

Underhill®

Tracker™ 2

T-400-2 Portable Irrigation Machine Assembly and Operating Instructions



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Introduction

Congratulations on your purchase of Underhill's newest generation of portable irrigation machine Tracker². Now more streamlined with the following unique features:

- 328 ft. (100m) of galvanized steel pull cable,
- Simplified gear drive assembly for longer life and consistent performance,
- Nearly fully assembled in the box, simply install the included part-circle impact sprinkler,
- Connect a 1" minimum sized hose,
- Spool out the cable wire and place the included ground stake of where irrigation is to finish,
- Turn on your water supply and step-back.

Please take a few moments and read the following Assembly and Operating Instructions to familiarize yourself with this product.

Applications

The Underhill Tracker² is a self-propelled, portable irrigation machine that can be used for a wide variety of supplemental irrigation when required.

The Tracker² can pull itself up to 328' in length from point A to point B. It comes supplied with galvanized steel pull cable and ground stake. A minimum of 1" supply hose should be about 10% longer than the length of area to be irrigated depending on the water source.

The Tracker² comes standard with a part-circle impact sprinkler with a radius of 62 feet (18,9m) depending on the delivery pressure to the inlet end of the Tracker². The part circle sprinkler can be converted to a full-circle model by sliding the trip pin upwards while the sprinkler is set to the forward mode and not the reverse mode.



Warning: The Tracker² requires a minimum of 50 Psi water pressure at the inlet end of the machine.

General Instructions for Safety and Accident Prevention

Develop early and safe habits each time operating the Tracker² Portable Irrigation Machine, please check the machine and supply hose. In general:

- Please take a moment and read through these Assembly and Operating instructions prior to operating this machine.
- Before starting, check the immediate visually check the surroundings for children and/or site features that might obstruct the Tracker²'s path.
- Working in close proximity to areas to be irrigated is not recommended,
- The sprinkler nozzle while operating should not be pointed directly at anyone.
- Standard safety measures are to be observed when any low overhead or on-grade wires might exist within the Tracker²'s sphere of irrigation spray. Contact your local electric or power company to obtain advice about safe operating distances if any potential danger exists.

Before Use

The following tasks should be reviewed and completed prior to setting the machine into operation:

- Confirm anything that was previously disassembled for transport or maintenance are in their correct place including the impact sprinkler is tighten into the threaded sprinkler inlet
- Verify the “Stop-Lever Switch” switches off automatically when the machine has spooled up all pull cable. Adjust as needed
- Regularly check the machine’s maintenance schedule and ensure there is sufficient lubrication.

Recommended Tools for Assembly

The only tool needed for initial assembly is an adjustable wrench with a large enough jaw opening to secure the impact sprinkler which is included in the shipping carton but not assembled.

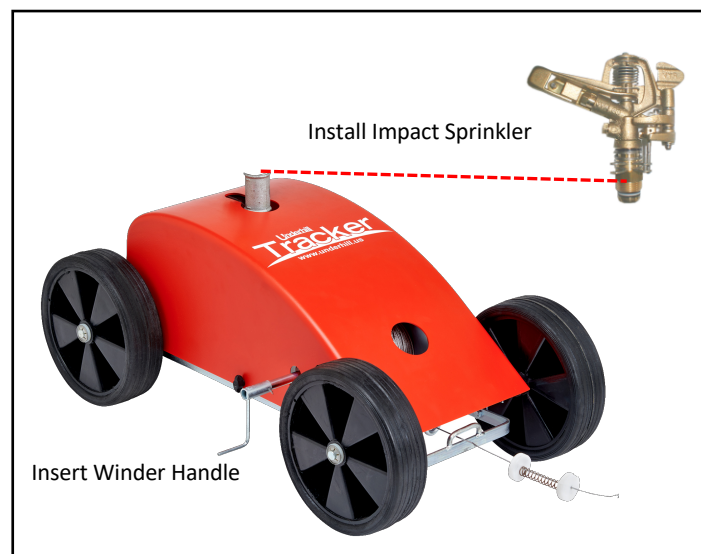
Getting Started

The following are set-up instructions of the machine initial and periodic use.

1. Locate the sprinkler inlet at the top of the Tracker² machine, see Figure 4-1. Wrap the male end of the impact sprinkler with two full turns of Teflon tape. Initially hand-thread and tighten the sprinkler into the sprinkler inlet. Use an adjustable wrench to tighten a ¼ more. The Tracker² comes standard with a part-circle impact sprinkler with a ¼” diameter nozzle.



In full circle applications, the impact sprinkler will reach a stop and then reverse its direction to complete the full circle.



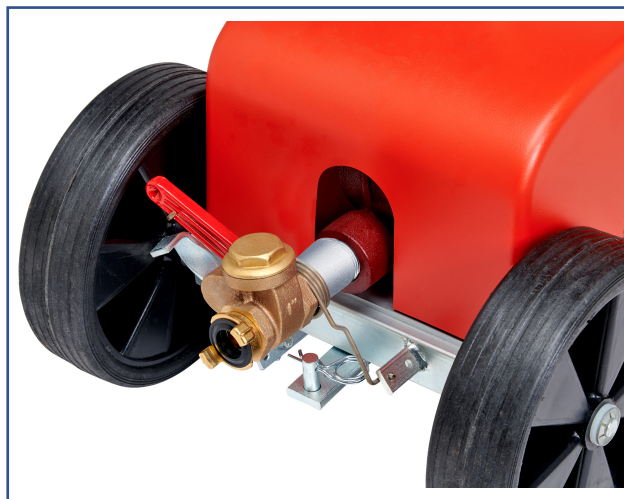
Tracker@ Without the Impact Sprinkler
Figure 4-1

2. Locate the Manual Winder Handle (included in the shipping carton) and insert into the crank shaft of the cable drum, see Figure 4-1 on the preceding page.

3. Locate the hose inlet on the backside of the Tracker², see Figure 5-1. Notice the supplied brass hose quick-connect. Thread the male end of your 1" hose into the threaded female end of the brass quick connect. Underhill offers a wide variety of UltraMax™ 1" hoses in both standard and custom lengths. See the www.underhill.us "UltraMax Hose Series" for more information.

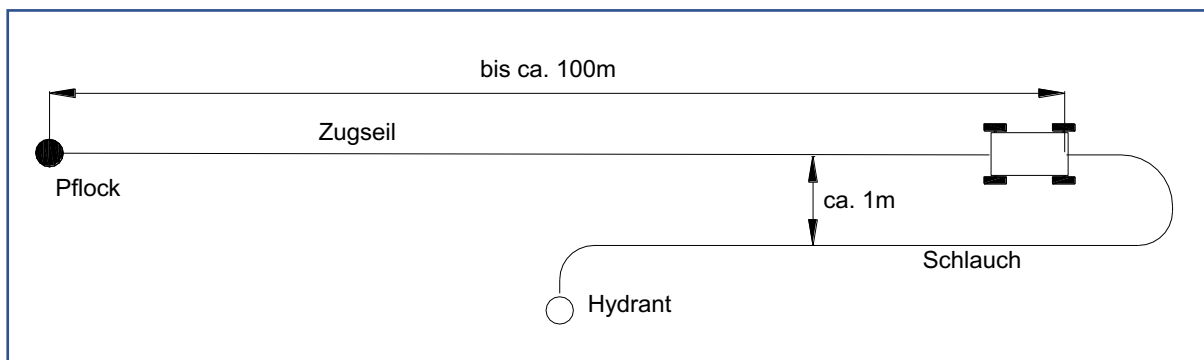


Depending on your water source, more hose maybe needed depending on the area to be irrigated.



1" Hose Inlet w/ Brass Quick Connect
Figure 5-1

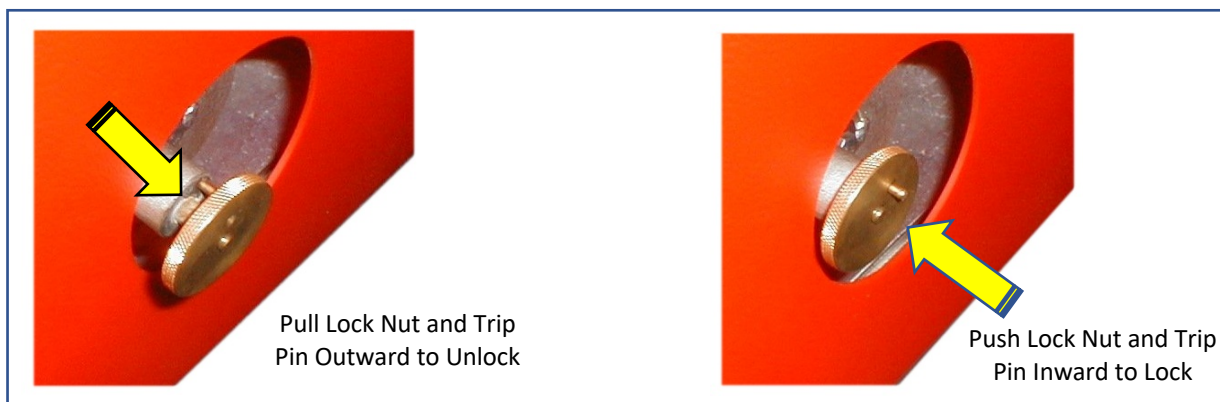
4. Place the Tracker² at the end of the area to be irrigated and nearest the water supply. Consider the radius of the impact sprinkler and delivery pressure to determine the Tracker's final position particularly considering prevailing winds.
5. Layout the hose parallel to the travel direction of the Tracker, see Figure 5-2 below. Now make the hose connection to your water supply. Verify the hose is free of dirt, debris and sand by flushing the hose from the water supply prior to connecting into the Tracker.



Tracker Hose Layout
Figure 5-2

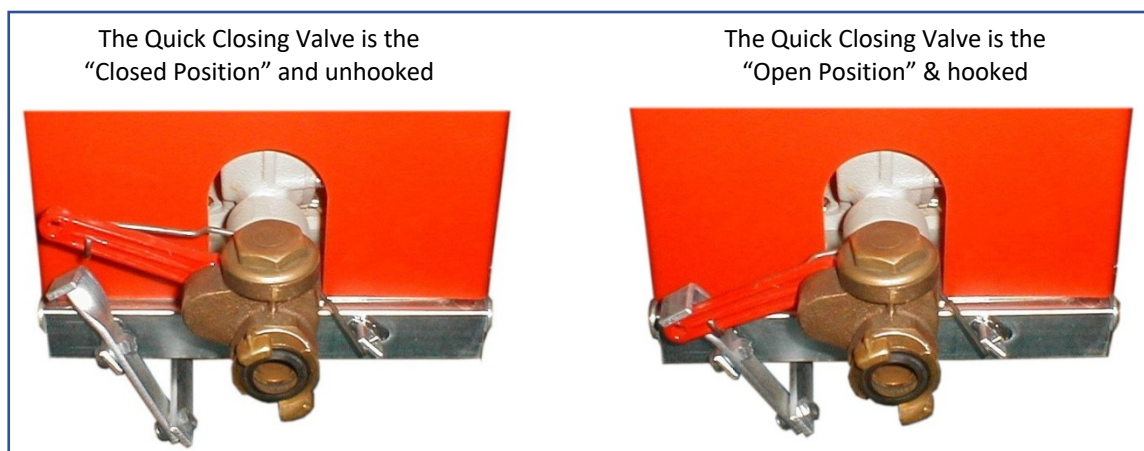
6. Locate the cable drum nut and trip pin on the side of the Tracker, see Figure 6-1. Pulling outward on the brass locknut and trip pin. Once released, spool out as much pull cable as needed for the area to be irrigated. Pull the cable slowly so that it doesn't unravel too quickly.

7. Secure the ground stake where irrigation is to finish. To secure the pull cable, by pressing the lock nut and trip pin inward see Figure 6-1.



Unlocking and Locking Pull Cable
Figure 6-1

8. Locate the Quick Closing Valve on the back end of the Tracker near the hose inlet see Figure 6-2. Push the level downward and secure in the downward position with the hold.



Quick Closing Valve
Figure 6-2



Attention! The water supply must be OFF while the Quick Closing Valve is opened.

9. Open the water supply. Verify the working or delivery water pressure and water flow is sufficient. The Tracker² will start to pull itself along the pull cable by the on-board turbine and gear box.
10. Located at the end of the pull cable is a "Stopper", see Figure 7-1. This presses the switch-off lever to close the quick closing valve once all of the pull cable has been spooled and automatically stop further irrigation.



Stopper
Figure 7-1



Attention: The hose should not stay under water pressure after the unit has shut down for an extended period of time. The water supply is to be closed and any remaining water pressure relieved prior to opening the quick closing valve. Confirm the pull cable has been release per instruction #6.

Winterization

It is recommended to “winterize” the Tracker² when stored in freezing climates. Drain any excess water that might have collected within the machine using compressed air. This can be accomplished by temporarily removing the impact sprinkler and blowing air back through the hose inlet port.

Then clean and lubricate wheel axles, cable drum, pull cable locking mechanism and winder handle connection into the main body of the machine.

Specifications

Product Dimensions

Length	32 1-/2"	(0,83m)
Width	18"	(0,46m)
Overall Height w/ Sprinkler	20"	(0,51m)
Overall Height w/o Sprinkler	14"	(0,35m)
Maximum Working Pressure	116 Psi	(8,0 bar)
Minimum Working Pressure	50 Psi	(3,5 bar)
Weight w/o Shipping Carton	81 lbs.	(36,7 kg)
Maximum Radius @ 116 Psi	62'	(18,6m)
Travel Speed	33 ft/h	(10m/h)
Application Rate	1/8-13/32"/hr.	(3-10mm/hr.)

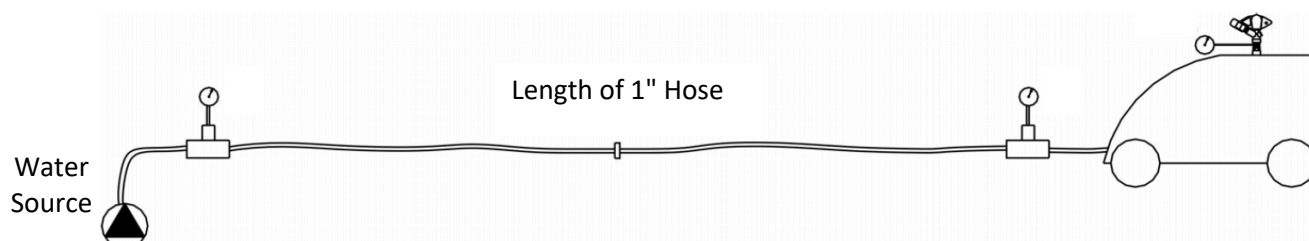
Impact Sprinkler Performance Chart

Nozzle Size	Operating Pressure at sprinkler		Radius		Flow Rate	
	Inches / (mm)	Psi (bar)	Ft. (m)	(m)	GPM (m ³ /h)	
1/4" (6.4mm)		40	2,8	52'	16,0	9.6
		46	3,2	56'	17,1	10
		53	3,7	56'	17,2	11
		58	4,0	59'	18,0	12
		66	4,6	62'	18,9	12
		69	4,8	62'	18,9	12.7

 Data below recommended operating pressure

Hose Friction Loss Chart

Friction Loss for 1" Hose Lengths in Feet				
Nozzle Size	Inlet Pressure	100' (approx 60 meters)	260' (approx 80 meters)	325' (approx 100 meters)
1/4" (6,4mm)	51 Psi	6.0 Psi Loss	15.6 Psi Loss	19.5 Psi Loss
	65 Psi	6.2 Psi Loss	16.0 Psi Loss	20 Psi Loss
	67 Psi	6.5 Psi Loss	16.5 Psi Loss	21 Psi Loss



Notes:

1. The Tracker2 requires a minimum of 50 Psi to the inlet end of the machine (after all losses calculated through the length of hose to be used)
2. 1/4" diameter (6,4mm) nozzle is the standard nozzle used in these calculations
3. The Tracker2 requires a minimum of a 1" hose.
4. To determine if there is sufficient pressure to operate the Tracker, determine the hose length and associated friction loss from the chart above.