Cranfield Universsity

Assignment 2: Code

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# **Deburring Station (Assignment Part 2a)**

## **Task 1**

### **MODULE Module1**

! Targets Declaration

CONST robtarget Target\_10:=[[524.6745,-78.100404646,108.244659229],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_20:=[[42.9,-78.100404646,108.24465923],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_30:=[[42.9,-67.203522698,117.141541059],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_40:=[[75.92,-67.203522571,117.14154106],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_50:=[[75.92,62.701779641,247.046843517],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_60:=[[85.445,62.701779641,247.046843517],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_70:=[[85.445,28.802913554,213.14797743],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_80:=[[87.049604448,27.05810886,211.403172736],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_90:=[[88.421360534,26.237692677,210.582756552],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_100:=[[95.226551237,23.439180238,207.784244114],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_110:=[[98.91403692,19.827297486,204.172361361],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_120:=[[101.772865126,18.766285358,203.111349233],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_130:=[[122.472417594,20.392118287,204.737182162],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_140:=[[141.79163867,26.479475047,210.824538922],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_150:=[[152.599771923,29.170629008,213.515692883],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_160:=[[163.330535091,27.96214263,212.307206504],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_170:=[[177.787801415,22.900627727,207.245691603],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_180:=[[185.18653303,21.38267257,205.727736446],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_190:=[[191.786480075,21.539958204,205.885022078],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_200:=[[205.248417569,23.771643952,208.116707827],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_210:=[[218.815235331,23.734550924,208.0796148],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_230:=[[238.806599993,21.38267257,205.727736444],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_240:=[[246.240318264,23.013132605,207.358196481],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_250:=[[260.767417512,28.175826744,212.520890619],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_260:=[[267.930083627,29.27074342,213.615807296],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_270:=[[275.089478357,28.165180663,212.510244538],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_280:=[[289.547188794,23.010870775,207.355934649],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_290:=[[296.946533029,21.382672569,205.727736445],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_300:=[[303.556050471,21.494425533,205.839489408],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_310:=[[317.037143575,23.748003166,208.093067041],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_320:=[[330.603780885,23.74553355,208.090597427],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_330:=[[343.997379838,21.501497345,205.846561221],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_340:=[[350.566599993,21.38267257,205.727736445],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_350:=[[358.000251216,23.007848321,207.352912195],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_360:=[[372.527349836,28.172483078,212.517546953],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_370:=[[379.703999999,29.270729108,213.615792984],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_380:=[[386.849580174,28.167761453,212.512825327],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_390:=[[401.307358814,23.013885586,207.358949462],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_410:=[[415.306523619,21.489123562,205.834187438],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_420:=[[428.768222078,23.736470196,208.081534072],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_430:=[[442.335824639,23.767624379,208.112688255],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_440:=[[455.749196701,21.538516869,205.883580744],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_450:=[[462.326599993,21.38267257,205.727736446],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_460:=[[469.727444031,22.906848543,207.251912419],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_470:=[[484.1869378,27.977227638,212.322291513],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_480:=[[494.896701759,29.156266403,213.501330279],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_490:=[[505.65262544,26.429773939,210.774837814],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_510:=[[542.973192865,18.734265562,203.079329438],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_520:=[[545.93513897,19.787342472,204.132406347],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_530:=[[549.690948763,23.439180238,207.784244114],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_540:=[[557.250798221,26.629988394,210.975052269],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_550:=[[558.890393624,28.163689457,212.508753332],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_560:=[[559.472500001,30.041707449,214.386771323],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_570:=[[559.4725,62.701779641,247.046843517],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_580:=[[568.997500001,62.701779642,247.046843517],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_590:=[[568.9975,29.059467742,213.404531618],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_600:=[[569.741448776,27.263416518,211.608480394],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_610:=[[571.5375,26.519467742,210.864531618],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_620:=[[596.112,26.519467742,210.864531618],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_630:=[[596.112,2.006141487,186.351205362],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_640:=[[571.537499999,2.006141487,186.351205364],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_650:=[[569.337795475,1.06655866,185.411622535],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_660:=[[568.9975,0.126975833,184.472039709],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_670:=[[568.997500001,-45.759310784,138.585753092],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_680:=[[556.015593863,-67.920810783,116.424253092],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_690:=[[524.6745,-77.100404646,107.244659229],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_710:=[[439.8225,-25.70061018,160.644453695],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_720:=[[491.590999999,10.905247222,197.250311099],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_730:=[[543.359500002,-25.700610179,160.644453696],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_740:=[[491.591,-62.306467581,124.038596293],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_750:=[[379.831000001,-63.013574363,123.331489513],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_760:=[[327.062500001,-25.70061018,160.644453695],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_770:=[[379.831,11.612354004,197.957417879],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_780:=[[432.5995,-25.700610179,160.644453696],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_790:=[[379.831,-63.013574363,123.331489513],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_800:=[[268.071000001,-63.013574363,123.331489513],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_810:=[[215.302499999,-25.70061018,160.644453696],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_220:=[[232.228056623,21.493794452,205.838858327],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_400:=[[408.706533031,21.38267257,205.727736444],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_500:=[[520.331666054,21.38267257,205.727736446],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_700:=[[491.591000001,-62.306467581,124.038596293],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_820:=[[268.070999999,11.612354004,197.957417879],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_830:=[[320.8395,-25.700610179,160.644453696],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_840:=[[268.071,-63.013574363,123.331489513],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_850:=[[156.311000001,-63.013574363,123.331489513],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_860:=[[103.542499999,-25.70061018,160.644453695],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_870:=[[156.310999998,11.612354003,197.957417879],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_880:=[[209.0795,-25.700610179,160.644453696],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_890:=[[156.311,-63.013574363,123.331489514],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_05:=[[524.6745,-88.707006376,97.638057523],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_695:=[[524.6745,-84.171472465,100.173591425],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_696:=[[524.6745,-91.242540269,107.244659244],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_702:=[[491.591000001,-55.235399762,131.109664098],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_741:=[[491.591000001,-55.235399762,131.109664098],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_742:=[[491.591000001,-62.306467566,138.180731917],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_703:=[[491.591000001,-62.306467581,124.038596293],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_751:=[[379.831000001,-63.013574348,137.473625137],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_752:=[[379.831000001,-55.942506544,130.402557317],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_791:=[[379.831000001,-55.942506544,130.402557317],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_792:=[[379.831000001,-63.013574348,137.473625137],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_753:=[[379.831000001,-63.013574363,123.331489513],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_801:=[[268.071000002,-63.013574348,137.473625137],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_802:=[[268.071000002,-55.942506544,130.402557317],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_841:=[[268.071000002,-55.942506544,130.402557317],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_842:=[[268.071000002,-63.013574348,137.473625137],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_803:=[[268.071000002,-63.013574363,123.331489513],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_851:=[[156.311000001,-63.013574348,137.473625137],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_852:=[[156.311000001,-55.942506544,130.402557317],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_891:=[[156.311000001,-55.942506544,130.402557317],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_892:=[[156.311000001,-63.013574348,137.473625137],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_853:=[[156.311000001,-63.013574363,123.331489513],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_900:=[[147.05,-90.685752988,138.085239669],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_901:=[[147.05,-66.99767583,114.397162487],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_902:=[[147.05,-76.543617379,123.94310403],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_910:=[[128.243,-73.916067814,126.57106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_911:=[[128.243,-62.602359312,115.257359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_912:=[[128.243,-73.916067814,126.57106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_920:=[[95.224,-59.727067814,140.76006781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_921:=[[95.224,-50.181126265,131.214126267],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_922:=[[95.224,-59.727067814,140.76006781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_930:=[[93.283,-38.868067814,161.61906781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_931:=[[93.283,-29.322126265,152.073126267],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_932:=[[93.283,-38.868067814,161.61906781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_940:=[[93.283,-25.796067814,174.69106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_941:=[[93.283,-16.250126265,165.145126266],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_942:=[[93.283,-25.796067814,174.69106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_950:=[[100.304,-9.951067814,190.53706781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_951:=[[100.304,1.362640688,179.223359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_952:=[[100.304,-9.951067814,190.53706781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_960:=[[156.184,12.870932186,213.35806781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_961:=[[156.184,24.184640688,202.044359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_962:=[[156.184,12.870932186,213.35806781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_970:=[[212.064,-9.951067814,190.53706781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_971:=[[212.064,1.362640688,179.223359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_972:=[[212.064,-9.951067814,190.53706781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_980:=[[267.944,12.870932186,213.35806781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_981:=[[267.944,24.184640688,202.044359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_982:=[[267.944,12.870932186,213.35806781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_990:=[[323.824,-9.951067814,190.53706781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_991:=[[323.824,1.362640688,179.223359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_992:=[[323.824,-9.951067814,190.53706781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1000:=[[379.704,12.870932186,213.35806781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1001:=[[379.704,24.184640688,202.044359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1002:=[[379.704,12.870932186,213.35806781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1010:=[[435.584,-9.951067814,190.53706781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1011:=[[435.584,1.362640688,179.223359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1012:=[[435.584,-9.951067814,190.53706781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1020:=[[491.464,12.870932186,213.35806781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1021:=[[491.464,24.184640688,202.044359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1022:=[[491.464,12.870932186,213.35806781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1030:=[[547.344,-9.951067814,190.53706781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1031:=[[547.344,1.362640688,179.223359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1032:=[[547.344,-9.951067814,190.53706781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1040:=[[554.075,-25.796067814,174.69106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1041:=[[554.075,-16.250126265,165.145126266],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1042:=[[554.075,-25.796067814,174.69106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1050:=[[554.075,-38.868067814,161.61906781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1051:=[[554.075,-29.322126265,152.073126267],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1052:=[[554.075,-38.868067814,161.61906781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1060:=[[552.423,-62.877067813,137.61006781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1061:=[[552.423,-53.331126265,128.064126267],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1062:=[[552.423,-62.877067813,137.61006781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1070:=[[519.405,-73.916067814,126.57106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1071:=[[519.405,-62.602359312,115.257359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1072:=[[519.405,-73.916067814,126.57106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1080:=[[502.068,-76.543067814,123.94406781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1081:=[[502.068,-66.997126265,114.398126267],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1082:=[[502.068,-76.543067814,123.94406781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1090:=[[463.523,-73.916067814,126.57106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1091:=[[463.523,-62.602359312,115.257359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1092:=[[463.523,-73.916067814,126.57106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1100:=[[435.711,-61.158067814,139.32906781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1101:=[[435.711,-49.844359312,128.015359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1102:=[[435.711,-61.158067814,139.32906781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1110:=[[407.645,-73.916067814,126.57106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1111:=[[407.645,-62.602359312,115.257359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1112:=[[407.645,-73.916067814,126.57106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1120:=[[368.973,-76.543067814,123.94406781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1121:=[[368.973,-66.997126265,114.398126267],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1122:=[[368.973,-76.543067814,123.94406781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1130:=[[351.763,-73.916067814,126.57106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1131:=[[351.763,-62.602359312,115.257359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1132:=[[351.763,-73.916067814,126.57106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1140:=[[323.951,-61.158067814,139.32906781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1141:=[[323.951,-49.844359312,128.015359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1142:=[[323.951,-61.158067814,139.32906781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1150:=[[295.885,-73.916067814,126.57106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1151:=[[295.885,-62.602359312,115.257359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1152:=[[295.885,-73.916067814,126.57106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1160:=[[278.946,-76.543067814,123.94406781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1161:=[[278.946,-66.997126265,114.398126267],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1162:=[[278.946,-76.543067814,123.94406781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1170:=[[240.003,-73.916067814,126.57106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1171:=[[240.003,-62.602359312,115.257359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1172:=[[240.003,-73.916067814,126.57106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1180:=[[212.191,-61.158067814,139.32906781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1181:=[[212.191,-49.844359312,128.015359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1182:=[[212.191,-61.158067814,139.32906781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1190:=[[184.125,-73.916067814,126.57106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1191:=[[184.125,-62.602359312,115.257359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1192:=[[184.125,-73.916067814,126.57106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1200:=[[212.191,5.005932186,205.49306781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1201:=[[212.191,12.077,198.422],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1230:=[[212.191,5.341890167,191.686954042],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1240:=[[202.665999999,12.077082258,198.422146133],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1250:=[[212.191,18.812274349,205.157338224],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1260:=[[221.716,12.077082258,198.422146133],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1270:=[[212.191,5.341890167,191.686954042],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1271:=[[212.191,12.077,198.422],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1272:=[[212.191,5.005932186,205.49306781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1280:=[[323.951,5.005932186,205.49306781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1281:=[[323.951,12.077,198.422],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1282:=[[323.951,5.341890167,191.686954042],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1290:=[[314.425999999,12.077082258,198.422146133],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1300:=[[323.951,18.812274349,205.157338224],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1310:=[[333.476,12.077082258,198.422146133],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1320:=[[323.951,5.341890167,191.686954042],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1321:=[[323.951,12.077,198.422],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1322:=[[323.951,5.005932186,205.49306781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1330:=[[435.711,5.005932186,205.49306781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1331:=[[435.711,12.077,198.422],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1332:=[[435.711,5.341890167,191.686954042],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1340:=[[426.186,12.077082258,198.422146133],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1350:=[[435.711,18.812274349,205.157338224],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1360:=[[445.236000001,12.077082258,198.422146133],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1370:=[[435.711,5.341890167,191.686954042],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1371:=[[435.711,12.077,198.422],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_1372:=[[435.711,5.005932186,205.49306781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget HomePos:=[[319,-453.847555092,1004.85],[0.353553391,-0.612372436,0.612372436,0.353553391],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

!\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

!

! Module: Module1

!

! Description:

! <Insert description here>

!

! Author: Jonathan Arreola

!

! Version: 1.0

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!

! Procedure main

!

! This is the entry point of your program

!

!\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PROC main()

!Add your code here

!Main routine where all of the subrutines all called out.

H\_Home;

A\_Path\_Edge;

B\_Path\_Cil4;

C\_Path\_Cil3;

D\_Path\_Cil2;

E\_Path\_Cil1;

F\_Path\_SHoles;

G\_Path\_BHoles;

H\_Home;

I\_Scanning;

J\_ReDeburr;

H\_Home;

K\_Scanning2;

ENDPROC

!Edge (right side) deburring subrutine

PROC A\_Path\_Edge()

WaitTime 3;

MoveJ Target\_30,v1000,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_40,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_50,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_60,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_70,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_80,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_90,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_100,Target\_110,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_120,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_130,Target\_140,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_150,Target\_160,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_170,Target\_180,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_190,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_200,Target\_210,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_220,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_230,Target\_240,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_250,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_260,Target\_270,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_280,Target\_290,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_300,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_310,Target\_320,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_330,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_340,Target\_350,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_360,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_370,Target\_380,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_390,Target\_400,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_410,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_420,Target\_430,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_440,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_450,Target\_460,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_470,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_480,Target\_490,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_500,Target\_510,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_520,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_530,Target\_540,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_550,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_560,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_570,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_580,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_590,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_600,Target\_610,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_620,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_630,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_640,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_650,Target\_660,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_670,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_680,Target\_690,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_695,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_696,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

ENDPROC

!Cilinder 4 (right side) deburring subrutine

PROC B\_Path\_Cil4()

MoveJ Target\_702,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_703,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_703,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_710,Target\_720,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_730,Target\_740,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_741,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_742,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

ENDPROC

!Cilinder 3 (right side) deburring subrutine

PROC C\_Path\_Cil3()

MoveJ Target\_792,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_751,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_752,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_753,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_760,Target\_770,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_780,Target\_790,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_791,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

ENDPROC

!Cilinder 2 (right side) deburring subrutine

PROC D\_Path\_Cil2()

MoveJ Target\_801,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_802,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_803,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_810,Target\_820,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_830,Target\_840,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_841,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_842,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

ENDPROC

!Cilinder 1 (right side) deburring subrutine

PROC E\_Path\_Cil1()

MoveJ Target\_851,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_852,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_853,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_860,Target\_870,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_880,Target\_890,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_891,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_892,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

ENDPROC

!Small holes (right side) deburring subrutine

PROC F\_Path\_SHoles()

MoveJ Target\_900,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_901,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_902,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_910,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_911,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_912,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_920,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_921,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_922,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_930,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_931,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_932,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_940,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_941,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_942,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_950,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_951,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_952,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_960,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_961,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_962,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_970,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_971,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_972,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_980,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_981,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_982,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_990,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_991,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_992,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1000,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1001,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1002,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1010,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1011,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1012,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1020,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1021,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1022,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1030,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1031,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1032,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1040,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1041,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1042,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1050,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1051,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1052,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1060,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1061,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1062,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1070,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1071,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1072,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1080,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1081,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1082,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1090,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1091,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1092,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1100,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1101,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1102,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1110,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1111,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1112,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1120,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1121,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1122,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1130,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1131,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1132,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1140,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1141,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1142,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1150,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1151,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1152,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1160,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1161,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1162,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1170,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1171,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1172,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1180,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1181,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1182,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1190,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1191,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1192,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

ENDPROC

!Big holes (right side) deburring subrutine

PROC G\_Path\_BHoles()

MoveJ Target\_1200,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1201,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1230,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_1240,Target\_1250,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_1260,Target\_1270,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1271,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1272,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1280,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1281,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1282,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_1290,Target\_1300,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_1310,Target\_1320,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1321,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1322,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_1330,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1331,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1332,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_1340,Target\_1350,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_1360,Target\_1370,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1371,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_1372,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

ENDPROC

!Move home (right side)

PROC H\_Home()

MoveJ HomePos,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

ENDPROC

!Scan the Engine block for deffects

PROC I\_Scanning()

SetDO GoHome,0;

SetDO StartScan,1;

SetDO StartScan,0;

SetDO GoHome,1;

SetDO ScanOK,0;

SetDO\Sync,ScanNOK,1;

ENDPROC

!Deffects correction deburring subrutine

PROC J\_ReDeburr()

WaitTime 9;

MoveJ Target\_751,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_752,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_753,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_760,Target\_770,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_780,Target\_790,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_791,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_792,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_05,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_10,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_20,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

ENDPROC

!Scan the Engine block for deffects one more time

PROC K\_Scanning2()

WaitTime 1;

SetDO GoHome,0;

SetDO StartScan,1;

SetDO StartScan,0;

SetDO GoHome,1;

SetDO ScanNOK,0;

SetDO ScanOK,1;

ENDPROC

!End of the Task 1

ENDMODULE

## **Task 2**

### **MODULE Module1**

! Targets declaration

CONST robtarget m\_Target\_702:=[[459.408999999,-295.235399762,130.109664098],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_703:=[[459.408999999,-302.306467581,123.038596293],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_710:=[[511.1775,-265.70061018,159.644453695],[0,0,0.923879533,0.382683432],[-1,-2,-2,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_720:=[[459.409000001,-229.094752778,196.250311099],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_730:=[[407.640499998,-265.700610179,159.644453696],[0,0,0.923879533,0.382683432],[-1,-2,-2,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_740:=[[459.409,-302.306467581,123.038596293],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_741:=[[459.408999999,-295.235399762,130.109664098],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_742:=[[459.408999999,-323.519670978,158.393935374],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_751:=[[348.168999999,-303.013574348,136.473625137],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_752:=[[348.168999999,-295.942506544,129.402557317],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_753:=[[348.168999999,-303.013574363,122.331489513],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_760:=[[400.937499999,-265.70061018,159.644453695],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_770:=[[348.169,-228.387645996,196.957417879],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_780:=[[295.4005,-265.700610179,159.644453696],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_790:=[[348.169,-303.013574363,122.331489513],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_791:=[[348.168999999,-295.942506544,129.402557317],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_792:=[[348.168999999,-303.013574348,136.473625137],[0,0,0.923879533,0.382683432],[-1,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_801:=[[234.928999998,-303.013574348,136.473625137],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_802:=[[234.928999998,-295.942506544,129.402557317],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_803:=[[234.928999998,-303.013574363,122.331489513],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_810:=[[287.697500001,-265.70061018,159.644453696],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_820:=[[234.929000001,-228.387645996,196.957417879],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_830:=[[182.1605,-265.700610179,159.644453696],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_840:=[[234.929,-303.013574363,122.331489513],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_841:=[[234.928999998,-295.942506544,129.402557317],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_842:=[[229.13574737,-302.790641035,122.554417586],[0,0,0.923879533,0.382683432],[0,-1,2,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_851:=[[124.688999999,-303.013574348,136.473625137],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_852:=[[124.688999999,-295.942506544,129.402557317],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_853:=[[124.688999999,-303.013574363,122.331489513],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_860:=[[177.457500001,-265.70061018,159.644453695],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_870:=[[124.689000002,-228.387645997,196.957417879],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_880:=[[71.9205,-265.700610179,159.644453696],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_890:=[[124.689,-303.013574363,122.331489514],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_891:=[[124.688999999,-295.942506544,129.402557317],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_892:=[[124.688999999,-303.013574348,136.473625137],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_900:=[[467.95,-317.54361739,123.943104026],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_901:=[[467.95,-307.99767583,114.397162487],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_902:=[[467.95,-317.543617379,123.94310403],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_910:=[[486.757,-314.916067814,126.57106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_911:=[[486.757,-303.602359312,115.257359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_912:=[[486.757,-314.916067814,126.57106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_920:=[[519.776,-300.727067814,140.76006781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_921:=[[519.776,-291.181126265,131.214126267],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_922:=[[519.776,-300.727067814,140.76006781],[0,0,0.923879533,0.382683432],[-1,0,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_930:=[[521.717,-279.868067814,161.61906781],[0.27059805,-0.653281483,-0.653281483,-0.27059805],[-1,0,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_931:=[[521.717,-270.322126265,152.073126267],[0.27059805,-0.653281483,-0.653281483,-0.27059805],[-1,0,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_932:=[[521.717,-279.868067814,161.61906781],[0.27059805,-0.653281483,-0.653281483,-0.27059805],[-1,0,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_940:=[[521.717,-266.796067814,174.69106781],[0.27059805,-0.653281483,-0.653281483,-0.27059805],[-1,0,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_941:=[[521.717,-257.250126265,165.145126266],[0.27059805,-0.653281483,-0.653281483,-0.27059805],[-1,0,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_942:=[[521.717,-266.796067814,174.69106781],[0.27059805,-0.653281483,-0.653281483,-0.27059805],[-1,0,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_950:=[[514.696,-250.951067814,190.53706781],[0.27059805,-0.653281483,-0.653281483,-0.27059805],[-1,0,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_951:=[[514.696,-239.637359312,179.223359314],[0.27059805,-0.653281483,-0.653281483,-0.27059805],[-1,0,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_952:=[[514.696,-250.951067814,190.53706781],[0.27059805,-0.653281483,-0.653281483,-0.27059805],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_960:=[[458.816,-228.129067814,213.35806781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_961:=[[458.816,-216.815359312,202.044359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_962:=[[458.816,-228.129067814,213.35806781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_970:=[[402.936,-250.951067814,190.53706781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_971:=[[402.936,-239.637359312,179.223359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_972:=[[402.936,-250.951067814,190.53706781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_980:=[[347.056,-228.129067814,213.35806781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_981:=[[347.056,-216.815359312,202.044359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_982:=[[347.056,-228.129067814,213.35806781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_990:=[[291.176,-250.951067814,190.53706781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_991:=[[291.176,-239.637359312,179.223359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_992:=[[291.176,-250.951067814,190.53706781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1000:=[[235.296,-228.129067814,213.35806781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1001:=[[235.296,-216.815359312,202.044359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1002:=[[235.296,-228.129067814,213.35806781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1010:=[[179.416,-250.951067814,190.53706781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1011:=[[179.416,-239.637359312,179.223359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1012:=[[179.416,-250.951067814,190.53706781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1020:=[[123.536,-228.129067814,213.35806781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1021:=[[123.536,-216.815359312,202.044359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1022:=[[123.536,-228.129067814,213.35806781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1030:=[[67.656,-250.951067814,190.53706781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1031:=[[67.656,-239.637359312,179.223359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1032:=[[67.656,-250.951067814,190.53706781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1040:=[[60.925,-266.796067814,174.69106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1041:=[[60.925,-257.250126265,165.145126266],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1042:=[[60.925,-266.796067814,174.69106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1050:=[[60.925,-279.868067814,161.61906781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1051:=[[60.925,-270.322126265,152.073126267],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1052:=[[60.925,-279.868067814,161.61906781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1060:=[[62.577,-303.877067813,137.61006781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1061:=[[62.577,-294.331126265,128.064126267],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1062:=[[62.577,-303.877067813,137.61006781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1070:=[[95.595,-314.916067814,126.57106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1071:=[[95.595,-303.602359312,115.257359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1072:=[[95.595,-314.916067814,126.57106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1080:=[[112.932,-317.543067814,123.94406781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1081:=[[112.932,-307.997126265,114.398126267],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1082:=[[112.932,-317.543067814,123.94406781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1090:=[[151.477,-314.916067814,126.57106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1091:=[[151.477,-303.602359312,115.257359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1092:=[[151.477,-314.916067814,126.57106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1100:=[[179.289,-302.158067814,139.32906781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1101:=[[179.289,-290.844359312,128.015359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1102:=[[179.289,-302.158067814,139.32906781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1110:=[[207.355,-314.916067814,126.57106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1111:=[[207.355,-303.602359312,115.257359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1112:=[[207.355,-314.916067814,126.57106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1120:=[[246.027,-317.543067814,123.94406781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1121:=[[246.027,-307.997126265,114.398126267],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1122:=[[246.027,-317.543067814,123.94406781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1130:=[[263.237,-314.916067814,126.57106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1131:=[[263.237,-303.602359312,115.257359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1132:=[[263.237,-314.916067814,126.57106781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1140:=[[291.049,-302.158067814,139.32906781],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1141:=[[291.049,-290.844359312,128.015359314],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1142:=[[291.049,-302.158067814,139.32906781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1150:=[[319.115,-314.916067814,126.57106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1151:=[[319.115,-303.602359312,115.257359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1152:=[[319.115,-314.916067814,126.57106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1160:=[[336.054,-317.543067814,123.94406781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1161:=[[336.054,-307.997126265,114.398126267],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1162:=[[336.054,-317.543067814,123.94406781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1170:=[[374.997,-314.916067814,126.57106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1171:=[[374.997,-303.602359312,115.257359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1172:=[[374.997,-314.916067814,126.57106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1180:=[[402.809,-302.158067814,139.32906781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1181:=[[402.809,-290.844359312,128.015359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1182:=[[402.809,-302.158067814,139.32906781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1190:=[[430.875,-314.916067814,126.57106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1191:=[[430.875,-303.602359312,115.257359314],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1192:=[[430.875,-314.916067814,126.57106781],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1200:=[[403.809,-234.994067814,204.49306781],[0,0,0.923879533,0.382683432],[-1,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1201:=[[403.809,-227.923,197.422],[0,0,0.923879533,0.382683432],[-1,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1230:=[[403.809,-234.658109833,190.686954042],[0,0,0.923879533,0.382683432],[-1,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1240:=[[413.334000001,-227.922917742,197.422146133],[0,0,0.923879533,0.382683432],[-1,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1250:=[[403.809,-221.187725651,204.157338224],[0,0,0.923879533,0.382683432],[-1,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1260:=[[394.284,-227.922917742,197.422146133],[0,0,0.923879533,0.382683432],[-1,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1270:=[[403.809,-234.658109833,190.686954042],[0,0,0.923879533,0.382683432],[-1,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1271:=[[403.809,-227.923,197.422],[0,0,0.923879533,0.382683432],[-1,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1272:=[[403.809,-234.994067814,204.49306781],[0,0,0.923879533,0.382683432],[-1,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1280:=[[292.049,-234.994067814,204.49306781],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1281:=[[292.049,-227.923,197.422],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1282:=[[292.049,-234.658109833,190.686954042],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1290:=[[301.574000001,-227.922917742,197.422146133],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1300:=[[292.049,-221.187725651,204.157338224],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1310:=[[282.524,-227.922917742,197.422146133],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1320:=[[292.049,-234.658109833,190.686954042],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1321:=[[292.049,-227.923,197.422],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1322:=[[292.049,-234.994067814,204.49306781],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1330:=[[180.289,-234.994067814,204.49306781],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1331:=[[180.289,-227.923,197.422],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1332:=[[180.289,-234.658109833,190.686954042],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1340:=[[189.814,-227.922917742,197.422146133],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1350:=[[180.289,-221.187725651,204.157338224],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1360:=[[170.763999999,-227.922917742,197.422146133],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1370:=[[180.289,-234.658109833,190.686954042],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1371:=[[180.289,-227.923,197.422],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget m\_Target\_1372:=[[180.289,-234.994067814,204.49306781],[0,0,0.923879533,0.382683432],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_10:=[[544.498569545,-189.70605996,235.639003916],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_20:=[[541.125758179,-190.690384638,234.654679237],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_30:=[[539.728,-193.073651171,232.271412704],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_40:=[[539.728,-308.203522816,117.141541059],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_50:=[[595.1,-308.203522943,117.141541059],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_60:=[[595.1,-318.100404646,107.244659229],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_70:=[[419.347006247,-318.100404646,107.244659229],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_80:=[[416.897320991,-318.580056059,106.765007816],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_90:=[[415.145459927,-319.882375457,105.462688418],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_100:=[[413.910750296,-324.761887381,100.583176494],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_110:=[[407.87248238,-329.250687092,96.094376784],[0,0,0.923879533,0.382683432],[-1,1,-1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_120:=[[395.440091211,-327.444829307,97.900234569],[0,0,0.923879533,0.382683432],[-1,1,-1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_130:=[[391.838264904,-319.882375457,105.462688418],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_140:=[[390.08640384,-318.580056059,106.765007816],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_150:=[[387.636718583,-318.100404646,107.24465923],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_160:=[[46.6505,-318.100404646,107.244659229],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_170:=[[46.6505,-178.298220359,247.046843517],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_180:=[[56.1755,-178.298220359,247.046843517],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_190:=[[56.1755,-210.958292552,214.386771323],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_200:=[[56.757606376,-212.836310543,212.508753332],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_210:=[[58.397201779,-214.370011606,210.975052269],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_220:=[[65.957051237,-217.560819762,207.784244114],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_230:=[[69.71286103,-221.212657528,204.132406347],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_240:=[[72.674807135,-222.265734438,203.079329438],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_250:=[[95.316333946,-219.61732743,205.727736445],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_260:=[[109.99537456,-214.570226061,210.774837814],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_270:=[[120.751298241,-211.843733597,213.501330279],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_280:=[[131.4610622,-213.022772362,212.322291513],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_290:=[[145.920555968,-218.093151457,207.251912419],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_300:=[[153.321400007,-219.61732743,205.727736445],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_310:=[[159.898803299,-219.461483131,205.883580744],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_320:=[[173.312175361,-217.232375621,208.112688255],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_330:=[[186.879777922,-217.263529804,208.081534071],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_340:=[[200.341476381,-219.510876438,205.834187438],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_350:=[[206.941466969,-219.61732743,205.727736445],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_360:=[[214.340641186,-217.986114414,207.358949461],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_370:=[[228.798419826,-212.832238548,212.512825327],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_380:=[[235.944,-211.729270892,213.615792984],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_390:=[[243.120650164,-212.827516922,212.517546954],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_400:=[[257.647748784,-217.992151679,207.352912196],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_410:=[[265.081400007,-219.61732743,205.727736445],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_420:=[[271.650620162,-219.498502655,205.846561221],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_430:=[[285.044219115,-217.25446645,208.090597426],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_440:=[[298.610856424,-217.251996834,208.093067041],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_450:=[[312.091949529,-219.505574467,205.839489408],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_460:=[[318.70146697,-219.61732743,205.727736445],[0,0,0.923879533,0.382683432],[0,-1,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_470:=[[326.100811206,-217.989129225,207.35593465],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_480:=[[340.558521643,-212.834819337,212.510244538],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_490:=[[347.717916373,-211.72925658,213.615807296],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_500:=[[354.880582488,-212.824173256,212.520890619],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_510:=[[369.407681736,-217.986867395,207.358196481],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_520:=[[376.841400007,-219.61732743,205.727736445],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_530:=[[383.419943377,-219.506205548,205.838858327],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_540:=[[396.832764669,-217.265449076,208.0796148],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_550:=[[410.399582431,-217.228356048,208.116707827],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_560:=[[423.861519925,-219.460041796,205.885022079],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_570:=[[430.46146697,-219.61732743,205.727736445],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_580:=[[437.860198585,-218.099372273,207.245691603],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_590:=[[452.317464909,-213.03785737,212.307206505],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_600:=[[463.048228077,-211.829370992,213.515692883],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_610:=[[473.85636133,-214.520524953,210.824538922],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_620:=[[493.175582406,-220.607881713,204.737182162],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_41:=[[419.346747362,-319.100549452,108.244514299],[0.270368703,-0.65272779,0.653834706,0.270827203],[-1,-1,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_101:=[[387.636989879,-319.100238743,108.244825372],[0.000324208,-0.000782708,-0.923879201,-0.382683295],[-1,1,-1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_91:=[[387.636989879,-319.100238743,108.244825372],[0.270368703,-0.65272779,0.653834706,0.270827203],[-1,-1,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_630:=[[513.875134874,-222.233714642,203.111349233],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_640:=[[516.73396308,-221.172702514,204.172361361],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_650:=[[520.421448763,-217.560819762,207.784244114],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_660:=[[527.981298221,-214.370011606,210.975052269],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_670:=[[529.620893624,-212.836310543,212.508753332],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_680:=[[530.203000001,-210.958292552,214.386771323],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_690:=[[530.203,-178.298220359,247.046843517],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_700:=[[552.085101946,-178.298220359,247.046843517],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_710:=[[553.422099457,-185.708024588,239.637039288],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_720:=[[544.498569545,-189.70605996,235.639003916],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_63:=[[403.492006247,-329.10015773,110.387041776],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_64:=[[419.347006247,-325.17147245,114.315727048],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_62:=[[403.492006247,-319.200662803,100.48754683],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_61:=[[403.492006247,-329.10015773,110.387041776],[0,0,0.923879533,0.382683432],[-1,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget HomPos\_2:=[[319,-691.847555092,1004.85],[0.353553391,-0.612372436,0.612372436,0.353553391],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

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!

! Module: Module1

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! Description:

! <Insert description here>

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! Author: Jonathan Arreola

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! Version: 1.0

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!

! Procedure main

!

! This is the entry point of your program

!

!\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PROC main()

!Add your code here

!Main routine where all of the subrutines all called out.

mH\_Path\_Home;

mA\_Path\_Edge;

mB\_Path\_Cil4;

mC\_Path\_Cil3;

mD\_Path\_Cil2;

mE\_Path\_Cil1;

mF\_Path\_SHoles;

mG\_Path\_BHoles;

mH\_Path\_Home;

mI\_Scanning;

ENDPROC

!Edge (leftside) deburring subrutine

PROC mA\_Path\_Edge()

WaitTime 3;

MoveJ Target\_61,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_62,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_63,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ Target\_64,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_70,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_80,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_90,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_100,Target\_110,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_120,Target\_130,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_140,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_150,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_160,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_170,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_180,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_190,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_200,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_210,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_220,Target\_230,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_240,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_250,Target\_260,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_270,Target\_280,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_290,Target\_300,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_310,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_320,Target\_330,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_340,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_350,Target\_360,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_370,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_380,Target\_390,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_400,Target\_410,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_420,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_430,Target\_440,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_450,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_460,Target\_470,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_480,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_490,Target\_500,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_510,Target\_520,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_530,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_540,Target\_550,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_560,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_570,Target\_580,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_590,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_600,Target\_610,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_620,Target\_630,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_640,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_650,Target\_660,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_670,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_680,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_690,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_700,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_710,Target\_720,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_10,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC Target\_20,Target\_30,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_40,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_50,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_60,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_70,v500,fine,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL Target\_64,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

ENDPROC

!Cilinder 4 (left side) deburring subrutine

PROC mB\_Path\_Cil4()

MoveJ m\_Target\_742,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_741,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_740,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC m\_Target\_730,m\_Target\_720,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC m\_Target\_710,m\_Target\_703,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_703,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_702,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_742,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

ENDPROC

!Cilinder 3 (left side) deburring subrutine

PROC mC\_Path\_Cil3()

MoveJ m\_Target\_792,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_791,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_790,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC m\_Target\_780,m\_Target\_770,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC m\_Target\_760,m\_Target\_753,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_752,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_751,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

ENDPROC

!Cilinder 2 (left side) deburring subrutine

PROC mD\_Path\_Cil2()

MoveJ m\_Target\_842,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_841,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_840,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC m\_Target\_830,m\_Target\_820,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC m\_Target\_810,m\_Target\_803,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_802,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_801,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

ENDPROC

!Cilinder 1 (left side) deburring subrutine

PROC mE\_Path\_Cil1()

MoveJ m\_Target\_892,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_891,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_890,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC m\_Target\_880,m\_Target\_870,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC m\_Target\_860,m\_Target\_853,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_852,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_851,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

ENDPROC

!Small holes (left side) deburring subrutine

PROC mF\_Path\_SHoles()

MoveJ m\_Target\_1082,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1081,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1080,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1072,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1071,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1070,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1062,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1061,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1060,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1052,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1051,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1050,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1042,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1041,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1040,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1032,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1031,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1030,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1022,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1021,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1020,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1012,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1011,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1010,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1002,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1001,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1000,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_992,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_991,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_990,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_982,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_981,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_980,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_972,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_971,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_970,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_962,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_961,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_960,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_952,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_951,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_950,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_942,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_941,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_940,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_932,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_931,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_930,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_922,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_921,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_920,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_912,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_911,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_910,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_902,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_901,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_900,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1192,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1191,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1190,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1182,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1181,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1180,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1172,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1171,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1170,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1162,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1161,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1160,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1152,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1151,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1150,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1142,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1141,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1140,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1132,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1131,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1130,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1122,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1121,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1120,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1112,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1111,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1110,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1102,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1101,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1100,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1092,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1091,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1090,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

ENDPROC

!Big holes (right side) deburring subrutine

PROC mG\_Path\_BHoles()

MoveJ m\_Target\_1372,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1371,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1370,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC m\_Target\_1360,m\_Target\_1350,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC m\_Target\_1340,m\_Target\_1332,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1331,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1330,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1322,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1321,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1320,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC m\_Target\_1310,m\_Target\_1300,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC m\_Target\_1290,m\_Target\_1282,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1281,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1280,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveJ m\_Target\_1272,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1271,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1270,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC m\_Target\_1260,m\_Target\_1250,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveC m\_Target\_1240,m\_Target\_1230,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1201,v500,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

MoveL m\_Target\_1200,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

ENDPROC

!Move Home (right side)

PROC mH\_Path\_Home()

MoveJ HomPos\_2,v1000,z100,MyDeburringTool\WObj:=EngineStand\_Wobj;

ENDPROC

!Scan the Engine block for deffects

PROC mI\_Scanning()

SetDO GoHome\_2,0;

SetDO StartScan\_2,1;

SetDO StartScan\_2,0;

SetDO GoHome\_2,1;

SetDO ScanNOK\_2,0;

SetDO ScanOK\_2,1;

ENDPROC

!End of the Task 2

ENDMODULE

# **Engine Case Assembly (Assignment Part 2b)**

## **Task 1**

### MODULE Module1

!Declaration of global variables for the Sync of tasks

PERS tasks taskNames{3} := [ ["T\_ROB1"],["T\_ROB2"],["T\_ROB3"] ];

VAR syncident EngCasesReady;

!Declaration of targets

CONST robtarget Target\_10:=[[-619.794919243,0,1755],[0.5,0,0.866025404,0],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_20:=[[-619.79498187,0,1385.287030131],[0.500000009,0,0.866025399,0],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Work\_Home:=[[-1499.23,-940,1911.89],[0,-0.707106781,0,0.707106781],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Lower\_EC\_App:=[[698.618,496.69,869.98],[0.5,-0.5,0.5,0.5],[-2,1,-2,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Lower\_EC\_Pick:=[[698.618,496.69,169.98],[0.5,-0.5,0.5,0.5],[-2,1,-2,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Lower\_EC\_Dep:=[[-1876,60,1413.01],[0,-0.707106781,0,0.707106781],[-1,0,-1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Lower\_EC\_Place:=[[-1876,60,263.95],[0,-0.707106781,0,0.707106781],[-1,1,-2,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Upper\_EC\_App:=[[-1408.9,-2481.17,866.62],[0,-0.707106781,0,0.707106781],[0,-1,0,2],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Upper\_EC\_Pick:=[[-1408.9,-2481.17,137.56],[0,-0.707106781,0,0.707106781],[0,-1,0,2],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Upper\_EC\_Dep:=[[-1876,60,1413.01],[0.707106781,0,-0.707106781,0],[-1,0,1,2],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Upper\_EC\_Place:=[[-1876,60,443.5],[0.707106781,0,-0.707106781,0],[-1,0,1,2],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Upper\_EC\_ChangeOrientation:=[[-1408.9,-1481.17,1366.62],[0.5,0.5,-0.5,-0.5],[0,-1,0,2],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Work\_Home\_2:=[[-1499.23,-940,1911.89],[0,-0.707106781,0,0.707106781],[-1,0,0,2],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Robot\_Home:=[[-2385.29409068,212.195768592,285.312821759],[0.231846622,0.766953125,0.402874108,-0.442405358],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget NewJetGripper\_App:=[[430.00022697,1533.574636048,752.259389526],[0.707104142,-0.001932079,0.707100529,0.002973465],[1,2,2,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget NewJetGripper\_Place:=[[430.000227448,1534.311011382,252.259931775],[0.707104142,-0.001932079,0.707100529,0.002973465],[1,2,-2,2],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget NewJetGripper\_Dep:=[[-69.987740365,1530.842291645,252.254822732],[0.707104142,-0.001932079,0.707100529,0.002973465],[-1,0,-2,6],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Scanner\_Place:=[[-266.41546929,183.360564758,-284.730264417],[0.625832837,0.329140185,-0.626316899,0.328218131],[0,0,-2,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Scanner\_Dep:=[[-486.192094295,143.034003005,-284.789655432],[0.625832837,0.329140185,-0.626316899,0.328218131],[0,0,-2,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

!\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

!

! Module: Module1

!

! Description:

! <Insert description here>

!

! Author: TECVISTA

!

! Version: 1.0

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!\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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!

! Procedure main

!

! This is the entry point of your program

!

!\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PROC main()

!Add your code here

!Main routine where all of the subrutines are called from

LC\_Placement;

UC\_Placement;

ENDPROC

!Sub-routine for positioning the lower Engine case

PROC LC\_Placement()

MoveL Work\_Home,v1000,z100,My\_JetGripper\_1\WObj:=Workobject\_lower;

SetDO NewJetGripperOpen,1;

WaitTime 1;

SetDO NewJetGripperOpen,0;

SetDO NewJetGripperClose,0;

WaitTime 1;

MoveL Lower\_EC\_App,v1000,z100,My\_JetGripper\_1\WObj:=Workobject\_lower;

MoveL Lower\_EC\_Pick,v1000,z100,My\_JetGripper\_1\WObj:=Workobject\_lower;

WaitTime 1;

SetDO NewJetGripperClose,1;

WaitTime 1;

SetDO NewJetGripperClose,0;

MoveL Lower\_EC\_App,v1000,z100,My\_JetGripper\_1\WObj:=Workobject\_lower;

MoveL Lower\_EC\_Dep,v1000,z100,My\_JetGripper\_1\WObj:=Workobject\_lower;

MoveL Lower\_EC\_Place,v1000,z100,My\_JetGripper\_1\WObj:=Workobject\_lower;

WaitTime 1;

SetDO NewJetGripperOpen,0;

SetDO NewJetGripperOpen,1;

WaitTime 1;

MoveL Lower\_EC\_Dep,v1000,z100,My\_JetGripper\_1\WObj:=Workobject\_lower;

MoveL Work\_Home,v1000,z100,My\_JetGripper\_1\WObj:=Workobject\_lower;

ENDPROC

!Sub-routine for positioning the upper Engine case

PROC UC\_Placement()

SetDO DI\_Op\_Up,1;

SetDO DI\_CL\_UP,0;

MoveJ Work\_Home\_2,v1000,z100,My\_JetGripper\_1\WObj:=Workobject\_lower;

MoveL Upper\_EC\_App,v500,z100,My\_JetGripper\_1\WObj:=Workobject\_lower;

MoveL Upper\_EC\_Pick,v500,z100,My\_JetGripper\_1\WObj:=Workobject\_lower;

SetDO DI\_Op\_Up,0;

WaitTime 1;

SetDO DI\_CL\_UP,1;

WaitTime 1;

MoveL Upper\_EC\_App,v500,z100,My\_JetGripper\_1\WObj:=Workobject\_lower;

MoveJ Upper\_EC\_ChangeOrientation,v500,z100,My\_JetGripper\_1\WObj:=Workobject\_lower;

MoveJ Upper\_EC\_Dep,v500,z100,My\_JetGripper\_1\WObj:=Workobject\_lower;

MoveL Upper\_EC\_Place,v500,z100,My\_JetGripper\_1\WObj:=Workobject\_lower;

WaitTime 1;

SetDO DI\_CL\_UP,0;

SetDO DI\_Op\_Up,1;

WaitTime 1;

MoveL Upper\_EC\_Dep,v500,z100,My\_JetGripper\_1\WObj:=Workobject\_lower;

MoveJ Work\_Home\_2,v1000,z100,My\_JetGripper\_1\WObj:=Workobject\_lower;

WaitSyncTask\InPos,EngCasesReady,taskNames;

ENDPROC

ENDMODULE

## **Task 2**

### MODULE Module1

!Declaration of global variables for the Sync of tasks

PERS tasks taskNames{3} := [ ["T\_ROB1"],["T\_ROB2"],["T\_ROB3"] ];

PERS tasks taskNames\_bolts{2} := [ ["T\_ROB2"],["T\_ROB3"] ];

VAR syncident NutPlaced;

VAR syncident EngCasesReady;

!Declaration of targets

CONST robtarget Target\_10:=[[-130.880301958,-1630.880301958,1598.1],[0.461939766,-0.331413574,0.800103145,0.191341716],[0,-1,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Target\_20:=[[-130.880308921,-1630.880308921,1372.086509772],[0.461939772,-0.331413573,0.800103142,0.191341719],[-1,0,-1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Work\_Home:=[[898.994182847,-10.56058663,654.739697818],[0.022752379,0.174305087,0.976147819,0.127418606],[1,0,-1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Bolt\_1\_App:=[[496.08,53.78,435.18],[0,0.642787609,0.766044443,0],[1,0,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Bolt\_1\_Pick:=[[488.469990059,52.438149938,333.10944763],[0.083900619,0.637288473,0.759490826,0.099988865],[1,0,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Bolt\_1\_1:=[[496.08,53.78,435.18],[0,0.642787609,0.766044443,0],[1,0,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Bolt\_1\_2:=[[1142.556607987,-91.439923412,435.179979232],[-0.000000005,0.947334415,0.320246009,-0.000000009],[1,0,1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Bolt\_1\_3:=[[1319.829319215,-554.809425235,534.185000382],[0.00973424,-0.801462017,-0.597441096,-0.025060253],[0,0,0,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Bolt\_1\_4:=[[1294.14966443,-999.148576507,633.367307027],[0.089968374,0.740937383,0.655961024,0.112394935],[0,0,-1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Bolt\_1\_Place:=[[1301.680422516,-998.11827104,594.580163306],[0.07702353,0.742394698,0.657822682,0.100929719],[0,0,-1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Bolt\_1\_Dep:=[[1294.14966443,-999.148576507,633.367307027],[0.089968374,0.740937383,0.655961024,0.112394935],[0,0,-1,0],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

!\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

!

! Module: Module1

!

! Description:

! <Insert description here>

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! Author: TECVISTA

!

! Version: 1.0

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!\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

!

! Procedure main

!

! This is the entry point of your program

!

!\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PROC main()

!Add your code here

!Main routine where all of the subrutines are called from

WaitForEnginePlacement;

Bolt\_1;

ENDPROC

!Sub-routine for positioning the bolts

PROC Bolt\_1()

VAR num counter:=0;

WHILE counter < 48 DO

MoveL Work\_Home,v1000,z200,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Bolts;

SetDO RP\_Rotate,0;

SetDO BG\_Open,1;

SetDO BG\_Open,0;

SetDO BG\_Close,0;

WaitTime\InPos,0.5;

MoveL Bolt\_1\_App,v1000,z200,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Bolts;

MoveL Bolt\_1\_Pick,v400,fine,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Bolts;

WaitTime 1;

SetDO BG\_Close,1;

WaitTime 1;

MoveL Bolt\_1\_1,v400,fine,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Bolts;

MoveL Bolt\_1\_2,v1000,z200,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Bolts;

MoveL Bolt\_1\_3,v1000,z200,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Bolts;

MoveL Bolt\_1\_4,v400,fine,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Bolts;

MoveL Bolt\_1\_Place,v50,fine,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Bolts;

WaitSyncTask\InPos,NutPlaced,taskNames\_bolts;

SetDO BG\_Close,0;

SetDO BG\_Open,1;

WaitTime 1;

MoveL Bolt\_1\_Dep,v400,fine,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Bolts;

MoveL Work\_Home,v1000,z200,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Bolts;

SetDO RP\_Rotate,1;

incr counter;

ENDWHILE

SetDO RP\_Rotate,0;

ENDPROC

!Sub-routine for waiting for the first robot to position both of the engine cases

PROC WaitForEnginePlacement()

WaitSyncTask EngCasesReady,taskNames;

ENDPROC

ENDMODULE

## **Task 3**

### MODULE Module1

!Declaration of global variables for the Sync of tasks

PERS tasks taskNames{3} := [ ["T\_ROB1"],["T\_ROB2"],["T\_ROB3"] ];

PERS tasks taskNames\_bolts{2} := [ ["T\_ROB2"],["T\_ROB3"] ];

!Declaration of targets

VAR syncident NutPlaced;

VAR syncident EngCasesReady;

CONST robtarget Work\_Home:=[[-59.118445156,-113.170686914,707.539027516],[0.343160906,-0.593494492,-0.308953677,-0.659205967],[-2,0,1,1],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Nut\_1\_App:=[[-88.623857344,-18.691000268,328.87535835],[0.343160906,-0.593494492,-0.308953677,-0.659205967],[-2,0,1,1],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Nut\_1\_Pick:=[[-85.495384053,11.120620398,315.297520302],[0.343160906,-0.593494492,-0.308953677,-0.659205967],[-2,0,1,1],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Nut\_1\_1:=[[-88.623857344,-18.691000268,328.87535835],[0.343160906,-0.593494492,-0.308953677,-0.659205967],[-2,0,1,1],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Nut\_1\_2:=[[-918.037324963,-191.940529407,328.87539871],[0.686476743,-0.256332266,-0.618046784,-0.284713231],[-1,0,1,1],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Nut\_1\_3:=[[-930.781757766,-1016.357395443,339.627303705],[0.726566588,0.17405522,-0.632225455,0.205174919],[-1,0,1,1],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Nut\_1\_4:=[[-1008.379,-1151.558,524.44],[0.707106781,0,-0.707106781,0],[0,0,1,1],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Nut\_1\_Place:=[[-1005.466159495,-1151.558,563.338989948],[0.743144825,0,-0.669130607,0],[0,0,1,1],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Nut\_1\_Dep:=[[-1008.379,-1151.558,524.44],[0.707106781,0,-0.707106781,0],[0,0,1,1],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Nut\_1\_Dep\_2:=[[-907.561715257,-1005.754011639,673.345063637],[0.719827132,-0.018938718,-0.693636466,0.018938803],[0,0,1,1],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

CONST robtarget Nut\_1\_Dep\_3:=[[-771.802562541,-136.355974763,707.538998821],[0.670015331,-0.289492849,-0.603226267,-0.321545357],[-2,0,1,1],[9E+09,9E+09,9E+09,9E+09,9E+09,9E+09]];

!\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

!

! Module: Module1

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! Description:

! <Insert description here>

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! Author: TECVISTA

!

! Version: 1.0

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!

! Procedure main

!

! This is the entry point of your program

!

!\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PROC main()

!Add your code here

!Main routine where all of the subrutines are called from

WaitForEnginePlacement\_2;

Nut\_1;

ENDPROC

!Sub-routine for waiting for the first robot to position both of the engine cases

PROC WaitForEnginePlacement\_2()

WaitSyncTask EngCasesReady,taskNames;

ENDPROC

!Sub-routine for positioning the nuts

PROC Nut\_1()

VAR num counter:=0;

WHILE counter < 48 DO

MoveL Work\_Home,v1000,z100,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Nuts;

SetDO NG\_Open,1;

SetDO NG\_Close,0;

SetDO NG\_Open,0;

MoveL Nut\_1\_App,v500,z100,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Nuts;

MoveL Nut\_1\_Pick,v1000,z100,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Nuts;

WaitTime 1;

SetDO NG\_Close,1;

WaitTime 1;

MoveL Nut\_1\_1,v1000,z100,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Nuts;

MoveL Nut\_1\_2,v500,z100,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Nuts;

MoveL Nut\_1\_3,v1000,z100,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Nuts;

MoveL Nut\_1\_4,v1000,z100,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Nuts;

MoveL Nut\_1\_Place,v50,z100,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Nuts;

WaitSyncTask\InPos,NutPlaced,taskNames\_bolts;

SetDO NG\_Close,0;

SetDO NG\_Open,1;

WaitTime 1;

MoveL Nut\_1\_Dep,v1000,z100,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Nuts;

MoveL Nut\_1\_Dep\_2,v1000,z100,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Nuts;

MoveL Nut\_1\_Dep\_3,v1000,z100,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Nuts;

MoveL Work\_Home,v1000,z100,Updated\_Bolt\_Gripper\_1\WObj:=Workobject\_Nuts;

incr counter;

ENDWHILE

ENDPROC

ENDMODULE