

INSTRUCTIONS FOR #100270 USRA LIGHT PACIFIC KIT - 3-1-94

These instructions provide photographs of completed model, exploded-view drawings, diagrams, step-by-step instructions and an itemized parts list. If for reasons beyond our control, any shortage or faulty part is found, write directly to manufacturer, including name of your dealer and date of purchase. Return any defective parts for exchange.

The builder should study the instructions and drawings to attain a working knowledge of proper procedure. Assembly work should be done in sequence outlined in this manual to assure proper construction.

We have included some extra parts in case you misplace or drop them on the floor.

Do not run the mechanism or the engine upside down.

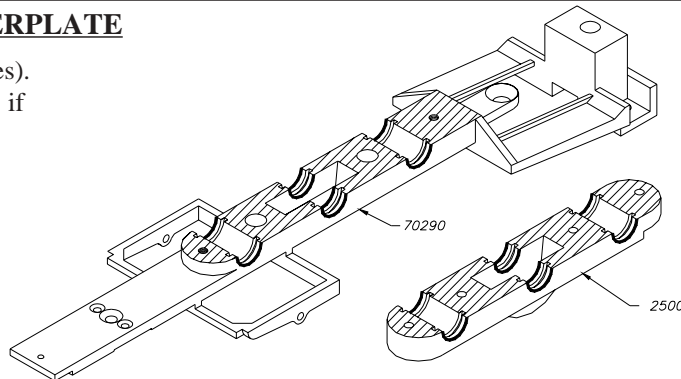
TOOLS

This is a builders kit, you will need a few tools. You will find use for the following: small hammer, several assorted pattern files, jewelers screwdriver (a set is convenient), a 6" flat file with a fairly fine cut, knife, pliers, flush cut nippers like Mascot #413 and tweezers.

BEFORE YOU PAINT THE MODEL OR DETAIL THE BOILER, WE RECOMMEND THAT YOU BUILD THE COMPLETE MECHANISM ATTACH THE UNDECORATED BODY AND THOROUGHLY TRACK TEST IT.

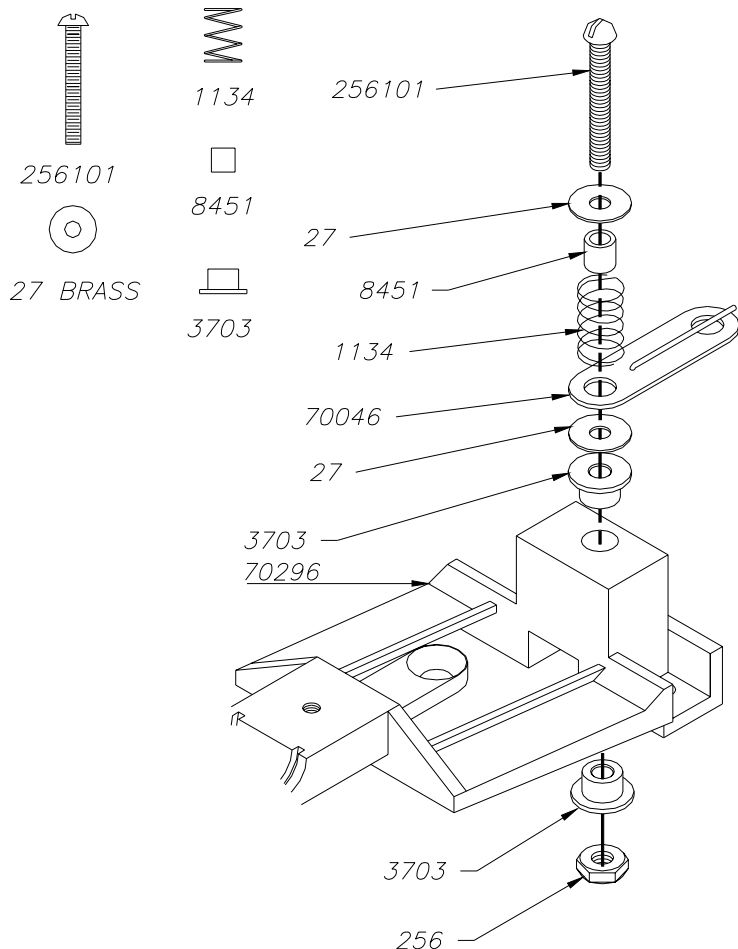
STEP #1. CLEAN UNDERFRAME AND COVERPLATE

Clean flash from edges of bearing slots. (Dark lines).
File matching surfaces (shaded) on a flat file. Check to see if these parts are straight. They should touch full length.
Straighten as necessary. Remove all burrs and chips.



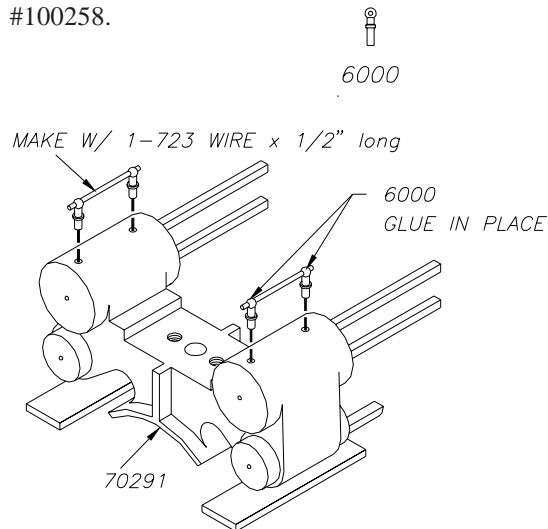
STEP #2: MOUNTING DRAWBAR

Full size Parts Drawings - Parts in Subkit #100253



STEP 3: CYLINDERS PREPARATION

If brass guide comes out, put a drop of glue in hole and tap into cylinder. Handrail posts are in subkit #100258.

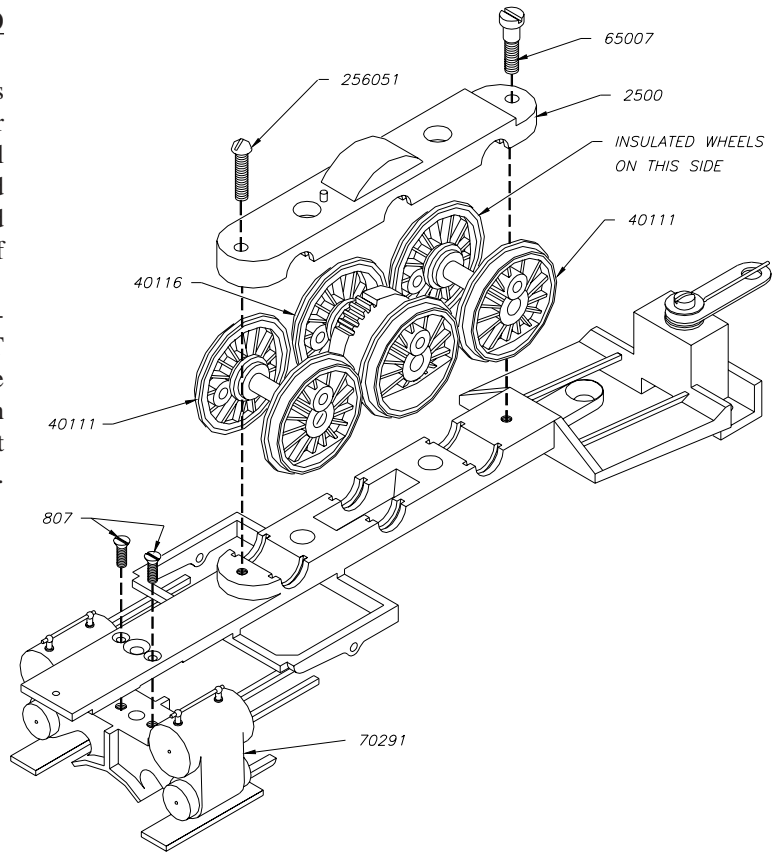


STEP 4: ASSEMBLING DRIVERS AND CYLINDERS TO FRAME

Identify which wheel of each set of drivers is insulated. With two wires hooked to your powerpack, touch one to the axle and one to a wheel rim. If you cause a spark, that is the uninsulated wheel. If there is no spark, that is the insulated wheel. The insulated wheel has a thin gray strip of insulation between tire and black wheel center.

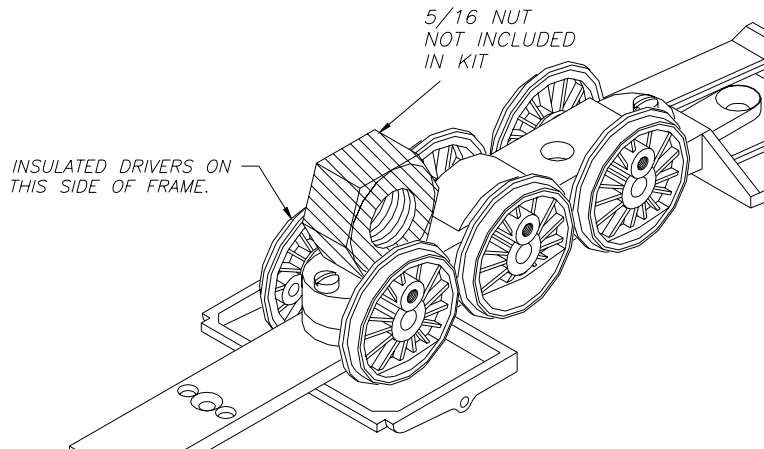
Install drivers making sure that the INSULATED wheel of each driver is on loco's LEFT SIDE. Left is determined by imagining you are sitting in cab of loco facing forward. Begin with geared driver (40116) in center slot and light counterweight drivers (40111) in rear and front slots. Put a small drop of oil on axle bearing.

Full size Parts Drawings -
Parts in Subkit #100253 &
#100257



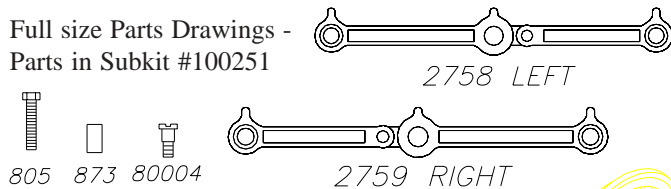
STEP 4: SEATING BEARINGS

To seat bearing, turn frame and driver assembly upside down in your hand - NEVER ON ANYTHING SOLID - put a 5/16 nut or small block on coverplate between a set of drivers and hit nut/block (NEVER HIT WHEELS) until this set of drivers spins freely. Repeat for each set of drivers, getting as close to geared driver as possible, both forward and to the rear of gear housing, but not on gear housing. As you tap coverplate down, take up on screws. WHEELS MUST SPIN FREELY BEFORE PROCEEDING. Do not use shims between frame and coverplate.

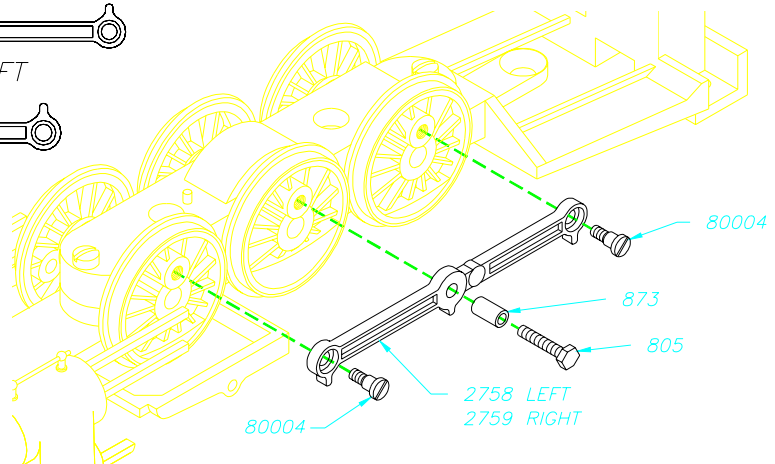


STEP 6: ASSEMBLING SIDE RODS TO DRIVERS

Full size Parts Drawings -
Parts in Subkit #100251

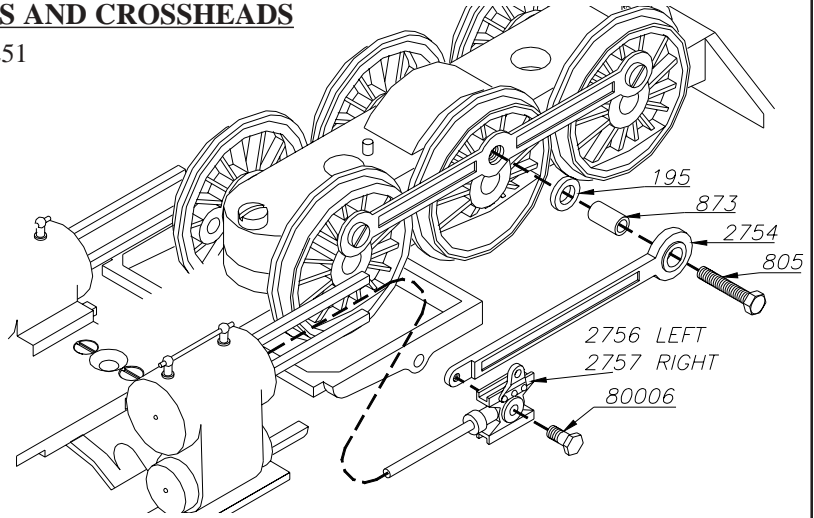
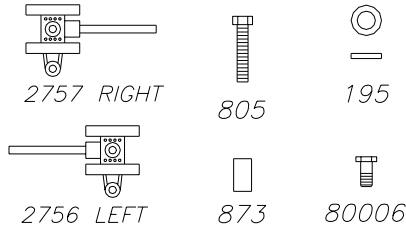


Check for binds by rolling back and forth on table. If you feel a bind, check to be sure screw heads are not pinching side rods to wheels. If that happens file back of side rod until it will move freely. It may be necessary to enlarge screw holes with a round file. Be careful, do not strip threads. DO NOT PROCEED UNTIL THIS PART OF MECHANISM RUNS ABSOLUTELY FREE.



STEP 7: ASSEMBLING MAIN RODS AND CROSSHEADS

Full size Parts Drawings - Parts in Subkit #100251

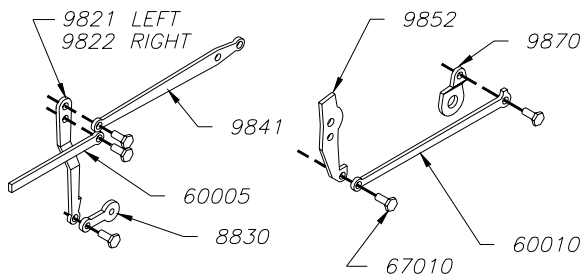
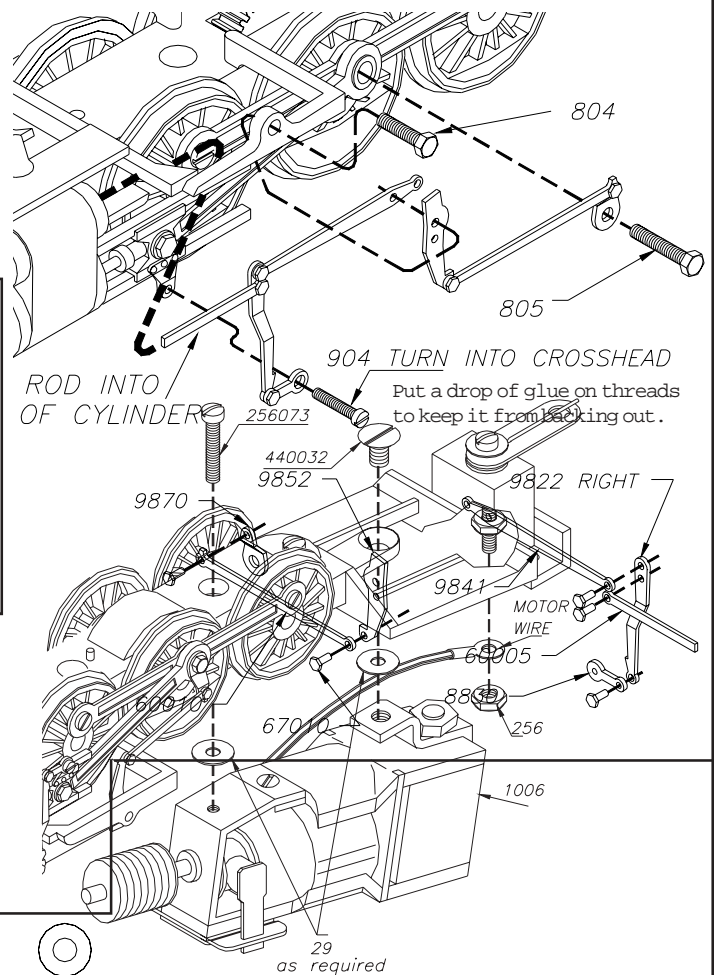
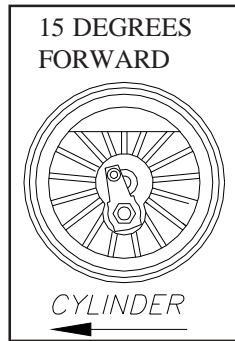


Crosshead must slide freely. File slots as necessary. Do not over tighten screw 80006 and main rod 2754. Main rod and crosshead must be free to pivot. Use a drop of glue on the back of screw after assembly to keep screw from working loose.

STEP 8: ASSEMBLING VALVE GEAR

Parts in Subkit #100255.

Notice particularly OVER & UNDER parts. Check all parts and remove small burrs and roughness. Actual riveting must be done very, very carefully. Your kit contains a rivet tool (36) which will make this job much easier. Put rivet (67010) through proper holes in rods and lay assembly down with rivet head on a solid object. Set rivet tool with center point in hole in end of rivet and tap with hammer until rivet is properly flared. Gently, gently, gently feel your way. **DO NOT MAKE JOINT TOO TIGHT.** Test after each rivet is installed. **ALL PARTS OF EACH ASSEMBLY SHOULD DANGLE FREELY.** If they do not rivets are too tight and must be replaced. Set eccentric 15 degree forward of axle.

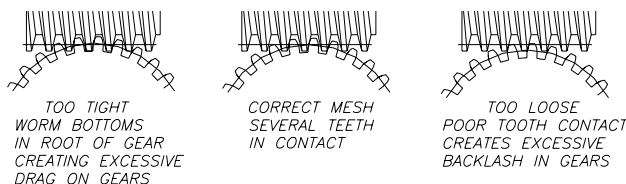


STEP 9: ASSEMBLING MOTOR TO FRAME

Parts in Subkit #100253



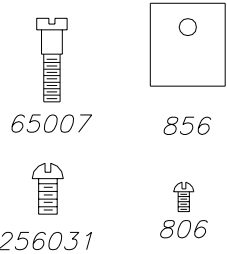
To get proper gear mesh, it may be necessary to raise the worm with a shim under front screw 256073 or to lower worm with a shim under back screw 440032. Fibre washer (29) is supplied for this.



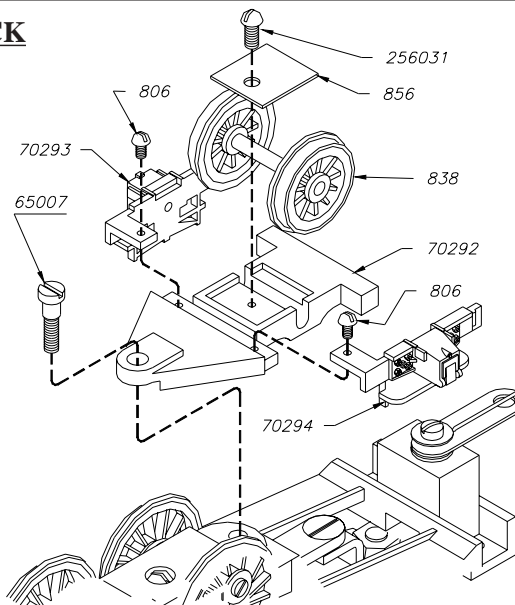
1005 motor

STEP 10: ASSEMBLING TRAILING TRUCK

Full size parts drawings - Parts in subkit #100257



Spoke Trailing Truck Wheel (838) must spin freely.



STEP 11: ASSEMBLING PILOT

Full size parts drawings -

See parts ID page (pare #11).

Parts in subkit #100258 & #100259

DIAGRAM 7

BOILER BRACE
(2) REQUIRED
.032 WIRE
#744

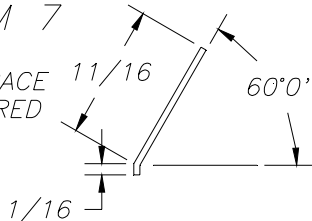


DIAGRAM 6

COUPLER LIFT BAR
(1) REQUIRED
.020 WIRE
#723

