



T-400

Portable Irrigation Machine

Assembly Instructions and Operation Manual



Underhill International Corporation

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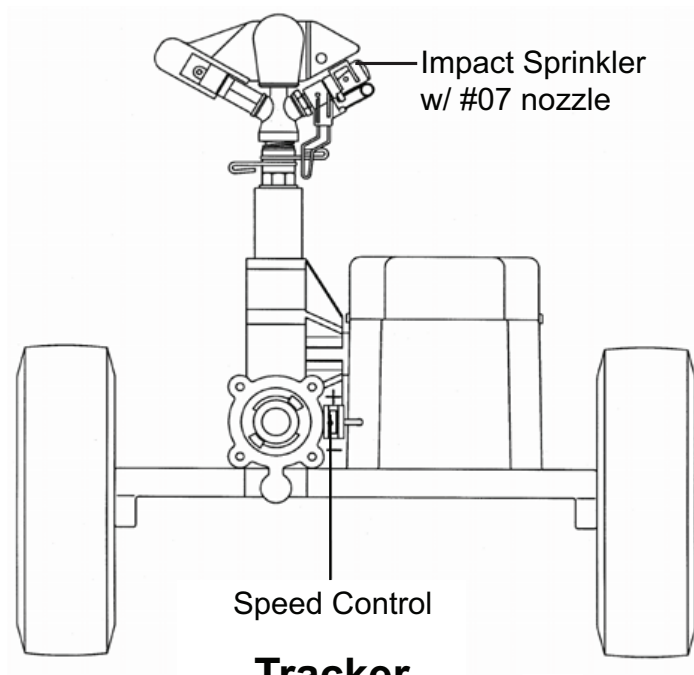
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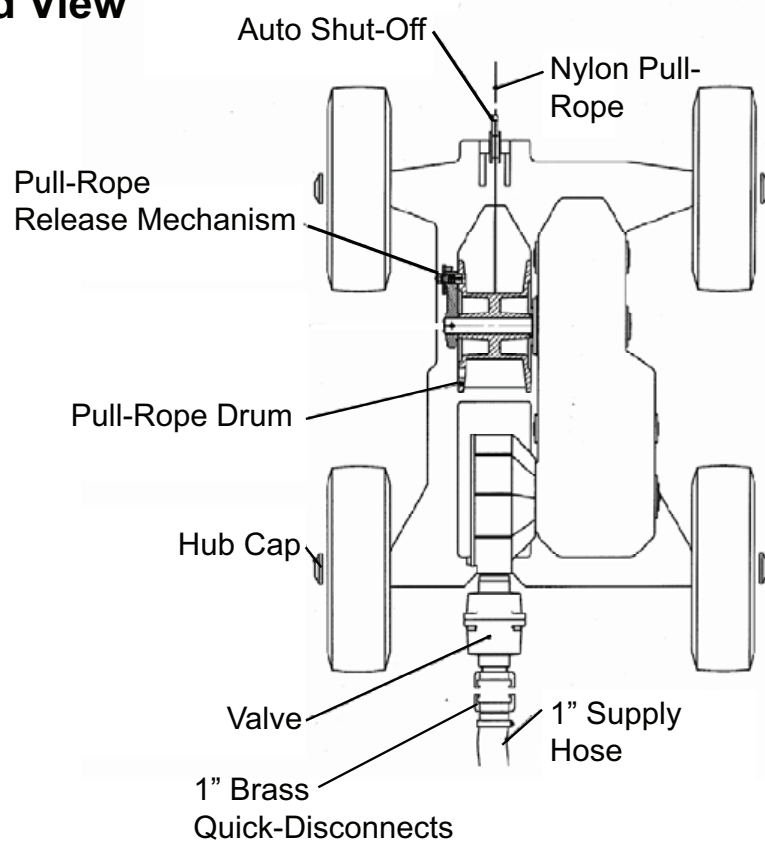
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Tracker Views



**Tracker
End View**



**Tracker
Top View**

Introduction

Congratulations on your purchase of Underhill's Tracker, portable irrigation machine. Please take a few moments to read the following Assembly and Operating Instructions to become familiar with this product.

Using your smart phone, scan the following symbol for a quick overview video on the Tracker operation.



Application

The Tracker is a self-propelled, portable irrigation machine that can be used for irrigating sports field, pastures, or large parks when supplemental irrigation is required.



Tracker Portable Irrigation Machine
Figure 4-1

The Tracker pulls itself up to 360' in length with the supplied nylon pull-rope to a ground stake and will automatically shut itself off when it's reach the end of its tether. A 1" supply hose should be 10% longer than the length of area to be watered.

The Tracker has a full-circle sprinkler pattern of 70-80 feet in diameter (depending on delivery pressure and standard nozzle).



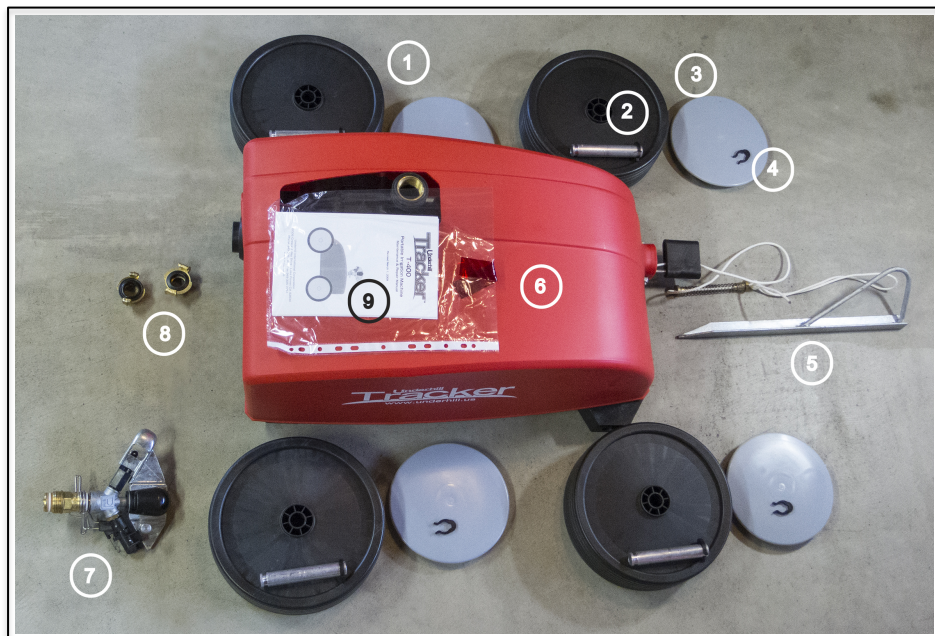
Warning: The Tracker requires at least 9 GPM and a 1" diameter hose plus a minimum of 50 Psi at the inlet side of the unit.

Getting Started

The table below identifies the contents of the shipping carton, also shown in Figure 5-1.

Inspect each component to make sure none were damaged in transit. If you determine parts are missing or are damaged, contact Underhill International Corp. at (949) 305-7050.

No	Qty	Description
1	4	Plastic wheels
2	4	Aluminum wheel axles
3	4	Gray plastic wheel hubcaps
4	8	Black plastic axle retainer clips
5	1	Galvanized ground stake
6	4	Tracker chassis w/ hinged red plastic cover
7	1	Adjustable full/part circle impact sprinkler w/ #07 nozzle
8	1	Male to female brass quick-connect hose fitting
9	1	Operating and Maintenance Manual



Contents of Tracker Shipping Carton
Figure 5-1

Recommended Tools for Assembly

The following is a list of tools or other components needed to quickly assemble the Tracker.

No.	Tool Description
1	Large crescent wrench
2	½" Teflon Tape

With the proper tools, assembly should take approximately 15-20 minutes.

Assembly Instructions

The sequence of installing the Tracker is listed below;

- Assemble and install the wheels
- Assemble and install the water supply fittings
- Install the impact sprinkler
- Locate and understand pull-rope release mechanism
- Locate and understand how the auto-shut-off function operates.

Assemble and Install the Wheels

Place the Tracker on its side. Insert the one of the hollow aluminum axles into the one of the wheels with the ribs of the wheel facing outward as shown in Figure 6-1.



Inserting Axle into Wheel
Figure 6-1

Slide the wheel and axle assembly into the axle support and clip into place with the black axle retainer clip so the smooth side of the wheel faces inward. See Figure 6-2.



Snap Retainer Clip onto Axle
Figure 6-2

Repeat this process for the remaining 3 wheels

Once the wheels are installed, attach the 4 (gray) hubcaps as shown in Figure 7-1.



Installing Hubcaps
Figure 7-1

Assemble and Install The Water Supply Fittings

Locate the 1" brass threaded inlet on the back of the Tracker. Wrap the male threads of the 1" brass, male to female quick-connect with Teflon tape and thread into this inlet, see Figure 7-2. Hand-tighten, then $\frac{1}{4}$ turn further with a crescent wrench to prevent leakage.



Thread Brass Quick Connect into Tracker Inlet
Figure 7-2

The mating connector to this quick connect has a 1" female hose thread (FHT) to attach to a 1" diameter hose, See figure 7-3.



1" Female Hose Thread
Figure 7-3

Install the Impact Sprinkler

Wrap the male threads of the impact sprinkler with 3 or 4 turns of Teflon tape and thread into the 1" outlet on top of the Tracker, see Figure 8-1. Tighten ¼ turn further with a crescent wrench.



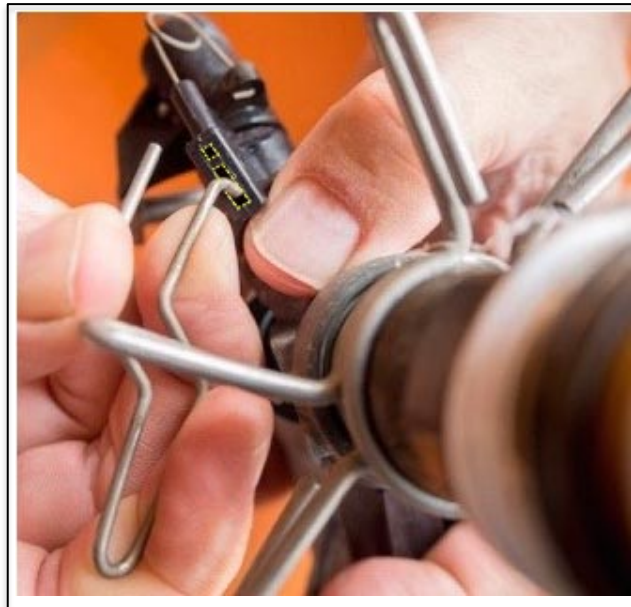
Note: Confirm the red cover is **closed** before connecting the sprinkler.



Installing the Impact Sprinkler
Figure 8-1

Converting a Part Circle to a Full Circle Arc Pattern

Unthread and remove the Tracker sprinkler. Turning the sprinkler upside down, locate the arc pattern “trip-lever” on the opposing side of the main nozzle as shown in Figure 8-2. There are two rectangular openings, one larger than the other (shown in dashed yellow lines). Pinch the outward facing wires together while rotating the one side with the larger slot molded in the underside of the mechanism upward at the same time to remove the trip lever. Now the sprinkler will rotate continuously in a full circle.

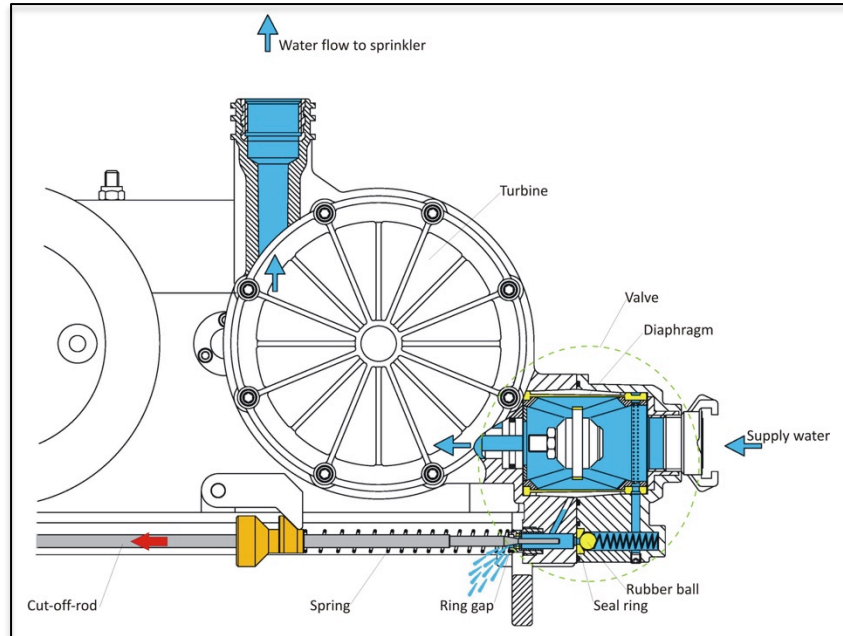


Removing the Arc “Trip-Lever”
Figure 8-2

Tracker Operation

When connected to a 1" diameter hose (to support the flow demand of the impact sprinkler), with a minimum of 50 Psi, the Tracker will automatically pull itself along the nylon cord, then automatically shut off once it's reach the ground stake.

Unthread the impact sprinkler and open the plastic cover of the Tracker. Figure 9-1 shows mechanical "On/Off" features of the Tracker.



Tracker "On"
Figure 9-1

When the cut-off rod is turned downward as shown in Figure 9-2, the spring-loaded rod will be pushed away from the valve. A rubber ball will be pressed to the seal ring to close the water flow to space outside of the diaphragm shown above, thereby allowing water to flow past the turbine and out through the sprinkler.



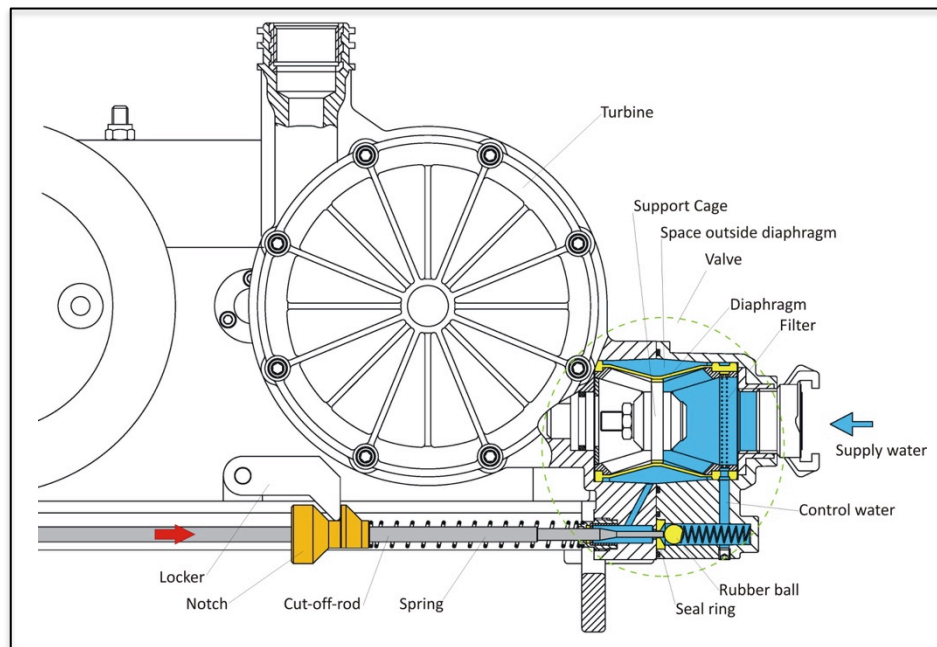
Tracker Operating
Figure 9-2

When the pull rope mechanism is pushed inward (see Figure 10-1), simulating the all of the nylon pull rope has been spooled, the spring loaded cut-off rod slides into the notch as shown in orange below.



Cut-Off Rod Push Inward
Figure 10-1

When cut-off rod is in this position, a rubber ball will be pushed away from the seal ring. This enables water to by-pass the seal ring and pressurizes the space outside of the diaphragm shown in blue in Figure 10-2 below automatically shutting off the Tracker.



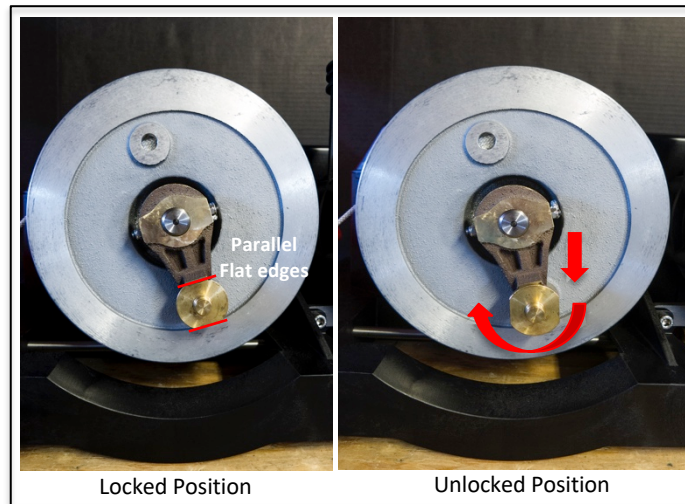
Tracker "Off"
Figure 10-2



Note: If the Tracker is observed to no longer pull it self along the nylon rope, then the cone-shaped inlet of the diaphragm is clogged w/ debris and needs to be cleaned.

Locate the Pull Rope Release Mechanism

Open the red cover to expose the interior of the Tracker. There is a large brass knob on the side of the pull-rope drum. Note how the brass knob has two parallel flat sides see Figure 11-1.



Pull Rope Release Mechanism
Figure 11-1

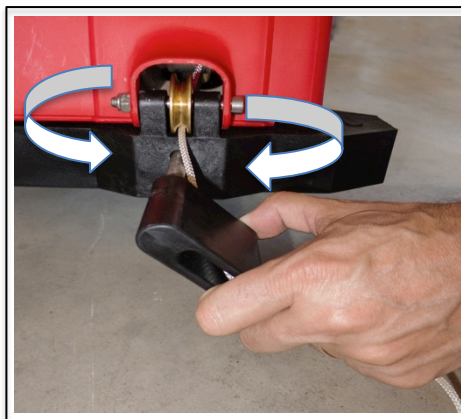
Pull the knob outward while simultaneously twisting in a clockwise or counter-clockwise manner to release the spool from the gear drive. Pull out the desired amount of pull rope and attach the loose end to the ground stake.



Confirm the pull-rope has some tension on the drum before the release mechanism is locked. Any slack could cause the Tracker to automatically shut-off prematurely.

Locate the Auto Shut-off

Close the red plastic cover and locate the black, rectangular auto shut-off knob on the front of the Tracker as shown in Figure 11-2.



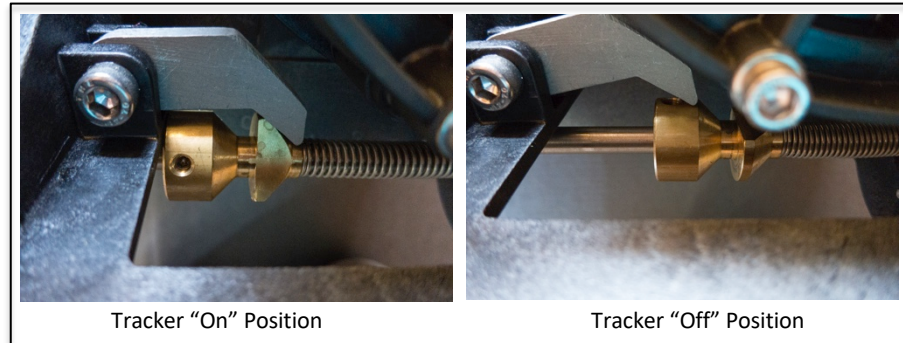
Auto Shut-off
Figure 11-2

The auto shut-off knob is connected to a valve that will automatically stop forward travel of the Tracker when it reaches the end of the pull-rope.



Note: The auto shut-off has to be manually reset after each irrigation use.

To reset push the auto shut-off inward rotate 180° as shown in Figure 12-1. This latch is located to the right of the pull-cord spool under the red cover.



Auto Shut-Off Reset
Figure 12-1

The Tracker is now ready to irrigate.

Operation

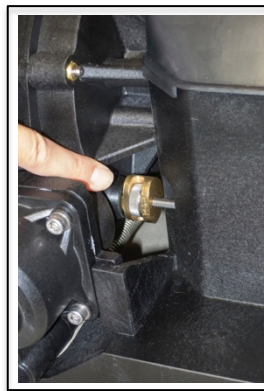
Now that the Tracker is fully assembled, connect a 1" hose to a water source and then other end to the quick connect fitting of the Tracker.

Required Operating Pressure

The Tracker requires a **minimum of 50 Psi** at the inlet side of the machine. If delivery pressure is measured to be the same or lower at the water source, this could impact the product's performance where it may not operate as expected.

Speed Adjustment

The Tracker has variable travel speed adjustment capability located under the cover above the water supply inlet see Figure 13-1. Turn the speed control knob (-) or (+) to increase or decrease the factory-default setting. One complete turn of the speed control knob in either direction will produce a speed variation of approximately 4%.



Speed Adjustment Knob
Figure 13-1



Note: Remember that even though the Tracker will automatically shut off, the water supply line remains pressurized. The water supply line or source should be turned off once the irrigation cycle is complete.

Set-up to Water

Set the Tracker approximately 50 feet from the boundary of the area to be irrigated.

Pull the nylon pull-rope to the desired length and tie-off to the ground stake.

Connect a 1" supply hose to the Tracker inlet. Open the hose bib or quick coupler slowly to begin irrigating and confirm the Tracker begins to travel.

If it fails to move forward, turn off the water and confirm the auto shut-off has been reset properly.

Maintenance

The Tracker requires periodic maintenance to ensure long-life and reliability. Please follow the following maintenance recommendations;

- 1) Grease the spindle of the gear wheels once a year. Use white lithium lube grease.
- 2) When used in cold-weather climates empty any residual water within the Tracker. To do so, disconnect the supply hose. Turn the auto shut-off knob 180° downward, see Figure 8-2 and then tilt the Tracker upwards to drain.

Troubleshooting

A separate Troubleshooting Guide can be found on Underhill's web site via the following web link;

<http://underhill.us/markets/golf/watering-acc/199-tracker#resources>

Spare or Replacement Parts

An exploded view of the internal parts of the Tracker can be found on Underhill's web site via the following web link;

<http://underhill.us/markets/golf/watering-acc/199-tracker#resources>

Tracker Operation Video

A video of the Tracker in operation can be found on Underhill's web site via the following web link;

<http://underhill.us/markets/golf/watering-acc/199-tracker#video>

Underhill UltraMax™ Hose Series

Underhill offers a variety of 1" hoses in different materials and operating pressures to meet a wide range of applications and budgets. See web link:

<http://underhill.us/markets/golf/watering-acc/217-ultramax-red-hose>



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