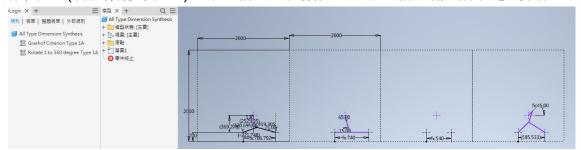
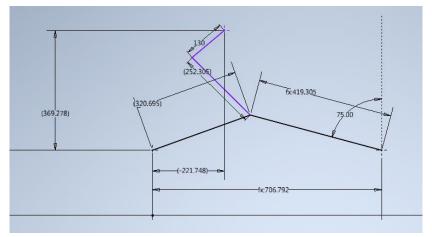
## 六連桿尺寸合成及計算 使用說明

作者: 顏澹寧 更新時間: 2024/12/13

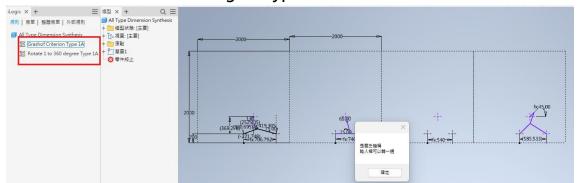
1. 開啟 All Type Dimension Synthesis.ipt 檔案。第一格是沖壓起始位置,第二格是沖壓結束位置(右極限肘節位置),第三格是左極限位置,第四格是輸入桿任意角度位置。



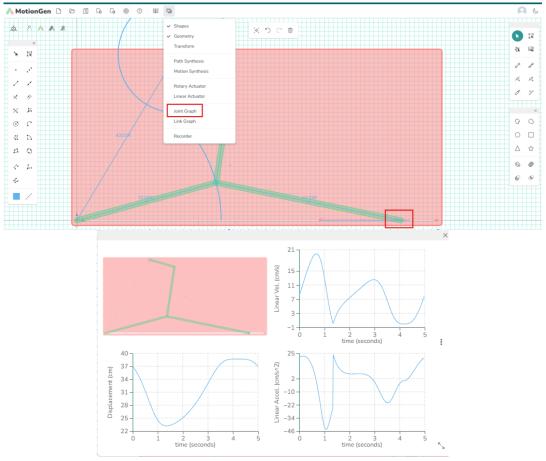
2. 根據設計變數(桿 2 尺寸、沖壓區間、四連桿傳力角、曲柄滑塊傳力角等等)設計尺寸,標註設為從動標註可放寬拘束。尺寸設計完畢記得按存檔,才會更新參數。



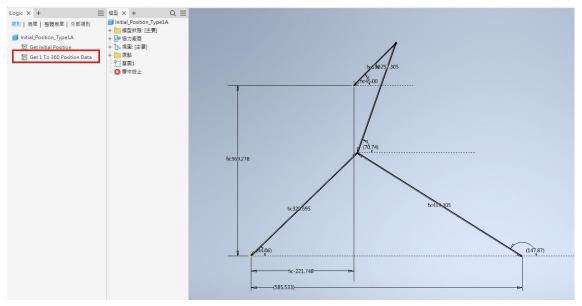
3. 看到左邊的 iLogic 規則,先執行 Grashoff Criterion Type 1A,確認四連桿能轉一圈後,再執行 Rotate 1 to 360 degree Type 1A,觀察第四格連桿旋轉一週情形。



4. 用 MotionGen 開啟 For Null Type 1A.motiongen 檔案。輸入得到的尺寸參數,在上方選單選擇 Joint Graph 後點選滑塊位置,確認位置速度加速度曲線是否平滑。



- 5. 開啟 MATLAB,執行 Generate Dimension Table\_2.m 檔案,得到全部 Type 尺寸表整理前.xlsx,用來獲得 Inventor 零件檔的所有參數。
- 6. 執行 GenerateDimensionTable\_3.m,得到全部 Type 尺寸表 整理後.xlsx,用來過 濾掉不必要的參數。
- 7. 執行 DivideDimensionForm\_1.m,將全部 Type 尺寸表 整理後.xlsx 分配成 Type 1A 尺寸表.xlsx,獲得 Type 1A 的尺寸參數。
- 8. 開啟 Initial\_Position\_Type1A.ipt·執行 Get 1 To 360 Position Data 規則,求出輸入 桿從 1~360 度的未知位置參數,並儲存到 Type 1A 初始位置表.xlsx。
- 9. 執行 GenerateBOMTable\_1.m,獲得所有桿件的質心長度(b),質心方位角(phi),質量(m)及轉動慣量(l),並儲存到 Type 1A 總組合 組合 1 BOM 表.xlsx。



10. 執行 Calculate\_All\_Type1A.m·求出輸入桿從 1~360 度的速度、加速度、機械利益、驅動力矩、搖撼力、搖撼力矩及接頭受力,並儲存到 Type 1A 計算結果表.xlsx。

	D. G	~ □		lype 1	A 計算結果表 [受保護	的磁視] - Excel		۶	搜尋			
富富	常用	插入 頁面	配置 公式	資料 校服	檢視 増益等	表 說明 A	nsys Response Surf	ace COMSOL 6	i.2			
)	受保護的檢視	小心,來自於	網際網路的檔案可能	も 有病毒・除非色	需要編輯,否則停留:	在 [受保護的檢視]。	中較為安全・	用編輯(E)				
1	~	: × ~	f <sub>x</sub> R1									
1	A	В	С	D	Е	F	G	н	1	J	К	L
R1	L	th3 t	h4	th5	R1d	th3d	th4d	th5d	R1dd	th3dd	th4dd	th5dd
m		rad r	ad	rad	m/s	rad/s	rad/s	rad/s	m/s^2	rad/s^2	rad/s^2	rad/s^2
0.	.695058502	1.34416836	0.402740484	2.8371444	0.778995763	1.75591911	5.1584362	1.459097141	6.707503488	58.42262258	24.45330555	3.0412568
0.	.693182395	1.340014564	0.41124893	2.830874218	0.796914226	1.73324025	5.177627243	1.462073143	7.006353892	59.32360087	26.10453125	3.3835924
0.	.691263772	1.335914978	0.41978797	2.824592202	0.814707158	1.710373343	5.195571865	1.464606717	7.314458856	60.235958	27.77537206	3.7297780
0.	.689302954	1.331870107	0.428355495	2.818300272	0.832353668	1.687290412	5.21225221	1.466693056	7.631927	61.15984788	29.4658142	4.0798843
0.	.687300316	1.327880459	0.436949427	2.812000349	0.849832459	1.663962398	5.227648827	1.468327039	7.958859525	62.09540383	31.17582121	4.4339805
0.	.685256283	1.323946696	0.445567653	2.805694387	0.867121595	1.640358481	5.241739925	1.469503057	8.295344948	63.04271946	32.90530993	4.792128
-		1.320069482		2.799384394	0.884198439	1.616445887	5.254501417	1.470215073	8.641459592	64.00185098	34.65415752	5.154386
0.	.681046001	1.316249602	0.462868194	2.793072323	0.901039843	1.592190148	5.265906886	1.470456613	8.997265281	64.97280915	36.42218776	5.52080
		1.312487929		2.786760253	0.917621814	1.56755464	5.275927255	1.470220658	9.362806354	65.95555054	38.20916312	5.891426
-		1.308785388		2.780450224	0.933919805	1.542500955	5.28453107	1.469499762	9.738110237	66.94997966	40.01478624	6.266280
-		1.305143043		2.774144367	0.949908301	1.516987919	5.291683589	1.46828585	10.1231801	67.95592389	41.83867179	6.645388
-		1.301562028		2.767844776	0.965561105	1.490972111	5.297347219	1.466570358	10.51799596	68.97313814	43.68035129	7.028755
_		1.298043619		2.761553649	0.980851113	1.46440766		1.464344098	10.92250967	70.00129026	45.53925442	7.416368
-		1.294589141		2.755273187	0.995750324	1.437245795	5.304041464	1.461597311	11.3366424	71.03995188	47.41470185	7.808199
-		1.291200096		2.749005657	1.010229755	1.409434887	5.304980153	1.458319565	11.76027884	72.08858122	49.3058812	8.204194
-												
_		1.287878106		2.742753347	1.02425937	1.380919925	5.304245531	1.454499759	12.19326256	73.14650739	51.21183156	8.6042770
-	.660217881	1.2846249		2.736518629	1.037808153	1.35164312		1.450126144	12.63539472	74.21293109	53.13144153	9.0083402
-		1.281442361		2.730303895	1.05084385	1.321542633	5.297530411	1.445186218	13.08642312	75.28688546	55.0634067	9.416245
-		1.278332534		2.724111607	1.063333091	1.290553275	5.291425737	1.439666761	13.54603999	76.36723441	57.00622402	9.8278150
-		1.275297633		2.717944277	1.075241241	1.258605876		1.433553781	14.01387314	77.4526441	58.9581598	10.24283
-		1.272339998		2.711804505	1.086532352	1.225627248	5.273377548	1.42683252	14.48948068	78.54156935	60.91723468	10.66102
_		1.269462195		2.70569491	1.097169204	1.191540041	5.261281623	1.419487447	14.97234141	79.63222356	62.88118547	11.08208
-		1.266666945		2.699618197	1.107113129	1.156262384	5.247027542	1.411502226	15.46184675	80.72255653	64.84744179	11.50562
0.	.642223426	1.263957199	0.602099357	2.693577194	1.116323958	1.119707831	5.230525834	1.40285967	15.95728999	81.81022462	66.81308885	11.93120
0.	.639555311	1.261336081	0.610695348	2.687574727	1.124760187	1.081785399	5.211681641	1.393541884	16.45786023	82.89257252	68.77484665	12.358307
0.	.636868074	1.258806994	0.619258317	2.68161373	1.13237874	1.04239915	5.190394263	1.383530139	16.96262628	83.96658733	70.72901464	12.78632
0.	.634163715	1.256373517	0.627784146	2.675697256	1.139135021	1.001448374	5.1665574	1.372804967	17.47053037	85.02888508	72.67145745	13.21457
0.	.631444342	1.254039523	0.636268558	2.669828377	1.144983063	0.958827652	5.140059137	1.361346243	17.9803747	86.07567026	74.59755363	13.64227
0.	.628712173	1.251809079	0.644707085	2.664010287	1.149875444	0.914426898	5.110782092	1.349133225	18.49081252	87.10271689	76.50217592	14.06852
0.	625969542	1.249686602	0.653095033	2.658246302	1.153763245	0.868131117	5.078603139	1.336144548	19.00032863	88.10531168	78.37962155	14.49230
	0.6232189	1.247676733	0.661427531	2.652539773	1.15659644	0.819821334	5.043394416	1.322358525	19.50723811	89.07825799	80.22361648	14.91249
0.	.620462818	1.245784395	0.669699484	2.646894174	1.158323839	0.769374577	5.005023372	1.307753176	20.00967062	90.01583573	82.02726761	15.32782
0.	617703991	1.24401484	0.677905569	2.641313083	1.158893298	0.716664422	4.963353374	1.292306414	20.50555918	90.91177496	83.7830293	15.73688
-		1.242373602		2.635800128	1.158252082	0.661561827	4.918244669	1.275996344	20.99263616	91.75925237	85.48269835	16.13810
-		1.240866546		2.630359099	1.156347064	0.603936029	4,869555405	1,258801447	21,46842459	92,55087905	87.11739645	16.52979
-		1.239499831		2.624993818	1.153125284	0.543655754	4.817143017	1.240701016	21.93023946	93.27871255	88.67758264	16.91007
-		1.238279915	0.709956795		1.148534321	0.480590462	4.760865684	1.221675466	22.37518755	93.93427125	90.15306789	17.27692
_		1.237213606		2.614506291	1.142522915	0.414612103	4.700584304	1.201706788	22.80017236	94.50856327	91.53304432	17.628160
-		1.23630799		2.609392162	1.135041618	0.345596956	4.636164645	1.180779058	23.20190856	94.99214517	92.80615248	17.961466