Cadman

STRENGTH SIMPLICITY DEPENDABILITY

1100 / 1250

Micro-Travellers

OPERATOR'S, PARTS, and MAINTENANCE MANUAL 2015 Edition

Revision: **TR-MAN-1100**

Table of Contents

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Cadman Micro-Travellers

We would like to thank you for purchasing your new **Cadman Micro-Traveller**. You have purchased a product of superior quality that will serve your needs for a long time provided you follow this manual and safety procedures.

Figure 1 – Cadman Micro-Travellers

img-00741

BEFORE operating your new **Cadman Micro-Traveller**, inspect the machine for any damage or parts which may have come loose during shipping. **REPORT ANY DAMAGE TO CADMAN POWER EQUIPMENT LIMITED OR YOUR LOCAL DEALER IMMEDIATELY!**

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Warranty Policy

CADMAN POWER EQUIPMENT LIMITED warrants that each machine it manufactures shall be free from defects in materials and workmanship. The terms of this warranty are as follows:

- All components manufactured by **CADMAN POWER EQUIPMENT LIMITED** shall be warranted for a period of one (1) year from the date of delivery, except the frame and hose drum structures which shall be warranted for a period of three (3) years.
- **CADMAN POWER EQUIPMENT LIMITED** makes no warranty whatsoever in regard to tires, motors, and other trade accessories used on its equipment. The customer shall rely solely on the warranties offered (if any) by the respective manufacturer of these trade accessories.

The sole obligation to **CADMAN POWER EQUIPMENT LIMITED** under this warranty is limited to the repair or replacement of any part it manufactured, which, in the judgment of **CADMAN POWER EQUIPMENT LIMITED**, failed under normal and proper use and maintenance due to defective materials or workmanship. All freight charges incurred shall be the sole responsibility of the customer.

CADMAN POWER EQUIPMENT LIMITED and its dealers **(who are neither authorized nor qualified to undertake any obligations on behalf of CADMAN POWER EQUIPMENT LIMITED) DO NOT**, under any circumstances, accept any responsibility for any losses or costs incurred due to parts failure and/or delays during the parts replacement process.

This warranty will be considered void if any alterations or modifications have been made to the machine without the express written consent of **CADMAN POWER EQUIPMENT LIMITED** outlining the nature and the extent of such modifications.

CADMAN POWER EQUIPMENT LIMITED, whose policy is one of continuous improvement, reserves the right to change specifications and designs without notice or incurring obligation.

The warranties expressed herein are non-transferable and replace any other warranties, either written or verbal, which may have been given or implied.

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Safety Precautions

Please take the time to read and **<u>understand</u>** this manual so that unnecessary errors and risks are avoided. If you have any questions or concerns, please contact **Cadman Power Equipment Limited** or your local dealer/distributor.

- **DO NOT** move or operate this machine until you have read and understand the instructions in this manual.
- **NEVER** allow untrained persons to operate this machine.
- **DO NOT** attempt to service this machine while it is in operation.
- **MAKE CERTAIN** all mechanical tension has been released and the battery is disconnected before attempting any service on the machine.
- **MAKE CERTAIN** all water pressure has been released before removing supply lines or adjusting sprinkler. Pressurized water can be trapped within the supply hose when the automatic sprinkler shut-off is engaged.
- **CHECK** all fasteners (nuts and bolts) regularly for tightness.

- **PERFORM REQUIRED MAINTENANCE** as prescribed or as necessary to keep this machine in safe operating condition.
- **KEEP ALL SPECTATORS** at a safe distance.
- **STAY CLEAR** of high pressure supply lines, especially when first pressurizing the system.
- **STAY CLEAR** of power lines. Contact with power lines with irrigation water WILL result in the machine being a conductor of electricity.
- **DO NOT** remove or alter any shielding on this machine.
- **BE CERTAIN** that the machine is securely anchored (using stabilizer feet) before unwinding the hose.
- **KEEP CLEAR** of all moving parts.
- **NEVER** tow this machine at speeds greater than **10 mph / 16 km/h** and be certain the tow vehicle has adequate braking capacity to maintain safe control at all times.
- **REGULAR INSPECTION** of your pipe couplings, tubing and gaskets should be a part of your regular set-up routine. Any defective parts MUST be replaced or repaired before the machine is put into service.

This symbol, the <u>safety-alert symbol</u>, indicates a hazard. When you come across the safety-alert symbol in this manual, make certain you fully understand and abide by the given instructions or warnings.

Safety Decals

Cadman Power Equipment Limited has determined the potential hazards and has labeled the machine accordingly. The safety decals on this machine are intended to warn the operator of potential hazards.

Figure 2 - Signal Word Panels

img-00340

Each safety decal on this machine contains a Signal Word Panel which indicates the degree of hazard. Definitions of the Signal Words are as noted below…

- **DANGER -** an imminently hazardous situation that, if not avoided, **WILL** result in death or serious injury.
- **WARNING -** a potentially hazardous situation that, if not avoided, could result in death or serious injury, and include hazards that are exposed when guards are removed.
- **CAUTION -** a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.

It is important that these decals are properly maintained.

- keep all safety decals legible (remove dirt or debris)
- replace any damaged or illegible decals
- replace any missing decals
- if applicable, install the current safety decal specified by **Cadman Power Equipment Limited** on any components installed during repair

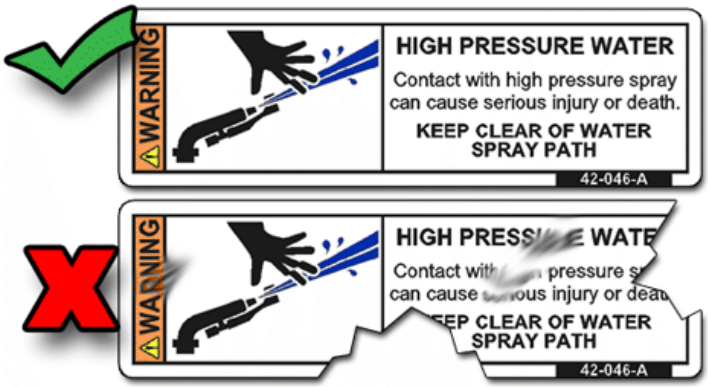

Figure 3 – Replace Decal

img-00131-A

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Location of Safety Labels

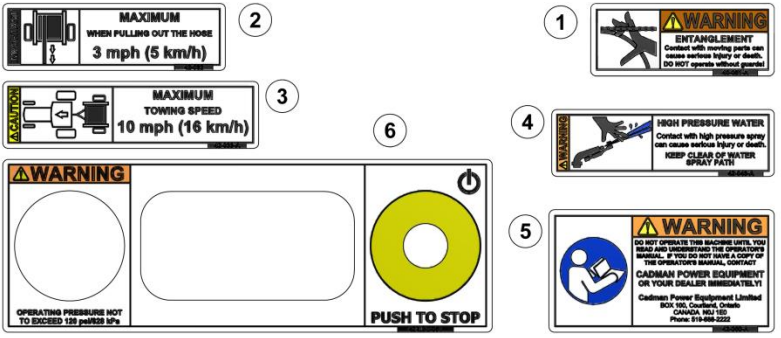


Figure 4 - Safety Labels

img-00742

For part numbers and quantities required please refer to the decal listing on page 51.

To obtain the required replacement safety decals contact **Cadman Power Equipment Limited**. Re-install all decals in the proper location on the machine.

Planning Your Application

You will benefit from having an accurate plan to follow before you set-up or operate your equipment. When creating your plan, remember that a properly planned field layout will cover the most area with the least amount of set-up time.

Step 1 - Field Preparation:

Determine the depth of application in inches.

- Irrigating deeper than the root zone is considered over watering. The most common depth for turf is between 0.2 – 0.3 inches (5 – 7.5 mm).

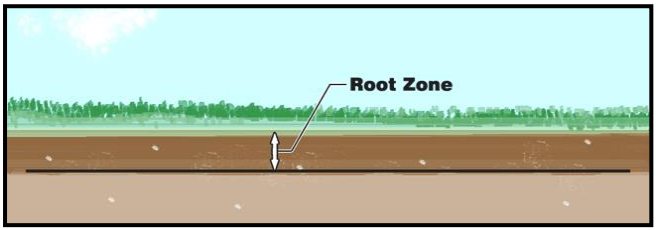


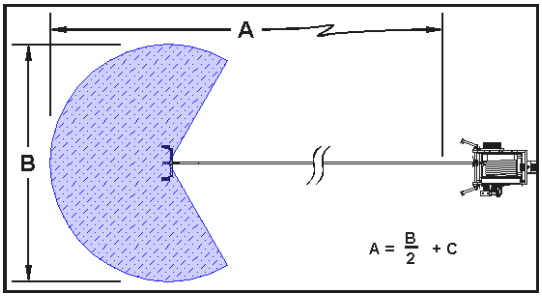
Figure 5 - Root Zone - Depth of Application

img-00197

Step 2

Divide your field into the least number of sections to obtain complete coverage.

- First determine the area you plan to irrigate. If your field width is greater than what can be achieved with one (1) pull you will be required to divide the field into the least number of sections to reduce set-up time. Use your sprinkler performance data tables to determine the coverage of your **Cadman Micro-Traveller**. The sprinkler should be set-up so that the spray diameter is covered plus sufficient overlap (beyond the edge of the crop) to provide adequate watering at the edge of the field.



Hose Length "C"

Model	Feet	Meters
1100	250	76
1250	230	70

Figure 6 - Reel Coverage

img-00193

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You MUST leave as a MINIMUM one (1) coil of hose on the drum at all times. Failure to do so WILL result in hose damage.

- Customize your application by choosing the right nozzle and pressure combination to accommodate the area to be irrigated. Changing the nozzle size and adjusting the water pressure can improve your irrigation plan. See the next step.
- Avoid quarter circle (partial pattern) operations while irrigating. During quarter circle operation, sprinkler thrust tends to steer the sprinkler cart in the direction of the water being thrown. Reduce the size of the sprinkler nozzle and water pressure to reduce the diameter of spray. Remember the retrieve rate WILL require adjustment to accommodate the reduced flow.

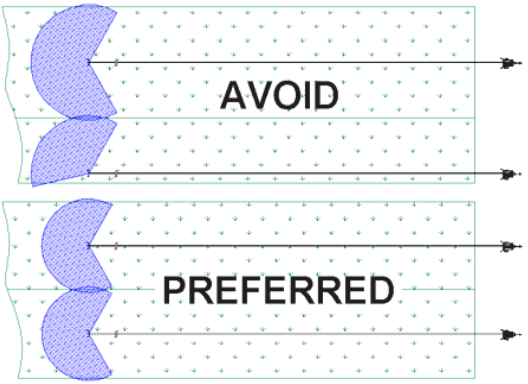


Figure 7 - Avoid Quarter Circle Applications

img-00199

OPERATOR NOTE

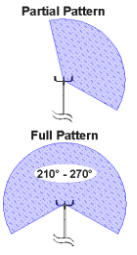
There are two (2) reasons for this.

(1)

Even divisions of the field allow maximum versatility to combat rising winds from any direction.

(2)

The sprinkler cart will track straight and be less affected by sprinkler thrust.



img-00200

- If conditions dictate that a quarter circle (partial pattern) pass is unavoidable, prepare the travel lane with a shallow trench for the hose to follow. Adding extra weight to the rear of the sprinkler cart is also beneficial. If these preparations are not possible or prove inadequate you must adjust your set-up to allow for a full spray pattern.
- During normal operation, (full pattern the sprinkler operates to both sides of the cart) sprinkler thrust will correct this steering action automatically. The side to side movement of the cart should be no more than the width of the carts rear tube. (where hose and sprinkler cart are connected)
- Cadman Power Equipment Limited does **NOT** recommend a curved hose pull out. This puts the equipment into a situation where it could become damaged. If a curved pull is necessary, pull a minimum of **50 feet (15.25 m)** of hose straight out from the machine prior to beginning a long gradual curve. The arc or curve must **NOT** form a ninety degree (90°) bend.

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Step 3A

Complete the following steps to determine your retrieve rate (desired width).

- Determine what inlet pressure is available while the sprinkler is working.
- Using Table 1 on page 10, find the closest width to what is required. Be sure the inlet pressure shown for that row is equal to or less than your available pressure.
- The width noted in Table 1 is the wetted areas. This means the sprinkler will project water approximately 15% further than listed. This allows for proper coverage. For actual spray diameter of the sprinkler refer to **Appendix A – Sprinkler Data** on page 63.
- Read nozzle size from the Table.
- Choose the application depth, then read your retrieve rate in inches per minute.

OPERATOR NOTE

If the sprinkler is not spraying water, the reading on the pressure gauge will be higher than actual available pressure. It is important to have the sprinkler in action to get a true reading.

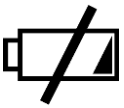
If the pressure at the irrigation sight is inadequate you may require a booster pump. See page 57 for the Cadman Booster Pump option.

Example 1:
Using a 1100 traveller with an inlet pressure of 35 psi, determine retrieve rate required to apply 1/2" to a 90 ft wide area.

- 8 mm - 34 PSI - 90' width - 6.5 inches/minute
- 9 mm - 37 PSI - 92' width - 7.9 inches/minute

OPERATOR NOTE

The battery will be depleted at a quicker rate the faster the retrieve rate is set.



For greater cycle life of the battery it is suggested to use a slower retrieval rate.

Step 3B

Complete the following steps to determine your retrieve rate (known nozzle size).

- Determine what inlet pressure is available while the sprinkler is working.
- Using Table 2 on page 10, find the nozzle and pressure combination you are using.
- Choose the application depth, then read your retrieve rate in inches per minute.
- The width noted in Table 2 is the wetted areas. This means the sprinkler will project water approximately 15% further than listed. This allows for proper coverage. For actual spray diameter of the sprinkler refer to **Appendix A – Sprinkler Data** on page 63.

Example 2:
Using a 1250 traveller with a 10 mm nozzle and an inlet pressure of 70 psi, determine retrieve rate required to apply 3/4" to the irrigated area.

From Table 1, the following combination is identified:

- 10 mm - 70 PSI - 205' width – 5.5 inches/minute

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Keep in mind that the charts should be used as a guide only. Always check the actual application amount with rain gauges to confirm your retrieve rate is correct.

1100/1250 SIME - K1

Nozzle Size	Inlet Pressure	Wetted Area	Retrieve Rate in Inches/Minute			
			Application Depth			
	PSI	Width'	1/4"	1/2"	3/4"	1"
8 mm	25	82	12.2	6.1	4.1	3.0
	34	90	13.0	6.5	4.3	3.2
	51	100	14.0	7.0	4.7	3.5
	69	108	15.0	7.5	5.0	3.8
9 mm	28	86	14.6	7.3	4.9	3.7
	37	92	15.7	7.9	5.2	3.9
	55	102	17.3	8.6	5.8	4.3
	74	110	18.4	9.2	6.1	4.6
10 mm	31	90	17.3	8.6	5.8	4.3
	41	94	19.0	9.5	6.3	4.8
	61	108	20.2	10.1	6.7	5.0
	81	115	21.9	11.0	7.3	5.5
12 mm	39	90	25.0	12.5	8.3	6.3
	52	100	25.9	12.9	8.6	6.5
	77	110	28.6	14.3	9.5	7.1
	102	123	29.6	14.8	9.9	7.4

Table 1 – 1100/1250 SIME - K1

1100/1250 KOMET – R20

Nozzle Size	Inlet Pressure	Wetted Area	Retrieve Rate in Inches/Minute			
			Application Depth			
	PSI	Width'	1/4"	1/2"	3/4"	1"
6 mm	36	108	6.4	3.2	2.1	1.6
	51	124	6.8	3.4	2.3	1.7
	65	138	6.7	3.3	2.2	1.7
8 mm	44	138	10.0	5.0	3.3	2.5
	58	148	10.9	5.5	3.6	2.7
10 mm	44	144	15.0	7.5	5.0	3.7
	58	157	15.7	7.8	5.2	3.9
12 mm	36	144	19.8	9.9	6.6	4.9
	51	157	21.6	10.8	7.2	5.4
	65	170	22.6	11.3	7.5	5.7

Table 2 - 1100/1250 KOMET – R20

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Step 4

Determine the best position for your reel in each section.

- The best start position for your reel is at the center of the furthest section away from the source of water. By doing this your subsequent setups will not require additional water source changes.

Ensure you abide by local by-laws and regulations for water usage. Cadman Power Equipment Limited recommends that you consult with your local water authority.

- Where field conditions permit, always attempt to pull the hose either up or down sloping terrain instead of operating on the side of a hill. If a side hill condition is unavoidable, provide a hilled trench as a guide for the hose and add extra weight to the sprinkler cart to prevent upset.

The hose will slide down the hill if a trench is not created. The hose will become much heavier once water is introduced. Failing to provide a trench will result in serious equipment damage and could result in you and/or your spectators being injured.

- Obstacles will play a big part in the planning process. If an obstacle interferes with the area to be irrigated an adjustment to the plan will be required.

Figure 8 - Obstacles in Plan

img-00234

The hose will naturally take the shortest path (a straight line). Without resistance such as a contour, trench or a furrow the hose will tend to straighten. The sprinkler cart will make contact with any obstacle if there is no resistance. Failure to provide a form of resistance will result in serious equipment damage and could result in you and/or your spectators being injured.

Equipment Set-up

Now that you have created a plan you are ready to set-up your **Cadman Micro-Traveller** in the field. Complete the following instructions to prepare for irrigation.

Step 1

Following your plan, choose transport method. Choose from hand operation or towable operation.

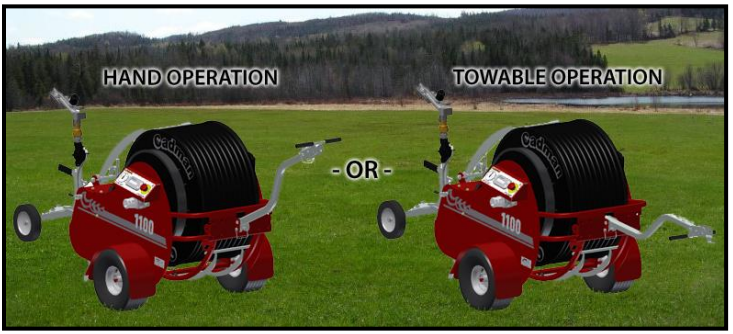

Figure 9 - Choose Transport Method

img-00743

Step 2

Engage the drive system then tow the machine to the first section.

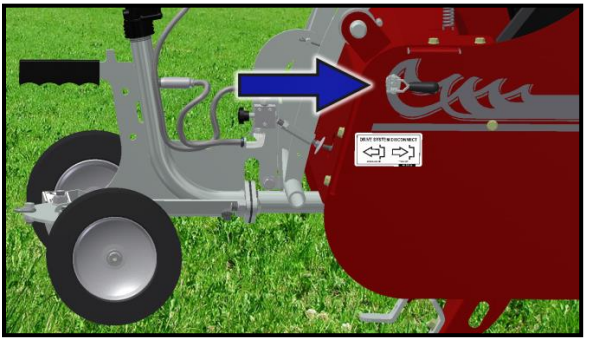

Figure 10 - Engage Drive System Prior to Transport

img-00744

It is important to verify that the drive system is engaged prior to moving your Cadman Micro-Traveller. Failure to do so can result in equipment damage.

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Step 3

To allow for better coverage, park the reel 5 ft. (1.5 m) minimum from the beginning of the section to be irrigated.

Keep the machine on firm and level ground.

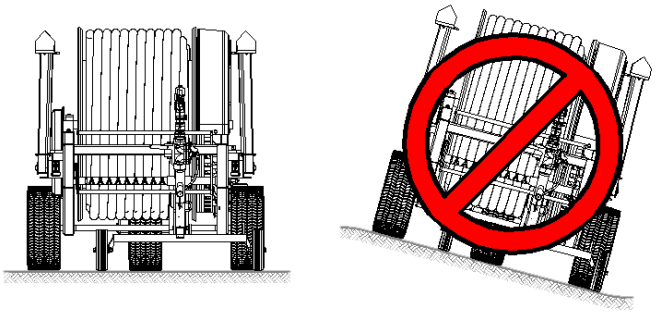

Figure 11 - Work on Firm and Level Ground (image exaggerated)

img-00330

Step 4

Disconnect your machine from the towing vehicle. (If applicable)

Step 5

Ensure the ground where the machine is set-up is soft enough for the stabilizer feet to penetrate the surface. The machine maybe required to use flat side of the stabilizer feet and tie down anchoring hole if the ground is too hard to penetrate with the pointed side of the stabilizer feet.

Figure 12 - Engage Stabilizer Feet

img-00745 & img-0746

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Failure to engage stabilizer feet will result in serious equipment damage and potential for injuries to you and/or spectators.

Step 6

Lower the sprinkler cart from the transport bracket by pulling the Spring Plunger to release the handle leaver, then pulling the handle downward to lower the sprinkler cart to the ground. Then simply pull the sprinkler cart away from the mini traveller. Raise the Micro traveler sprinkler cart handle back up to the home location and use the spring plunger to lock it back in place. To pick the sprinkler cart back up follow these instructions in reverse.

Figure 13 - Lower Sprinkler Cart

img-00458

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Step 7

Disengage the drive system before towing the sprinkler cart out.

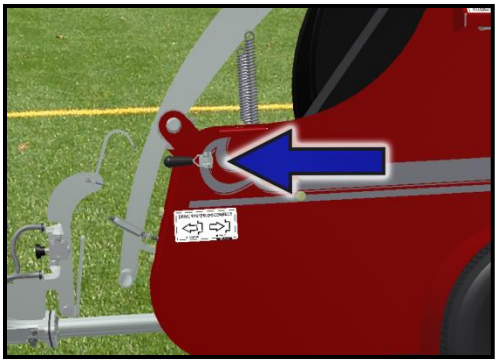

Figure 14 - Disengage Drive System Prior to Towing Out Sprinkler Cart

img-00747

It is important to verify that the drive system is disengaged prior to moving the sprinkler cart on your Cadman Micro-Traveller. Failure to do so can result in equipment damage.

Step 8

Tow the sprinkler cart to the start point of irrigation. Always leave a minimum of one (1) wrap of hose on the drum. When pulling the hose out, keep it straight. If obstacles require you to change your path, make the change gradual.

The hose will naturally take the shortest path. Without resistance such as a contour, trench or a furrow the hose will tend to straighten. You may have to adjust your irrigation plan to accommodate for obstacles. (Refer to **"Planning Your Application"** on page 7.)

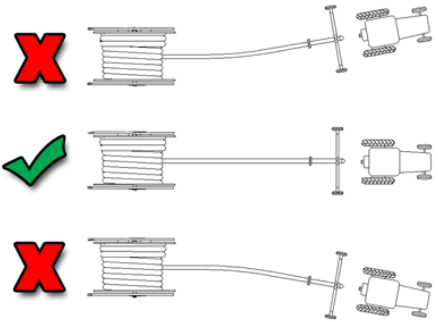

Figure 15 - Pull Out Hose Straight

img-00244

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DO NOT exceed 3 mph (5 km/h) while pulling out the hose. DO NOT stop suddenly at the end of your travel lane. Slow gradually when nearing the end of the pull. Keep spectators away from the machine while pulling out the hose. Failure to follow these instructions may result in serious equipment damage and potential for injuries to you and/or spectators.

Step 8

Verify the sprinkler set up is correct and install the correct nozzle. Also at this time, set the part circle stops on the sprinkler. The sprinkler should be set behind the cart so that the travel path remains dry until the cart passes.

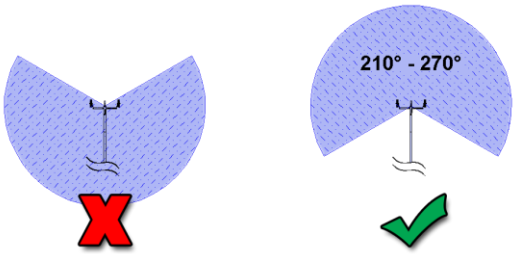

Figure 16 - Correct Spray Setting

img-00201

Step 9

Your **Cadman Micro-Traveller** is equipped with an auto sprinkler shut-off system. This system will stop the flow of water to the sprinkler at the end of each retrieve cycle.

When the Auto Shut-off System is used, there WILL be a pressure spike within the supply circuit. Take the appropriate precautions to prevent equipment damage and/or injury to you and/or spectators.

If you do not have appropriate precautions in place (i.e. automatic pump shut down) DO NOT use this feature!

Disabled

If you would like to disable the automatic water shut-off, turn the ball valve to the off position. Water will continue to flow once the sprinkler cart has been retrieved. No further sprinkler cart adjustments are required.

Enabled

The valve trigger should be pulled away from the valve and valve button pushed in towards the hose end of the sprinkler cart. Turn the ball valve to the open position. This will allow water flow to the sprinkler. When the sprinkler cart has been retrieved the valve trigger will shift the water shut-off valve and stop the flow of water to the sprinkler.

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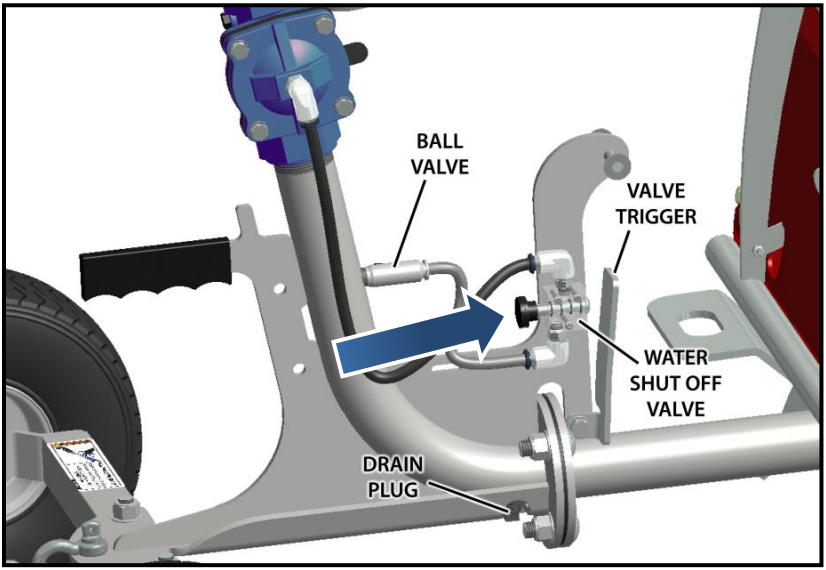

Figure 17 - Water Shut-off Valve

img-00708

Step 10

Return to the machine and inspect the hose remaining on the drum. The hose should be tightly coiled and not loose. If the hose is loose, tighten the coils so that they form a neatly packed spool. Rotate the drum if necessary.

Figure 18 - Spool Condition

img-00245

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Step 11

Inspect the indexer. The hose should travel in a straight line through the hose guide. If the hose is angled through the indexer refer to the **"**Indexer Adjustment Instructions**"** found on page 60.

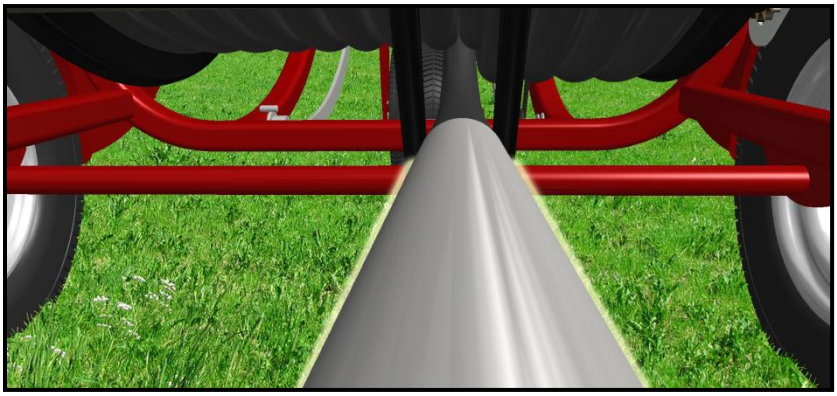

Figure 19 - Indexer / Hose Alignment

img-00709

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Notes

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Beginning Irrigation

Once you have successfully set up your **Cadman Micro-Traveller** you can begin irrigating.

Step 1

Clear the area of operation of spectators prior to starting irrigation.

Figure 20 - Clear Irrigation Zone

img-00336

The irrigation sprinkler projects a large volume of pressurized water. Contact with the sprinkler's discharge will result in injury. Avoid the area where irrigation is taking place.

Step 2

Connect the main water supply line to your machine. Make sure the hose sweeps in a gentle arc away from the control area of the machine.

Figure 21 - Supply Layout

img-00748

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Step 3

GRADUAL pressurization of the system may now begin. Keep the pressure low (under 20 psi [138 bar]) until **ALL** air is purged from the system and a steady stream is flowing from the sprinkler nozzle. **AFTER** all the air is purged from the system, pressure may be slowly increased to the maximum operating pressure of 120 psi (8.3 bar).

Now you are ready to begin the hose retrieval.

Step 4

Before the power is turned on, engage the drive system. The clutch has angled faces to allow for easy meshing if the power is already on and the drive is engaged while it is running. When the drive faces line up, the clutch will engage.

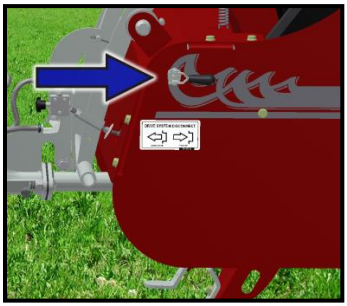

Figure 22 - Engage Drive System

img-00744

Step 5

Pull the power switch (red button) to turn on the power to the unit.

Figure 23 - Control Panel

img-00712

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Step 6

Once the display screen is done loading, it will tell you to set the speed using buttons as shown in the figure below. Set the desired retrieval speed by pushing the upper button beside the display. You can decrease the retrieval rate by pressing the lower button

Figure 24 - Adjust Retrieval Speed

img-00713

Retrieval speed can be confirmed by measuring the amount of hose retrieved in one minute using a measuring tape and a wax marker.

Step 7

Once the machine starts to retrieve the hose you must test the Shut-off System to verify it is in working order. Rotate the shut-off bar to actuate the Shut-off System. If the retrieval stops, release the shut-off bar to continue the retrieval. If not, stop use of the machine and contact **Cadman Power Equipment Limited** or your local dealer for further instructions.

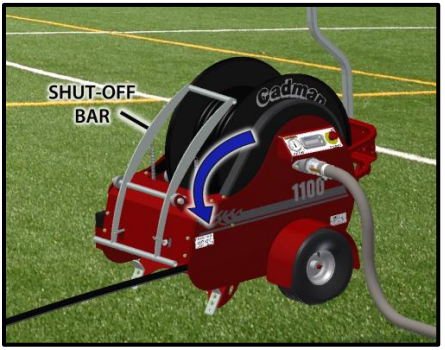

Figure 25 - Verify Shut-off System

img-00749

Completing Irrigation

Step 1

Once the sprinkler cart has returned to the traveller, turn off the water supply. Depressurize the supply line. You can view the remaining pressure in the system by looking at the pressure gauge on the control panel or the pressure gauge on the sprinkler cart. To depressurize the hose on the traveller, press the water shut-off valve inwards, toward the front of the traveller and the excess water pressure will release out of the sprinkler head.

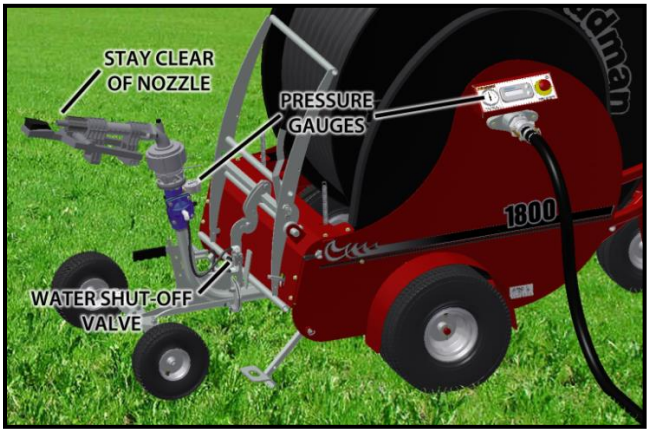

Figure 26 – Water Pressure Release

img-00713

Water under pressure can be very dangerous. Please use proper methods to bleed the supply line prior to disconnecting from the traveller. Failure to properly bleed the pressure can result in equipment damage and potential for injuries to you and/or spectators.

Keep clear of the sprinkler nozzle when bleeding the remaining pressure from the hose. Failure to stay clear of the sprinkler nozzle when bleeding off the excess pressure could result in potential injuries to you and/or spectators.

Step 2

Once all the pressure has been released from the line, disconnect the supply line to prepare the machine for transport. Leave the machine drive system engaged during transportation to keep tension on the hose drum.

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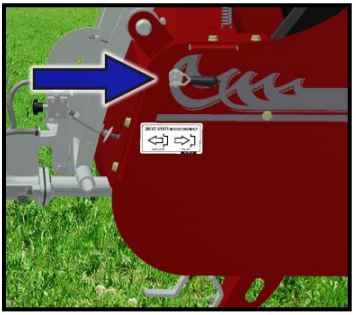

Figure 27 - Engage Drive System

img-00744

DO NOT move your Cadman Micro-Traveller without properly preparing it for transport. Failure to engage the drive system and lifting the sprinkler cart will result in equipment damage and may result in injury to you and/or spectators.

Step 3

Complete any required maintenance as prescribe in the "**Required Maintenance**" section found on page 57.

Battery Exchange/Charging

The battery level percentage shows up on the iWATER display screen when the unit is in running operation mode.

Figure 28 - Battery Level Percentage

img-00715

When the battery reaches (20% of discharge), **Cadman Power Equipment Limited** recommends that it be exchanged with the secondary (back-up) battery. Complete the following step and abide by safety warnings/precautions.

Running the charge level below 20% can reduce the battery life or even make it inoperable.

Never connect Battery Charger directly to the machine. Connecting the charger to the machine WILL result in equipment damage and potential for personal injury. Fire may also occur resulting in equipment/property damage.

Due to the high chance of water being near the machine due to its designed purpose it is important never to charge the battery while it is installed on the machine.

Step 1

Ensure machine is powered off by pushing the main power switch (red button) to the off position.

Step 2

Remove the discharged battery by disconnecting the power plug, and then open the battery retainer. Carefully lift the battery out of the tray.

Only use the red plug handle to disconnect the battery. Never pull directly on the wires. Failure to use the handle may result in battery and/or equipment damage as well as a potential for personal injury.

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Figure 29 - Remove Discharged Battery

img-0750

Step 3

Install the freshly charged battery, and close the battery retainer. Then connect the battery connector.

Step 4

Bring the battery to your charging station. This area must be a well ventilated area. Use the supplied battery charger (p/n 42-302-KIT) only. Ensure that the charger is plugged into a 110 volt outlet that has been properly installed with a ground according to your local electrical code. Now connect the battery until the charged LED is on. Once the battery has been charged, disconnect the charger from the outlet.

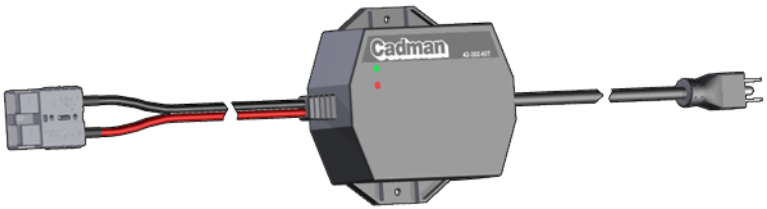

Figure 30 - Supplied Battery Charger

img-00479

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LED Indicators

POWER ON (green) LED: Indicates the charger is connected to AC power source and is receiving power.

CHARGED (red) LED: Indicates the battery is fully charged and the charger is in the maintain mode.

Never alter the cord or plug that is provided with this charging unit. An improper connection can result in a risk of electrical shock and/or electrocution. Never leave the charger plugged in without a battery connected being charged.

It is preferred not to use an extension cord, however if required use an extension cord with a wire no smaller than 18 gauge (0.82 mm^2). Using a wire smaller than 18 gauge (0.82 mm^2) can result in fire.

Never smoke or allow a spark or open flame in the vicinity of a battery. The gasses discharged during charging and regular operation are very explosive. Failure will result in an explosion resulting in fire and personal injury.

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Solar Panel Charger Option

A time saving method of charging your mini traveller is the Solar panel option to increase run time for your irrigation needs. **Cadman Power Equipment Limited** offers a solar panel package to meet your requirements. You can select the solar panel option (TR-OPT-SOL1) when you purchase your micro traveller which will replace the extra battery kit and charging unit. There is also a solar panel kit that you can purchase afterwards. To mount and operate your solar panel kit, complete the following instructions:

Step 1

Mount the solar panel to the front of your mini traveller unit using the supplied ½ inch bolts, washer and nuts.

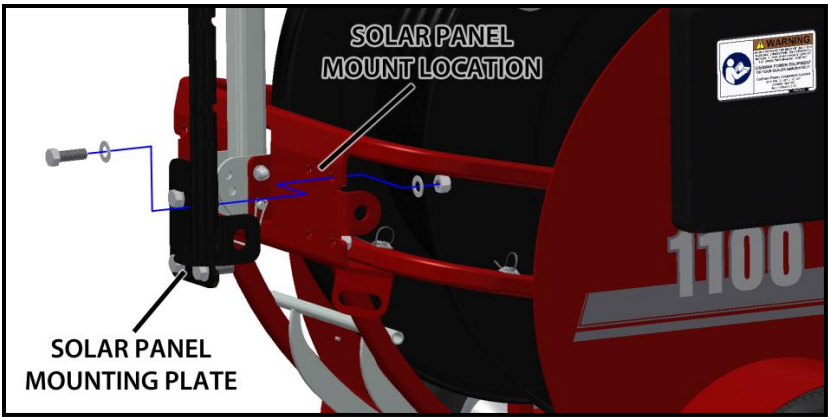

Figure 31 – Fastening Solar Panel to the Traveller

img-00751

Step 2

Once you have fastened the Solar panel to the traveler review page 55 the Solar Panel Harness section to wire the Solar panel harness to the back of the battery connector plug on the main harness (61-311-B) of the traveller. Before wiring the booster pump to the traveller make sure the battery is disconnected from the unit as well also make sure the E-stop is depressed on the control panel.

If the battery is not disconnected, STOP and disconnect the battery plug from the equipment. Failure to disconnect the battery from the equipment before hooking up the wiring harness could result in equipment damage and may result in serious injury to you and/or spectators.

Step 3

Use the cable tie anchors (42-647) and cable ties (42-391) to secure the solar panel harness in place. Make sure the harness is secure to the frame and cannot be caught on the hose drum of the traveller.

WARNING: Unsecure and loose wires can become caught and may cause damage to the equipment.

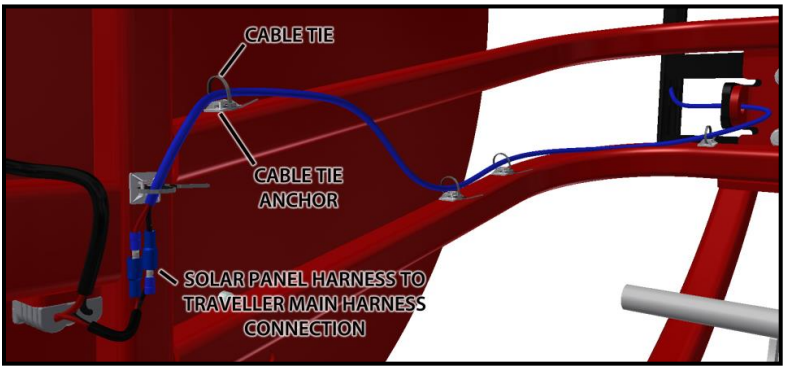

Figure 32 – Solar Panel Harness Tie Down and Connections

img-00735

Step 4

Once the harness is connected and anchored down, plug the battery back into the traveller, and pull the E-stop out to turn the power **ON.** Verify that the solar panel is working by placing the unit in a sunny location. Check the battery percentage on the control panel screen, record the percentage, then come back in about 10 mins and the percentage should be higher then what was recorded.

Figure 33 - Solar Panel Assembly Completed

img-00752

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Notes

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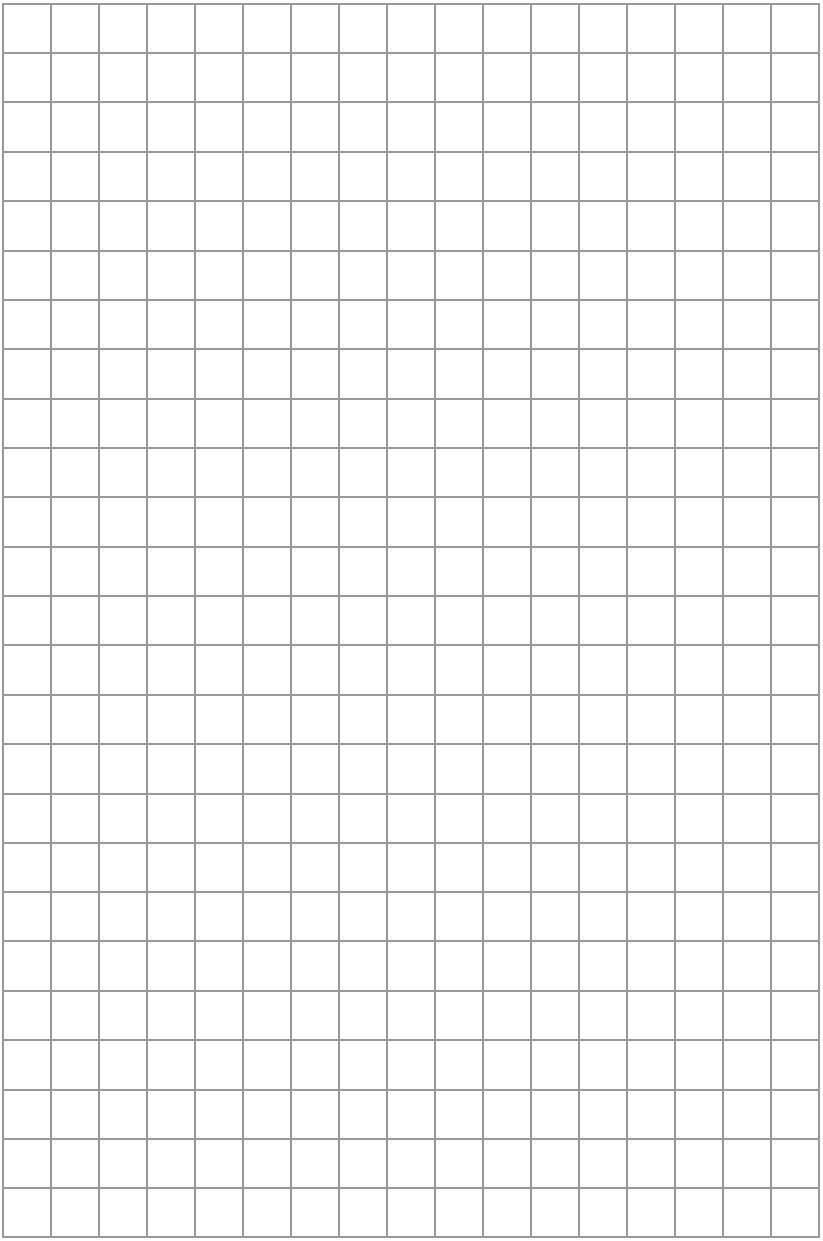

Parts Section

Symbol Legend

↳	Model Variations
•	Standard Equipment
○	Optional Equipment
◆	Complete Assembly
⊙	Special Tool Required
AR	As Required
N/A	Not Available

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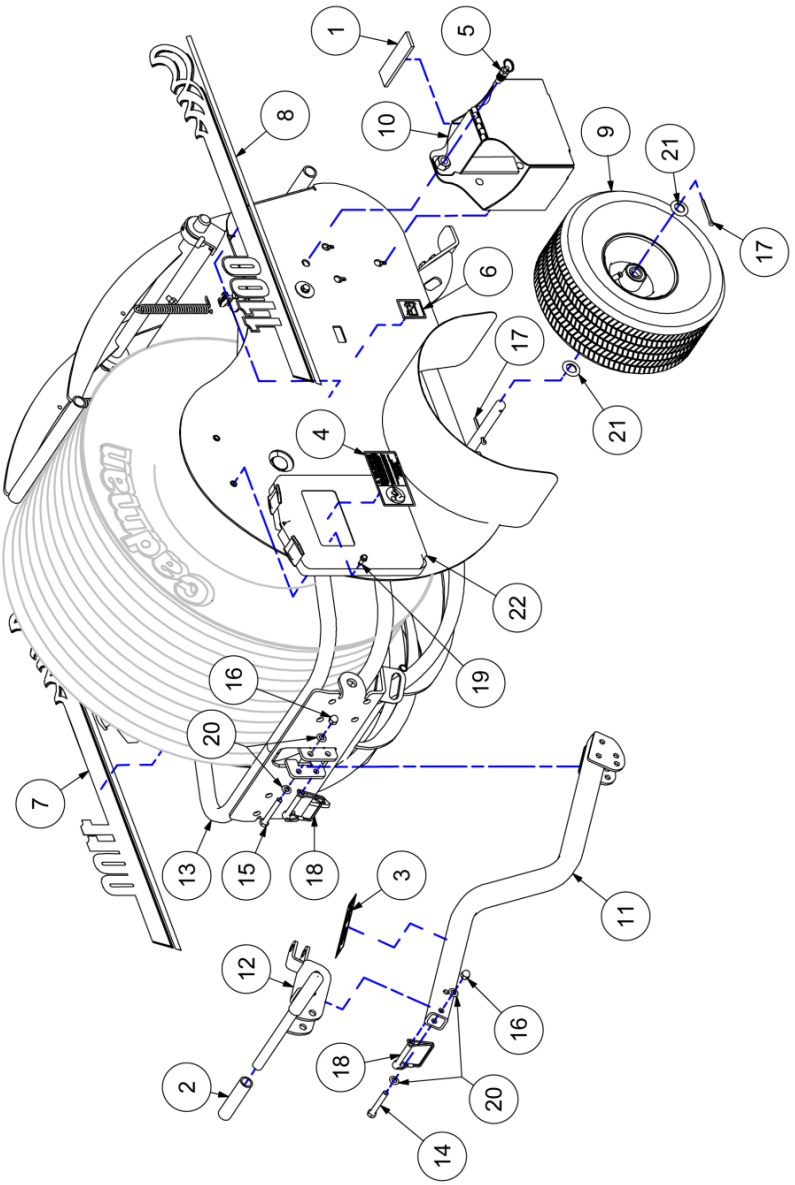
Frame Assembly



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Frame Assembly

Item	Description	Part Number	Qty
1	ROUGH TOP BELT - 1 3/8" x 5"	40-093-05	3
2	HAND GRIP - 0.75 X 4.00	42-019	2
3	LABEL - MAX TOW SPEED	42-033-A	1
4	LABEL - OPERATOR MANUAL	42-050-A	1
5	SPRING PLUNGER - HAND RETRACTABLE	42-547	1
6	LABEL - DISCONNECT	42-LBL-007	1
7	DECAL - 1100 SIDE FRAME	42-LBL-1100-L-A	1
↳	DECAL - 1250 SIDE FRAME L.H.	42-LBL-1250-L-A	1
8	DECAL - 1100 SIDE FRAME	42-DCL-1100-R-A	1
↳	DECAL - 1250 SIDE FRAME R.H.	42-DCL-1250-R-A	1
9	WHEEL AND RIM ASSY	55-162	2
10	KIT - BATTERY BOX	61-625-000	1
11	TONGUE WELDMENT - 1100	68-200-000	1
12	HANDLE/CLEVIS WELDMENT - 1100	68-201-000	1
13	FRAME WELDMENT - 1100/1250	68-400-000-A	1
14	BOLT - 3/8-16 X 2 1/2	90-BLT-03816X250	1
15	BOLT - 3/8-16 X 2 3/4	90-BLT-03816X275	1
16	NUT ACORN - 3/8-16UNC	90-NUT-ACN038-16	2
17	COTTER PIN, 3/16 X 1.75 LG	90-PIN-CT019X175	4
18	QUICK PIN - 3/8 X 2 1/2 LG.	90-PIN-Q038X250	2
19	TEK SCREW - 1/4" X 3/4"	90-SCR-TEK025X075	2
20	WASHER SAE - 3/8	90-WSR-SAE038	4
21	WASHER SAE - 3/4	90-WSR-SAE075	4
22	MANUAL PAK - SMALL ASSEMBLY	TR-MAN-SMPAK	1

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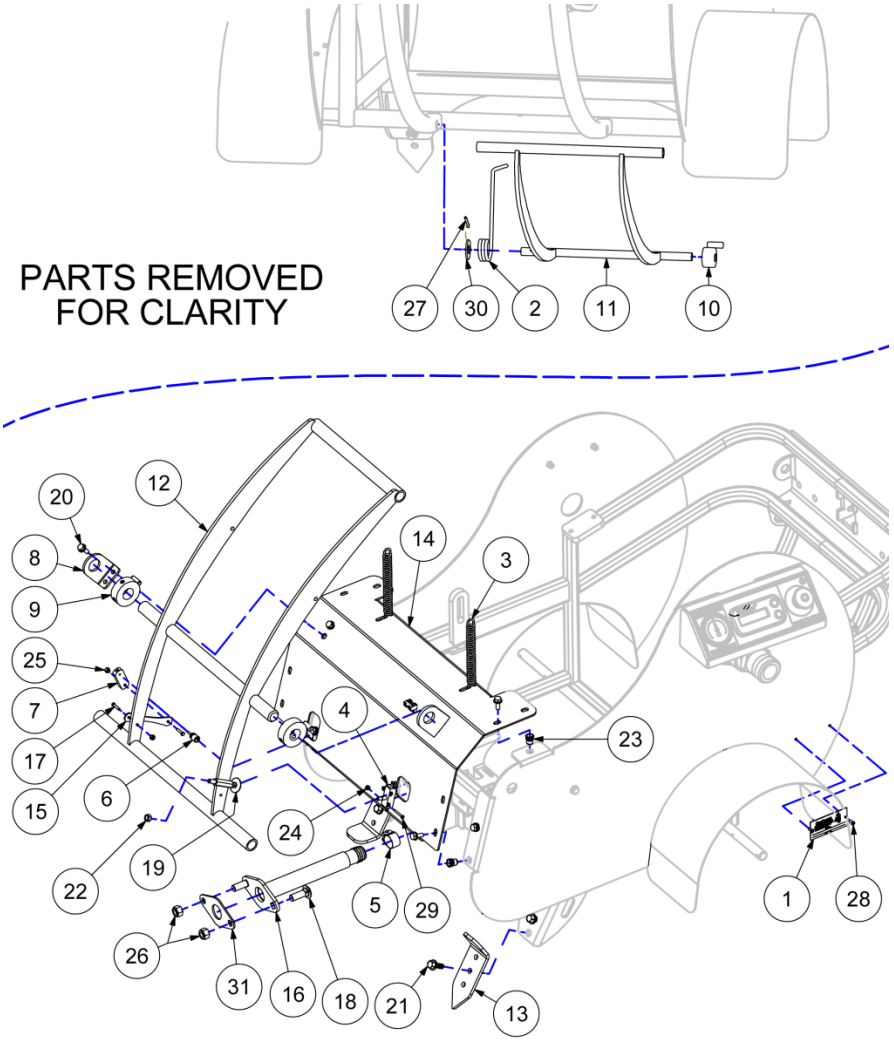
Frame Assembly Continued



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Frame Assembly Continued

Item	Description	Part Number	Qty
1	CADMAN SERIAL NUMBER TAG	40-238	1
2	SPRING	42-006	1
3	SPRING EXTENSION	42-313	2
4	SHUT OFF SWITCH - BUTTON STYLE	42-ELC-043	1
5	CLAMP - M6 26-28 (1.02-1.13)	50-075	1
6	HARNESS - POTENTIOMETER	61-313-A	1
7	BRACKET - SPEED COMP.	61-314	1
8	SUPPORT - SHUT OFF BAR	61-614-000	1
9	STOP - 1.00" COLLAR	61-621-000	2
10	STOP - 1/2" SHUT OFF BAR	61-623-000	1
11	TUBE RIDER WELDMENT - 1100	68-604-000	1
12	SHUTOFF BAR WELDMENT - 1100	68-605-000	1
13	FOOT - REVERSIBLE	68-606-000	2
14	SHIELD WELDMENT - INDEXER	68-610-000	1
15	LINK - 1100 SPEED COMP.	68-619-000-A	1
16	HOSE FLANGE WELDMENT - 1100	68-910-000	1
17	BOLT - #08-32 X 3/4	90-BLT-00832X075	2
18	BOLT CARRIAGE - 1/2-13 X 1 1/2	90-BLT-CG05013X150	2
19	BOLT ELEVATOR - 5/16-18 X 3	90-BLT-EL03118X300	1
20	BOLT FLANGE HEAD - 5/16-18UNC X 3/4	90-BLT-F03118X075	10
21	BOLT FLANGE HEAD - 3/8-16UNC X 3/4	90-BLT-F03816X100	4
22	NUT HEX - 5/16-18	90-NUT-HEX031-18	1
23	THREADED INSERT - 5/16-18 SHORT	90-NUT-HTR03118S	6
24	NUT LOCK - #06-32	90-NUT-LOC006-32	2
25	NUT LOCK - #08-32	90-NUT-LOC008-32	2
26	NUT LOCK - 1/2-13	90-NUT-LOC050-13	2
27	COTTER PIN - 1/8 X 1.00 LONG	90-PIN-CT013X100	1
28	RIVET - 3/16 X 3/8 IN	90-RIV-019X038	2
29	MACHINE SCREW PAN - #6-32 X 1 1/8 PHILLIPS	90-SCR-PH00632X113	2
30	WASHER FLAT - 1/2	90-WSR-FLT050	2
31	GASKET - 1 1/4" X 2 BOLT	IR-GKT-2B125	1

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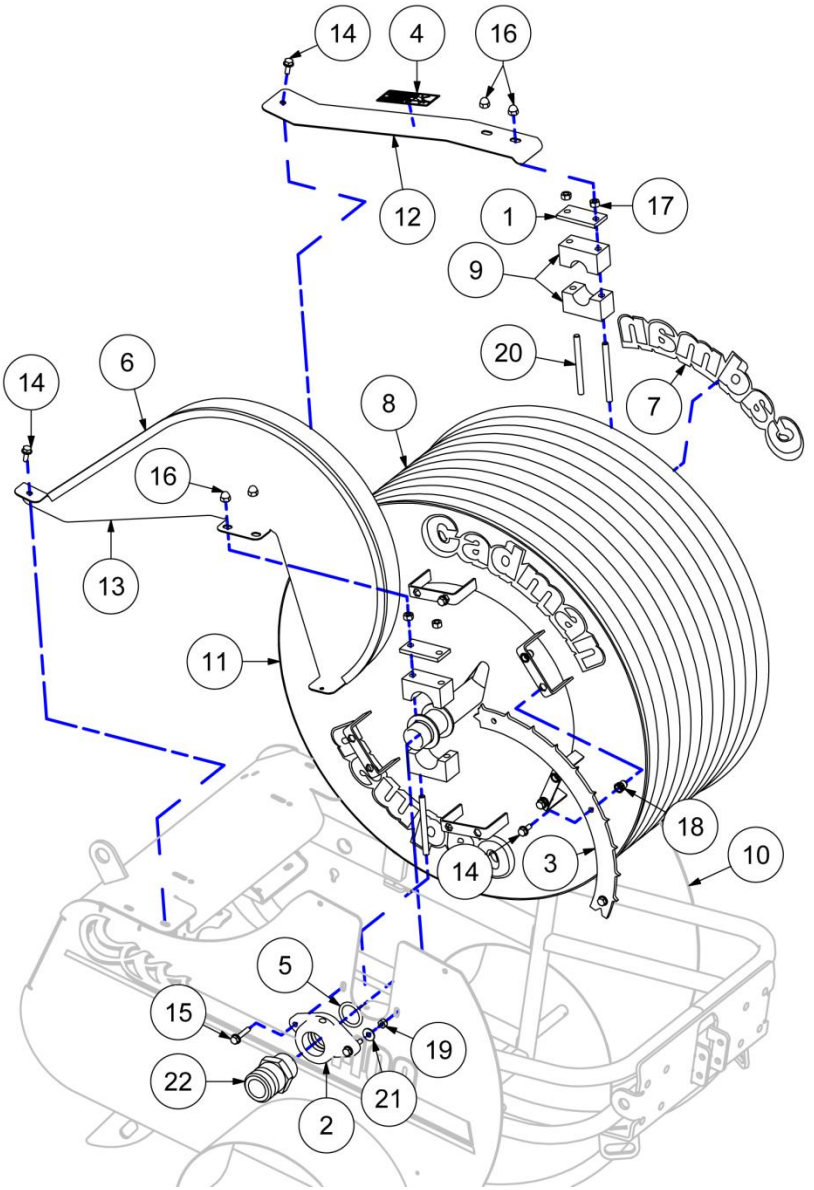
Drum Assembly



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Drum Assembly

Item	Description	Part Number	Qty
1	BEARING BLOCK PLATE	27-634	2
2	HOUSING - SWIVEL MACHINE	33-326	1
3	GEAR SEGMENT - 120 TEETH	33-625-A	1
4	LABEL - ENTANGLEMENT	40-051-A	1
5	O-RING - 1 5/8 ID X 2 OD X 3/16 W	42-037	1
6	SEAL – EDGE 36.83”	42-303	1
7	DECAL - DRUM R10 1/4"	42-DCL-006	4
8	HOSE - 1.30” OD X 1.10” ID X 250ft - 1100	50-116-250	1
↳	HOSE - 1.45” OD X 1.24” ID X 230FT - 1250	50-144-230	1
9	BEARING - Ø 1 5/16" UHMW BLACK	68-303	1
10	FRAME WELDMENT - 1100/1250	68-400-000	1
11	DRUM WELDMENT - 1100	68-501-000	1
↳	DRUM WELDMENT - 1250	68-551-000	1
12	SHIELD - INDEXER CHAIN	68-610-100	1
13	DRIVE SHILED WELDMENT - 1100	68-610-200	1
14	BOLT FLANGE HEAD - 5/16-18UNC X 3/4	90-BLT-F03118X075	11
15	BOLT FLANGE HEAD - 5/16-18 X 1 1/2"	90-BLT-F03118X150	2
16	NUT ACORN - 3/8-16UNC	90-NUT-ACN038-16	4
17	NUT HEX - 3/8-16	90-NUT-HEX038-16	4
18	THREADED INSERT - 5/16-18 SHORT	90-NUT-HTR03118S	9
19	NUT LOCK - 5/16-18	90-NUT-LOC031-18	2
20	THREADED ROD - 3/8-16 X 4 3/8"	90-ROD-03816X0438	4
21	WASHER FLAT - 5/16	90-WSR-FLT031	2
22	CAM LOCK - F150	IR-CAM-150/F	1

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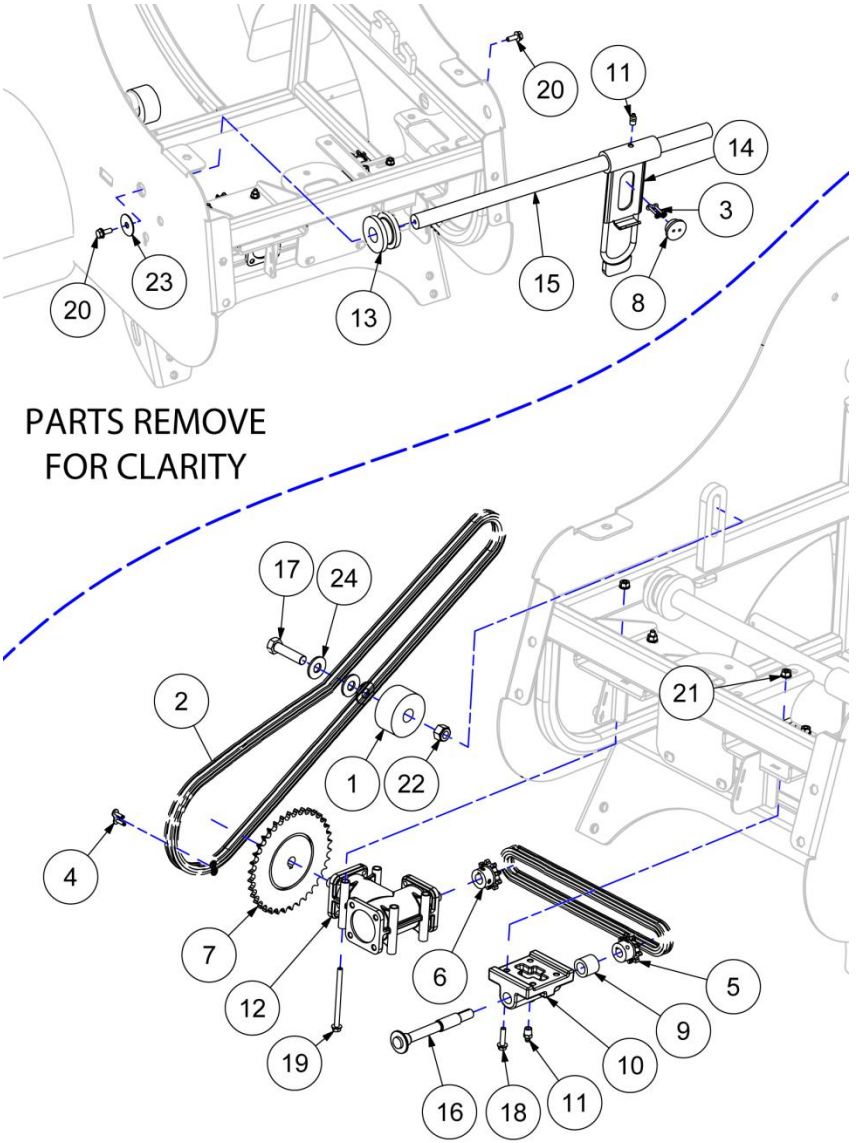
Indexing System



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Indexing System

Item	Description	Part Number	Qty
1	IDLER WHEEL - RUB BLOCK	08-653	1
2	ROLLER CHAIN - #40 RIVETED	10-CHN-40-1RIV/FT	14.38
3	CONNECTING LINK - #40-2	10-LNK-40-2CONN	1
4	CONNECTING LINK - #40	10-LNK-40CONN	3
5	SPROCKET - 40B09 X 1/2"	10-SPT-40B09X050	1
6	SPROCKET - 40B09 X 14mm	10-SPT-40B09X14MM	1
7	SPROCKET - 40B36 X 14MM BORE	10-SPT-40B36XM14	1
8	INDEXER DRIVE BUTTON	33-301	1
9	SPACER - IDLER SPROCKET	37-304	1
10	IDLER SUPPORT MACHINE	37-306	1
11	GREASE FITTING - 1/8 NPT	40-001	2
12	GEARBOX - RIGHT ANGLE	42-588	1
13	IDLER WHEEL - RUB BLOCK	61-301	1
14	HOSE GUIDE WELDMENT – 1100/1250	68-607-000-A	1
15	BAR - INDEXER	68-608-000	1
16	SHAFT - INDEXER IDLER WELDMENT	68-627-000	1
17	BOLT - 1/2-13 X 2.00	90-BLT-05013X200	1
18	BOLT FLANGE HEAD - 1/4-20 X 1.00	90-BLT-F02520X100	4
19	BOLT FLANGE HEAD - 1/4-20 X 3 1/2	90-BLT-F02520X350	4
20	BOLT FLANGE HEAD - 5/16-18UNC X 3/4	90-BLT-F03118X075	2
21	NUT FLANGE - 1/4-20 SERRATED	90-NUT-F025-20	8
22	NUT LOCK - 1/2-13	90-NUT-LOC050-13	1
23	WASHER FENDER - 3/8" X 1 1/2"	90-WSR-FEN038	1
24	WASHER FLAT - 1/2	90-WSR-FLT050	3

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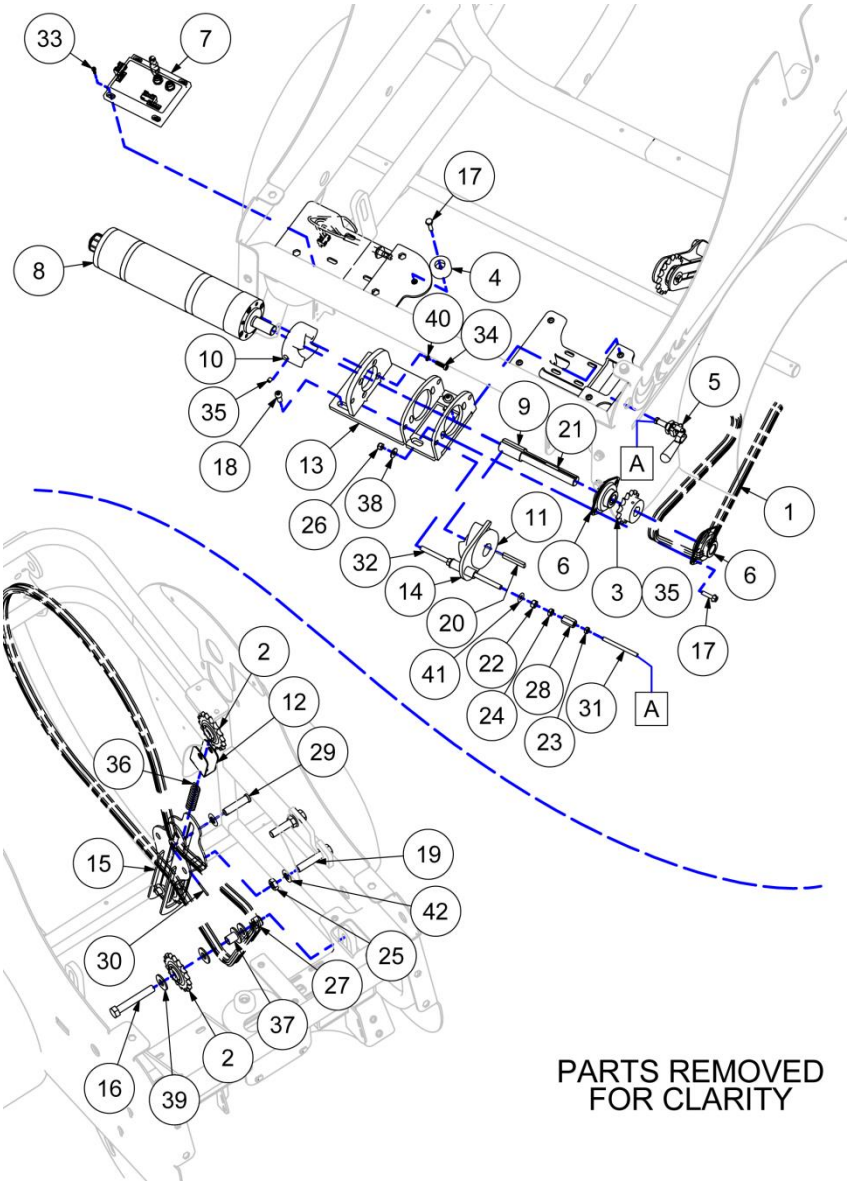
Drive System



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Drive System

Item	Description	Part Number	Qty
1	ROLLER CHAIN - #40 RIVETED	10-CHN-40-1RIV/FT	14.38
2	IDLER SPROCKET - 40-18 X 5/8	10-SPT-40-18IDLER	3
3	40B15 X 3/4 SPROCKET	10-SPT-40B15X075	1
4	RUBBER BUMPER	42-063	1
5	TOGGLE CLAMP - PUSH/PULL 3/4"	42-587	1
6	FLANGE BEARING - 3/4"	42-BRG-5913K73	2
7	CONTROLLER - iWATER™ MINI	42-ELC-033-A	1
8	MOTOR - MINI-TRAVELLER	42-ELC-034	1
9	DRIVE SHAFT	61-300-000-A	1
10	DRIVE CLUTCH	61-305	1
11	CLUTCH - DRIVEN	61-306	1
12	YOKE - DOUBLE IDLER SPROCKET	61-632-000	1
13	DRIVE SYSTEM MOUNT WELDMENT	61-651-000-C	1
14	YOKE - DRIVE DISENGAGE	61-652-000-A	1
15	BRACKET - DOUBLE IDLER	67-631-000-A	1
16	BOLT - 1/2-13 X 3.25	90-BLT-05013X325	1
17	BOLT FLANGE HEAD - 1/4-20 X 1.00	90-BLT-F02520X100	5
18	BOLT FLANGE HEAD - 5/16-18 X 1.00	90-BLT-F03118X100	4
19	BOLT - 1/2-13 X 2 1/2 F/THREAD	90-BLT-FT05013X250	2
20	KEY - 3/16" X 3/8" X 1 7/8"	90-KEY-SQ019X038X163	1
21	3/16 SQ. X 1 1/8" LG. KEY	90-KEY-SQ019X113	1
22	NUT HEX - 5/16-18	90-NUT-HEX031-18	2
23	NUT FLANGE - 1/4-20 SERRATED	90-NUT-F025-20	2
24	JAM NUT - 5/16"-18	90-NUT-JAM031-18	1
25	JAM NUT - 1/2"-13	90-NUT-JAM050-13	2
26	NUT LOCK - 1/4-20	90-NUT-LOC025-20	4
27	NUT LOCK - 1/2-13	90-NUT-LOC050-13	1
28	NUT RED. COUPLER - 1/4-20 X 5/16-18	90-NUT-RCPL02520X03118	1
29	CLEVIS PIN - 1/2 X 1 3/4 LG	90-PIN-CL050X175	1
30	COTTER PIN, 7/64 X 3/4 LG	90-PIN-CT011X025	2
31	THREADED ROD - 1/4-20 X 3.00"	90-ROD-02520x0300	1
32	THREADED ROD - 51/6-18 X 7.00"	90-ROD-03118X0700	1
33	SCREW SOCKET CAP - #08-32 X 1/2	90-SCR-SH00832X050	4
34	SCREW SOCKET CAP - M06-100 X 20MM	90-SCR-SHM06100X20	4
35	SET SCREW - 10-32 X 5/16 LG	90-SCR-ST01032X031	2
36	EXTENSION SPRING - 11/16 X .105 X 4 1/16	90-SPG-068X105X406	1
37	SPACER - 1/2 ID X 5/8 OD X 3/4	90-SPR-051X063X075	1
38	WASHER FLAT - 1/4	90-WSR-FLT025	4
39	WASHER FLAT - 1/2	90-WSR-FLT050	4
40	WASHER LOCK - M06 HIGH COLLAR	90-WSR-LOCM06HC	4
41	WASHER SAE - 5/16	90-WSR-SAE031	2
42	WASHER SAE - 1/2	90-WSR-SAE050	9

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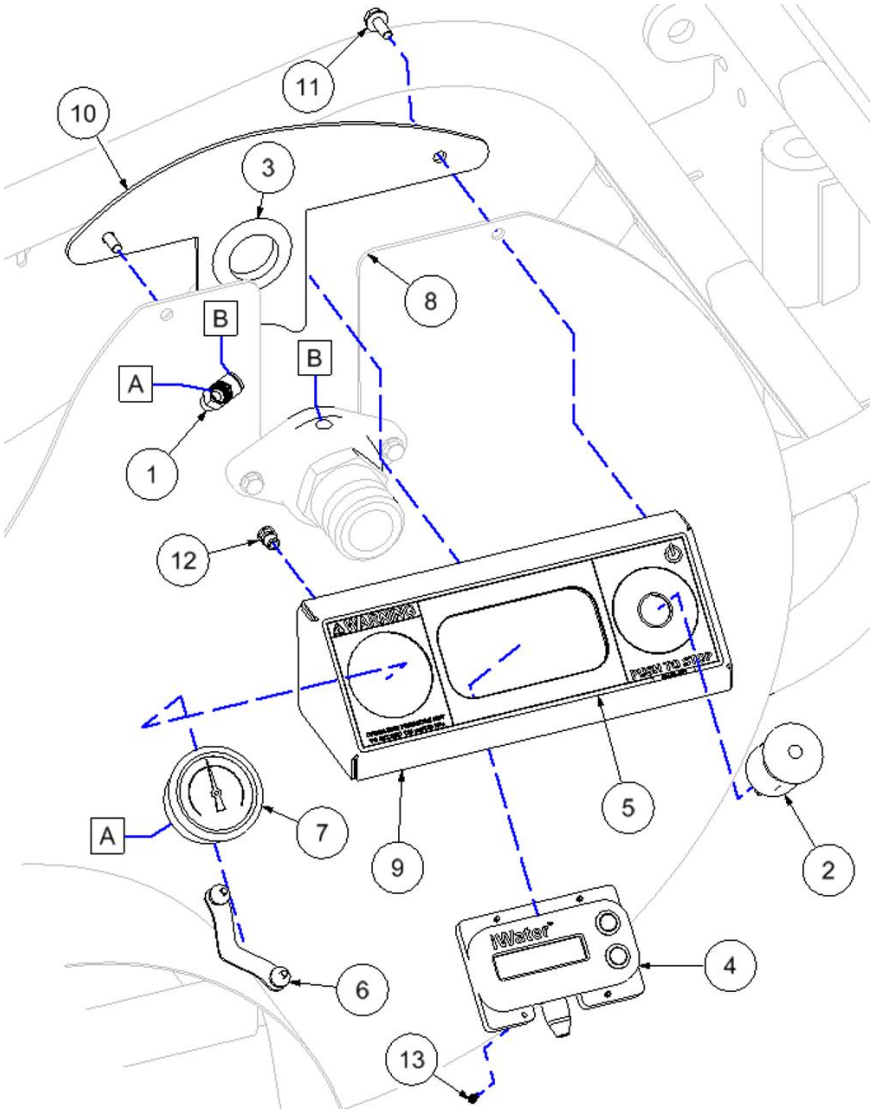
Control Panel



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Control Panel

Item	Description	Part Number	Qty
1	ADAPTER - 1/4-NPT-M X 3/8 TUBE X 90°	40-NPT-PLO25X038X90	1
2	SWITCH - EMERGENCY STOP	42-268	1
3	GROMMET - 1 1/2"ID X 2 3/8"OD X 3/8"	42-589	1
4	PANEL - iWATER™ MINI	42-ELC-035-A	1
5	LABEL - CONTROL	42-LBL-051	1
6	GAUGE - 0-160 PSI WET	45-059	1
7	GAUGE CLAMP ASSEMBLY	45-060	1
8	FRAME WELDMENT - 1100	68-400-000	1
9	GAUGE/CONTROL PANEL WELDMENT	61-601-000	1
10	SKIN CAP - 1100 R.H.	68-620-000	1
11	BOLT FLANGE HEAD - 5/16-18UNC X 3/4	90-BLT-F03118X075	2
12	THREADED INSERT - 1/4-20 SHORT	90-NUT-HTR02520S ⊙	2
13	SCREW SOCKET CAP - #06-32 X 7/16	90-SCR-SH00632X043	4
14	WIRING HARNESS *(NOT SHOWN)* SEE PAGE 47		

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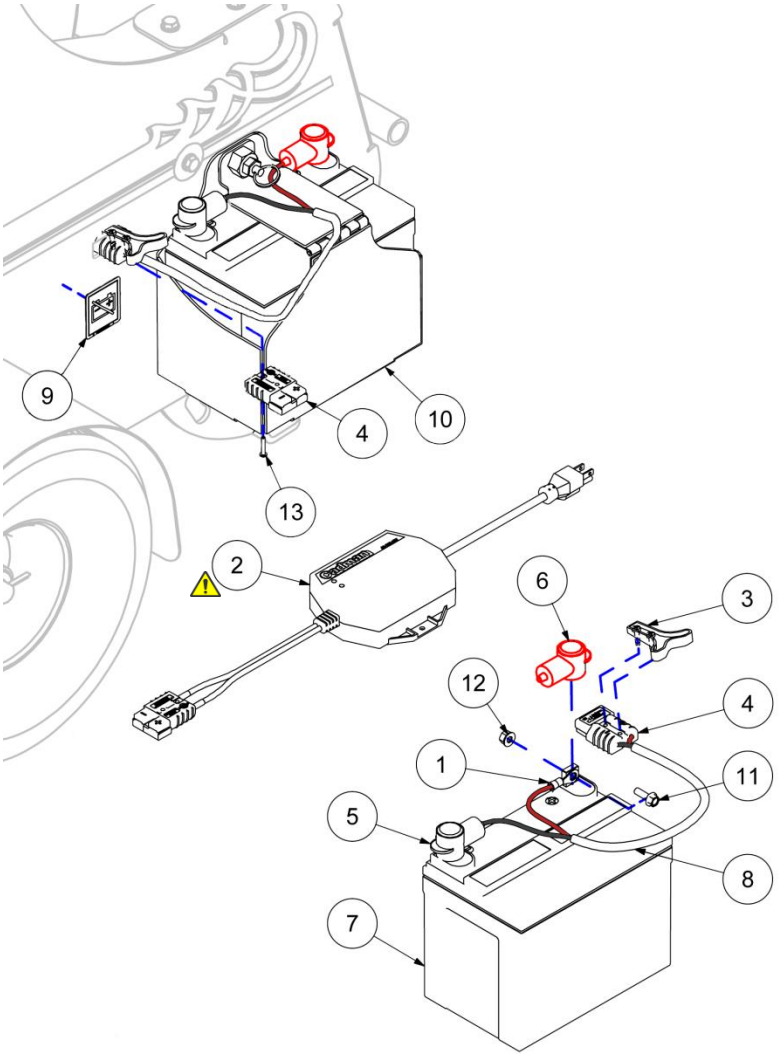
Power Supply System



WARNING:
Never Connect Battery Charger directly to machine. Connecting the charger to the machine **WILL** result in equipment damage and potential for personal injury. Fire may also occur resulting in equipment/property damage.

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Power Supply System

Item	Description	Part Number	Qty
1	5/16 IN. TERMINAL EYE, YELLOW	40-322	4
2	CHARGING KIT	42-302-KIT	1
3	CONNECTOR HANDLE - RED	42-310	2
4	CONNECTOR - BATTERY	42-311	3
5	BATTERY BOOT - BLACK 18-10G	42-315	2
6	BATTERY BOOT - RED 18-10G	42-316	2
7	BATTERY - 12 VOLT 33AH	42-325	2
8	8 GAUGE TWIN BATTERY CABLE - 18" LENGTH	42-ELC-040	2
9	LABEL - DISCONNECT	42-LBL-007	1
10	KIT - BATTERY BOX	61-625-000	1
11	1/4-20 X 3/4 LG FLANGE HEAD BLT	90-BLT-F02520X075	4
12	1/4-20 FLANGE TOP NUT	90-NUT-F025-20	4
13	MACHINE SCREW PAN - #6-32 X 3/4 PHILLIPS	90-SCR-PH00632X075	2
14	WIRING HARNESS (NOT SHOWN) SEE PAGE 47		

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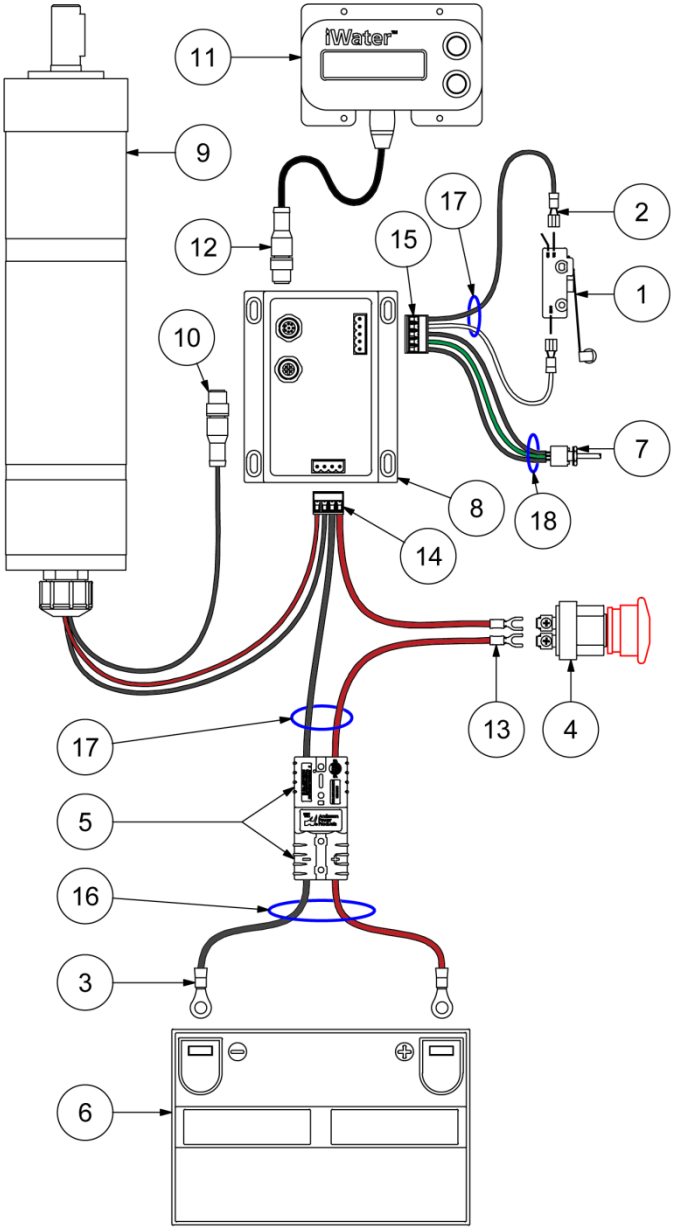
Wiring Assembly



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Wiring Assembly

Item	Description	Part Number	Qty
1	SHUT OFF SWITCH	40-ELC-043	1
2	FEMALE SPADE - 1/4" BLUE - 16-14 GAUGE	40-068	2
3	5/16 IN. EYE TERM. YELLOW - 12-10 GAUGE	40-322	2
4	SWITCH - EMERGENCY STOP	42-268	1
5	CONNECTOR - BATTERY	42-311	2
6	BATTERY - 12V 33AH	42-325	1
7	ROTARY POTENTIOMETER 10K OHM	42-ELC-032	1
8	CONTROLLER - iWATER™ MINI	42-ELC-033-A	1
9	MOTOR - MINI-TRAVELLER	42-ELC-034	1
10	HARNESS - MOTOR PLUG & WIRING	42-ELC-034_PLUG	1
11	PANEL - iWATER™ MINI	42-ELC-035-A	1
12	HARNESS - iWATER™ MINI PLUG & WIRING	42-ELC-035-A_PLUG	1
13	TERMINAL - BLUE SPADE 16-14 GA.	42-ELC-036	2
14	Terminal Blocks Pluggable plug, 4 position	42-ELC-046	1
15	Terminal Blocks Pluggable plug, 5 position	42-ELC-047	1
16	HARNESS - BATTERY PLUG	61-310	1
17	HARNESS - MAIN	61-311-A	1
18	HARNESS - POTENTIOMETER	61-313-A	1
AR	CABLE TIE - ANCHOR MOUNT BLACK *(NOT SHOWN)*	42-595	11
AR	CABLE TIE – 4 IN. BLACK *(NOT SHOWN)*	40-391	11

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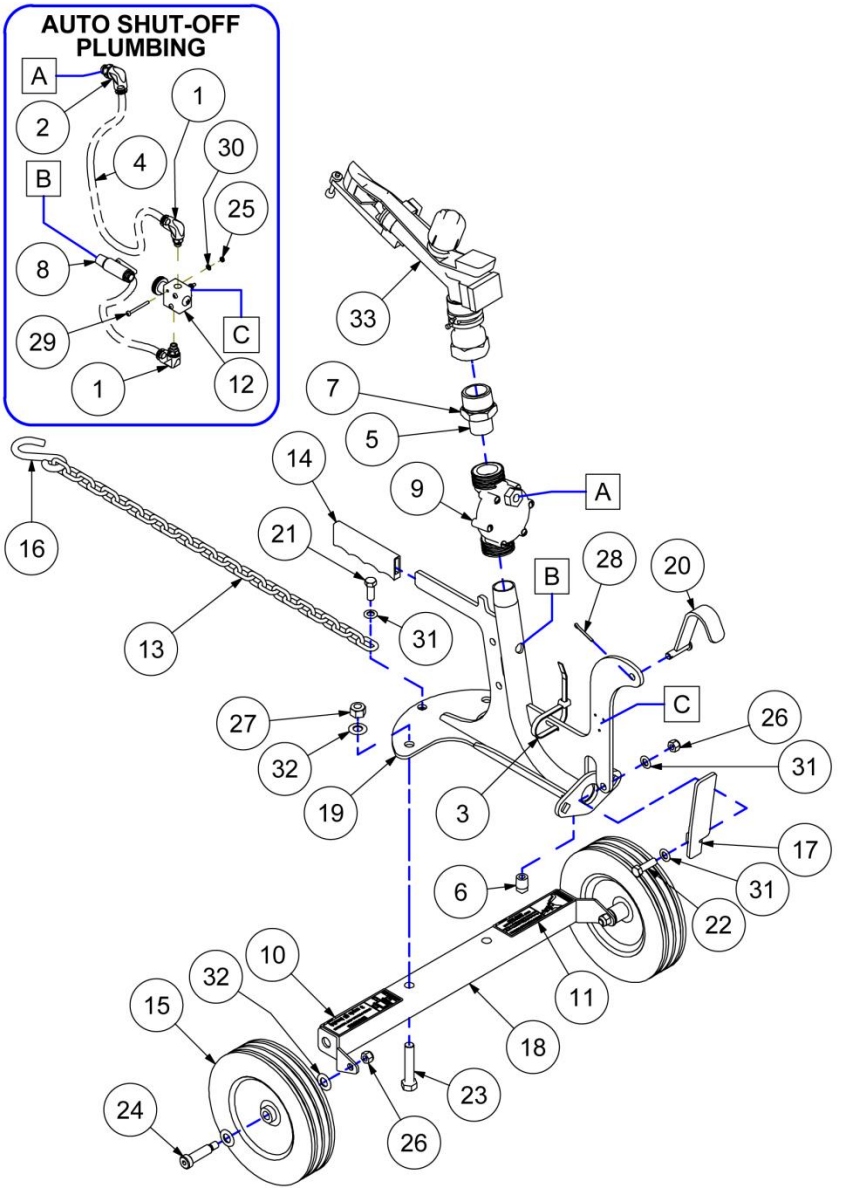
Low Sprinkler Cart Assembly •



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Low Sprinkler Cart Assembly •

Item	Description	Part Number	Qty
1	ELBOW - #06 TUBE X #02 M-NPT X 90°	25-HYD-87110-06-02	2
2	ELBOW - #06 TUBE X #04 M-NPT X 90°	25-HYD-87110-06-04	1
3	CABLE TIE - 8 1/2" BLACK	40-470	3
4	HOSE - 3/8" BLACK POLYETHYLENE	40-HHZ-0167	30
5	NIPPLE, 1" NPT CLOSE GALV.	40-NPT-NPLC100G	1
6	PLUG - 3/8" NPT GALVANIZED	40-NPT-PLG038G	1
7	REDUCER BUSHING - 1 1/4 X I NPT GALV.	40-NPT-RB125X100G	1
8	VALVE - 3/8 NPT-M X 3/8 TUBE	40-NPT-VLV038BLLMFTUBE	1
9	VALVE-SHUTOFF	40-NPT-VLV100DPMFF	1
10	LABEL - MAX HOSE PULL	42-032	1
11	LABEL - HIGH PRESS. WATER	42-046-A	1
12	VALVE - 3 WAY	42-048	1
13	CHAIN - 3/16 GALVANIZED 26 LINKS	42-055-26	1
14	GRIP - HANDLE	42-304	1
15	WHEEL-SPRINKLER CART	42-305	2
16	HOOK-TOW	42-306	1
17	BUMPER - SPRINKLER SHUT OFF	61-913-000-A	1
18	AXLE WELDMENT - L1100 CART	68-911-000	1
19	SPRINKLER CART BODY - L1100	68-912-000	1
20	CART HOOK WELDMENT	68-913-000	1
21	BOLT - 3/8-16 X 1.00	90-BLT-03816X100	1
22	BOLT - 3/8-16 X 1 1/4	90-BLT-03816X125	1
23	BOLT - 1/2-13 X 2 1/2	90-BLT-05013X250	2
24	BOLT SHOULDER - 3/8-16 X 1 1/2	90-BLT-SH03816X150	2
25	NUT HEX - #06-32	90-NUT-HEX006-32	3
26	NUT LOCK - 3/8-16	90-NUT-LOC038-16	4
27	NUT LOCK - 1/2-13	90-NUT-LOC050-13	2
28	COTTER PIN - 1/8 X 1.00 LONG	90-PIN-CT013X100	1
29	SCREW MACH. - #06-32 X 1 1/2	90-SCR-PHP06-32X150	3
30	WASHER LOCK - #06	90-WSR-LOC006	3
31	WASHER SAE - 3/8	90-WSR-SAE038	3
32	WASHER SAE - 1/2	90-WSR-SAE050	6
33	SPRINKLER - SIME K1 ○	SP-SIM-K1	1
↳	KOMET R20 ○ – 1500 ○	SP-KOM-R20	1

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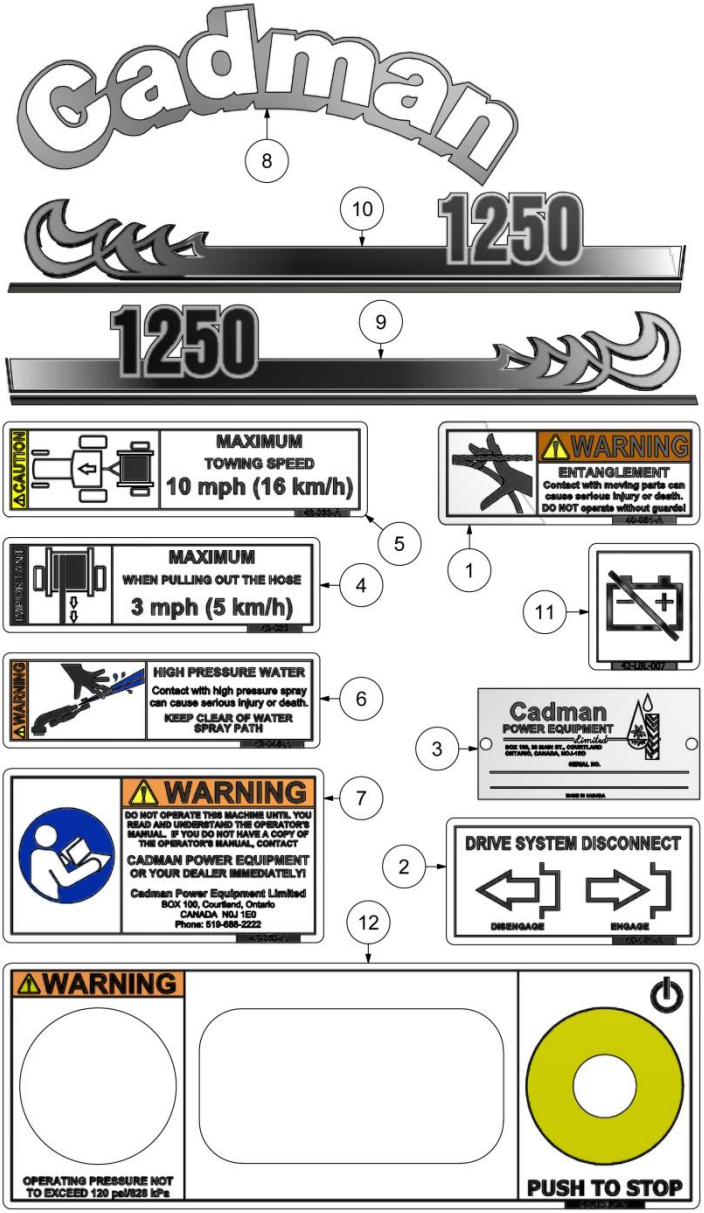
Decals


Cadman
8
10
1250
1250
9
CAUTION
MAXIMUM
TOWING SPEED
10 mph (16 km/h)
5
WARNING
ENTANGLEMENT
Contact with moving parts can cause serious injury or death.
DO NOT operate without guards!
1
MAXIMUM
WHEN PULLING OUT THE HOSE
3 mph (5 km/h)
4
11
WARNING
HIGH PRESSURE WATER
Contact with high pressure spray can cause serious injury or death.
KEEP CLEAR OF WATER SPRAY PATH
6
Cadman
POWER EQUIPMENT
Limited
3
WARNING
DO NOT OPERATE THIS MACHINE UNTIL YOU READ AND UNDERSTAND THE OPERATOR'S MANUAL. IF YOU DO NOT HAVE A COPY OF THE OPERATOR'S MANUAL, CONTACT
CADMAN POWER EQUIPMENT
OR YOUR DEALER IMMEDIATELY!
Cadman Power Equipment Limited
BOX 100, Courtland, Ontario
CANADA N0J 1E0
Phone: 519-688-2222
7
DRIVE SYSTEM DISCONNECT
DISENGAGE
ENGAGE
2
12
WARNING
OPERATING PRESSURE NOT TO EXCEED 120 psi/828 kPa
PUSH TO STOP

Decals

Item	Description	Part Number	Qty
1	LABEL - ENTANGLEMENT	40-051-A	1
2	LABEL - DRIVE DISCONNECT	40-151-A	1
3	CADMAN SERIAL NUMBER TAG	40-238	1
4	LABEL - MAX HOSE PULL	42-032	1
5	LABEL - MAX TOW SPEED	42-033-A	1
6	LABEL - HIGH PRESS. WATER	42-046-A	1
7	LABEL - OPERATOR MANUAL	42-050-A	1
8	DECAL - DRUM R14"	42-DCL-010	4
9	DECAL - 1250 SIDE FRAME L.H.	42-DCL-1250L	1
↳	DECAL - 1100 SIDE FRAME L.H.	42-DCL-1100L	1
10	DECAL - 1250 SIDE FRAME R.H.	42-DCL-1250R	1
↳	DECAL - 1100 SIDE FRAME R.H.	42-DCL-1100R	1
11	LABEL - DISCONNECT	42-LBL-007	1
12	LABEL - CONTROL	42-LBL-051	1

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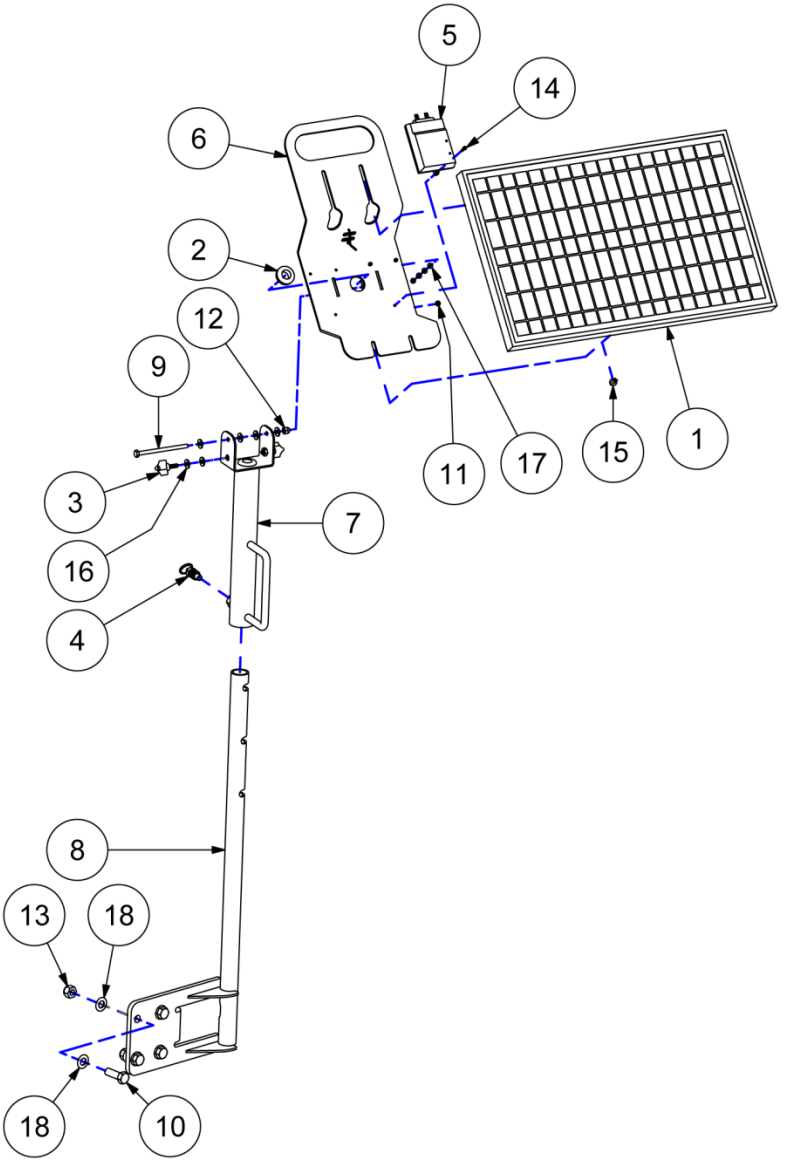
Solar Panel Kit ○ *TR-KIT-SOL1*



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Solar Panel Kit ○ *TR-KIT-SOL1*

Item	Description	Part Number	Qty
1	SOLAR PANEL - 20 WATT	42-261	1
2	GROMMET - 1" X 1 5/16" X 7/16"	42-406	2
3	CONTROL KNOB - 1/4-20 THREE ARM	42-471	2
4	SPRING PLUNGER - HAND RETRACTABLE	42-547	1
5	SOLAR CHARGER ASSEMBLY	61-627-000	1
6	SOLAR PANEL PIVOT MOUNT	61-810-000	1
7	TUBE WELDMENT - SOLAR PIVOT	61-811-000	1
8	SOLAR PANEL MOUNT BASE WELD	61-812-000	1
9	BOLT - 1/4-20 X 4.00	90-BLT-02520X400	1
10	BOLT - 1/2-13 X 1 1/2	90-BLT-05013X150	4
11	NUT ACORN - #06-32	90-NUT-ACL006-32	3
12	NUT ACORN - 1/4-20UNC LOW	90-NUT-ACL025-20	1
13	NUT LOCK - 1/2-13	90-NUT-LOC050-13	4
14	SCREW SOCKET CAP - #06-32 X 7/16	90-SCR-SH00632X043	3
15	SCREW TEK - 1/4 X 1/2	90-SCR-TEK025X050	4
16	WASHER FLAT - 1/4 NYLON	90-WSR-FLT025NYLON	8
17	WASHER SAE - #06	90-WSR-SAE006	6
18	WASHER SAE - 1/2	90-WSR-SAE050	8
19	HARNESS - SOLAR PANEL*(NOT SHOWN)* SEE PAGE 55	61-315	1

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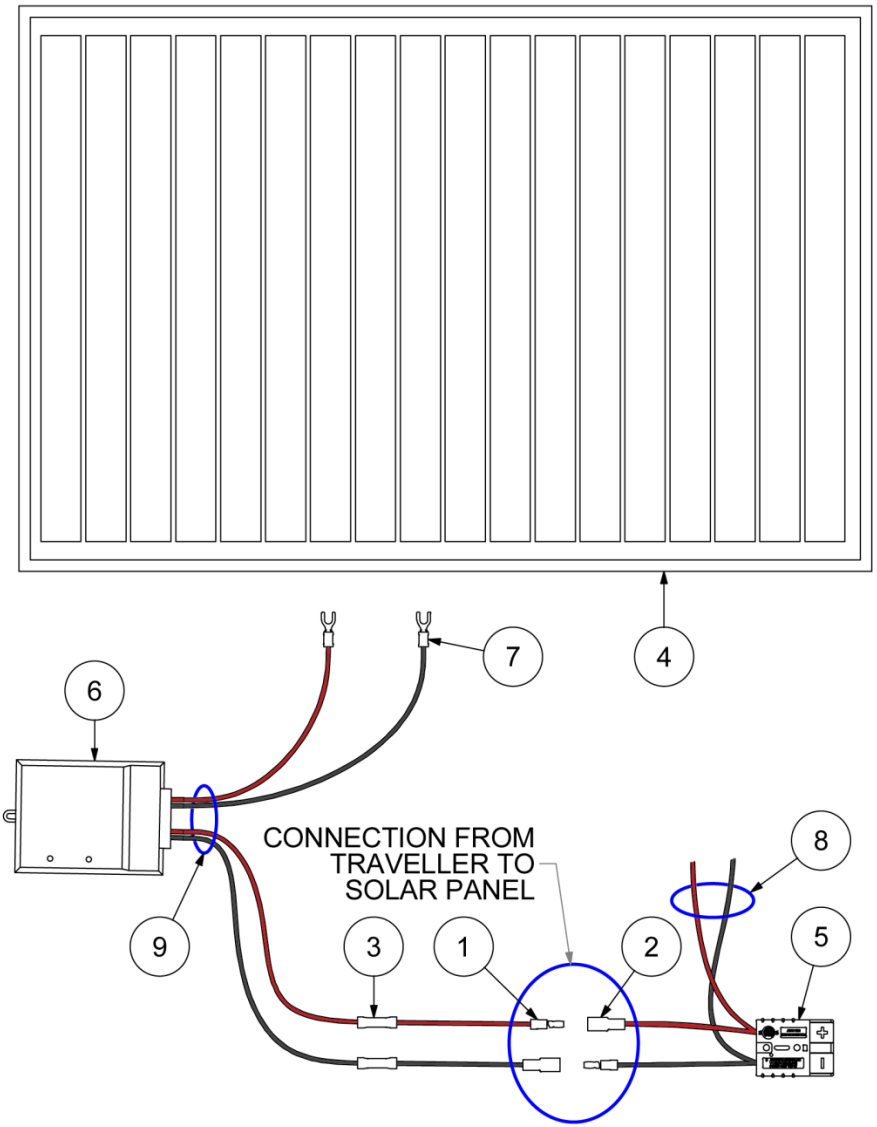
Solar Panel Harness *61-315*



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Solar Panel Harness *61-315*

Item	Description	Part Number	Qty
1	TERMINAL BULLET - BLUE MALE	40-070	2
2	TERMINAL BULLET - BLUE FEMALE	40-247	2
3	BUTT CONNECTOR - BLUE	40-258	2
4	SOLAR PANEL - 20 WATT	42-261	1
5	CONNECTOR - BATTERY	42-311	1
6	SOLAR CHARGER - SUNFORCE	42-399	1
7	TERMINAL - BLUE SPADE 16-14 GA.	42-ELC-036	2
8	HARNESS - MAIN MINI TRAVELLER	61-311-A	1
9	HARNESS - SOLAR PANEL	61-315	1
AR	CABLE TIE - ANCHOR MOUNT BLACK *(NOT SHOWN)*	42-647	5
AR	CABLE TIE – 4 IN. BLACK *(NOT SHOWN)*	40-391	5

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Required Maintenance

Prevention of mechanical failure is the goal of any good maintenance schedule. The secret to preventing unwanted down time is to adhere to a maintenance schedule suited to the way you use the equipment. Your maintenance schedule should include the following minimum requirements:

ONLY perform maintenance when the machine is shut down with the battery removed and is in a non-loaded condition. This means that no water is being pumped through the reel, all water pressure has been appropriately bled, and all mechanical tension has been released from the hose rewind system.

Each Use

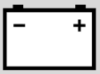
Maintenance Item	Figure	Procedure
Visually inspect equipment		Walk around the unit and inspect for loose, missing or damaged items. Replace missing or damaged items and tighten loosened items.
Lubricate the following	Figure 35	• Indexer chain • Gear box • Wheel axles on main chassis • All grease points
Maintain tire pressure		Using a tire pressure gauge, check the pressure of each tire and add or remove air to achieve the manufacturer's recommended pressure posted on the tire sidewall. **DO NOT LOWER TIRE PRESSURE BELOW THE RECOMMENDED LEVEL. A lower pressure than the recommended pressure could result in the tire separating from the rim.**
Check battery level		Check battery level to ensure there is enough charge to complete the required cycles.

Table 3 - Required Maintenance - Each Use

Every 100 Hours

Maintenance Item	Figure	Procedure
Adjust, if necessary, the tension of the drive and indexer chain	Figure 34 & Page 60	Remove protective shield. The indexer chain is properly tensioned when it has no visible slack. Adjustments are made by moving the idler wheel (rub block) towards the chain. Replace the shield before operating this machine.
Lubricate the following	Figure 35	• Indexer chain • Gear box • Wheel axles on main chassis • All grease points

Table 4 – Every 100 Hours of Use

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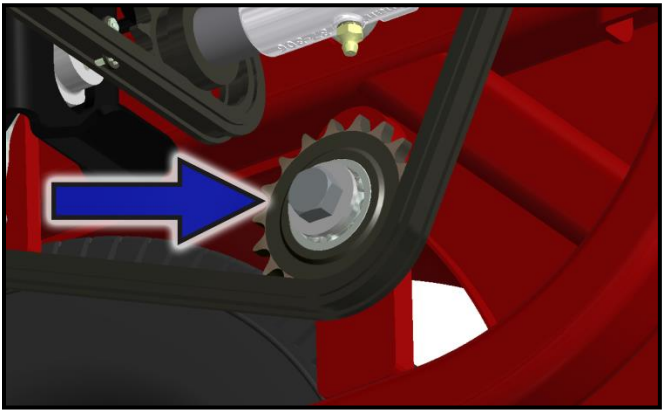

Figure 34 - Adjust Drive Chain

img-00722

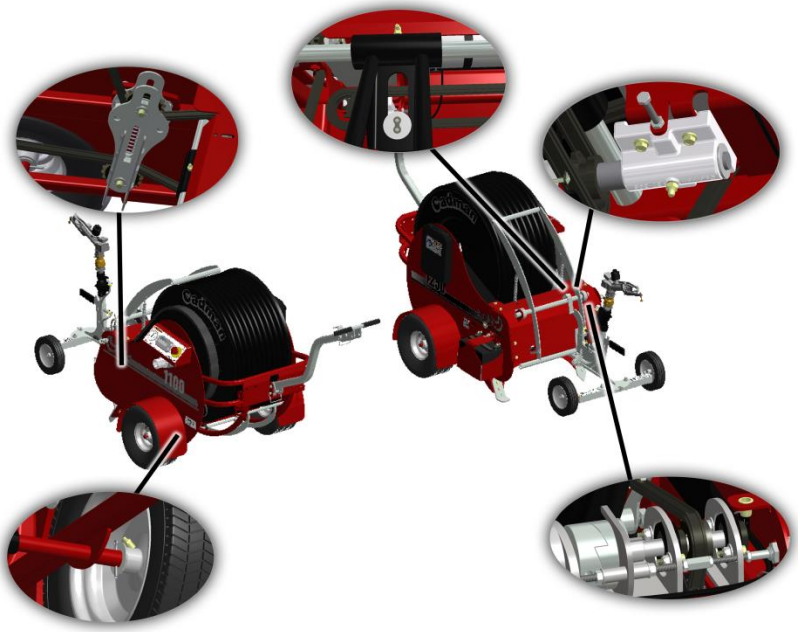

Figure 35 – 1100/1250 Lubrication Points

img-00753

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Before Storing

You MUST properly empty your Cadman Micro-Traveller before storing the machine for long periods of time. Failure to properly clean out the hose could result in the hose being plugged with sediment.

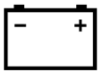
Maintenance Item	Figure	Procedure
Drain the traveller	N / A	For cold climates you must winterize your equipment. All liquid must be drained from the machine. Open the sprinkler cart drain fully. Use compressed air to purge the machine. For further information contact Cadman Power Equipment Limited or your dealer.
Lubricate the following	Figure 35	• Indexer chain • Gear box • Wheel axles on main chassis • All grease points
Remove battery		Remove battery from your equipment and store as per manufacturer's specifications.
Cap all openings	N / A	Once the machine is drained, cap all openings such as water inlet and sprinkler nozzle. This will prevent insects or rodents from blocking the system with debris.

Table 5 - Required Maintenance – Before Storing

Before Start Up *(After long term storage)*

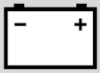
Maintenance Item	Figure	Procedure
Review Operator's manual		Review this manual to refresh your memory regarding the proper operation of this machine. This will reduce the potential for equipment damage and user injury.
Charge battery		Charge battery before putting your equipment into service. This will ensure desired operating results.
Maintain tire pressure		Using a tire pressure gauge, check the pressure of each tire and add or remove air to achieve the manufacturer's recommended pressure posted on the tire sidewall. **DO NOT LOWER TIRE PRESSURE BELOW THE RECOMMENDED LEVEL. A lower pressure than the recommended pressure could result in the tire separating from the rim.**

Table 6 - Required Maintenance - After Long Term Storage

Lubricants

Grease: Any good grade multi-purpose, waterproof grease is compatible with the greasing requirements of your Cadman Mini-Traveller.

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Indexer Adjustment Instructions

In some cases indexer adjustment may be required. If required simply complete the following instructions to achieve proper indexer adjustment.

Only perform the indexer adjustment procedure when the hose is pulled out to the base layer. If there are spaces in the base layer you will be required to tighten the coils so that they form a neatly packed spool. Rotate the drum if necessary. In some cases the indexer may not be out of adjustment and will not require any adjustments. If the indexer is still out of alignment continue with the instructions below.

Step 1

Disconnect the battery and ensure all mechanical tension has been released from the hose rewind system. Then remove the indexer chain guard.

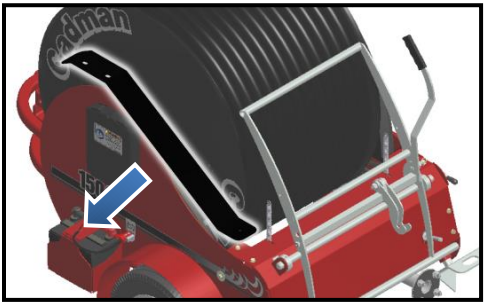

Figure 36 - Remove Chain Guard

img-00724

Step 2

Remove the chain connector link, and then remove indexer chain.

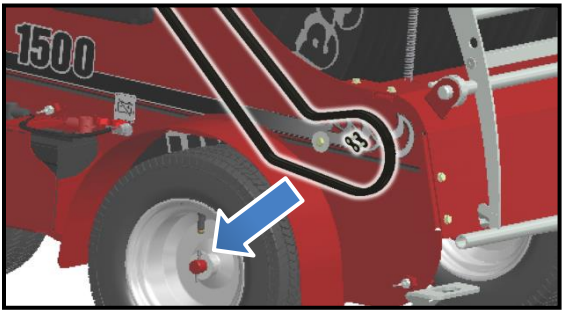

Figure 37 - Remove Indexer Chain

img-00725

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Step 3

Rotate the indexer sprocket until the hose guide is lined up with the hose. Make sure that the hose is directly in the center of the hose guide.

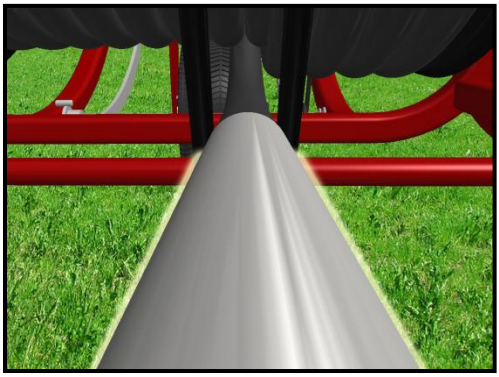

Figure 38 - Align Hose Guide

img-00709

It is IMPORTANT that the hose guide is traveling in the same direction as the hose. When rotating the indexer sprocket note the direction of travel for the hose. If the hose guide travels opposite to the hose, equipment damage WILL occur.

Step 4

Re-install the chain and chain connector link.

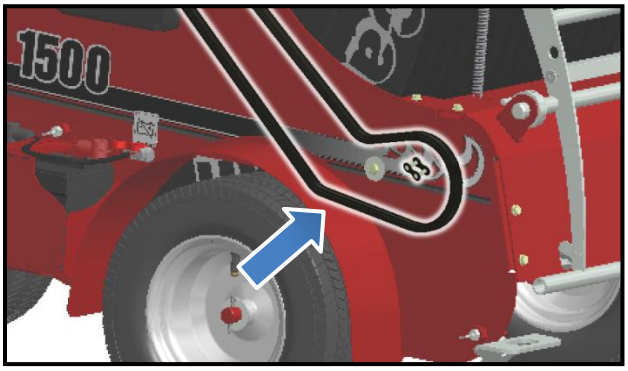

Figure 39 - Re-install Chain and Chain Connector Link

img-00726

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Step 5

Re-install the indexer chain guard.

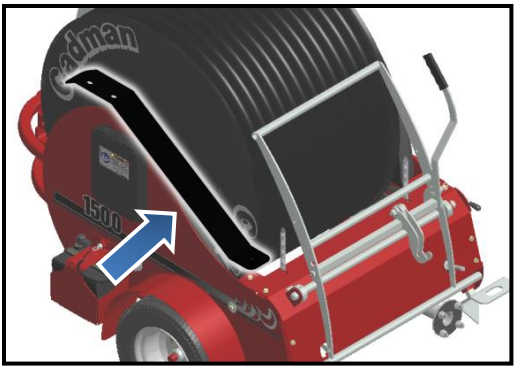

Figure 40 – Re-install Indexer Chain Guard

img-00727

DO NOT operate this machine without all guards properly installed. Failure to have guards properly installed may result in serious injury to you and/or spectators.

Appendix A – Sprinkler Data

1100/1250 Model

SIME – K1								
PSI	Nozzle 8 mm		Nozzle 9 mm		Nozzle 10 mm		Nozzle 12 mm	
	GPM	DIA.	GPM	DIA.	GPM	DIA.	GPM	DIA.
22	12.9	102'	16.4	108'	20.1	112'	29.1	112'
29	15.1	112'	18.8	115'	23.3	118'	33.6	125'
44	18.2	125'	23.0	128'	28.3	135'	41.0	138'
59	21.1	135'	26.4	138'	32.8	144'	47.3	154'

Table 7 - SIME – K1 (U.S. units) †

1100/1250 Model

KOMET – R20								
PSI	Nozzle 6 mm		Nozzle 8 mm		Nozzle 10 mm		Nozzle 12 mm	
	GPM	DIA.	GPM	DIA.	GPM	DIA.	GPM	DIA.
36	9	108'	-	-	-	-	37	144'
44	-	-	18	138'	28	144'	-	-
51	11	124'	-	-	-	-	44	157'
58	-	-	21	148'	32	157'	-	-
65	12	138'	-	-	-	-	50	170'

Table 8 - KOMET – R20 (U.S. units) ‡

† Table Data taken from manufacturer's literature and depict ideal testing conditions. Pressure (PSI) refers to pressure at nozzle. For every 3° drop of the trajectory angle the throw is reduced by approximately 3 to 4%. Data may change without notice.

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Technical Specifications

Approximate 1100/1250 Micro-Traveller Dimensions

IMPORTANT: The dimensions shown on the following pages are only approximate. Many varying factors affect these dimensions, for example tire option, hose type, tire inflation etc.

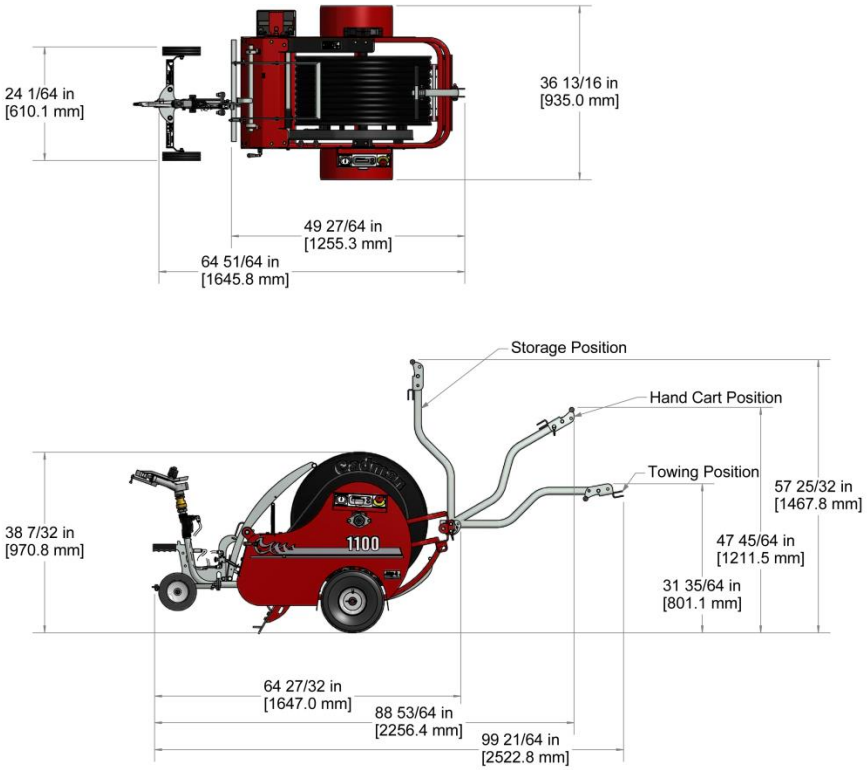

Figure 41 – Overall 1100/1250 Dimensions with Low Sprinkler Cart

img-00754

The approximate weight for an empty Cadman 1100 Micro-traveller is 525 lbs [232 kg].
The approximate weight for an empty Cadman 1250 Micro-traveller is 525 lbs [232 kg].

Note: These weights are as shipped including shipping material.

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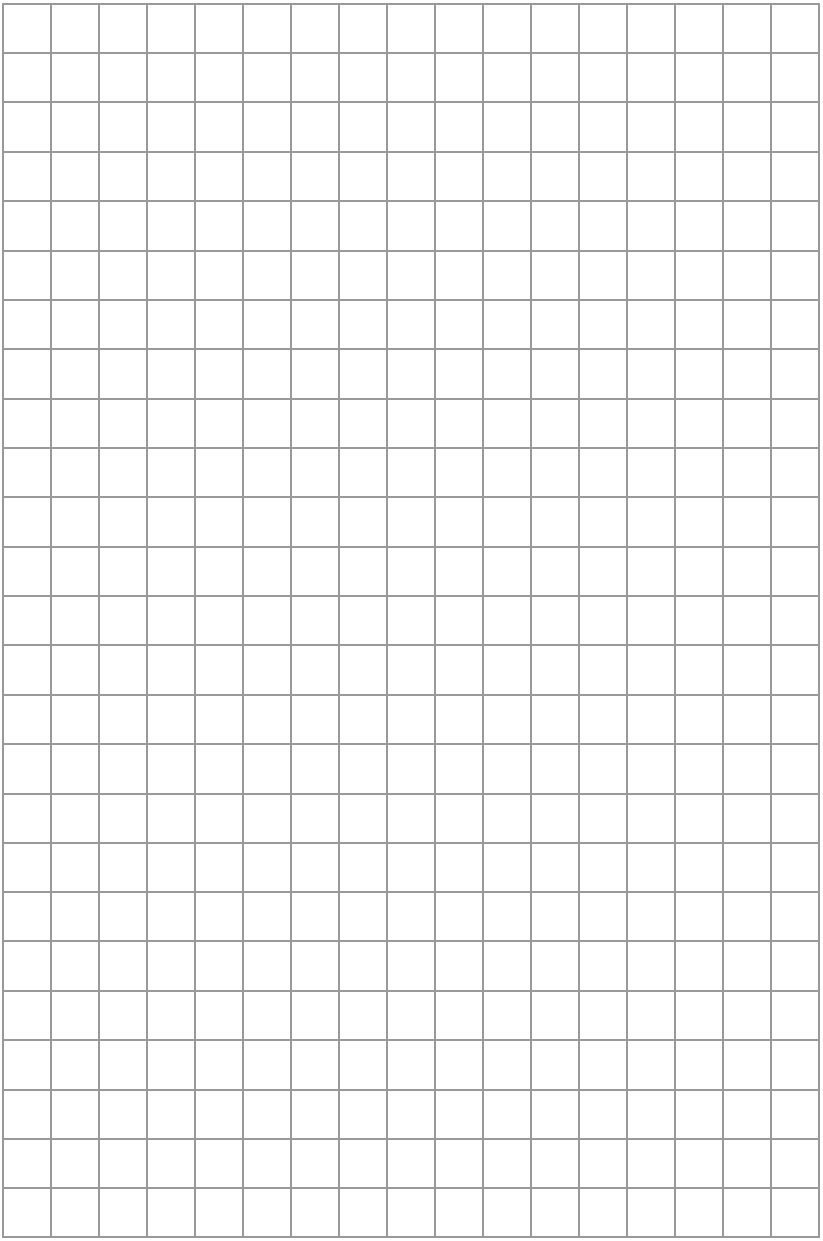

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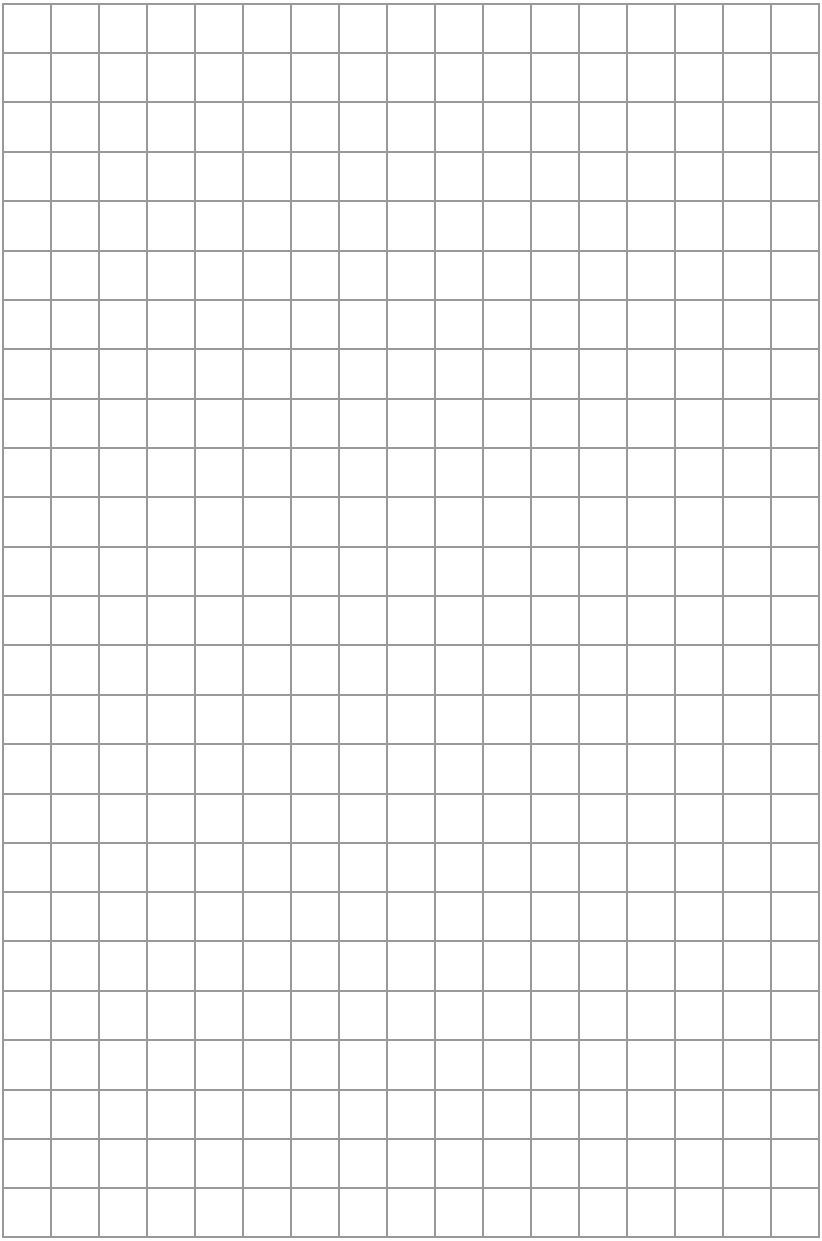

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Useful Information

Length

1 FOOT	= 12	Inches	**1 METER**	= 39.37	Inches
	= 0.3048	Meter		= 3.2808	Feet
1 ROD	= 5.029	Meters	**1 MILE**	= 5280	Feet
	= 16.5	Feet		= 1760	Yards
	= 5.5	Yards		= 320	Rods
				= 1609	Meters

Area

1 SQUARE FOOT	= 144	Square Inches
	= 0.0929	Square Meters
1 SQUARE YARD	= 1296	Square Inches
	= 0.8361	Square Meters
1 SQUARE METER	= 1549.4	Square Inches
	= 10.764	Square Feet
1 ACRE	= 43560	Square Feet
	= 4047	Square Meters
	= 0.4047	Hectare
1 HECTARE	= 107642.62	Square Feet
	= 10000	Square Meters
	= 2.47105	Acres
1 SQUARE MILE	= 640	Acres
	= 259	Hectares

Volume

1 GALLON (US)	= 0.8327	Imperial Gallons
	= 231	Cubic Inches
	= 0.1337	Cubic Feet
	= 8.345	Pounds
1 CUBIC FOOT	= 1728	Cubic Inches
	= 7.48	Gallons (US)
	= 62.4	Pounds
	= 28.32	Liters
1 ACRE INCH	= 27154	Gallons (US)
	= 254	Cubic Meters / Hectare

AREA OF A CIRCLE = Diameter² X 0.7854

CYLINDER VOLUME (US GAL.) = Diameter² X 0.7854 X Length

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Revision History

VERSION	DATE (MM/DD/YYYY)	AUTHOR	DESCRIPTION

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