

INSTRUCTIONS FOR #100730 2-10-2 KIT

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 the 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 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 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 small 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 PAINTING YOUR MODEL OR DETAILING THE BOILER, WE RECOMMEND THAT YOU BUILD THE COMPLETE MECHANISM ATTACH THE UNDECORATED BODY AND THOROUGHLY TRACK TEST IT.

STEP #1

Clean flash from edges of parts.
File mating surfaces on a flat file.
Assemble and assure the wheels spin freely.
Oil lightly.

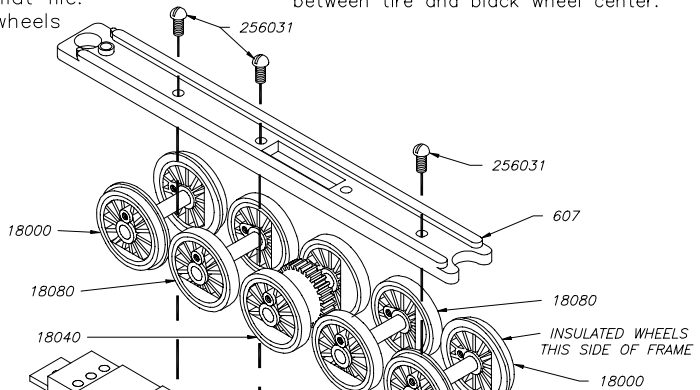
SUBKIT 100733



256031

FULL SIZE

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.



STEP #2

Assemble side rods as shown.
The fluted surface faces out. Assure the wheels spin freely. Enlarge holes with round file in side rods to eliminate any binds. Oil lightly.

SUBKIT #100731



1720

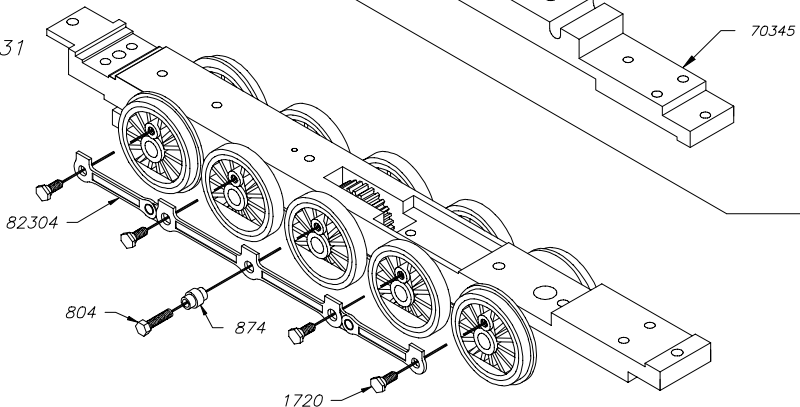


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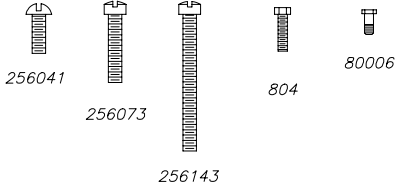
FULL SIZE



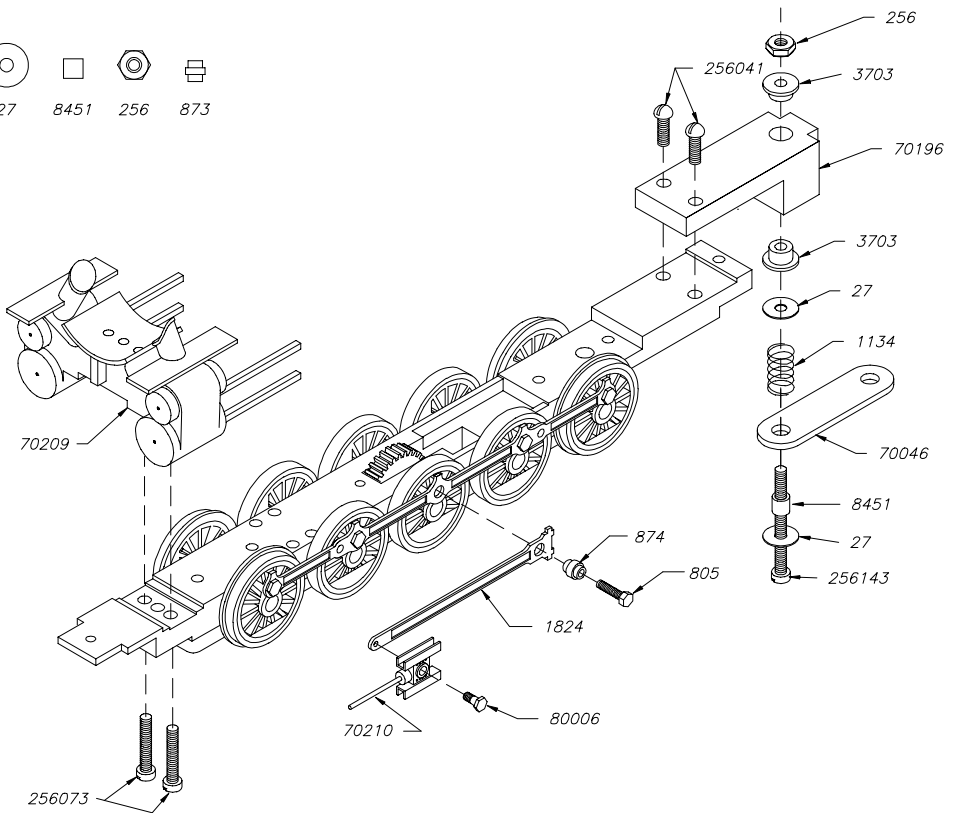
STEP 3

INSTALL FRAME EXTENSION & DRAW BAR.
INSTALL CYLINDERS & MAIN ROD.

SUBKIT #100731, 100733
FULL SIZE



MECHANISM MUST ROLL FREELY. OIL LIGHTLY.
PUT A DROP OF GLUE ON THREADS OF
80006 TO KEEP IT FROM BACKING OUT.

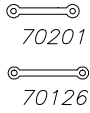
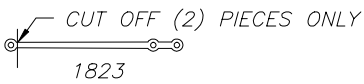


STEP 4

SET #36 RIVET TOOL WITH CENTER POINT IN HOLE IN END OF RIVET. TAP WITH LIGHT HAMMER UNTIL RIVET IS PROPERLY FLARED. BE CAREFULL NOT TO MAKE JOINT TOO TIGHT.

SUBKIT #100735

PARTS IDENTIFICATION LIST
SHOWN FULL SIZE



67010

FIG 1
ASSEMBLE
LEFT SIDE

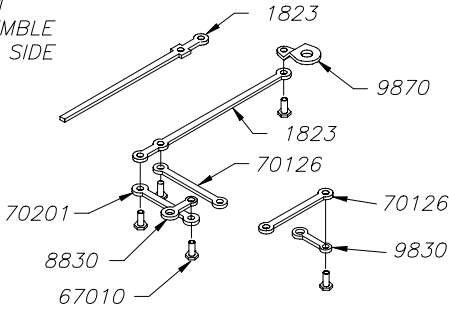


FIG 2
ASSEMBLE
RIGHT SIDE

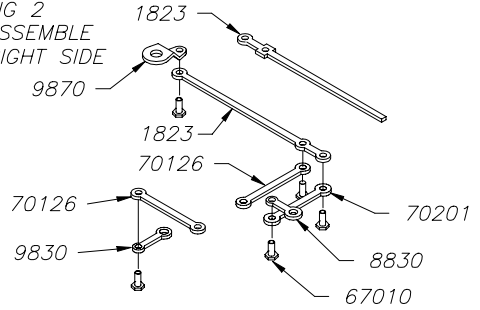


FIG 3
INSTALL VALVE GEAR
ON LEFT HANGER

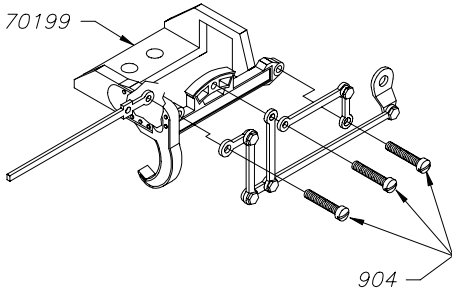


FIG 4
INSTALL VALVE GEAR
ON RIGHT HANGER

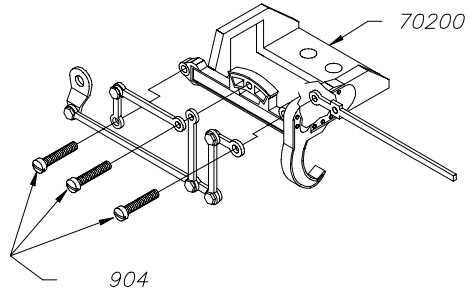


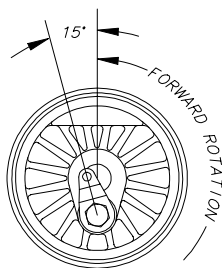
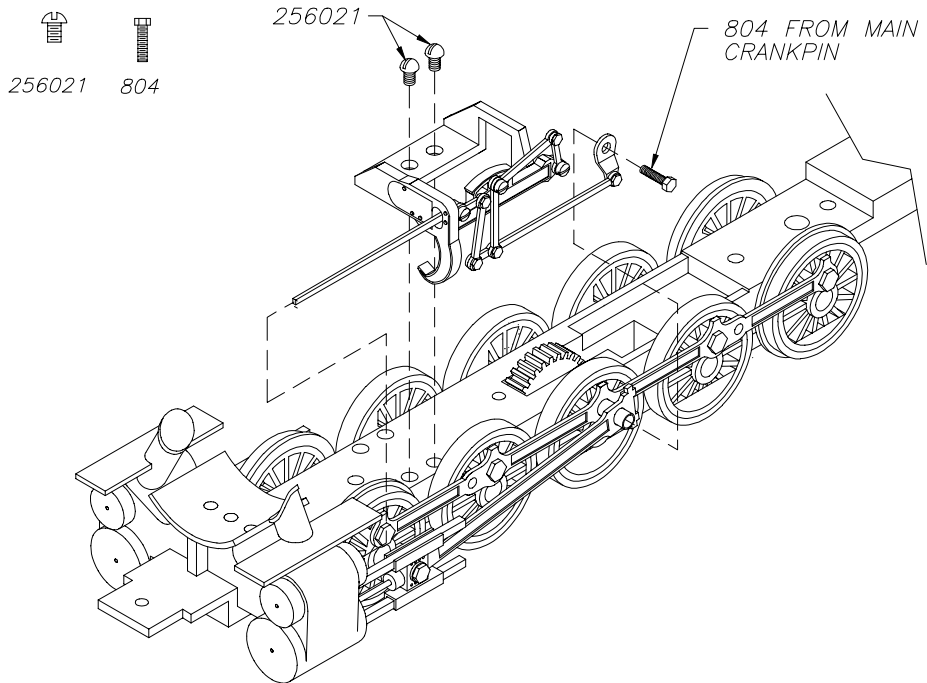
FIG 5
VALVE GEAR READY
TO INSTALL ON MECHANISM.



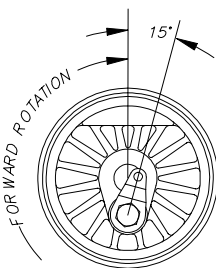
STEP 5

INSTALL VALVE GEAR ASSEMBLY.
LEFT SIDE ONLY IS SHOWN FOR CLARITY.
TIME VALVES AS SHOWN BELOW.
MECHANISM SHOULD ROLL FREELY. OIL LIGHTLY.

SUBKIT #100735
PARTS IDENTIFICATION LIST
SHOWN FULL SIZE



LEFT SIDE



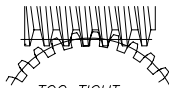
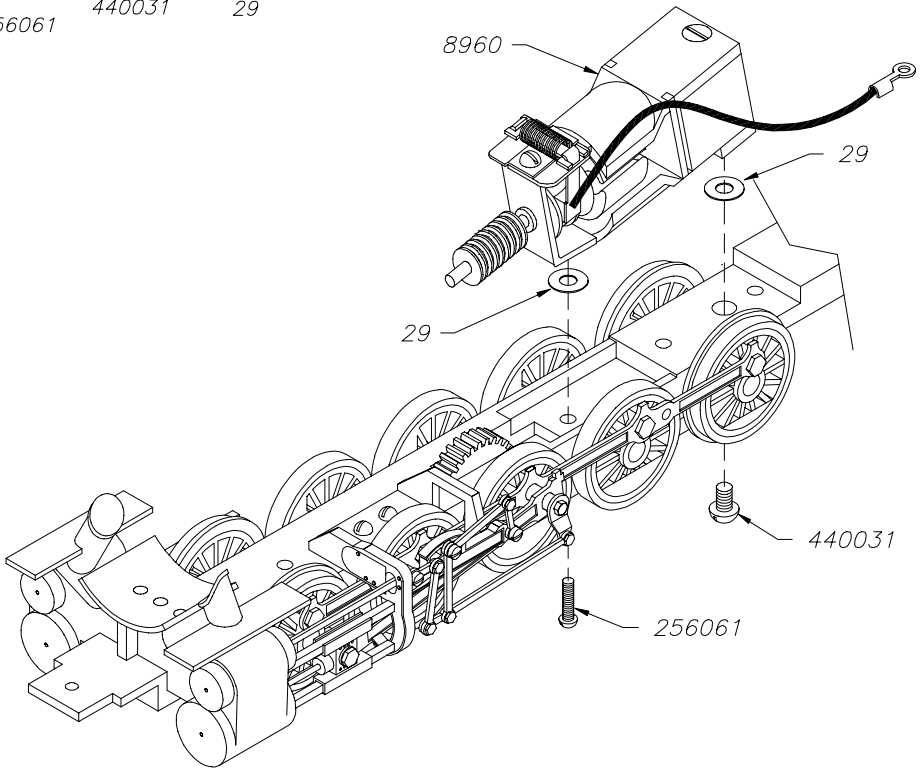
RIGHT SIDE

STEP 6

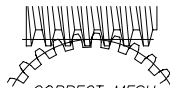
INSTALL MOTOR.
ADJUST GEAR MESH USING #29 WASHERS.
SEE DIAGRAM AT BOTTOM OF
PAGE FOR PROPER GEAR MESH.

SUBKIT #100733

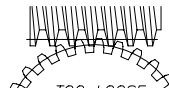
FULL SIZE



TOO TIGHT
WORM BOTTOMS
IN ROOT OF GEAR
CAUSING EXCESSIVE
DRAG ON GEARS.



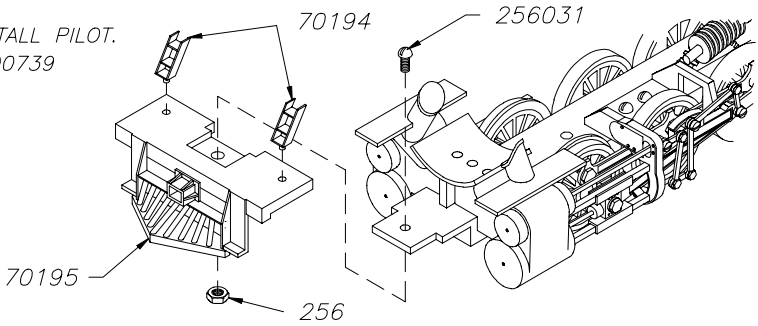
CORRECT MESH
SEVERAL TEETH
IN CONTACT.



TOO LOOSE
POOR TOOTH CONTACT
CAUSING EXCESSIVE
BACKLASH IN GEARS.

STEP 7

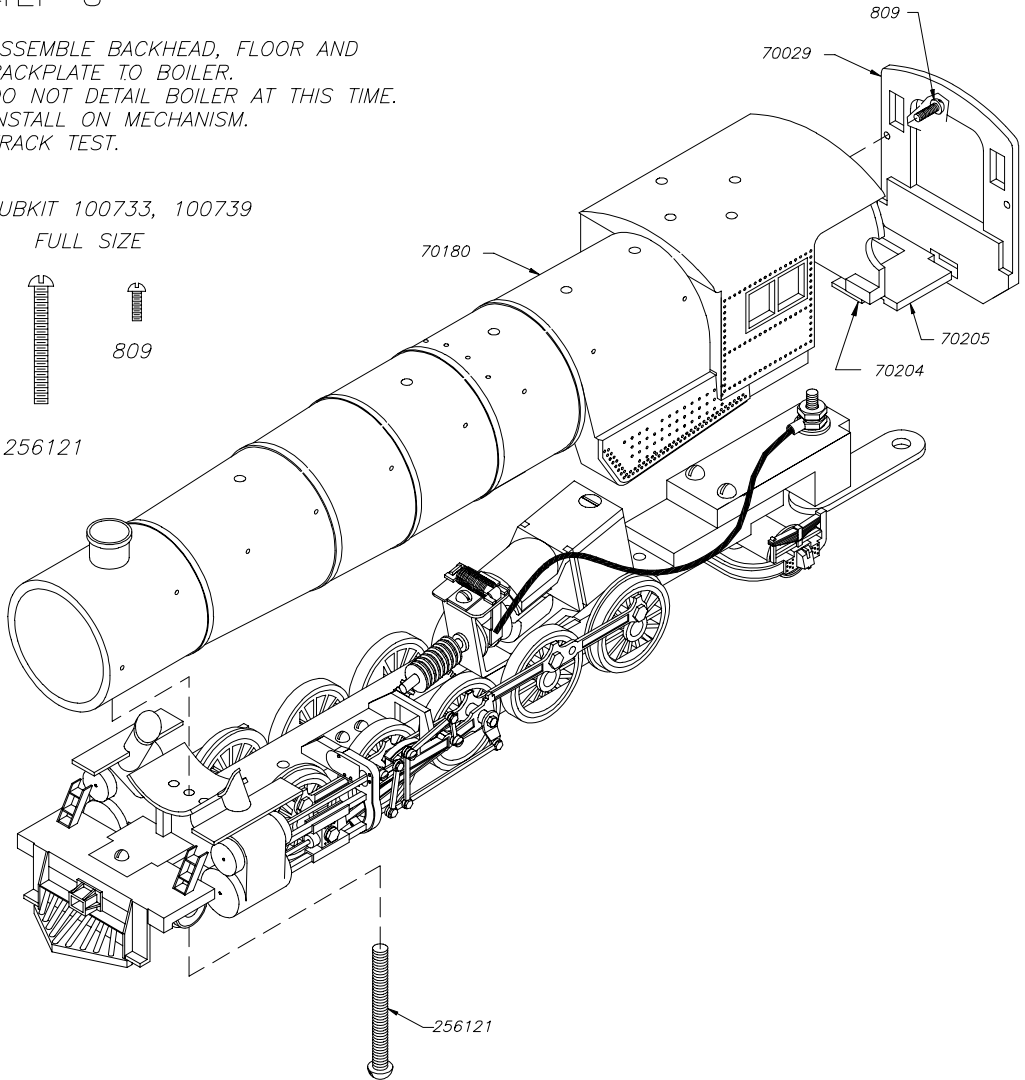
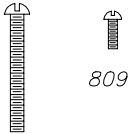
ASSEMBLE AND INSTALL PILOT.
SUBKIT 100736, 100739
FULL SIZE



STEP 8

ASSEMBLE BACKHEAD, FLOOR AND
BACKPLATE TO BOILER.
DO NOT DETAIL BOILER AT THIS TIME.
INSTALL ON MECHANISM.
TRACK TEST.

SUBKIT 100733, 100739
FULL SIZE

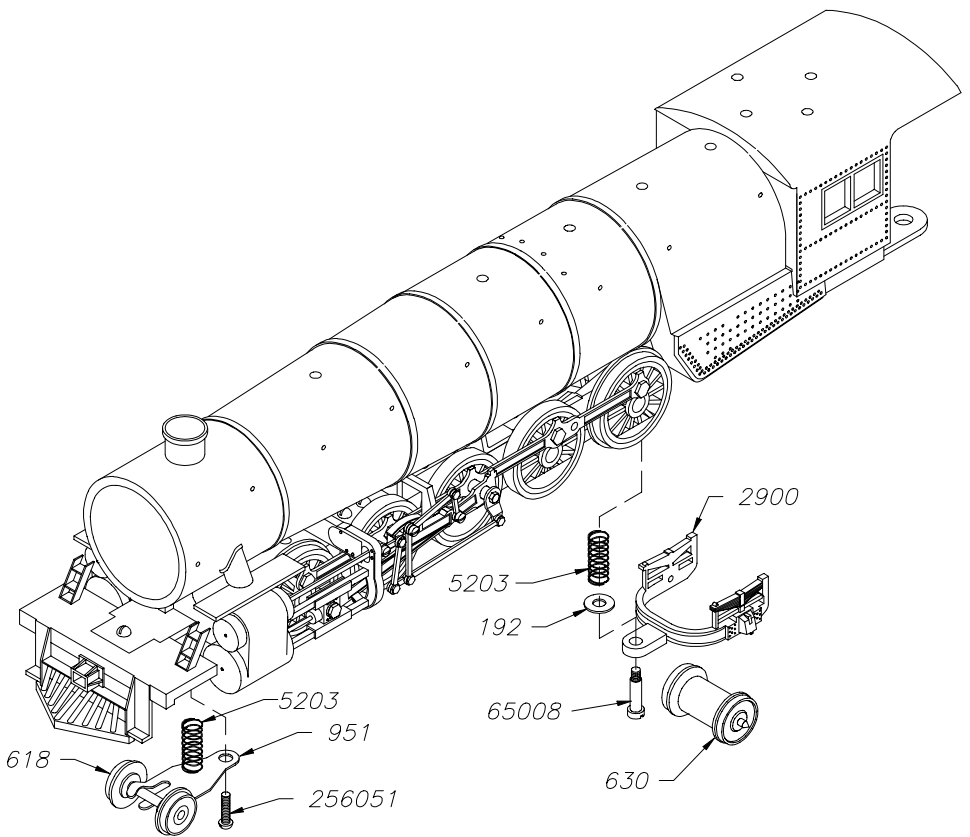
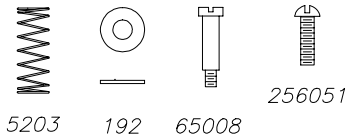


STEP 9

INSTALL LEAD AND TRAIL TRUCK.

SUBKIT #100704, 100737

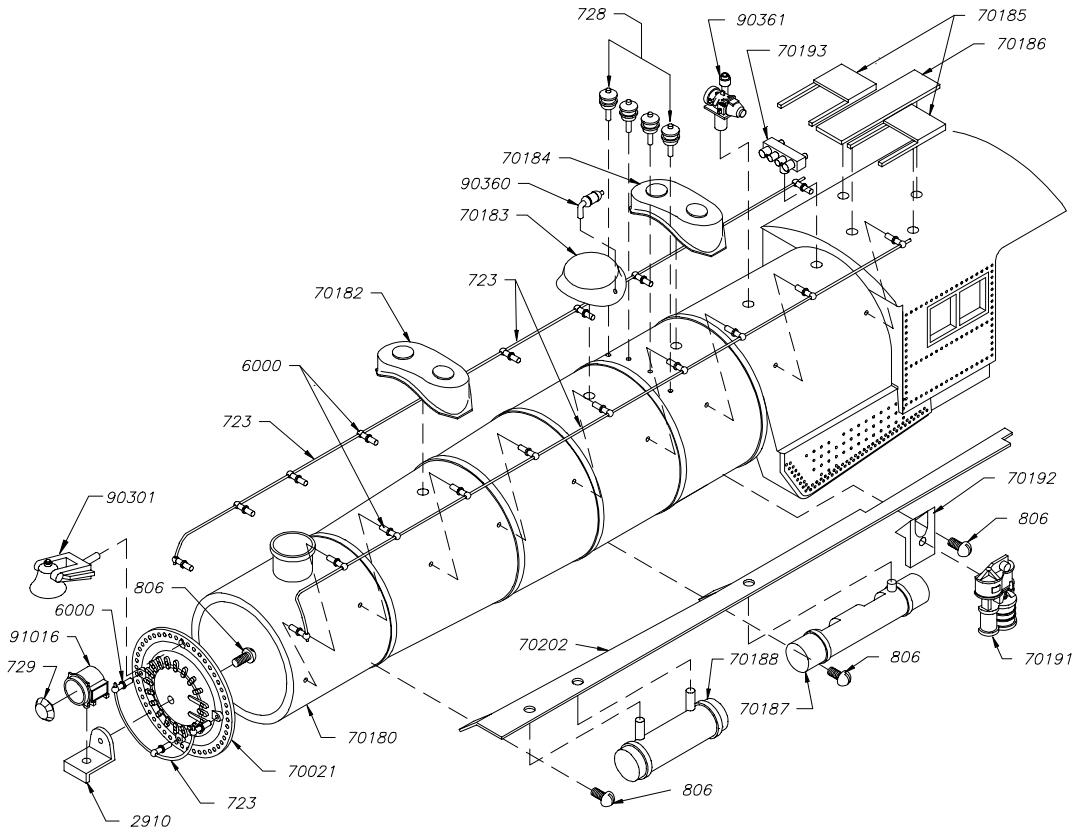
FULL SIZE



STEP 10

REMOVE BOILER FROM MECHANISM.
DETAIL LEFT SIDE OF BOILER.

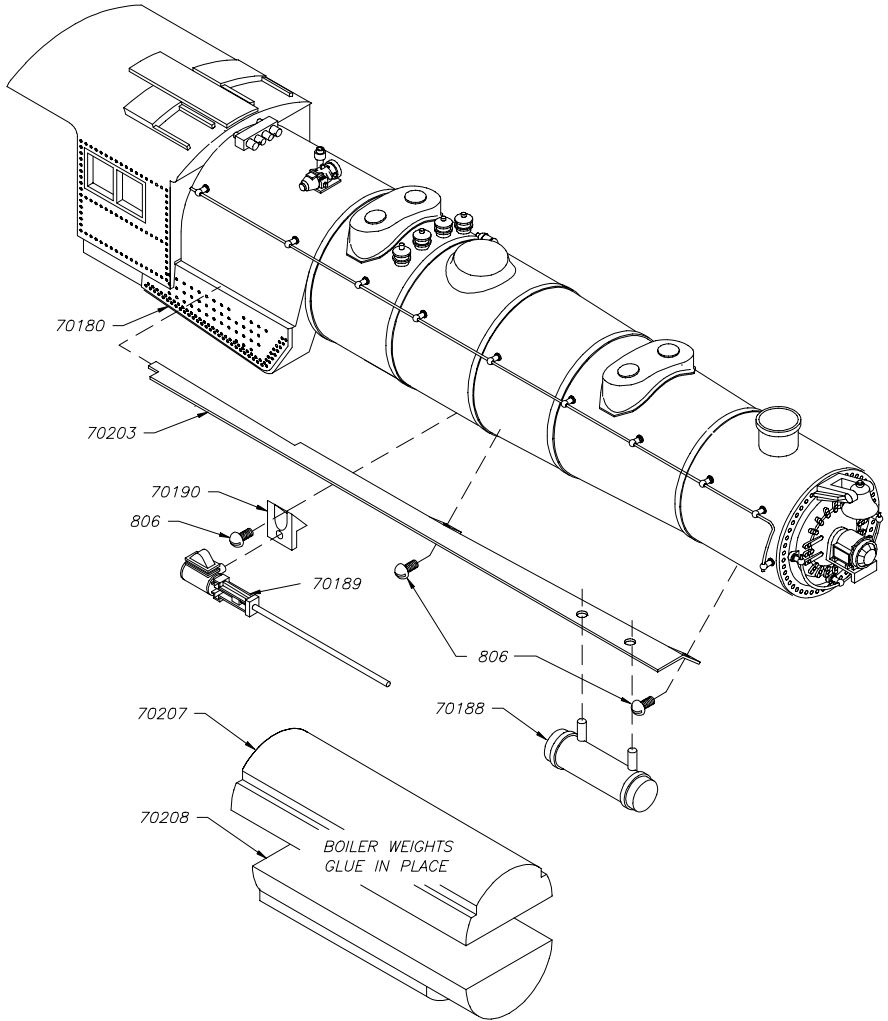
SUBKIT 100736, 100739



STEP 11

REMOVE BOILER FROM MECHANISM.
DETAIL RIGHT SIDE OF BOILER.

SUBKIT 100736, 100739



STEP 12

ASSEMBLE TENDER.
 DO NOT GET PAINT ON TRUCK BOSSES
 ON UNDERFRAME. ELECTRICAL PICKUP
 WILL NOT BE MADE IF PAINTED.
 HOOK TO LOCO AND TEST RUN.

SUBKIT 40020, 100733

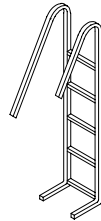
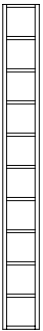
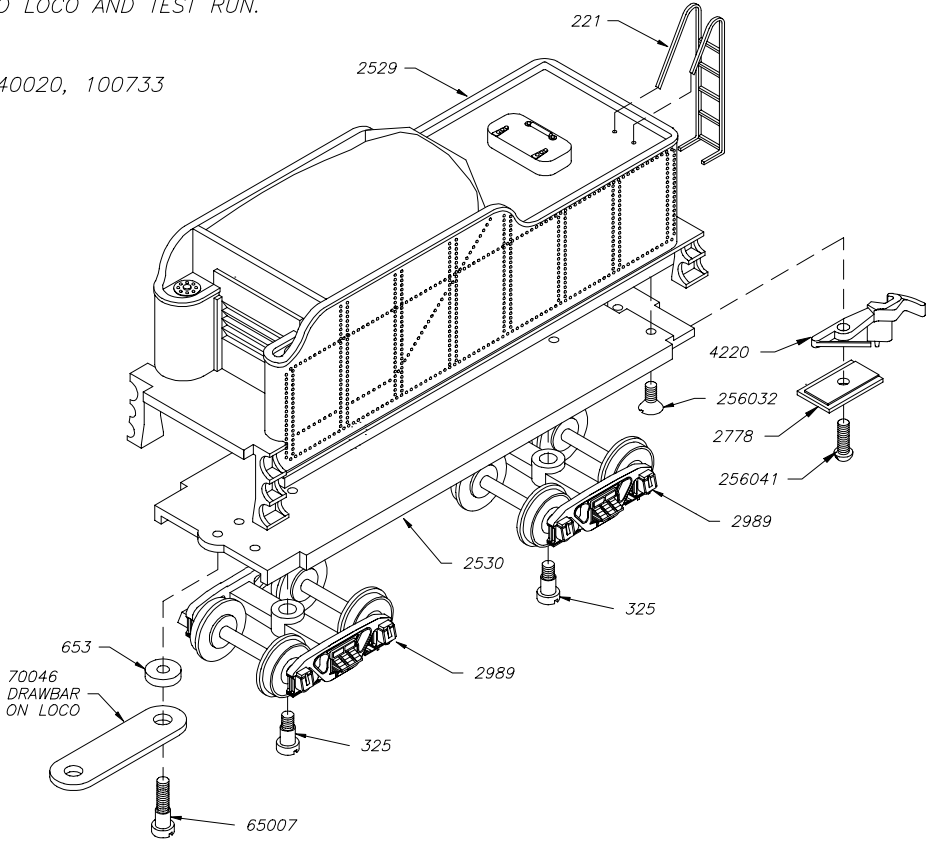


FIGURE 1

FIGURE 2

FIGURE 3

FIGURE 4

FIGURE 5


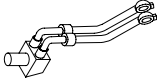
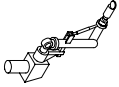



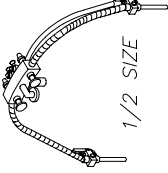
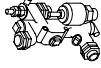
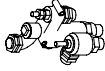




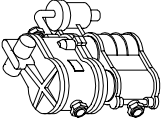
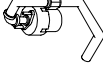

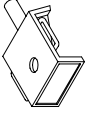

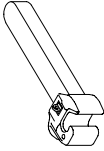
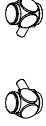
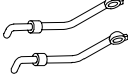



FIGURE 6

(SCALE: FULL SIZE)

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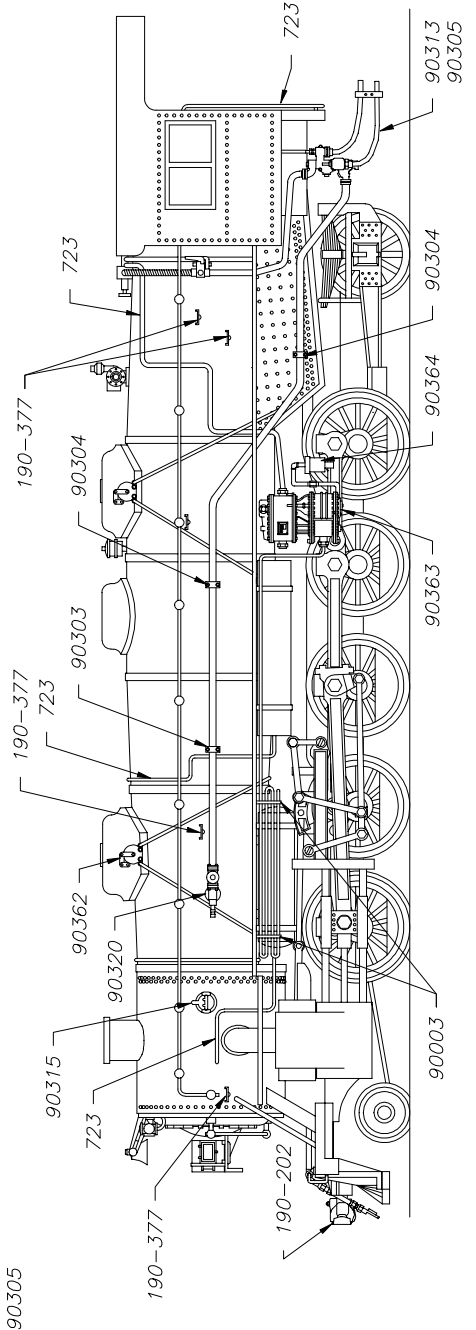
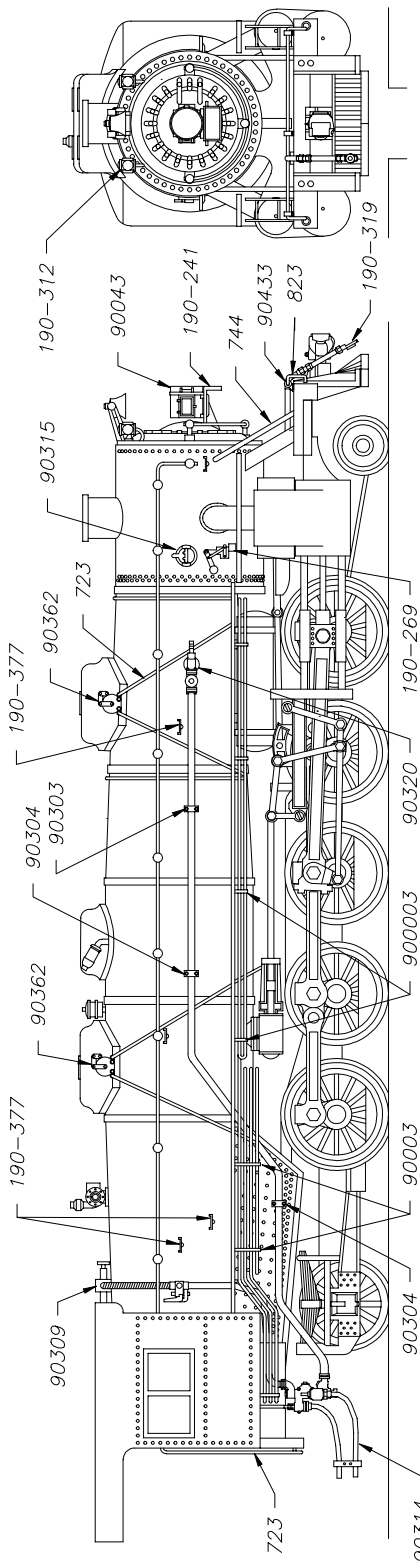
N2 SUPER DETAIL PARTS IDENTIFICATION

KIT #100740

 <p>90003</p>	 <p>90018</p>	 <p>90019</p>	 <p>90303</p>	 <p>90304</p>	 <p>90305</p>
 <p>90309 1/2 SIZE</p>	 <p>90313</p>	 <p>90314</p>	 <p>90315</p>	 <p>90320</p>	 <p>90330</p>
 <p>90362</p>	 <p>90363</p>	 <p>90364</p>	 <p>90-221</p>	 <p>90-241</p>	 <p>90-269</p>
 <p>90-292</p>	 <p>90-312</p>	 <p>90-319</p>	 <p>90-377</p>	 <p>90-304</p>	 <p>90-305</p>

(8) PIECES .020 X 6" BRASS WIRE

(2) PIECES .032 X 6" BRASS WIRE



Miscellaneous Building Tips

TIP 1: Painting Metal

You may want to superdetail your loco before painting.

We suggest that you do not paint your loco until it is thoroughly track tested as disassembly and handling generally ruins a paint job. Take your locomotive apart so that the various parts may be painted without getting paint on moving parts.

Valve gear, side rods, bearings, pony truck, etc. will not operate properly if paint gets into the joints of moving parts.

Parts to be painted should be degreased with a solvent like paint thinner and pickled in acetic acid solution (vinegar) or oxalic acid solution (5%) for a few minutes before applying paint.

DO NOT USE THIS VINEGAR FOR COOKING OR EATING.

Rinse with clean water. Do not handle the surfaces to

be painted. CAUTION: Do not immerse wheels, underframe or cover plate in acid solution or cleaners. Brush cleaner and acid solutions on metal frames of lead and trailing trucks and on underframe surfaces to be painted (NOT ON WHEELS, AXLES OR BEARING SLOTS). Drivers are pre-blackened and can be touched up, after removing flash, without using cleaner or acid. I recommend a glossy paint be used (PRR locos were painted Brunswick Green). Apply a smooth, uniform coat of good grade model railroad paint. I like to spray paint my models. Work carefully to avoid piling up paint around small details.

Painting exposed surfaces of main frame will add to final appearance of model, but be careful not to get paint in any bearings.

TIP 2: Hex Head Wrench (Cheap and Easy)

Go to your hardware store and buy Socket Head Cap Screws or Set Screws in many different sizes. They have the hex shape machined in the head and will work for tightening hex head screws.

TIP 3: Soldering Tips

Wear Eye Protection

First be sure everything is clean.

Put flux on both parts. Hold together and place solder iron at joint. The solder will flow to the hot area. Solder should not form a ball. This indicates the area was not hot enough. To tin your soldering iron so that solder will stick to it.

When cold clean the tip with a file. Put a little flux on tip. Turn on iron and apply solder to the tip as soon as it gets hot.

If this does not work. Clean the tip while hot and dip tip in a drop of flux (while hot) and immediately put solder on tip.

TIP 4: Cleaning A File When the Grooves Fill

When filing parts, the grooves in a file will fill with the metal you are filing.

This metal can be removed quickly by using a small piece of thin steel (1/16 to 1/8" thick) and sliding the steel on the file in the direction of the grooves. The chips that remain can be removed by sliding a sharp knife in each groove. This may take awhile to clean each groove. I do this only as a last resort. To keep most of the chips from sticking while you file, apply a thin oil to the file before filing.

TIP 5: Drilling Small Holes

To drill metal with small drills it is best to use powered tools. Dremel tool or a small drill press. Hand drilling with a pin vise will work but is much slower. You must drill straight. Drills do not bend they break. Use a lubricant on the drill. Cutting oil is best, but you can use a bar of Ivory Soap. Put the lube on the drill before starting. I recommend peck drilling.

(Drill about 1 or 2 times the diameter of the drill and remove the drill from the hole. Clean off the chips. Lube the drill and repeat.)

Take your time. It is very important to clean the chips from the flutes of the drill. When the flutes fill with chips the drill will break.

The smaller the drill the more you need to peck drill.

TIP 6: Tapping a Drilled Hole

First be sure your hole is the proper size.

00-90 Taps #60

0-80 Taps #55

2-56 Tap #49

4-40 Tap #43

These drill sizes are one size larger than the charts.

We feel they work very well for steel, brass and zinc.

You must tap straight. Taps do not bend they break.

Use a lubricant on the tap. Cutting oil is best but you can use a bar of Ivory Soap.

Put the lube on the tap before starting.

Turn in tap to get it started (1 or 2 turns). Back off 1/2 turn. This breaks the chips that form when tapping.

Repeat above. As the hole gets deeper you will have to back off the tap more often. If you are tapping a very deep hole you will have to back off the tap after as little as 1/2 turn