

# VERMONT RELEASE CALIBRATER

*Check out the info that follows and learn how to inspect and upgrade your Calibrater or why you should consider trading in your old model or purchasing additional components.*

## WHAT IS A CALIBRATER?

The Calibrater is designed to measure the release torque of Alpine ski/boot/binding systems. Three components are necessary to conduct all tests: a FOOT, a LEG, and an ARM. The FOOT is a last, which is inserted into the boot. The LEG is an extension of the FOOT used for forward or backward lean tests. The ARM is a torque wrench, which is attached to the FOOT for twist release tests and to the LEG for forward or backward lean tests.



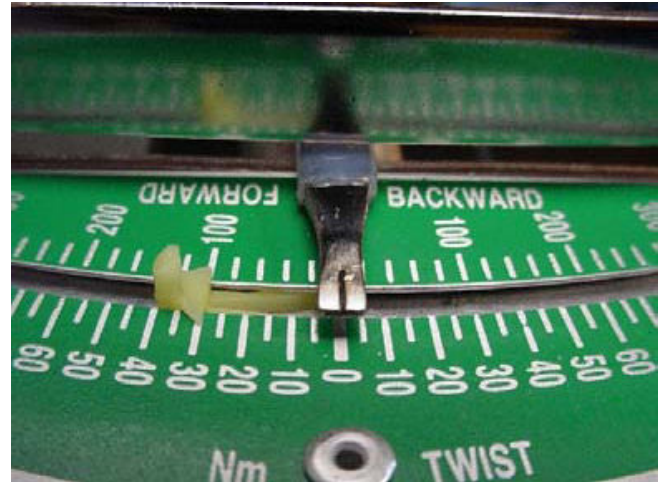
## WHAT'S INCLUDED?

The VRC-HD5b includes a LEG, Adult and Junior FOOT, Foot Collar, Universal ARM, Tilt Vise, spare parts, Instruction Manual, Torque Limiting Screwdriver with adapters, Calibration Bracket with Tool Hanger, Short Ski Adapter, Video Training Tape, Dead Hammer, and a foam-lined storage box.



## **HOW DOES IT OPERATE?**

To perform a twist release test, the FOOT and Foot Collar are placed in the boot, the ARM is attached to the FOOT, grasped with a hand at each end, and rotated to release the binding. The release torque is read from the twist scale of the ARM. Separate release torque indicators are provided for clockwise and counter-clockwise measurements.



To perform a forward or backward lean release test, the LEG is attached to the FOOT, the strap is placed under the boot heel, the ARM is then attached to the LEG, grasped with one hand and pulled to release the binding. The release torque is read from the forward lean scale of the ARM.

### **TILT VISE**

The Tilt Vise supports the ski for twist tests and tilts to secure the ski at a convenient angle for forward lean tests. The vise can also be used to hold the ski during binding installation and repairs. A chip tray catches debris and automatically deposits it into a detachable plastic bag whenever the vise is tilted. The vise is now wide enough for fat and carving skis, and long enough for most all templates. Ski clamp pressure is adjusted with knobs located under the vise. A new adjustable center support is now included to preserve ski camber for systems with performance enhancement features.

### **SHORT SKI ADAPTER**

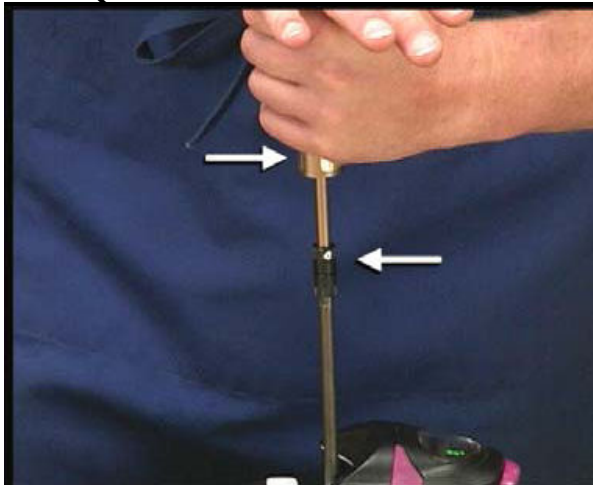
If the ski is too short for the Tilt Vise, the Short Ski Adapter is slipped over the tail of the ski and the box tube frame of the Vise. The Adapter is then clamped in place as if it were a ski.

## **DEAD HAMMER**

Use the Dead Hammer in place of the palm of your hand to test the binding toe piece for correct anti-shock performance. Be careful not to strike buckles or other boot fixtures.



## **TORQUE LIMITING SCREW DRIVER (TLS)**



The Torque Limiting Screwdriver (TLS) is preset at the factory to approximately 4 Newton meters (Nm) torque and is marked with a red cap. Units set to 3 Nm are marked with a black cap. When the TLS clutch releases, it is an indication to the mechanic that the preset torque has been reached. The Torque Limiting Screwdriver can also be used to check the preset torque of power screwdrivers.

## **HOW TO INSPECT YOUR CALIBRATER**

Check the following prior to each use of the Calibrator. If deficiencies are noted in any of the following areas, consult the Maintenance and Repair sections of this manual. Replace damaged, worn, or missing parts immediately.

- 1) Make sure that the yellow release torque indicators point to zero. To do this, move one indicator at a time up against the wand. Each indicator should point to within 1/4 of the smallest division of zero.
- 2) Check that the release indicators are intact and can move freely, with some resistance, but do not bind in the slot. Check also that they correctly follow the wand and do not jump or slip back when the binding releases.
- 3) Make sure the wand does not drag on the scale or the protective frame and that it does not touch the beam.
- 4) Make sure the scale and the frame that supports it are not damaged or bent.
- 5) Check the cable strap assembly for damage and wear. Check the strap for abrasion and the cable for kinks or broken wires.
- 6) Check the elastic stabilizer for damage or wear. Make sure the plastic cable sleeve is lubricated with a thin film of ARMORALL.
- 7) Check the rubber bumpers and pads on Vise for tears or cracks. Check all clamps for proper function.
- 8) Check the Vise hinge (or cable) for kinks (or broken wires).
- 9) Make sure the FOOT is not bent or otherwise damaged. Make sure the plastic coating is lubricated with a thin film of ARMORALL.
- 10) Check the top of the FOOT shaft for damage or wear. Make sure that it fits the socket at the bottom of the LEG.

## **ROUTINE MAINTENANCE**

Most routine maintenance and component replacement operations can be performed in the shop. Calibrator components do not need to be returned to the factory except as noted.

### **ARM**

Keep the yellow release torque indicators and their track clean. Replace the indicators when damaged or loose. It is a good practice to replace them annually. When properly inserted they should point directly across the slot in the scale. ARMS with red, black, or blue scales should be updated. At the beginning, and at least once during the season, the calibration of the ARM should be verified using a dead weight. Calibration checks should also be made whenever the accuracy of the Calibrator is called into question. Return the ARM to VSSE if damage or wear cannot be corrected or if proper function cannot be restored.

### **LEG**

Keep the steel socket at the bottom of the LEG clean, smooth, and lubricated with a thin film of silicone. Straighten any kinks that develop in the cable. Replace damaged or worn cables or straps. Always use clevis pins and split rings supplied by VSSE for reassembly. Keep the plastic covering of the cable lubricated with a thin film of ARMORALL to allow the stabilizer to slide easily. Replace the stabilizer when broken.

# **PARTS AND SERVICE FOR QUICK REPAIRS**

## **VRC-PK1**

Parts Kit #1. Includes (1) pair yellow Release Indicators, (1) Elastic Stabilizer Shunt, (1) Heel Strap and an Instruction Manual.

## **VRC-PK2**

Parts Kit #2. PK#1 and Vise Cable and Clamp Bumpers.

## **VRC-PK3**

Parts Kit #3. PK#1 and LEG Cable-Strap Assembly.

## **HD-I UPGRD**

Inspection, calibration, and HD5 upgrade of ARM. Shields critical parts from most damage. Includes PK#1 and FOOT Collar.

## **HD-R UPGRD**

Repair and HD5 upgrade of ARM. Shields critical parts from most damage. Includes PK#1 and FOOT Collar.

## **VTV UPGRD**

Tilt Vise Upgrade. Replaces all clamping hardware. Takes wide skis and eliminates wing nut adjustment for clamp bumpers. Includes adjustable Camber Support, Chip Tray, and repair or replacement of Component Hangers, Calibration Bracket, Short Ski Adapter, and Video.

## **VRC UPGRD**

Tilt Vise Upgrade, HD5 Upgrade of Calibrator Arm, Foot Collar, Dead Hammer, Torque Limiting Screw Driver, and repair or replacement of Leg and both Feet.

## **VRA()-I**

Inspection and calibration check of the Calibrator ARM (no repairs or adjustments). Must have HD5 Upgrade (see above).

## **VRA()-R**

Repair and recalibration of ARM. Includes PK#1. Must have HD5 Upgrade (see above).

## **MAKE SURE YOUR CALIBRATER HAS THESE COMPONENTS:**

### **VFC-5**

Foot Collar. Fits over Foot shaft. Used to position the FOOT within the ski boot.

### **VTV-5**

Tilt Vise. Holds a single ski for mounting, inspection, and calibration of the binding. Tilts for calibration in forward or backward lean. Includes Chip Tray, Short Ski Adapter, and Component Hangers.

### **VBH-5**

Calibration Bracket & Component Hanger. Holds all Calibrater components and can be used to hold the ARM for calibration checks.

### **VSA-5**

Short Ski Adapter. Adapts Tilt Vise for skis less than 100 cm. Included in PK#5.

### **VTD-5**

Torque Limiting Screwdriver. Adjusted to 4 Nm and used to check mounting screw tightness, train new mechanics, and set the clutch on power screwdrivers.

### **VDH-5**

Dead Hammer. Used to check for correct anti-shock travel.

### **V-5**

Video Training Tape or DVD. "Release Calibrater Operations and Maintenance."

***VERMONT SKI SAFETY EQUIP. INC.***

(mail) **P.O. Box 85 (ship) 9 Sandhill Rd. Underhill Ctr., VT 05490**

(phone) **802-899-4738 (fax) 802-899-3677**

**[www.vermontskisafety.com](http://www.vermontskisafety.com)**

**[www.check-itout.com](http://www.check-itout.com)**