The Reel Rain Traveler Irrigation D1030 and D1033 are manufactured by Amadas Industries:

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Welcome to AMADAS Industries

With origins dating back to 1963, Amadas Industries and its predecessors have a long history of providing high quality, reliable, and innovative equipment for the farming industry. Amadas equipment is currently at work throughout the United States and in many other countries. This equipment ranges from the Magnum Fource Peanut Combine, Tree Bark Processing and Packaging Machinery, Hi-Speed Cotton Stalk Puller/Chopper to the Reel Rain Traveler Irrigation Systems.
Introduction

Reel Rain D1030/D1033

D1030/D1033
Reel Rain
Traveler
Irrigation System

Gas Engine Drive Reel Rain D1030

Congratulations on your purchase of a Reel Rain Traveler Irrigation System! We're proud of our Reel Rain and the design and workmanship that go into every AMADAS machine.

Irrigation equipment is important to good farm management. Water applied at the right times and in the correct amounts can result in increased yields. An efficient irrigation system such as the Reel Rain adds a measure of insurance to your operation.

The AMADAS Reel Rain Traveler Irrigation Series offers one of the most efficient and flexible methods of irrigation. The Reel Rain irrigators can handle fields of almost any shape or size and are easy to transport from field to field.

The engine drive Reel Rain irrigator is the most popular piece of equipment for slurry and wastewater disposal. With its easy setup and operation, a Reel Rain irrigator disposes of slurry and wastewater quickly and efficiently. The turbine drive model is a low maintenance alternative for clear water applications.

Benefits
The Reel Rain Traveler Irrigation System offers the following benefits:

• Performance under the toughest conditions.

With application rates of up to 400 gallons per minute, a Reel Rain Irrigator can irrigate up to 135 acres per week, applying one inch of water. A specially designed chassis and drive train guarantee long life, high reliability, and maximum versatility.

• One of the most efficient and flexible methods of irrigation.

In terms of time and labor, the Reel Rain offers one of the most efficient and flexible methods of irrigation with quick setup and minimal maintenance. A large diameter turntable simplifies reel positioning while an enlarged opening between the turntable and reel allows greater rewind flexibility. Reel Rain irrigators are easy to transport, allowing you to irrigate different sizes and shapes of fields at different locations.

Turbine Drive Reel Rain D1030
• **Automatic speed compensation.**

Every Reel Rain Irrigator is equipped with an automatic speed compensation sensor that measures the depth of the hose on the reel and adjusts the speed as the reel becomes filled. This allows the hose retrieval speed to be maintained within five percent of the original setting, providing a more uniform application of water over the entire path of the gun cart.

• **Cost effective solution to slurry problems.**

AMADAS Reel Rain Traveler Irrigators offer cost effective solutions to the slurry disposal problems faced by municipalities as well as hog and dairy operations.

Galvanized inlet fittings and a galvanized gun cart make the AMADAS Reel Rain the prime choice for slurry and agricultural applications. When combined with a chopper pump, the Reel Rain can process slurry with a solids content of up to 7%. The Reel Rain model is available with either a 3.012” (1030 model) or 3.35” (1033 model) hose. (Dimension is inside diameter of the hose.)

• **Heavy duty two-speed Gearbox.**

The Reel Rain D1030/D1033 comes standard with a heavy duty two-speed gearbox, designed for trouble-free operation, that is easily adaptable to various application rates.

---

**Features**

The Reel Rain D1030/D1033 comes standard with the following features:

• Heavy duty chasis and drive train
• Heavy duty medium density polyethylene hose
Optional Features
The following are options available for the Reel Rain D1030 and D1033:

- 5.5 HP gasoline drive
- Air purge kit
- Longer stabilizer legs
- Optional PTO shaft
- Gun cart weight kit.

Performance Data

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Hose Length (feet)</th>
<th>Hose I.D. (Inches)</th>
<th>Typical Lane Spacing (ft)</th>
<th>No. of Acres Covered in One Pull</th>
<th>Flow Rate (G.P.M.)</th>
<th>Time for One Pull Applying 1&quot; of Water (hours)</th>
<th>Nelson Gun &amp; Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1033</td>
<td>850</td>
<td>3.3</td>
<td>260</td>
<td>5.68</td>
<td>360</td>
<td>7.1</td>
<td>SR150/80PSI</td>
</tr>
<tr>
<td>1030</td>
<td>965</td>
<td>3.0</td>
<td>240</td>
<td>5.84</td>
<td>260</td>
<td>10.2</td>
<td>SR150/80PSI</td>
</tr>
</tbody>
</table>

Nelson SR 150 Gun
1. Safety

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Overview
Safety is the responsibility of everyone. Although safety features are incorporated into the machine and dangerous areas marked, ultimately, careful operation is the best prevention against accidents. To reduce the risk of accidents, please read thoroughly and follow the safety instructions and messages included in this manual and on the machine.

Safety Symbols Used
The three safety symbols used on the machine and in this manual are shown below. The following section explains each of these symbols in detail.

⚠️ DANGER
⚠️ WARNING
⚠️ CAUTION

Please familiarize yourself with each symbol and its meaning. It is crucial to your safety and the safety of others that you follow the safety precautions indicated by these symbols.

Protective Devices
Protective guards and shields have been installed to protect the user from hazards.

Never remove, tamper with, or modify guards or shields. To do so could result in serious personal injury or death.

If it is necessary to remove a shield to perform maintenance, it is essential that the shield be replaced prior to operating the Reel Rain.

Careful Lifting
Please follow safe lifting procedures when installing or removing any equipment. Use a second person as a helper when indicated by the weight of an item.
## Safety Symbols

### Danger
This symbol indicates an imminently hazardous situation, which if not avoided, will result in death or serious injury. The use of the word DANGER is limited to the most extreme situations. Extreme care should be taken when you are near these areas. DANGER decals are located at, or as near as possible to, these dangerous areas.

![DANGER](image)

### Warning
This symbol identifies areas or practices, which if not avoided, could result in serious personal injury. These injuries could range from minor cuts to dismemberment. Warning decals are located at, or as near as possible to, these hazardous areas.

![WARNING](image)

### Caution
This symbol identifies a potentially hazardous situation, which if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices that could cause damage to the machine. Caution decals are located at, or as near as possible, to these potentially harmful areas.

![CAUTION](image)
Safety Alert Symbol
This symbol alerts you to possible hazards. Follow the recommended precautions and safe operating procedures. If you have any questions, please contact your dealer or the manufacturer.

Safety Instructions
Safety features have been designed into the machine with hazardous areas marked. Please read and follow the instructions in this manual prior to operating, maintaining, or servicing this machine.

Notes
Throughout the manual, information that needs to be emphasized is set apart with either a "NOTE!" or "IMPORTANT!" heading. Please be sure to read this information carefully, as it usually indicates a situation that could cause machine damage.

Example:
NOTE! The engine has an automatic shutoff that engages if the oil level is too low. Refer to the Honda Manual for more information on the engine.
Safety Guidelines

Many accidents can be prevented by your knowing about safety. Prevent hazards by reading the safety warnings in this manual. Alert others to potential hazards.

Remember all machinery can be dangerous if used incorrectly. Please operate carefully. Safety is only a word until it is put into practice.

When operating this machine:

- Do NOT climb or ride on this machine at any time.
- Do NOT let anyone stand between the machine and the gun cart.
- Make sure that everyone is clear of the machine prior to and during operation.
- Keep all shields in place.
- Keep fingers, feet, and loose clothing away from moving parts.
- Do NOT stand near high pressure water lines while pressurizing the system.
- Do NOT operate the machine with an inlet pressure exceeding 150 PSI.
- Lower the stabilizer legs and jack prior to towing out the hose.
- Periodically check all nuts and bolts for tightness.
- Stand clear of the gun while in operation.
- Do NOT stand in front of the gun during operation. The high velocity water exiting the gun can cause injury.

When transporting this machine:

- ALWAYS make sure the drum reel is lined up parallel to the chassis before moving the irrigator.
- ALWAYS make sure the turntable is locked with the hitchpin before moving the irrigator.
- ALWAYS use safety chains when towing the irrigator.
- ALWAYS hook the loose end of each gun cart lift chain into the opening from which the chain is hung if the gun cart is not attached.
- Do NOT tow in excess of 20 MPH when empty or 3 MPH when hoses are full of water.
- Make sure the machine is level when it is towed.
When performing maintenance on this machine:

- Do NOT make adjustments or attempt any maintenance while the machine is in operation.
- ALWAYS engage the reel brake before attempting any maintenance or adjustments.
- Do NOT change gun nozzles while there is water pressure in the system.
Decals
Safety decals identify specific hazards and general safety. Please note the following about the decals:

- Keep them clean and legible.
- NEVER remove a safety decal from the machine.
- When you replace a part with a safety decal, also replace that decal.
- For replacement decals, call your AMADAS parts representative.
- Replacement safety decals are available free of charge.

Decals Included
The following are some of the safety decals included on the Reel Rain:
CAUTION
Pinch Point

WARNING
Do Not Operate unless all Safety Shields & Guards are in place.

WARNING
Disconnect Water & Disengage Main Drive Before Changing Belt

WARNING
Before Operation or Towing:
1) Turntable (if so equipped) must be in the locked position.
2) All Shields must be in place and secured.
3) Check & Tighten all Wheel lugs.
4) All disconnects must be securely fastened before applying water pressure - Maximum pressure = 150 PSI.
5) Stabilizers and jack must be in place before towing out the hose.
6) Maximum towing speed = 20 MPH.

DANGER
P.T.O. Shafts are Dangerous

CAUTION
MAXIMUM RATED PRESSURE 150 PSI
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**Before Beginning**

Your Reel Rain irrigator has been carefully prepared for shipping. When you first receive your Reel Rain, you will need to perform a post delivery inspection, and then prepare your Reel Rain as described in this chapter. Preparation includes setting up your gun cart and making sure all necessary items are lubricated.

To ensure your safety and many years of efficient use of your Reel Rain, please follow all the directions for setup, operation, adjustments, and maintenance described in this manual.
**Post Delivery Inspection**

1. Examine the Reel Rain for transport damage. If the machine is damaged in any way, contact your dealer at once.

2. Remove the three shipping bolts that secure the upper portion of the Reel Rain to the base.

3. Replace the shipping bolt (right side) with the hitch pin and clip.
Lubrication

1. Lubricate all grease fittings with a good grade of general purpose grease (see Chapter 6, Maintenance, for locations of grease fittings).

2. Grease the slider assembly on the rear of the traverse frame. This includes both the slide rails and the traverse chain boss track (top and middle photos).

⚠️ CAUTION ⚠️

It is important that all grease points remain lubricated for the Reel Rain to work safely and efficiently.

NEVER lubricate the reel drive chain (bottom photo)! Doing so will cause the reel drive to slip.
## Gun Cart Setup

### Track the Gun Cart

1. Roll the gun cart down a straight line on level ground, approximately 20 feet.

2. Determine if the gun cart rolls in a straight line:

   If yes, connect the gun cart as described in “Hook Up the Gun Cart” on page 14. If no, continue with Step 3.

3. Adjust the nose wheel as follows:
   a. Loosen the four bolts holding the nose wheel in place.
   b. Twist the nose wheel slightly, in the opposite direction it is running out of line.
   c. Re-tighten the nose wheel bolts.
   d. Test again.

4. Repeat Step 3 until the gun cart rolls in a straight line.
Hook Up the Gun Cart

NOTE! This process requires two people.

1. Inspect the hose end and the gun cart inlet (top photo) for excessive deposits of galvanizing material on the gasket sealing surfaces or in the victaulic clamp grooves. The sealing surfaces should be flat and smooth. The victaulic clamp grooves should be full depth with crisp edges.

   If the hot dip galvanizing material has built up in any of these areas, use a flat file to clean up the areas.

2. Disengage the machine brake by pulling the handle down (arm should be horizontal; see middle photo) and verify that the gearbox is in neutral (bottom photo).

3. Unpin each stabilizer leg and throw down. Make sure the plate at the end of the leg is embedded in the ground.

4. Release the jack pin and make sure the tongue jack is level on the ground. Replace the pin.

5. Connect a chain or rope to the end of the hose and pull it out 15 to 20 feet.

6. Roll the gun cart into position so that the end of the hose and the gun cart inlet (top photo) are roughly in line.
Hook Up the Gun Cart

7. Apply grease to the surface of the Victaulic gasket and slide it onto the coupler in the hose.

8. Raise the end of the hose and line up the hose coupler and the gun cart coupler.

9. Slide the gasket into position on the gun cart coupler and install the Victaulic clamp (top photo).

10. Tighten the clamp (top photo)

11. Wind the hose in using the hand crank (middle photo) on the PTO shaft outlet.

12. Attach the gun cart lift chains (bottom photo) to the gun cart.
Hook up the Gun Cart

13. Raise the gun cart, using the hand winch (top photo).

14. Raise the stabilizer legs and pin them (middle photo).

15. Attach the safety chain (bottom photo) and lower the gun cart so that the chain is bearing the load instead of the winch cable (top photo).

**NOTE!** Do NOT transport the Reel Rain without the safety chain in place. If the weight of the gun cart is not put on the chain instead of the winch, the winch may break in transport.
Adjust Gun Cart Width
The main wheels can be adjusted to fit different width rows. To adjust the width:

1. Determine the row width and divide by two (for example: 72" row / 2 = 36").

2. Loosen the bolts indicated in the top photo.

3. Pull each leg out the number of inches calculated in Step 1, beginning the measurement from the center of the gun holder. Wider settings increase stability. Use as much width as possible.

4. Place the Slow Moving Vehicle (SMV) sign included with the Reel Rain over a bolt and straighten (bottom photo).

5. Tighten all bolts.
Attach the Gun
1. Inspect the gun mounting flange on the top of the gun cart (top photo); it should be smooth. If it is not, the gasket will never seal between the gun and gun mounting flange, which will result in leaks. Severe roughness can even result in damage to the flange of the gun.
   
   If excessive deposits of material remain on this surface from the hot dip galvanizing process, use a flat file to clean up the area.

2. Place the gasket supplied with the irrigation gun on the mounting flange.

3. Bolt the gun to the mounting flange as in the middle photo. Use the bolts provided.

4. Place the water pressure gauge included with the Reel Rain onto the fitting on the gun (bottom photo).
Inspection Checklist
After performing the post-delivery inspection and lubrication described on the previous page, make sure to do all the items on the Inspection Checklist below.

IMPORTANT! These items should also be performed every time you use your Reel Rain. Inspecting your Reel Rain on a regular basis will help ensure your safety and the irrigator’s effectiveness.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>√</td>
<td>Check all shields. Do NOT operate unless all shields are in place.</td>
</tr>
<tr>
<td>√</td>
<td>Check all hose connections. Tighten or connect if necessary.</td>
</tr>
<tr>
<td>√</td>
<td>Check the oil level in the transmission and traverse gearbox. If needed, fill with AGMA grade 5 Synthetic oil (Texaco syn-star TL50) to the top of the level plug.</td>
</tr>
<tr>
<td>√</td>
<td>Check the air pressure in the tires. The pressure should be 50 PSI. Inflate if needed.</td>
</tr>
<tr>
<td>√</td>
<td>Check the lug nuts and/or bolts to make sure none have loosened in transport. Lugs should be tightened to 65 ft/lbs.</td>
</tr>
<tr>
<td>√</td>
<td>Check all belts and chains. Tighten, repair, or replace as necessary.</td>
</tr>
</tbody>
</table>
NOTE
3. Operation Overview

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Reel Rain Operation
AMADAS Reel Rains are hard hose traveler irrigators. They have been designed with the operator in mind to give you what you need most from a hard hose traveler: quick setup, simple operation, and low maintenance.

Your Reel Rain applies a uniform application of water over your crops at a rate that you determine. Included in this chapter are charts to help you determine the best settings to suit your needs.

Always be careful when you tow the irrigator. Hard hose travelers have an inherently high center of gravity, which can make them unstable on hillsides and during sharp turns. While the Reel Rain’s design has minimized this problem, the heavy weight of the machine when filled with water needs to be taken into account. Chapter 4, Machine Setup, contains more information on safely transporting the Reel Rain.

Special attention has been paid to the convenience of operating the Reel Rain, but not at the expense of safety. Please review Chapter 1, Safety, for safety information prior to operating the Reel Rain.

Performance
The Reel Rain operates as described in the following steps:

Step 1.
The Reel Rain consists of a polyethylene hose, attached on one end to a water supply, wound around a reel drum, with the other end of the hose connected to a gun cart. Before irrigating, the gun cart is towed away from the Reel Rain, causing the hose to unwind.

Step 2.

Turbine Driven Models
Water pumped through the Reel Rain hose passes first through a turbine. The energy from the water as it passes through the turbine rotates the drum, which reels the hose back in. As the hose and cart are reeled in, the gun applies a uniform application over the entire lane the gun cart travels.

Engine Driven Models
With the engine driven models, the energy needed to rotate the drum is supplied by the engine. As the hose and cart are reeled in, the gun applies a uniform application over the entire lane the gun cart travels.

Step 3.
Once the cart is reeled back to the drum, it strikes a shutoff bar, which automatically shuts off the engine and shifts the transmission to neutral, stopping the gun cart. The Reel Rain continues to spray water.

NOTE! The faster the hose is wound, the quicker the machine can be moved to the next lane. However, a slow retrieval speed is necessary for a high water application rate. To determine the correct speed for your needs, please refer to the chart guidelines included in this chapter.

Equipment Applications
The Reel Rain traveler irrigation system can be used to pump clear water, waste water, gray water, or slurry. If the Reel Rain will be used to pump clear water or waste water with very low solid contents and particle size, a turbine driven irrigator is recommended. If the Reel Rain will be used to pump water with high solid content, it is recommended that an engine-powered irrigator to be used. Always flush out the Reel Rain after use when pumping waste.
Guns
The recommended gun to use for pumping waste water and slurry is an irrigation gun with a taper bore nozzle. A standard ring nozzle on an irrigation gun is recommended for pumping clear water.

Displays
There are two types of digital displays for the Reel Rain:

- “Tiny Tachometer” – this display unit is standard on the engine driven Reel Rain. The display shows the RPM speed at which the engine is running. If the engine is not running, the tachometer displays the number of hours the engine has run.

- Digital speed readout – this display unit is standard on all Reel Rains. The display shows the ground speed of hose retrieval of the innermost speed of hose. Conversion charts are provided on the Reel Rain to determine the retrieval speed of the outer layers of the hose. See Chapter 6, Adjustments, for information on setting this display.

Flow Rate
Flow rates are determined by the water pressure at the gun and the size of the gun nozzle and/or ring. Application rates are determined by a combination of the flow rate and the ground speed of hose retrieval. The charts in this chapter are provided to help you determine the correct speed, lane spacing, and depth of water to apply for your application.

NOTE! If runoff is a problem (typically for wastewater applications), the average application rate should not exceed the initial soil absorption rate.

Note that the charts are also posted on the Reel Rain, as shown in the following photos:
To use the charts:

1. Determine the ring size of your gun. It should be marked on the ring.

2. With the irrigator and water supply turned on, read the pressure gauges located on the gun and on the inlet elbow of the machine.

3. Referring to the “Gross Application Depth vs Ground Speed” chart for your model (1030 or 1033), locate your ring size, elbow pressure and gun pressure.

   For example: The ring size is .86. The pressure of the elbow is 100 and the gun pressure is approximately 83. Locate the .86 ring size on the chart, then locate 100 in the ELBOW PRESS column and 83 in the GUN PRESS column. Note that the GAL PER MINUTE column is 130, and the RECOMMENDED LINE SPACING column is 200 feet.

4. Determine the number of inches you want applied.

   For example: You want to apply .5 inches of water.

5. On the same chart, cross reference the ground speed needed (in feet per minute) to achieve the amount of water you want applied.

   For example: Continue across the chart to the APPLICATION DEPTH column for .5” for the .86 ring size, 100 elbow pressure, and 83 gun pressure. Note that a retrieval ground speed of 1.9 feet per minute is required to lay .5” of water for these specifications.

6. If you have an engine driven Reel Rain, refer to the “Engine Speed Settings” chart for your model. Locate the approximate speed you need and set the engine as indicated.

   For example: Look at the chart for the 1030. To achieve the 1.9 feet per minute ground speed, your engine needs to be set between 2450 and 2800 RPMs, with the range shifter in low and the belt on the inner pulley.

   If you have a turbine driven Reel Rain, determine ground speed by making sure the pressure at the gun and ring size are correct for the amount of water you want applied. Note that the elbow pressure will need to be higher to achieve the same gun pressure than for the engine driven Reel Rain due to pressure loss from the turbine.

NOTE! If the flow rate exceeds 300 GPM, fluid must be added to the tires of the gun cart to aid stability. If necessary, wheel weights can also be added to the cart and the wheel width extended. Gun recoil can overturn the cart.

Hose Indicator
The hose indicator, located under the gun cart lift, indicates how many feet of hose remains in the field. The indicator shows
the number of feet, according to the number of layers left on the reel. In the example below, the amount of hose remaining in the field is as follows:

<table>
<thead>
<tr>
<th>Layers Left on Reel</th>
<th>Still in Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>One layer</td>
<td>approx. 815</td>
</tr>
<tr>
<td>Two layers</td>
<td>approx. 475</td>
</tr>
<tr>
<td>Three layers</td>
<td>approx. 390</td>
</tr>
<tr>
<td>Four layers</td>
<td>0</td>
</tr>
</tbody>
</table>

In this example, if you have two layers of hose left on the reel and the indicator is in the position shown in the photo, you have approximately 475 feet remaining in the field.

**Hose Shape**

Note that the Reel Rain hose shape changes slightly when water pressure is turned off. The Hose Indicator is designed for measuring a pressurized hose and is therefore slightly more accurate when there is water pressure in the system.

![Hose Indicator](image)

With pressure

Without pressure
## Charts

### D1030 Gross Application Rates

#### GROSS APPLICATION DEPTH VS GROUND SPEED

MODEL D1030 W/ NELSON SR150-24 GUN & RING NOZZLES

<table>
<thead>
<tr>
<th>RING SIZE</th>
<th>ELBOW PRESS.</th>
<th>GUN PRESS.</th>
<th>GAL PER MINUTE</th>
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# D1033 Gross Application Rates

**GROSS APPLICATION DEPTH VS GROUND SPEED**

**MODEL D1033 W/ NELSON SR150-24 GUN & RING NOZZLES**

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**IRRIGATION RATE**

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# Depth of Water Applied

## DEPTH OF WATER APPLIED - INCHES

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## Tachometer Conversion

### D1030/1033 Series TACHOMETER CONVERSION CHART

#### LOW RANGE

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<thead>
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<th>ACTUAL HOSE SPEED</th>
<th>DIGITAL READOUT DISPLAY</th>
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#### HIGH RANGE

<table>
<thead>
<tr>
<th>ACTUAL HOSE SPEED</th>
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<td>3.9</td>
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<tr>
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<td>4.1</td>
</tr>
</tbody>
</table>

**NOTE:** The tachometer speed drops on layers 2, 3, and 4 due to an increase in the effective drum diameter as the hose renews. The high range does not read actual speed because the tachometer is calibrated for the low range. Refer to the operators manual for additional information. Digital readout values provided are accurate to +/-5%.
# Hose Speed Pelton Wheel Turbine

## D1030/1033 HOSE SPEED CHART

**PELTON WHEEL TURBINE**

Required gear range and sheave for desired ground speed (in feet per minute).

(NUMBERS SHOWN ARE TURBINE RPM)

<table>
<thead>
<tr>
<th>GROUND SPEED</th>
<th>LOW RANGE</th>
<th>HIGH RANGE</th>
</tr>
</thead>
<tbody>
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<td>INNER PULLEY</td>
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<tr>
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</table>

**NOTE:** Not all speeds can be achieved under all conditions. Turbines are flow and pressure sensitive. High speeds require higher flow rates and pressures. This chart is intended as a general guideline only. See operator's manual for additional information.
## Hose Speed Engine Drive

### D1030/1033 HOSE SPEED CHART

**ENGINE DRIVE**

ENGINE RPM FOR A GIVEN GROUND SPEED (FEET PER MINUTE),
GEAR RANGE, AND SHEAVE

<table>
<thead>
<tr>
<th>GROUND SPEED</th>
<th>LOW RANGE INNER PULLEY</th>
<th>LOW RANGE OUTER PULLEY</th>
<th>HIGH RANGE INNER PULLEY</th>
<th>HIGH RANGE OUTER PULLEY</th>
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**NOTE:** NOT ALL SPEEDS CAN BE ACHIEVED UNDER ALL CONDITIONS.
SEE OPERATOR'S MANUAL FOR ADDITIONAL INFORMATION.
4. Machine Setup

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Make Adjustments .................................45
Towing
Review the towing checklist below. The items on this list should be followed *each time* the irrigator is towed.

### Towing Checklist

- Make sure the turntable is lined up with the chassis as shown in the photo and the locking pin is in place to prevent the turntable from rotating. Do NOT move the Reel Rain with the turntable rotated.
- Clear everyone from the area around the Reel Rain and between the Reel Rain and gun cart.
- Make sure that the stabilizer legs are raised and pinned.
- Make sure a safety chain is attached from the Reel Rain to the towing vehicle.
- Attach the safety chain to the gun cart lift arm to take the load from the winch handle lift.
- Engage the reel brake.
With Gun Cart
Remember the following when towing the Reel Rain with the gun cart:

- Always remove water from the machine before towing long distances.

- Never tow the machine at speeds in excess of 3 MPH with water or 20 MPH when empty.

- Never tow the machine on grades exceeding 5%.

- Make sure the drum reel is parallel to the chassis (as in the top photo) and the hitch pin is secured in the turntable (middle photo).

- Make sure the safety lift chain is in place (bottom photo).
**Without Gun Cart**

Remember the following when towing the Reel Rain without the gun cart:

- Always remove water from machine before towing long distances.
- Never tow machine at speeds in excess of 3 MPH with water or 20 MPH when empty.
- Never tow machine on grades exceeding 5%.
- Always make sure the drum reel is parallel to the chassis and the hitch pin is secured in the turntable (top photo).
- Always make sure the gun cart lift is cranked up and the chains are stored as indicated in the bottom photo.
Tow to the Field

**NOTE!** Before towing the Reel Rain to the field, make sure the gun cart is attached, stabilizer legs raised, and the turntable parallel to the chassis as described on the previous page.

1. Engage the reel brake (handle should be vertical; see top photo).

2. Drive the tractor to the front of the Reel Rain and hook the irrigator to the drawbar.

3. Turn the crank until the tractor is supporting the irrigator.

4. Pull out the pin and raise the jack drop leg all the way up as far as it will go (bottom photo).

5. Reinsert the pin to secure the jack leg.
Tow to the Field

6. If equipped with a Honda engine, turn off the fuel valve on the carburetor (top photo) and fuel cutoff valve under the gas tank (bottom photo).

7. Transport your Reel Rain to the field, following all safety guidelines given at the beginning of this chapter.

8. When you reach your destination, detach the tractor.
**Position Machine**

1. Determine the irrigation pattern and decide on lane spacing for the machine. Remember to make necessary allowances for wind. See “Charts” section in Chapter 3, *Operation Overview*.

2. Position the machine in the desired location in the field.

3. Pull out the pin on the jack drop leg and lower the leg to the ground (top photo).

4. Lower the jack by rotating the jack handle until the jack foot is firmly set in the ground (top photo).

   **IMPORTANT!** The machine’s bottom frame should be parallel to the ground. Raise or lower the jack on the tongue until the frame is parallel.

5. Remove the hitch pin securing the turntable (middle photo).

6. Rotate the turntable 90° by pushing on the gun cart until it is perpendicular to the chassis. (See bottom photo.) The turntable pin should align with the center hole if possible. This setting will provide the maximum stability of the reel chassis during hose retrieval.

7. Re-install the pin securing the turntable.
Ready Machine
1. Unpin the throw down stabilizer legs and unfold. Make sure they are embedded in the ground (top photo).

2. Verify that machine transmission is in Neutral (middle photo).

3. Disengage the reel brake by pulling the handle down (see bottom photo).
**Set Up Gun Cart**

1. Using the hand winch (top photo), raise the gun cart slightly and release the safety chain holding the gun cart in place (middle photo).

2. Using the hand winch, lower the gun cart until all three wheels are on the ground.

3. Disconnect the gun cart from the gun cart lift by unhooking the chains.

4. Using the winch raise the gun cart lift out of the way. Be sure the lift chains are stored out of the way as shown in the middle photo.

**NOTE!** Be certain the gun lift arms are raised high enough so that the gun cart cannot strike the lift arm.
Set Up Gun Cart
5. Set the stops on the gun (photo). Refer to the manual for the gun for specific information on setting stops. A copy of the manual is included with your parts catalog.

6. Be sure the proper nozzle is installed on the gun (bottom photo).

Connect Hose
1. Connect the water infeed hose to the machine inlet as shown in the photo.

2. Position the opposite end as far away from the irrigator as possible.

NOTE! Do NOT connect the infeed hose to the water source at this time. Water will drain from the machine during pullout, which will make the hose easier to pull.
Pull Out Hose
1. Disconnect the tractor from the irrigator.

2. Hook the tractor up to the gun cart.

3. Disengage the drum brake by pulling handle down (top photo). Do NOT attempt to pull out the hose with the brake engaged.

4. Shift the transmission into neutral (middle photo).

5. Start the tractor and pull the gun cart to the desired spot to start irrigation.

NOTE! It is important to remember the following when pulling out the hose.

- Do NOT exceed 2 MPH.
- Point the gun AWAY from the tractor.
- Leave at least 1 wrap of hose on the reel.
- Stop slowly to prevent or minimize backlash from the hose.

CAUTION
If backlash occurs, hose coils must be manually tightened before irrigation hose retrieval is started. Failure to eliminate the backlash will severely damage the hose.

6. Disconnect the gun cart from the tractor.

7. Reconnect the tractor to the irrigator.

8. Check the hose on the drum and tighten if necessary.
**Connect to Water Supply**
Connect the water infeed hose to the water supply.

**NOTE!** For best performance, try to minimize the kinking of the infeed hose.

**DANGER**
Do NOT position your body over riser. If pressure causes the riser to blow off, death or serious injury could occur.
**Make Adjustments**

Make the level wind adjustment to machine timing the first time you pull the hose out on the irrigator. This will ensure the hose winds up correctly. See “Level Wind Timing” in Chapter 6, *Adjustments*, for specific information on how to adjust the level wind timing.
5. Operation

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Overview
This section describes the procedures for using the gas engine drive and Pelton Wheel turbine versions of the Reel Rain. Before operating your irrigator, review the items on the Pre-operation Checklist. These items should be performed each time you operate your Reel Rain.

Pre-Operation Checklist

√ Do NOT operate the Reel Rain at temperatures below 32°F. If the temperature will drop below freezing, drain the water or keep the machine in a heated building.

√ Check all shields. Do NOT operate unless all shields are in place.

√ Check all hose connections. Tighten or connect if necessary.

√ Make sure that the turntable locking pin is in place.

√ Make sure that the water supply to the irrigator is ready for operation.

√ Make sure the jack is lowered and in place.

√ Make sure that there are no obstructions which will interfere with the operation of the Reel Rain.

√ Make sure that no one is between the Reel Rain and the gun cart, and that all people are a safe distance away from the Reel Rain.

√ Make sure that the stabilizer legs are lowered and embedded.

√ Verify that the reel brake is engaged.
**Automatic Cutoff Bar**

This information applies to both gas engine and Pelton Wheel turbine models.

**In gas engine models:** when the automatic shutoff bar is pushed in, the engine automatically shuts off and the transmission shifts into neutral, which in turn stops the reel from rotating.

**In Pelton Wheel turbine models:** when the automatic shutoff bar is pushed in, the transmission shifts into neutral, which in turn stops the reel from rotating. Remember that the turbine does NOT shut off until the water is stopped.

The automatic shutoff bar is pushed in automatically when the hose is reeled in all the way. It is important that the shutoff bar function correctly, as damage can result to the machine if the reel keeps rotating after the hose has been pulled into the machine. Note that the shutoff bar does NOT shut off the water; this will have to be done manually or the machine will continue watering the immediate area.

**IMPORTANT!** If the shutoff bar is striking the transmission disengage, the transmission will not go into high or low range. Make certain that the shutoff bar is pulled away from the machine when you start up the Reel Rain and/or change gears.

**Test the Shutoff Bar**

Before operating your Reel Rain, test the automatic shutoff bar to make sure it is functioning correctly.

---

**CAUTION**

Do NOT operate the irrigator if the automatic cutoff does not shut the engine off. Serious machine damage will occur if the reel continues to rotate after the hose has been retrieved.
Two-Speed Transmission
To avoid excessive wear and tear on the two-speed transmission, it is important that you follow the recommended shifting sequence when you change gears.

The two-speed transmission is a non-synchronized transmission. Unlike a car transmission, it does not have any synchronizers. The transmission should not be shifted under a load or at speed. Even though it is possible to shift the transmission with force, it should never be done because it will cause premature wear in the shifter and gear assembly.

Force should never be required when you shift this transmission. If the transmission seems hard or difficult to shift, something is being done incorrectly or there is a problem. The procedures for using the gas engine and the Pelton Wheel turbine both provide instructions on how to shift gears correctly.

If it is necessary to change the gear or speed range during a pull, it is important that you remove all load from the machine without allowing it to backlash. To change gears during a pull, see page 56 for gas engine model instructions, or page 61 for turbine model instructions.

Speed Chart
The speed chart indicates the speed range and gear the transmission needs to be in to achieve the desired speed. The two-speed gear box allows infinitely variable hose retrieval speed ranges:

1.0 foot/minute to 8.5 feet/minute for turbine Reel Rains
1.5 feet/minute to 10.0 feet/minute for gas engine models
**Gas Drive**

1. Open the shield covering the drives (top photo).

2. Decide which pulley to use for the belt drive. Use the charts in Chapter 3, *Operation Overview* to determine the desired speed.

3. Release the tension on the step cone drives by pushing the handle up (bottom photo).
Gas Drive
4. Place the belt in the selected groove (top photo). Release the handle to re-tension the belt when it is in place.

5. Close the shield.

6. Open the water supply valve gradually and allow the water to flow to the irrigator.

**DANGER**
Do NOT suddenly supply high pressure water to the system. Instead, allow the pressure to build up slowly. This will help avoid water hammer, which can rupture pipes, hoses, and/or seals. Failure to do so can cause death, serious injury, or significant damage to the machine.

7. Allow the gun to irrigate the land at the lane end. This is necessary to maintain even distribution of water over the entire length of the gun cart movement.

Water is usually run for at least 10-15 minutes to prevent dry spots at the end of the field. Adjust the time for any other type of application as appropriate.

**NOTE!** Once the water is started, it continues running until the supply is shut off, even if the engine stops running.

8. Check the gas level in the gas tank and fill if necessary (top photo).

9. Check the oil level in the engine and fill if necessary (bottom photo).

**NOTE!** The engine has an automatic shutoff that stops the engine if the oil level is too low. Refer to the engine manual for more specific information on the engine.
Gas Engine
10. Pull the automatic cutoff bar out toward the gun cart (first photo).

**NOTE!** If the automatic cutoff bar is not fully out, the engine will not start.

11. Verify that the transmission is in neutral. If it is not, engage the reel brake by pulling the handle up, place the transmission in neutral, and disengage the brake by pulling the handle down slowly (middle photo).

Start the engine:

12. Turn the gas valve on the engine to “ON.”

13. If the engine is cold, turn the choke lever to “ON” (bottom photo).
Gas Engine
14. Turn the engine switch to “ON” (top photo).

15. Adjust the engine throttle to approximately 1/2 throttle (middle photo).

16. Choke the engine (middle photo).

17. Grab the recoil starter grip and pull briskly (middle photo). Be sure to allow the recoil starter grip to return slowly. If the engine does not start, pull again.

**NOTE!** Do NOT allow the starter grip to snap back against the engine as damage to the starter could result.

18. Release the choke as the engine warms up. Allow the engine to warm up for a few minutes before starting hose retrieval.

19. Adjust the engine to a low idle (1800 RPM or less).

20. Shift the range lever into “H” (high) or “L” (low) speed range (bottom photo), depending on the desired retrieval speed.

**NOTE!** You can select any hose retrieval speed between 1.25 feet per minute and 10 feet per minute, depending on the options you choose. Use the Hose Speed Chart in the “Charts” section of Chapter 3, *Operation Overview* (or on the Reel Rain) to determine the proper transmission and pulley settings for the speed desired.
Gas Drive
21. Adjust the engine speed by adjusting the throttle until the desired hose retrieval speed is reached.

**NOTE!** The run will terminate when the gun cart is pulled back in and the automatic shutoff bar has stopped hose retrieval. The automatic shutoff DOES NOT turn off the water to the irrigator. You must shut off the water manually to prevent over-irrigation of the land at the lane end.
Gas Drive – Change Speed Range
If it is necessary to change the speed range of the pulleys during hose retrieval:

1. Shut off the engine.
2. Engage the reel brake by making sure the handle is up (top photo).
3. Shift the transmission to Neutral.
4. Slowly pull the handle down to release the reel brake. This allows hose tension to dissipate by unwinding (middle photo).
5. Engage the brake again by pushing the handle back up (top photo).
6. Determine what pulley ratio is needed.
7. Push the drive belt tensioner up to release tension on the step cone pulley belt (bottom photo).
Gas Drive – Change Speed Range

8. Place the belt in the selected groove (top photo).

9. Release the drive belt tensioner handle (middle photo); close the shield.

10. Restart the engine; run at low idle.

11. Disengage the reel brake (bottom photo).

12. With the transmission still running at idle, shift the transmission into the desired range (high or low).

13. Continue with the pull.
Pelton Wheel Turbine Drive

1. Shut off the turbine by opening the valve (top photo).

2. Engage the reel brake by pulling the handle up (middle photo).

3. Shift the transmission to Neutral (middle photo).

4. Slowly disengage the reel brake by pulling the handle down. This allows hose tension to dissipate (bottom photo).

5. Engage the reel brake again by pulling the handle up (middle photo).
Pelton Wheel Turbine Drive

6. Open the water supply valve gradually and allow the water to flow to the irrigator.

**DANGER**
Do NOT suddenly supply high pressure water to the system. Instead, allow the pressure to build up slowly. This will help avoid water hammer, which can rupture pipes, hoses, and/or seals. Failure to do so can cause death, serious injury, or significant damage to the machine.

Do NOT exceed 150 PSI at inlet plumbing pressure gauge (top photo).

7. Allow the gun to irrigate the land at the lane end. This is necessary to maintain the even distribution of water over the entire length of the gun cart movement.

Water is usually run for at least 10-15 minutes to prevent dry spots at the end of the field. Adjust the time for any other type of application as needed.

**NOTE!** Once the water is started, it continues running until the supply is shut off, even if the turbine stops running.

8. Disengage the drive belt tensioner for the step cone pulley belt (middle photo) by pushing the handle up.

9. Select the correct pulley ratio and adjust the belt accordingly (bottom photo). See the Hose Speed Chart in the “Charts” section of Chapter 3, *Operation Overview* for information on selecting the pulley.
Pelton Wheel Turbine Drive

10. Engage the drive belt tensioner by releasing the handle (top photo).

11. Slowly begin closing the turbine valve until the turbine begins to turn (middle photo).

12. As the turbine begins to turn, shift the transmission to the desired range (bottom photo).

NOTE! You can select any hose retrieval speed between 1 foot per minute and 8.5 feet per minute, depending on the options you choose (pulley and gear).

13. After the transmission is engaged, close the valve until the desired ground speed is reached (middle photo).

DANGER

Make certain that the automatic shutoff bar is pulled out away from the machine or the transmission will not go into gear.

If you are able to change gears with the bar pushed in, the shutoff bar is not working. Do NOT operate the irrigator if the automatic shutoff does not shut the turbine off. Serious machine damage will occur if the reel continues to rotate after the hose has been retrieved.

NOTE! The run will terminate when the gun cart is pulled back in and the automatic shutoff bar has stopped hose retrieval. The automatic shutoff DOES NOT turn off the water to the irrigator. You must shut off the water manually to prevent over-irrigation of the land at the end of the run.
Turbine Drive – Change Speed Range
If it is necessary to change the speed range of the pulleys during hose retrieval:

1. Shut off the turbine by opening the valve completely (top photo).

2. Engage the reel brake pushing up the handle (middle photo).

3. Shift the transmission to Neutral (middle photo).

4. Release the reel brake by pushing the handle down slowly. This allows hose tension to dissipate (bottom photo).

5. Push the handle up to engage the reel brake again (middle photo).
**Turbine Drive – Change Speed Range**

6. Disengage the drive belt tensioner for the step cone pulley belt by pushing the handle up and holding it (top photo).

7. Select the correct pulley ratio and adjust accordingly (middle photo). See the Hose Speed chart in the “Charts” section of the Chapter 3, *Operation Overview* to determine which pulley to use.

**NOTE!** You can select any hose retrieval speed between 1 foot per minute and 8.5 feet per minute, depending on the options you choose (pulley and gear). Speed may be limited by the water flow.

8. Engage the drive belt tensioner by releasing the handle (middle photo).

9. Slowly begin to close the turbine valve.

10. As the turbine begins to turn, shift the transmission to the desired range.

11. After the transmission has been engaged, close the valve until the desired ground speed is achieved (bottom photo).
Run Termination
The time needed to complete a run depends on the retrieval speed and hose length. Usually, the run is terminated when the gun cart has been pulled all the way in and the automatic cutoff bar has stopped the hose retrieval.

The procedure for ending a run starts on page 64.

If you choose to stop the irrigator before the gun cart is all the way in, you can use a PTO shaft to rewind the remaining hose. Instructions for using a PTO shaft to rewind the hose begin on page 67. You can use the PTO shaft that is available with the Reel Rain or any other PTO shaft that is four feet or more collapsed.

IMPORTANT! ONLY use a PTO shaft that is at least four feet when collapsed. A shorter one will cause the load to be uneven and will put pressure on the gearbox housing.
End the Run
1. Allow the gun to irrigate the land at the lane end. This is necessary to maintain even distribution of water over the entire length of the gun cart movement.

Water is usually run for at least 10-15 minutes to prevent dry spots at the end of the field. Adjust the time as necessary.

⚠️ CAUTION
During normal operation, the automatic cutoff bar stops the hose retrieval once the gun cart is pulled all the way in. This prevents damage to the machine from overwinding. The automatic cutoff bar does NOT turn off the water. The water must be shut off manually to prevent over-irrigation of the land at the lane end.

If equipped with an engine:

2. Turn off the fuel valve (top photo).
3. Turn the engine on/off switch to OFF (middle photo).

For both turbine and engine:

4. Close the riser valve to shut off the water to the irrigator after the water pressure source has been cut off.

⚠️ DANGER
Do NOT position your body over the riser. If pressure causes the riser to blow off, death or serious injury could occur.
End the Run

5. When the water pressure falls to 0 (zero) (turbine engine, top photo), disconnect the infeed hose from the machine and water source.

6. Roll the infeed hose up and store in the machine tongue.

7. Connect the gun cart to the gun cart lift chains (middle photo).

8. Raise the gun cart using the winch.

9. Secure the safety chain.

10. Lower the gun cart using the winch handle so that the safety chain is carrying the load.

11. Engage the reel brake by pushing the handle up. This will prevent the hose from backlashing during transport.
End the Run

12. Raise the stabilizer legs and secure with pin (top photo).

13. Rotate the machine if required.
   A. Remove the pin securing the turntable.
   B. Rotate the turntable so that the sides of the reel are parallel to the wheels.
   C. Replace the pin securing the turntable (middle photo).

14. Drive the tractor to the front of the irrigator and hook the Reel Rain to the tractor drawbar.

15. Raise the jack.
   A. Pull out the locking pin (bottom photo).
   B. Slide the telescoping shoe up into the jack.
   C. Replace the locking pin.

16. Move the machine to the next site to be irrigated (follow all transportation safety rules).

⚠️ CAUTION
Always attach a safety chain from the Reel Rain to the towing vehicle when you transport the irrigator.
Rewind Hose with PTO Shaft
These instructions are necessary only if you choose not to allow the gun cart to be completely pulled in by the Reel Rain drive system.

NOTE! When you wind up the hose with PTO rewind, it is desirable to have water pressure in the hose. The water pressure in the hose prevents the hose from becoming oval in shape and affecting the level wind timing. If rewound without pressure, manual realignment of the hose may be required.

1. If equipped with an engine, turn the engine on/off switch to OFF (top photo).
2. Make sure the reel brake is engaged (middle photo).
3. Move the transmission to neutral (middle photo).
4. Pull the reel brake handle down slowly, allowing the hose to unwind slightly and dissipate any tension in the hose (bottom photo).
Rewind Hose with PTO Shaft
5. Remove PTO shaft from machine (top photo) or use another appropriately sized PTO shaft (greater than 4 feet collapsed).

6. Connect one end of the PTO shaft to the rewind (middle and bottom photos).

7. Connect the other end of the PTO shaft to a standard tractor with 540 RPM PTO speed.

⚠️ CAUTION
Do NOT operate above 1/3 PTO speed.

Do NOT use a PTO shaft with less than a four foot collapsed length. Using a shorter PTO shaft can cause damage to the gearbox.

8. Re-start the water flow, if practical.

9. When the gun cart is approximately 20 feet from the irrigator, disengage the drive to the PTO shaft and shut off the tractor.

10. Engage the reel brake and remove the PTO shaft.

11. Disengage the reel brake again.
Rewind Hose with PTO Shaft
12. Install the PTO rewind hand crank in the PTO shaft input (top and middle photos).

13. Finish rewinding the hose.

14. Remove hand crank and return it to its storage place.

15. Follow Steps 5-16 of “End the Run.”

⚠️ CAUTION
The machine cutoff will not stop drum rotation when rewound with a tractor PTO.
6. Adjustments

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Overview
This chapter provides information for making basic adjustments on the Reel Rain after it is put into operation. Adjustments needed to initially set up the Reel Rain are described in the Chapter 2, Preparation.

Information needed to set up and run the Reel Rain is provided in Chapter 5, Operation. Chapter 7, Maintenance, contains information for lubrication, maintenance, and storage of the Reel Rain.

Automatic Shutoff
When the automatic cutoff bar is pushed in, the Reel Rain transmission is automatically thrown into neutral, and the gas engine is stopped. If either of these does not occur, you will need to adjust the automatic shutoff mechanism.

NOTE! The water flow is not stopped by the automatic shutoff bar. You must manually turn off the water supply to stop the water.

If the shutoff bar does not work, turn the nut at the end of the rod/plunger assembly to adjust the assembly (bottom photo). You will need to open the indicated shield to adjust the nut. Be sure to close the shield when done.
Compensation Adjustment

The compensation system automatically controls the retrieval speed of the hose to within a few percentage points of the original set speed over the course of the run. This compensation is necessary as the hose layers build up on the reel and the diameter of the reel increases. It automatically slows the reel down to maintain a consistent rate of hose speed retrieval.

The compensation system consists of a sensor bar that determines the number of layers of hose on the reel and a variable speed pulley assembly that automatically adjusts the speed of hose retrieval.

1. Pull the hose out 20 feet.
2. Pull the shutoff bar out.
3. Open the shield covering the compensation assembly. This is located on the left side of the machine as you face the gun cart side of the Reel Rain (top photo).

**NOTE!** All four layers of hose need to be on the reel when you make the adjustment (other than the 20 feet pulled out), so make sure the hose is fully wound on the reel before you set the idler.

4. Move the indicated tensioners (middle photo) to change.
**Compensation Adjustment**

5. Move the tensioners by adjusting as shown in the photo.

6. Make sure all nuts are tightened and shields closed before operating machine.
Level Wind Timing
The level wind timing must be properly adjusted for the hose to coil back on the reel correctly. Check the timing when you use the Reel Rain for the first time and at least once every three months.

To adjust the level wind timing:

1. Pull the hose out until only one coil remains on the reel and the gooseneck is on the bottom.

2. Push the hose coil tightly against the side of the gooseneck and measure the distance from the inside edge of the reel to the center of the hose next to the gooseneck (top photo).

3. Measure the distance from the inside edge of the reel to the center of the traverse cradle (middle photo). The center of the traverse cradle should be \( \frac{1}{4} \) inch closer to the edge of the reel than the hose center at the gooseneck.
Level Wind Timing
4. Adjust the traverse cradle as follows:
   a. Remove the #40 level wind drive chain that runs from the reel center to the level wind gearbox (top and middle photos).
   b. Adjust the traverse cradle so that the center of the hose is ¼ “ closer to the reel side than the hose is at the gooseneck (refer to photos on previous page). Be certain that the boss on the #80 traverse chain (bottom photo) is on the lower loop of the chain when the hose is pulled out to the last coil. (You may have to adjust the length the hose is pulled out to move the chain to the correct position.)
   c. Check the measurement and re-adjust if necessary.
   d. Replace the level wind drive chain.
Digital Speed Readout

The digital speed readout on the turbine Reel Rain uses a magnetic pickup to measure the hose speed. Over time, the magnetic pickup gap may need adjustment.

To adjust the magnetic pickup gap:

Measure the gap between the tooth of the sensor target and the magnetic pickup head. The gap should be between 1/16 and 1/8”. If the gap is not correct, loosen the pickup assembly and lock nut and adjust as necessary.

If the digital assembly becomes dim:

Remove and replace the batteries.

If readings are incorrect:

Remove the cover of the digital readout unit by loosening the screws. Check the settings (see next page).
Tachometer Programming Instructions
The tachometer for your machine has been fully programmed at the factory. However, if you have a replacement tachometer, program the new tachometer using the instructions included with it in the packaging. Instructions can also be found on the AMADAS website as follows:

1. Go to www.amadas.com

2. From the AMADAS home page, select Product Catalogs and Manuals

3. From the Product Catalogs and Manuals page, select Technical Bulletins

4. Select Tach Programming for Diggers/Irrigators (Form 0366; Part #16395)

IMPORTANT! Do NOT program your tachometer UNLESS you have received a replacement from AMADAS Industries. Tachometers on new machines are fully programmed at the factory and attempting to re-program them may cause errors.
Gun Carts
Reel Rain gun carts are equipped with an adjustable nose wheel and variably spaced main wheels. The adjustable nose wheel allows the cart to be adjusted to roll straight so that the cart will follow behind the hose properly. The variable width main wheels allow the cart to be tailored to different field conditions.

Generally, the gun cart should be adjusted so that the wheels are as wide apart as possible for stability. In addition, if the flow rate exceeds 300 GPM, fluid or weight must be added to the tires of the gun cart to add stability. Weight and width extension kits are available for the MH50 gun cart. In addition, an extension is also available to add height to the gun. Contact your dealer for more information.

Drains
The low pressure drain will automatically drain water from the gun cart as needed. When you drain the hose, remove the rear drain cover to drain water from the gun cart.

⚠️ CAUTION
Make sure water pressure is off of the machine before attempting to drain water out of the drain.
Main Wheels
Adjust the main wheels as follows:

1. Remove bolts and slow moving vehicle sign.
2. Pull wheel arms out or push together to desired width. Make sure each arm is extended the same amount.
3. Reinstall bolts and slow moving vehicle sign.

Nose Wheel
Adjust the nose wheel as follows:

1. Loosen the four bolts holding the nose wheel in place.
2. Twist the nose wheel slightly, in the opposite direction the gun cart is running out of line.
3. Re-tighten the nose wheel bolts.
4. Test again.

Gun Speed
The speed the gun rotates is adjusted by the placement of weight on the gun. This weight is located on the top of the gun cart.

To change the gun speed:

1. Loosen bolt.
2. Move weight in direction indicated by arrows to slow down or speed up gun.
3. Tighten bolt.
**Gun**

Your Reel Rain D1030/D1033 has been equipped with a Nelson SR 150 gun.

Gun nozzles and/or rings can be changed to vary the volume of water discharged at any given pressure. Larger nozzles or ring sizes have higher discharge rates than smaller nozzles or rings at the same pressure. Refer to the “Charts” section in Chapter 3, *Operation Overview*, for discharge rates of specific ring sizes.

Stops on the gun are set to determine the arc that the gun turns to dispense water. Generally, we recommend you set the stops so that the gun turns in no more than a 270º arc behind the cart. This will eliminate water sprayed between the gun cart and Reel Rain.

Refer to the manual for the gun that was included with the parts catalog.
Nozzles

⚠️ CAUTION
Make sure water pressure is off of the machine before changing a nozzle. Attempting to change a nozzle while the gun is under pressure could result in serious injury.

1. Unscrew the ring holder on the end of the nozzle.

2. Using the charts in Chapter 3, Operation Overview, determine the proper size ring.

3. Place the desired ring in the ring holder and screw the ring holder onto the end of the nozzle.
**Tension Adjustments**
The following photos show tension adjustments that can be made for the Reel Rain. These are explained in greater detail in Chapter 7, *Maintenance.*

- **#40 Drive chain for level wind gearbox**

- **#80 Traverse chain for level wind**

- **Automatic shutoff bar adjustment**

- **Reel brake adjustment**
7. Maintenance

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Performing Maintenance
We strongly recommend that you perform regular maintenance on your Reel Rain irrigator to help ensure efficient and safe operation.

The following page contains the Lubrication Schedule we recommend you follow. Each item on the schedule is described in more detail in this chapter.

If you need to replace any machine parts, please contact your Amadas dealer.

Safety Decals
Be sure to follow all warnings indicated by the safety decals on this machine. Two examples of safety decals are shown below.

---

CAUTION
Please follow safety recommendations when performing any maintenance on the Reel Rain.

- Do NOT make adjustments or attempt any maintenance while the machine is in operation.
- Always engage the machine’s reel brake before attempting any maintenance or adjustments.
- Use the stabilizer legs when performing any maintenance. Make sure the Reel Rain is properly positioned.
- Do NOT perform any maintenance or repairs on the irrigator while the machine has water pressure. Always make sure the water source is shut off.
Lubrication

Lubricate your Reel Rain according to the schedule below. Each item on the schedule is described in more detail beginning on the next page.

### Lubrication Schedule

<table>
<thead>
<tr>
<th>Location</th>
<th>Type of Lubricant</th>
<th>Daily</th>
<th>Every 2 Weeks</th>
<th>Monthly</th>
<th>Yearly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chains (except drum)</td>
<td>30 weight oil</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gearboxes (2)</td>
<td>AGMA Grade 5 Syn.</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Inlet Spindle Thrust Washer</td>
<td>Multi-purpose grease</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Inlet swivel (elbow)</td>
<td>Multi-purpose grease</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Jackshaft bearing</td>
<td>Multi-purpose grease</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Reel bearing</td>
<td>Multi-purpose grease</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Traverse Assembly</td>
<td>Multi-purpose grease</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Wheel bearings/Reel Rain</td>
<td>Wheel bearing grease</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
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<tr>
<td>Wheel Bearings/Gun Cart</td>
<td>Wheel bearing grease</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

![Diagram](image)
### Chains

**Lubricate**
- 30 weight oil/chain oil
- Monthly

Grease all chains with 30 weight oil monthly.

**IMPORTANT!** Do NOT grease reel drive chain as chain slippage will result.
Gearboxes

Lubricate
- Yearly
- AGMA Grade 5 Synthetic oil

The following two gearboxes are located on the Reel Rain:

- Main drive gearbox, located behind the gear shifters. You will need to remove the shield with the speed charts to access this gearbox.

- Level wind gearbox, located on the left hand side of the machine, if you are viewing the remaining hose indicator (bottom photo). To check the oil level in this gearbox, unscrew the large bolt and check the level inside the box. Fill as necessary.
There are two grease applications on the inlet plumbing:

- The inlet swivel (or elbow) has a grease fitting that needs to be greased every two weeks. It is important that you maintain this fitting to prevent the bearings from rusting, which will cause leaking and prematurely wear the plumbing.

- The inlet spindle thrust washer tends to dry out while the Reel Rain is being stored for the winter. Therefore, it is important that you pack the spindle and bearing with grease each season before you put the Reel Rain back into service. These items are located behind the inlet plumbing. Take care when packing grease into these items, as too much force can unseat the snap ring.
**Jackshaft Bearing**

**Lubricate**
- Daily
- Use multi-purpose grease

Lubricate grease points on both sides of jackshaft bearing as shown in the two photos.

The top photo shows the front of the jackshaft bearing; you will need to open the shield under the transmission to access it on either machine model. The second photo shows the back of the bearing. In engine models, you will need to open the shield over the gear pulleys to access the bearing.

**Reel Bearing**

**Lubricate**
- Weekly
- Multi-purpose grease.

Lubricate grease point.
Traverse Assembly

Lubricate
- Every two weeks
- Use multi-purpose grease

1. Lubricate the chain slider assembly on the rear of the traverse frame.
2. Lubricate the grease point with multi-purpose grease.
3. Lubricate the surface of the slide rod.
4. Lubricate the boss.
## Wheel Bearings/Gun Cart

### Lubricate
- **Daily**
- **Wheel bearing grease**

Pump wheel bearing grease into the gun cart wheel grease fittings before each use.

---

## Wheel Bearings/Reel Rain

### Lubricate
- **Yearly**
- **Wheel bearing grease**

Pull wheels and repack wheel bearings.
Preventative Maintenance
The chart below lists general preventative maintenance that should be performed every six months. Routine, general inspection and repair is necessary to increase the service life of the machine.

More detailed preventative maintenance is described beginning on the next page.

Preventative Maintenance Checklist

√ Check the oil levels in all gearboxes. If necessary, fill the traverse box with AGMA Grade 5 Synthetic oil to the level of the plug. Fill the main gearbox with AGMA Grade 5 Synthetic oil.

√ Inspect the frame for chipped paint or rust. Repaint if necessary.

√ Check the condition of the tires. Replace if worn or damaged. Check the tire pressure and inflate to 50 PSI if necessary.

√ Check the wheel lug nut torque. It should be 65 ft/lbs.

√ Inspect the hose for cracks, damage, or loose connections. Repair or replace as necessary.

√ Check the condition of all belts and chains. Replace or repair any damaged belts or chains.
**Level Wind Chain**
Remove the excess slack in the level wind chain.

1. Loosen the bolt holding idler in place.
2. Push the idler toward the chain until all slack is gone.
3. Tighten the idler.

**Traverse Chain**
Adjust so that the sag of the chain at the midpoint of the machine is less than 1/2 inch. You should be able to squeeze the two chains together in the midpoint when properly adjusted.

1. Loosen the nut on the back of the chain idler.
2. Loosen the lock nut on the adjusting screw.
3. Loosen the traverse chain idler sprocket bolt ½ turn.
4. Turn the adjusting screw until the tension is correct.
5. Re-tighten the idler sprocket bolt
6. Re-tighten all lock nuts.
Reel Drive Chain
Measure the length of each drum drive chain tension spring on the drum reel. If the length of each spring from the front mounting pin to the rear mounting pin is not 11 inches, turn the spring adjustment rods until the springs measure 11 inches between mounting pins.

If the springs become stretched over time, it may be necessary to adjust the springs to beyond 11".
Plumbing Seals
Check for leakage around the side rotating seal where the inlet plumbing is connected. If water is leaking, replace the side rotating seal as follows:

NOTE! The seal will leak until the system’s pressure is reached and then drip slightly. Change the seal when the leak does not stop after the system pressure is reached.

1. Turn off the water flow to the irrigator.
2. Disconnect the infeed hose.
3. Unbolt and remove the inlet plumbing.
4. Remove the retaining ring, O-ring, and thrust washer from the inlet spindle.
5. Install the new O-ring, retaining ring, and thrust washer on the inlet spindle. Be certain that the thrust washer is greased thoroughly.

NOTE! The thrust washer, inlet spindle, and inlet plumbing should not have any rust on them. If necessary, clean these items. Rust will prevent the thrust washer from moving freely.

6. Replace the inlet plumbing and bolt into place. The inlet plumbing must be lined up with the inlet spindle to prevent any leaking.
**Stabilizer Legs**

Regular inspection will keep the legs in good operating condition.

1. Inspect the legs for damage or missing parts.
2. Repair or replace as required.
Engine
If your Reel Rain is powered by a gas engine, refer to the maintenance section of the Owner's Manual. Regular maintenance should be performed on the air cleaner and spark plugs.

**NOTE!** It is very important that the oil be changed according to the instructions in the engine operator's manual.

The Honda engine is covered by the manufacturer's warranty. If you have engine problems, contact your local authorized Honda dealer.

Tires
Maintain tire pressure at 50 PSI on machine. Lug nuts should remain torqued at 65 ft/lbs.
Off-Season Storage
Review the off season storage checklist below. The items on this list should be followed *each time* the irrigator is put away for storage.

- **Drain all water from the Reel Rain as follows:**
  1. Tow the hose out to the full length.
  2. Leave at least 1 coil of hose on the drum reel to prevent pulling the hose off of the reel. It is difficult to replace the hose once it has been pulled off.
  3. Remove the drain fitting from the rear of the gun cart.
  4. Rewind the hose slowly with the tractor PTO. This will allow the water to drain from the irrigator and prevent freeze damage to the Reel Rain. The hose may become slightly oval in shape when the water drains out and may not rewind properly on the drum reel. Avoid cross layering the hose, which can break the traverse cradle or damage the hose. If necessary, use a wooden post to pry the hose and force it in place.

- **On the turbine powered machines,** open the butterfly valve, and the drain plug or petcock on the turbine.

- **On gas engine powered machines,** drain all fuel from the tank and carburetor.

- **Grease all fittings.**

- **Touch up any scratched or chipped paint on the irrigator and repaint any rusted areas.**

- **Cover the inlet and gun to prevent the entrance of dirt or animals. Replace the drain plug.**

- **Store the irrigator in a clean and dry place.**

- **If the Reel Rain will be left outside, cover the entire machine with waterproof tarp.**
## Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine will not start.</td>
<td>Engine is not set up properly (out of gas, low oil, fouled spark plug, etc.)</td>
<td>Refer to the <em>Engine Owner's Manual</em>.</td>
</tr>
<tr>
<td></td>
<td>Gas or water is in the crankcase.</td>
<td>Change the oil. Clean the carburetor and bowl. Drain the water from the fuel tank. Replace with clean fuel.</td>
</tr>
<tr>
<td>Engine will not start or the transmission will not go into high or low range.</td>
<td>Automatic cut off bar is not pulled toward the gun cart.</td>
<td>Pull the bar out.</td>
</tr>
<tr>
<td></td>
<td>Automatic cut off switch is broken or out of adjustment</td>
<td>Replace or adjust as required. Refer to Chapter 6, <em>Adjustments</em>.</td>
</tr>
<tr>
<td>Turbine does not work.</td>
<td>Water flow is too low.</td>
<td>Check and increase water flow by increasing water pressure or increasing gun nozzle size.</td>
</tr>
<tr>
<td></td>
<td>Defective valve.</td>
<td>Replace.</td>
</tr>
<tr>
<td></td>
<td>Valve is open.</td>
<td>Close valve.</td>
</tr>
<tr>
<td>Irregular or uneven irrigation pattern.</td>
<td>Wind is shifting.</td>
<td>Adjust irrigating pattern for windage.</td>
</tr>
<tr>
<td></td>
<td>Lane spacing is incorrect.</td>
<td>Check and adjust the lane spacing. See “Charts” section of Chapter 3, <em>Operation Overview</em>.</td>
</tr>
<tr>
<td></td>
<td>Speed of gun cart is changing.</td>
<td>Adjust the speed compensator. Refer to “Guns” in Chapter 6, <em>Adjustments</em>.</td>
</tr>
<tr>
<td></td>
<td>Water pressure is unsteady.</td>
<td>Check and adjust the pump. Inspect the pump and lines for leaks.</td>
</tr>
<tr>
<td>Problem</td>
<td>Cause</td>
<td>Correction</td>
</tr>
<tr>
<td>---------</td>
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</tr>
<tr>
<td>Hose does not rewind, or rewinds improperly.</td>
<td>Stabilizer legs are not down and the chassis is moving.</td>
<td>Reset the stabilizer legs.</td>
</tr>
<tr>
<td>Machine and hose are at an angle.</td>
<td></td>
<td>Align the machine with the hose.</td>
</tr>
<tr>
<td>Obstructions are blocking or dragging on the gun cart.</td>
<td></td>
<td>Remove any obstructions.</td>
</tr>
<tr>
<td>Level wind timing is out of adjustment.</td>
<td></td>
<td>Adjust the level wind timing. Refer to Chapter 6, <em>Adjustments</em>.</td>
</tr>
<tr>
<td>Traverse cradle is broken or damaged.</td>
<td></td>
<td>Check and replace. After replacing, re-time according to Chapter 6, <em>Adjustments</em>.</td>
</tr>
<tr>
<td>Turbine operation is erratic.</td>
<td></td>
<td>Check and adjust the drive range (high or low) settings. If necessary, change the impeller or increase water flow.</td>
</tr>
<tr>
<td>Gun cart has fallen over.</td>
<td></td>
<td>Check the gun cart. Add weight if necessary, or extend the width between the two tires. Refer to Chapter 2, <em>Preparation</em>.</td>
</tr>
<tr>
<td>Gun cart is not tracking in a straight line.</td>
<td></td>
<td>Adjust the nose wheel steering. Refer to Chapter 2, <em>Preparation</em>.</td>
</tr>
<tr>
<td>Broken or slipping belts.</td>
<td></td>
<td>Check and replace or tighten.</td>
</tr>
<tr>
<td>Reel chains are slipping</td>
<td></td>
<td>Remove the oil from the chain and in the chain track. Adjust reel chains to proper tension: 11” from end coil to end coil (instructions in this chapter)</td>
</tr>
</tbody>
</table>
LIMITED WARRANTY
FOR NEW AMADAS INDUSTRIES REEL RAIN
HARD HOSE TRAVELER IRRIGATION SYSTEMS

A. GENERAL PROVISIONS

The warranty described below is provided by AMADAS INDUSTRIES ("AMADAS"), through its authorized
dealers, to the original purchaser of each NEW AMADAS Reel Rain Traveler Irrigation System ("Reel Rain Traveler").
An authorized AMADAS dealer will repair or replace, at AMADAS’s option, any parts covered under warranty which are
found to be defective in material and/or workmanship during the applicable period of the warranty.

B. WHAT IS WARRANTED?

All parts of any NEW AMADAS Reel Rain Traveler, with the exception of the hard hose and normal wear items,
are warranted for 3 years (1 year if used primarily for manure, wastewater, or industrial applications). This warranty shall
not apply to any engines, tires, tubes, batteries, electrical components, or other products, which are or may be warranted
separately by the manufacturer thereof. The warranty period will begin when the Reel Rain Traveler is delivered to the
purchaser. Hard Hoses carry a five(5) year pro-rated warranty on ALL NEW machines. Hard hoses are pro-rated as
follows:

1st year—100%, 2nd year—80%, 3rd year—60%, 4th year — 40%, 5th year — 20%

This warranty covers defective materials and workmanship. It does not cover maintenance, normal wear, misuse,
lack of proper protection during storage, accidents or abuse. The purchaser shall pay all costs of routine maintenance and/
or replacement of normal maintenance and wear items. Contact your dealer for specific information as to what constitutes
normal wear, misuse, or abuse.

Used equipment is not warranted by AMADAS unless specifically covered by a separate warranty document.

C. UNAPPROVED SERVICE OR MODIFICATION

All obligations of AMADAS under this warranty are terminated if the Reel Rain Traveler is modified or altered in
ways not approved by AMADAS.

D. SECURING WARRANTY SERVICE

To secure warranty service the purchaser must (1) Contact an authorized AMADAS dealer promptly on any claim
for warranty service, report the product defect, and request repair within the applicable warranty period (2) Present evidence
of the date of delivery of the Reel Rain Traveler and (3) Deliver the machine to an authorized AMADAS dealer
within a reasonable period of time, at the purchasers expense, during normal working hours, for any needed warranty
service.

E. NO DEALER WARRANTY

The selling dealer makes no warranty of his own on any items warranted by AMADAS, and makes no warranty on
other items. The dealer has no authority to make any representation or promise on behalf of AMADAS, or modify the terms
or limitations of this warranty in any way.

F. WHAT ARE THE PURCHASERS RESPONSIBILITIES?

A. Sign the AMADAS machinery delivery form, which will be given to you by the dealer.
B. Read the Operators manual before operating the equipment and make sure that all potential operators of the
machine have been trained in its safe and proper usage.
C. Perform all required maintenance as recommended in the operator’s manual.

G. DISCLAIMER

There are no warranties that extend beyond the description here. ANY WARRANTIES OF MERCHANTABILITY
AND FITNESS FOR ANY PARTICULAR PURPOSE ARE SPECIFICALLY DISCLAIMED AS ARE ALL
OTHER REPRESENTATIONS TO THE PURCHASER. AMADAS specifically excludes any liability on behalf of
the company for any incidental or consequential damages including, but not limited to, crop loss, loss of profits, rental of
substitute equipment, or other commercial losses. AMADAS shall not be responsible for expenses or inconveniences that
the purchaser may incur or experience with respect to the AMADAS Reel Rain Traveler Irrigation unit, nor shall AMADAS
be liable for defect, damage, or failure caused by improper storage, unreasonable use, abuse, or accident, including the
failure to provide reasonable and specified maintenance. This warranty applies only to the original purchaser of the
equipment. Because some states do not allow the exclusion of limitation of incidental or consequential damages, the above
limitation may not apply to you. This warranty gives you specific legal rights. You may also have other rights, which
vary from state to state. Where there is a conflict between a provision of this warranty and the provision of any state, the state
legislation prevails.

AMADAS

Revised: 4/99