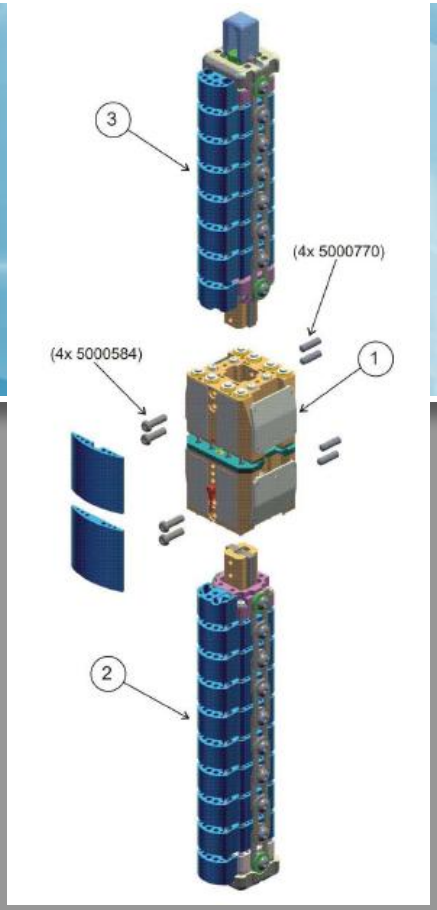
Flex PLI GTR Status

Informal Group GTR9 PH2



1-2 December 2011

Bernard Been

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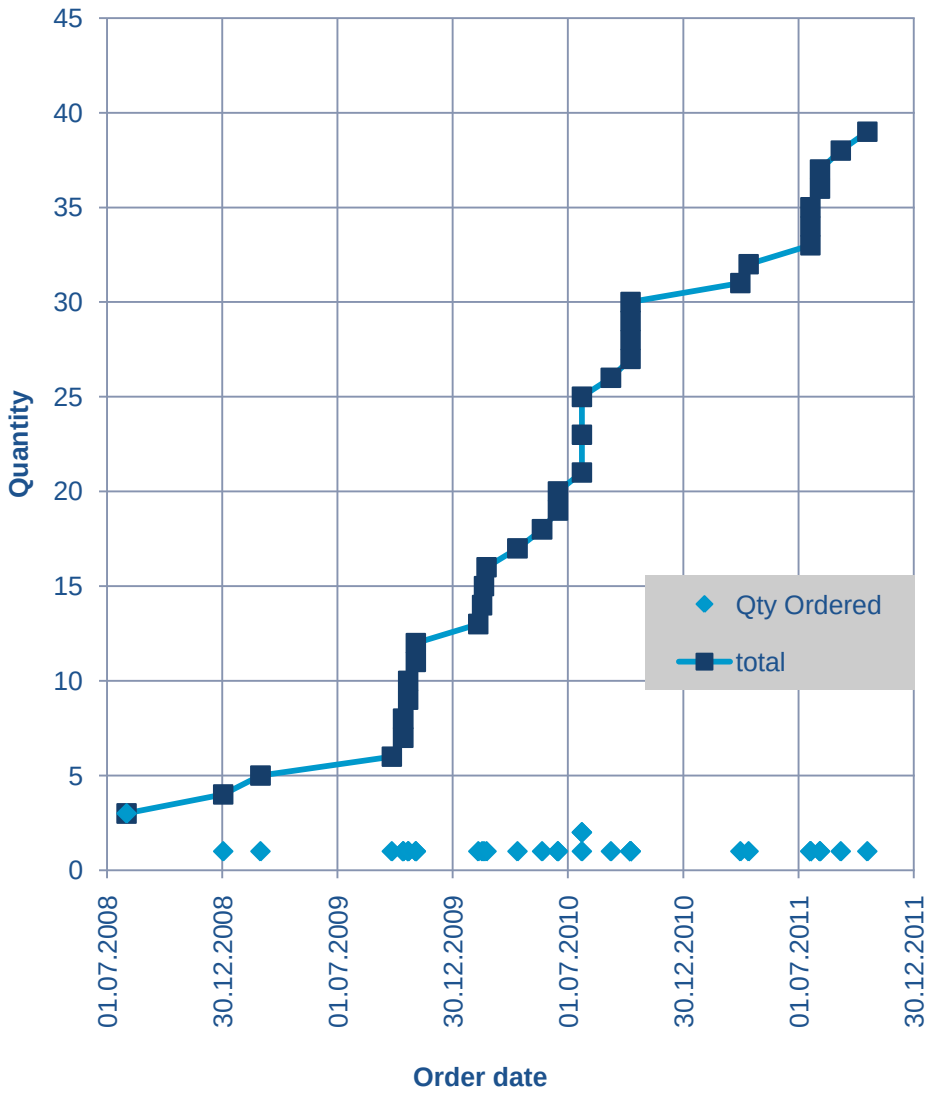
Content

- Number of GTR legs manufactured
- Flex Status
- Leg availability

Number of GTR Legs Made

- 3 JARI prototypes
- 3 Humanetics for internal testing, demo and CAE
- 22 customer legs have been sold
- 12 legs are on order
- All customer legs have onboard DAS
- Some with optional addition channels up to 24



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Flex Status

- All production legs have Vinyl ester bones (more durable) Some prototypes have been updated to Vinyl ester
- All legs were build passing agreed GTR static component corridors
- All production legs pass GTR Pendulum corridors
  - T3 and T4 are usually high and MCL is generally low
- Production legs consistently fail some Inverse GTR corridors
  - some tibia moment channels are too low
  - failure very repeatable
- 4 different batches of Vinyl ester bone have been used
- From test experience Humanetics currently manufactures bones to be as close to GTR inverse corridors as possible

Example 2011 Production Pendulum Results

Pendulum			SN DH5646				SN DG0726			SN DG6304			SN DH6791		
Date			3/21/2011	3/21/2011	4/1/2011	4/7/2011	4/29/2011	5/2/2011	5/16/2011	6/16/2011	6/16/2011	6/17/2011	5/5/2011	5/6/2011	5/6/2011
Test site	Low	High	Plymouth	Plymouth	Nagoya	Nagoya	Plymouth	Plymouth	BAST	Plymouth	Plymouth	Plymouth	Plymouth	Plymouth	Plymouth
Peak Moment @ T1	235	272	243.29	245.57	246.97	252.70	251.00	246.83	248.30	244.25	244.33	243.67	247.76	247.71	248.41
Peak Moment @ T2	185	211	198.12	199.87	199.64	205.10	207.98	204.93	199.50	199.49	199.54	198.98	204.72	204.12	204.63
Peak Moment @ T3	135	160	152.92	154.93	151.24	156.50	159.07	155.94	150.30	151.61	151.77	151.08	156.46	155.79	153.01
Peak Moment @ T4	94	108	102.79	103.89	102.89	107.00	109.33	106.83	101.50	102.39	102.45	101.50	106.91	106.50	106.52
Peak ACL Elongation	9	11	10.02	9.99	10.03	10.20	9.23	9.07	9.90	9.23	9.24	9.25	9.55	9.90	9.68
Peak MCL Elongation	23	26	22.87	23.08	23.17	23.60	23.14	22.96	22.90	22.67	22.70	22.72	23.14	23.08	23.18
Peak LCL Elongation	2	4.5	3.24	3.18	3.19	4.30	3.66	3.54	3.10	2.86	2.86	2.86	4.10	3.93	3.97
Peak PCL Elongation	4	5.4	4.09	4.18	4.27	2.00	4.94	5.06	4.20	4.93	4.95	4.96	4.76	4.45	4.53
Femur stiffness			mid				High			MID			Low		
Femur thickness			10.44mm				10.38mm			?			~10.3		
Femur Batch			B2				B2			B2			B2		
Tibia stiffness			mid-high				High			MID			Medium		
Tibia thickness			10.36mm				10.67mm			?			10.4		
Tibia Batch			B2				B3			B2			B3		
Tibia Assembly			Pass				Pass			Pass			Pass		
Femur Assembly			Pass				Pass			Pass			Pass		
Knee Assembly			Pass				Pass			Pass			Pass		
				1/2 turn to springs		With SLICE									

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Example 2011 Production Inverse Results

Inverse			SN DH5646		SN DG0726		SN DG6304		DH6791	DI6014
Date			4/19/2011	4/20/2011	4/29/2011	5/16/2011	6/17/2011	8/4/2011	4/20/2011	6/2/2011
Test site			Plymouth	Plymouth	Plymouth	BAST	Plymouth	BAST	Plymouth	Plymouth
Pre Impact velocity	10.9	11.3	11.05	11.34	11.34	11.09	11.24	11.15	11.24	11.24
Peak Moment @ T1	237	277	0.00	257.14	237.73	250.30	241.32	246.8	231.48	241.01
Peak Moment @ T2	223	269	228.26	232.05	221.94	229.50	222.27	224.1	216.31	217.43
Peak Moment @ T3	176	204	173.37	180.00	169.13	177.70	170.39	170.5	171.09	167.68
Peak Moment @ T4	98	120	98.19	101.26	93.42	97.40	97.06	97.3	99.40	97.11
Peak ACL Elongation	8.5	10.5	8.28	8.75	9.27	8.70	9.26	9.7	8.22	9.55
Peak MCL Elongation	18	23	19.77	19.73	19.59	19.10	19.33	20.3	16.24	19.42
Peak PCL Elongation	4.5	6	0.01	5.83	5.34	5.10	5.62	5.4	4.38	6.27
Femur stiffness			mid		High		MID		Low	High
Femur thickness			10.44mm		10.38mm		?		~10.3	?
Femur Batch			B2		B2		B2		B2	B3
Tibia stiffness			mid-high		High		MID		Medium	High
Tibia thickness			10.36mm		10.67mm		?		10.4	?
Tibia Batch			B2		B3		B2		B3	B2
Tibia Assembly			Pass		Pass		Pass		Pass	Pass
Femur Assembly			Pass		Pass		Pass		Pass	Pass
Knee Assembly			Pass		Pass		Pass		Pass	Pass

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Leg Availability for Testing

- Humanetics proposes at least 6 legs should be tested for corridor definition at 6 labs minimum after they have been checked and certified
- Availability of legs for testing would depend on customer co-operation
- Humanetics would make their internal leg available for testing

Thank you for your attention!