

NorthWest Short Line

REPOWERING the:

Concor-Rivarossi-IHM HO GAUGE 4-6-4 Hudson (1994)

This project helps you re-motor the Rivarossi et al 4-6-4 Hudson, specifically the 1994 version but generally adaptable to other production runs of this model locomotive. We here describe the general process which can be accomplished in about 2 hours (plus overnight caulk set time if used) if proper materials and tools are on hand.

- Tools required:** Miniature screwdrivers
Jewelers or similar small flat file
3/32" or 2.4mm drill (if using a motor with 2.4mm shaft)
- Skill required:** This job assumes you have reasonable proficiency in soldering and disassembly/assembly of mechanical devices. If not, your learning experience here will be valuable despite problems you may encounter in achieving quick and satisfactory completion - patience will reward you.
- Time required:** About 2 hours (plus cure time for bonding agent and sealant)
- Parts required:** motor #20324-9 or #20325-9 or (for faster speed) #20328-9 (these motors have 2.0mm shaft)
- May require:** Silicon sealant (sold at hardware stores as bathtub caulk, window caulk, etc.)
Wire 28 or 29 gauge, two approx. 1.5" pieces

1. Remove the old motor by loosening the plastic clips from the shaft bearings and lifting straight up.
2. Remove the worm from the old motor. (note the following if using a 2.4mm shaft version of the 2032 motor, the worm must be drilled to accept the 2.4mm shaft of the new motor - a 3/32" drill may be adequate, if too tight, use a 2.4mm drill (must bond with Loktite or other superglue if loose fit). The bronze bearings need to be clearance drilled with a #38 drill bit.)
3. Press the worm onto the motor shaft (or bond in place as necessary). Caution - be extra careful to avoid bending the shaft! The motor shaft on the terminal end (if using a double shaft motor) should be shortened to 1/4" while the other shaft should be cut back to about 0.60" length. Be sure to add the bearings to the motor shaft prior to pressing the worm into place.
4. Remove the round brass bearing 'disk' from the rear bearing housing and place it in the front housing with the other disk. This should place the motor at the correct angle to provide proper worm/wormgear mesh. Replace the plastic clips over the bearings.
5. Connect the wiring: Motor plus to the engine frame and negative to the drawbar (tender).
6. Place the motor into position, keeping the wires in proper orientation (not twisted). Check worm/wormgear backlash. There should be some back-and-forth movement in the drivers. If everything checks, re-install the mounting clips. The negative motor lug goes up and the positive lug down. Lubricate the gears, motor and bearings. Test run the mechanism. (in older units, motor can be secured in place easily with silicon sealant - sold as bathtub caulk, etc. - we prefer the clear)
7. The opening in the firebox needs to be enlarged with a file to clear the new motor. File down the inside bottom edges of the firebox, being careful to not enter the mounting holes. This will allow the superstructure to just fit down over the motor.

Installation 3-97 by David Plebanek

NOTES on what I learned on this project that will be helpful on future projects: