Tracker™

PORTABLE IRRIGATION MACHINE
The Tracker™ offers an economical solution for supplementing seasonal watering needs of ¼ acre to 2 acre areas. It’s also ideal for irrigating athletic fields, cemeteries, golf course roughs, or other large areas where an underground system is impractical. Built to last with precision German engineering and high quality materials, this portable powerhouse can irrigate an entire football field in just two passes.

Tracker™ requires minimal labor to operate. Powered by water, it pulls itself along a nylon cable, dragging up to 360 ft. of 1” reinforced heavy-duty hose (sold separately). Each pass irrigates about 2/3 acre per 8 hours of operations.

specifications
• Weight: 58 lbs.
• Size: Length 33”, Width 22”, Height 22”
• Materials: Aluminum, Brass, ABS
• Minimum Water Pressure: 50 psi
• Hose Required: 1”

features
• Adjustable Speed Control: 20-70 ft./hr.
• Standard full or part circle sprinkler (8-15 GPM)
• 360 ft. nylon cable provides irrigated length of 400 ft.
• 70-85 ft. pass width
• Automatic shut-off at end of pass
• Water turbine drive and gear box
• Galvanized anchor stake
• Includes 1” brass quick-connect adapter

DeepDrip™

TREE WATERING STAKES
Water and fertilize your trees at the roots, encouraging deeper roots and healthier trees with DeepDrip™ stakes. Water gets underground fast, so you can irrigate for shorter periods and save water. They also help aerate the soil, and you can add fertilizer into the shaft to direct nutrients to the root zone.

Three Lengths For All Tree Sizes: Use the 14.5” stake for shallow root trees and shrubs, like rose bushes and ornamental trees (or boxed trees). The 24.5” stake is best for most other tree varieties except for palms and similarly deeper rooted trees, which will benefit from the longer 36” stakes.

Built Smart - And Easy To Use: The DeepDrip’s reinforced tip and cap are made from ABS and the upper shaft is made from Schedule 40 PVC. Multiple holes in the bottom half of the spike, internally covered by a mesh filter, allow water to flow out but keep dirt from getting in and clogging the tube. The UV-protected cap acts as a reinforced cover when pounding the stake into the ground, keeps debris from entering the shaft and holds a 1/4” drip line/emitter securely in place. By inserting a screwdriver through the two holes at the top of the upper shaft, stakes can be easily pulled up to remove/reposition, or rotated to deter root invasion.

ordering
Part # T-400 Tracker™ Portable Irrigation Machine
Part # A-DD14 DeepDrip™ 14.5” watering stake
Part # A-DD24 DeepDrip™ 24.5” watering stake
Part # A-DD36 DeepDrip™ 36” watering stake
NEW! **SuperKey XL™**

**MULTI-PURPOSE TOOL FOR TORO, RAINBIRD GOLF SPRINKLERS**

The ultimate all-in-one tool for your golf sprinklers...think of it as a Swiss army knife, a must have companion. Made of stainless steel and composite material, it effortlessly turns electric valve-in-heads on and off, removes internal snap rings and performs many other sprinkler maintenance chores. Great for John Deere®/Signature® sprinklers, too!

**EasyReach™ Key**

**EXTRA-LONG SHAFT ON/OFF KEY**

Extra long and extra heavy duty metal key designed for easy on/off operation for TORO, Rain Bird and John Deere/Signature electric valve-in-head golf sprinklers. Made of high grade metal, EasyReach offers years of effortless on/off operation.

**VersaLid™**

**VALVE BOX UNIVERSAL REPLACEMENT LID**

VersaLid™ is the easy solution for broken or missing valve box lids. No need to guess what brand a buried box is or even worse - dig it up to find out - VersaLid's locking system fits all 6"-7" round valve boxes.

**features**

- Fits all 6"-7" round boxes
- Universal fit
- Greater top-load strength and more UV-resistant than structural foam lids
- Purple Lid available for non-potable/reclaimed water

**ordering**

- Part # A-SKTRB SuperKey™ XL for Toro®, Rain Bird® and John Deere® golf sprinklers
- Part # A-EPT EasyReach™ for Toro® and John Deere®/Signature® golf sprinklers
- Part # A-ERR EasyReach™ for Rain Bird® golf sprinklers
- Part # VL-6 Green VersaLid™ 6"-7" valve box lid
- Part # VL-6P Purple VersaLid™ 6"-7" valve box lid
- Part # DBRY-4 Direct Bury Splice Kit - 4 Pack
- Part # DBRY Direct Bury Splice Kit - single unit
Gulp™ UltraMAX

SUPER HIGH-CAPACITY WATER REMOVAL SUCTION PUMPS

Whether you need to remove water from sprinklers and valve boxes or other areas or devices, UltraMax Series Pumps are the ideal tools for the job...huge capacities and the smoothest pumps you will ever use as well.

special features
- Super Smooth Pumping Action
- High Volume Capacity
- Strong Aluminum Pump Shaft
- Contour Grip Handle
- No Leak Seals
- Self Priming

also great for
- fountains
- pipe repair
- boats
- toilets
- spas
- and more!

ordering
- Part # A-G12-C Gulp™ UltraMax
- Part # A-G3636CK BigGulp™ UltraMax w/ 36" outlet hose
- Part # A-G3672CK BigGulp™ UltraMax w/ 72" outlet hose
- Part # A-G12S-C Gulp™ Syringe Ultra
- Part # A-GTUB-C 100 ft. outlet hose

Underbill
1507 16th St., N.W.
Washington, D.C. 20036
866-863-3744 • www.underhill.us
AuditMaster™

EXPERT SPRINKLER PERFORMANCE TESTING KITS

Increasing watering times to compensate for poorly performing sprinklers wastes a lot of water. Accurately measuring sprinkler application rates with Underhill® AuditMaster™ helps maximize water savings.

AuditMaster Combo ST/LT Kit (pictured), includes large CatchCanPro cups (blue) and CatchCanPro Mini cups (30 each).
AuditMaster ST Kit excludes the large CatchCanPro cups. This kit is ideal for SMALL TURF audits.
AuditMaster LT Kit excludes the CatchCanPro Mini cups. This kit is optimized for golf courses, sports fields and other LARGE TURF audits.

CatchCan Pro™

features

• Self standing - easily anchors into turf, even on slopes
• Measures sprinkler application in inches or centimeters
• Unique design allows for shorter duration test
• Made of durable polypropylene engineered plastic
• Can be stacked for easy storage
• Each 10 pack kit comes with instructions

ordering

<table>
<thead>
<tr>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUD-ST</td>
<td>AuditMaster ST Kit</td>
</tr>
<tr>
<td>AUD-LT</td>
<td>AuditMaster LT Kit</td>
</tr>
<tr>
<td>AUD-STL</td>
<td>AuditMaster Combo ST/LT Kit</td>
</tr>
<tr>
<td>SALESPRO4</td>
<td>AuditMaster Wheeled Carry Case</td>
</tr>
<tr>
<td>A-STW</td>
<td>Stop Watch</td>
</tr>
<tr>
<td>A-WIND</td>
<td>Anemometer (Wind Gauge)</td>
</tr>
<tr>
<td>CCPK-10</td>
<td>CatchCan Pro (Blue) - 10 Pack</td>
</tr>
<tr>
<td>CCPMK-10</td>
<td>CatchCan Pro Mini - 10 Pack</td>
</tr>
<tr>
<td>MT-100</td>
<td>Fiberglass Measuring Tape: 100’</td>
</tr>
<tr>
<td>A-FLAG</td>
<td>Marking Flags: Yellow - 50 Pack</td>
</tr>
<tr>
<td>A-FLAG-B</td>
<td>Marking Flags: Blue - 50 Pack</td>
</tr>
<tr>
<td>A-FLAG-O</td>
<td>Marking Flags: Orange - 50 Pack</td>
</tr>
<tr>
<td>A-FLAG-P</td>
<td>Marking Flags: Pink - 50 Pack</td>
</tr>
<tr>
<td>A-FLAG-R</td>
<td>Marking Flags: Red - 50 Pack</td>
</tr>
<tr>
<td>A-FLAG-W</td>
<td>Marking Flags: White - 50 Pack</td>
</tr>
</tbody>
</table>

CatchCan Pro (CCPK-10) for LARGE TURF audits. Measures ml, cm, inches.

CatchCan Pro Mini (CCPMK-10) for SMALL TURF audits. Measures inches.

MADE IN USA

Products that work...smart.
**TurfSpy™**

**EARLY STRESS DETECTION GLASSES**

Disease, drought and weed invasion are plant and turf killers. But by the time you see them it can be too late. TurfSpy™ glasses, with stress detection technology developed by NASA, lets you "see into the future" to identify problems 2-10 days before they are visible to your naked eye. Keep your turf and vegetation healthy BEFORE serious problems arise.

**features**
- Shatterproof/polycarbonate stress detection lens (ANSI approved safety lens)
- Wrap-around lens limits ambient light for optimal detection
- Sports frame with adjustable ear piece
- Lightweight case included

**HOW IT WORKS**

Dying vegetation absorbs and reflects sunlight differently then when its healthy. The earliest signals occur at the outer limits of the human visual spectrum, and are rendered invisible compared to the predominant middle wavelengths. TurfSpy™ filters the light in the center so that fringe spectra, which show early plant stress, become visible.

**ordering**

Part # NG655-01 TurfSpy™ Glasses and Deluxe Case

---

**HeadChecker™**

**NOZZLE DISCHARGE PRESSURE GAUGE**

Use this liquid-filled 160 psi gauge with 30" flex hose and solid brass Pitot tube, hose bib, or spray head adapter to measure water pressure at discharge points.

**ordering**

Part # A-PHG-160K HeadChecker™ gauge, 30" Flex Hose, Pitot Tube
Part # A-SHG-160K HeadChecker™ gauge with Spray Head Adapter
Part # A-HBG-160K HeadChecker™ with ¾" POC Hose Bib Tap
Part # A-HCGPK HeadChecker™ gauge and Pitot tube
Part # A-PG160L HeadChecker™ 160 psi pressure gauge only
Part # A-HCP Pitot tube only
Part # A-HBT ¾" Hose Thread x ¾" Brass Hose Bib Tap
Part # A-SHA Spray Head Adapter

---

866-863-3744 • www.underhill.us
GRUND GUIDE by Underhill®
Marking Systems

SPEED AND QUALITY OF PLAY...GOLF AS IT SHOULD BE.

You know Grund Guide for making premier yardage marking solutions. Now backed with the strength of Underhill® distribution and product development, you can have the highest quality and most complete yardage marking systems available today and into the future. We offer durable and high-visibility customized markers for all popular golf sprinklers along with unique fairway, tee box, and driving range markers. Speed up and improve the quality of play with Grund Guide Marking Systems.

Sprinkler Head Yardage Markers

Model SPM 106 - TORO Engraved Caps: Perfect-fit caps engraved and color filled for high visibility. Multiple number locations vary for lids with holes.

Model SPM 107 - Rain Bird Engraved Caps: Perfect-fit caps engraved and color filled for high visibility number identification.

Model SPM 110 - Hunter Engraved Caps/Covers: Perfect-fit flange covers (G800, G900) and caps (G90), engraved and color filled for high visibility.

Model SPM 101 - Fit Over Discs: Anodized aluminum (no paint!), these markers are engraved and custom fit to each sprinkler. Multiple number locations vary for lids with holes.

Model SPM 105 - Universal Tags: Anodized aluminum (no paint!), these markers are engraved and designed for most universal fit applications. Tags are installed using 1/8" rivets.

Model SPM 103 - TORO Snap-In Markers: OEM UPGRADE to high quality polycarbonate custom fit. One complete, high-visibility marker snaps into OEM plug.

Model SPM 108 - TORO & Hunter: Special engraved plastic material designed to fit into OEM lid recess

Model SPM 104 - Lid/Molded Recess Markers: Durable replacement lid, with reverse engraved number insert process. Excellent number ID with this model

Model SPM 102 - Rain Bird Yardage Highlighter Snap-Ring: Replaces OEM snap ring with perfect fit bright yardage and reclaimed color identification.

View/download complete ordering guide at www.underhill.us

<table>
<thead>
<tr>
<th>Model SPM</th>
<th>Sprinkler Mfg</th>
<th>Series</th>
<th>Marker Color</th>
<th># of #s on Marker</th>
<th>Total Qty on Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPM-106</td>
<td>Toro</td>
<td>730</td>
<td>Black</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Yellow</td>
<td></td>
<td>76</td>
</tr>
</tbody>
</table>

ordering example
Fairway / Tee / Range Disc Markers

Large 7\(\frac{1}{2}\)" cap with big bold 3\(\frac{1}{4}\)" standard yardage numbers. Ideal for fairway, tee and driving range marking. Optional 8" mounting pipe attachment available for secure installation.

**FAIRWAY STANDARD DISC SYSTEM**

Color-coded markers with bold 3\(\frac{1}{4}\)" yardage number. Several system options available.

![Disc Marker](image)

**FAIRWAY CUSTOM OPTIONS**

Markers can be customized to display specific yardage numbers, include logos, or custom design.

**TEE BOX / DRIVING RANGE CUSTOM OPTIONS**

Markers can be customized to display specific multiple numbers, include logos, or custom design.

**SYSTEM EXAMPLES**

A: 3 markers placed down the center of the fairway at 50 yard intervals
B: 5 markers placed down the center of the fairway for greater coverage
C: Markers placed on sides and center ("diamond" layout) for highest visibility
D: Create a custom system with your choice of color and numbers/markings

![Diagram](image)

**Valve Box / Universal Markers**

These engraved, anodized aluminum (no paint!) markers are ideal for isolation or control valves, satellites or other applications.

![Diagram](image)

For detailed ordering information of custom markers, visit www.underhill.us
An industry leader in innovative watering products all over the world, Underhill® brings 34 years of know-how in developing our inventory of “Products that work...smart.™

For even more products that work smart, like our super long throw Mirage™ sprinklers (up to 174 ft. radius!), the Sapien™ 2-wire controller, Novo™ 2-wire converters and 2WIRE decoders, visit www.underhill.us

UNDERHILL INTERNATIONAL
PROFESSIONAL WATERING PRODUCTS 2013

©2013 Underhill International Corporation. All original equipment manufacturers, names and products presented in this publication are used for identification purposes only, and we are in no way implying that any of our products are original equipment parts. Toro® is a registered trademark of the Toro Company, Rain Bird® is a registered trademark of the Rain Bird Sprinkler Manufacturing Corporation, Hunter® is a registered trademark of Hunter Industries. John Deere® is a registered trademark of Deere & Company. Signature® is a registered trademark of Signature Control Systems, Inc.
“The Penn State Golf Course Turfgrass Management Program enabled me to reach my highest goals in the golf course industry.”

Matt Shaffer, Merion Golf Club

Get the edge you need to succeed in turfgrass management in just 18 months.

turf.psu.edu/certificate

Penn State is committed to affirmative action, equal opportunity, and the diversity of its workforce.
Brian Vinchesi, the 2009 EPA WaterSense Irrigation Partner of the Year, is president of Irrigation Consulting Inc., a golf course irrigation design and consulting firm headquartered in Peppereil, Mass., that designs irrigation systems throughout the world. He can be reached at bvinchesi@irrigationconsulting.com or 978/433-8972.

GETTING IT DONE

I recently attended the American Society of Irrigation Consultants (ASIC) – yes, there’s an irrigation consultants association – annual meeting in Scottsdale, Ariz. And since ASIC was in Scottsdale, they invited Sean Emerson and Jeff Plotts to talk about how they irrigate their courses from both a water-quality and a water-quantity standpoint.

Sean, director of agronomy at Desert Mountain Club, oversees six 18-hole courses using some 2-million gallons per acre annually on a combination of warm- and cool-season turf. Jeff has the same position at TPC Scottsdale, overseeing 400 acres at a 36-hole resort/public facility utilizing warm-season turf. The 400 acres consists of 185 acres of turf, 200 acres of desert landscape and 15 acres of surface water. He also hosts a PGA Tour event every January.

Sean is an opinionated individual who is also a great speaker. His presentation centered on the efforts his staff has taken to decrease not only their water use, but their energy use, too, while providing excellent playing conditions on green turf. At Desert Mountain they are concerned with the usual irrigation parameters: precipitation rate, cycle time, uniformity and part circle arcs. However, they have gone one step further observing gallons per kilowatt (gal/kw). The gallons-per-kilowatt measurement allows Desert Mountain to determine not just how efficient they are with water or energy, but how one influences and impacts the other.

To be more energy and water efficient, Desert Mountain has created or purchased solutions for data capturing. These include utilizing wireless ground sensors, weather stations, weather pattern monitoring and the IBM Smarter Cities system to allow existing equipment software’s (irrigation central control, pump station monitoring) to interact with each other for an integrated view and feedback of their water/power usage. They monitor lake levels, water use and to salt accumulations and turf health. Using the data, Jeff created Water Quality Management Zones (WQMZ) to manage irrigation applications and Na+ accumulation. The WQMZ’s are also designed to manage salt loads during different times of the year based on turf stands. In the future, each sprinkler is assigned to a WQMZ zone and will be programmed accordingly and will utilize soil-moisture

Sean [Emerson] and Jeff [Plotts] were quick to point out that to accomplish what they have to date, and to make their programs successful, they have used a number of different consultants to help structure and implement their water, soil and energy plans.

energy use for trends. For all aspects of their water and energy use they plan, implement, record, evaluate, and revise. The result is significant water and energy savings, as well as improved conditions and lots of data to further refine their procedures.

Jeff has a more subdued personality, but he still gets his points across. His passion for providing tournament conditions is evident. TPC Scottsdale has a number of operational issues including: being a flood basin, difficult water quality, fine textured clay soils, lack of positive drainage and an arid environment. Each is a difficult problem on their own, but combined they present a challenge. He studies and measures data on salinity areas, distribution uniformity, and turf vigor. This allows TPC Scottsdale to correlate irrigation and drainage patterns sensors to substantiate and fine tune their process. With this data, TPC Scottsdale will make correlations between salinity and moisture. Jeff also uses micro-irrigation (above ground micro sprays) to decrease salt and transitional stresses.

The results of Jeff’s initiatives have resulted in an average of 138.75 less acre feet (45.21 million gallons) of water used annually over the last five years. Not only has that saved considerable dollars, but also reduced salt inputs by 189.45 tons annually.

Both Desert Mountain and TPC Scottsdale are examples of how poor water quality can be managed and at the same time save water and energy. They provide a superior golf product in spite of these challenges and are happy to share their approaches, experiences and results with others. GCi