Gcode Syntax Kuka Example

$FastPathPreCheck = TRUE	Estimated Process time is now better in accordance to the PRO
number of cases = 194760	Process Mode & Cases
number of movement cases = 194760	Movements
Case 1 = 1	
Case 2 = 194759	
Case 3 = 1	Now that this ensures print, is used for the starting point and while printing the TCP has to be in there (is a point outside of it, the program will stop). Later it is used for multiplying Print.csv
Case 4 = 1	
Case 5 = 1	
Case 6 = 1	
Case 7 = 1777	
Case 8 = 194760	
Parts = E1709348 9287	Diplomat Fabiano Armani
Code out	Code Generated with Grasshopper Kuka
	Type "in the end of the movement below - inbound"

Inclusion without moving	E1 for Linear movement	E6Pos: Incremental dimension (here just for the Extrusionmovement)	E6Axis: Incremental Extruder movement, here Extrusion movement	E6Axis: Absolute dimension (for everything else)	Need in "mm Quid went to give a limit without movement						
	E1	E6Pos: 0.0, E6Axis: 0.0	E6Pos: 0.0, E6Axis: 0.0	E6Axis: 0.0							
		! Never program E1=0 without a E1!! directly after Extrusion. The best would be to implement the Extruder Coordinate anyway we set the this bookmarked									
Fan setting	Fans Speed Extruder 1!!		Fans speed Extruder 2!!								
	V.E.GLOBAL_BOOL[14] = TRUE		V.E.GLOBAL[3] = 80								
printbed temperature setting	Turn heatline table used! on		heatline table zone 1 temperature	Turn heatline table used! on	heatline table zone 2 temperature	Turn heatline table used! on	heatline table zone 3 temperature	Turn heatline table used! on	heatline table zone 4 temperature	Turn heatline table used! on	heatline table zone 5 temperature
	V.E.GLOBAL_BOOL[21] = TRUE		not defined yet	V.E.GLOBAL_BOOL[22] = TRUE	not defined yet	V.E.GLOBAL_BOOL[15] = TRUE	not defined yet	V.E.GLOBAL_BOOL[16] = TRUE	not defined yet	V.E.GLOBAL_BOOL[17] = TRUE	not defined yet
Extruder temperature setting	Turn Hitze zone used! on		Hitze zone temperature	Turn heatline extruder used! on	heatline extruder zone 1 temperature	Turn heatline extruder used! on	heatline extruder zone 2 temperature	Turn heatline nozzle used on	heatline nozzle zone temperature		
	V.E.GLOBAL_BOOL[4] = TRUE		V.E.GLOBAL[4] = 80	V.E.GLOBAL_BOOL[3] = TRUE	V.E.GLOBAL[5] = 180	V.E.GLOBAL_BOOL[1] = TRUE	V.E.GLOBAL[6] = 180	V.E.GLOBAL_BOOL[18] = TRUE	V.E.GLOBAL[7] = 180	V.E.GLOBAL_BOOL[19] = TRUE	V.E.GLOBAL[8] = 180

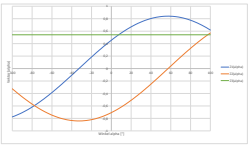
								x-y-z" sequence, intrinsic rotations					
movel/joint/circ	<nonumber optional, for tests, we didn't use>	E1/for Linear movement	Processdata (PowerPrinted Data)	Motion velocity	Destination	Euler-angle 1 o.= rotation around z	Euler-angle 2 o.= rotation around y	Euler-angle 3 o.= rotation around x	E6Pos: Incremental dimension (here just for the Extrusionmovement)	Obstacle? Values	E6Pos: Absolute dimension (for everything else)	Need in mm/min, not influenced if Override is set	Notes
LIN		E1=0.0	CONT_DATA	TCP=400 mm/s	{X 1181.1393	A=0.0	B 56.43008	C=0.0					
PTP		E1=0.0	CONT_DATA	TCP=100 %	{X 1181.4757	A=0.0	B 56.43008	C=0.0					
LIN		E1=0.0	CONT_DATA	TCP=400 mm/s	{X 1181.56	A=0.0	B 56.31168	C=0.0	E6Pos: 0.0, E6Axis: 0.0	FALSE	E6Axis: 0.0		
LIN		E1=0.0	CONT_DATA	TCP=400 mm/s	{X 1181.5748	A=0.0	B 56.31168	C=0.0	E6Pos: 0.0, E6Axis: 0.0	FALSE	E6Axis: 0.0		
LIN		E1=0.0	CONT_DATA	TCP=400 mm/s	{X 1181.5748	A=0.0	B 56.31168	C=0.0	E6Pos: 0.0, E6Axis: 0.0	FALSE	E6Axis: 0.0		
LIN		E1=0.0	CONT_DATA	TCP=400 mm/s	{X 1181.5748	A=0.0	B 56.31168	C=0.0	E6Pos: 0.0, E6Axis: 0.0	FALSE	E6Axis: 0.0		
End of program/back to start position		Endmovement											

Case	Variable		Kuka Vaerk Prebeskrivelse
; TYPE SHORT	= Robot WAY		; WAY_kuka.src
; TYPE SUPPORT-REFERENCE	= Robot Left		; WAY_kuka.src
; Robot print pillar			;
; Robot print base			; WAY_kuka.src
; TYPE SUPPORT	= Robot extruder		; WAY_kuka.src
; TYPE WAY-TEXTUR	= Robot nozzle perimeter		; WAY_kuka.src
Services	= Robot bridge		; WAY_kuka.src
DEF PTP20			$VEL.A = 100
; Jessica Project			
; ADD-ON-MOVE			
; TYPE WAY-TEXTUR			
; NUM_RAW_COMPONENTS: DEFAULT = 50 000 00			
; TIME_ELAPSED: 215, 5000 ms			
; End of Header			
LOOP_STRUCTUred Spray_start()			$VEL.CP=0.700
; LIN - double output			

x-y-z" sequence, intrinsic rotations

$$\begin{pmatrix} \cos(c)\cos(b) & \cos(c)\sin(b)\sin(a)-\sin(c)\cos(a) & \cos(c)\sin(b)\cos(a)+\sin(c)\sin(a) \\ \sin(c)\cos(b) & \sin(c)\sin(b)\sin(a)+\cos(c)\cos(a) & \sin(c)\sin(b)\cos(a)-\cos(c)\sin(a) \\ -\sin(b) & \cos(b)\sin(a) & \cos(b)\cos(a) \end{pmatrix}$$

x-Alpha	20.000000	y-Beta	20.000000	z-Gamma	20.000000
x-Beta	0.349066	y-Alpha	0.349066	z-Alpha	0.349066
x-Gamma	0.785398	y-Gamma	0.785398	z-Beta	0.785398
x-Dist	0.000000	y-Dist	0.000000	z-Dist	0.000000
x1	1.000000	x2	0.939693	x3	0.766044
x4	0.500000	x5	0.173648	x6	-0.173648

0.778466611	0.385260897	-0.49955193
0.260358834	0.859927666	0.436000616
0.602788	-0.32434702	0.728277753
x-vector	y-vector	z-vector
1	1	1

Alpha	Sec1	Sec1	Z1	Z2	Z3
-100	-0.9848078	0.1736482	-0.7752960719	0.6248339532	0.543579125
-99	-0.9876883	-0.1564344	-0.7696839139	-0.6356077218	0.543579125
-98	-0.9902681	-0.1391731	-0.7638356168	-0.6463468414	0.543579125
-97	-0.9925461	-0.1218693	-0.7577534539	-0.6569510918	0.543579125
-96	-0.9945222	-0.1045284	-0.7514393995	-0.6674119787	0.543579125
-95	-0.996195	-0.0871557	-0.7448953309	-0.6777214177	0.543579125
-94	-0.9975641	-0.0697564	-0.7381239181	-0.6878720223	0.543579125
-93	-0.9986295	-0.0523360	-0.7311274234	-0.6978564116	0.543579125
-92	-0.9993911	-0.0348995	-0.7239084182	-0.7076674183	0.543579125
-91	-0.9998468	-0.0174532	-0.7164693666	-0.7172981012	0.543579125
-90	-1.000000	0.0000000	-0.7088126781	-0.7267418478	0.543579125
-89	-0.9998468	0.0174532	-0.7009408327	-0.7359923907	0.543579125
-88	-0.9993911	0.0348995	-0.6928564777	-0.7450437179	0.543579125
-87	-0.9986295	0.0523360	-0.6845622268	-0.7538902802	0.543579125
-86	-0.9975641	0.0697564	-0.6760607629	-0.7625268977	0.543579125
-85	-0.996195	0.0871557	-0.6673548347	-0.7709488651	0.543579125
-84	-0.9945222	0.1045284	-0.6584472564	-0.7791518492	0.543579125
-83	-0.9925461	0.1218693	-0.6493408999	-0.7871320837	0.543579125
-82	-0.9902681	0.1391731	-0.6400386931	-0.7948863693	0.543579125
-81	-0.9876883	0.1564344	-0.6305436162	-0.8024121703	0.543579125
-80	-0.9848078	0.1736482	-0.6208587966	-0.8097075161	0.543579125
-79	-0.981638	0.1908090	-0.6109874048	-0.8167709911	0.543579125
-78	-0.978138	0.2079112	-0.6009327481	-0.8236015205	0.543579125
-77	-0.974370	0.2249511	-0.5906981695	-0.8301984589	0.543579125
-76	-0.970296	0.2419219	-0.5802871435	-0.8365623854	0.543579125
-75	-0.965926	0.2588214	-0.5697031681	-0.8426940004	0.543579125
-74	-0.961262	0.2756437	-0.5589499197	-0.8485943107	0.543579125
-73	-0.956305	0.2923852	-0.5480311693	-0.8542644193	0.543579125
-72	-0.951057	0.3090417	-0.5369507239	-0.8597057233	0.543579125
-71	-0.945519	0.3256095	-0.5257124249	-0.8649198017	0.543579125
-70	-0.939693	0.3420858	-0.5143201507	-0.8699083063	0.543579125
-69	-0.933580	0.3584668	-0.4927778897	-0.8746730491	0.543579125
-68	-0.927184	0.3747496	-0.4810898988	-0.8792159866	0.543579125
-67	-0.920505	0.3909311	-0.4692603016	-0.8835392106	0.543579125
-66	-0.913545	0.4070087	-0.4572934693	-0.8876449355	0.543579125
-65	-0.906308	0.4229818	-0.4451938145	-0.7107739781	0.543579125
-64	-0.898794	0.4388453	-0.4329658888	-0.7035278605	0.543579125
-63	-0.891007	0.4545965	-0.4206143721	-0.6960911997	0.543579125
-62	-0.882948	0.4702272	-0.4081440691	-0.7633835665	0.543579125
-61	-0.874620	0.4857353	-0.3955598121	-0.7555148815	0.543579125
-60	-0.866025	0.5010200	-0.3828667097	-0.7475778835	0.543579125
-59	-0.857167	0.5161767	-0.3700698511	-0.7394784255	0.543579125
-58	-0.848048	0.5312018	-0.3571744015	-0.7312215203	0.543579125
-57	-0.838671	0.5460899	-0.3441855981	-0.7228123868	0.543579125
-56	-0.829038	0.5608363	-0.3311086525	-0.7142563147	0.543579125
-55	-0.819152	0.5754378	-0.3179488388	-0.7055587037	0.543579125
-54	-0.809017	0.5898875	-0.3047115004	-0.6967250172	0.543579125
-53	-0.798636	0.6041815	-0.2914020453	-0.6877607879	0.543579125
-52	-0.788011	0.6183161	-0.2780259387	-0.6786716183	0.543579125
-51	-0.777146	0.6322860	-0.2645887966	-0.6694631802	0.543579125
-50	-0.766044	0.6460872	-0.2510962788	-0.6601412139	0.543579125
-49	-0.754710	0.6597158	-0.2375540337	-0.6507116284	0.543579125
-48	-0.743145	0.6731674	-0.2239678923	-0.6411803999	0.543579125
-47	-0.731354	0.6864378	-0.2103436564	-0.6315534705	0.543579125
-46	-0.719340	0.6995231	-0.1966872035	-0.6218368472	0.543579125
-45	-0.707107	0.7123194	-0.1830044747	-0.6120366003	0.543579125
-44	-0.694658	0.7248230	-0.1693014733	-0.6021588625	0.543579125
-43	-0.681998	0.7370301	-0.1555841625	-0.5922098262	0.543579125
-42	-0.669131	0.7489372	-0.1418585635	-0.5821957413	0.543579125
-41	-0.656059	0.7605408	-0.1281306539	-0.5721229136	0.543579125
-40	-0.642788	0.7718374	-0.1144064652	-0.5619977021	0.543579125
-39	-0.629320	0.7828236	-0.1006921809	-0.5518265166	0.543579125
-38	-0.615661	0.7934962	-0.0869940344	-0.5416158161	0.543579125
-37	-0.601815	0.8038520	-0.0733183062	-0.5313721064	0.543579125
-36	-0.587785	0.8138881	-0.0596713211	-0.5211019373	0.543579125
-35	-0.573576	0.8236015	-0.0460594437	-0.5108119004	0.543579125
-34	-0.559193	0.8329894	-0.0324890755	-0.5005086261	0.543579125
-33	-0.544639	0.8420491	-0.0189666532	-0.4901987804	0.543579125
-32	-0.529919	0.8507781	-0.0054986464	-0.4798890621	0.543579125
-31	-0.515038	0.8591739	0.0079884911	-0.4695861999	0.543579125
-30	-0.500000	0.8672340	0.0214662139	-0.4592969488	0.543579125
-29	-0.484810	0.8749563	0.0349350613	-0.4490280866	0.543579125
-28	-0.469472	0.8823368	0.0483910555	-0.4387863	0.543579125
-27	-0.453990	0.8893697	0.0618302059	-0.4285783526	0.543579125
-26	-0.438371	0.8960566	0.0752486109	-0.4184107639	0.543579125
-25	-0.422618	0.9023936	0.0886423	-0.4082900911	0.543579125
-24	-0.406737	0.9083805	0.1020073	-0.3982227	0.543579125
-23	-0.390731	0.9140165	0.1153398	-0.3882148	0.543579125
-22	-0.374607	0.9193016	0.1286359	-0.3782726	0.543579125
-21	-0.358368	0.9242343	0.1418916	-0.3684021	0.543579125
-20	-0.342020	0.9288133	0.1551029	-0.3586093	0.543579125
-19	-0.325568	0.9330374	0.1682659	-0.3489001	0.543579125
-18	-0.309017	0.9369053	0.1813766	-0.3392803	0.543579125
-17	-0.292372	0.9404161	0.1944312	-0.3297556	0.543579125
-16	-0.275637	0.9435686	0.2074257	-0.3203317	0.543579125
-15	-0.258819	0.9463619	0.2203561	-0.3110139	0.543579125
-14	-0.241922	0.9487946	0.2332186	-0.3018075	0.543579125
-13	-0.224951	0.9508659	0.2460092	-0.2927174	0.543579125
-12	-0.207912	0.9525748	0.2587239	-0.2837482	0.543579125
-11	-0.190809	0.9539207	0.2713588	-0.2749044	0.543579125
-10	-0.173648	0.9549028	0.2839101	-0.2661902	0.543579125
-9	-0.156434	0.9555208	0.2963738	-0.2576095	0.543579125
-8	-0.139173	0.9557739	0.3087462	-0.2491659	0.543579125
-7	-0.121869	0.9556616	0.3210234	-0.2408628	0.543579125
-6	-0.104528	0.9551832	0.3332017	-0.2327033	0.543579125
-5	-0.087156	0.9543384	0.3452774	-0.2246903	0.543579125
-4	-0.069756	0.9531268	0.3572469	-0.2168264	0.543579125
-3	-0.052336	0.9515480	0.3691067	-0.2091139	0.543579125
-2	-0.034899	0.9496019	0.3808534	-0.2015548	0.543579125
-1	-0.017452	0.9472883	0.3924838	-0.1941511	0.543579125
0	0.000000	0.9447072	0.4039949	-0.1869043	0.543579125
1	0.017452	0.9418586	0.4153837	-0.1798157	0.543579125
2	0.034899	0.9387427	0.4266475	-0.1728863	0.543579125
3	0.052336	0.9353599	0.4377837	-0.1661169	0.543579125
4	0.069756	0.9317104	0.4487898	-0.1595080	0.543579125
5	0.087156	0.9277947	0.4596636	-0.1530599	0.543579125
6	0.104528	0.9236132	0.4704029	-0.1467726	0.543579125
7	0.121869	0.9191666	0.4810059	-0.1406459	0.543579125
8	0.139173	0.9144558	0.4914708	-0.1346793	0.543579125
9	0.156434	0.9094816	0.5017962	-0.1288722	0.543579125
10	0.173648	0.9042452	0.5119809	-0.1232237	0.543579125
11	0.190809	0.8987477	0.5220239	-0.1177326	0.543579125
12	0.207912	0.8929906	0.5319245	-0.1123976	0.543579125
13	0.224951	0.8869755	0.5416822	-0.1072170	0.543579125
14	0.241922	0.8807044	0.5512968	-0.1021889	0.543579125
15	0.258819	0.8741794	0.5607683	-0.0973107	0.543579125
16	0.275637	0.8674028	0.5700971	-0.0925795	0.543579125
17	0.292372	0.8603772	0.5792838	-0.0879921	0.543579125
18	0.309017	0.8531053	0.5883294	-0.0835447	0.543579125
19	0.325568	0.8455901	0.5972351	-0.0792332	0.543579125
20	0.342020	0.8378347	0.6060026	-0.0750531	0.543579125
21	0.358368	0.8298427	0.6146339	-0.0709994	0.543579125
22	0.374607	0.8216177	0.6231312	-0.0670668	0.543579125
23	0.390731	0.8131636	0.6314970	-0.0632495	0.543579125
24	0.406737	0.8044845	0.6397340	-0.0595413	0.543579125
25	0.422618	0.7955848	0.6478453	-0.0559358	0.543579125
26	0.438371	0.7864693	0.6558341	-0.0524262	0.543579125
27	0.453990	0.7771429	0.6637039	-0.0490054	0.543579125
28	0.469472	0.7676108	0.6714584	-0.0456662	0.543579125
29	0.484810	0.7578784	0.6791013	-0.0424011	0.543579125
30	0.500000	0.7479517	0.6866367	-0.0392023	0.543579125
31	0.515038	0.7378366	0.6940685	-0.0360619	0.543579125
32	0.529919	0.7275393	0.7014010	-0.0329718	0.543579125
33	0.544639	0.7170661	0.7086386	-0.0299238	0.543579125
34	0.559193	0.7064234	0.7157858	-0.0269095	0.543579125
35	0.573576	0.6956177	0.7228471	-0.0239203	0.543579125
36	0.587785	0.6846557	0.7298275	-0.0209475	0.543579125
37	0.601815	0.6735440	0.7367318	-0.0179823	0.543579125
38	0.615661	0.6622895	0.7435653	-0.0150157	0.543579125
39	0.629320	0.6508992	0.7503333	-0.0120385	0.543579125
40	0.642788	0.6393803	0.7570414	-0.0090413	0.543579125
41	0.656059	0.6277402	0.7636953	-0.0060145	0.543579125
42	0.669131	0.6159865	0.7703011	-0.0029481	0.543579125
43	0.681998	0.6041270	0.7768650	0.0001677	0.543579125
44	0.694658	0.5921697	0.7833935	0.0033139	0.543579125
45	0.707107	0.5801228	0.7898933	0.0065139	0.543579125
46	0.719340	0.5679950	0.7963714	0.0097824	0.543579125
47	0.731354	0.5557949	0.8028350	0.0131350	0.543579125
48	0.743145	0.5435314	0.8092917	0.0165880	0.543579125
49	0.754710	0.5312137	0.8157494	0.0201581	0.543579125
50	0.766044	0.5188512	0.8222164	0.0238625	0.543579125
51	0.777146	0.5064536	0.8287012	0.0277191	0.543579125
52	0.788011	0.4940311	0.8352128	0.0317468	0.543579125
53	0.798636	0.4815945	0.8417606	0.0359654	0.543579125
54	0.809017	0.4691548	0.8483547	0.0403960	0.543579125
55	0.819152	0.4567234	0.8550054	0.0450611	0.543579125
56	0.829038	0.4443118	0.8617239	0.0499850	0.543579125
57	0.838671	0.4319320	0.8685220	0.0551941	0.543579125
58	0.848048	0.4195963	0.8754123	0.0607174	0.543579125
59	0.857167	0.4073172	0.8824081	0.0665865	0.543579125
60	0.866025	0.3951073	0.8895236	0.0728363	0.543579125
61	0.874620	0.3829796	0.8967739	0.0795052	0.543579125
62	0.882948	0.3709472	0.9041750	0.0866353	0.543579125
63	0.891007	0.3590232	0.9117442	0.0942732	0.543579125
64	0.898794	0.3472210	0.9194996	0.1024700	0.543579125
65	0.906308	0.3355542	0.9274607	0.1112824	0.543579125
66	0.913545	0.3240366	0.9356484	0.1207734	0.543579125
67	0.920505	0.3126824	0.9440857	0.1310139	0.543579125
68	0.927184	0.3015062	0.9527974	0.1420837	0.543579125
69	0.933580	0.2905230	0.9618108	0.1540727	0.543579125
70	0.939693	0.2797485	0.9711566	0.1670831	0.543579125
71	0.945519	0.2691988	0.9808693	0.1812317	0.543579125
72	0.951057	0.2588907	0.9909881	0.1966523	0.543579125
73	0.956305	0.2488412	1.0015579	0.2135000	0.543579125
74	0.961262	0.2390687	1.0126307	0.2319610	0.543579125
75	0.965926	0.2295914	1.0242680	0.2522566	0.543579125
76	0.970296	0.2204313	1.0365425	0.2746506	0.543579125
77	0.974370	0.2116102	1.0495429	0.2994555	0.543579125
78	0.978138	0.2031512	1.0633719	0.3270137	0.543579125
79	0.981638	0.1950768	1.0781513	0.3576116	0.543579125
80	0.984807	0.1874109	1.0940197	0.3915618	0.543579125
81	0.987688	0.1801818	1.1111268	0.4291757	0.543579125
82	0.990268	0.1734132	1.1296345	0.4707437	0.543579125
83	0.992546	0.1671348	1.1497109	0.5165165	0.543579125
84	0.994522	0.1613768	1.1715411	0.5667008	0.543579125
85	0.996195	0.1561716	1.1953209	0.6214511	0.543579125
86	0.997564	0.1515516	1.2212598	0.6808267	0.543579125
87	0.998630	0.1475536	1.2494910	0.7447193	0.543579125
88	0.999391	0.1442099	1.2801812	0.8129518	0.543579125
89	0.999848	0.1415517	1.3134351	0.8852966	0.543579125
90	1.000000	0.1396082	1.3493196	0.9614139	0.543579125
91	0.999848	0.1317652	0.4999566227	0.4667979967	0.543579125
92	0.999391	0.1238999	0.4983611331	0.4719510557	0.543579125
93	0.998630	0.1159196	0.4967239054	0.4769109695	0.543579125
94	0.997564	0.1078317	0.4950459	0.4816749	0.543579125
95	0.996195	0.0996436	0.4933283	0.4862403	0.543579125
96	0.994522	0.0913628	0.4915722	0.4906048	0.543579125
97	0.992546	0.0829969	0.4897787	0.4947663	0.543579125
98	0.990268	0.0745536	0.4879489	0.4987228	0.543579125
99	0.987688	0.0660405	0.4860841	0.5024725	0.543579125
100	0.984808	0.0574658	0.4841854	0.5060139	0.543579125