

KRELL INDUSTRIES, INCORPORATED  
KAV 250 CD  
LASER FOCUSING ASSEMBLY REPLACEMENT PROCEDURE  
2004

### Tools Required

T-10 Torx screwdriver  
7/64" Allen screwdriver  
#1 Phillips screwdriver  
#2 Phillips screwdriver  
#0 Phillips screwdriver  
Wire cutter  
White Lithium grease

- Remove (12) T-10 Torx screws from top cover. Set aside.
- Remove top cover. Set Aside.
- Facing the front of the unit, locate the disc drive assembly front center. To the right of the drive assembly is a metal shield covering the servo board. Two cable assemblies extend through a square hole on the front of the servo shield that connect to the front panel board.
- Disconnect these cables from the front panel board and leave them hanging loose.
- Lift the unit to view the underside of the chassis.
- Locate the (4) hex socket head screws securing the servo shield.
- Using 7/64" Allen driver, remove screws and lock washers.
- Remove the servo shield by threading the hanging cables through the square hole.
- Following removal of the shield, reconnect the cables to the front panel board.
- Lift the disc clamp lever from the top of the disc drive assembly while pulling the drawer open. Slide the drawer fully forward.
- Locate the plastic tab on the left side of the drive that prevents further drawer movement. *Carefully push the tab to the left. Too much force will cause the tab to break.* The drawer assembly can now be removed.
- To the left of the disc clamp lever, locate (1) Phillips head screw near the hinge pivot point. Remove the screw.
- Lift the clamp lever out of the pivot and move it towards the rear. (Note that the tension spring can be unhooked from the rear of the drive assembly.)
- Remove the clamp assembly. Set aside.
- Remove the (4) Phillips head screws inset in the plastic drive frame.
- Lift the drive assembly to view the underside. Note that the wires connected to the laser pickup assembly leading to the servo board are secured to the drive frame by a cable tie. Cut the cable tie.
- Disconnect the (3) wire groups from the servo board.
- Place the drive assembly on a flat surface.
- Looking at the laser pickup assembly, center rear, on the left side is a white plastic gear rack and hook latch. The latch piece is secured by (1) Phillips head screw. Remove the screw and the latch. (Note: if the spring band to the left of the latch pops out during the latch removal, replace the spring on the support posts.)
- Remove (2) small Phillips head screws. Set aside.
- Remove gear rack.

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- The spindle table and motor front center are mounted to a metal plate. (2) Phillips head screws secure this plate to the drive frame. Remove the (2) screws.
- Move the plate up and forward to clear the plastic tabs on the rear of the drive frame.
- Lift the right side of the plate and move it to the right to clear the belt and pulley on the left. (The motor connection wires do not allow much movement.) *Do not pull on the wires, as this might cause damage.*
- Lift the pickup assembly plus the (2) metal rods that act as rails away from the drive frame. Remove the rods from the assembly and retain. Discard old assembly.
- Wipe all lubricant off the rods.
- Insert clean rods in new pickup assembly.
- Place rods in the grooves in the drive frame.
- Replace the metal plate and spindle motor assembly over the rods, yet under the pulley and belt. The plate should fit under the plastic tabs on the rear of the drive frame. Replace the (2) Phillips head screws that fasten the plate to the drive frame.
- Check to make certain that the laser assembly can move freely back and forward on the rod rails.
- Turn the drive assembly over. Make sure that the laser assembly connection cable clears the frame for all positions of laser travel. Allowing suitable slack on the connection cables, install a new cable tie around the cable and wire through the hole on the side of the drive frame. Check the assembly travel for freedom of movement once again.
- Place the drive assembly upright. Push the assembly completely to the rear of the drive frame. Replace the gear rack on the left of the assembly and replace the (2) small screws.
- Replace the hook latch on the plastic pivot post. If necessary, add a small amount of lithium lubricant on the pivot post and spring band. Replace (1) screw.
- Place the drive in the unit. The rubber isolation boots should fit onto the brass mounting posts.
- Replace the (4) screws in the plastic drive frame.
- Reconnect the (3) wire groups to the servo board.
- Re-hook the tension spring onto the clamp assembly to the rear of the drive and return the clamp to the pivot.
- Re-install the (1) screw on the left pivot.
- Lubricate the required (6) points on the drive slide assembly. A very small <sup>AMOUNT</sup> of lubricant is needed.
- Insert the drawer assembly through the front panel and into slide points. Push the drawer past the plastic tab using only moderate force. If necessary, lift the clamp assembly slightly to allow the drawer to close fully.
- Apply power to the unit. Press the open/close button to check proper drawer action.
- Insert a test disc.
- Align the servo board.
- Check disc playback.
- When operation is considered to be correct, disconnect the (2) cable assemblies from the front panel and re-insert them through the hole in the servo shield.
- Install the shield over the servo board.
- Replace the (4) hex head screws and lock washers securing the servo shield.
- Replace the top cover and top cover screws.