



DATE=10/9/2024 TIME=10:08:16 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/<10.717,12.4901,-28.5758>,<0.0001703,0.001055,0.9999994>
MEAS/PLANE,4
HIT/BASIC,NORMAL,<8.5356,16.7148,-24.7428>,<0.0086394,-0.0040229,0.9999546>,<8.5289,14.0213,-28.577
2>,USE THEO=YES

HIT/BASIC,NORMAL,<13.4988,16.7148,-24.7832>,<0.0086394,-0.0040229,0.9999546>,<8.529,11.3979,-28.574
2>,USE THEO=YES

HIT/BASIC,NORMAL,<11.9595,13.8658,-24.7841>,<0.0086394,-0.0040229,0.9999546>,<12.9051,11.398,-28.57
52>,USE THEO=YES

HIT/BASIC,NORMAL,<7.9275,13.8659,-24.7462>,<0.0086394,-0.0040229,0.9999546>,<12.9051,13.1433,-28.57
67>,USE THEO=YES

LIN-MB =FEAT/LINE,CARTESIAN,UNBOUNDED
THEO/<7.9312,13.2015,-25.0697>,<0.9996762,-0.0254449,0>
ACTL/<8.7224,10.7389,-28.7528>,<0.9998732,-0.0159263,0>
MEAS/LINE,2,ZPLUS
HIT/BASIC,NORMAL,<7.9312,13.2015,-25.0697>,<-0.0254449,-0.9996762,0>,<8.7224,10.7389,-28.7528>,USE
THEO=YES

HIT/BASIC,NORMAL,<11.9168,13.1,-25.0696>,<-0.0254449,-0.9996762,0>,<12.0819,10.6854,-28.7527>,USE T
HEO=YES

PNT-MC =FEAT/POINT,CARTESIAN
THEO/<6.1928,14.0029,-25.473>,<-1,0,0>
ACTL/<6.6603,12.814,-29.3312>,<-0.9987868,-0.0309816,-0.038275>
MEAS/POINT,1,WORKPLANE
HIT/BASIC,NORMAL,<6.1928,14.0029,-25.473>,<-1,0,0>,<6.6603,12.814,-29.3312>,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"
*****Move Speed set to 300 mm/sec
*****
MODE/DCC
CLEARP/ZPLUS,0.5,ZPLUS,0,OFF
MOVESPEED/ 300

```

\$\$ NO,

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*****
*****Define "DCC Alignment" DATUM Features
*****

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PLN-A

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MOVE/CLEARPLANE
=FEAT/PLANE,CARTESIAN,TRIANGLE
THEO/<4.288,1.941,-0.0011>,<-0.0000788,0.0002717,1>
ACTL/<4.288,1.9411,-0.0011>,<-0.0001576,0.0000331,1>
MEAS/PLANE,7
    HIT/BASIC,NORMAL,<1.925,3.3994,-0.0008>,<-0.0000788,0.0002717,1>,<1.9251,3.3996,-0.0007>,USE THEO=Y
ES
    HIT/BASIC,NORMAL,<4.2146,3.533,-0.0044>,<-0.0000788,0.0002717,1>,<4.2146,3.5331,-0.004>,USE THEO=YE
S
    HIT/BASIC,NORMAL,<6.7795,3.5041,0.0005>,<-0.0000788,0.0002717,1>,<6.7795,3.5042,0.001>,USE THEO=YES
    HIT/BASIC,NORMAL,<6.4809,1.5236,0.0002>,<-0.0000788,0.0002717,1>,<6.4809,1.5237,0.0003>,USE THEO=YES
    HIT/BASIC,NORMAL,<5.7266,0.5981,-0.0016>,<-0.0000788,0.0002717,1>,<5.7267,0.5981,-0.0018>,USE THEO=
YES
    HIT/BASIC,NORMAL,<3.2568,0.5352,-0.0026>,<-0.0000788,0.0002717,1>,<3.2569,0.5352,-0.003>,USE THEO=Y
ES
    HIT/BASIC,NORMAL,<1.6322,0.4937,0.0012>,<-0.0000788,0.0002717,1>,<1.6323,0.4937,0.0005>,USE THEO=YES

ENDMEAS/
MOVE/CLEARPLANE

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PLN-B =FEAT/PLANE, CARTESIAN, TRIANGLE
      THEO/<3.9449,0,-0.4041>,<-0.0000444,-1,0.0000778>
      ACTL/<3.945,0.0001,-0.4041>,<-0.0000066,-1,0.0001121>
      MEAS/PLANE,6
      HIT/BASIC,NORMAL,<1.6517,0.0002,-0.444>,<-0.0000444,-1,0.0000778>,<1.6518,0.0002,-0.4441>,USE THEO=
YES
      HIT/BASIC,NORMAL,<2.4788,0,-0.2215>,<-0.0000444,-1,0.0000778>,<2.479,0,-0.2215>,USE THEO=YES
      HIT/BASIC,NORMAL,<3.2307,-0.0002,-0.6041>,<-0.0000444,-1,0.0000778>,<3.2308,0,-0.6041>,USE THEO=YES

      HIT/BASIC,NORMAL,<4.3822,0,-0.2781>,<-0.0000444,-1,0.0000778>,<4.3823,0.0003,-0.2781>,USE THEO=YES
      HIT/BASIC,NORMAL,<5.5548,0,-0.6048>,<-0.0000444,-1,0.0000778>,<5.555,0.0001,-0.6048>,USE THEO=YES
      HIT/BASIC,NORMAL,<6.3708,-0.0002,-0.272>,<-0.0000444,-1,0.0000778>,<6.371,0.0001,-0.2721>,USE THEO=
YES

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      ENDMEAS/
      MOVE/CLEARPLANE
PLN-C =FEAT/PLANE, CARTESIAN, TRIANGLE
      THEO/<0.0026,1.503,-0.7787>,<-0.9999896,0.0038343,0.0024787>
      ACTL/<-0.0018,1.503,-0.7788>,<-0.9999896,0.0037379,0.0026276>
      MEAS/PLANE,6
      HIT/BASIC,NORMAL,<-0.0024,0.2468,-0.7623>,<-0.9999896,0.0038343,0.0024787>,<-0.0066,0.2468,-0.7623>
,USE THEO=YES
      HIT/BASIC,NORMAL,<-0.0011,0.5009,-0.8031>,<-0.9999896,0.0038343,0.0024787>,<-0.0056,0.5009,-0.8032>
,USE THEO=YES
      HIT/BASIC,NORMAL,<0.0009,0.9591,-0.7175>,<-0.9999896,0.0038343,0.0024787>,<-0.0036,0.9591,-0.7176>,
USE THEO=YES
      HIT/BASIC,NORMAL,<0.0039,1.8755,-0.8063>,<-0.9999896,0.0038343,0.0024787>,<-0.0004,1.8755,-0.8063>,
USE THEO=YES
      HIT/BASIC,NORMAL,<0.0065,2.5192,-0.7602>,<-0.9999896,0.0038343,0.0024787>,<0.0019,2.5192,-0.7603>,U
SE THEO=YES
      HIT/BASIC,NORMAL,<0.008,2.9166,-0.8229>,<-0.9999896,0.0038343,0.0024787>,<0.0033,2.9166,-0.8229>,US
E THEO=YES

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```

      ENDMEAS/
      MOVE/CLEARPLANE
$$ NO,
*****
*
*****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

```

PLN-BOTTOM =FEAT/PLANE, CARTESIAN, TRIANGLE
 THEO/<4.5937,1.7653,-0.9454>,<-0.0000873,-0.0004394,0.9999999>
 ACTL/<4.5937,1.7654,-0.9471>,<0.0000163,-0.0010092,0.9999995>
 MEAS/PLANE,4
 HIT/BASIC,NORMAL,<-0.3306,2.9145,-0.9453>,<-0.0000873,-0.0004394,0.9999999>,<-0.3306,2.9146,-0.9458>,
 USE THEO=YES
 HIT/BASIC,NORMAL,<-0.2907,0.3324,-0.9464>,<-0.0000873,-0.0004394,0.9999999>,<-0.2907,0.3324,-0.9486>,
 USE THEO=YES
 MOVE/CLEARPLANE
 HIT/BASIC,NORMAL,<9.5199,0.4837,-0.9455>,<-0.0000873,-0.0004394,0.9999999>,<9.52,0.4837,-0.9484>,
 USE THEO=YES
 HIT/BASIC,NORMAL,<9.476,3.3308,-0.9442>,<-0.0000873,-0.0004394,0.9999999>,<9.476,3.3309,-0.9457>,
 USE THEO=YES

PLN-LIP_L =FEAT/PLANE, CARTESIAN, TRIANGLE
 THEO/<0.0838,1.4508,-0.6903>,<0.0034092,-0.0005292,0.9999994>
 ACTL/<0.0839,1.4508,-0.691>,<0.0033856,-0.0003234,0.9999942>
 MEAS/PLANE,5
 HIT/BASIC,NORMAL,<0.0382,0.1629,-0.6909>,<0.0034092,-0.0005292,0.9999994>,<0.0383,0.1629,-0.6915>,
 USE THEO=YES
 HIT/BASIC,NORMAL,<0.1174,0.7493,-0.6908>,<0.0034092,-0.0005292,0.9999994>,<0.1175,0.7493,-0.6914>,
 USE THEO=YES
 HIT/BASIC,NORMAL,<0.0598,1.3809,-0.69>,<0.0034092,-0.0005292,0.9999994>,<0.0598,1.381,-0.6905>,
 USE THEO=YES
 HIT/BASIC,NORMAL,<0.123,2.1267,-0.69>,<0.0034092,-0.0005292,0.9999994>,<0.123,2.1268,-0.6909>,
 USE THEO=YES
 HIT/BASIC,NORMAL,<0.0805,2.8342,-0.6897>,<0.0034092,-0.0005292,0.9999994>,<0.0806,2.8343,-0.6908>,
 USE THEO=YES

PLN-LIP_R =FEAT/PLANE, CARTESIAN, TRIANGLE
 THEO/<8.8619,1.7066,-0.6901>,<0.0007042,-0.0005683,0.9999996>
 ACTL/<8.8616,1.7066,-0.6899>,<0.0075014,-0.0004808,0.9999717>
 MEAS/PLANE,4
 HIT/BASIC,NORMAL,<8.8378,0.2354,-0.691>,<0.0007042,-0.0005683,0.9999996>,<8.8376,0.2352,-0.6905>,
 USE THEO=YES
 HIT/BASIC,NORMAL,<8.888,1.0444,-0.6905>,<0.0007042,-0.0005683,0.9999996>,<8.8877,1.0445,-0.6904>,
 USE THEO=YES
 HIT/BASIC,NORMAL,<8.8465,2.2423,-0.6897>,<0.0007042,-0.0005683,0.9999996>,<8.8461,2.2424,-0.6895>,
 USE THEO=YES
 HIT/BASIC,NORMAL,<8.8754,3.3042,-0.6893>,<0.0007042,-0.0005683,0.9999996>,<8.875,3.3043,-0.6893>,
 USE 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/<4.2881,2.0097,-0.5>,<-0.0003476,-0.0000043,0.9999999>
 MEAS/PLANE,5
 HIT/BASIC,NORMAL,<3.7401,2.8851,-0.5004>,<-0.0003291,-0.0000395,0.9999999>,<3.7401,2.8851,-0.5004>,
 USE THEO=YES

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

HIT/BASIC,NORMAL,<3.5638,1.3124,-0.5004>,<-0.0003291,-0.0000395,0.9999999>,<3.5639,1.3123,-0.5004>,
 USE THEO=YES

HIT/BASIC,NORMAL,<5.3144,1.3572,-0.4998>,<-0.0003291,-0.0000395,0.9999999>,<5.3143,1.3572,-0.4998>,
 USE THEO=YES

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

ENDMEAS/
 MOVE/CLEARPLANE

PLN_R =FEAT/PLANE, CARTESIAN, TRIANGLE
 THEO/<8.9968,1.7867,-0.7976>,<0.9999925,-0.0037216,-0.0010567>
 ACTL/<8.9968,1.7867,-0.7977>,<0.999993,-0.003692,0.0005709>
 MEAS/PLANE,4
 HIT/BASIC,NORMAL,<8.9914,0.3094,-0.7816>,<0.9999925,-0.0037216,-0.0010567>,<8.9914,0.3094,-0.7816>,
 USE THEO=YES

HIT/BASIC,NORMAL,<8.9955,1.4731,-0.8435>,<0.9999925,-0.0037216,-0.0010567>,<8.9956,1.4732,-0.8436>,
 USE THEO=YES

HIT/BASIC,NORMAL,<8.9985,2.2508,-0.7355>,<0.9999925,-0.0037216,-0.0010567>,<8.9985,2.2509,-0.7355>,
 USE THEO=YES

HIT/BASIC,NORMAL,<9.0018,3.1133,-0.83>,<0.9999925,-0.0037216,-0.0010567>,<9.0018,3.1134,-0.8301>,
 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/<8.7453,1.3922,-0.3313>,<0.999991,-0.0041563,0.0008873>
 MEAS/PLANE,5
 HIT/BASIC,NORMAL,<8.7403,0.2451,-0.214>,<0.9999905,-0.0042047,0.0011105>,<8.7405,0.245,-0.214>,
 USE THEO=YES

HIT/BASIC,NORMAL,<8.7421,0.604,-0.5338>,<0.9999905,-0.0042047,0.0011105>,<8.7422,0.6041,-0.5338>,
 USE THEO=YES

HIT/BASIC,NORMAL,<8.7448,1.3235,-0.1952>,<0.9999905,-0.0042047,0.0011105>,<8.7448,1.3235,-0.1952>,
 USE THEO=YES

HIT/BASIC,NORMAL,<8.7487,2.1521,-0.5282>,<0.9999905,-0.0042047,0.0011105>,<8.7487,2.1522,-0.5281>,
 USE THEO=YES

HIT/BASIC,NORMAL,<8.7503,2.6361,-0.1856>,<0.9999905,-0.0042047,0.0011105>,<8.7504,2.6362,-0.1856>,
 USE 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/<0.2402,1.6412,-0.2989>,<-0.9999921,0.003948,0.0004443>
MEAS/PLANE,6
HIT/BASIC,NORMAL,<0.2328,0.3024,-0.1463>,<-0.9999913,0.0039754,0.0012863>,<0.235,0.3023,-0.1463>,USE THEO=YES

HIT/BASIC,NORMAL,<0.2324,0.3027,-0.4557>,<-0.9999913,0.0039754,0.0012863>,<0.2348,0.3024,-0.4557>,USE THEO=YES

HIT/BASIC,NORMAL,<0.2381,1.7058,-0.4546>,<-0.9999913,0.0039754,0.0012863>,<0.2404,1.7058,-0.4547>,USE THEO=YES

HIT/BASIC,NORMAL,<0.2384,1.7056,-0.119>,<-0.9999913,0.0039754,0.0012863>,<0.2405,1.7056,-0.1191>,USE THEO=YES

HIT/BASIC,NORMAL,<0.2433,2.9155,-0.1182>,<-0.9999913,0.0039754,0.0012863>,<0.2453,2.9156,-0.1182>,USE THEO=YES

HIT/BASIC,NORMAL,<0.2427,2.9158,-0.4996>,<-0.9999913,0.0039754,0.0012863>,<0.2451,2.9158,-0.4996>,USE THEO=YES

ENDMEAS/
MOVE/CLEARPLANE
PLN-BACK =FEAT/PLANE, CARTESIAN, TRIANGLE
THEO/<5.3322,3.8599,-0.4591>,<-0.0001359,0.9999998,0.0005942>
ACTL/<5.3321,3.8603,-0.4591>,<-0.000089,0.9999999,0.0003692>
MEAS/PLANE,6
HIT/BASIC,NORMAL,<7.2865,3.8601,-0.0782>,<-0.0001359,0.9999998,0.0005942>,<7.2864,3.8604,-0.0782>,USE THEO=YES

HIT/BASIC,NORMAL,<7.2917,3.8605,-0.6819>,<-0.0001359,0.9999998,0.0005942>,<7.2915,3.8606,-0.6818>,USE THEO=YES

HIT/BASIC,NORMAL,<5.5759,3.86,-0.6972>,<-0.0001359,0.9999998,0.0005942>,<5.5758,3.8603,-0.6972>,USE THEO=YES

HIT/BASIC,NORMAL,<5.5725,3.8596,-0.3249>,<-0.0001359,0.9999998,0.0005942>,<5.5723,3.86,-0.3249>,USE THEO=YES

HIT/BASIC,NORMAL,<3.1321,3.8597,-0.3465>,<-0.0001359,0.9999998,0.0005942>,<3.132,3.8601,-0.3465>,USE THEO=YES

HIT/BASIC,NORMAL,<3.1345,3.8598,-0.6262>,<-0.0001359,0.9999998,0.0005942>,<3.1344,3.8602,-0.6261>,USE 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/<0.9752, 3.6491, -0.5076>, <-0.2722478, 0.9622262, -0.0013564>
 MEAS/PLANE, 6
 HIT/BASIC, NORMAL, <1.3623, 3.7582, -0.7559>, <-0.2722006, 0.9622396, -0.0013677>, <1.3621, 3.7584, -0.7559>, USE THEO=YES

 HIT/BASIC, NORMAL, <1.3576, 3.7576, -0.2965>, <-0.2722006, 0.9622396, -0.0013677>, <1.3574, 3.7578, -0.2965>, USE THEO=YES

 HIT/BASIC, NORMAL, <0.993, 3.6538, -0.2991>, <-0.2722006, 0.9622396, -0.0013677>, <0.9928, 3.654, -0.2991>, USE THEO=YES

 HIT/BASIC, NORMAL, <0.9963, 3.6541, -0.7127>, <-0.2722006, 0.9622396, -0.0013677>, <0.9961, 3.6544, -0.7127>, USE THEO=YES

 HIT/BASIC, NORMAL, <0.5735, 3.5351, -0.7161>, <-0.2722006, 0.9622396, -0.0013677>, <0.5733, 3.5353, -0.7161>, USE THEO=YES

 HIT/BASIC, NORMAL, <0.57, 3.5347, -0.2655>, <-0.2722006, 0.9622396, -0.0013677>, <0.5698, 3.5349, -0.2655>, USE THEO=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/<1.7203, 3.86, -0.4923>, <0.0062889, 0.0003698, -0.9999802>
 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, 1.0135, -0.1883>, <0, 0, 1>, 1.0011
 MEAS/CIRCLE, 4, ZPLUS
 HIT/BASIC, NORMAL, <0.975, 1.5135, -0.1897>, <0.0230116, -0.9997352, 0>, <0.9751, 1.5138, -0.1898>, USE THEO=YES

 HIT/BASIC, NORMAL, <0.9988, 0.5129, -0.1868>, <-0.0246371, 0.9996965, 0>, <0.9986, 0.5131, -0.1868>, USE THEO=YES

 HIT/BASIC, NORMAL, <0.4863, 1.0265, -0.1921>, <0.9996464, -0.0265917, 0>, <0.4865, 1.0266, -0.1921>, USE THEO=YES

 HIT/BASIC, NORMAL, <1.4854, 1.0517, -0.1846>, <-0.9970302, -0.0770112, 0>, <1.4859, 1.0518, -0.1847>, USE THEO=YES

ENDMEAS/
 MOVE/CLEARPLANE

CIR2 =FEAT/CIRCLE, CARTESIAN, IN, LEAST_SQR
 THEO/<0.9943, 3.0128, -0.2196>, <0, 0, 1>, 1.0008
 ACTL/<0.9948, 3.0131, -0.2196>, <0, 0, 1>, 1.001
 MEAS/CIRCLE, 4, ZPLUS
 HIT/BASIC, NORMAL, <0.9912, 3.5131, -0.2209>, <0.0063309, -0.99998, 0>, <0.9912, 3.5134, -0.221>, USE THEO=YES

 HIT/BASIC, NORMAL, <1.0151, 2.5129, -0.218>, <-0.0414886, 0.999139, 0>, <1.0149, 2.5131, -0.2179>, USE THEO=YES

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

 HIT/BASIC, NORMAL, <1.4894, 3.086, -0.2159>, <-0.9892353, -0.1463334, 0>, <1.4901, 3.0861, -0.216>, 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/<7.994,0.9837,-0.1786>,<0,0,1>,1.001
 MEAS/CIRCLE,4,ZPLUS
 HIT/BASIC,NORMAL,<8.0035,1.4839,-0.1799>,<-0.0195891,-0.9998081,0>,<8.0036,1.4841,-0.18>,USE THEO=Y
 ES
 HIT/BASIC,NORMAL,<8.0273,0.4841,-0.177>,<-0.0672267,0.9977377,0>,<8.0271,0.4842,-0.177>,USE THEO=YES
 HIT/BASIC,NORMAL,<8.4934,1.011,-0.1749>,<-0.9984886,-0.0549584,0>,<8.4938,1.011,-0.175>,USE THEO=YE
 S
 HIT/BASIC,NORMAL,<7.4931,0.9858,-0.1824>,<0.9999891,-0.0046723,0>,<7.4935,0.9859,-0.1824>,USE THEO=YE
 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/<7.7495,2.9849,-0.2031>,<0,0,1>,2.001,0
 MEAS/CIRCLE,6,ZPLUS
 HIT/BASIC,NORMAL,<8.3287,3.8001,-0.2029>,<0.5790999,0.8152566,0>,<8.3289,3.8005,-0.2028>,USE THEO=Y
 ES
 MOVE/CIRCULAR
 HIT/BASIC,NORMAL,<8.4206,3.7263,-0.2017>,<0.6709903,0.7414661,0>,<8.4211,3.7266,-0.2017>,USE THEO=Y
 ES
 MOVE/CIRCULAR
 HIT/BASIC,NORMAL,<8.4901,3.6569,-0.2008>,<0.7404565,0.6721043,0>,<8.4905,3.6572,-0.2007>,USE THEO=Y
 ES
 MOVE/CIRCULAR
 HIT/BASIC,NORMAL,<8.5301,3.6103,-0.2009>,<0.7802772,0.6254338,0>,<8.5303,3.6106,-0.2008>,USE THEO=Y
 ES
 MOVE/CIRCULAR
 HIT/BASIC,NORMAL,<8.5868,3.5317,-0.2029>,<0.8371482,0.5469762,0>,<8.5872,3.5319,-0.2028>,USE THEO=Y
 ES
 MOVE/CIRCULAR
 HIT/BASIC,NORMAL,<8.6469,3.4266,-0.2094>,<0.8971347,0.441757,0>,<8.6472,3.4267,-0.2094>,USE THEO=YE
 S
 ENDMEAS/
 MOVE/CLEARPLANE
 CIR5 =FEAT/CIRCLE, CARTESIAN, IN, LEAST_SQR
 THEO/<4.4403,1.9985,-0.1076>,<0,0,1>,2.5021
 ACTL/<4.4404,1.9989,-0.1077>,<0,0,1>,2.5022
 MEAS/CIRCLE,5,ZPLUS
 HIT/BASIC,NORMAL,<3.7552,3.0442,-0.1015>,<0.5479871,-0.8364868,0>,<3.7551,3.0447,-0.1016>,USE THEO=YE
 YES
 HIT/BASIC,NORMAL,<5.1531,3.0266,-0.0897>,<-0.5697034,-0.8218504,0>,<5.1533,3.027,-0.0897>,USE THEO=YE
 YES
 HIT/BASIC,NORMAL,<5.6913,2.0359,-0.0979>,<-0.9995529,-0.0299009,0>,<5.6916,2.0357,-0.098>,USE THEO=Y
 ES
 HIT/BASIC,NORMAL,<3.1886,1.9724,-0.1186>,<0.9997835,0.0208073,0>,<3.1886,1.9723,-0.1186>,USE THEO=Y
 ES
 HIT/BASIC,NORMAL,<4.5299,0.7513,-0.1305>,<-0.0716029,0.9974332,0>,<4.5297,0.7517,-0.1305>,USE THEO=YE
 YES
 ENDMEAS/
 MOVE/CLEARPLANE


```

CIR6 =FEAT/CIRCLE,CARTESIAN,IN,LEAST_SQR
      THEO/<4.4402,1.9992,-0.6529>,<0,0,1>,2
      ACTL/<4.4403,1.9997,-0.653>,<0,0,1>,2.0001
      MEAS/CIRCLE,5,ZPLUS
      HIT/BASIC,NORMAL,<3.891,2.8341,-0.6261>,<0.5496231,-0.8354127,0>,<3.8909,2.8346,-0.6262>,USE THEO=Y
ES
      HIT/BASIC,NORMAL,<4.9797,2.8409,-0.6172>,<-0.5396195,-0.841909,0>,<4.98,2.8412,-0.6172>,USE THEO=Y
S
      HIT/BASIC,NORMAL,<5.4377,2.0793,-0.667>,<-0.9967888,-0.0800759,0>,<5.438,2.0793,-0.6671>,USE THEO=Y
ES
      HIT/BASIC,NORMAL,<3.4398,2.0287,-0.6833>,<0.999565,-0.0294935,0>,<3.4399,2.0287,-0.6833>,USE THEO=Y
ES
      HIT/BASIC,NORMAL,<4.5375,1.0047,-0.6711>,<-0.0973698,0.9952483,0>,<4.5374,1.005,-0.6711>,USE THEO=Y
ES

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

```

\$\$ NO,

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*****
****

*****Insert Dimension
*****
****

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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 0.2564 0.0008 0.0004 ----->
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 0.2573 0.0024 0.0020 ----->
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 -0.9471 -0.0018 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 0.0022 0.0002 ----->
END OF DIMENSION LOC_04
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 0.2498 -0.0008 0.0004 <-----
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 0.0000 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 1.0135 0.0003 0.0000 -----#---
D 1.0008 0.0020 0.0020 1.0011 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	3.0131	0.0003	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	0.9837	0.0002	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	2.9849	0.0002	0.0000	-----#---
D	2.0004	0.0020	0.0020	2.0010	0.0006	0.0000	-----#---
R	1.0002	0.0010	0.0010	1.0005	0.0003	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	4.4404	0.0001	0.0000	-----#---
Y	1.9985	0.0020	0.0020	1.9989	0.0004	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	1.9997	0.0005	0.0000	-----#---
D	2.0000	0.0020	0.0020	2.0001	0.0002	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	3.8603	0.0003	0.0000	-----#---

END OF DIMENSION LOC_14

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	1.7235	0.0003	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	15.7930	0.0055	0.0051	-----#-->

*****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/<8.7446,2.3001,-0.5001>,<1,0,0>
MEAS/POINT,1,WORKPLANE
HIT/BASIC,NORMAL,<8.7539,2.3,-0.5>,<1,0,0>,<8.7446,2.3001,-0.5001>,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/<0.2387,2.2999,-0.5001>,<-1,0,0>
MEAS/POINT,1,WORKPLANE
HIT/BASIC,NORMAL,<0.249,2.3,-0.5>,<-1,0,0>,<0.2387,2.2999,-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/<0.2382,2.3001,-0.5001>,<-1,0,0>
MEAS/POINT,1,WORKPLANE
HIT/BASIC,NORMAL,<0.2513,2.3,-0.5>,<-1,0,0>,<0.2382,2.3001,-0.5001>,USE THEO=YES
ENDMEAS/

DIM LOC1= LOCATION OF POINT PNT-L_S UNITS=IN , \$
GRAPH=OFF TEXT=OFF MULT=10.00 OUTPUT=BOTH HALF ANGLE=NO

AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL
X	0.2513	0.0020	0.0020	0.2382	-0.0131	0.0111 <-----

END OF DIMENSION LOC1

DIMINFO/LOC1, ,DIMID,FEATID, , ,

USEDIM

DIMINFO/LOC1, ,DIMID,FEATID, , ,

USEDIM

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/<8.7444,2.3002,-0.4999>,<1,0,0>
MEAS/POINT,1,WORKPLANE
HIT/BASIC,NORMAL,<8.7576,2.3,-0.5>,<1,0,0>,<8.7444,2.3002,-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 =0 # OUT OF TOL =0 # OF HOURS =00:00:00