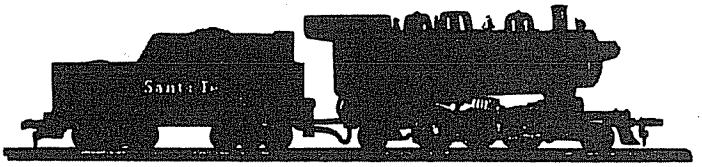
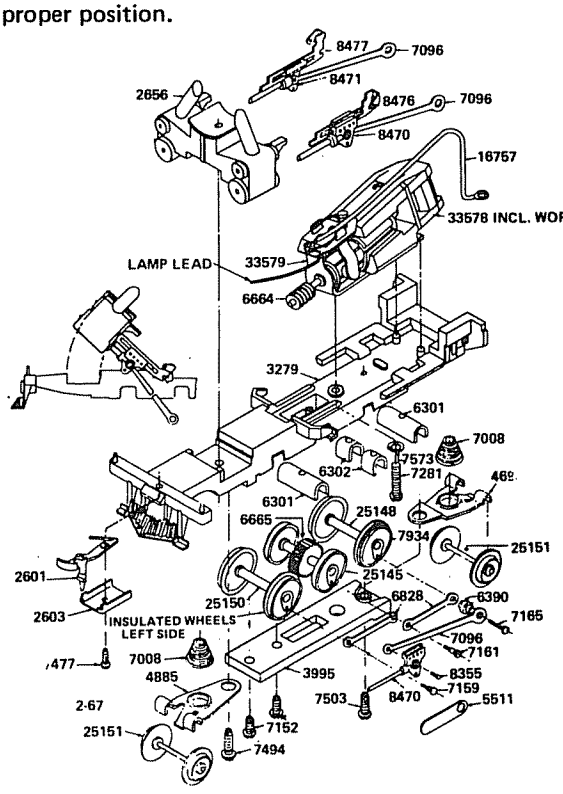
# MANTUA



# 2-6-2 PRAIRIE

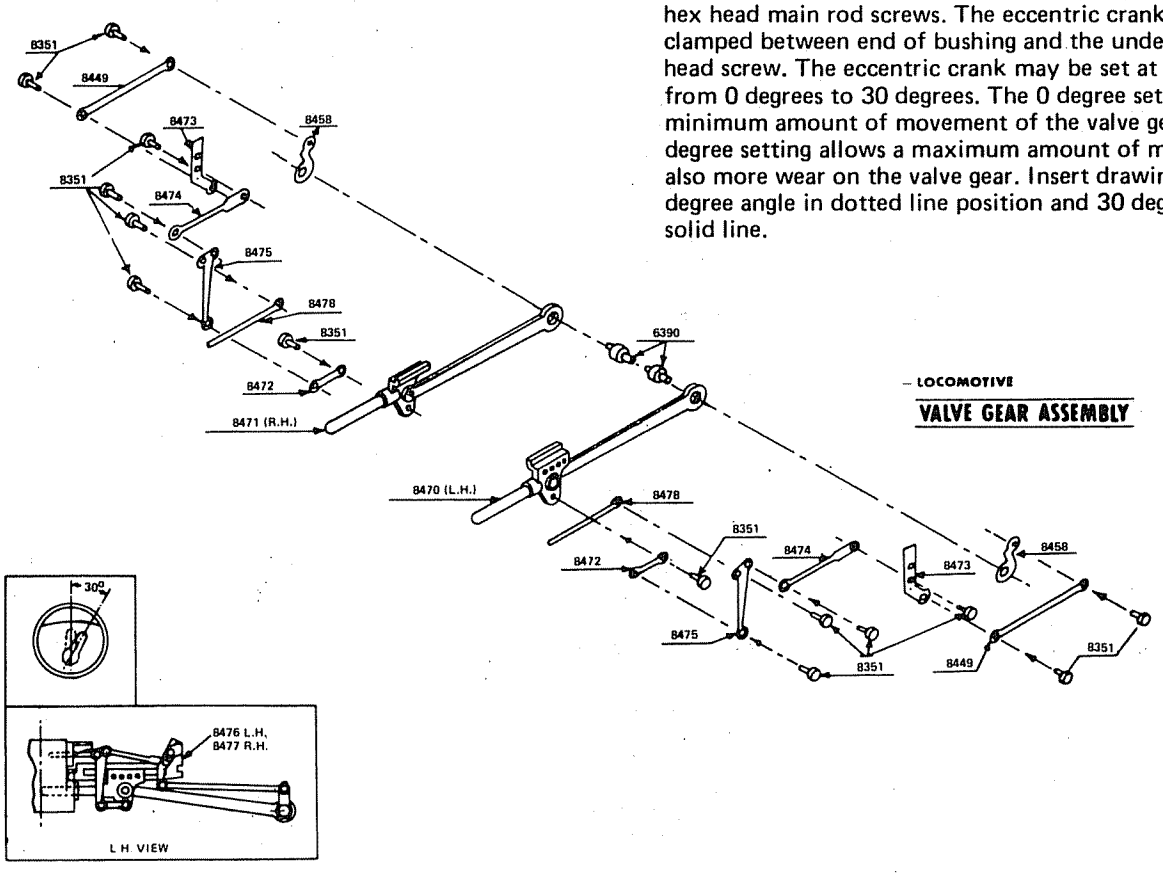
## MECHANISM ASSEMBLY

1. Check all parts with the Replacement Parts List. Study drawings to identify the parts. Read instructions through before starting and BE SURE you understand HOW each part is to be mounted and avoid disappointing and expensive errors. Smooth edges of all castings with a knife or fine file to remove all flash and burrs.
2. Assemble two No.6301 Long Axle Bearings and two No. 6302 Short Axle Bearings in No.3279 Frame making certain they are located on the pins and are properly seated in the bearing slots of the frame.
3. Place No.25150 Driving Wheels in the front slot and No. 25148 with traction ring in the rear slot. Place No.25145 driver's with gear and blind rims in center slot. ALL INSULATED WHEELS must be on the left side.
4. Place No.3995 Retainer Plate in position and secure with two No.7152 screws, #2-56x3/16" S.T.R.H. and one #7503 screw, #2-56x¼" S.T.R.H. as shown.
5. Make certain that each pair of wheels revolve freely in its bearings.
6. Assemble side rods. Starting with left side of mechanism, fasten one No.6828 Side Rod to front driver with No.7159 Short Side Rod Screw. Align free end of rod with crankpin hole of middle drive wheel, over this place another No. 6828 Side Rod so that hole aligns with previous side rod and middle wheel crankpin hole. Secure with a No.7161 Intermediate Side Rod Screw. The free end of this second side rod is fastened to the third set of drivers with a No. 7165 Side Rod Screw #0-80x¼" lg. inserted through No. 6390 Shouldered Bushing as shown. Assemble right side in same manner. Use No.5511 #0-80 Wrench to assemble and tighten side rod screws.
7. 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.
8. Fasten No.33578 Motor Assembly to No.3279 Frame with No.7281 Screw, #2-56x3/8" R.H. with No.7573 Lock Washer. When the screw is tightened the worm and gear should mesh without binding but with minimum backlash. Should adjustment be necessary remove metal from pad surface carefully with a fine file as follows: To bring worm and gear closer remove from front pad and for wider setting from rear pad.
9. To connect No.16757 Motor Lead and Lug assembly to No.33578, Motor use a drop of solder on front Brush Post as shown in drawing or it may be connected under brush spring loop. Remove brush assembly, rotate the spring so loop end is free from fibre plate. Place stripped end of lead in loop of spring. Rotate spring back to original position. Replace brush assembly. CAUTION! Make sure lead is locked between loop of spring and fibre plate. Headlight lead is also connected at this point.
10. Check unit with 12 volt, D.C. Power in both forward and reverse motion. DO NOT TEST RUN without lubricating the nylon worm and gear with Lubriplate or a light grease.
11. Place No.25151 Wheel Assembly in bearing slots of No. 4885 Truck Frame. Bend tab up to hold wheels in position, allowing suitable running clearance. Sand or file axle points after assembly.
12. Place large end of No.7008 spring over boss on truck frame, then place assembled truck frame on boss on Loco frame No.3279 and secure with No.7494 Screw, #2-56x3/16" lg. S.T.W.H.
13. Assemble trailing truck No.4695 in a similar manner as the lead truck.
14. Loosen two front retainer plate screws, remove rear screw and slip No.4695 assembled truck frame over boss provided on No.3995 retainer plate. Be sure No.7008 spring is in proper position.



## VALVE GEAR ASSEMBLY

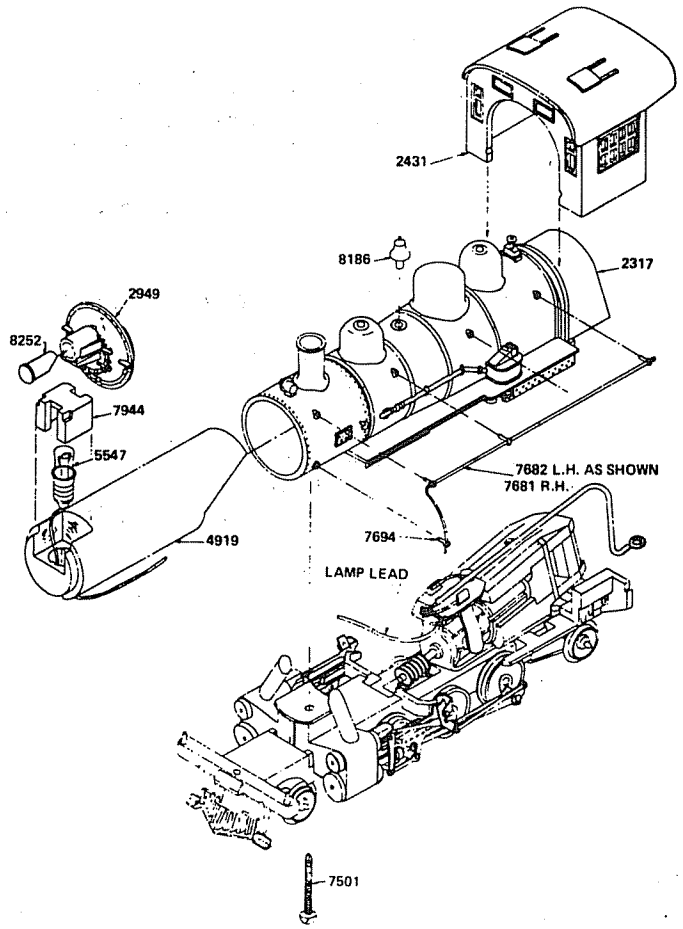
1. Check all parts with the replacement parts list. Riveting the valve gear links together requires a reasonable amount of care and study.
2. On a sheet of white paper place all the valve gear parts just as they will be assembled on the locomotive. The drawing shows the exact relation of the parts to each other. Check your layout over again with the drawing as each part must overlap the other as shown.
3. A few tools will be required for the riveting operation:
   A small flat block of steel as an anvil.
   A flat fine cut needle file.
   A small center punch.
   A small flat ended punch.
   A light hammer.
4. To become more familiar with the riveting – start with the No.7096 Main Rods, No.8470 L.H. side and No.8471 R.H. side Crosshead Assemblies using No.8355 Long Crosshead Rivet. Insert a small center punch in the hollow end of the rivet and tap lightly until the rivet is flared out. Then tap rivet lightly with the flat face of the hammer until it pulls the main rod and crosshead snugly but not tight. All the rods and levers must operate freely before assembling them on the locomotive frame.
5. After both sides of the main rod and crosshead assemblies are finished, rivet together the No.8458 Eccentric Crank and the No.8449 Eccentric Rod using a No.8351 Rivet. Finish both sides before going to the next step, being careful to keep the projecting lug up, thus distinguishing the left from the right side assembly. IMPORTANT NOTE: All No.8351 Rivets are placed with the head outside. A few extra rivets are supplied for your convenience.
6. Left Side – Rivet No.8449 to No.8473.
   Right Side – Rivet No.8449 to No.8473.
7. Left Side – Rivet No.8473 to No.8474.
   Right Side – Rivet No.8473 to No.8474.
8. Left Side – Rivet No.8474 to No.8475.
   Right Side – Rivet No.8474 to No.8475.
9. Left Side – Rivet No.8475 to No.8478.
   Right Side – Rivet No.8475 to No.8478.
10. Left Side – Rivet No.8475 to No.8472.
    Right Side – Rivet No.8475 to No.8472.
11. Left Side – Rivet No.8472 to No.8470.
    Right Side – Rivet No.8472 to No.8471.
12. Rivet the No.8473 Reverse Links to No.8476 L.H. and No. 8477 R.H. Crosshead Guide and Reverse Link Hanger. Use No.8351 Short Valve Gear Rivet (see insert drawing).
13. Assemble crosshead and No.8476 L.H. and No.8477 R.H. crosshead guide and reverse link hanger as shown in final mechanism assembly drawing. Small end of guide pointing the same direction as the piston rod.
14. Assemble No.2656 Cylinder Unit and crosshead guides by inserting piston rod in cylinder, followed by the single point end of crosshead guide into the elongated hole above it. Hold completed unit in position over frame and place notched end of crosshead guide between protecting pins at bottom of guide bracket. When in proper position cylinder unit will drop in slot in frame. See mechanism assembly sheet (View shows assembly less valve gear rods), see also L.H. view at bottom of valve gear assembly sheet. Check crossheads making certain that they slide freely in the guides.
15. Hold cylinder unit in place temporarily by inserting No. 7501 Screw #2-56x13/16" lg. R.H.S.T. through from bottom of frame and secure with a No.7427 nut, #2-56 Hex.
16. Remove the No.7165 Main Rod screw from each side of the rear drivers, slip the end of No.7096 Main Rod over No. 6390 shouldered bushing. Now with the No.8458 eccentric crank place over the end of the bushing, replace the long hex head main rod screws. The eccentric crank is thus clamped between end of bushing and the underside of hex head screw. The eccentric crank may be set at any angle from 0 degrees to 30 degrees. The 0 degree setting allows a minimum amount of movement of the valve gear. A 30 degree setting allows a maximum amount of movement and also more wear on the valve gear. Insert drawing shows 0 degree angle in dotted line position and 30 degree angle in solid line.




– LOCOMOTIVE
**VALVE GEAR ASSEMBLY**

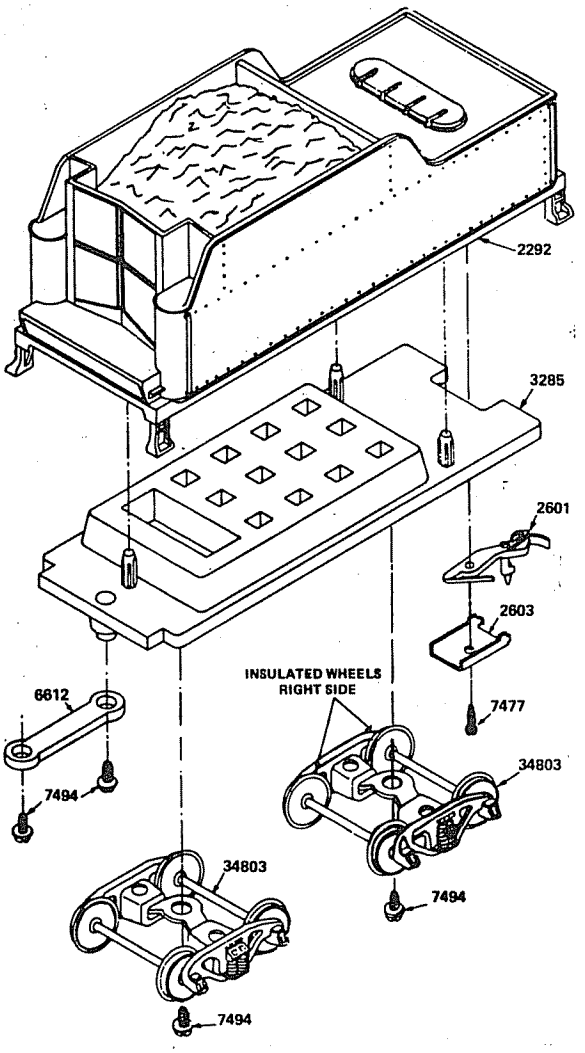
## BOILER ASSEMBLY

1. Thread No.5547 Lamp Lead through hole in boiler weight No.4919 as shown. Press lamp into weight. Place lamp wire in slot on bottom surface of the weight. Insert No.7944 Heat Sink over bulb as shown in drawing. Slide this assembly into boiler lamp lead first (Refer to Paragraph 9 Mechanism Assembly for lamp lead hook up.)
2. Press No.8252 Headlight Lens into No.2949 Boiler Front. Press this assembly into boiler.
3. Press No.8186 Bell into boiler as indicated.
4. Assemble No.2431 Cab and No.2317 Boiler as shown on drawing. Note - a drop of plastic cement on the inside of cab may be used for a permanent assembly.
5. Remove #2-56 Nut temporarily used on Mechanism Assembly.
6. Place boiler assembly on frame, making certain that the projecting lugs on the lower edge of the firebox seat properly in the slots provided on frame. Push boiler back as far as it will go, thus engaging the lugs and locking boiler in place.
7. Insert No.7501 Screw, #2-56x13/16" S.T.R.H. up through frame, cylinder unit and into boiler weight and screw up snugly. Check and see that the motor lead is over top of motor and not jammed between firebox sides and motor.
8. Assemble No.7682 L.H. Handrail and No.7681 R.H. Handrail and No.7694 Handrail posts as shown on drawing.
9. Place No.2601 Coupler in No.2603 Coupler Pocket and insert No.7477 Screw, #0x7/32" S.T.R.H. as shown on drawing. Screw into hole provided on Loco underframe No. 3279. Be sure coupler is under spring tension and moves freely.




## TENDER ASSEMBLY

1. Check all parts with replacement parts list. Study drawings to identify the parts. Read instructions through before starting and BE SURE you understand how each part is to be mounted and avoid disappointing and expensive errors. Smooth edges of all castings with a knife or fine file to remove all flash and burrs.
2. Assemble No.3285 Frame to No.2292 Body by pressing the three pins on the frame into the holes provided in body.
3. Place No.2601 Coupler in No.2603 Coupler Pocket and insert No.7477 Screw, #0x7/32" lg. S.T.R.H. as shown on drawing. Screw into hole provided on Tender Body. Be sure coupler is under spring tension and moves freely.
4. Install No.34803 Trucks with insulated wheels on the right hand side (opposite side to loco insulated wheels). Screw into place with two No.7494 Screws, #2-56x3/16" W.H.S.T.
5. Place No.6612 Drawbar over boss at front of tender frame, over this place motor lead wire terminal, secure with a No. 7494 Screw, #2-56x3/16" S.T.W.H. The other end of Drawbar slips over the boss at the rear of loco frame, No. 7494 Screw is also used here.



| NO. IN KIT | DESCRIPTION | PART NO. |
|---|---|---|
| | **MECHANISM PARTS** | |
| 1 | Main Frame | 3279 |
| 2 | Bearings - Long Axle | 6301 |
| 2 | Bearings - Short Axle | 6302 |
| 1 | Wheel, Axle & Gear Assembly | 25145 |
| 1 | Wheel & Axle Assembly (Rear) | 25148 |
| 1 | Traction Ring | 7934 |
| 1 | Wheel & Axle Assembly (Front) | 25150 |
| 1 | Retainer Plate | 3995 |
| 2 | Screw, #2-56x3/16" lg. R.H.S.T. | 7152 |
| 1 | Screw, #2-56x¼" lg. S.T.R.H. | 7503 |
| 1 | Coupler (Front) | 2601 |
| 1 | Coupler Pocket | 2603 |
| 1 | Screw, #0x7/32" lg. R.H.S.T. | 7477 |
| 2 | Main Rods | 7096 |
| 1 | Crosshead Assembly L.H. | 8470 |
| 1 | Crosshead Assembly R.H. | 8471 |
| 2 | Rivet, Crosshead Long | 8355 |
| 4 | Side Rod (Plain) | 6828 |
| 2 | Screw, (Short) Side Rod | 7159 |
| 2 | Screw, Intermediate | 7161 |
| 1 | Wrench | 5511 |
| 1 | Cylinder Unit | 2656 |
| 1 | Screw, #2-56x13/16" lg. R.H.S.T. | 7501 |
| 1 | Nut #2-56 | 7427 |
| 1 | Motor Assembly | 33578 |
| | Parts for Above: | |
| 1 | Motor, PM-1 | 33579 |
| 1 | Worm, 56P | 6664 |
| 1 | Lock Washer | 7573 |
| 1 | Screw, #2-56x3/8" lg. R.H. | 7281 |
| 1 | Motor Lead & Lug Assembly | 16757 |
| 1 | Lead Truck Frame | 4885 |
| 1 | Trailing Truck Frame | 4695 |
| 2 | Wheel & Axle Assembly | 25151 |
| 2 | Springs, Conical | 7008 |
| 1 | Screw, #2-56x3/16" lg. W.H.S.T. | 7494 |

| NO. IN KIT | DESCRIPTION | PART NO. |
|---|---|---|
| | **VALVE GEAR PARTS** | |
| 2 | Bushing Shld. | 6390 |
| 2 | Screw #0-80x¼" lg. Hex Head | 7165 |
| 1 | Crosshead Guide and Reverse Link Hanger L.H. | 8476 |
| 1 | Crosshead Guide and Reverse Link Hanger R.H. | 8477 |
| 2 | Reverse Link | 8473 |
| 2 | Eccentric Rods (.608 Centers) | 8459 |
| 2 | Eccentric Rods (.926 Centers Kit #504-6) | 8449 |
| 2 | Crosshead Link | 8472 |
| 2 | Eccentric Crank | 8458 |
| 2 | Combination Lever | 8475 |
| 2 | Valve Rod | 8478 |
| 2 | Radius Rod | 8474 |
| 16 | Rivet, Valve Gear (Short) | 8351 |

| NO. IN KIT | DESCRIPTION | PART NO. | UNIT |
|---|---|---|---|
| | **BOILER PARTS** | | |
| 1 | Boiler | 2317 | |
| 1 | Cab | 2431 | |
| 1 | Bell, Brass | 8186 | |
| 10 | Handrail Posts | 7694 | |
| 1 | Handrail R.H. | 7681 | |
| 1 | Handrail L.H. | 7682 | |
| 1 | Weight | 4919 | |
| 1 | Heat Sink | 7944 | |
| 1 | Lamp & Lead | 5547 | |
| 1 | Boiler Front | 2949 | |
| 1 | Headlight Lens | 8252 | |
| | **TENDER PARTS** | | |
| 1 | Tender Body | 2292 | |
| 1 | Tender Frame | 3285 | |
| 1 | Tender Trucks | 34803 | |
| 4 | Screw, #2-56x3/16" W.H.S.T. | 7494 | |
| 1 | Coupler Pocket | 2603 | |
| 1 | Coupler | 2601 | |
| 1 | Screw, #0x7/32" S.T.R.H. | 7477 | |
| 1 | Drawbar | 6612 | |

## 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.