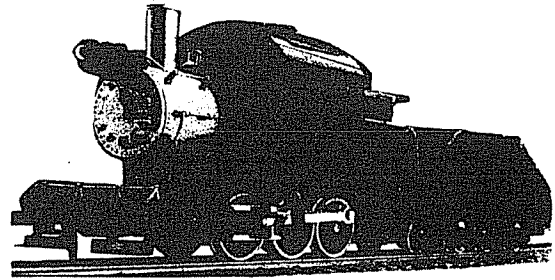


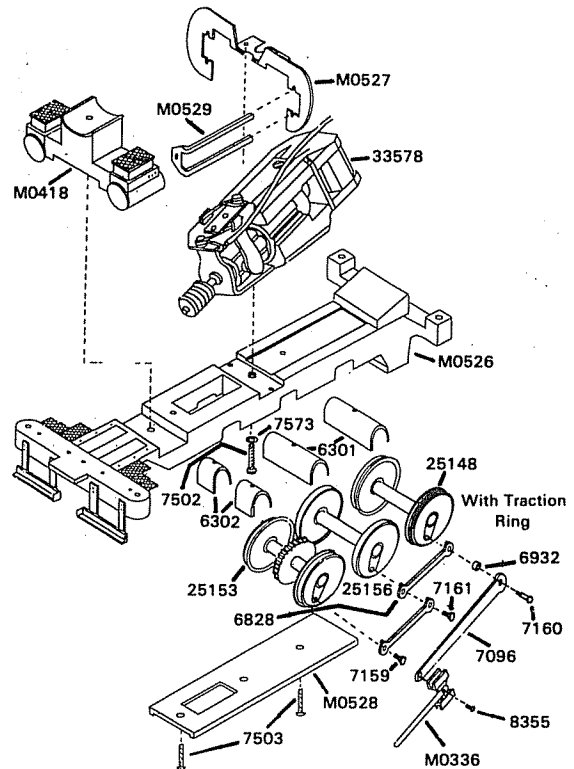
MANTUA



B8a SWITCHER

MECHANISM ASSEMBLY

1. Check all parts with replacement parts list. Study drawing to identify the parts. Read instructions thoroughly before starting assembly. Remove all flash and burrs from casting with knife or fine file.
2. Assemble two long axle bearings #6301 in second and third bearing slots and two 6302 short bearings in front slot of frame, making sure they are properly seated in slots.
3. Place one set of #25150 drivers w/gear in front bearing and one set of #25156 blind drivers in second bearing and one set of 25148 drivers with traction ring in rear bearing. ALL INSULATED WHEELS must be on left side of locomotive when in running position on track. Insulated wheels are identified by a white ring between the wheel casting and wheel rim. Put light oil on each axle.
4. Place #M0528 retainer plate in position and secure with two #7503, #2-56x1/4" R.H.S.T. screws. Make certain each set of wheels revolves freely in its bearing.
5. Assemble four #6828 side rods to drivers using #7159 short side rod screws in front drivers. Use #7161 intermediate screws in second set of drivers and #7160 long screw in last set of drivers. Check for smooth rotation of coupled drivers. Tight spots in side rods may be eliminated by reaming with a round needle file. Do not ream any more than is absolutely necessary. Assembled mechanism should roll freely. Main rod will be attached later.
6. Assemble #M0336 crosshead and piston rod to #7096 main rod by using #8355 rivet as shown. Parts should move freely.
7. Assemble #M0529 crosshead guide to #M0418 cylinder by using #7477, Ox7/32" screws. Line up bars of crosshead guide so crosshead can be slipped between them with piston rod going into cylinder.
8. Place cylinder in saddle of main frame as shown and secure with #7504, 2-56x3/8" S.T. screw, up through frame into cylinder.
9. Remove #7160 side rod screw and place #6932 bushing between #6828 side rod and #7096 main rod and replace #7160 screw to hold them.
10. Place #M0527 crosshead guide hanger in slot in frame as shown and align guide bars in hanger. Secure with two #7477, Ox7/32" screws. All parts should move smoothly before attaching motor.
11. Assemble motor to frame by using #7502, 2-56x7/16" screw and #7573 lock washer.
12. Check unit with 12 volts D.C. power in both forward and reverse directions. DO NOT TEST RUN without lubricating nylon worm and gear with a good light grease.
13. Attach #2604 front coupler and #M0338 coupler pocket with #7477 screw. Assembly is shown on tender drawing.
14. Assemble #M0029 handrail and four #M0030 handrail posts to pilot beam as shown.



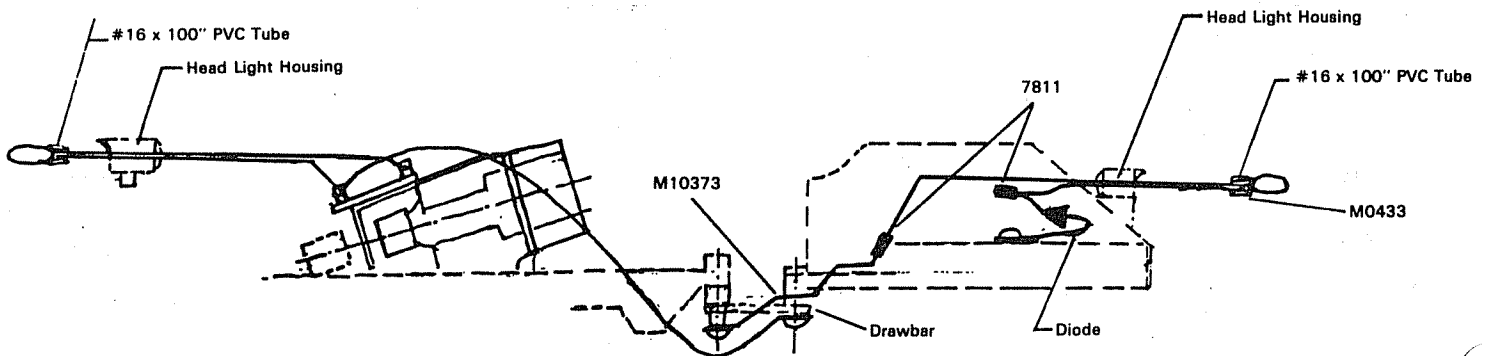
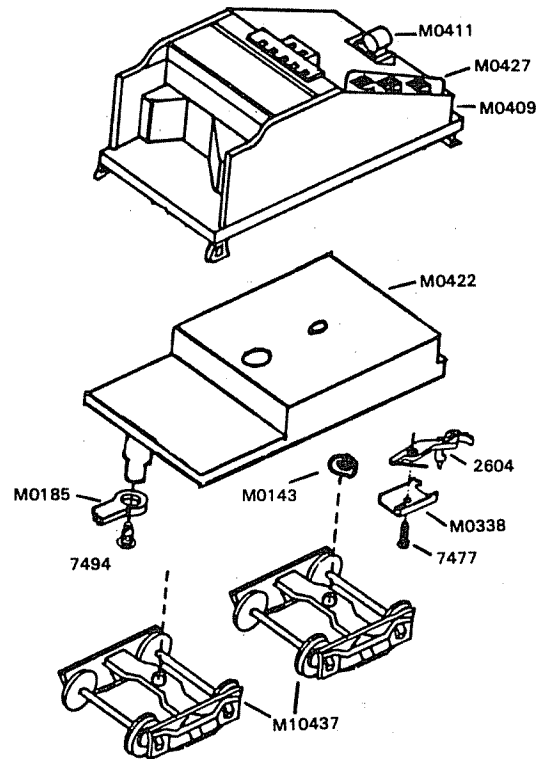
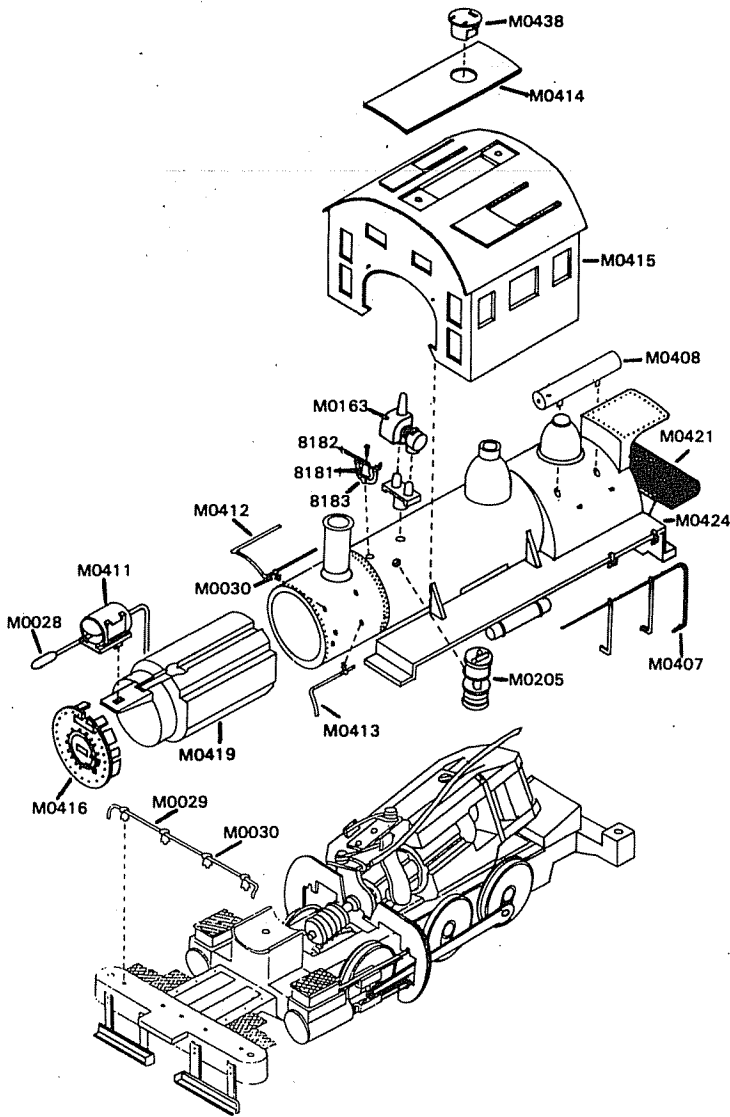
3. Valve and pipe unit #M0417 is fastened to right side of boiler before handrail is installed.
4. Handrails are fastened to boiler as shown.
5. Fasten #8183 bell bracket on boiler with #7477, Ox7/32" screw and place bell and crank in holes of bell bracket.
6. Assemble two parts of M0163 as shown and press into hole in boiler behind bell.
7. Air tanks are pressed into holes on each side of boiler as shown.
8. Assemble dome cover #M0437 to ventilator, which goes on cab roof as shown. Cab weights #M0406 are placed on running boards between the triangular braces with locking tabs fitting into slots on sides of boiler. Cab is now lowered over boiler and weights and snapped into notches in boiler. This secures cab, weights and boiler into one unit. Handrail wires are pushed into holes at each end of cab to finish the assembly.
9. #M0205 compressor is pressed into hole in left side of boiler.
10. Rear deck #M0421 is assembled in slot at rear of boiler.
11. Assemble boiler to frame with #7504, 2-56x3/8" S.T. screw down through smoke stack and weight into cylinder, and two #7487, #2x3/8" S.T. screws up through rear of frame into boiler.

BOILER ASSEMBLY

1. Put #M0433 insulator over wires of M0028 and slide up tight to bulb to protect wires going through hole in metal light housing. Do this for front and rear lights. Assemble bulbs in housings as shown. Follow wiring plan on separate page.
2. Place #M0416 boiler front against front of #M0419 boiler weight with light bracket passing through slot in boiler front. Light housing assembly is pressed into light bracket and glued if desired. Lay wires in slot along top of weight and push weight into boiler until front is snug in boiler.

TENDER ASSEMBLY

1. Assemble #M0427 handrail and #7741 Handrail post to top of #M0409 tender body.
2. Insert light wires through hole in tender body and fasten light housing to rear platform of body.
3. Assemble coupler as shown and install trucks by using #M0143 wave washer and #7494 screw 2-56x3/16 S.T.W.H. with each truck. Brass wheels will be on left side when tender is on track.
4. #M10373 lead wire threads up through hole in front of tender floor and is twisted together with one lead from the rear light. Use #7811 insulator to cover wire joint. The terminal end goes on drawbar post of locomotive frame, using #7494 screw, 2-56x3/16" W.H.S.T. after tender is assembled.
5. After wiring is complete place body on tender floor and secure with #7153 screw, #2x5/16" S.T. up through floor.
6. Use #7494 screw 2-56x3/16" S.T.W.H. to fasten drawbar and lead wire from locomotive to tender frame.



The band on the diode marks the front, which should face toward the rear light.

1. Fasten both lead wires from front lamp by soldering to posts on motor or by fastening under each brush spring. Do not solder to spring, as heat will cause loss of tension in spring.

2. Fasten one lead wire from rear lamp to drawbar post on locomotive using extension with terminal as shown. The other wire is fastened to front of diode and plastic insulation slipped over it.
3. Rear wire on diode is grounded to tender floor with #2-56x3/16" washer head screw #7494.

MECHANISM PARTS

No. in Kit	Description	Part No.	Price Each
1	Main Frame	M0526	
2	Bearing, Long	6301	
2	Bearing, Short	6302	
1	50" Wheel & Axle & Gear, Flanged	25153	
1	50" Wheel & Axle, Blind	25156	
1	50" Wheel & Axle, Flg. w/Traction	25148	
1	Retainer Plate	M0528	
2	Screw, 2-56x1/4" S.T.	7503	
4	Side Rod	6828	
2	Main Rod	7096	
2	Crosshead & Piston Rod	M0336	
2	Crosshead Guide	M0529	
3	Rivet	8355	
2	Screw, Short Side rod	7159	
2	Screw, Intermediate	7161	
2	Screw, Long	7160	
2	Spacer, Main Rod	6932	
1	Cylinder	M0418	
2	Screw, 2-56x3/8" S.T.	7504	
1	Valve Gear Hanger	M0527	
1	Motor w/6664 worm	33578	
1	Lead Wire & Terminal	M10439	
1	Screw, 2-56x7/16 R.H.	7502	
1	Lock Washer	7573	
1	Pilot Handrail & Lift Bar	M0029	
19	Handrail Post	M0030	
2	Coupler	2601	
2	Coupler, Easy-op	M0328	
7	Screw, Ox7/32 S.T.	7477	
2	Coupler Pocket	M0338	
5	Screw, 2-56x3/16" W.H.S.T.	7494	
1	Wrench	5511	
2	Screw, #2x3/8" S.T.	7487	

BOILER PARTS

No. in Kit	Description	Part No.
1	Boiler	M0424
1	Bell	8181
1	Bell Crank	8182
1	Bell Bracket	8183
2	Light housing	M0411
2	Air cylinder	M0408
1	Dome Cover	M0438
1	Generator (2 pcs)	M0163
1	Cab	M0415
1	Ventilator	M0414
2	Cab weight	M0406
1	Boiler front	M0416
1	Boiler weight	M0419
1	Rear deck plate	M0421
1	Front handrail R.H.	M0426
1	Front handrail L.H.	M0413
2	Rear side Handrail	M0407
4	Handrail post	7594
1	Front handrail, top, boiler	M0412
1	Valve and pipe unit	M0417
1	Compressor, single	M0205
2	Bulb and lead wire	M0028
2	Screw, #2x3/8 R.H.S.T.	7487
2	Insulator, PVC tubing .100"long	M0433

TENDER PARTS

No. in Kit	Description	Part No.	
1	Tender frame	M0422	\$
1	Tender body	M0409	
2	Tender truck	M10437	
1	Drawbar	M0185	
1	Diode	M0300	
2	Insulating tubing	7811	
1	Handrail	M0427	
1	Handrail post	7741	
2	Wave washer	M0143	
1	Screw #2x5/16" S.T.	7153	
1	Lead & Lug 3"	M10373	

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 the defective part will only be replaced, not installed. Please enclose check or money order for \$2.00 to cover the cost of postage and handling.

OUR GUARANTEES

Because of the workmanship of the Mantua product, we are able to offer a **Limited Lifetime Warranty**. As the owner of Mantua products, you'll enjoy a commitment to product dependability few companies can offer. All Mantua items are thoroughly inspected and tested prior to shipment. They are guaranteed to operate satisfactorily, and to be free from defects in material and/or workmanship. If it fails to perform because of defects in material or workmanship, Mantua will replace it free of charge. This guarantee does not apply to (a) electric bulbs, (b) damage caused by customer accident, abuse, mishandling or drooping; or (c) products which have been subject to unauthorized repairs. We cannot assume responsibility for the replacement of any parts that have been altered, or assembled and painted, unless, in our opinion, the defect did not become apparent until after the assembly.

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