

SERVICE BULLETIN ML TECH025



Date : April, 2010
Game : Carousel
Subject : Relay



Distribution: - Service Bulletins are available at www.laigames.com and are e-mailed to members of a opt-in e-mail list. If you wish to receive Service Bulletins via e-mail, send an e-mail to support@mleisure.co.id to subscribe to this list.

Symptom : Carousel continues to run or does not stop when emergency stop is pressed.

Problem : Relay current capacity is under spec from factory.

Solution : Replace existing relay with relay supplied

Tools Needed : #4 Hex Key, short and medium Philips driver.

Parts Required : One new relay, one self tapping screw, both supplied.

Time Required : Approx 30 minutes.

Caution **Read and understand these instructions completely before you begin this procedure.** If you have any questions **“Stop”** and call Carl in LAI Technical Support at (888) 211-6370 or (469) 521-7000 ext 504.

It has come to our attention that the relay we are currently using does not meet the current capacity necessary to reliably operate the carousel. The units will keep running after the time is up and sometimes will not respond to the emergency stop being pressed due to the relay being seized. Units may also start rotating at power up as well.

Please follow the simple steps and photos below to properly change out the relay.

Note: REMOVE POWER FROM UNIT. DO NOT ATTEMPT TO MAKE ANY REPAIRS TO GAME WHILE POWER IS APPLIED!!!!

Replacement and Installation Procedure for Motor Control relay, 3 pages

1. Remove the fiberglass service cover located below the coin door. This may require a #4 Hex key as well as the keys for the machine depending on the model. Set the panel in a safe place to avoid damage.
2. Remove the clear safety panel that cover the electrical components located inside the service bay.
3. Locate the motor relay. It will be located to the right above the large donut shaped transformer (red box in picture) or to the very back left in older machines (blue arrow in picture).
4. The relay is a clear plastic device in a black socket. See photo below for a reference.

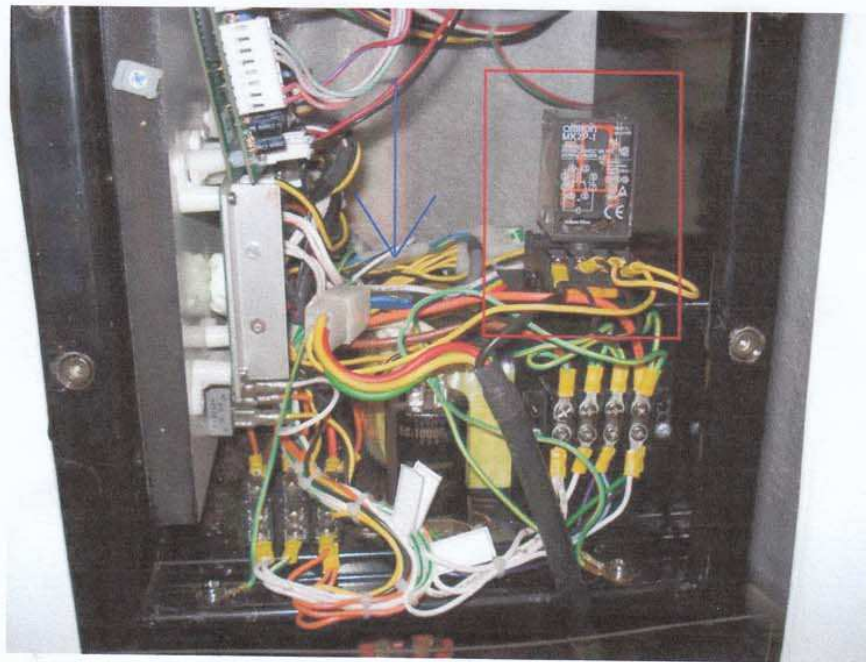


Fig 1
shows possible locations of relay – in red box on newer units or in the area of the blue arrow in older units.

5. Remove the old relay from the socket. Disconnect the yellow wires and black wires from the front of the relay socket.
6. Disconnect the black and white wire from the back of the relay socket.
7. Remove the two Philips screws securing the relay socket and discard the socket.
8. Using Fig 2 as a guide, mount the new solid state relay using the self tapping screw and the original mounting hole on the left of the bracket.

9. The connectors marked 1 and 2 on the new relay will be to your left while the connectors marked 3 and 4 will be on your right.
10. Once the relay is securely mounted connect the wires using the supplied screws on the relay in the following order.
11. Two black wires stacked on terminal marked number 1. Stacked means that two wires will be connected to this terminal. Just insert the screw through both rings and secure it.
12. Two yellow wires stacked on terminal marked number 2.
13. The wires that were on the back of the old relay are a small black and a small white wire. Install them in the following order.
 - One black small wire to terminal marked (-) 4.
 - One small white wire to terminal marked (+) 3.

It is very important that the wires are connected properly to Terminal 3 and 4 as this connection does have polarity.

Note: If you would rather not stack the yellow and black wires from the front of the old relay, you can clip the extra wire off at the ring terminal. You will then have a single ring for each color. This would leave you with a single yellow wire coming from the six pin connector ending in a ring and a single black wire coming from the large supply wire ending with a single ring.

14. Replace the protective clear cover, and service panel.
15. Reapply power and unit should operate as normal.

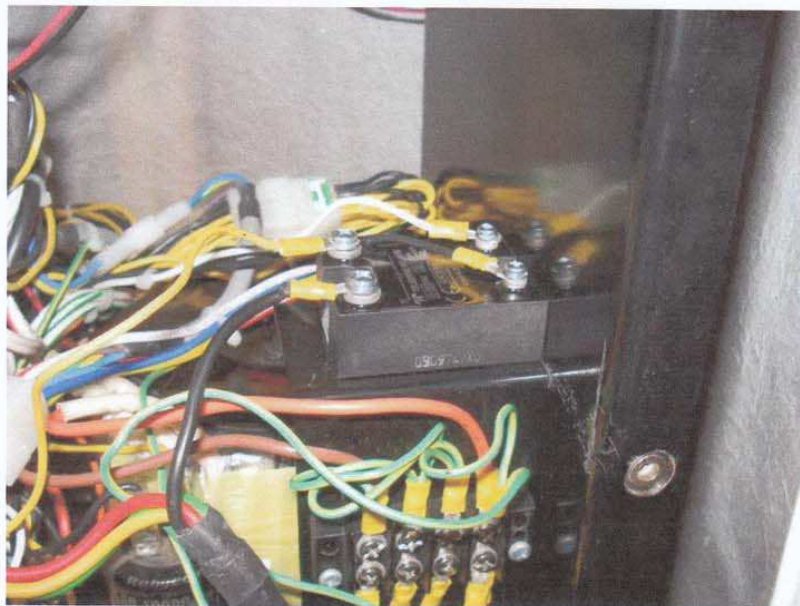


Fig 2

Shows proper wiring configuration of new, Solid State Relay.

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Date : April, 2010
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Subject : Bushing Failure



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Symptom : Horses spin on the axis of their mounting pole (the horse can rotate side to side)

Problem : The single Philips head locking screw intended to hold the horse push rod bushing in place backs out over time.

Solution : Replace existing push rod bushing assemblies with updated push rod bushing assemblies

Tools Needed : Metric socket set and #4 Hex Key

Parts Required : Three factory-modified push rod bushing assemblies

Time Required : Approx 15 minutes per bushing – total of 45 minutes

Caution **Read and understand these instructions completely before you begin this procedure.** If you have any questions “**Stop**” and call Carl in LAI Technical Support at (888) 211-6370 or (469) 521-7000 ext 504.

We discovered an issue with the push rod bushing assembly in some of our carousels. This can create an unsafe condition for the riders. The symptoms of this problem are:

- Horse can be spin sideways on the axis of their mounting pole
- May only spin in upper position

The cause of this fault has been traced to the single screw that secures the nylon push rod bushing in its metal housing. This screw is backing out over time allowing the nylon bushing to raise out of its metal housing.

We have modified the push rod bushing assembly by:

- Increasing the number of locking screws from 1 to 3
- Gluing these screws in place
- Gluing the push rod bushing into its metal housing

Please follow the simple steps and photos on the next 2 pages to properly change out the bushing assemblies.

Push Rod Bushing Replacement Procedure – 3 pages

1. Remove the Sheer bolts, (one per horse located under the dust boot below the horse's body) from the top of the push rod. Refer to Fig 1.



Fig 1

Shows exposed sheer bolt located under the dust boot below the horse's body.

2. Remove the horses from the game. To do this:
 - o Raise the horse about halfway up the pole then lift the pole from the push rod.
 - o Bring the horse and pole out towards you slightly and pull the pole and horse down out of the ceiling of the unit.
 - o Be careful not to bump the horse on the push rod or its finish could be damaged.
3. Remove the four #4 hex screws that secure the protective cover over the pushrod assembly. See Fig 2 for reference.



Fig 2

Shows one of four #4 hex screws per horse that secure the protective cover over the pushrod assembly.

3. Once the four screws are removed, lift the cover up and off of the assembly and set it aside.
4. Remove the two large metric bolts securing the bushing assembly in place. The size of these bolts can vary from # 12 to # 14 metric bolts.

5. Lift the assembly with the push rod out of the base of the unit.
6. Remove the old bushing assembly from the push rod by sliding it up and off.
7. Slip the new assembly over the push rod.
8. Note by looking in the hole where the push rod goes. You will see a track the wheel rolls on and a rail at the back edge of this track. See fig 3 for reference.

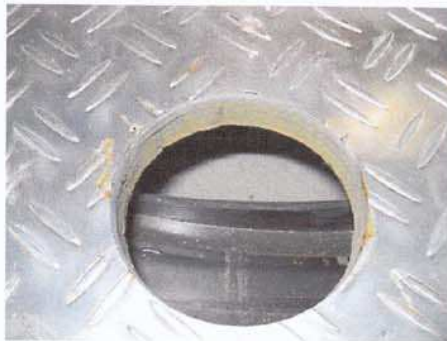


Fig 3
Shows rail and back edge of track

9. ***When placing the push rod back into the hole it is imperative that the bolt head securing the wheel faces the rail. The end of the bolt with the nut should be facing the outer edge of the carousel.***
10. Once the push rod and bushing assembly are in place, secure them with the large bolts removed from the previous step.
11. Note you will want to have the bushing mount slid back as far as possible when you secure it. Otherwise the push rod will rub on the protective cover and make a loud noise. See Fig 4 and Fig 5 for reference.



Fig 4
Shows bushing mount slid back as far as possible before installing the mounting bolt.



Fig 5

Shows how push rod “can” rub against protective cover if bushing mount is not attached properly

12. Once the bushing mount is secured, replace the protective cover and secure it with the four #4 hex screws. Be sure the foot rest are to your left.
13. Grasp the pole and horse as a complete assembly and Insert the top of the pole back through the hole in the ceiling of the unit.
14. Slide the pole down over the top of the push rod being careful to align the holes for the sheer bolt.
15. Slide the horse down and align the hole in it with the holes for the sheer bolt.
16. Reinstall the sheer bolt.
17. Repeat this process for the other two horses.

If you need further support, feel free to contact the Technical Service department at (888) 211-6370 or (469) 521-7000 ext 504 or at carl@laigames.com.

Thanks for choosing LAI GAMES as your game provider.

Regards,

