



SPEED TRAINING 101

Make Speed Happen

A practical guide for coaches using the 1080 Sprint

WHAT IS THE 1080 SPRINT?

A motorized resistance and assistance system built to improve sprint performance with precision. Unlike sleds, bands, or fixed-resistance tools, the 1080 uses a computer-controlled motor and tether to apply resistance or assistance while athletes run, cut, or jump — with complete control over load, direction, and measurement.

1–50 kg

Resistance Range
Resisted/Concentric

1–60 kg

Assistance Range
Assisted/Eccentric

14 m/s

Max Speed
31 mph

120 m

Tether Length
Standard

What coaches can do

- Individualize loading** in real time — session to session and athlete to athlete
- Overload acceleration or top speed** safely under controlled conditions
- Measure performance objectively** — velocity, force, power, and time — so decisions are based on data, not guesswork

Advanced capabilities

- Variable loading** — constant or variable based on goal
- Assisted overload** — supramaximal speed exposure
- Speed-controlled resistance** — eccentric emphasis or isokinetic-style constraints
- Note:** Loads 25–50 kg resisted require the included pulley (max speed 7 m/s or 15.5 mph)

KEYS TO RELIABLE TESTING & TRAINING

Consistency is the foundation of valid data



Setup & Surface

Secure the unit on a stable surface every session



Warm-Up Order

Standardized warm-up before every session



Consistent Protocol

Same distances, loads, and rest across all tests



Model Awareness

Sprint model & software version affect workflow



Repeatability

Same cues, start position, and timing for every athlete

High-quality speed work is not conditioning. Keep each session focused: dynamic warm-up first, sprint when athletes are fresh, full recovery between reps, one specific adaptation per session, every rep at max intent.

1080 SPRINT ASSESSMENTS

Three levels — start simple, add depth over time

1

Quick Baseline Test

Fastest way to start: resisted sprint with set load + distance. Provides top speed, split times (e.g. 0–5 m), and total time. Best for quick check-ins.

2

Standardized Resisted Sprint (recommended starting point)

Example: 30 m at 3 kg. Captures the full acceleration phase. Produces deeper metrics (force–velocity outputs, step-based analysis) stored to the athlete profile in the webapp.

3

Load–Velocity Profile (LVP)

Run 3 loads at different distances to build an individual force–velocity profile. Save it to the athlete profile and use velocity-decrement targets to prescribe every future training load automatically.

SAMPLE LVP PROTOCOL

3 kg	30 m
6–8 kg	25 m
12–14 kg	20 m

Full recovery between each load

DISTANCE SELECTION GUIDE

10 m Early acceleration & first-step outcomes

20–30 m Later acceleration & LVP testing

30–40 m Max velocity development

Custom Start-to-stop: acceleration + deceleration (e.g., 10 m ADA)

Minimum load: Use at least **3 kg** for running. Loads below 3 kg can allow line sway at high speed and reduce force measurement quality.

TRAINING EXAMPLES

Resisted (acceleration) and assisted (top speed)

CASE 1: Improve Acceleration

Profile: low horizontal force (F_o), good velocity potential (V_o)

Label: "Force-deficient"

Goal: improve early acceleration force (0–10 m)

Method: Resisted sprint training

Load Selection

Target a moderate-to-heavy resistance that achieves a **40–60% velocity decrement (Vdec)** — matching the load to the athlete's individual LVP, not a fixed kg value.

Session Example

Distance: 10–15 m

Load: ~22 kg (example: targets ~50% Vdec at 4.0 m/s)

Reps: 4–6

Sets: 2–3

Rest: 2–3 min between reps (full quality recovery)

4–6 Week Progression

Re-test and adjust loads using the updated LVP after each block. Progress by slightly increasing load, improving sprint quality, or shifting from very heavy → moderate resistance as acceleration improves.

CASE 2: Improve Top Speed

Profile: strong early acceleration, limited max velocity
Label: "Velocity-deficient"
Goal: expose athlete to supramaximal speed
Method: Assisted sprint training

Key Principle

Assistance lets the athlete experience faster-than-normal speed while maintaining mechanics. Target a controlled velocity gain of **+3–5% above max velocity** — not extreme towing. Start conservative and increase in 0.1–0.5 kg increments.

Session Example

Build-up zone: 20–30 m

Assisted zone: 20–30 m

Load: ~3 kg assistance (starting conservative)

Reps: 2–3

Sets: 1–2

Rest: 5+ min (full neural recovery)

Weeks 1–2

+1–3% above max velocity
Technical exposure — let the athlete feel the speed

Weeks 3–4

+3–5% above max velocity
Neural + elastic stimulus — confirm transfer periodically without assistance

Coaching cue: If posture, front-side mechanics, or foot strike quality breaks down — **the assistance is too high. Reduce it immediately.**

LEARN MORE & GET STARTED

Documentation

docs.1080motion.com
Full setup guides, testing protocols, and software walkthroughs

Video & Training

youtube.com/@1080Motion
Webinars, tutorials, and applied sport training examples

Get in Touch

sales@1080motion.com
Quotation, demo scheduling, and pricing