

Blue Star Training Module 3 Instruction Sheet # 3	EDU-8016 Blue Star Module 3.3- Familiarization & Fine Tuning (Walking)			Setting:	Rehab and clinical	Doc #:	EDU-8016
				Supervision:	Certified clinical professional	Version:	1,3
		Population:	General (per indications)	Section:	Clinical Tools	Operation:	Walking familiarization and fine tuning
1	Turn Keeogo ON , Assistance level → 3 , Optional: Copy "Main" Profile → Walk (per Sheet #1)						
	IF Knee buckling issues: Assistance level → 5 , verify eccentric control parameter in step 3						
2	Explain and demonstrate how Keeogo will react to their movements through each gait phase:						
	a) Flexion assistance at toe-off for foot clearance b) Leg extension assistance at mid-swing for stride length and heel strike c) Weight bearing assistance on front leg if the knee bends						
3	Explain and demonstrate how to achieve consistent assistance						
	a) Stride length ≥ 3/4 length of foot b) Continuous motion without pauses/hesitation (will stop if slower than 3 seconds to initiate a step)						
4	Have user walk for short distance (repeat this step as needed for fine tuning)						
	Instruct user to walk in straight line for 10 steps then stop in neutral stance (both feet together until beep) When familiar, user can turn while walking to allow real-time fine-tuning (refer to Instruction sheet #4)						
5	Fine tune for best observed kinematics						
	We recommend using the instructions in walking tuning by deficit, following these principles: a) Tune one deficit at a time, in the order listed, symmetrically first then asymmetrically b) Gradually increase assistance of each parameter until the user perceives too much assistance. c) Revert back to last perceived optimal assistance or best observed kinematics						
6	Save profile to Keeogo - Turn Keeogo OFF , save profile to device.						
-	Extra: For lunging and kneeling, only do so <u>forward</u> . Refer to BST Training videos for safety instructions						

Maintain contact-guard assist throughout user movements

Keeogo does not assist while walking sideways or backwards

Walking tuning by deficit:

Fine tune one deficit at a time, in order, symmetrically:

• For foot clearance and cycle speed/pace:

1) Step 3: Swing flexion assistance, change by ↑↓ of 2 Nm

2) Step 4: Assisted RoM Swing flexion, change by ↑↓ of 5°

• For heel strike, stride length, and cycle speed/pace:

3) Step 3: Swing extension assistance, change by ↑↓ of 2 Nm

4) Step 4: Assisted RoM Swing extension, change by ↑↓ of 5°

• For fluidity and quickness at toe-off in pre-swing:

5) Step 6: Motor ramp up, change by ↑↓ of 1

• IF Keeogo detects weight-bearing due to user squatting right before walking (causing ext. assistance when walking):

6) Step 2: Angle for motor initiation, change by ↑ of 3° until resolved

• IF slow walker takes more than 3 seconds to initiate a step:

7) Step 5: Neutral position timeout, change by ↑ of 100 ms until resolved

• IF toe-off and midswing assistance timing are off or abnormal:

8) Re-calibrate hip sensors to the user's walking posture (accounting for excess hip flexion)

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Revision History			
DATE	REV	Change description	Owner
2019-07-03	1,0	Original Version. Modified from IN-8000 series (A. Mai, M. Brookshaw)	B-Temia Inc.
2019-07-17	1,1	Edited walking tuning by deficit for clarity and added extra info for lunges (A. Mai)	
2020-01-14	1,2	Improved clarity of language and updated numbering and cross-referencing structure (M. Brookshaw)	
2020-05-01	1,3	Improved clarity of language and cross-referencing structure (A. Mai)	
This document SHALL be print on both side to show the revision history on the back side			

