

# TRAIL KING SERVICE

## Maintenance HD-S (Hydraulic Detachable Steering Trailer)

### MAINTENANCE OPERATIONS ON THE STEERING SYSTEM

- The steering system is a safety-critical system. Carry out the maintenance procedures carefully.



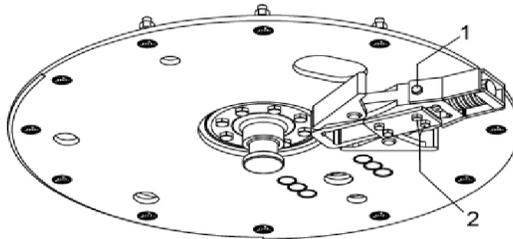
• **NOTE** • Failure to work carefully may result in damage and/or an accident.

- Chock the wheels of the trailer safely when working underneath it.
- Place solid blocks under the trailer when carrying out work involving the removal of wheels.
- When installing/removing heavy components, use hoisting equipment or safely support them.
- Avoid unnecessary contact with oil and lubricants.
- Apply protective lotion to unprotected body parts.
- Use only original parts for maintenance and repair purposes.

### TECHNICAL DATA

Suitable for a fifth wheel steering wedge angle of: 40 degrees to 58 degrees 8' 18"

#### Tightening Torques:



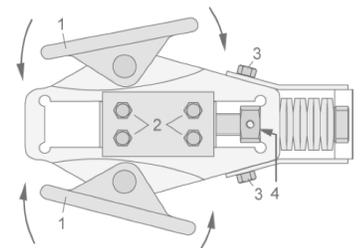
Pos	Quant.	Size	Qual.	Description	Tightening torque
1	2	M10x16	8.8	Bolts for cover plate, adjustable steering wedge	45 Nm *)
2	4	M10x20	8.8	Bolts for attachment plate, adjustable steering wedge	45 Nm *)

\*) Apply Loctite 243 (blue) or an equivalent product to the bolt threads.

#### STEERING WEDGE MAINTENANCE:

**Inspection:** Check the general condition of:

- Steering wedge
- Both adjusting blocks (1) must pivot easily
- The bolts (2 and 3) must be securely tightened.
- The setback nut (4) must contact the end (3 mm gap when coupled).



**Figure 2. Check**

#### Lubrication:

- The adjustable steering wedge does not require any special maintenance.

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### STEERING WEDGE REPAIRS

#### STEERING WEDGE REPLACEMENT

- Remove the socket-head screw (4) from the set-back nut (3).
- Remove the two bolts (9) and take the retaining cap (10) off the steering wedge housing (7).
- Completely unscrew (anti-clockwise) the adjustment block (11). While doing so, be sure not to lose the setback nut (3) and the Belleville spring washers (8).
- Support the steering wedge housing (7) and remove the four hex bolts (13) and the cover plate (12).
- Remove the housing (7) with both adjusting blocks (6) from the turntable plate.

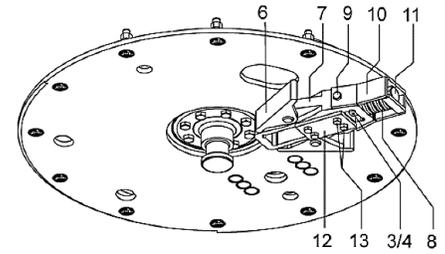


Figure 3. Replacing the steering wedge

#### STEERING WEDGE INSTALLATION

- Clean the glide block for the steering wedge, which is welded to the bottom of the turntable plate.
- Lightly lubricate the sliding surfaces of the glide block and the sliding surfaces in the housing of the steering wedge with copper anti-seize.
- Assemble the housing (7) with the adjusting blocks and the pivot pins (lubricate all moving parts with copper anti-seize).
- Slide the housing (7) with the pre-installed adjusting blocks over the guide block and against the turntable plate.
- Hold the steering wedge housing (7) in position against the bottom of the turntable plate.
  - Lightly lubricate the sliding surface of the cover plate (12) with copper anti-seize.
- Apply Loctite 243 or a similar product to the attachment bolts (13).
- – Attach the cover plate (12) with the four bolts (13) and tighten them to 45 Nm.
- Turn the set-back nut (3) on the adjustment bolt (11) by hand until the Belleville spring washers (8) are held in place firmly.
- Drill a 6.8 mm diameter hole 16 mm deep into the setback nut (3) and the adjustment bolt (11).
- Tap M8 thread in the hole you have just drilled in the setback nut.
- Use the M8x16 socket-head bolt (4) to secure the set-back nut (3) to the shoulder of the adjustment bolt (11).

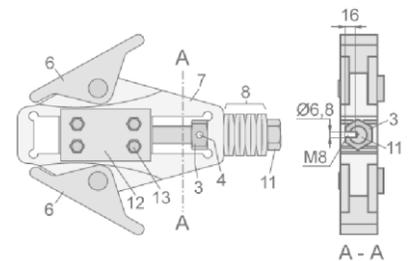
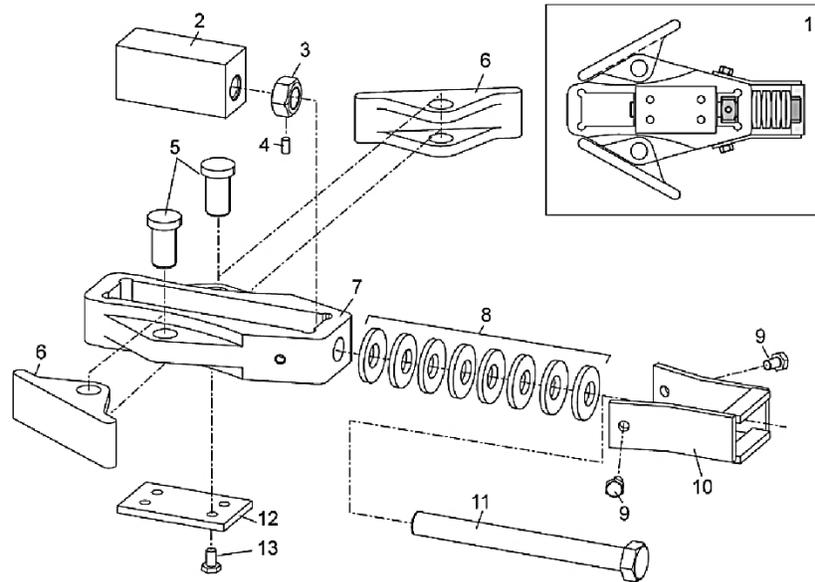


Figure 4. Securing the setback nut to the adjustment bolt.

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### STEERING WEDGE PARTS:



Pos.	Quant.	Number	Name	Note
1	1	206378	Adjustable steering wedge, complete	
2	1	-	Glide block (welded to the turntable plate)	
3	1	311010	Set-back nut	M24 8.8
4	1	311008	Socket-head screw	M8x16 8.8
5	2	206397	Pivot pin	L=61
6	2	206379	Adjusting block	172x59
7	1	206380	Housing, steering wedge	
8	8	311013	Belleville spring washer	H7.54 DIN 6796
9	2	311084	Hex bolt	M10x16 8.8
10	1	206404	Retaining cap	
11	1	311014	Adjusting screw	M24x240 8.8
12	1	206403	Retaining plate	
13	4	311083	Hex bolt	M10x20 8.8

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## Maintenance HD-S (Hydraulic Detachable Steering Trailer)

### TROUBLE SHOOTING – STEERING

Problem	Possible cause
<b>Trailer doesn't maintain track with truck</b>	<ol style="list-style-type: none"> <li>1. low steering circuit pressure</li> <li>1. kingpin wedge not tight</li> <li>2. alignment of axles to kingpin is off</li> <li>3. air introduced into system/ cycle air out</li> <li>4. worn steering components</li> <li>5. failed cylinder</li> </ol>
<b>Trailer doesn't steer off Kingpin</b>	<ol style="list-style-type: none"> <li>1. kingpin wedge not tight</li> <li>2. hydraulic connections not properly connected</li> <li>3. manual override in manual position</li> <li>4. failed cylinder</li> <li>5. Inspect for failed steering component(s)</li> </ol>
<b>Trailer doesnt steer manually</b>	<ol style="list-style-type: none"> <li>1. confirm SCU is running, bypass valve is closed and all hydraulics are connected.</li> <li>2. confirm trailer brakes are released</li> <li>3. check blue light illuminated after engaging wireless power switch</li> <li>4. check green manual steering activated light illuminated at gooseneck (see manual steer instructions)</li> <li>5. confirm transmitter is powered on</li> <li>6. properly charged batteries in transmitter</li> <li>7. confirm trailer steers with pendant remote</li> <li>8. confirm communication between transmitter and remote</li> <li>9. verify solenoid lights are activating when steering button(s) is pressed</li> <li>10. verify bleed off valve is closed</li> <li>11. temporarily manually actuate steering bypass valve. Test to see if manual steering works.</li> </ol>
<b>System not maintaining pressure</b>	<ol style="list-style-type: none"> <li>1. ambient temperature change (recharge system)</li> <li>2. debris holding short cicuit/s valve open</li> <li>3. cylinder(s) leaking internally</li> </ol>
<b>System not building pressure</b>	<ol style="list-style-type: none"> <li>1. psi bleed off valve open</li> <li>2. faulty steering bypass valve</li> <li>3. debris in steering solenoid/s</li> <li>4. weak/failed scu pump</li> <li>5. system low on oil</li> </ol>

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### TROUBLE SHOOTING – HYDRAULICS

Problem	Possible cause
<b>The neck flip extension will not flip properly.</b>	<ol style="list-style-type: none"> <li>1. worn/damaged linkage/pins</li> <li>2. weak/worn SCU pump. must be 3,000 PSI</li> <li>3. faulty cylinder</li> </ol>
<b>Gooseneck lift arm drifts</b>	<ol style="list-style-type: none"> <li>1. faulty cylinder</li> <li>2. faulty valve section</li> </ol>
<b>Gooseneck will not lift bed</b>	<ol style="list-style-type: none"> <li>1. confirm SCU is running, bypass valve is closed and all hydraulics are connected. check with Harold for naming convention</li> <li>2. overloaded capacity or too concentrated to front of trailer</li> <li>3. relief setting to 3,000 PSI</li> <li>4. steering bypass valve engaged manually or stuck closed</li> <li>5. weak/worn scu pump.</li> <li>6. faulty cylinder</li> <li>7. faulty valve section</li> </ol>

### TROUBLE SHOOTING – SUSPENSION

Problem	Possible cause
<b>Suspension is not operating properly</b>	<ol style="list-style-type: none"> <li>1. air not released in the truck</li> <li>2. air lines not coupled properly</li> <li>3. the pressure protection valve failed</li> <li>4. the leveling valve failed or is out of adjustment</li> <li>5. controls in manual mode</li> <li>6. one or more control valves failed</li> </ol>

### TROUBLE SHOOTING -LIGHTS

Problem	Possible cause
<b>Strobe lights don't operate</b>	<ol style="list-style-type: none"> <li>1. no power from the tow vehicle on 7 way center pin plug (blue circuit)</li> <li>2. failed toggle switch</li> <li>3. faulty wiring</li> <li>4. faulty light</li> </ol>
<b>DOT lights are not working</b>	<ol style="list-style-type: none"> <li>1. no power from the tow vehicle on 7 way per circuit required</li> <li>2. faulty wiring</li> <li>3. failed light</li> </ol>

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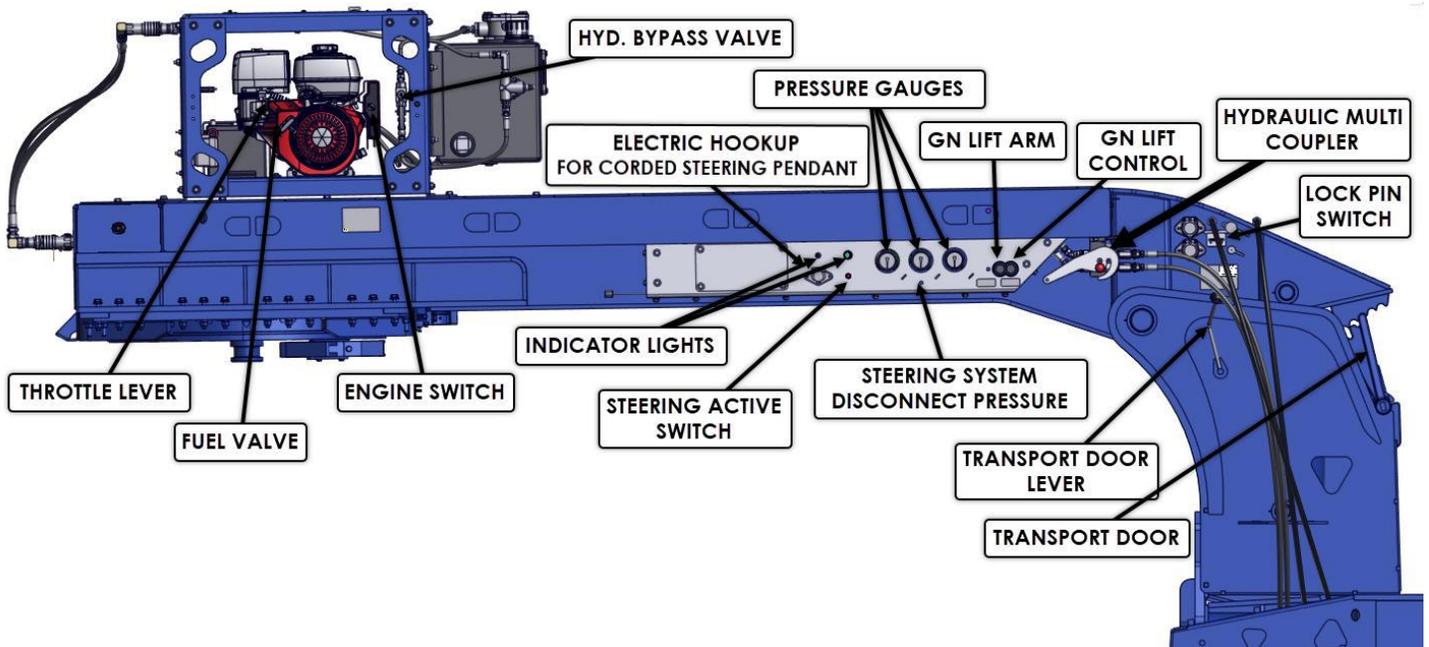
### TROUBLE SHOOTING – LIFT AXLE

Lift axle doesn't latch	1. air not dumped to catch the latch 2. switch not in correct position
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### TROUBLE SHOOTING – KINGPIN ENGAGEMENT

Kingpin doesn't couple	1. verify wedge is in back position
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### GOOSENECK CONTROL LOCATIONS (AS APPLICABLE)



# TRAIL KING SERVICE

## Maintenance HD-S (Hydraulic Detachable Steering Trailer)



Wiring Instructions for 92 Series & 93 Series 2 & 4 Function Receivers



92 04 RX STX01E

### 1 BEFORE YOU START

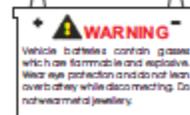
- The Receiver is designed to carry a maximum of 15 Amps. That is, for example, 15 Amps through one output or 5 Amps each through 3 outputs.
- Master Output. This can be configured to Continuous or Parallel operation, see overleaf for details.
- If Receiver outputs are connected in parallel with an external switching device (wired remote) the Receiver will instantly switch off when the wired remote is operated
- Lodnar Receivers **MUST** have an **isolation switch** for safety, to allow for registering a replacement Transmitter.
- Safety Feature. Both the Transmitter and the Receiver will "time out" after 30 minutes of inactivity. This can be altered, ask your dealer.

### 2 IDENTIFY POWER CONNECTION POINT AND ISOLATE SUPPLY

Remove fuse



or Disconnect Battery



### 3 MOUNT RECEIVER



TAKE TIME TO LOCATE THE BEST POSITION

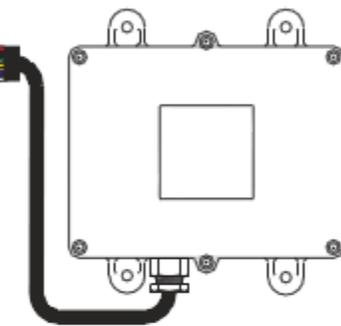
If necessary, power the Receiver and move it around the vehicle until the required performance is achieved. Operate the Transmitter and observe the Receiver internal LED's.

Mount as **HIGH** as possible  
**AVOID** surfaces with **HEAVY VIBRATION**  
**AVOID DIRECT SPRAY** from wheels  
 In a **HOT CLIMATE** fit in a **SHADED** position  
 Cable gland should face **DOWN** or **BACK**

Receiver 92 04 RX and 93 04 RX shown,  
 Waterproof to IP67, complete with 3 metres (10 ft) cables



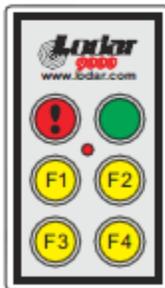
POSITIVE  
 NEGATIVE



Secure using 5mm (3/16") bolts (not supplied) through the 4 mounting feet

### 4 CONNECT WIRES

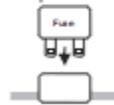
Transmitter Function I.D.



RECEIVER WIRES for given Transmitter Operation			
WIRE COLOUR	FUNCTION	9200 9300	9204 9302 9304
RED	12 to 36 Volts DC Positive	YES	YES
BLACK	Negative	YES	YES
GREEN	Output F1	YES	YES
YELLOW	Output F2	YES	YES
BROWN	Output F3	NOT AVAILABLE	NOT USED
BLUE	Output F4	NOT AVAILABLE	NOT USED
WHITE	Master Output	NOT AVAILABLE	YES

### 5 ACTIVATE SUPPLY

Replace fuse



or re-connect Battery

### 6 CONNECT TRANSMITTER BATTERY

Batteries generally have to be disconnected when shipping.



Your product is marked with this symbol. It means that used electrical and electronic products should not be mixed with general household waste. There is a separate collection system for these products.  
**In the EEC** - Please contact your National Distributor (see [www.lodnar.com](http://www.lodnar.com) for this information) who will inform you about the take-back of the product. You might be charged for the costs arising from the take-back and recycling. Small products might be taken back by your local collection facilities.  
**Outside the EEC** - If you wish to discard this product please contact your local authorities and ask for the correct method of disposal

### 7 TEST

Press the Transmitter **RESET** button to activate the system, and carefully test each function for correct operation.

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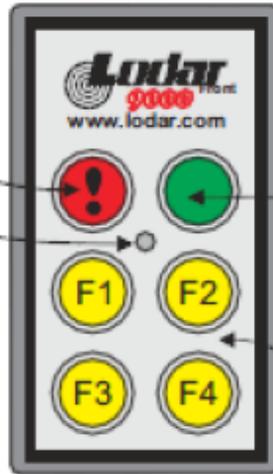
**FM Series - Effective working range up to a distance of 60 metres (200 feet).**  
**Narrow Band FM Series - Effective working range up to a distance of 300 metres (1000 feet)**

**STOP** Button switches off the Receiver and the keypad function buttons

**L.E.D.**  
**Blinks** when Transmitter and Receiver are active.  
**ON** when a Transmitter Button is pressed.  
**Pulses** while transmitting when battery is low.  
*New feature May 2010*

**SAFETY FEATURE**

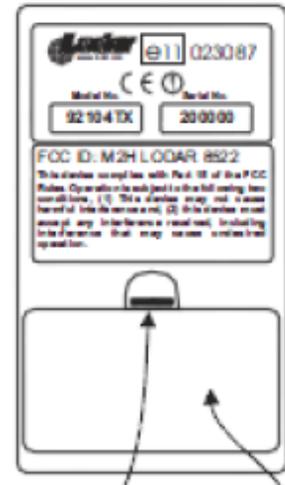
The Transmitter automatically transmits a **STOP** signal after 30 minutes; this de-activates the Receiver and the Transmitter keypad.



**Lo-Cover not shown**

**RESET** Button activates the Receiver and the keypad function buttons

Yellow Function Buttons



Release Catch

Battery Compartment

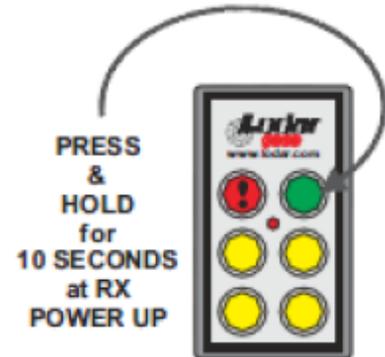
**To register a replacement Lodar Transmitter to a Receiver.**

**Step 1.**  
 Switch OFF or DISCONNECT the power to the Receiver.

**Step 2.**  
 Switch ON or Reconnect the power to the Receiver.  
 This opens a 20 second registration window in the Receiver.  
*If you are looking at the Receiver PCB the Fault LED Flashes.*

**Step 3.**  
 Immediately PRESS and HOLD the Transmitter Green Button for a minimum of 10 seconds during this 20 second window.  
*When the Transmitter is Registered the Fault LED goes out, and the Set LED comes on.*

Your Transmitter is now operating the Receiver.



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