-0.5>,<-1,0,0>,<0.2384,2.3,-0.5>,USE THEO=YES

ENDMEAS/

MOVE/POINT,NORMAL,<0.0918,1.8905,1.5959>

MOVE/POINT,NORMAL,<10.3151,2.0481,1.5968>

PNT-R\_S

=FEAT/POINT,CARTESIAN

THEO/<8.7576,2.3,-0.5>,<1,0,0>

ACTL/<8.7445,2.3001,-0.4999>,<1,0,0>

MEAS/POINT,1,WORKPLANE

HIT/BASIC,NORMAL,<8.7576,2.3,-0.5>,<1,0,0>,<8.7445,2.3001,-0.4999>,USE THEO=YES

ENDMEAS/

MOVE/POINT,NORMAL,<8.917,2.025,3.6012>

LOADPROBE/MSU\_PROBE\_D\_3X50MM

END OF MEASUREMENT FOR

PN=Lab-2-Demo

DWG=1

SN=

TOTAL # OF MEAS =35

# OUT OF TOL =5

# OF HOURS =00:07:36