



3D Golf BioDynamics Swing Analysis

First Name: Keegan	Last Name: Bradley	Test type: Initial Test
Date: 19-Aug-2011	Email: keegan.bradley@yahoo.com	Data Date: 19-Aug-2011
Mass: 185 lbs	Handicap: PGAT	Height: 6,2"

Summary

Setup Foundations

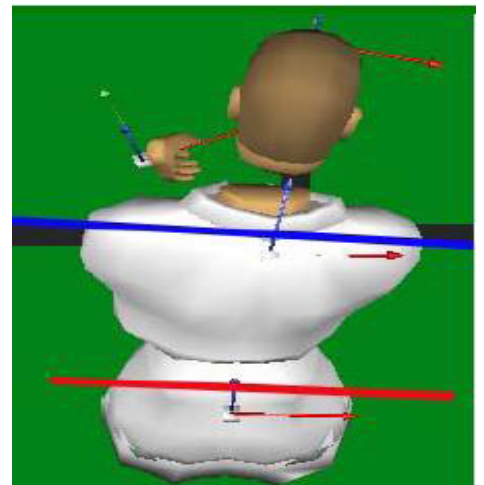
Alignment

	Corridor	You
Hips	0 to 8 °	6 Open
Shoulders	5 to 12 °	6 Open

Green = within corridor

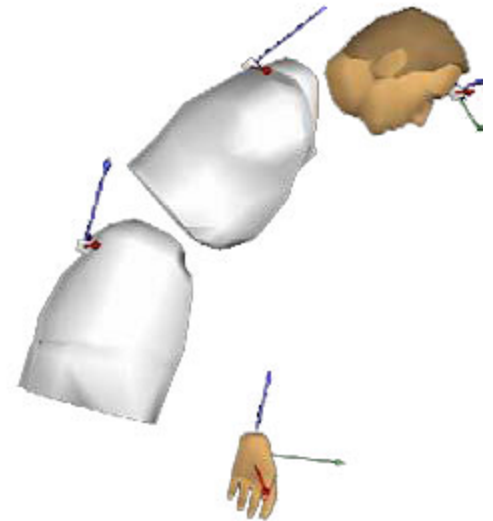
Yellow = just outside corridor

Red = well outside corridor

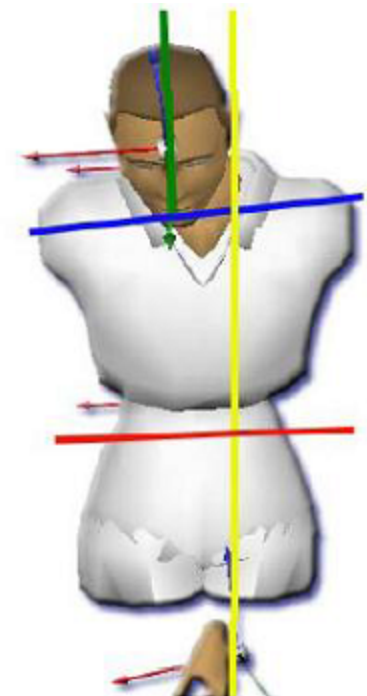




Bending		
	Corridor	You
Hips	13 to 26 °	19 Forward
Shoulders	27 to 40 °	44 Forward
Head	35 to 55 °	46 Forward



Tilting		
	Corridor	You
Hips	0 to 3 °	5 Right
Shoulders	7 to 13 °	9 Right
Head	-3 to 10 °	3 Right

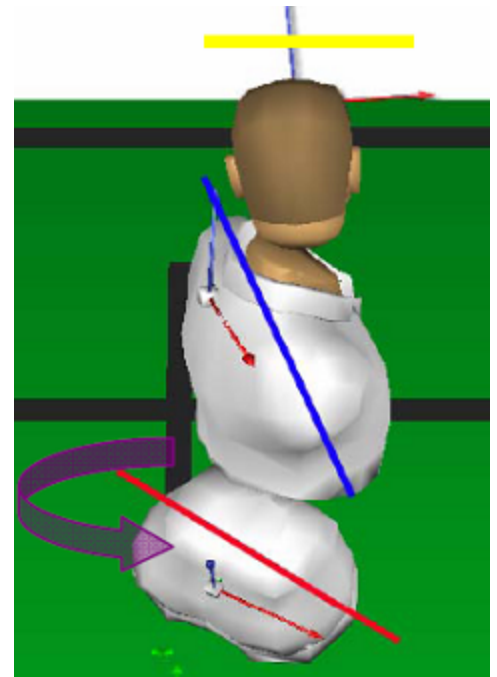




Backswing

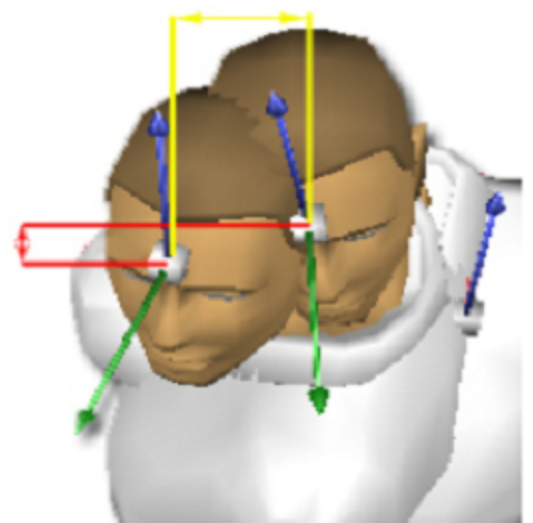
Rotations

	Corridor	You
Shoulder Turn	-85 to -98 °	-86 Closed
Hip Turn	-37 to -48 °	-42 Closed
X-Factor	-40 to -50 °	-44 Closed
X-Factor Stretch	-15 to -25 °	-25 Closed
Head Turn	-20 to -40 °	-24 Closed



Stability

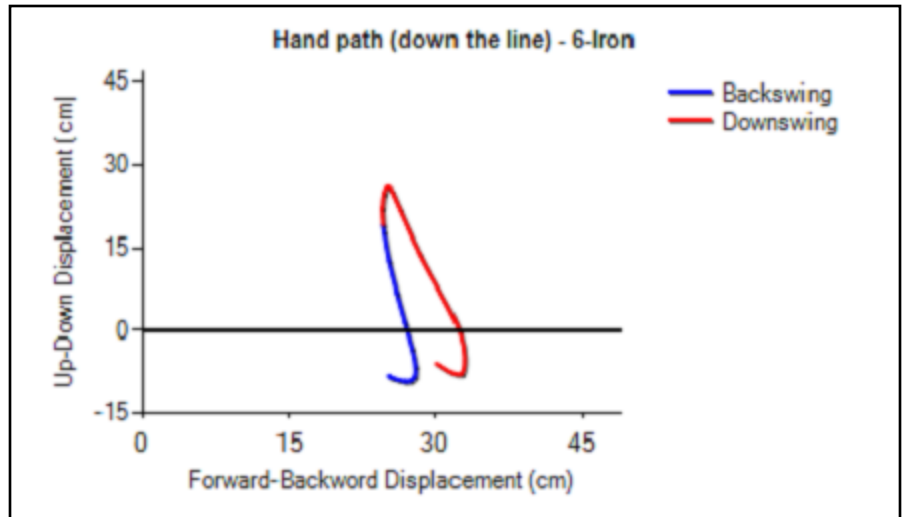
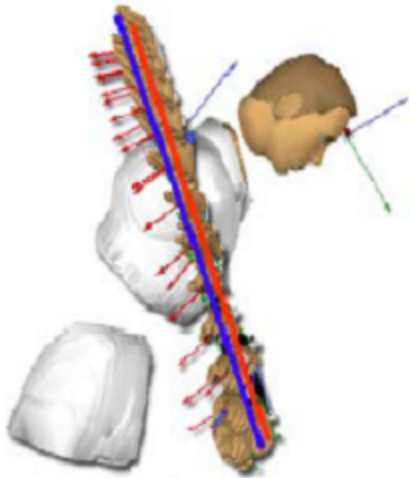
	Corridor	You
Head sway (Address to top)	0 to 3"	2.2 Away
Head lift (Address to top)	-1.5 to 0.5"	-1.6 Down
Head thrust (Address to top)	-0.75 to 0.75"	2.2 Forward
Hip drop (Address to top)	-1.25 to 0"	-0.3 Down
Hip sway (Address to top)	-0.5 to 0.5"	-1.3 Toward





Ideal Hand Path

Your Hand Path

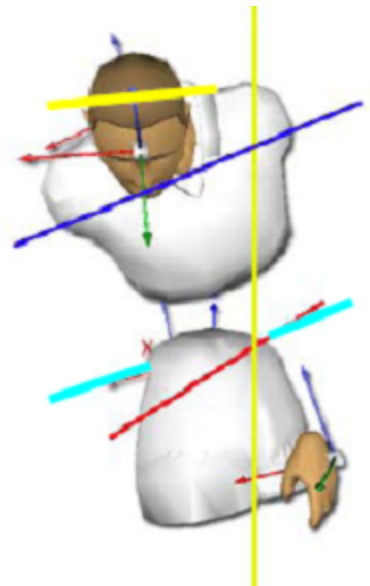


Blue = backswing Red = downswing

Downswing

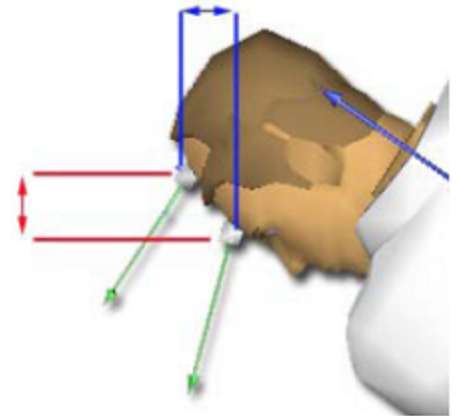
Impact Zone

	Corridor	You
Hip Turn	35 to 55 °	57 Open
Shoulder Turn	35 to 55 °	35 Open
Head Turn	10 to 40 °	6 Open
Hip Tilt	10 to 15 °	17 Right
Hip Bend	0 to 10 °	5 Forward





Stability (Spine Angle Control)		
	Corridor	You
Head drop (Address to impact)	-2.5 to 0.5"	-3.0 Down
Head thrust (Address to impact)	-0.75 to 0.75"	2.2 Forward
Head sway (Address to impact)	-1.25 to 0.75"	0.4 Away
Hip sway (Address to impact)	-4.25 to -5.75"	-5.1 Toward
Hip thrust (When Hip rotation = 0)	-0.75 to 0.75"	1.0 Forward



Body Speed		
	Corridor	You
Hips	>= 430 deg/s	494
UT	>= 640 deg/s	721
Arm	>= 880 deg/s	961
Hand	>= 1400 deg/s	1,543
Club	>= 1400 deg/s	1,920

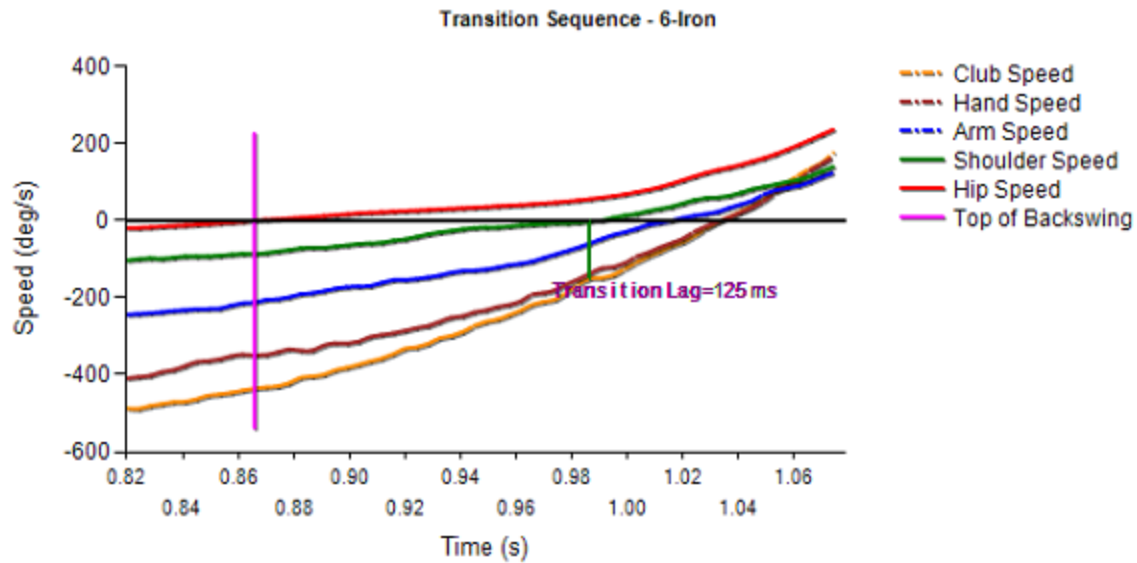
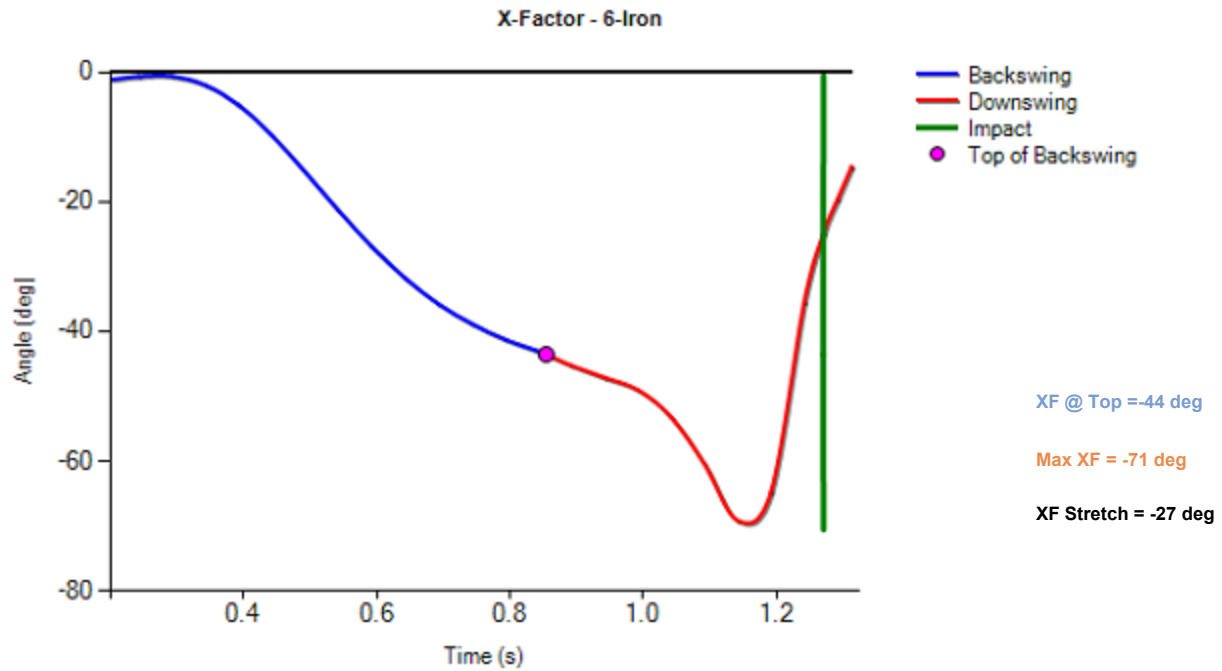
Transition Sequence				
order that body segments change direction				
	Hips	UT	Arm	Hand
Ideal	1	2	3	4
You	1	2	3	4

Timing Lags		
	Corridor	You
Hips to UT	25 to 40 ms	26
UT to Arm	15 to 30 ms	-2
Arm to Hand	5 to 20 ms	17
Hand to Impact	15 to 45 ms	54

Timing Sequence				
order that peak speeds occur in downswing				
	Hips	UT	Arm	Hand
Ideal	1	2	3	4
6-Iron	1	2	2	3
-	0	0	0	0



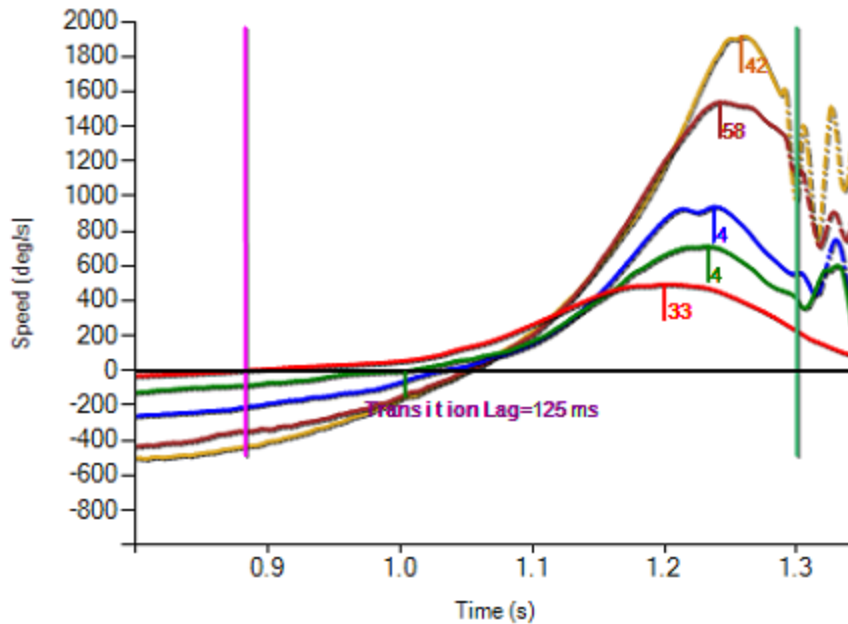
Dynamics





Dynamics

Timing Sequence - 6-Iron



- Club Speed
- Hand Speed
- Arm Speed
- Shoulder Speed
- Hip Speed
- Top of Backswing
- Impact

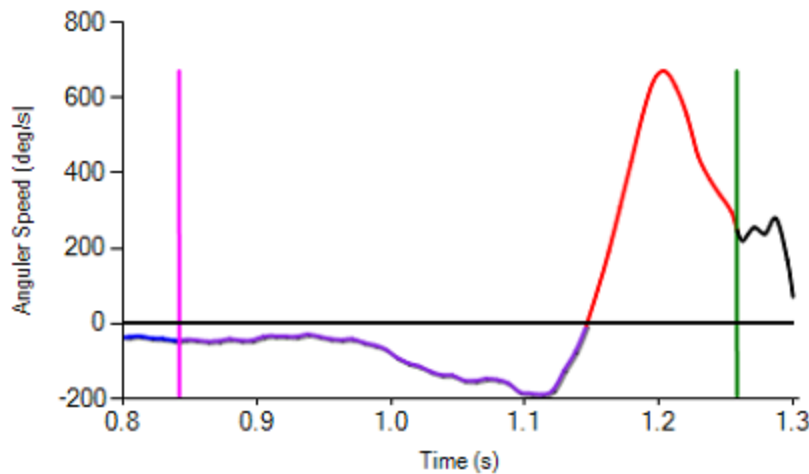
Max Hand Speed=1,539 deg/s

Max Arm Speed=939 deg/s

Max UT Speed=711 deg/s

Max Hip Speed=495 deg/s

Rate of X-factor Stretch & Recoil - 6-Iron



- Backswing
- Stretch
- Recoil
- Impact
- Top of Backswing
- Post Impact

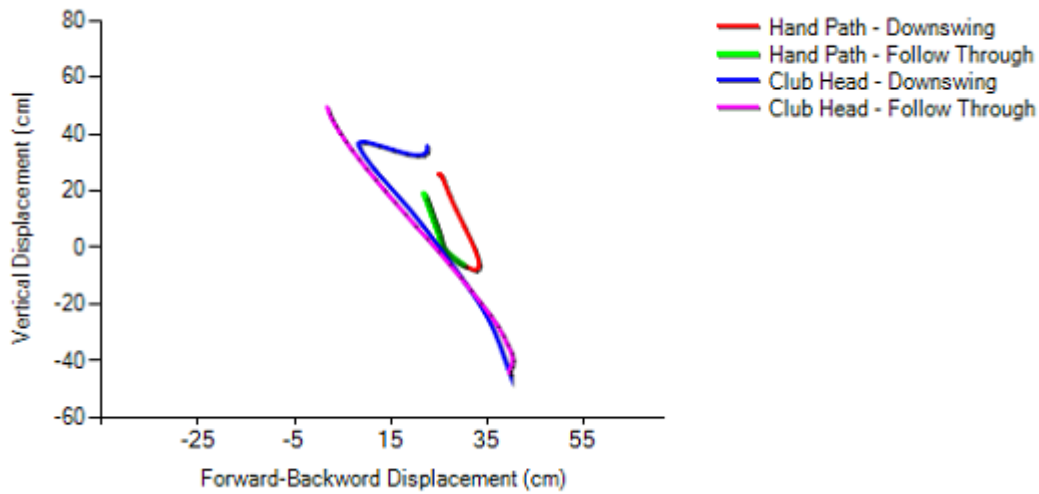
Max_Recoil=671 deg/s

Max Rate of Stretch = 68 deg/s

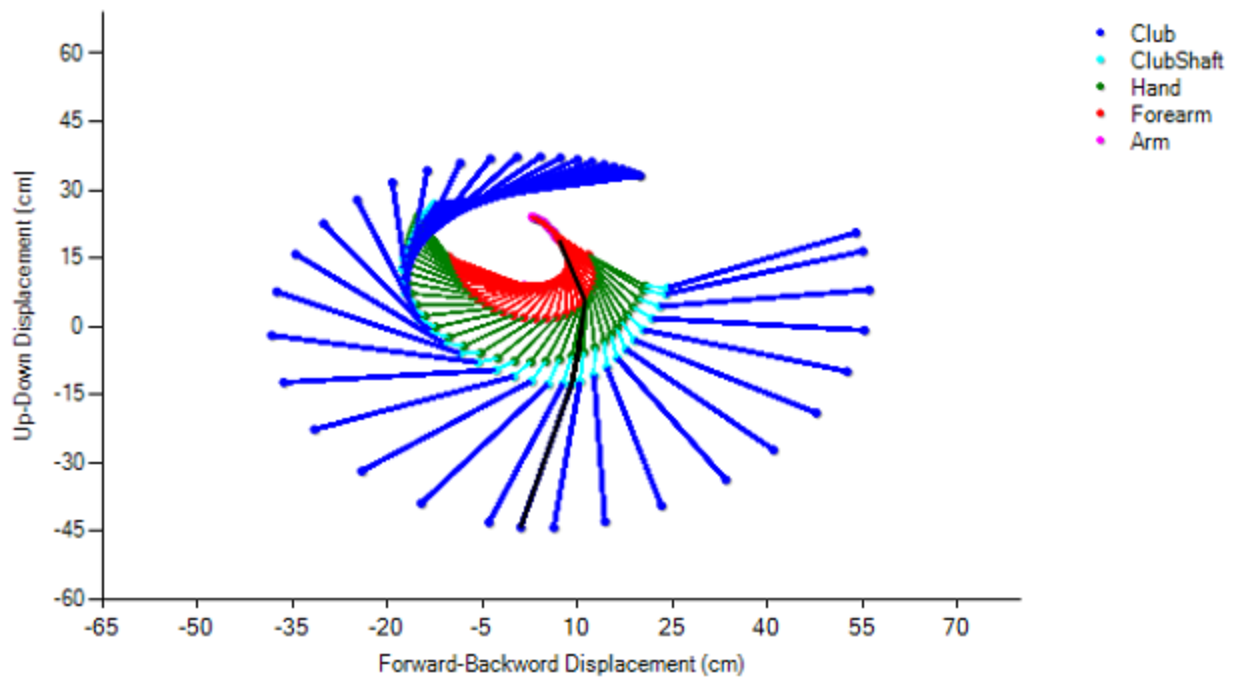


Dynamics

Hand And Club Head Paths




Arm, Forearm, Hand And Club Movement (Downswing:Face-On)





Club Data

	Address		Impact	
Shaft lean (Viewed from face on to golfer)	6.1 ⁰		12.4 ⁰	
Shaft plane (Viewed from target line)	70.4 ⁰		GBD 75.7 ⁰ (n = 6) T/Man 0.0 ⁰ (n = 0)	
Face angle (Viewed from above)	1.6 ⁰		GBD 13.1 ⁰ (n = 6) T/Man 0.0 ⁰ (n = 0)	
Angle of attack			GBD -7.8 ⁰ (n = 6) T/Man 0.0 ⁰ (n = 0)	
Club path (Viewed from above)			GBD 4.2 ⁰ (n = 6) T/Man 0.0 ⁰ (n = 0)	
Club head speed (Estimated)			GBD 61.5 mph (n = 6) T/Man 0.0 mph (n = 0)	27.5 m/s 0.0 m/s



Keegan Bradley

Swing parameter	19-Aug-2011		6-Iron	
	Address	Top of Backswing	Impact	Finish
Pelvic Rotation (deg)	6.3	-42.1	57.3	108.8
X-Factor (deg)	-0.4	-43.6	-22.4	34.4
Upper Torso Rotation (deg)	5.9	-85.7	34.9	143.2
Pelvic Bend (deg)	19.1	15.3	5.4	9.3
Spine Bend (deg)	25.3	-6.1	36.4	-39.8
Upper Torso Bend (deg)	44.4	9.2	41.8	-30.5
Pelvic Tilt (deg)	4.8	-7.6	16.7	5.8
Spine Tilt (deg)	4.0	-38.3	14.4	10.3
Upper Torso Tilt (deg)	8.8	-45.9	31.1	16.1
Head Rotation (deg)	-1.2	-23.8	5.7	88.6
Head Bend (deg)	46.4	51.2	72.7	-0.3
Head Tilt (deg)	2.9	-12.0	7.2	33.2
Pelvic Sway (inch)	0.0	-1.3	-5.1	-9.4
Upper Torso Sway (inch)	0.0	1.2	-1.6	-7.9
Head Sway (inch)	0.0	2.2	0.4	-9.2
Hand Sway (inch)	0.0	24.1	-8.4	4.8
Pelvic Thrust (inch)	0.0	2.0	2.2	5.9
Upper Torso Thrust (inch)	0.0	2.2	0.9	-0.4
Head Thrust (inch)	0.0	2.2	2.2	-5.0
Hand Thrust (inch)	0.0	-0.8	4.4	-8.9
Pelvic Lift (inch)	0.0	-0.3	0.5	1.7
Upper Torso Lift (inch)	0.0	-0.8	0.8	6.8
Head Lift (inch)	0.0	-1.6	-3.0	10.4
Hand Lift (inch)	0.0	27.5	2.4	40.7
X-Factor Stretch (deg)	-25	Peak club twist velocity (deg/s)		2,672.5
Max. Pelvic Speed (deg/s)	494	Spine Angle (Address)		49.4
Max. Upper Torso Speed (deg/s)	721	Spine Angle (TOB)		47.9
Max. Arm Speed (deg/s)	961	Spine Angle (Impact)		53.0
Max. Hand Speed (deg/s)	1,543	Hip sway (Downswing hip rot=0)		-4.0
Max. Club Speed (deg/s)	1,920	Hip thrust (Downswing hip rot=0)		1.0
Max. Club Head Speed (mph)	86	Hip lift (Downswing hip rot=0)		-2.0
Hip - Upper Torso lag(ms)	26			
Upper Torso - Arm lag (ms)	-2			
Arm - Hand lag (ms)	17			
Hand Impact lag (ms)	54			
Backswing Time (ms)	658			
Downswing Time (ms)	408			
Total Swing Time (ms)	1,065			
Min hip sway on downswing (inch)	-1.5			