BALANCE DRIVEN

RB 364 S & RAW Board

User Manual

React Board 364 S — reactive balance training platform
RAW Board (Rocker · Angle · Wobble)
RAW Board S (step insert system)



For therapists, trainers, and trained independent users

BALANCE YOUR WORLD · COLUMBUS, OHIO

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1. About This Manual

This manual covers the RB 364 S reactive balance training platform and the RAW Board / RAW Board S tilt boards, including setup, safety, training progressions, and how to document sessions.

1.1 Who this manual is for

The RB 364 S is designed to be used two ways:

- **Therapist- or trainer-driven**, with the quick release handle attached, to deliver controlled perturbations for reactive balance training.
- **Independently**, with the handle removed, as a rotating and translating unstable surface for upper extremity, lower extremity, core, and balance exercise.

Sections 6 through 8 assume a therapist or trainer is controlling the platform. Section 9 covers independent use.

1.2 Optional components

Some items referenced here are purchased separately. If your configuration does not include them, skip the related instructions.

- Quick release handle — required for therapist-driven perturbation training.
- Two larger RAW Board inserts, in addition to the two inserts supplied with the board.
- S insert bases and bottoms for the RAW Board S.

2. Product Overview

2.1 What the RB 364 S does

RB stands for React Board. **364** describes the motion: 360 degrees of rotation and 4 inches of translation. The top platform rotates freely and slides, and the amount of resistance to that motion is adjustable at the center dial.

2.2 Why reactive balance training

Most unstable-surface equipment increases exercise difficulty and trains *anticipatory* balance, but it does not train *reactive* balance. Research has shown that people with better reactive balance are less likely to sustain falls and injuries, because their neuromuscular response is both faster and more appropriate.

Large automated reactive balance platforms have existed for years, but they are expensive and require significant training before use, so they are found mainly in research settings. The RB 364 S and RAW Board are intended to bring affordable, controllable reactive balance training into therapy and training centers.

2.3 The RAW Board and RAW Board S

The RAW Board is a rocker, angle, or wobble board depending on the size, location, and number of inserts used. It has an elliptical shape for more foot positioning options and nine insert receptacles — one in the middle and eight around the periphery. Hundreds of configurations are possible, so the board can be tailored to an individual client.

The RAW Board S uses step inserts with flat bottoms and stepped profiles. The steps let the user hold the board level more easily, feel each step as they pass over it, move more slowly and with more control, and even stop the board at several angles before it reaches the edge.

2.4 What can be combined with what

Combination	Allowed?	Notes
RB 364 S alone	Yes	With handle for perturbation training, or without for independent exercise.
RAW Board alone on the floor	Yes	Used like any other rocker, angle, or wobble board.
RAW Board on top of the RB 364 S	Yes	Very unstable — the surface rotates, translates, and tilts. The client must be comfortable with each product separately first.
RAW Board S with step inserts on the RB 364 S	**No**	The RAW Board S with step inserts is intended for floor use only.

WARNING
Never place the RAW Board S with step inserts on top of the RB 364 S. It is designed for use on the floor only.

3. Parts and Controls



Figure 1 — RB 364 S, top view. The three circle zones and concentric grid lines are used for foot placement and documentation. Eight peripheral indentations correspond to the insert receptacles on the underside of the RAW Board. The center dial controls friction. The red port at the edge of the tab accepts the quick release handle.



Figure 2 — RB 364 S in use with the handle attached. The client is in single leg stance with the foot on the center dial, inside the middle zone. The therapist or trainer drives the platform from the handle, standing or seated on an adjustable rolling stool.

3.1 RB 364 S top surface

- **Three circle zones** — used to define where the client stands. Single leg stance activities must not be performed in the outer circle zone.
- **Concentric grid lines** — reference marks for recording medial-lateral and anterior-posterior foot position (see Section 10).
- **Peripheral indentations** — locate the RAW Board when it is set on top of the platform.
- **Handle port** — receives the quick release handle.

3.2 Center friction dial

The center dial sets how much friction the bottom disc applies to slow the motion of the top platform. Friction is generated at the dial, which is why the dial is also the preferred foot position for single leg stance work.

Dial position	Result
As initially assembled	Greatest friction — translation of the top platform is slowed the most.
Turned clockwise	Friction progressively decreases.
Fully clockwise, no added friction	Top platform translates with no added resistance.
Turned clockwise until it stops	**Rotation only mode** — translation is locked out.

IMPORTANT
The platform must be centered while it is being put into rotation only mode.

3.3 Quick release handle

The handle is what the therapist or trainer uses to drive the platform. It lifts off when it is held at a 90 degree angle relative to the platform, which converts the RB 364 S to an independently usable unstable surface. With the handle removed, the handle hole also accepts thera-tube (Section 9.3).

3.4 RAW Board

The RAW Board is elliptical, with a gridded top surface and nine insert receptacles on the underside — one center and eight around the periphery. It ships with two inserts; two larger inserts are available separately. Because the board is elliptical, the same insert placed in different receptacles produces

different angles.



Figure 3 — RAW Board S top surface. The molded grid lines give consistent visual reference points for foot placement.



Figure 4 — RAW Board, top and underside. The underside shows the nine insert receptacles with two inserts fitted. Insert placement determines whether the board behaves as a wobble, rocker, or angle board.

3.5 Standard inserts and S inserts

Standard inserts thread into any of the nine receptacles. Two are supplied; two larger inserts can be added.

S inserts consist of a base that screws quickly into the RAW Board and a separate insert bottom that fits into that base. There are ten different S insert bottoms with different profiles. Some have bumps in certain directions and not others, so the user will not feel exactly the same motion in every direction of travel.

S insert bottoms can also be rotated within the base. This matters because the RAW Board is elliptical: rotating the bottom changes which part of the profile the user travels over, and with a non-symmetrical bottom it changes the feel of the motion.

4. Safety

4.1 Hand hold and spotter requirements

Client	Setup
Elderly clients with fall risk	Use the RB 364 S in the parallel bars, with a spotter present.
Clients not at risk for falls	Position the platform next to a hand hold such as a counter or horizontal bar.
Athletes	A hand hold may be available, or the platform may be moved into the open for sport specific activity. The platform is low enough that stepping off to recover balance is practical, and there is therapeutic value in that maneuver.

Every client, at every ability level, should use a hand hold assist when getting on and off the platform. During training, the client should touch the hand hold only as needed.

4.2 Rules that always apply

SAFETY RULES

- **Stabilize before mounting or dismounting.** The therapist or trainer pushes the platform all the way to the end of its motion, into the internal rubber bumper, before the client steps on or off.
- **The client does not move the platform.** Many clients will instinctively try to drive the board themselves. Instruct them not to — it reduces your control over the perturbation forces and therefore reduces safety.
- **Keep the hand hold reachable.** The client should be positioned so the hand hold is always within reach, unless you have deliberately chosen to train without one for sport specific work.
- **No single leg stance in the outer circle zone.** The platform may tip slightly if a client stands on one leg out at the edge.
- **Build up in stages.** A client should be experienced and comfortable with the RB 364 S and the RAW Board separately before the two are used together.
- **The RAW Board S with step inserts is for floor use only** — never on the RB 364 S.

If a client needs a moment of extra stability during a bout, you can give it immediately: hold the platform as still as possible, or push it to the edge of translation to stabilize it, exactly as you do when the client is stepping on or off.

4.3 Pain and training load

Reactive balance training places an unusual stress on the body. A client may be reacting to hundreds of perturbations in a single session, which is not something they encounter in ordinary life or exercise. Keep this in mind when starting a client, and keep asking about pain as you change foot positions — each position loads the tissue differently.

Ideally, there is no increase in pain during the training. Intermittent minimal pain may be acceptable depending on the client and the injured tissue.

5. Setup

5.1 Setting friction and rotation-only mode

1. Decide how much resistance to translation the client needs. New clients should start with some added friction to slow the platform, and many clients continue to train with added friction depending on ability, body weight, and treatment goals.
2. Turn the center dial clockwise to reduce friction. The platform starts at maximum friction as assembled.
3. For **rotation only mode**: center the platform first, then continue turning the dial clockwise until it stops.

For single leg stance work, use medium to high friction, and have the client stand directly on the dial where the friction is generated.

5.2 Attaching and removing the handle

Insert the handle into the port at the edge of the platform for therapist-driven training. To remove it, bring the handle to a 90 degree angle relative to the platform and lift it off.

5.3 Configuring the RAW Board

Configuration	Insert placement	Behavior
Wobble board	One insert in the middle receptacle	Tilts in all directions
Rocker board	Two inserts opposite each other	Rocks along one axis
Angle board	Two inserts at one end	Holds a fixed angle for stretching or positioning

Different peripheral receptacles produce different angles because of the elliptical shape. Mixing insert sizes changes the axis and the angle again — for example, one regular and one large insert placed opposite each other produces rocking at an angle.

> **Configuration example — dorsiflexion.** For a client who needs to work on dorsiflexion, set the RAW Board up as an angle board for static stretching. Alternatively, set it up as a rocker board with one insert at the edge, or with one regular and one large insert opposite each other, so the client rocks at an angle to stretch the Achilles, gastrocnemius, and soleus.

5.4 Using S inserts (RAW Board S)

1. Screw the S insert base into the chosen receptacle on the RAW Board.
2. Fit the desired S insert bottom into the base. Ten profiles are available, each with a different feel and speed.
3. Use **two** S inserts for a rocker board or **one** for a wobble board.
4. Rotate the insert bottom within the base to change which part of the profile the user travels over. With a non-symmetrical bottom, this alters the motion.

6. Reactive Balance Training — First Session

6.1 Setting up the space

- Fall risk clients: platform in the parallel bars, spotter present.
- Non fall risk clients: platform beside a hand hold.
- Sport specific work: platform may be away from any hand hold.
- Set some added friction at the center dial to slow the platform for a client who is new to the training.

The therapist or trainer typically either stands and moves the platform with a foot, or sits on an adjustable rolling stool and drives the platform with the handle. The seated position generally gives the best comfort and control.

6.2 Getting the client on the platform

1. Push the platform all the way to the end of its motion into the internal rubber bumper to stabilize it.
2. Have the client use the hand hold while stepping on.
3. Position the client facing you, feet slightly less than shoulder width apart, knees slightly bent.
4. Confirm the client can reach the hand hold from where they are standing.

6.3 The first bout, step by step

The whole sequence below should take 45 to 60 seconds.

1. **Predictable rotation.** Rotate the client back and forth with some predictability so they can adjust to the sensation.
2. **Less predictable rotation.** Vary the timing and direction.
3. **Translation.** Introduce translation perturbations once the client is comfortable with rotation.
4. **Combined.** Give a combination of rotation and translation. By the end of the bout the client has experienced rotation only, translation only, and both together.
5. **Stabilize and dismount.** Push the platform to the end of translation to stabilize it, have the client hold the hand hold, and step off carefully.

Ask about increased pain during the bout. If there is pain, reduce intensity by reducing the amount of motion and increasing predictability — this lowers stress on muscle, tendon, joint, and ligament.

6.4 Dosage on day one

Situation	Bouts	Duration	Intensity
Pain during training	1–2	30 seconds	Low
No pain during training	2–3	30–45 seconds	As tolerated

- Rest 15 to 30 seconds between bouts, or longer if the client needs it.
- Stop after one bout if the client had more than minimal increased pain, or if they are apprehensive about another bout.
- If there were no increased symptoms after the session, gradually increase intensity, duration, and number of bouts based on the client's injury, ability, and goals.
- If there was increased pain, repeat the first session as before, reduce it, or hold, depending on the client's situation.

7. Training Positions

Work through the positions below in order. Each one changes how the tissue is loaded, so ask about pain after every change and adjust intensity as needed.

7.1 Facing the therapist (A-P)

The starting position. Feet slightly less than shoulder width apart, knees slightly bent, client facing you. Pushing and pulling the platform produces anterior-posterior perturbations.

7.2 Side to the therapist (M-L)

The client turns 90 degrees so one side faces you, feet still slightly less than shoulder width apart, hand hold still within easy reach. Start the bout the same way you started the first one. Pushing and pulling now produces medial-lateral perturbations.

7.3 Semi-tandem

One foot forward, one foot back, with 4 to 8 inches of width between them. The client keeps their side to you. Most clients do best with the dominant foot back. The back foot appears to do most of the work, so if the dominant foot is the injured one, consider starting with the non-dominant foot back.

7.4 Single leg stance (SLS)

The most difficult of the major training positions. With a younger or more athletic client you may move through the earlier positions quickly enough to include SLS on day one.

- Start with the client facing you, so they receive anterior-posterior translation — typically much easier in SLS than medial-lateral.
- Set medium to high friction.
- Have the client stand directly on the dial, where friction is generated.
- Do not perform SLS in the outer circle zone; the platform may tip slightly.

8. Progressing the Training

Progression can be rapid or slow depending on the client's injury or surgical status, ability, age, comfort level, and goals. The following are the main levers available, roughly in order of increasing challenge.

1. Decrease the base of support by bringing the feet together.
2. Increase the speed of the perturbation.
3. Increase the unpredictability of the perturbation.
4. Increase the distance of the perturbation.
5. Perform rotation and translation perturbations simultaneously.
6. Further decrease the base of support by standing on the balls of the feet or the heels.
7. Use dark glasses, or have the client close their eyes.
8. Change the client's orientation on the board.
9. Increase bout length to 60–90 seconds and increase the number of bouts.
10. Perform sport specific activities during the training.
11. Put the RAW Board on top of the RB 364 S.
12. Lower the stance to increase quadriceps work and fatigue.

9. Independent Use (Handle Removed)

With the handle removed, the RB 364 S becomes an unstable surface that rotates and translates. Upper extremity, lower extremity, core, and balance exercises can all be performed on it. Adjust the center dial to set the level of resistance, or select rotation only mode.

9.1 Upper extremity and core

Push-ups, shoulder stabilization, and plank activities can be performed with the platform set to rotation only or opened up for translation. The RB 364 S can also be placed on a mat table — preferably a high-low table — to reduce the intensity of upper extremity weight bearing exercise.

9.2 Lower extremity and sport specific

- Rotate the platform side to side in double or single leg stance.
- Traditional exercises: squats, lunges, step ups.

- Sport specific activities: dribbling a basketball, bumping a volleyball, and similar.

SLS rotation drill. Set the RB 364 S to rotation only. Place the front of the foot in the middle circle zone. The client gently pushes the platform in forward or backward circles and tries to ride it around as far as possible each time. For a harder variation, let the platform come to a complete stop before pushing again.

9.3 Thera-tube resistance

With the handle removed, thread thera-tube through the handle hole and tie a few knots to secure it. Resisted rotational motions can then be performed:

- Seated.
- Standing with one foot weight bearing on the ground.
- With one or both feet on the platform and no weight bearing on the ground.

Most of these exercises are performed in rotation only mode, but thera-tube can also be used during non-rotational activities to add complexity or to help return the platform to a starting position.

9.4 RAW Board on top of the RB 364 S

Placing the RAW Board on the RB 364 S increases both difficulty and range of motion. The insert receptacles on the underside of the RAW Board correspond to the indentations on the RB 364 S, so it can sit on the platform in any configuration and at any orientation relative to the perturbation.

CAUTION
With the RAW Board on top, the surface rotates, translates, and tilts at the same time. Getting on and off is the most hazardous moment: the client must use a hand hold, and must either be able to reach that hand hold during the exercise or have a spotter. The client should already be comfortable using each product separately.

The combination can be used during therapist-driven reactive balance training, or with the handle removed for independent rocker and wobble board exercise on an unstable base.

10. Documentation and Scoring

The three circle zones and concentric grid lines on the platform exist so that foot position can be recorded and reproduced. A complete record lets you reproduce the treatment, progress the client safely, and demonstrate improvement.

10.1 Foot position notation

There are effectively eight levels of foot positioning, 0 through 7. Feet together in the center is level zero, the smallest possible base of support in bilateral stance. Position is described three ways:

Medial-lateral (M-L)
Measured using the outside edges of the client's shoes. Outside edges touching the first grid line from the center is M-L 1, the second grid line is M-L 2, and so on.

Anterior-posterior (A-P)
Measured using the toe of the lead foot and the heel of the back foot. Feet together and centered is level zero, even if a client with larger feet already extends to or past the first or second grid line. A staggered stance with the lead toe on the third grid line and the back heel on the fifth is written `A3-P5`. Add R or L in front to identify the lead foot: `R A3-P5`.

Orientation on the platform

Code	Meaning
`F`	Facing the therapist
`B`	Back to the therapist
`RS`	Right side to the therapist
`LS`	Left side to the therapist

A full position therefore reads `(M-L 2, A3-P5, F)`. The usual starting position for reactive balance training is approximately `(M-L 2, zero, F)`. For single leg stance, no position beyond the orientation is needed — for example `(R SLS, RS)`.

10.2 What to record for each bout

Field	Detail
Foot position	M-L, A-P, and orientation, as above
Duration	Length of the bout in seconds
Dial setting	Translation allowed, from 0 to 4 inches
Errors	How many times the client touched the hand hold in bilateral stance, or put the other foot down in SLS. Usually counted by the client.
Perturbations	Number given, usually counted by the therapist or trainer
Intensity	Your overall perception: min, mod, or max
Pain	Whether there was any, and if so, what level and where

Example record. Bout #1 (M-L 2, R A3-P5, RS), 40 seconds, 5 errors, 25 mod perturbations, 1 1/3 inch translation, no pain.

You will not collect every field for every client, but collect enough that the treatment can be reasonably reproduced, the client can be safely progressed, and progress can be shown.

10.3 Grading and goal setting

When foot positioning and dial setting are held constant, a bout can be graded from errors and perturbations. In the example above, 5 errors out of 25 perturbations is 20/25, or 80 percent. This is an effective way to show a client that their reactive balance has improved.

Pick the training position that matters most for the client's problem and document it thoroughly, then set a goal as a percentage of tolerated perturbations. For a client with peroneal tendinitis or an unstable ankle, the key training and testing position might be `(R SLS, RS)`.

If all other conditions are held constant between tests, a client who scored 15/25 initially and 23/25 at the final session has improved perturbation tolerance from 60 percent to 92 percent on the right — roughly a 30 percent improvement. Run the same test on the uninjured side for an injured-to-uninjured comparison, but interpret that number carefully: most people tolerate perturbations better on their dominant side regardless of injury.

11. Quick Reference

Center dial

Want	Do
Maximum resistance to translation	Dial as initially assembled
Less resistance	Turn clockwise
Free translation	Turn clockwise until no added friction remains
Rotation only	Center the platform, then turn clockwise until the dial stops

RAW Board configuration

Want	Inserts
Wobble board	One in the middle receptacle
Rocker board	Two opposite each other
Angle board	Two at one end
Rocking at an angle	One regular and one large, opposite each other

Position order for a new client

1. Facing the therapist, feet slightly less than shoulder width (A-P perturbations)
2. Side to the therapist (M-L perturbations)
3. Semi-tandem, side to the therapist, dominant foot back
4. Single leg stance, facing the therapist, foot on the dial, medium to high friction

Notation cheat sheet

Element	Example	Meaning
M-L level	`M-L 2`	Outside shoe edges at the second grid line
A-P level	`R A3-P5`	Right foot leading, lead toe at grid 3, back heel at grid 5
Orientation	`F / B / RS / LS`	Facing / back / right side / left side to the therapist
Single leg	`R SLS, RS`	Right single leg stance, right side to the therapist
Full record	`(M-L 2, R A3-P5, RS)`	Complete bilateral stance position