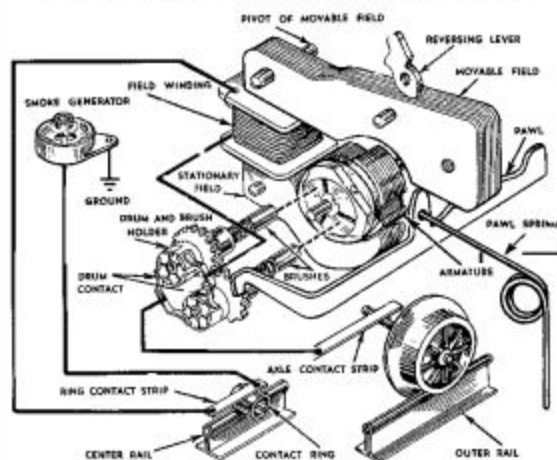


LIONEL SERVICE MANUAL

NOS. 1120 AND 6110 'SCOUT' LOCOMOTIVES

SCHEMATIC DIAGRAM OF NO. 6110 LOCOMOTIVE



Note: With the Exception of the Smoke Generator No. 1120 Locomotive is Identical with No. 6110.

No. 1120 and No. 6110 'Scout' locomotives, produced in 1950, differ from the previously described No. 1110 locomotive principally in being equipped with 'Magne-Traction.' Magnetic force is furnished by a permanent magnet inserted transversely between the rear wheels of the motor. The magnetic circuit is completed through sintered iron driving wheels, while the wheel axles are made of non-magnetic stainless steel.

Addition of 'Magne-Traction' increases the tractive power of 'Scout' locomotives by about 50% and increases their operating voltage slightly.

In order to enable 'Scout' locomotives to traverse switches and crossings without losing 'ground' and reversing automatically, certain changes have been made in the construction and attachment of the front and rear trucks to the motor to provide additional motor ground connections.

Nos. 1120 and 6110 'Scout' locomotives do not have a headlight, but No. 6110 locomotive is equipped with a smoke generator which is attached to the inside of the locomotive casting. Unlike other Lionel smoke generators, the 'Scout' smoke generator is not synchronized with the motion of the locomotive wheels. Instead, the smoke is driven out of the locomotive stack in a steady stream by air forced through the opening in the front of the locomotive casting by the forward motion of the locomotive.

SERVICE HINTS

A number of the 'Scout' locomotives produced in 1950 have exhibited a tendency to reverse involuntarily or erratically. This defect is generally due to an unduly strong pawl spring which causes the reversing mechanism of the motor to operate when the locomotive bumps over an uneven spot in the track. Failure of the locomotive to reverse when desired may be due either to a slightly deformed pawl, or to small imperfections of the plastic brush holder drums, such as 'flash' or burrs on the gear teeth or overlapping of the plastic material over the contacting brass surfaces.

Since the imperfections in the pawl spring and the pawl are difficult to detect without specialized testing equipment do not attempt to adjust or correct these parts but replace them with new parts which, as of the date of this issue, are thoroughly inspected and processed to insure proper spring tension and dimensional accuracy.

To remedy poor reversing action of the 'Scout' motors proceed as follows:

1. Remove motor from the locomotive.
2. Remove plain drive wheels from the axle. Use No. ST-301 Wheel Puller to avoid possible breakage of the motor housing.
3. Holding the motor with the brush housing down, remove end clamps and carefully open motor housing by prying gently with a screw driver or knife blade.
4. Replace the pawl and the pawl spring.
5. Reassemble the motor and the driving wheels and test on the test track before installing into locomotive. Do not expect the motor alone to negotiate switches and crossings because the front and rear trucks are necessary to maintain ground connection.

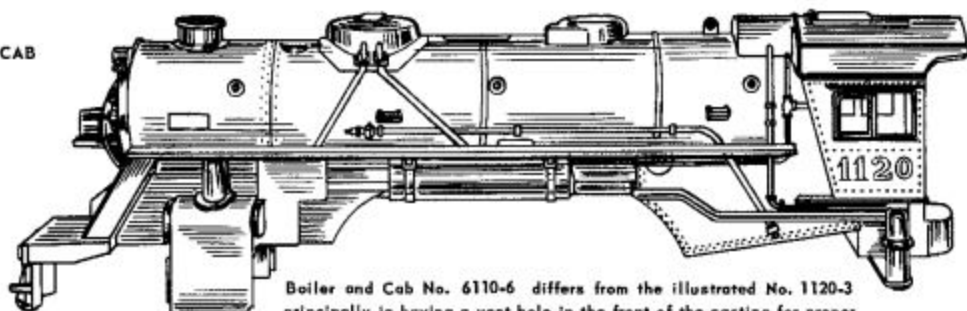


Wire Brushing 'Flash' From Plastic Brush Holder Drum

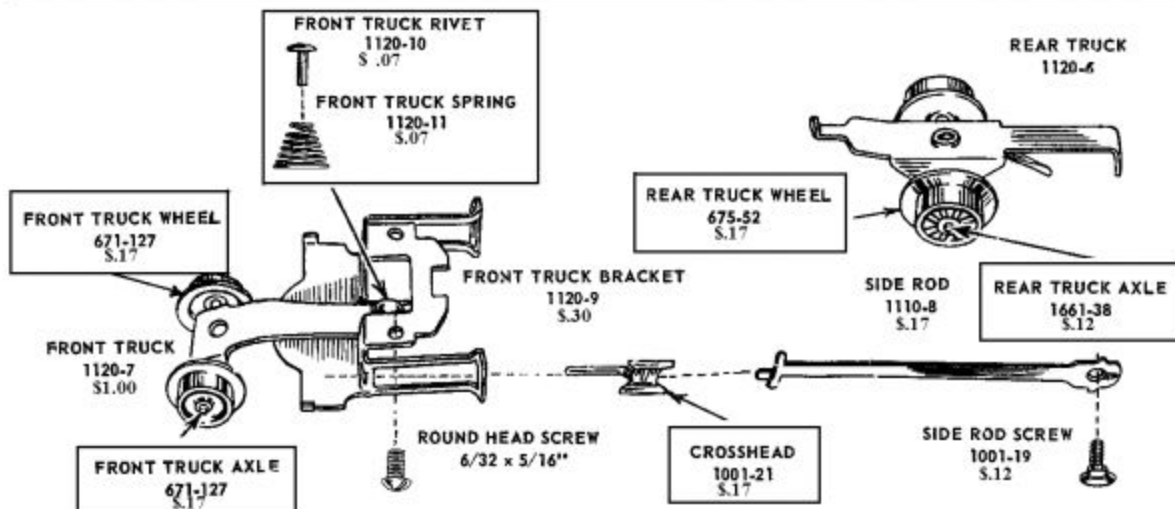
6. If motor fails to reverse properly open the brush housing cover and examine the brush holder drums closely. If any irregularities exist do not attempt to remove them with a sharp blade but brush them off by placing the brush holder on a loosely fitting rod and holding it for a few seconds against a small wire brush wheel chucked in a drill press.

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BOILER & CAB
1120-3
6110-6

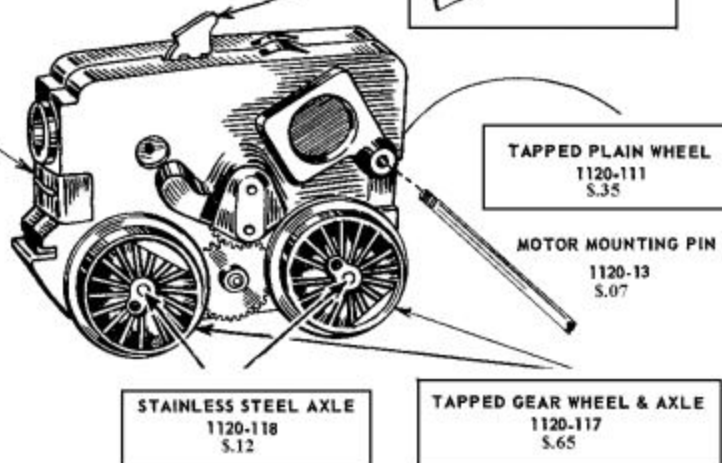


Boiler and Cab No. 6110-6 differs from the illustrated No. 1120-3 principally in having a vent hole in the front of the casting for proper operation of the smoke generator.



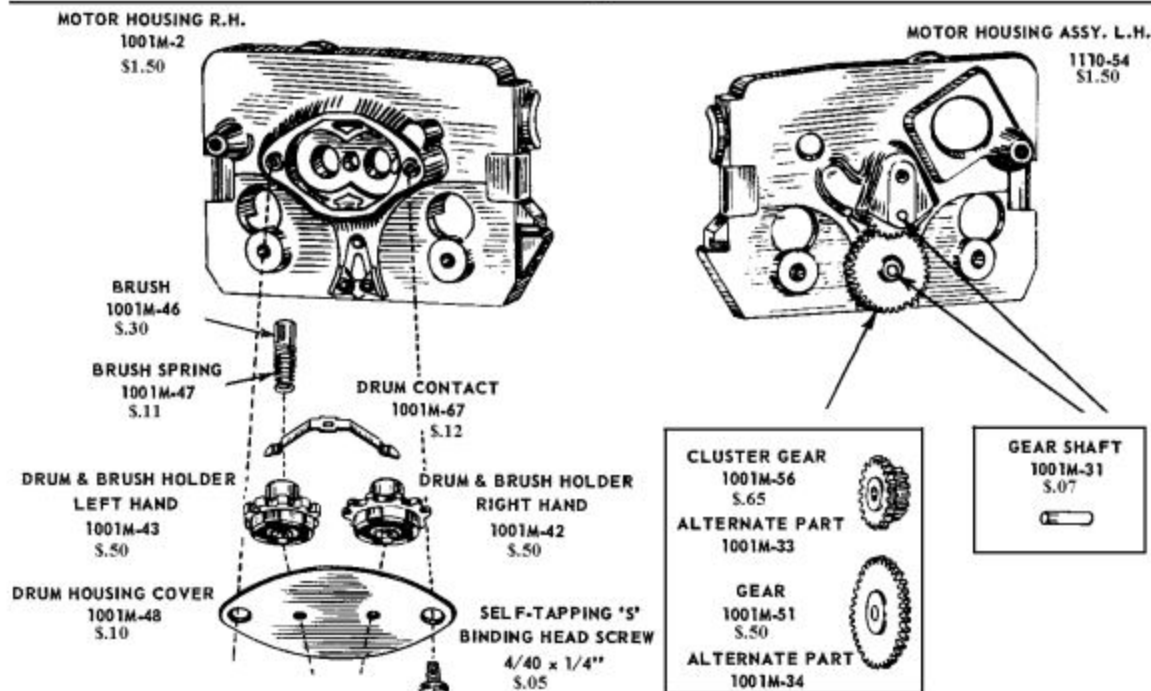
Motor 6110-100 differs from the illustrated No. 1120-100 in being provided with a wire lead for smoke generator connection.

MOTOR COMPLETE
1120-100
6110-100



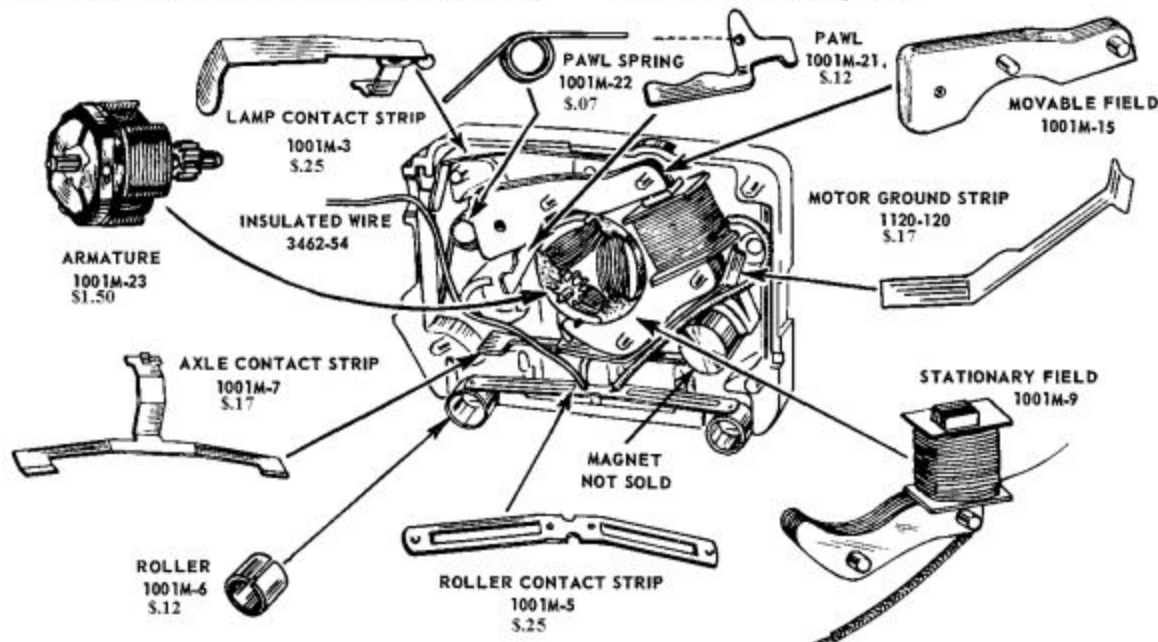
If 6110-100 and 1120-100 'Magne-Traction' motors are not available, 1110-50 motor may be substituted. If 1110-50 is to be used instead of 6110-100, an insulated wire for smoke generator connection should be soldered to the Axle Contact Strip as shown on the following page. Also, to eliminate danger of short circuits, Lamp Socket Strip should be removed.

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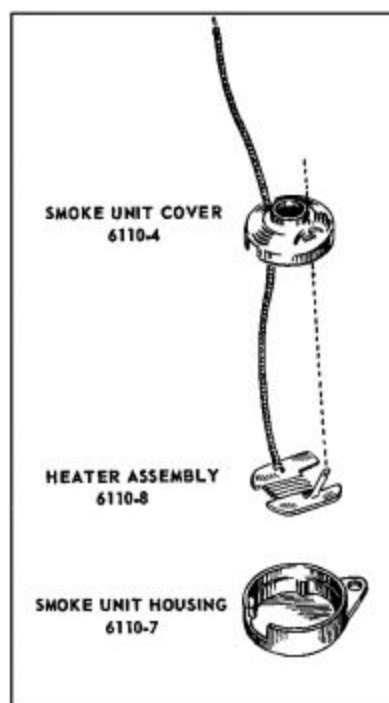


The motor illustrated below is No. 6110-100. Motor No. 1120-100 is similar but does not have the Insulated Wire 3462-54 for smoke generator connection. Since these two locomotives are not equipped with a headlight lamp, Lamp Socket Strip 1001M-8, illustrated in Section LOC-1001, is not included. If desired, however, this strip

may be inserted in 1120-100 motor and the locomotive provided with a headlight lamp. This procedure is not recommended for the 6110 locomotive, since the locomotive's smoke generator would obscure the headlight. Note also the inclusion of the Motor Ground Strip 1120-120 for improved motor grounding.



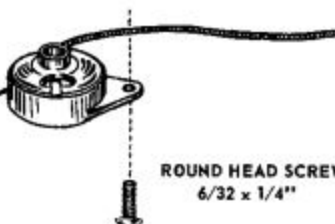
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STACK GASKET
671-181



SMOKE UNIT COMPLETE
6110-15



ROUND HEAD SCREW
6/32 x 1/4"



SMOKE UNIT LINING
6110-5



SMOKE UNIT RETAINER
6110-3

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REPLACEMENT PARTS FOR LOCOMOTIVES NOS. 1120 AND 6110

Part No.	Part Name	List Price	Part No.	Part Name	List Price
671-127	Front Truck Wheel	.10	THESE PARTS FOR 6110 LOCOMOTIVE ONLY		
675-52	Rear Truck Wheel	.10			
1001-19	Side Rod Screw	.10			
1001-21	Crosshead	.10			
1001M-2*	Motor Housing R.H.	.75			
1001M-3	Lamp Contact Strip	.15			
1001M-5	Roller Contact Strip	.10			
1001M-6	Roller	.10			
1001M-7	Axle Contact Strip	.10			
1001M-9	Stationary Field	.60			
1001M-15	Movable Field	.25	671-181	Stack Gasket	.05
1001M-19	Reverse Lever	.05	6110-3	Smoke Unit Retainer	.05
1001M-21	Pawl	.10	6110-4	Smoke Unit Cover	.10
1001M-22	Pawl Spring	.05	6110-5	Smoke Unit Lining	.05
1001M-23	Armature	1.25	6110-6	Boiler & Cab	3.50
1001M-31	Gear Shaft	.05	6110-7	Smoke Unit Housing	.25
1001M-33	Cluster Gear (Alternate)	.35	6110-8	Heater Assembly	.75
1001M-34	Gear (Alternate)	.30	6110-15	Smoke Unit Complete	1.50
1001M-35	Housing Clamp	.05	6110-100 *	Motor Complete	7.25
1001M-42	Drum & Brushholder R.H.	.40	6-32 x 1/4"	R.H. Smoke Unit Mtg. Screw	.02
1001M-43	Drum & Brushholder L.H.	.40			
1001M-46	Brush	pr. .25			
1001M-47	Brush Spring	pr. .10			
1001M-48	Drum Housing Cover	.05			
1001M-51	Gear	.30			
1001M-56	Cluster Gear	.35			
1110-8	Side Rod	.10			
1110-54*	Motor Housing Assy. L.H.	1.25			
1120-3	Boiler & Cab	3.00			
1120-6	Rear Truck	.30			
1120-7	Front Truck	.30			
1120-9	Front Truck Bracket	.15			
1120-10	Front Truck Rivet	.05			
1120-11	Front Truck Spring	.05			
1120-13	Motor Mounting Pin	.05			
1120-100*	Motor Complete	6.00			
1120-111	Tapped Plain Wheel	.25			
1120-117	Tapped Gear Wheel & Axle	.40			
1120-118	Stainless Steel Axle	.05			
1120-120	Motor Ground Strip	.10			
1661-38	Truck Wheel Axle	.05			
4-40 x 1/4"	S.T.B.H. 'S' Drum Housing Sc.	.02			
6-32 x 5/16"	R.H. Front Truck Screw	.02			

*NOT AVAILABLE

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TEN-T

PL

1-60

NO. 247T - TENDER

TEN-247T

Part Number	Location	Unit Price	Min. Quan.	Description
247-26		2.50		Tender Body (Baltimore & Ohio)
566-1	B-55	1.25		Coupler Truck
566-16	P-87	.02	25	Truck Rivet
567-1	I-28	.75		Plain Truck
1130-52	G-36	1.00		Frame
1130-53	G-36	.15	4	Drawbar
4 x 1/4"	Q-53	.02	25	Rec. RHST "Z" Body Screw

NO. 250T - TENDER

TEN-250T

250-26	G-37	2.50		Tender Body
566-1	B-55	1.25		Coupler Truck
566-16	P-87	.02		Truck Rivet
567-1	I-28	.75		Plain Truck
1130-52	G-36	1.00		Frame
1130-53	G-36	.15	4	Drawbar

NO. 1001T - TENDER

TEN-1001T

221-7	G-51	.15	4	Drawbar
500-1	P-32	.75		Coupler Truck
501-1		.50		Plain Truck
1001T-2	C-42	1.00		Cover
1001T-3	Obsolete			Frame
1002-5	P-92	.02	25	Eyelet

NO. 1130T-500 - TENDER

TEN-1130T

566-1	B-55	1.25		Coupler Truck (Rear)
566-16	P-87	.02	25	Truck Rivet
567-1	I-28	.75		Plain Truck (Front)
1130-26	G-35	2.50		Body Back
1130-52	G-36	1.00		Frame
1130-53	G-36	.15	4	Drawbar
1130-502	H-38	2.50		Body (Pink)
4 x 1/4"		.02	25	Rec. ST "Z" Body Mtg. Screw

- continued -