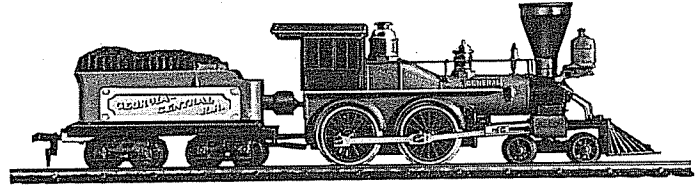


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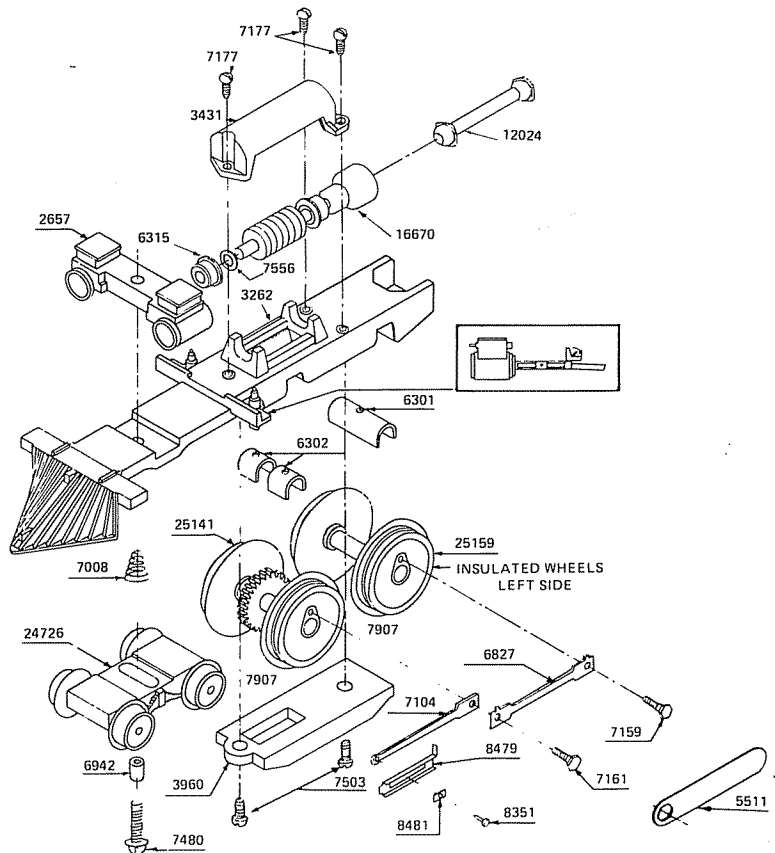
4-4-0 GENERAL

MECHANISM ASSEMBLY

1. Check all parts with parts list. Study drawings to identify all parts. Read instructions thoroughly before starting and be sure you understand how each part is to be mounted to avoid disappointing and expensive errors. Smooth edges of all castings with a knife or fine file to remove all flash and burrs.
2. Assemble one No.6301 Long Axle Bearing and two No. 6302 Short Axle Bearings in No.3262 Main Frame, making certain they are located on pins and properly seated in bearing slots of frame.
3. Place one pair No.25141 Driving Wheels with worm gear mounted on axle in the first or front slot and one pair No.25159 Driving Wheels in the second or rear slot. All insulated driving wheels must be on the left hand side. The insulated driver can be identified by the white ring between the wheel casting and wheel rim.
4. Place No.3960 Retainer Plate in position and secure with two No.7503 Screws, #2-56x $\frac{1}{4}$ " S.T.R.H. Make certain that each pair of driving wheels revolves freely.
5. Assemble No.6827 Side Rods, with oil cup to the top, using a No.7161 Hex Head Screw in each side of the geared set of drivers, and a No.7159 Hex Head Screw in each side of the rear drivers. Use No.5511 Hex Wrench to tighten screws. DO NOT USE PLIERS.
6. Check rotation of coupled drivers. Tight spots in side rods may be freed by reaming slightly with a round needle file. Do not ream any more than is absolutely necessary. Assembled mechanism should roll freely.
7. Place No.7556 Washer on shaft of No.16770 Worm Drive Assembly, then place No.6315 Bearing on shaft with flange toward worm. Place this assembly in bearing supports on frame. Retain in position with No.3431 Housing and three No.7177 Screws, #0-80x $\frac{5}{32}$ " R.H. Shaft must rotate freely. If too tight, check proper seating of the bearings and end play of the worm assembly, and be sure the gear and the worm are properly meshed and are not binding. Lubricate with a light grease.
8. No.8481 Crosshead, No.8479 L.H. and No.8480 R.H. Crosshead Guides and No.7104 Main Rods are assembled as shown in drawing, with countersunk side of rod toward hollow end of rivet. Insert a small center punch in the hollow end of No.8351 Rivet and tap lightly until rivet is flared out. Crosshead and Main Rod should fit snugly but not so tight that main rod and crosshead will not slide easily the full length of the crosshead slot.
9. Place No.2657 Cylinder Unit in Frame Saddle with the notched end forward. Temporarily hold in place with the No.7480 Screw, #2-56x $\frac{1}{2}$ " W.H. inserted through No. 6942 Spacer, No.24726 Lead Truck and No.7008 Conical

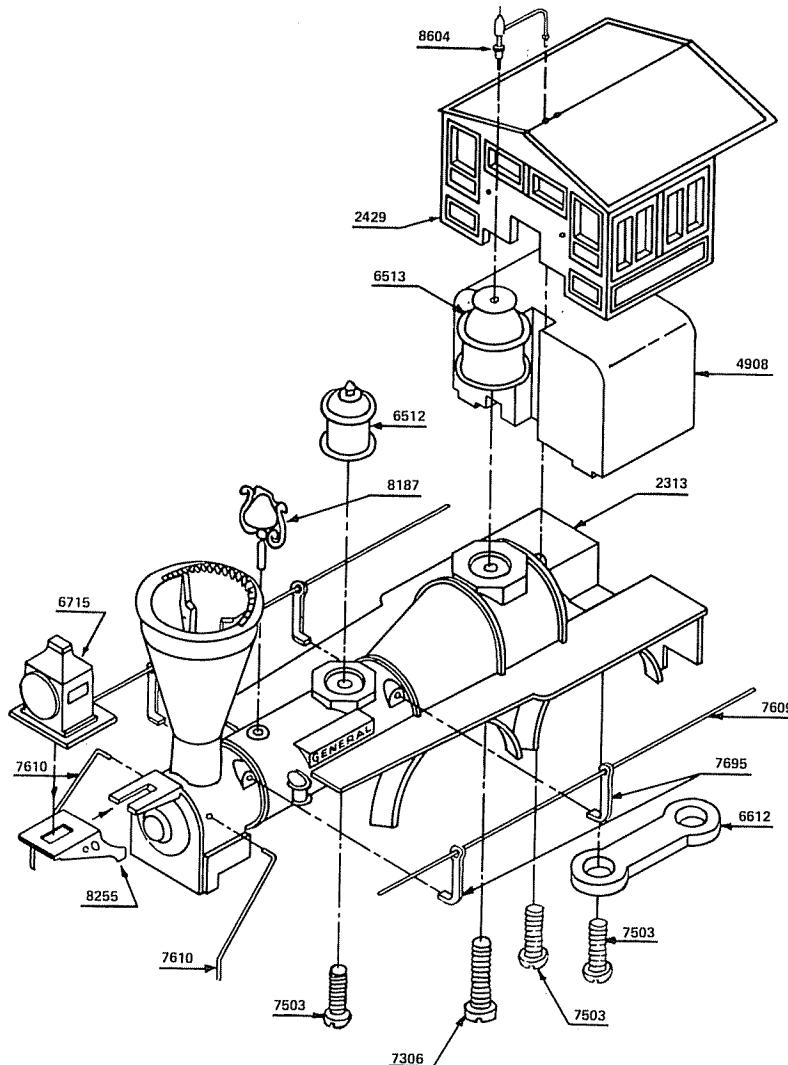
Spring and screw into one No.7427 Hex Nut, #2-56, on the top of cylinder unit. Long end of truck must be placed forward. Adjust spring to support front of locomotive.

10. The tab on end of crosshead guide (see crosshead guide and insert drawing) is bent at right angles to the guide. This tab end enters the crosshead guide yoke on the frame. After the front end is entered into the slot provided in the cylinder, the assembly is mounted on the frame with the crosshead facing out and the main rod to the background. The protruding end of the tab is then bent over flat on top of the guide yoke to secure the guide in place.
11. Remove the Hex Head side rod screws from the front set of drivers. The larger end of the main rod is placed under the side rod. Replace Hex Head screws, pull tight with the Hex Wrench.



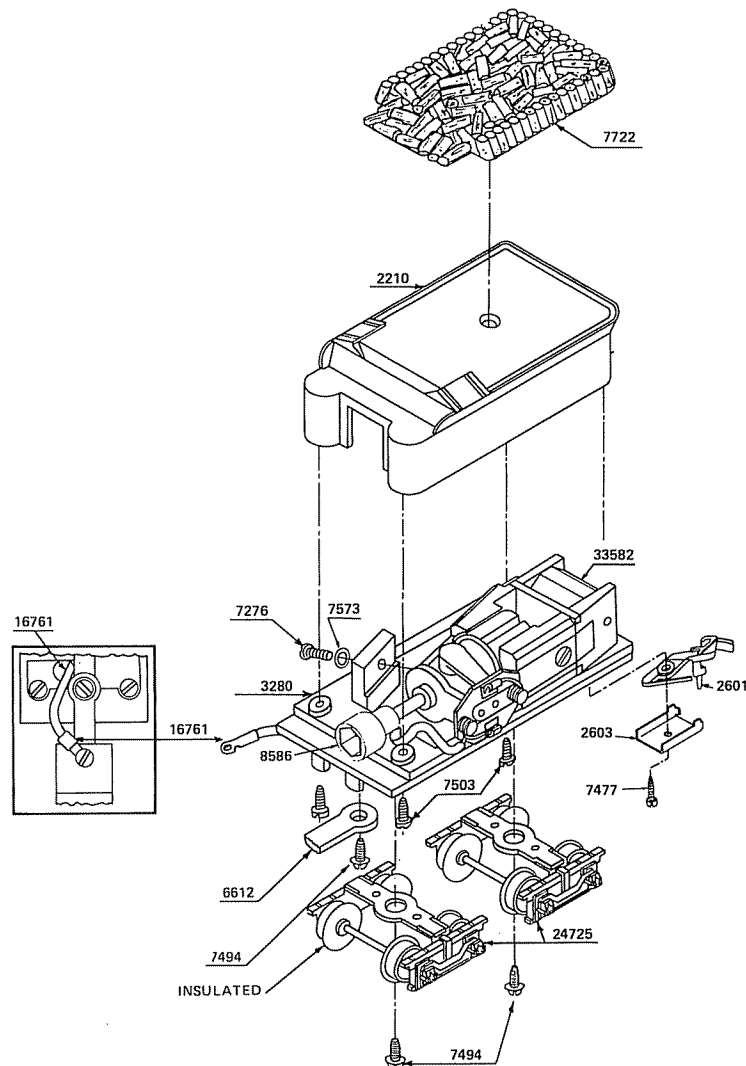
BOILER ASSEMBLY

1. Place No.4908 Cab Weight in No.2429 Cab and mount on No. 2313 Boiler with one No.7503 Screw, #2-56x $\frac{1}{4}$ " S.T.R.H. through bottom of lug located at rear of boiler, then through inside of the cab.
2. Place No.6513 Steam Dome on its base next to cab, secure with a No.7306 Screw, #2-56x $\frac{3}{8}$ " Fil. Head. In the hole on top of the steam dome, insert No.8604 Whistle and control lever of the whistle in the hole provided in the cab roof.
3. The No.6512 Sand Dome is mounted on the base just forward of the steam dome in the same manner with a No. 7503 Screw, #2-56x $\frac{1}{4}$ " S.T.R.H.
4. The No.7695 Handrail Posts are push-fit into holes in boiler. Using a pair of needle-nose pliers, push post to bottom of hole, keeping flat of post parallel to running board. At a point $\frac{1}{16}$ " from where post enters boiler, make a right angle bend upwards (see drawing) making a good sharp bend. Now grip the post close to the top of bend and make a quarter turn to the right. The hole should now face the front and rear of locomotive. Sighting through the holes in posts they should now line up with the handrail hole in cab front. Thread No.7609 Handrail steel wire through the two posts, then into cab wall but do not bend over end as you may want to remove cab for painting. The front end of the handrail wire is clipped off $\frac{1}{8}$ " from front edge of boiler. A drop of solder or cement at each post will hold wire securely in place.
5. NO.8187 Bell and Bracket (one piece) is cemented in the hole to the rear of the smokestack.
6. Mount No.6715 Headlight by placing the lug located on the bottom into the slot in No.8255 Headlight Bracket. Then slide lug into slot on front of boiler as indicated on drawing.
7. Place No.6612 Drawbar (shown on tender assembly drawing) over boss at rear of loco frame. Remove and discard the #2-56 Hex nut. Hold the pilot truck assembly, previously assembled, in place. Lay boiler on frame and hold loosely in place with No.7480 Screw, #2-56x $\frac{1}{2}$ " Washer Head. Insert No.7503 Screw, #2-56x $\frac{1}{4}$ " R.H.S.T. at rear end of frame. Do not screw up tight, leave loose. Cut and fit smoke box supports from the No.7610 Brass Wire, as shown in drawing. Tighten lead truck screw first and then rear screw.
8. For those who wish to add a little extra detail, add sand pipes to the front set of drivers by removing sand dome and notching octagon shaped base enough to allow the thin handrail steel wire to lay under the dome. Drill a hole in each running board directly below dome with a No. 72 Drill. Extend wire down below bottom of front edge of fender and snip off.



TENDER ASSEMBLY

1. Place No.2601 Coupler in No.2603 Coupler Pocket and insert No.7477 Screw, #0x7/32" R.H.S.T. as shown on drawing.
2. Screw into hole provided on No.3280 Tender Underframe. Be sure coupler is under spring tension and moves freely.
3. Next install No.16761 Motor Lead and Lug Assembly to No.33582 Motor. Remove the brush assembly retained by the spring at the front of the motor. Rotate the spring so the loop end is free from the fibre plate. Strip off motor lead insulation 3/16" back from end. Place stripped end of motor lead in loop of spring, rotate spring back to original position, replace brush assembly. CAUTION! Make sure lead is located between loop of spring and fibre plate.
4. Insert lug of No.16761 Motor Lead and Lug Assembly through hole in tender frame. Secure motor to frame with No.7276 Screw, #2-56x7/32" R.H. inserted through No. 7573 Lock Washer.
5. Place No.2210 Tender Body on flat surface open side up. Place one No.7503 Screw, #2-56x1/4" R.H.S.T. in each of the holes located in the corners of the tender frame assembly as indicated in the instruction drawing. Then put tender frame assembly on tender body and tighten screws securely. Check motor with 12 V.D.C. for short circuit.
6. Assemble No.24725 Trucks with insulated wheels on the right hand side (as tender will stand on rails) using No. 7494 Screw, #2-56x3/16" W.H.S.T.
7. Place one end of No.12024 Drive Shaft Assembly in socket end of No.16670 Worm Drive Assembly. Other end fits into socket end on the motor.
8. Place No.6612 Drawbar over boss at end of tender frame, secure in place with No.7492 Screw #2-56x3/16" W.H.S.T.
9. Place motor lead wire lug under No.7503 Screw, #2-56x1/4" round head self tapping at rear of locomotive.
10. Mount No.7722 Wood Pile on tender by inserting boss located on underside of wood pile into hole on top of tender.
11. Oil all moving parts of loco and tender with a light oil. Test run on track for a half hour or more.
12. When the loco has been tested and adjusted it is now ready to paint. Clean all parts (except motor) thoroughly with cleaning solvent. Some of the parts, such as loco frame, drivers, wheels, trucks, tender frame, body and cylinder unit, may be cleaned and painted after all burrs and flash have been removed before the first assembly. The suggested color scheme of the General is black with red cab, trimmed in brass and gold. Almost any bright color scheme would be authentic for historic models.



NO. IN KIT	DESCRIPTION	UNIT PART PRICE NO. EACH
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MECHANISM PARTS

1	Cylinder Unit	2657
1	Frame, Loco	3262
1	Bearing Long Axle	6301
2	Bearings Short Axle	6302
1	Retainer Plate	3960
1	Truck, 4-Wheel Leading Assembly	24726
1	Wheels, Axle & Gear Assembly (with Traction Ring), Flanged Front	25141
1	Wheels and Axle Assembly, Flanged Rear (with Traction Ring)	25159
1	Wrench, Hex #0	5511
2	Side Rods (.942" Centers)	6827
2	Traction Rings	7907
1	Spacer, Leading Truck	6942
1	Spring, Conical	7008
2	Main Rods (1" Centers), Straight	7104
2	Screws, #0-80 Short Shouldered Side Rod	7159
2	Screws, #0-80 Intermediate Shouldered Side Rod	7161
1	Screw, #2-56x½" Washer Head	7480
2	Screws, #2-56x¼" Round Head Self Tapping	7503
1	Nut, #2-56 Hex (temporary assembly)	7427
2	Rivets, Valve Gear	8351
1	Crosshead Guide, L.H.	8479
1	Crosshead Guide, R.H.	8480
2	Crossheads	8481
1	Worm and Drive Assembly	16670
	Parts for Above:	
1	Worm, Nylon, 56 Pitch	6664
1	Shaft	2023
1	Bearing	6315
1	Socket End	8586
1	Washer, Steel	7556
1	Weight Cab	4908
1	Worm Shaft Housing	3431
1	Bearing	6315
3	Screws, #0-80x5/32" Round Head	7177

BOILER PARTS

1	Boiler, Die Cast	2313
1	Cab, Die Cast	2429
1	Dome, Brass Sand	6512
1	Screw, #2-56x¼" Round Head Self Tapping	7503
1	Dome, Brass Steam	6513
1	Screw, #2-56x3/8" Fillister Head	7306
1	Drawbar, Fibre	6612
1	Headlight, Molded	6715
1	Headlight, Bracket	8255
2	Screws, #2-56x¼" Round Head Self Tapping	7503
4	Posts, Handrail	7695
1	Wire, Handrail, Steel 8" Long	7609
1	Wire, Smokebox Support, 4" long	7610
1	Bell and Bracket	8187
1	Whistle	8604

ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

NO. IN KIT	DESCRIPTION	UNIT PART PRICE NO. EACH
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TENDER PARTS

1	Body, Tender	2210
1	Frame, Tender	3280
1	Coupler	2601
1	Coupler Pocket	2603
1	Screw, #0-80x7/32" Round Head Self Tapping	7477
1	Motor Assembly with No. 8586 Socket End	33582
	Parts for Above:	
1	Motor Plain	33579
1	Socket End	8586
1	Washer, Lock	7573
1	Screw, #2-56x7/32" Round Head	7276
1	Motor Lead and Lug Assembly	16761
2	Trucks, Tender	24725
3	Screws, #2-56x3/16" Washer Head Self Tapping	7494
4	Screws, #2-56x¼" Round Head Self Tapping	7503
1	Drive Shaft Assembly	12024
1	Wood Pile, Molded	7722

REPLACEMENT PARTS

See your Hobby Dealer. If he cannot supply them you may order from the factory. Please send check or money order for parts required, plus \$1.00 for postage and handling.

DEFECTIVE PARTS

RETURN PARTS ONLY – NOT COMPLETE MODEL. Any defective part will be replaced at no charge. If complete or partially completed model is returned only the defective part will be replaced, not installed.

Please enclose check or money order for \$1.00 to cover the cost of postage and handling.

MANTUA FULL ONE YEAR WARRANTY

All Mantua Products are thoroughly inspected and tested prior to shipment and are guaranteed to operate satisfactorily and be free from factory defects. If within one (1) year from the date of purchase this product fails due to defect in material or workmanship Mantua will repair or replace it free of charge. This guarantee does not apply to (a) electric bulbs, (b) damage caused by accident, abuse or mishandling, dropping and (c) units which have been subjected to unauthorized repair. To prevent damage in transit please pack securely and return to: Mantua Service, Grandview Avenue, Woodbury Heights, N. J. 08097.

MANTUA

MANTUA METAL PRODUCTS CO., INC.
GRANDVIEW AVENUE, WOODBURY HEIGHTS, NEW JERSEY 08097

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