



LARSON Cable Trailers, Inc.

Model 7500

Manufactured by

LARSON CABLE TRAILERS, INC.

601 Lincoln Avenue NW

Huron, SD 57350

605-352-9336

Toll Free: 866-250-7624

Fax: 605-352-5664

E-mail: cs@larsonct.com

Webpage: <http://www.larsonct.com>

United States Patent # 6,347,761

March 2016

TABLE OF CONTENTS

INTRODUCTION.....	3
GENERAL INFORMATION AND DESCRIPTION	4
STARTING AND OPERATION.....	5
BEFORE STARTING.....	5
LUBE CHART	6
HYDRAULIC LIFTING RACK SETUP	7
REEL LOADING.....	8
HYDRAULIC REEL TURNER.....	12
TRANSPORTING.....	13
WIRING DIAGRAM.....	14
PARTS DIAGRAM	15
MAINTENANCE SCHEDULE.....	19
HONDA ENGINE.....	19
DEXTER AXLE AND RELATED COMPONENTS.....	20
TRAILER	21
OPTIONAL ACCESSORIES.....	22
FIGURE-8 DEVICE.....	23
FIGURE-8 FORK ASSEMBLY.....	29
LEVEL WINDING DEVICE.....	30
DUMPSTER	34
LOADING RAMPS.....	36
COLD WEATHER START KIT	37
PVC RACK	38
SIDE ROLLER	39
WARRANTY	40
REPORTING SAFETY DEFECTS	42
TIRE SAFETY INFORMATION	See Back of Manual
HONDA ENGINES WARRANTY.....	See Back of Manual

INTRODUCTION

Congratulations on purchasing the best mobile cable dispensing system on the market. This manual has been prepared to acquaint you with the **LARSON MOBILE CABLE DISPENSING SYSTEM (LMCDS)** and its maintenance, setup, operation, and transport. Please note, this manual contains important safety information that both you and others operating this trailer must know. Please give your full attention to safety.

Here at LARSON, we have been burying cable for over 50+ years. Several years ago we started burying fiber optic cable. This was a whole new challenge since fiber can't be cut and spliced when obstacles are met. We initially designed a figure-8 machine and reel winder for our cable plow. However, when we came to an obstacle (oil road, shallow cables, etc.) our plow and the entire crew were left figure-8ing. Efficiency was very poor.

We looked everywhere for a trailer capable of figure-8ing and rewinding. There wasn't a cable trailer that had a bed or reel turner rugged enough for our needs. And most, if not all, cable trailers we found had no suspension, slowing transport.

We designed and built the **LMCDS** to meet our needs. This trailer will also save you time and manpower as you bury cable in a new and more efficient way.

We soon realized that the trailer we had developed was invaluable in other capacities as well. So the **LMCDS** was created for those who desire a high-quality, self-loading, multi-purpose unit for use on the utility job site.

When it comes to service, your LARSON Authorized Sales Representative knows your trailer the best and is interested in your complete satisfaction. We invite you to return to your representative for all of your service needs both during and after the warranty period.

This **SAFETY ALERT SYMBOL**  indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of **PERSONAL INJURY** or **EQUIPMENT DAMAGE**.

Always store this manual in the paperwork holder of your trailer for future reference.

 **WARNING!** Failure to read the manual and understand how to the safely operate this equipment could lead to serious damage to property, equipment, or cable. It could also lead to personal injury or death. If you do not understand the instructions in this manual, contact your LARSON Authorized Sales Representative.

GENERAL INFORMATION AND DESCRIPTION

The **LMCDS 7500** has an overall length of 14 ft. with a 5 ft. by 6 ft. treated-wood flatbed for hauling tools and small equipment to the job site. It will lift 7500 lb. reels of various sizes or haul a mini-excavator, basements, pads, boxes, anodes, and other materials to the job site. Even with a full payload, the trailer can be towed behind your vehicle at the regular posted speed limit. The hydraulic system has a flow rate of 12 gallons per minute at 2000 psi, powered by a 20-hp Honda engine. This allows the trailer to figure-8 and rewind cable at a rate up to 750 feet per minute. The reel turning rack is powered by a 2-speed orbital motor operated from the control panel. The control panel swings 180° allowing the user to efficiently operate the hydraulic system while monitoring the activity at the rear of the trailer. The hydraulic lifting rack makes loading and unloading a one-man operation.

Standard accessories include: auxiliary hydraulic ports for powering other tools and accessories, two bushings, two collars, one arbor, and extra hooks located on the back of the lifting arms.

Additional accessories available include: a second arbor, additional bushings and collars, loading ramps, dumpster, cold-weather start kit, tension brake, dielectric fluid, light kit, PVC rack, A frame, side roller, level winding device, figure-8 device, hydraulically-powered generator, and a remote control.

STARTING AND OPERATION

This manual covers most, but not all, of the features of your trailer. Separate owner's manuals for the Honda engine and Dexter axles are also provided. Be certain you have full working knowledge of all features before operating your trailer. Contact your LARSON Authorized Sales Representative if you have questions or incomplete knowledge of your equipment's operation.

BEFORE STARTING

1. Check all fluid levels.

- Oil in the engine. Note that the Honda engine has a low-oil shut off sensor.
- Gasoline in the engine. Turn the gasoline on.
- Hydraulic fluid in tank. The hydraulic fluid should be visible in the window on the side of the tank. If not, add more hydraulic fluid. (Use Mobil 424 or equivalent UTF - Universal Tractor Fluid.)
- **If the trailer is labeled for Dielectric Fluid, USE DIELECTRIC FLUID.**



Warning! Always check the hydraulic fluid before starting the engine.



Warning! Always make sure the hydraulic valve is open before starting the engine. The valve is in the open position when the handle is in line with the hose. Starting the engine with the valve closed will damage hydraulic pump. This valve should remain open unless you are performing maintenance on the pump.

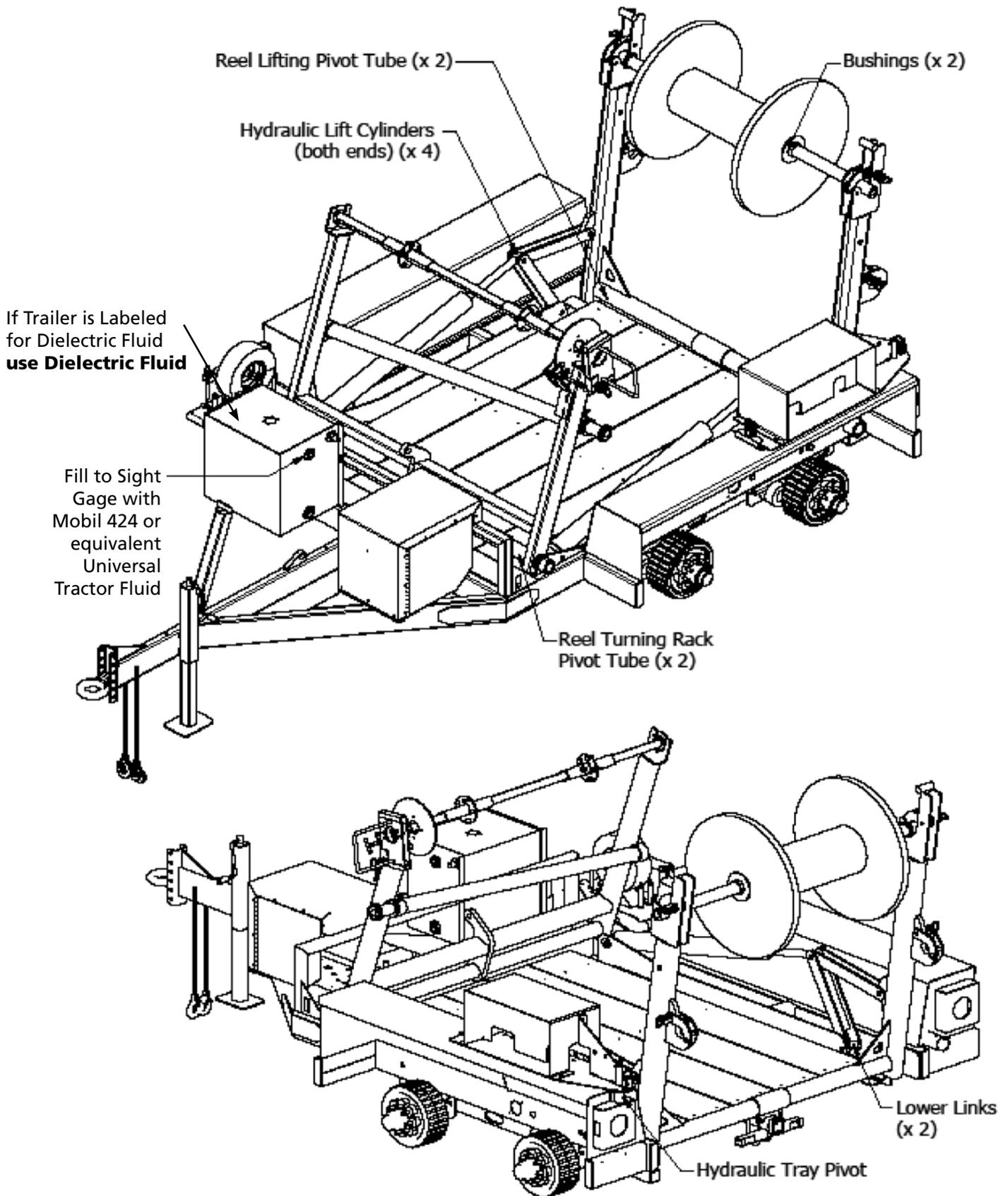
2. Check recommended air pressure in all tires

- 8" reel-turning tire: 20-25 psi
- 4" figure-8 tire: 6-8 psi
- 235/85R16E tires: 80 psi

3. Check the lights and brake system.

4. Ensure that the trailer is properly lubricated with all-purpose grease. Grease zerks are located on the lower links, bushings, reel turning rack, reel lifting rack, hydraulic valve tray pivot, and each end of the hydraulic lift cylinders. See the Lube Chart on the following page to help locate these items.

LUBE CHART



HYDRAULIC LIFTING RACK SETUP



1. Using the reel rack lever on the control panel, lower the reel rack.
2. Pull the keeper pin out of the lifting arm. Please refer to the Parts Diagram for the location of the keeper pin.
3. Extend the lifting arm to the desired length.
4. Replace the keeper pin in the lifting arm.

REEL LOADING



1. Lubricate the hole in the reel hubs.

 **WARNING!** If the reel hubs are not properly lubricated, the high RPMs attained during figure-8ing and rewinding the cable can generate enough heat to deform the arbor hole in the reel. The deformed reel could stop turning which could damage the cable.



2. Remove the arbor from the lifting rack or storage tube.

3. Remove any locking collars and bushings from the arbor. Lubricate the inside of the bushing. Place the bushing in the hole in the reel hub.



4. Slide a locking collar onto the arbor with the flange facing the reel.



5. Insert the arbor in the bushing and push through the reel. If the reel is not level, insert the arbor from the lower side. The washers on the arbor need to be on the lower side to prevent the arbor from sliding off the lifting arm while loading the reel.



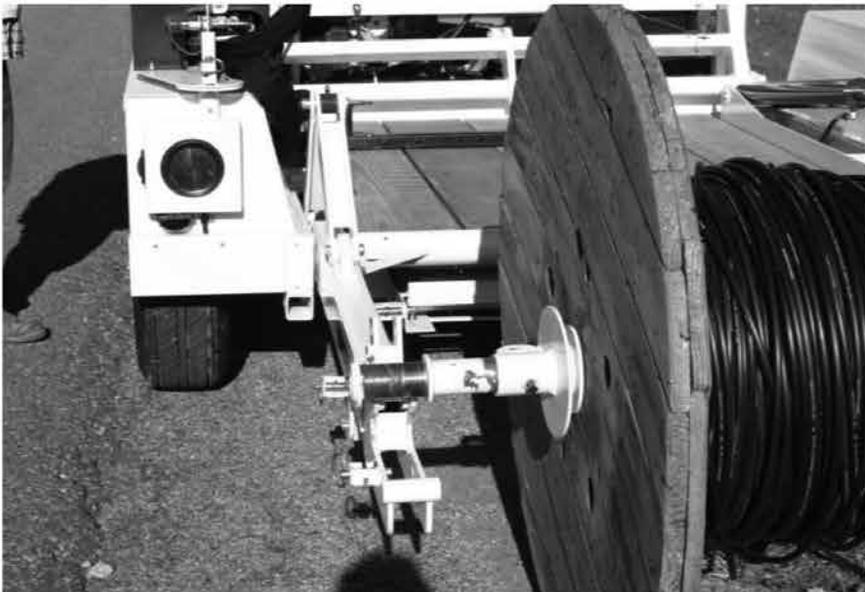
6. Lubricate the inside of the opposite bushing and reel hole, place the bushing onto the arbor, and slide the bushing into the reel hub.



7. Slide the opposite locking collar onto the arbor with the set screw facing away from the reel.



8. Using the reel lifting rack lever on the control panel, lower the lifting arms below the height of the arbor in the reel.



9. Roll the reel forward to align the arbor with the lifting rack and raise the reel rack lifting arms, making contact with the arbor.



10. Center the reel and lock the arbor collars with the set screws. Lock the arbor in place by engaging the spring latch on each side of the lifting rack.



11. The trailer must always be securely attached to a heavy vehicle while lifting.

12. Load the reel using the reel rack lever on the control panel.

 **WARNING!** To properly position the reel on the trailer, bring the reel all the way forward until the cylinder stops.

HYDRAULIC REEL TURNER



1. The reel turner is powered by an orbital motor which also powers the figure-8 device.



2. The reel turner is operated from the control panel.



3. When finished, return the reel turner rack to its full forward position.

TRANSPORTING

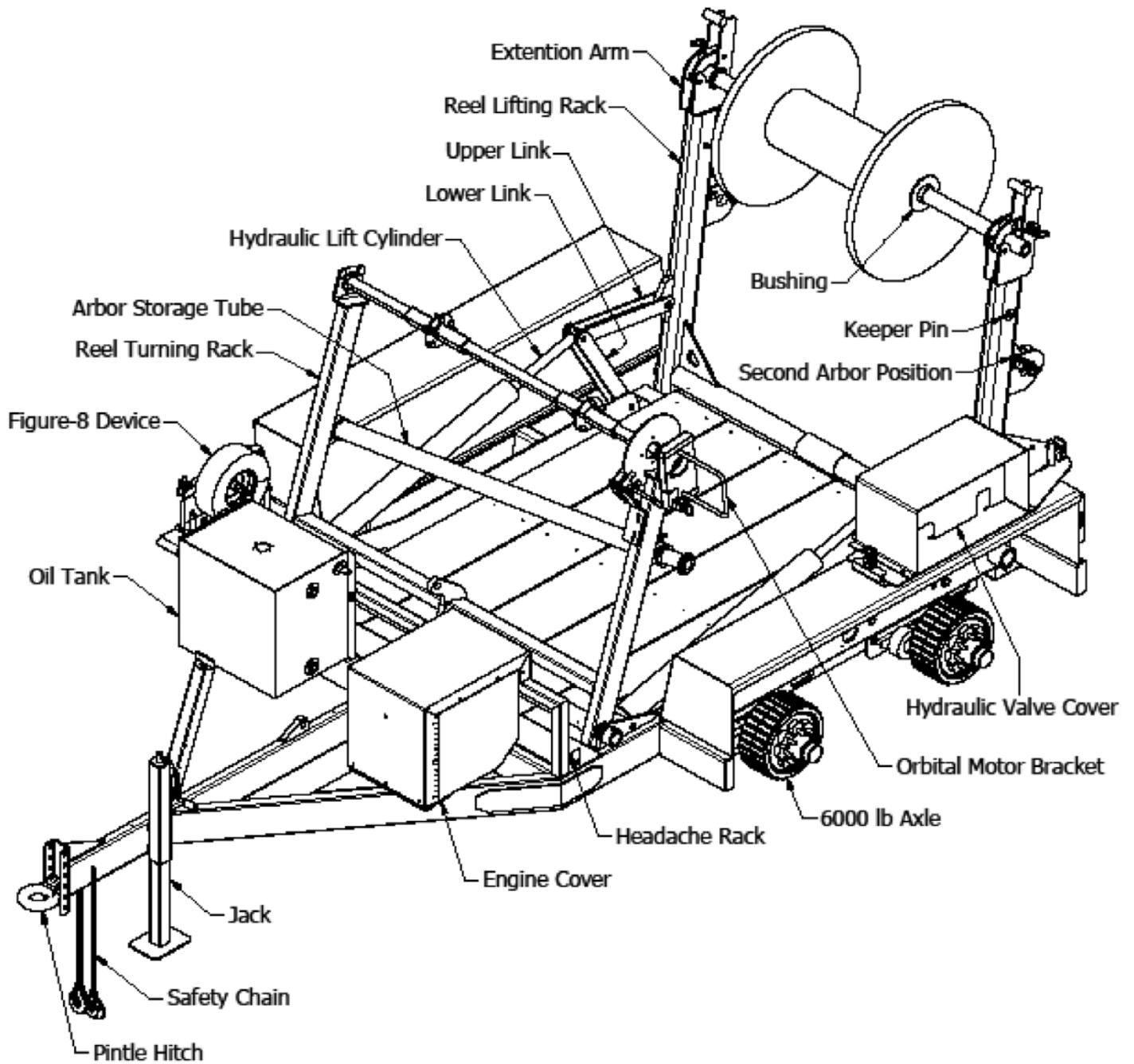
Before transporting:

1. Gas must be turned off on the Honda engine.
2. The reel turning rack must be in the full forward position.
3. All set screws must be tightened on the collars and the reel turner axle hubs to prevent them from vibrating out.
4. The control panel must be locked down.
5. Loads must be secured to the trailer.

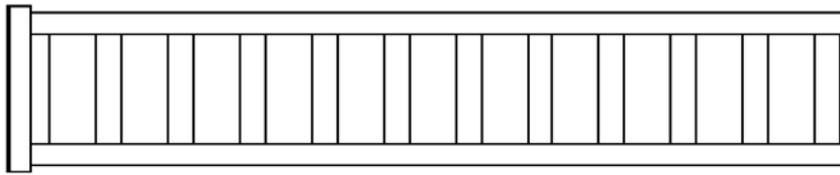


Warning! Failure to heed the above information could result in property damage, serious injury, or death.

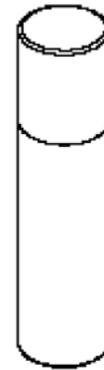
PARTS DIAGRAM



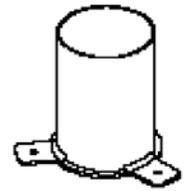
Depending on the optional accessories purchased with your trailer, you may or may not have the parts shown.



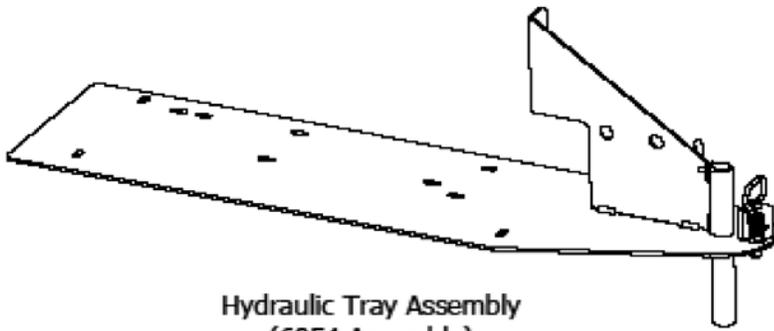
Loading Ramp (5804)



Paperwork Tube



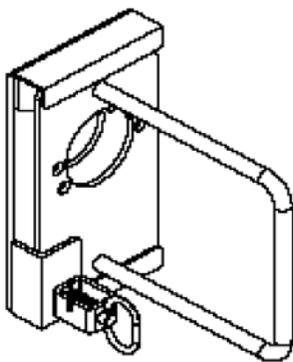
Paperwork Tube Holder (4004)



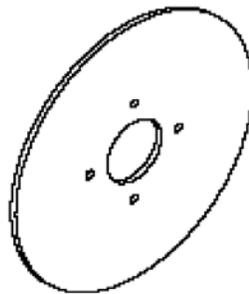
Hydraulic Tray Assembly (6054 Assembly)



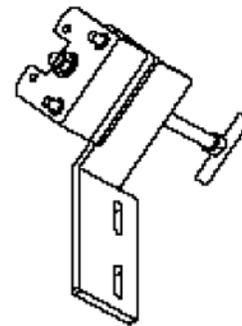
Spline Coupler



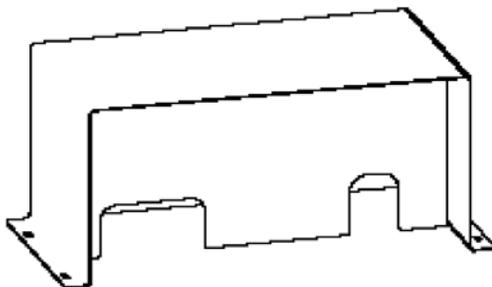
Hydraulic Motor Bracket (6044)



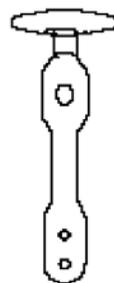
Brake Disc (7008)



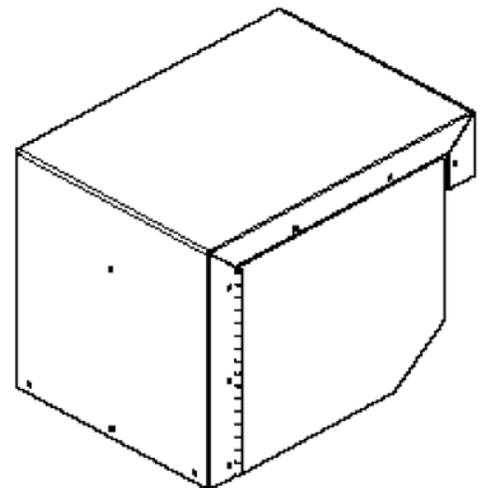
Brake Brackets (1007 Assembly D)



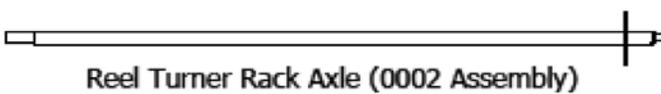
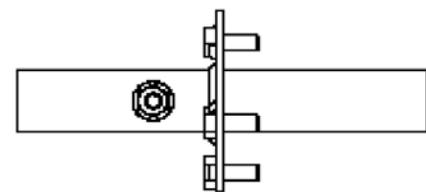
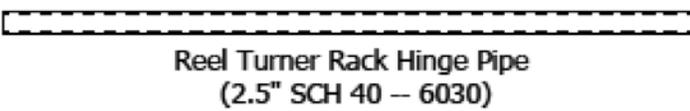
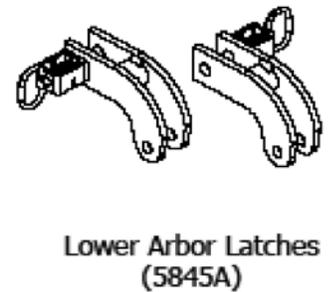
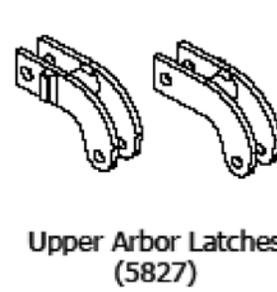
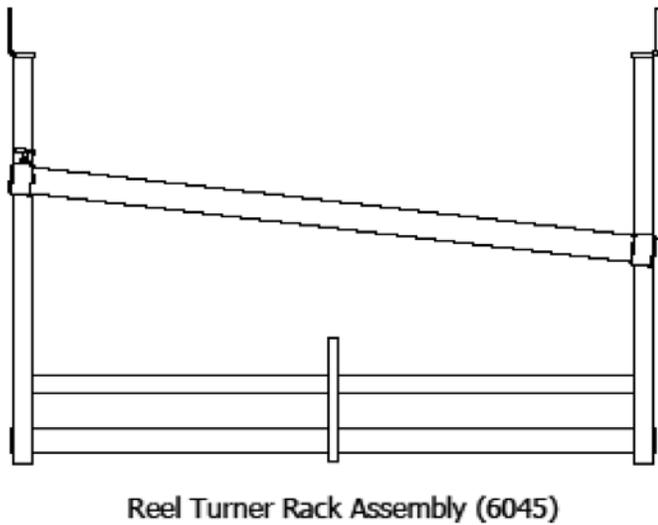
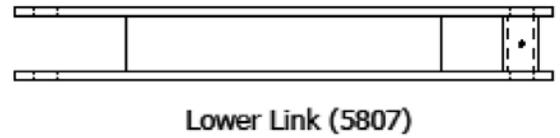
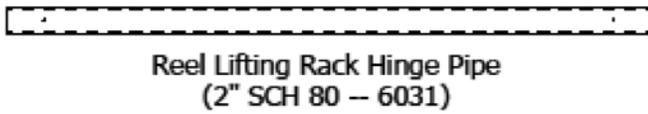
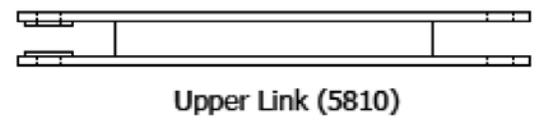
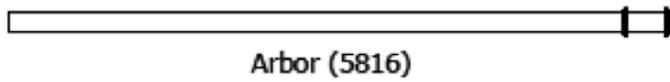
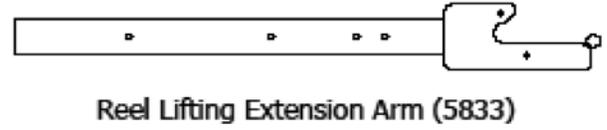
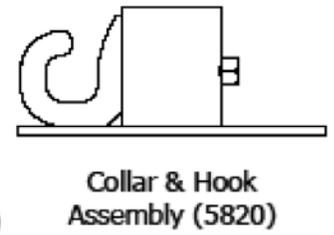
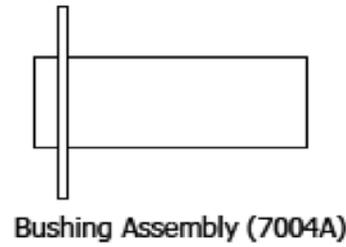
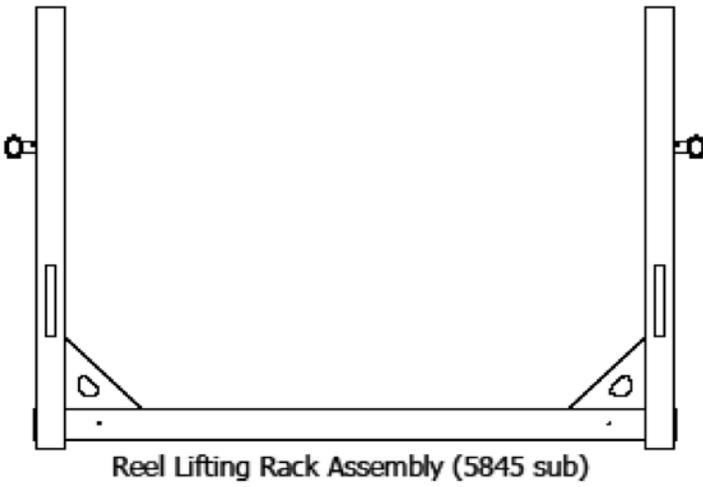
Control Valves Hood (6051)



Engine Cover Fastener (3076)



Engine Hood (5969 Assembly)



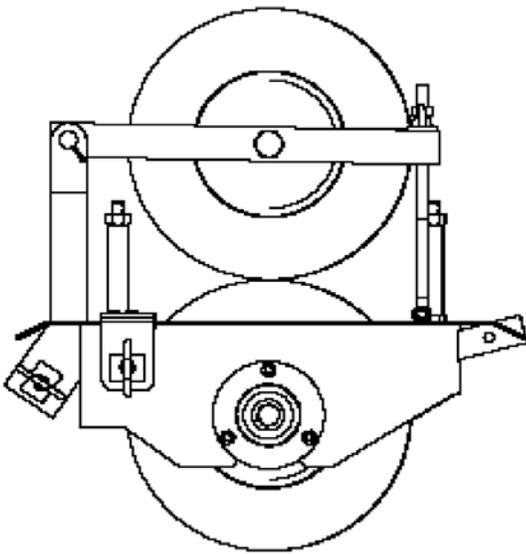


Figure-8 Device



Figure-8 Bolt

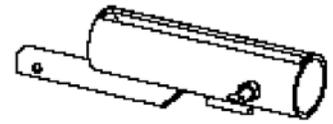


Figure-8 Split Tube Bracket (5995)

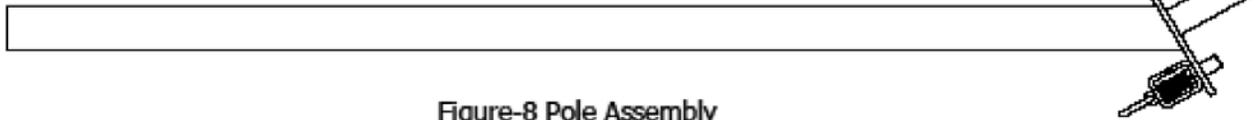
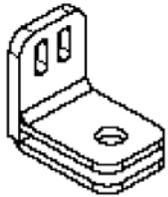


Figure-8 Pole Assembly (5988)



Orbital Motor Stabilizer (5984)

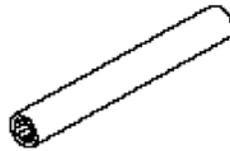


Figure-8 Drive Shaft

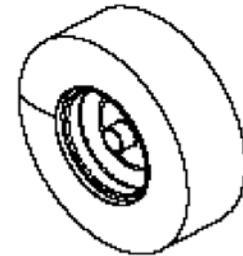
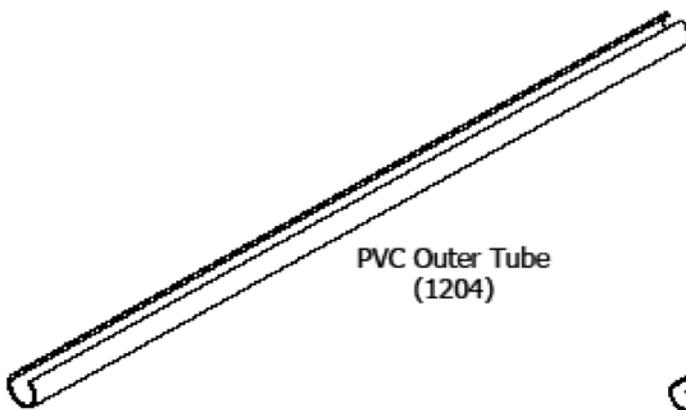
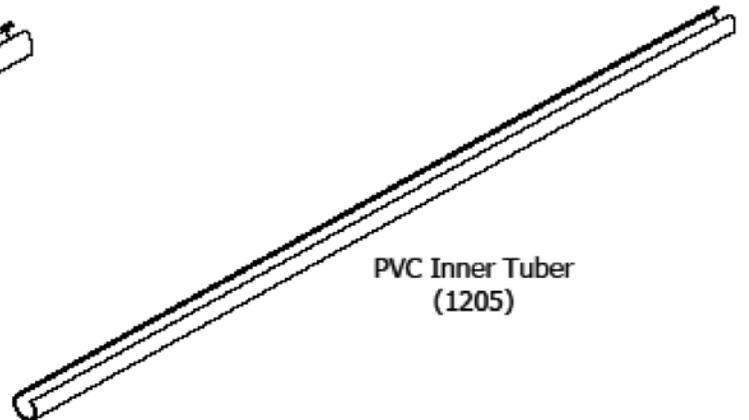


Figure-8 Tire and Rim



PVC Outer Tube (1204)



PVC Inner Tubur (1205)

MAINTENANCE SCHEDULE

There are a number of steps to follow in caring for your trailer that can add to its life and in some cases may protect your own life as well. Please read the enclosed owner's manuals for the Honda Engine and Dexter Axle for more details.

HONDA ENGINE

Item	Task	Each Use	First month or 20 Hrs	Every 3 months or 50 Hrs.	Every 6 months or 100 Hrs.	Every year or 300 Hrs	
Engine Oil	Check level	x					
Engine Oil	Change		x		x		
Air Filter	Check	x					
Air Filter	Clean			x (1)			
Air Filter	Replace					x*	
Sediment Cup	Clean				x		
Spark Plug	Check-adjust				x		
Spark Plug	Replace					x	
Spark Arrester (optional part)	Clean				x		
Idle Speed	Check-adjust					x (2)	
Valve Clearance	Check-adjust					x (2)	
Combustion Chamber	Clean	After every 500 Hrs. (2)					
Fuel Tank & Filter	Clean				x (2)		
Fuel Tube	Check	Every 2 years (Replace if necessary) (2)					

*Replace the paper element type only.

(1) Service more frequently when used in dusty areas.

(2) These items should be serviced by your servicing dealer, unless you have the proper tools and are mechanically proficient. Refer to the Honda shop manual for service procedures.

(3) Log hours of operation to determine proper maintenance intervals.

DEXTER AXLE AND RELATED COMPONENTS

Item	Function Required	Weekly	3 months or 3000 miles	6 months or 6000 miles	12 months or 12000 miles
Brakes	Test that they are operational.	At Every Use			
Brake Adjustment	Adjust to proper operating clearance.		x		
Brake Magnets	Inspect for wear and current draw.			x	
Brake Linings	Inspect for wear or contamination.				x
Brake Controller	Check for correct amperage & modulation.			x	
Brake Cylinders	Check for leaks, sticking.				x
Brake Lines	Inspect for cracks, leaks, kinks.				x
Hubs	Check& refill with high quality hypoid gear oil.		x		
Hub/Drum	Inspect for abnormal wear or scoring.				x
Wheel Bearings & Cups	Inspect for corrosion or wear. Clean & repack.				x
Seals	Inspect for leakage. Replace if removed.				x
Springs	Inspect for wear, loss of arch.				x
Suspension Parts	Inspect for bending, loose fasteners, wear.			x	
Hangers	Inspect welds.				x

TRAILER

Item	Function Required	Weekly	3 months or 3000 miles	6 months or 6000 miles	12 months or 12000 miles
Trailer Wiring	Inspect wiring for bare spots, fray, etc.				x
Brakeaway System	Check battery charge and switch operation.	At Every Use			
Wheel Nuts and Bolts	Tighten to specified torque values.		x		
Wheels	Inspect for cracks, dents or distortion.			x	
Tire Inflation Pressure	Inflate tires to mfg's specifications.	x			
Tires	Rotate			x	
Tire Condition	Inspect for cuts, wear, bulging, etc.		x		
Hose Fittings	Inspect for cuts, wear marks.			x	
Hydraulic Fluid	Check level.	x (1)			
Hydraulic Fluid	Change.				x
Hydraulic Fluid Filter	Change filter.				x (2)
Lights	Verify operation.	x			
Trailer Structure	Inspect for worn, damaged, or broken parts.		x		
Battery	Check electrolyte level.		x		

(1) Use Mobil 424 or equivalent UTF -Universal Tractor Fluid. ***If the trailer is labeled for Dielectric Fluid, USE DIELECTRIC FLUID.***

(2) Zinga AE-10

OPTIONAL ACCESSORIES

FIGURE-8 DEVICE

Before figure-8ing, inspect the reel for nails, sharp edges, missing boards or anything that could obstruct movement of the cable. Remove or repair accordingly before using the trailer.



1. Remove the figure-8 pole from the tool storage tray at the front of the trailer.



2. Place the pole into the tube on the receiver hitch.



3. Remove the figure-8 device from the mount on the right side of the trailer.



4. Place the device on the figure-8 pole. Engage the spring latch to lock the device in place.



5. Place the figure-8 tube bracket on the figure-8 device. Insert the split tube into the bracket. Tighten the T-handle set screw to secure the split tube to the bracket.



6. Thread the cable through the figure-8 device.



7. Close and lock the figure-8 device.



8. Remove the orbital motor from the reel-turner axle.



9. Place the orbital motor on the figure-8 device and engage the spring latch to lock into place.



10. Align the drive tires to the outside rims of the reel. Tighten the set screws.



11. Set the brake on the reel turner axle. Adjust the brake tension tighter for heavier reels, and looser for smaller reels. This will lessen the chance of “burning” the jacket if you stop the reel suddenly.



14. Engage the drive tires to the reel by operating the reel turner rack lever on the control panel. Move the reel turner axle tires no closer than 6" to the sides of the reel. If the need to stop the reel during the figure-8ing operation arises, the tires are ready to be engaged.



Warning! Many situations may arise that require you to stop the reel. Please be prepared! If this situation should arise, engage the reel turner with the braking system at the same time as you disengage the figure 8-ing device.



15. Unlock the spring latch on the front of the control panel.



16. Unlock the spring latch on the back of the control panel.



17. Swing the control panel to the working position at the back of the trailer. Lock the spring latch at the back of the control panel to secure the panel in the working position.

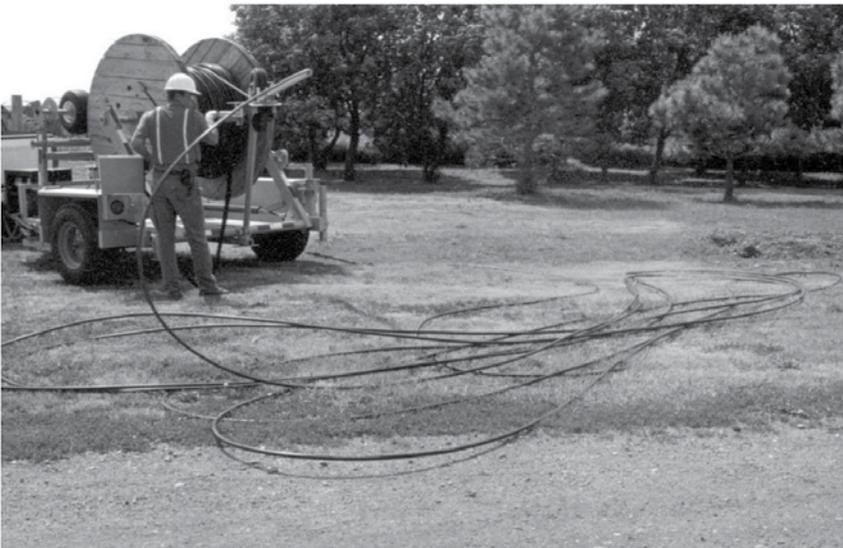


18. Take hold of the figure-8 device. Begin figure-8ing by operating the rotation lever and swinging the figure-8 device back and forth.

 **Warning!** Be sure to take a firm hold on the figure-8 device before operating rotation lever to prevent the figure-8 device from accidentally striking the operator.

 **Warning!** Do not swing the figure-8 device too far to the left or right. Rubbing the cable on the sides of the reel could cause serious damage to the cable.

 **Warning!** Always be aware of your location and that of the spinning reel while figure-8ing cable.



19. Pictured is a successful figure-8 result.

FIGURE-8 FORK ASSEMBLY

The figure-8 fork assembly consists of 3 pieces (2 poles and 1 fork) that snap together. As the photos illustrate, the figure-8 fork holds the cable off the pile to prevent twisting and tangling of the cable while rewinding the cable onto the reel.



LEVEL WINDING DEVICE

The level winding device holds the wire or cable in place while being rewound onto the reel. This eliminates the risk of operator injury associated with level winding manually.



1. The level winding device is stored on the passenger side fender of the trailer. Unpin the cylinder and remove the level winding device from the fender.



2. Fold out the right arm and place it in the center receiver hitch tube. Fold out the left arm and place it in the driver's side receiver hitch tube. Pin both arms in place.



3. Lift the roller arm. Using the same pins that held the cylinder in the fender rack, pin the cylinder. The back of the cylinder should rest at the bottom of the configuration.



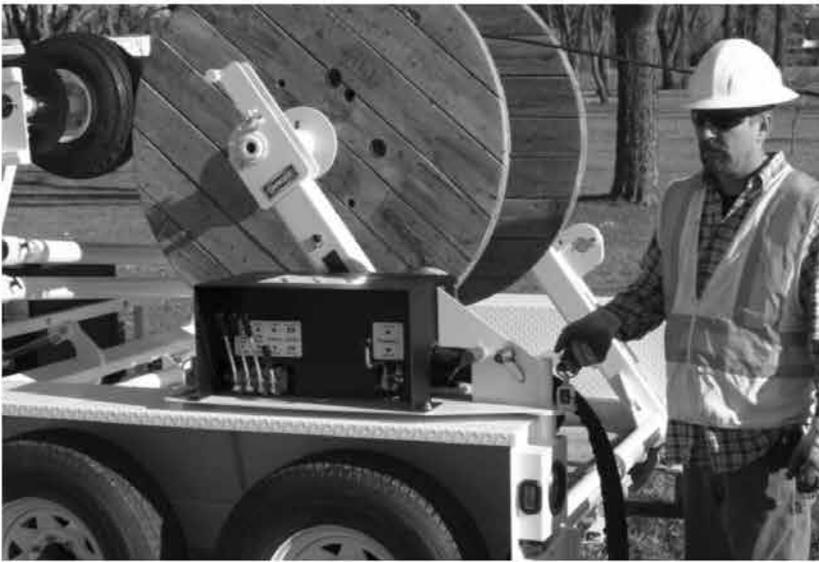
4. Adjust the roller arm to the desired height for the application.



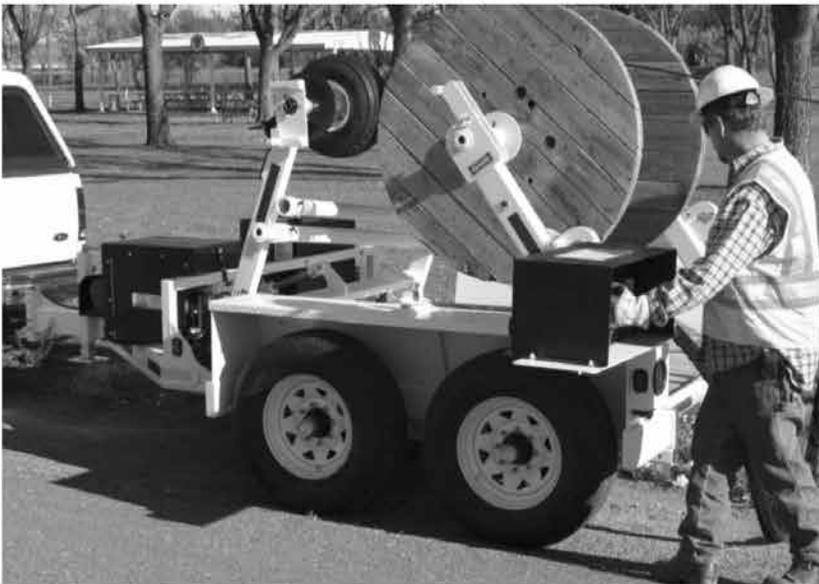
5. Pin in place.



6. Unlock the spring latch on the front of the valve table.



7. Unlock the spring latch on the back of the valve table.



8. Swing the control panel to the working position at the back of the trailer. Lock the spring latch.



9. Connect the hydraulic hoses to the auxiliary hydraulic connections next to the control panel. Either hose may be hooked up first.



10. Control the level winding device by operating the auxiliary lever on the control panel.

DUMPSTER



To attach the dumpster to the trailer:

1. Back the trailer into the lifting position. The lifting arms should extend along either side of the dumpster.
2. Attach the chains of the dumpster to the hooked collars on the lifting rack arbor. Do not tighten the set screws.



3. Load the dumpster using the reel rack lever.



4. Adjust the reel rack until the weight of the dumpster is resting on the bed of the trailer. This photo shows the dumpster properly loaded.



5. To use the dumpster as a dump box, attach chain (provided with dumpster) through the D-rings on the lower dumpster and through the chain hole in the gusset on the lower lifting arm of the trailer.



6. To empty the dumpster, push the reel rack lever to the lower position.



7. Once dumping is complete, return the dumpster to the upright position by pulling the reel rack lever.

LOADING RAMPS



An optional ramp storage unit with two loading ramps bolts easily under the trailer.

1. To remove the ramps, unhook the spring latch and slide the ramps out.



2. Hook the ramps on the bottom of the reel lifting rack at the rear of the trailer.

3. Ensure the trailer is securely attached to the transport vehicle before using the ramps for loading.

COLD WEATHER START KIT

The cold-weather start kit allows the engine to pump the hydraulic fluid through the recirculating loop until the engine has warmed up.



To operate the cold-weather start kit:

1. Turn the bypass valve to the open position. (This photo shows the closed position.)
2. Start the Honda engine. Allow the engine to warm up for 5 minutes.
3. **SLOWLY** close the bypass valve before operating your trailer. Closing the valve too quickly can stall the engine.
4. Allow the hydraulic system to warm up for 3 to 5 minutes.

PVC RACK

The PVC Rack allows the trailer to transport ten-foot pieces of PVC pipe.



1. Insert the mount into the receiver hitch.
2. Insert the PVC rack into the mount and insert the pin.

SIDE ROLLER

The side roller allows the conduit or cable to be pulled off the reel at a right angle without damaging the conduit.



1. Insert the mount into the receiver hitch.
2. Insert the side roller into the mount and insert the pin.

WARRANTY

LIMITED TWENTY-FOUR (24) MONTH WARRANTY FOR LARSON MODEL 7500 MOBILE CABLE DISPENSING SYSTEM

Larson Cable Trailers, Inc. hereinafter referred to as "Larson" warrants to the original purchaser that the products used on the mobile cable dispensing system will be free of defects in material and workmanship for a period of twenty-four (24) months from the date of purchase from Larson Cable Trailers, Inc. or its Authorized Sales Representative for a period of thirty-six (36) months from the production date, whichever period is shorter.

For customers within the continental United States, Larson's obligation under the warranty shall be limited to repair or replacement of the product or any of its parts, which upon examination by Larson show to be defective.

The purchaser shall return the product claimed to be defective to Larson with transportation charges prepaid by purchaser or, at Larson's option, make the product available for inspection by Larson. Larson shall, at its option, correct any defect either by repairing or replacing the defective article or by issuing a credit or refund for the purchase price. Repaired articles, or parts thereof, shall be returned to the purchaser, transportation charges prepaid by Larson, and shall be warranted for the remainder of the term of the original warranty on the article or ninety (90) days, whichever is longer.

If Larson denies the warranty claim, Larson shall notify the purchaser. Larson shall retain the item for thirty (30) day following such denial. During this period, the purchaser may at purchaser's expense take possession of the item. If purchaser does not take possession of the product within this period, Larson may dispose of the product as Larson deems fit.

For customers outside the continental United States, Larson's obligation under the warranty shall be limited to sending replacement parts, which upon determination by Larson show to be defective.

The warranty shall not apply to any article which has been subject to alteration, accident, abuse, misuse, or failure to follow Larson's instructions for operation and maintenance. Larson does not warranty products damaged by the use of anti-friction sealants. Larson shall also not be responsible for the normal wear and tear of all equipment and parts of the **Larson Mobile Cable Dispensing System (LMCDS)**.

LARSON CABLE TRAILERS, INC. EXPRESSLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

LARSON CABLE TRAILERS, INC. SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND.

This warranty shall constitute the sole remedy of the purchaser and the sole liability of Larson. Larson neither assumes nor authorizes any person to assume for it any other obligation or liability in connection with the sale of this product, and no person is authorized to amend, modify or extend this warranty in any way.

To make a claim under this warranty, write directly to:

LARSON CABLE TRAILERS, INC.

601 Lincoln Avenue NW
Huron, SD 57350

or contact directly:

Telephone: (605) 352-9336

Fax: (605) 352-5664

Identify the product and give its location. Larson will assess your claim and provide you with Return Goods Authorization instructions. For customers within the continental United States, Larson will make its best effort to repair or replace the product, if found to be defective within the terms of the warranty, within fifteen (15) days after following the return of the product to the company.

The construction and validity of this warranty shall be determined under the laws of the State of South Dakota.

Reporting Safety Defects

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Larson Cable Trailers, Inc.

If NHTSA receives similar complaints, it may open an investigation and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer and Larson Cable Trailers, Inc.

To contact NHTSA, you may either call the Auto Safety Hotline toll free at 1-888-327-4236 (TTY: 1-800-424-9153): go to <http://www.safercar.gov>; or Write to: NHTSA, US Department of Transportation, 1200 New Jersey SE, Washington , DC 20590. You can also obtain other information about motor vehicle safety from <http://www.safercar.gov>.

Tire Safety Information

1. TIRE SAFETY INFORMATION

This portion of the User's Manual contains tire safety information as required by 49 CFR 575.6.

Section 2.1 contains "Steps for Determining Correct Load Limit - Trailer".

Section 2.2 contains "Steps for Determining Correct Load Limit – Tow Vehicle".

Section 2.3 contains a Glossary of Tire Terminology, including "cold inflation pressure", "maximum inflation pressure", "recommended inflation pressure", and other non-technical terms.

Section 2.4 contains information from the NHTSA brochure entitled "Tire Safety – Everything Rides On It". This brochure, as well as the preceding subsections, describes the following items;

- Tire labeling, including a description and explanation of each marking on the tires, and information about the DOT Tire Identification Number (TIN).
- Recommended tire inflation pressure, including a description and explanation of:
 - A. Cold inflation pressure.
 - B. Vehicle Placard and location on the vehicle.
 - C. Adverse safety consequences of under inflation (including tire failure).
 - D. Measuring and adjusting air pressure for proper inflation.
- Tire Care, including maintenance and safety practices.
- Vehicle load limits, including a description and explanation of the following items:
 - A. Locating and understanding the load limit information, total load capacity, and cargo capacity.
 - B. Calculating total and cargo capacities with varying seating configurations including quantitative examples showing / illustrating how the vehicles cargo and luggage capacity decreases as combined number and size of occupants' increases. This item is also discussed in Section 3.
 - C. Determining compatibility of tire and vehicle load capabilities.
 - D. Adverse safety consequences of overloading on handling and stopping on tires.

1.1. STEPS FOR DETERMINING CORRECT LOAD LIMIT – TRAILER

Determining the load limits of a trailer includes more than understanding the load limits of the tires alone. On all trailers there is a Federal certification/VIN label that is located on the forward half of the left (road) side of the unit. This certification/VIN label will indicate the trailer's Gross Vehicle Weight Rating (GVWR). This is the most weight the fully loaded trailer can weigh. It will also provide the Gross Axle Weight Rating (GAWR). This is the most a particular axle can weigh. If there are multiple axles, the GAWR of each axle will be provided.

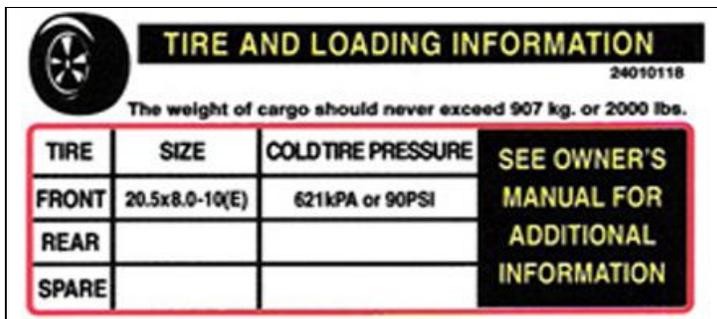
If your trailer has a GVWR of 10,000 pounds or less, there is a vehicle placard located in the same location as the certification label described above. This placard provides tire and loading information. In addition, this placard will show a statement regarding maximum cargo capacity. Cargo can be added to the trailer, up to the maximum weight specified on the placard. The combined weight of the cargo is provided as a single number. In any case, remember: the total weight of a fully loaded trailer can not exceed the stated GVWR.

For trailers with living quarters installed, the weight of water and propane also need to be considered. The weight of fully filled propane containers is considered part of the weight of the trailer before it is loaded with cargo, and is not considered part of the disposable cargo load. Water however, is a disposable cargo weight and is treated as such. If there is a fresh water storage tank of 100 gallons, this tank when filled would weigh about 800 pounds. If more cargo is being transported, water can be off-loaded to keep the total amount of cargo added to the vehicle within the limits of the GVWR so as not to overload the vehicle. Understanding this flexibility will allow you, the owner, to make choices that fit your travel needs.

When loading your cargo, be sure it is distributed evenly to prevent overloading front to back and side to side. Heavy items should be placed low and as close to the axle positions as reasonable. Too many items on one side may overload a tire. The best way to know the actual weight of the vehicle is to weigh it at a public scale. Talk to your dealer to discuss the weighing methods needed to capture the various weights related to the trailer. This would include the weight empty or unloaded, weights per axle, wheel, hitch or king-pin, and total weight.

Excessive loads and/or underinflation cause tire overloading and, as a result, abnormal tire flexing occurs. This situation can generate an excessive amount of heat within the tire. Excessive heat may lead to tire failure. It is the air pressure that enables a tire to support the load, so proper inflation is critical. The proper air pressure may be found on the certification/VIN label and/or on the Tire Placard. This value should never exceed the maximum cold inflation pressure stamped on the tire.

1.1.1. TRAILERS 10,000 POUNDS GVWR OR LESS



Tire and Loading Information Placard – Figure 1-1

1. Locate the statement, “The weight of cargo should never exceed XXX kg or XXX lbs.,” on your vehicle’s placard. See figure 1-1.
2. This figure equals the available amount of cargo and luggage load capacity.
3. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity.

The trailer’s placard refers to the Tire Information Placard attached adjacent to or near the trailer’s VIN (Certification) label at the left front of the trailer.

1.1.2. TRAILERS OVER 10,000 POUNDS GVWR (NOTE: THESE TRAILERS ARE NOT REQUIRED TO HAVE A TIRE INFORMATION PLACARD ON THE VEHICLE)

1. Determine the empty weight of your trailer by weighing the trailer using a public scale or other means. This step does not have to be repeated.
2. Locate the GVWR (Gross Vehicle Weight Rating) of the trailer on your trailer’s VIN (Certification) label.
3. Subtract the empty weight of your trailer from the GVWR stated on the VIN label. That weight is the maximum available cargo capacity of the trailer and may not be safely exceeded.

1.2. STEPS FOR DETERMINING CORRECT LOAD LIMIT – TOW VEHICLE

1. Locate the statement, “The combined weight of occupants and cargo should never exceed XXX lbs.,” on your vehicle’s placard.
2. Determine the combined weight of the driver and passengers who will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kilograms or XXX pounds.
4. The resulting figure equals the available amount of cargo and luggage capacity. For example, if the “XXX” amount equals 1400 lbs. and there will be five 150 lb. passengers in your vehicle, the amount of available cargo and luggage capacity is 650 lbs. (1400-750 (5 x 150) = 650 lbs.).
5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage capacity calculated in Step # 4.
6. If your vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult the tow vehicle’s manual to determine how this weight transfer reduces the available cargo and luggage capacity of your vehicle.

1.3. GLOSSARY OF TIRE TERMINOLOGY

Accessory weight

The combined weight (in excess of those standard items which may be replaced) of automatic transmission, power steering, power brakes, power windows, power seats, radio and heater, to the extent that these items are available as factory-installed equipment (whether installed or not).

Bead

The part of the tire that is made of steel wires, wrapped or reinforced by ply cords and that is shaped to fit the rim.

Bead separation

This is the breakdown of the bond between components in the bead.

Bias ply tire

A pneumatic tire in which the ply cords that extend to the beads are laid at alternate angles substantially less than 90 degrees to the centerline of the tread.

Carcass

The tire structure, except tread and sidewall rubber which, when inflated, bears the load.

Chunking

The breaking away of pieces of the tread or sidewall.

Cold inflation pressure

The pressure in the tire before you drive.

Cord

The strands forming the plies in the tire.

Cord separation

The parting of cords from adjacent rubber compounds.

Cracking

Any parting within the tread, sidewall, or inner liner of the tire extending to cord material.

CT

A pneumatic tire with an inverted flange tire and rim system in which the rim is designed with rim flanges pointed radially inward and the tire is designed to fit on the underside of the rim in a manner that encloses the rim flanges inside the air cavity of the tire.

Curb weight

The weight of a motor vehicle with standard equipment including the maximum capacity of fuel, oil, and coolant, and, if so equipped, air conditioning and additional weight optional engine.

Extra load tire

A tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire.

Groove

The space between two adjacent tread ribs.

Gross Axle Weight Rating

The maximum weight that any axle can support, as published on the Certification / VIN label on the front left side of the trailer. Actual weight determined by weighing each axle on a public scale, with the trailer attached to the towing vehicle.

Gross Vehicle Weight Rating

The maximum weight of the fully loaded trailer, as published on the Certification / VIN label. Actual weight determined by weighing trailer on a public scale, without being attached to the towing vehicle.

Hitch Weight

The downward force exerted on the hitch ball by the trailer coupler.

Innerliner

The layer(s) forming the inside surface of a tubeless tire that contains the inflating medium within the tire.

Innerliner separation

The parting of the innerliner from cord material in the carcass.

Intended outboard sidewall

The sidewall that contains a white-wall, bears white lettering or bears manufacturer, brand, and/or model name molding that is higher or deeper than the same molding on the other sidewall of the tire or the outward facing sidewall of an asymmetrical tire that has a particular side that must always face outward when mounted on a vehicle.

Light truck (LT) tire

A tire designated by its manufacturer as primarily intended for use on lightweight trucks or multipurpose passenger vehicles.

Load rating

The maximum load that a tire is rated to carry for a given inflation pressure.

Maximum load rating

The load rating for a tire at the maximum permissible inflation pressure for that tire.

Maximum permissible inflation pressure

The maximum cold inflation pressure to which a tire may be inflated.

Maximum loaded vehicle weight

The sum of curb weight, accessory weight, vehicle capacity weight, and production options weight.

Measuring rim

The rim on which a tire is fitted for physical dimension requirements.

Pin Weight

The downward force applied to the 5th wheel or gooseneck ball, by the trailer kingpin or gooseneck coupler.

Non-pneumatic rim

A mechanical device which, when a non-pneumatic tire assembly incorporates a wheel, supports the tire, and attaches, either integrally or separably, to the wheel center member and upon which the tire is attached.

Non-pneumatic spare tire assembly

A non-pneumatic tire assembly intended for temporary use in place of one of the pneumatic tires and rims that are fitted to a passenger car in compliance with the requirements of this standard.

Non-pneumatic tire

A mechanical device which transmits, either directly or through a wheel or wheel center member, the vertical load and tractive forces from the roadway to the vehicle, generates the tractive forces that provide the directional control of the vehicle and does not rely on the containment of any gas or fluid for providing those functions.

Non-pneumatic tire assembly

A non-pneumatic tire, alone or in combination with a wheel or wheel center member, which can be mounted on a vehicle.

Normal occupant weight

This means 68 kilograms (150 lbs.) times the number of occupants specified in the second column of Table I of 49 CFR 571.110.

Occupant distribution

The distribution of occupants in a vehicle as specified in the third column of Table I of 49 CFR 571.110.

Open splice

Any parting at any junction of tread, sidewall, or innerliner that extends to cord material.

Outer diameter

The overall diameter of an inflated new tire.

Overall width

The linear distance between the exteriors of the sidewalls of an inflated tire, including elevations due to labeling, decorations, or protective bands or ribs.

Ply

A layer of rubber-coated parallel cords.

Ply separation

A parting of rubber compound between adjacent plies.

Pneumatic tire

A mechanical device made of rubber, chemicals, fabric and steel or other materials, that, when mounted on an automotive wheel, provides the traction and contains the gas or fluid that sustains the load.

Production options weight

The combined weight of those installed regular production options weighing over 2.3 kilograms (5 lbs.) in excess of those standard items which they replace, not previously considered in curb weight or accessory weight, including heavy duty brakes, ride levelers, roof rack, heavy duty battery, and special trim.

Radial ply tire

A pneumatic tire in which the ply cords that extend to the beads are laid at substantially 90 degrees to the centerline of the tread.

Recommended inflation pressure

This is the inflation pressure provided by the vehicle manufacturer on the Tire Information label and on the Certification / VIN tag.

Reinforced tire

A tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire.

Rim

A metal support for a tire or a tire and tube assembly upon which the tire beads are seated.

Rim diameter

This means the nominal diameter of the bead seat.

Rim size designation

This means the rim diameter and width.

Rim type designation

This means the industry of manufacturer's designation for a rim by style or code.

Rim width

This means the nominal distance between rim flanges.

Section width

The linear distance between the exteriors of the sidewalls of an inflated tire, excluding elevations due to labeling, decoration, or protective bands.

Sidewall

That portion of a tire between the tread and bead.

Sidewall separation

The parting of the rubber compound from the cord material in the sidewall.

Special Trailer (ST) tire

The "ST" is an indication the tire is for trailer use only.

Test rim

The rim on which a tire is fitted for testing, and may be any rim listed as appropriate for use with that tire.

Tread

That portion of a tire that comes into contact with the road.

Tread rib

A tread section running circumferentially around a tire.

Tread separation

Pulling away of the tread from the tire carcass.

Treadwear indicators (TWI)

The projections within the principal grooves designed to give a visual indication of the degrees of wear of the tread.

Vehicle capacity weight

The rated cargo and luggage load plus 68 kilograms (150 lbs.) times the vehicle's designated seating capacity.

Vehicle maximum load on the tire

The load on an individual tire that is determined by distributing to each axle its share of the maximum loaded vehicle weight and dividing by two.

Vehicle normal load on the tire

The load on an individual tire that is determined by distributing to each axle its share of the curb weight, accessory weight, and normal occupant weight (distributed in accordance with Table I of CRF 49 571.110) and dividing by 2.

Weather side

The surface area of the rim not covered by the inflated tire.

Wheel center member

In the case of a non-pneumatic tire assembly incorporating a wheel, a mechanical device which attaches, either integrally or separably, to the non-pneumatic rim and provides the connection between the non-pneumatic rim and the vehicle; or, in the case of a non-pneumatic tire assembly not incorporating a wheel, a mechanical device which attaches, either integrally or separably, to the non-pneumatic tire and provides the connection between tire and the vehicle.

Wheel-holding fixture

The fixture used to hold the wheel and tire assembly securely during testing.

1.4. TIRE SAFETY - EVERYTHING RIDES ON IT

The National Traffic Safety Administration (NHTSA) has published a brochure (DOT HS 809 361) that discusses all aspects of Tire Safety, as required by CFR 575.6. This brochure is reproduced in part below. It can be obtained and downloaded from NHTSA, free of charge, from the following web site:

http://www.nhtsa.dot.gov/cars/rules/TireSafety/ridesonit/tires_index.html

Studies of tire safety show that maintaining proper tire pressure, observing tire and vehicle load limits (not carrying more weight in your vehicle than your tires or vehicle can safely handle), avoiding road hazards, and inspecting tires for cuts, slashes, and other irregularities are the most important things you can do to avoid tire failure, such as tread separation or blowout and flat tires. These actions, along with other care and maintenance activities, can also:

- Improve vehicle handling
- Help protect you and others from avoidable breakdowns and accidents
- Improve fuel economy
- Increase the life of your tires.

This booklet presents a comprehensive overview of tire safety, including information on the following topics:

- Basic tire maintenance
- Uniform Tire Quality Grading System
- Fundamental characteristics of tires

- Tire safety tips.

Use this information to make tire safety a regular part of your vehicle maintenance routine. Recognize that the time you spend is minimal compared with the inconvenience and safety consequences of a flat tire or other tire failure.

1.5. SAFETY FIRST—BASIC TIRE MAINTENANCE

Properly maintained tires improve the steering, stopping, traction, and load-carrying capability of your vehicle. Underinflated tires and overloaded vehicles are a major cause of tire failure. Therefore, as mentioned above, to avoid flat tires and other types of tire failure, you should maintain proper tire pressure, observe tire and vehicle load limits, avoid road hazards, and regularly inspect your tires.

1.5.1. FINDING YOUR VEHICLE'S RECOMMENDED TIRE PRESSURE AND LOAD LIMITS

Tire information placards and vehicle certification labels contain information on tires and load limits. These labels indicate the vehicle manufacturer's information including:

- Recommended tire size
- Recommended tire inflation pressure
- Vehicle capacity weight (VCW—the maximum occupant and cargo weight a vehicle is designed to carry)
- Front and rear gross axle weight ratings (GAWR—the maximum weight the axle systems are designed to carry).

Both placards and certification labels are permanently attached to the trailer near the left front.

1.5.2. UNDERSTANDING TIRE PRESSURE AND LOAD LIMITS

Tire inflation pressure is the level of air in the tire that provides it with load-carrying capacity and affects the overall performance of the vehicle. The tire inflation pressure is a number that indicates the amount of air pressure—measured in pounds per square inch (psi)—a tire requires to be properly inflated. (You will also find this number on the vehicle information placard expressed in kilopascals (kpa), which is the metric measure used internationally.)

Manufacturers of passenger vehicles and light trucks determine this number based on the vehicle's design load limit, that is, the greatest amount of weight a vehicle can safely carry and the vehicle's tire size. The proper tire pressure for your vehicle is referred to as the "recommended cold inflation pressure." (As you will read below, it is difficult to obtain the recommended tire pressure if your tires are not cold.)

Because tires are designed to be used on more than one type of vehicle, tire manufacturers list the "maximum permissible inflation pressure" on the tire sidewall. This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

1.5.3. CHECKING TIRE PRESSURE

It is important to check your vehicle's tire pressure at least once a month for the following reasons:

- Most tires may naturally lose air over time.
- Tires can lose air suddenly if you drive over a pothole or other object or if you strike the curb when parking.
- With radial tires, it is usually not possible to determine underinflation by visual inspection.

For convenience, purchase a tire pressure gauge to keep in your vehicle. Gauges can be purchased at tire dealerships, auto supply stores, and other retail outlets.

The recommended tire inflation pressure that vehicle manufacturers provide reflects the proper psi when a tire is cold. The term cold does not relate to the outside temperature. Rather, a cold tire is one that has not been driven on for at least three hours. When you drive, your tires get warmer, causing the air pressure within them to increase. Therefore, to get an accurate tire pressure reading, you must measure tire pressure when the tires are cold or compensate for the extra pressure in warm tires.

1.5.4. STEPS FOR MAINTAINING PROPER TIRE PRESSURE

- Step 1: Locate the recommended tire pressure on the vehicle's tire information placard, certification label, or in the owner's manual.
- Step 2: Record the tire pressure of all tires.
- Step 3: If the tire pressure is too high in any of the tires, slowly release air by gently pressing on the tire valve stem with the edge of your tire gauge until you get to the correct pressure.
- Step 4: If the tire pressure is too low, note the difference between the measured tire pressure and the correct tire pressure. These "missing" pounds of pressure are what you will need to add.
- Step 5: At a service station, add the missing pounds of air pressure to each tire that is underinflated.
- Step 6: Check all the tires to make sure they have the same air pressure (except in cases in which the front and rear tires are supposed to have different amounts of pressure).

If you have been driving your vehicle and think that a tire is underinflated, fill it to the recommended cold inflation pressure indicated on your vehicle's tire information placard or certification label. While your tire may still be slightly underinflated due to the extra pounds of pressure in the warm tire, it is safer to drive with air pressure that is slightly lower than the vehicle manufacturer's recommended cold inflation pressure than to drive with a significantly underinflated tire. Since this is a temporary fix, don't forget to recheck and adjust the tire's pressure when you can obtain a cold reading.

1.5.5. TIRE SIZE

To maintain tire safety, purchase new tires that are the same size as the vehicle's original tires or another size recommended by the manufacturer. Look at the tire information placard, the owner's manual, or the sidewall of the tire you are replacing to find this information. If you have any doubt about the correct size to choose, consult with the tire dealer.

1.5.6. TIRE TREAD

The tire tread provides the gripping action and traction that prevent your vehicle from slipping or sliding, especially when the road is wet or icy. In general, tires are not safe and should be replaced when the tread is worn down to 1/16 of an inch. Tires have built-in treadwear indicators that let you know when it is time to replace your tires. These indicators are raised sections spaced intermittently in the bottom of the tread grooves. When they appear "even" with the outside of the tread, it is time to replace your tires. Another method for checking tread depth is to place a penny in the tread with Lincoln's head upside down and facing you. If you can see the top of Lincoln's head, you are ready for new tires.

1.5.7. TIRE BALANCE AND WHEEL ALIGNMENT

To avoid vibration or shaking of the vehicle when a tire rotates, the tire must be properly balanced. This balance is achieved by positioning weights on the wheel to counterbalance heavy spots on the wheel-and-tire assembly. A wheel alignment adjusts the angles of the wheels so that they are positioned correctly relative to the vehicle's frame. This adjustment maximizes the life of your tires. These adjustments require special equipment and should be performed by a qualified technician.

1.5.8. TIRE REPAIR

The proper repair of a punctured tire requires a plug for the hole and a patch for the area inside the tire that surrounds the puncture hole. Punctures through the tread can be repaired if they are not too large, but punctures to the sidewall should not be repaired. Tires must be removed from the rim to be properly inspected before being plugged and patched.

1.5.9. TIRE FUNDAMENTALS

Federal law requires tire manufacturers to place standardized information on the sidewall of all tires. This information identifies and describes the fundamental characteristics of the tire and also provides a tire identification number for safety standard certification and in case of a recall.

Tire Safety Information

Letter Rating	Speed Rating
Q	99 mph
R	106 mph
S	112 mph
T	118 mph
U	124 mph
H	130 mph
V	149 mph
W	168* mph
Y	186* mph

* For tires with a maximum speed capability over 149 mph, tire manufacturers sometimes use the letters ZR. For those with a maximum speed capability over 186 mph, tire manufacturers always use the letters ZR.

U.S. DOT Tire Identification Number

This begins with the letters "DOT" and indicates that the tire meets all federal standards. The next two numbers or letters are the plant code where it was manufactured, and the last four numbers represent the week and year the tire was built. For example, the numbers 3197 means the 31st week of 1997. The other numbers are marketing codes used at the manufacturer's discretion. This information is used to contact consumers if a tire defect requires a recall.

Tire Ply Composition and Materials Used

The number of plies indicates the number of layers of rubber-coated fabric in the tire. In general, the greater the number of plies, the more weight a tire can support. Tire manufacturers also must indicate the materials in the tire, which include steel, nylon, polyester, and others.

Maximum Load Rating

This number indicates the maximum load in kilograms and pounds that can be carried by the tire.

Maximum Permissible Inflation Pressure

This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

1.5.9.2. UTQGS Information

Treadwear Number

This number indicates the tire's wear rate. The higher the treadwear number is, the longer it should take for the tread to wear down. For example, a tire graded 400 should last twice as long as a tire graded 200.

Traction Letter

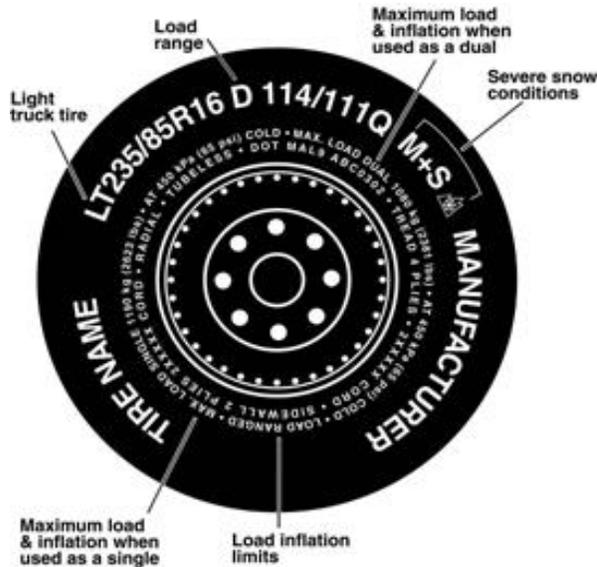
This letter indicates a tire's ability to stop on wet pavement. A higher graded tire should allow you to stop your car on wet roads in a shorter distance than a tire with a lower grade. Traction is graded from highest to lowest as "AA", "A", "B", and "C".

Temperature Letter

This letter indicates a tire's resistance to heat. The temperature grade is for a tire that is inflated properly and not overloaded. Excessive speed, underinflation or excessive loading, either separately or in combination, can cause heat build-up and possible tire failure. From highest to lowest, a tire's resistance to heat is graded as "A", "B", or "C".

1.5.9.3. Additional Information on Light Truck Tires

Please refer to the following diagram.



Tires for light trucks have other markings besides those found on the sidewalls of passenger tires.

LT

The "LT" indicates the tire is for light trucks or trailers.

ST

An "ST" is an indication the tire is for trailer use only.

Max. Load Dual kg (lbs) at kPa (psi) Cold

This information indicates the maximum load and tire pressure when the tire is used as a dual, that is, when four tires are put on each rear axle (a total of six or more tires on the vehicle).

Max. Load Single kg (lbs) at kPa (psi) Cold

This information indicates the maximum load and tire pressure when the tire is used as a single.

Load Range

This information identifies the tire's load-carrying capabilities and its inflation limits.

1.6. TIRE SAFETY TIPS

Preventing Tire Damage

- Slow down if you have to go over a pothole or other object in the road.
- Do not run over curbs or other foreign objects in the roadway, and try not to strike the curb when parking.

Tire Safety Checklist

- Check tire pressure regularly (at least once a month), including the spare.
- Inspect tires for uneven wear patterns on the tread, cracks, foreign objects, or other signs of wear or trauma.
- Remove bits of glass and foreign objects wedged in the tread.
- Make sure your tire valves have valve caps.
- Check tire pressure before going on a long trip.
- Do not overload your vehicle. Check the Tire Information and Loading Placard or User's Manual for the maximum recommended load for the vehicle.



Distributor's Limited Warranty

Honda General Purpose Engines

This warranty is limited to Honda general purpose engines distributed by American Honda Motor Co., Inc., Power Equipment Division, 4900 Marconi Drive, Alpharetta, Georgia 30005. The following warranty applies to engines purchased at retail or placed into rental service on or after January 1, 2009.

PRODUCTS COVERED BY THIS WARRANTY:	LENGTH OF WARRANTY: (FROM DATE OF ORIGINAL PURCHASE)	
	PRIVATE RESIDENTIAL ⁽³⁾	COMMERCIAL/RENTAL/INSTITUTIONAL
GX & GXV Series Engines (except models listed below)	36 months	36 months ⁽¹⁾
GXV140, GXV160	24 months	24 months
GX22, GX25, GX31, GX35, GXH50, GXV50, GXV57, GS & GSV Series Engines	24 months	12 months ⁽²⁾
GC & GCV Series	24 months	3 months ⁽²⁾

- Honda GX and GXV general purpose engines installed in concession-type vehicles are covered by this warranty for a period of 12 months from the date of original retail purchase.
- Honda GC/GS and GCV/GSV general purpose engines are not covered by this warranty when installed on concession type vehicles.
- Private Residential: Used in maintaining owner's primary and/or secondary residence. Any other use, including but not limited to informal "for hire" use, is considered commercial/rental/institutional use.

To Qualify for this Warranty:

The Honda general purpose engine must be purchased from a Honda general purpose engine dealer authorized to sell that product in the United States, Puerto Rico, or the U.S. Virgin Islands. This limited warranty applies to the first retail purchaser and each subsequent owner during the applicable warranty time period.

What American Honda Will Repair or Replace Under Warranty:

American Honda will repair or replace, at its option, any part that is proven to be defective in material or workmanship under normal use during the applicable warranty time period. Warranty repairs and replacements will be made without charge for parts or labor. Anything replaced under warranty becomes the property of American Honda Motor Company, Inc. All parts replaced under warranty will be considered as part of the original product and any warranty on those parts will expire coincident with the original product warranty.

To Obtain Warranty Service:

You must take your Honda general purpose engine, or the equipment in which it is installed, together with proof of original retail purchase date, at your expense, to a Honda engine dealer authorized to sell that product in the United States, Puerto Rico, or the U.S. Virgin Islands, during their normal business hours. To locate a dealer near you, visit our web site at <http://engines.honda.com> and click on FIND A DEALER.

If you are unable to obtain warranty service, or are dissatisfied with the warranty service you receive, take the following steps: First, contact the owner of the dealership involved; normally this should resolve the problem. However, if you should require further assistance, write or call the Power Equipment Customer Relations Department of American Honda Motor Co., Inc.

American Honda Motor Co., Inc.
Power Equipment Customer Relations Department
4900 Marconi Drive
Alpharetta, Georgia 30005-8847
Telephone: (770) 497-6400

Exclusions:

This engine warranty does not include the following:

- Any damage or deterioration resulting from the following:
 - Neglect of the periodic maintenance as specified in the engine owner's manual
 - Improper repair or maintenance
 - Operating methods other than those indicated in the engine owner's manual
 - Damage caused by the product on which the engine is installed
 - Damage caused by conversion to, or use of, fuel other than the fuel(s) that the engine was originally manufactured to use, as set forth in the engine owner's manual and/or warranty booklet
 - The use of non-genuine Honda parts and accessories, other than those approved by Honda (other than recommended lubricants and fluids) (does not apply to the emissions warranty unless non-genuine part used is not comparable to Honda part and was cause of the failure)
 - Exposure of the product to soot and smoke, chemical agents, bird droppings, sea water, salt, or other corrosive environments
 - Collision, fuel contamination or deterioration, neglect, unauthorized alteration, or misuse
 - Natural wear and tear (natural fading of painted or plated surfaces, sheet peeling and other natural deterioration)
- Consumable parts: Honda does not warrant parts deterioration due to normal wear and tear. The parts listed below are not covered by warranty (unless they are needed as a part of another warranty repair):
 - Spark plug, fuel filter, air cleaner element, clutch disc, recoil starter rope
 - Lubricant: oil and grease
- Cleaning, adjustment, and normal periodic maintenance work (carburetor cleaning and engine oil draining).
- Use of the Honda general purpose engine for racing or competition.
- Any engine that is part of a product that has ever been declared a total loss or sold for salvage by a financial institution or insurer.

Disclaimer of Consequential Damage and Limitation of Implied Warranties:

American Honda disclaims any responsibility for loss of time or use of the engine, or the equipment in which the engine is installed, transportation, commercial loss, or any other incidental or consequential damage. Any implied warranties are limited to the duration of this written limited warranty. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusions and limitations may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

American Honda Motor Co., Inc.

August 2015

Page 1 of 2

PWL50372P.2015.08



Distributor's Limited Warranty Accessories, Replacement Parts, and Apparel

This warranty is limited to Honda Power Equipment parts, accessories, and apparel when distributed by American Honda Motor Co., Inc., 4900 Marconi Drive, Alpharetta, Georgia 30005-8847.

PRODUCTS COVERED BY WARRANTY:	LENGTH OF WARRANTY: (FROM DATE OF ORIGINAL RETAIL PURCHASE)	
	PRIVATE RESIDENTIAL	COMMERCIAL/RENTAL/INSTITUTIONAL
Accessories	12 months	3 months
Replacement Parts	6 months	3 months
Apparel	6 months	3 months

To Qualify for this Warranty:

- The accessories, replacement parts, or apparel must be purchased from American Honda or a dealer authorized by American Honda to sell those products in the United States, Puerto Rico, and the U.S. Virgin Islands. Parts and Accessories must be purchased for installation on original Honda equipment or engines to be eligible for warranty coverage. Installing Parts and Accessories on non-Honda products or engines voids this warranty.
- You must be the first retail purchaser. This warranty is not transferable to subsequent owners.

What American Honda Will Repair or Replace Under Warranty:

American Honda will repair or replace, at its option, any Honda General Purpose Engine accessories, replacement parts, or apparel that are proven to be defective in material or workmanship under normal use during the applicable warranty time period. Anything replaced under warranty becomes the property of American Honda Motor Company, Inc. All parts replaced under warranty will be considered as part of the original product, and any warranty on those parts will expire coincident with the original product warranty.

Accessories and replacement parts installed by a dealer who is authorized by American Honda to sell them will be repaired or replaced under warranty without charge for parts or labor. If installed by anyone else, accessories and replacement parts will be repaired or replaced under warranty without charge for parts, but any labor charges will be the responsibility of the purchaser.

Apparel will be repaired or replaced under warranty without any charge.

To Obtain Warranty Service:

You must take the Honda General Purpose Engine accessory, replacement part, apparel, or the Honda general purpose engine on which the accessory or replacement part is installed, and proof of purchase, at your expense, to any Honda General Purpose Engine dealer in the United States, Puerto Rico, or the U.S. Virgin Islands who is authorized to sell that product, during the dealer's normal business hours. If you are unable to obtain warranty service, or are dissatisfied with the warranty service you receive, take the following steps: first, contact the owner of the dealership involved; normally this will resolve the problem. However, if you should require further assistance, write or call the Power Equipment Customer Relations Department of American Honda Motor Co., Inc.

American Honda Motor Co., Inc.
Power Equipment Customer Relations Department
4900 Marconi Drive
Alpharetta, Georgia 30005-8847
Telephone: (770) 497-6400

Exclusions:

This warranty does not extend to accessories, parts, or apparel affected or damaged by collision, normal wear, use in an application for which the product was not designed, or any other misuse, neglect, incorporation or use of unsuitable attachments or parts, unauthorized alteration, improper installation, or any causes other than defects in material or workmanship of the product. Installing Parts and Accessories on non-Honda products or engines voids this warranty.

Disclaimer of Consequential Damage and Limitation of Implied Warranties:

American Honda disclaims any responsibility for loss of time or use of the product, or the power equipment on which the product is installed, transportation, commercial loss, or any other incidental or consequential damage. Any implied warranties are limited to the duration of this written warranty. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusions and limitations may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.