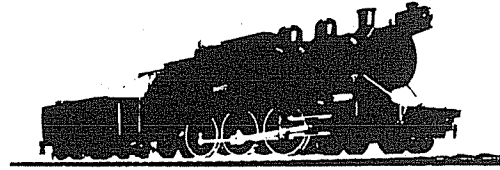


MANTUA



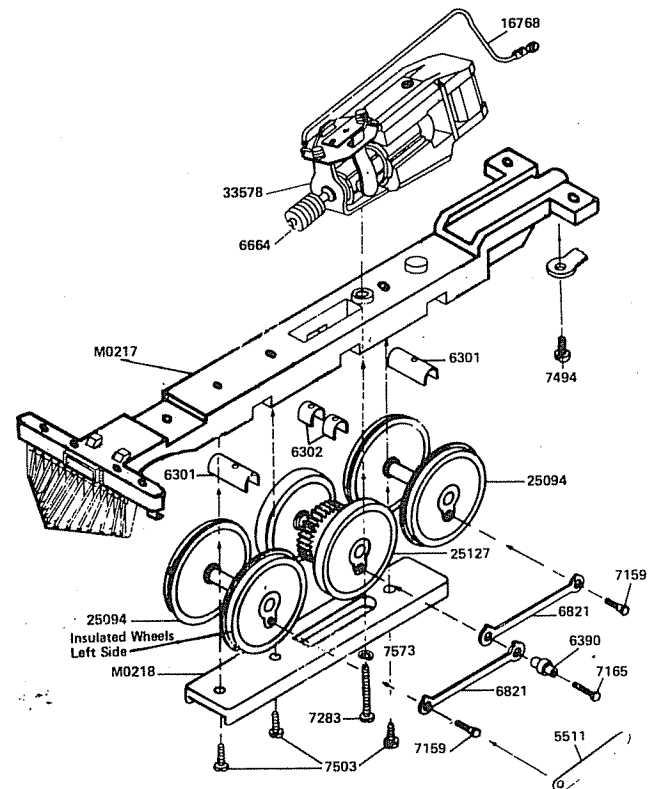
4-6-2 CAMELBACK

MECHANISM 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 two No.6301 Long Axle Bearings and two No.6302 Short Axle Bearings in No.M0217 Frame, making certain they are located on pins and properly seated in bearing slots of frame.
3. Place one pair No.25094 Drive Wheels in the first and third slots of Part No.M0217 Frame, one pair of No.25127 Drive Wheels (with blind rims and gear) in second slot. ALL INSULATED WHEELS must be on the left side (see drawing). Apply a couple of drops of oil.
4. Place No.M0218 Retainer Plate in position and secure with three No.7503 screws, No.2-56x $\frac{1}{4}$ " R.H. as shown. Make certain each pair of wheels revolve freely in its bearing slot.
5. Assemble two No.6821 Side Rods, one No.6390 Shouldered Bushing on Drivers with two No.7159 No.0-80 Short Shouldered Side Rod Screws and one No.7165 No.0-80 Hex Head Main Rod Screw in positions designated on drawing. Use No.5511 No.0-80 wrench to tighten screws. DO NOT USE PLIERS. Drawing shows left side assembly. Assemble right side in same manner. The Main Rod Screws No.7165 must be in each side of the No.25127 drivers.
6. Check rotation of drivers. Tight spots in side rods may be freed by reaming slightly with a round file. DO NOT REAM any more than is absolutely necessary. Assembled mechanism should roll freely.
7. Fasten No.33578 Motor Assembly to No.M0217 Frame with No.7283 screw, No.2-56x $\frac{1}{2}$ " R.H. used 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.
8. To connect No.16768 Motor Lead and Lug Assembly to No.33578 Motor, remove the spring so loop end is free from fibre plate. Place stripped end of lead wire in loop of spring. Rotate spring back to original position to hold brush assembly. CAUTION: Make sure wire is locked between loop of spring and fibre

plate. Alternate method: may be carefully soldered to top of brushspring post. Do not overheat spring.

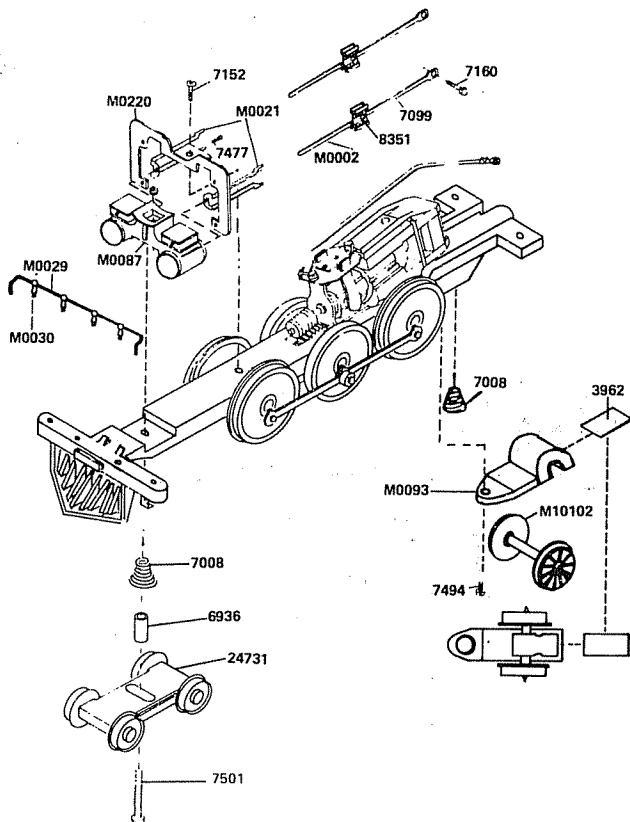
9. Check with 12 Volts, D.C. Power in both forward and reverse motion.
10. Attach No.6612 Drawbar to rear of frame with No.7494 screw, No.2-56x3/16 W.H.S.T.
11. Lubricate worm and gear with Lubriplate or any good light grease. Apply a drop of light oil to all other moving parts. Turn mechanism upside down and in this position run-in mechanism for not less than 30 minutes with 12 Volts D.C. Power. Reverse direction of rotation one-half of the run-in time.



(cont.)

BOILER ASSEMBLY

12. Assemble No.M0002 Crosshead and Piston Rod to No.7099 Main Rod with No.8351 Rivet. Assemble left and right side in same manner.
13. Assemble No.M0021 Crosshead Guide to No.M0087 Cylinder with No.7477 Screw, No.0x7.32" S.T. Do this for right and left sides. Attach No.M0220 Crosshead Guide Hanger to frame with No.7152 Screw, No.2-56x3/16. With Crosshead and Piston Rod fitted into guides set cylinder in place and insert ends of Crosshead Guide into holes in hanger. Secure cylinder with No.7501 Screw, No.2-56x13/16 R.H.
14. Remove No.7165 Hex Head Screws and place main rod on No.6390 Bushing and replace screws.
15. Remove No.7284 Screw holding cylinder on frame. (Keep cylinder in place) Insert Screw through slot in No.24731 Lead Truck then through No.6936 Spacer and No.7008 Conical Spring. With long end of truck forward, re-assemble into place through frame and into cylinder, holding Truck, Frame and Cylinder securely.
16. Place No.M10102 Wheel and Axle set in slot of M0093 Trailing Truck Frame. Slide No.3962 Retainer Plate forward in Frame until it is secured and holding axle in place. Insert small end of No.7008 spring into recess of main frame. Place Trailing Truck so large end of spring slides across top of truck. Secure truck to main frame with No.7494 Screw, No.2-56x3/16 S.T.W.H.



1. Insert No.M0028 Bulb in No.M0018 Bulb-Holder being careful to get wires through slot at bottom rear of holder. Twist the wires together to make easier threading.
2. Place No.M0018 Bulb holder with bulb into headlight cavity on front of No.M0089 Boiler front with slot in holder so wire comes out through rear of headlight housing.
3. Slide No.M0219 weight into top half of No.M0086 Boiler.
4. Thread the wires down the opening between Weight and Boiler on the left side. Wires can now be carefully pulled and boiler front pushed in place.
5. Tabs on front of No.M0082 bottom of Boiler are locked into top half of Boiler as they are pushed forward. Rear lock is then engaged.
6. The stripped ends of the wires are now attached to the brush springs of the motor in the following manner: Rotate motor brush spring so loop is free from fibre plate. Place stripped end of wire in loop of spring. Rotate spring back to original position replace brush arm. Caution: Make sure wire is locked between loop of spring and fibre plate. (Alternate Method) Solder wires to brush spring posts on motor. Do not overheat.
7. Thread No.16768 Motor Lead Wire back between bottom of boiler and frame to be attached to tender.
8. Boiler assembly is attached by two No.7504 2-56x3/8" Screws through the rear outrigger of the frame into the weight. The front is secured by putting No.7281 2-56x3/8" Screw down thru weight to cylinder.
9. Assemble No.M0080 Ventilator to cab roof and place cab over boiler, locate by locks on cab and boiler as shown.
10. Place five No.M0030 Handrail Posts on Handrail No.M0090 and press into holes shown on boiler drawing. Place four No.M0030 Handrail Posts on No.M0029 Pilot Handrail and press into pilot.
11. Press two No.M0083 Handrail Posts into left side of fire box and slide No.M0101 Straight Handrail Wire through center holes. Next slide No.M0078 Handrail through top holes and into holes in cab and rear of lower boiler. Repeat for right side.
12. Assemble bell and bracket and attach to top of boiler with No.7477 0-7/32" S.T. Screw.
13. Press whistle in hole provided.
14. Press air tanks in holes on each side of boiler. All parts may be cemented for extra security if desired.
15. Push Rear Deck Support Wire No.M0120 into holes in rear of Lower Boiler. Wrap tab of Deck No.M0119 around wire to form hinge.
16. Assemble Smoke Box Support as shown.

(Boiler assembly pictured to the right)

NO. UNIT
IN PART PRICE
KIT DESCRIPTION NO. EACH

MECHANISM PARTS

1	Frame, Loco	M0217	\$
2	Bearings, Long	6301	
2	Bearings, Short	6302	
1	Wheel & Axle, Blind w/No.6663 gear 34T,56P	25127	
2	Wheel & Axle, Flanged 80"	25094	
1	Retainer Plate	M0218	
3	Screws, No.2-56x1/4" R.H.S.T.	7503	
4	Side Rods, Plain (968 Centers)	6821	
2	Bushings, Shouldered	6390	
4	Short Side Rod Screws	7159	
2	Hex Head Side Rod Screws	7165	
1	Motor Assembly	33578	
	Parts for above:		
1	Motor, Std. PM-1	33579	
1	Worm, 56 Pitch	6664	
1	Screw, No.2-56x1/2" R.H.	7283	
1	Lock Washer	7573	
1	Motor Lead & Lug Assembly	16768	
1	Cylinder Unit	M0087	
1	Wrench, No.0-80	5511	
1	Lead Truck Assembly	24731	
1	Spacer, Lead Truck .285" Long	6936	
1	Spring, Conical	7008	
1	Screw, No.2-56x13/16 R.H.	7284	
1	Trailing Truck Frame	M0093	
1	Wheel & Axle, 45"	M10102	
1	Retainer	3962	
1	Spring, Conical	7008	
1	Screw, 2-56x3/16 W.H.S.T.	7494	
2	Main Rod	7099	
2	Crosshead & Piston Rod	M0002	
2	Rivets	8351	
1	Hanger, Crosshead Guide	M0220	
1	Screw No.2-56x3/16 S.T.	7152	
2	Crosshead Guide	M0021	
2	Screw, 0x7/32 R.H.S.T.	7477	
1	Pilot Handrail	M0029	
4	Handrail Post	M0030	
1	Rear Deck	M0119	
1	Rear Deck Support	M0120	

NO. UNIT
IN PART PRICE
KIT DESCRIPTION NO. EACH

BOILER PARTS

1	Boiler, Top Half	M0086	\$
1	Boiler, Bottom Half	M0082	
2	Screws, S.T. 2-56x3/8	7504	
1	Screw 2/56 x 3/8 R.H.	7281	
1	Cab	M0095	
1	Cab Ventilator	M0080	
2	Air Tanks	M0092	
1	Boiler Front	M0089	
1	Bulb Holder, Headlight	M0018	
1	Bulb & Lead wire	M0028	
1	Weight, boiler	M0219	
1	Bell, Brass	8181	
1	Bell Bracket - straight	8183	
1	Bell, Crank	8182	
1	Screw, OX 7/32" R.H.S.T.	7477	
1	Whistle	M0142	
1	Handrail, Front	M0090	
1	Smokebox support	M0088	
1	Handrail, Rear R.H.	M0079	
1	Handrail, Rear L.H.	M0078	
2	Handrail, Rear-Straight	M0101	
4	Handrail posts, Rear	M0083	

TENDER PARTS

1	Tender Body	M0097	\$
1	Tender Hatch	M0099	
1	Tender Frame	3285	
2	Tender Truck	34803	
4	Screw, No.2-56x3/16" W.H.S.T.	7494	
1	Coupler, Pocket	2603	
1	Coupler	2601	
1	Drawbar	6612	
1	Screw No.OX 7/32" S.T.	7477	
1	Handrail, Tender	M0100	
2	Wave Washer	M0143	

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.