

Tracker™

PORTABLE IRRIGATION MACHINE

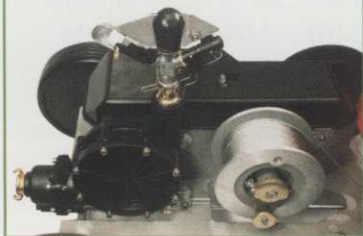
The Tracker™ offers a very economical solution for supplementing seasonal watering needs of 1/4 acre to 2 acre areas. Ideal for irrigation of roughs, fairways, driving ranges and other areas where underground irrigation is unavailable. Built to last with precision German engineering and high quality materials, this portable powerhouse can irrigate an area the size of a 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
- Hose Required: 1"
- Minimum Water Pressure: 50 psi

Precision German engineering, high quality components...built to last!



features

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



Use Tracker™ to help areas where an irrigation system is not available. Tracker's maximum 400 ft. irrigation path makes it practical for large areas and its compact size allows it to operate in narrow spaces such as in between trees.



Solid brass one-piece quick coupler valves and valve keys can help you get your Tracker™ set up quickly.

ordering

Part # T-400 Tracker™ Portable Irrigation Machine

Quick Coupler Valves & Keys

SOLID BRASS, SINGLE SLOT/LUG ESSENTIALS

Built to last, Underhill valves and keys are constructed of solid red brass and stainless steel. Valves incorporate rugged one-piece design.



Valve: Part # QV-075R
(3/4" FPT inlet)

Key: Part # QK-075
(3/4" MPT x 1/2" FPT outlet)

Valve: Part # QV-100R
(1" FPT inlet)

Key: Part # QK-100
(1" MPT x 3/4" FPT outlet)

Valve: Part # QV-150R
(1-1/2" FPT inlet)

Key: Part # QK-150
(1-1/2" MPT x 1-1/4" FPT outlet)



hose swivels

Part # HS-075 3/4" FPT x 3/4" MHT outlet

Part # HS-100 1" FPT x 3/4" MHT outlet

Part # HS-101 1" FPT x 1" MHT outlet

Part # HS-151 1-1/2" FPT x 1" MHT outlet

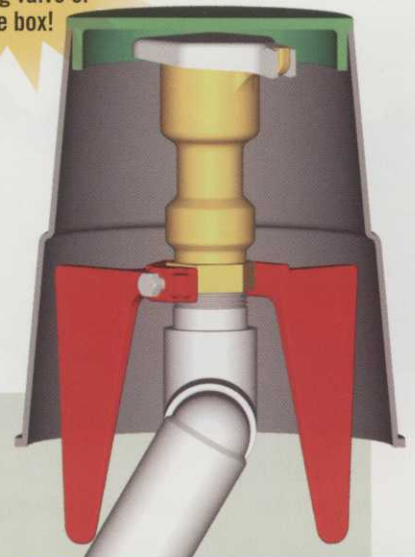
The Claw™

QUICK COUPLER MOTION RESTRAINT

When quick coupler valves become unscrewed from swing joints, it's more than just a hassle - it can be dangerous. The Claw™, new from Underhill, offers a simple solution. Embedded in the soil below the quick coupler, and then securely attached to its base, The Claw provides significant resistance to rotational, vertical and horizontal motion, preventing the valve from moving. Made from high strength ductile iron, this compact anchor attaches easily with a single steel bolt.

EASY RETROFIT

Installs without removing valve or valve box!



The Claw™ pictured with 1" quick coupler, key and hose swivel.

ordering

Part # QCA-075100 The Claw™ for 3/4" and 1" valves

Part # QCA-150 The Claw™ for 1-1/2" valves

Impact Sprinklers

SOLID BRASS, ULTRA-RELIABLE WORKHORSES

For reliable, trouble-free, high-performance year after year, you just can't beat our brass impact sprinklers. Available in full circle and full/part circle, in inlet sizes of 3/4", 1" and 1-1/4".

features

- Solid brass construction
- Stainless steel drive spring
- Bearing assembly hood for longer wear life
- Chemical resistant bearing seals
- Solid brass nozzle

Underhill's SI100F 1" inlet brass impact atop the portable base RollerPro™ (see page 10) puts a powerful sprinkler anywhere you can run a hose.



3/4"
Flow: 5-15 GPM
Spacing: 40-60 ft.



1"
Flow: 15-45 GPM
Spacing: 50-80 ft.



1-1/4"
Flow: 25-120 GPM
Spacing: 75-110 ft.

ordering

		GPM	Radius (ft.)
Part # SI075F	3/4" MPT Full Circle Sprinkler	13	57
Part # SI075P	3/4" MPT Part/Full Circle Sprinkler	11	48
Part # SI100F	1" MPT Full Circle Sprinkler	23	71
Part # SI100P	1" MPT Part/Full Circle Sprinkler	23	71
Part # SI125F	1-1/4" MPT Full Circle Sprinkler	51	96
Part # SI125P	1-1/4" MPT Part/Full Circle Sprinkler	54	78

Performance data shown at 80 psi. GPM and radius will vary with pressure at sprinkler



VersaLid™

UNIVERSAL REPLACEMENT LID FOR ALL VALVE BOXES

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

- Stepped locking system
- T-Top design minimizes dirt in valve box
- Fits all 6"-7" round boxes
- Interchangeable, easy to install
- Greater top-load strength and more UV-resistant than structural foam lids



ordering

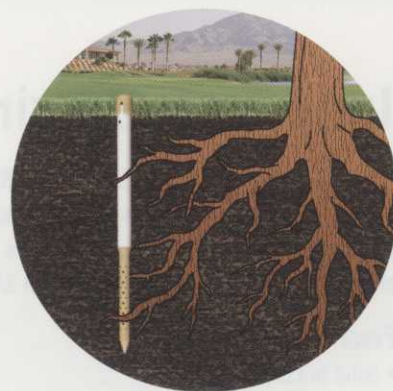
Part # VL-6 VersaLid™ 6"-7" valve box lid



DeepDrip™

TREE WATERING STAKES

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



THREE LENGTHS FOR USE WITH ALL TREE SIZES

DeepDrip comes in three sizes, each designed for use with automatic landscape drip systems or a hose. The 14.5" unit is ideal for small trees and shrubs with shallow roots, like rose bushes and ornamental trees (or in commercial use for 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.

DeepDrip™ watering stakes can be installed during or after tree planting. Once in, you have instant access to the root system for fertilizer delivery or to set up deep automatic drip watering.

ordering

- | | |
|---------------|--------------------------------|
| Part # A-DD14 | DeepDrip™ 14.5" watering stake |
| Part # A-DD24 | DeepDrip™ 24.5" watering stake |
| Part # A-DD36 | DeepDrip™ 36" watering stake |



MicroEase™

MICRO-IRRIGATION KITS

Convert your current, inefficient irrigation into a highly effective, low-maintenance, water-saving drip system. MicroEase™ kits can connect to a water faucet, existing sprinkler system or 1/2" riser, providing efficient, low volume irrigation ideal for clubhouse surrounds and other landscaping, shrubbery and planter areas.



PRO KIT
(faucet connection)



CONVERSION KIT
(sprinkler/riser connection)

ordering

- | | |
|-------------------|------------------------------------------------|
| Part # ME-SS-PK | MicroEase™ Pro Kit: spray spikes (25) |
| Part # ME-8SS-PK | MicroEase™ Pro Kit: 8-stream spikes (25) |
| Part # ME-SS-SCK | MicroEase™ Conversion Kit: spray spikes (9) |
| Part # ME-8SS-SCK | MicroEase™ Conversion Kit: 8-stream spikes (9) |

Gulp™ Series Pumps

WATER REMOVAL SUCTION PUMPS

Whether you need to remove water from sprinklers and valve boxes or displace gallons of standing water in the field, the Underhill Gulp™ series of water removal hand pumps has the right tool for the job. Constructed from heavy-duty, corrosion-proof materials, these pumps are self-priming and easy to clean. The Gulp Syringe™ and Gulp™ are ideal for carrying on maintenance carts for small, routine needs. For larger water removal jobs, BigGulp™ pumps a gallon of water in only four strokes and SuperGulp™ can move 16 gallons of water in one minute.



SUPER GULP

- 16 GPM pumping capability
- 4" dia. x 2 ft. pump chamber
- 3" dia. x 3 ft. outlet hose
- 3" dia. x 7 ft. outlet hose



BIG GULP

- 35 oz./stroke
- 3 ft. pump chamber
- 36" or 72" outlet hose



GULP

- 8 oz./stroke
- 1 ft. pump chamber
- 10" outlet pipe



GULP SYRINGE

- 8 oz./stroke
- 1 ft. pump chamber
- 11" outlet tube



Use the BigGulp™ Riser Attachment to help prevent mud and rocks from entering the pump chamber.

ordering

- | | |
|-----------------|---------------------------------|
| Part # A-G12 | Gulp™ |
| Part # A-G12S | Gulp™ Syringe |
| Part # A-G3636K | BigGulp™ with 36" outlet hose |
| Part # A-G3672K | BigGulp™ with 72" outlet hose |
| Part # A-G2484 | SuperGulp™ with 84" outlet hose |
| Part # A-G01 | BigGulp™ Riser Attachment |



SuperGulp™



BigGulp™



Gulp™



Gulp™ Syringe



20505 Crescent Bay Drive
Lake Forest, CA 92630 USA

tel: (949) 305-7050

fax: (949) 305-7051

1-866-863-3744 • www.underhill.us



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Form No. UIGWP-809

Products that work...smart.™

Luke Frank is communications director for the American Society of Irrigation Consultants. He's worked in the green industry for more than 15 years, addressing water resource development, management and conservation through irrigation. Reach him via asic.org.



YOUR MAP TO GROUND ZERO

A lot of people talk at “30,000 feet,” as they say. Let’s bring it down to ground level, where the action is. Every year, we clean and tune up our irrigation equipment – knowing that on an old golf course, there’s a fifty-fifty chance things could go our way. Whether we like it or not, there’s a decent chance for some kind of an irrigation system failure, and often the bigger challenge is finding – not fixing – the problem.

Where will the action be this year? A compression fitting on the 11th tee box installed about eight years ago when a trencher nicked the piping? An electrical splice hastily twisted last summer and buried outside the valve box? Who’s going to have to find it and how fast?

I’ve always felt bad for irrigation crews, regularly dispatched on mapless treasure hunts. No clues, no markers, no direction – just find it and fix it. I guess it’s just part of the training. After all, you can throw just about anything at a seasoned irrigation foreman. Eventually, he (or she) can find a 30-year-old old irrigation drain somewhere on the east end of a 100-acre site, or the original 6-inch asbestos main from an old greens nursery buried 3-feet deep. But it takes a lot of time, patience, inspection, reflection and perhaps most of all – shoveling.

GET YOUR AS-BUILTS IN GEAR

Why would anybody not have a “map” to his or her site? I’d expect every golf course superintendent to have an accurate blueprint that quickly locates irrigation system features and even details when they were installed, modified, upgraded and removed, just out of good, old-fashioned CYA and professional paranoia.

Irrigation as-builts are worth their weight in gold, and the more current and accurate, the better. You can usually recognize a golf course that doesn’t work off an as-built. You see long trenching scars in the fairways or roughs from exploratory surgeries. Patches of turf around some of the valve boxes look lumpy and out of place.

If you’re managing a large site, Global Positioning System (GPS) might be the way to go. GPS refers to a network of satellites that can provide accurate positions anywhere in the world, 24 hours a day. It’s become a pretty hot product in the golf industry because you can catalog so much detail about the entire course – including turf and tree species, bunkers, water hazards, landscaped areas and parking lots.

In addition to locating details of irrigation piping and electrical runs, individual system components (to the year, make and model) and repairs, you can document the exact square footage, linear footage and acreage of your site and all of its features. The square-footage information can be used to more accurately calculate pesticide and nutrient requirements.

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GPS as-builts record with astounding precision the location of every single irrigation head, valve, pipe and fitting, electrical and control line, drain and air-relief valve. Need I go on?

We’re all stuck with what we inherit, but too many golf course sites remain without any drawings or documentation whatsoever. One of the biggest challenges when arriving at a new site is not having enough documentation of the existing system, so out come the measuring wheels. But these data sets can’t tell you what parts of an antiquated irrigation system have been altered over the decades.

If you can’t go GPS, at least get started this season with some kind of baseline project map and inventory record. Stop working in the muck wearing a blindfold, feeling around for system repairs and upgrades. Hand-trenching across turf to locate irrigation lines or equipment is about as inspiring as breaking granite into sand.

I always marvel at a crew of three or four guys up to their waists in a hole guarded by a couple of trucksters. “What are you guys lookin’ for?” I ask.

“An old quick coupler that’s weeping – we haven’t seen it in years,” they say.

“How long you been here?” I prod.

“Dove into it first thing this morning,” they admit.

If you’re going to send them on a treasure hunt, at least give them some clues. **GCI**



Jeffrey D. Brauer is a licensed golf course architect and president of GolfScapes, a golf course design firm in Arlington, Texas. Brauer, a past president of the American Society of Golf Course Architects, can be reached at jeff@jeffreymbrauer.com.

WHAT DO GOLFERS WANT MOST?

When golf was booming back in the 1990s, it was easy to be a genius, much like it was easy to be a stock-picking genius when the market rose 20 percent a year. In tough times, it's more difficult to look smart. But, some positive examples of genius in the golf course business are certainly still out there.

I am proud to say that one of my designs, Sand Creek Station in Newton, Kan., recently won the National Golf Foundation Annual Customer Loyalty Award in 2008 with a strong 87 percent rating. The award is based on customer responses to the course's staff friendliness, overall experience, value, course condition, amenities, scenery and aesthetics. Looking at the criteria, KemperSports, who manages the facility for the city of Newton, must be given much of the credit for the "experience" customers have.

It's clear that maintenance and service are important factors in customer loyalty. As someone who chooses golf venues based on playing a variety of courses, it's hard for me to fathom that about 90 percent of all "where to play" decisions are based on camaraderie, convenience and cost. Even so, there's so much competition out there that a quality experience is critical to your success.

While it also humbles me to see how low design ranks in decisions on where to play, I do think good design has some benefit in making facilities popular, even if it's largely intuitive to the golfer or mixed in with "aesthetics."

While golfers rarely notice design nuances (if they all did, I guess it wouldn't technically be a nuance) they do notice repetition in looks, club selection and features – especially negative repetition, like too many short or long holes, too many water hazards or too many narrow fairways. They also notice a course with few features that's totally boring, even when paying low fees.

Golfers do understand "value" – the feeling that they're getting a great experience for a reasonable price, no matter what the price level. A common comment on

Sand Creek Station is that it feels a lot more like a \$75 dollar course than a \$40 course.

But, it's a matter of degree – most golfers will play an expensive, difficult and well-known course occasionally (courses rarely get famous for being easy), but for their "everyday course," a facility like Sand Creek Station is popular because it isn't a back breaker or a bank breaker. Majority of the time, golfers want to play courses they intuitively recognize as "good" and shoot their normal score (not lose golf balls) and be able to enjoy some scenery.

However, catering to all 25 million golfers is getting increasingly difficult. The "typical customer" may be extinct. I believe future courses will be more narrowly targeted to a specific market segments rather than being aimed at "average golfers." An example would be

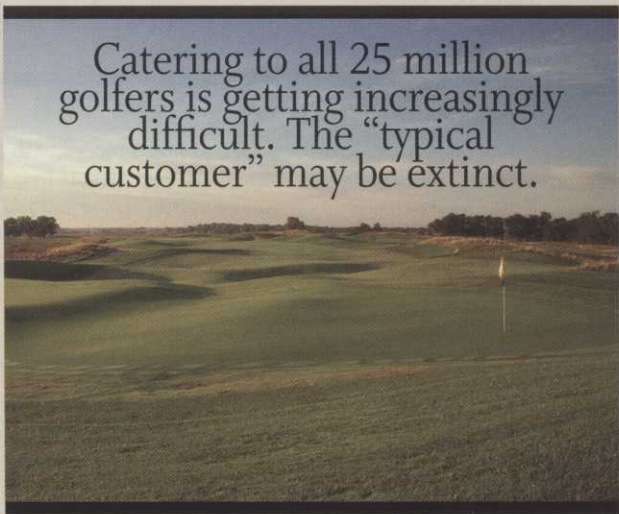
redesigning courses that lie within senior communities to provide what they want vs. the "championship course" that sold real estate initially.

While your customers can be harsh critics, asking for impossible ideals like lush, green fairways that give plenty of roll and soft greens that hold any approach shot but never get bumpy from traffic, in reality they aren't judging you against

Pebble Beach. Just as customers judge burger joints to burger joints and steak houses to steak houses, golfers judge similarly priced golf courses.

It's important that your "cues" tell golfers what it is they're getting for their golfing dollar. It's just as likely that spending money on flower beds at a low-priced course is as poor a business decision as not providing amenities at a high-price course.

Too many courses are competing only on price these days when with a little work and effort, they could probably charge more and golfers would happily pay it if the facility offered just a bit more value for the money. It might be worth asking some questions, rather than assuming your golfers like what you like and are the same as they've always been. **GCI**



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EASY

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DAY OUT

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DURABLE



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Monroe Miller is a retired golf course superintendent. He spent 36 years as superintendent at Blackhawk Country Club in Madison, Wis. Miller can be reached at groots@charter.net.

MENTORING'S PAYOFF

In many ways my career in golf couldn't have been scripted any better.

I greatly enjoyed the golf club that employed me for 36 years, and its location in my home state was an advantage I appreciated almost daily.

Our golf course was only a short distance from our land grant University of Wisconsin. That means Big Ten sports, terrific cultural opportunities and alumni activities galore.

Maybe best of all, the UW-Madison has a four-year turf program that we think ranks with the best. There's my prejudice – I am a product of that program.

From my first year in 1973 to my final in 2008, my staff included at least one turfgrass intern. That offered rewards and advantages that cannot be overstated, but serious responsibilities were also part of the deal.

I mention this because I've been asked many times already what I miss most about being retired from managing a golf course. It might be easier to answer what I *don't* miss because there were so many pleasant and rewarding aspects to my daily work life. But, honestly, I miss working with the college kids most.

Proximity made it easy for me to attract turf students. They were able to work both ends of the summer and even, sometimes, in the shop in the winter. They usually kept the same apartment they had for the school year – no sublets – and the appeal of campus life extended into the summer for them.

I was a student intern myself once, and wise words of advice from my undergrad advisor and major professor – Dr. James R. Love – were the catalyst for my commitment to turf students. He said many times that the only way for us to repay the help we'd received was to help those who aspired to the

same; in other words, pay forward, not back. He was right on.

It would be nearly impossible to record all of the positives to establishing an internship program for a golf course, but at the top of my list is the enthusiasm for golf turf I saw in every turf student I ever employed. Their career choice wasn't a second choice; they loved the work, just as I did when I was their age. Always, it was more than a summer job; their motivation to do good work was endlessly impressive and inspired me not to let them down in any way.

And talk! For most of these kids, "talking turf" among themselves and visiting with the rest of us about golf and grass was not only instructive, it was entertaining and enjoyable. Being surrounded by students kept me young and on my toes. The questions and challenges came fast and furious at times, and it would have been irresponsible for me to try to dodge even one of them.

One of the most important requisites of a mentor is your ability to be an open book. "Keep no secrets," was my motto; every time someone had a question, he got an honest and sincere answer. More than a few times I'd confess, "I don't know but I will definitely find out for you."

Mentoring on a golf course provided an opportunity to be a teacher, one of the most noble of activities. Superintendents, at least in our four-year undergrad program, filled in the technical and practical aspects of turf student education. It's one thing to be able to integrate or differentiate a calculus equation and quite another to calculate quantities that go into the tank for disease control.

Our weekly meetings included relevant math problems, a few grammar lessons, equipment issues and a whole lot more of the down-to-earth

situations faced daily by golf course superintendents.

It's inevitable that interns will leave with some of your basic philosophy, things I like to think will help over time. Neatness, no tolerance for tardiness or absenteeism, teamwork, a real sense of committing to what's good for the game of golf and respect for the chain of command are but a few examples that may not be taught in a college four-year curriculum but were learned in our workplace.

A good internship plan isn't always fun; it's always a lot of work and has a significant time requirement. Occasionally you'll experience a student who's difficult or arrogant or who's quite sure he knows much more than you do. And there will be an individual who expects an internship means riding around with you all day and who's in a state of shock when given a shovel.

Having so many former golf course employees is like having a large extended family. We talk on the phone, exchange Christmas cards and visit about fun things when we meet. I get wedding invitations, birth notices, write letters of recommendation and both send and receive letters of congratulations and condolence.

More than anything, I'm proud of them all. They've accomplished great things in our profession.

Internships and students have enriched not only my career but my life, as well. The responsibility to instruct students is formidable, but it can lead to respect and a contribution to golf that can make a difference.

The great English golf writer Bernard Darwin, commenting on students and teaching, put it this way: "It is no small bond between two people or between a hundred that they have been at the best house of the best school in England." **GCI**