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LIMITED WARRANTY

Bowman Manufacturing Co, Inc. ("BMC") warrants all products to be free from defects in material and workmanship for a period of 1 year from the date of delivery of the product to the original retail purchaser. BMC shall repair or replace, at its discretion, free of charge, any part that shows evidence of such defect.

It is the owner's responsibility to return all products in question to BMC, freight prepaid, or to deliver the product to a place designated by BMC for warranty evaluation.

Under no circumstances will this warranty cover any item or component thereof which, in the opinion of BMC, has been subjected to misuse, unauthorized modification, neglect, improper maintenance, accident, or substitution of parts other than those obtainable through BMC, nor will it cover normal wear associated with use of the item.

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! SAFETY FIRST! !

SAFETY PRECAUTIONS MUST BE FOLLOWED! READ AND UNDERSTAND THE ENTIRE CONTENTS OF THIS MANUAL BEFORE ASSEMBLING, OPERATING OR MAINTAINING THIS EQUIPMENT. FAILURE TO FOLLOW SAFETY INSTRUCTIONS AND FAILURE TO USE COMMON SENSE COULD RESULT IN SERIOUS INJURY AND/OR DEATH TO THE OPERATOR, BYSTANDERS, PASSERSBY OR ANIMALS IN THE AREA.

OPERATOR'S MANUAL



WICKBAR PIPE PLUS ROPE



<u>Model No.</u>	<u>Description</u>
WT40	40" Wickbar, center fill
WT90L	90" Wickbar, left elbow
WT120L	120" Wickbar, left elbow*
WT160L	160" Wickbar, left elbow*
WT180L	180" Wickbar, left elbow*
WT240L	240" Wickbar, left elbow

* also available with elbow on right end.



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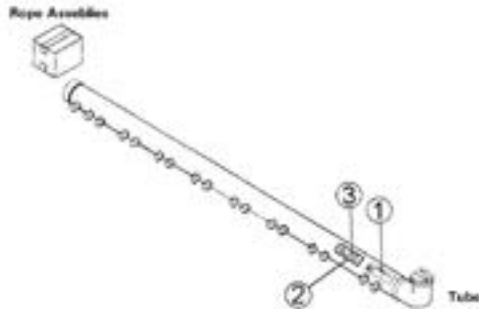
SAFETY TERMS

Throughout this manual, the term **IMPORTANT** is used to indicate that failure to observe can cause damage to equipment. The signal words **CAUTION**, **WARNING** and **DANGER** are used in conjunction with the **SAFETY-ALERT SYMBOL** (a triangle with an exclamation mark), to indicate the degree of hazard for items of personal safety.

	THE SAFETY-ALERT SYMBOL MEANS ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!
	CAUTION Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. Color code for CAUTION SIGNS is YELLOW and BLACK .
	WARNING Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices. Color code for WARNING SIGNS is ORANGE and BLACK .
	DANGER Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded. Color code for DANGER SIGNS is RED and WHITE .

SAFETY DECALS

 **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!** 
Replace Immediately If Damaged!



1. CAUTION "CHEMICAL" - 11202 (1)



3. SIZE - 00000 (1)

T160L

2. BOWMAN - 11276 (1)



NOTES:

PARTS cont.

40"



Ref. Part No. No.	Qty	Description
1 WT40	1	RD pipe w/rope, 40" center
* 14357		Adapter, ropewick 3/4mp-mgh
* 14549		Elbow, 3/4mp-3/8hb short ny
* 10735		Clamp, hose 3/8&1/2worm gear
* 25755		Tubing, cl vinyl 5/8od-3/8id
* 14403		WT vent tube asby
* 14412		Nut, garden hose
* 13174		Washer, garden hose
* 10643		Rope assembly (1 rope, 2 nuts, 2 grommets)
* 17841		Rope, wick 18
* 14375		Ropewick nut, 3/4fgh-5/8hole
* 15787		Grommet, ropewick

* replacement parts

ASSEMBLY

1. Screw rope assemblies onto adapters in two parallel rows. (***For multiple 40" pipes only***, install loose ends of ropes across adjoining pipes such that rope pattern is maintained. Shorten exposed length of outer end ropes and install onto adapters so that rope will be at a slight diagonal.)
2. Remove sag from each rope by un-threading one end of the rope assembly and adjusting the grommet. Hand tighten nuts onto adapters snugly.
3. For 40" pipe only, screw filler/vent assembly to the filler adapter on pipe.

MOUNTING WICKBAR

1. For 120" wickbars or longer, back up the PVC pipe with a steel support bar within 3 ft. from each end of PVC pipe.
2. Attach the PVC pipe to the support bar with clamps no further than 4 1/2" ft. apart.
3. For best results, the wickbar should be height adjustable and allowed to tilt so that the angle of ropes is variable.

SPECIFICATIONS

Model	Total Length	Effective Rope		Total Capacity (gallons)	Working volume	Internal Baffles	Weight (lbs)
		Coverage					
WT40	40"	38"		1.25	0.5 - 1.0	-	8
WT90	95"	85"		2.9	1.0 - 2.0	1	17
WT120	125"	115"		3.8	1.5 - 3.0	1	21
WT160	165"	155"		5.1	2.0 - 4.0	2	28
WT180	185"	175"		5.7	2.0 - 4.0	2	32
WT240	245"	235"		7.5	2.5 - 5.0	3	40

PRINCIPLE

The basic principle involved in the ropewick applicator is that a series of ropes are saturated with chemical by the force of gravity, and by mechanically varying the height of the ropes above the ground, the operator may selectively apply chemical to the surface areas of weeds by direct contact.



OPERATING

1. Follow chemical manufacturer's recommendations on application rates.
2. Use water to check out the system for proper functioning before adding the working chemical mixture. **IMPORTANT:** Water wicks faster than chemical solution and new ropes wick faster than used ropes.
3. Pre-mix chemical and clean water before filling pipe. Follow chemical manufacturer's instructions on mixing ratios.
4. Wicking Rate
 - a. **Tilting of ropes** - The position of fastest wicking action is where the ropes are in the 6 o'clock position. As the ropes are rotated upward toward 3 o'clock flow rate decreases. Wicking action may be stopped by rotating ropes up to approximately a 45 degree angle. **CAUTION!** Further upward rotation of ropes may allow chemical to leak out of filler cap.
 - b. **Tightness of swivel caps** - As the swivel cap is tightened, more squeeze is placed on the beveled rubber compression bushing and the rope, thus decreasing the flow rate. Flow is increased as the swivel cap is loosened. **IMPORTANT!** When loosening the caps, always pull the rubber bushing loose from the adaptor since it may have become wedged.
 - c. **Level of liquid** - Adding more liquid to the tube reservoir increases the fluid pressure on the ropes, thus increasing flow rate. As the liquid level drops the flow rate decreases. See "Specifications" for recommended maximum and minimum levels.
 - d. **Condition of ropes** - Dirt and wax buildup will reduce the amount of chemical which is being released from the rope.
 - e. **Chemical mixture ratio** - Generally the more dilute the chemical, the greater the flow rate. Follow the chemical manufacturer's recommendations for mixing ratios.
 - f. **Venting the System** - For 80" wickbars and longer, flow rate is greatly affected depending upon whether the system is vented or not. When the filler plug is left ajar, full flow rate will take place. Flow may be decreased substantially by wrapping the threaded plug two or three times with Teflon tape. Note: 40" wickbars are positively vented at all times.
5. Internal baffles prevent end-to-end surging when turning. The baffles also help maintain a volume of solution all along tube reservoir length.
6. The recommended speed of application is **3 or 4 MPH** in *moderate weed infestations*. Reduce speed and consider making a 2nd pass in the opposite direction of travel in *heavy infestation*. Speed may be increased between areas of weeds.

MAINTENANCE

1. **Daily cleaning** - Rinse off ropes with water to remove excess dirt and trash. If the ropes become too stiff or hardened, simply remove and "wash" ropes by soaking in water for several hours and brush off. Reinstall ropes on pipe.
2. **Storing for a period of time** - Remove and wash ropes. Leave ropes out of pipe until next use. Flush pipe with water. Store out of weather.
3. **Periodically** check for tightness of all rope assembly nuts.
4. **Draining** - Rotate pipe so that filler hole is straight down.
5. **Flushing** - To clean tube, unscrew as many ropes as desired and run water in the filler spout allowing it to drain through open adapters.

PARTS

	Ref.	No.	Part No.	Qty.	Description
		1	T90L	1	RD pipe no rope, 90" left
			T90R	1	RD pipe no rope, 90" right
			T120L	1	RD pipe no rope, 120" left
			T120R	1	RD pipe no rope, 120" right
			T160L	1	RD pipe no rope, 160" left
			T160R	1	RD pipe no rope, 160" right
			T180L	1	RD pipe no rope, 180" left
			T180R	1	RD pipe no rope, 180" right
			T240L	1	RD pipe no rope, 240" left
			T240R	1	RD pipe no rope, 240" right
		*	14393		Fill plug, pvc 3mp sq hd
		2	R90	1	RD rope kit, 16 asby
			R120	1	RD rope kit, 22 asby
			R160	1	RD rope kit, 30 asby
			R180	1	RD rope kit, 34 asby
			R240	1	RD rope kit, 46 asby
		*	10643		Rope assembly (1 rope, 2 nuts, 2 grommets)
		*	17841		Rope, wick 18
		*	14375		Ropewick nut, 3/4fgh-5/8hole
	*	15787		Grommet, ropewick	

* replacement parts