



# **Mamod SL1K Locomotive Assembly Instructions**

## **LOCOMOTIVE ASSEMBLY INSTRUCTIONS**

To ensure ease of construction reference to these instructions are essential.

All the major parts are in the front of the box and the small components are in polythene bags. Numbers on the bags refer to items on the drawings.

When constructing for 'Gauge 1' ensure longer wheel assemblies are used, and fit 6 gaskets either side of port face.

### **Stage 1**

#### **CHASSIS ASSEMBLY**

Essential tools are small screwdriver and a pair of small electrical pliers. Desirable tools are 6BA spanner or small adjustable spanner.

#### **SUB ASSEMBLY – CYLINDER AND PORT FACE RIGHT HAND**

Take cylinder ( item 1 ) and place on port face ( item 2 ). Fit spring ( item 5 ) over trunnion bolt ( item 4 ). Locate bolt and spring through rear of port face and screw tight into cylinder.

Repeat for cylinder and port face left hand.

#### **FRAME AND CYLINDER ASSEMBLY RIGHT HAND**

Take 2 gaskets ( item 3 ) and fit to rear of cylinder and port face assembly. Place on frame ( item 7 ) locating bolt and spring through hole. Align screw holes and fix rear holes with 2 long screws ( item 28 ) and nuts ( item 26 ).

Frame and cylinder assembly left hand repeat as above.

#### **WHEEL AND MAIN FRAME ASSEMBLY**

Take both frame and cylinder assemblies and place back to back. Take leading axle assembly ( item 54 ) ( long pins ) and slide axles into front slots ensuring brass bearings are outside the frame.

Repeat with the trailing axle assembly (item 55) ( short pins ).

Pull frames apart, this will locate bearing bushes into location holes. Fit spacer ( item 8 ) with 2 short screws ( item 6 ).

#### **REVERSING VALVE ASSEMBLY**

Take ( item 12 ) reversing block and insert 2 'O' rings ( item 13 ) to counter bored holes in rear. Fit spring ( item 17 ) onto bolt ( item 18 ). Pass bolt through retainer plate ( item 14 ) and through rear of block ( item 12 ) and screw into reversing lever ( item 11 ) ensuring alignment of holes in retainer plate with rubber 'O' rings.

Take valve assembly and secure to main frame front using 4 long screws ( item 28 ) and locating to front cylinder assembly holes. When done check that both front and rear cylinder screws are tight.

### **WHEEL AND CONNECTING LINK ASSEMBLY**

Place 1 black washer ( item 20 ) over each leading and trailing crank pin on wheels, then place connecting link ( item 21 ) over pins, place 4 more black washers ( item 20 ) on top and secure in position with 4 circlips ( item 22 ).

Spring out piston ends to go over leading pins on front wheels, revolve wheels to ensure a free motion.

### **EXHAUST AND STEAM PIPE**

Take exhaust pipe ( item 15 ) and place 'O' ring ( item 13 ) approx. 6 mm (1/4") down long leg of pipe. Put a spot of oil or fairy liquid on opposite end and push into right hand side of reversing block ( item 12 ) this is a tight fit and care must be taken not to damage the 'O' ring.

Next take steam pipe ( item 19 ) and locate into left hand side of block with long end upper most.

( Check that end of pipe is burr free and smooth edge if necessary ).

### **TANK ASSEMBLY**

Take boiler ( item 32 ) and fit buffer beam ( item 10 ) over coupling.

Take buffer ( item 25 ) and feed screwed end into buffer stock ( item 24 ) locate into buffer beam and secure with nuts ( item 26 ). Fit coupling ring ( item 23 ) by prising open ( such as with key ring ) and feed into coupling bottom section.

Fit smoke box handle ( item 16 ) with pozi screw ( item 48 ).

Take whistle ( item 47 ) and place 1 aluminium washer ( item 49 ). Then fix arm ( item 51 ). Hold secure by fitting fibre washer ( item 34 ) this is a tight fit and may have to be screwed up the thread. It will assist if washer is placed in oil or water prior to assembly.

Next screw whistle into boiler opposite end to chimney. Do tighten but do not over tighten.

When secure fit whistle lever ( item 46 ) with long screw ( item 28 ) and nut ( item 26 ).

Note, there must be free play on whistle arm, bend arm upwards if required.

### **SIDE TANK FITTINGS**

Take cab ( item 37 ) and fix right hand side tank ( item 36 ) to the top hole above lugs in the front of the cab. Fix with short screws and nuts ( item 6 and 26 ).

Repeat operation for left hand side tank.

Take combustion chamber ( item 33 ) and insert between side tanks and secure to cab with 2 ( item 6 ) screws and 2 ( item 26 ) nuts to bottom fixing tags.

Next slide boiler into combustion ensuring that the side tanks lugs nest into the slot between the boiler and front casting and whistle lever locates into cab. Secure both side tanks to front end with black pozi screws ( item 48 ).

Take reflector ( item 38 ) and locate into boiler end hole ( this rests on the inside lip of the end hole ). Fit 'O' ring ( item 39 ) on inner rim which forms a gasket.

Place glass ( item 40 ) on top of 'O' ring, carefully fit gauge ( item 42 ) over glass, secure with 2 small screws ( item 6 ). It is essential that great care be taken over this operation to ensure a steam tight seal. It is advisable to hold the gauge firmly in position with thumb and screw down each screw a turn at a time.

Locate grab rails ( item 41 ) through tank side and cab secure with 4 nuts ( item 46 ).

Fit 2 short screws ( item 6 ) and 2 nuts ( item 26 ) to underside of cab.

Take ( item 45 ) roof clip secure into roof ( item 44 ) with 2 black screws ( item 27 ) and nuts ( item 26 ).

Ensure that roof clip tags face downward and toward rear of cab. Then fit roof to cab with 4 black screws ( item 27 ) and nuts ( item 26 ).

## **FINAL ASSEMBLY**

Take chassis and cab assembly and carefully feed cab assembly over steam and exhaust pipe and at same time locating reversing lever in slot. This operation can be best done by holding cab at approx. 45° to chassis and offering the cab over pipes and reversing lever.

Finally ensure correct location by pressing with both thumbs on underside of chassis by base of reversing bloc, squarely fixing side frames to outside of casting tabs.

Fit 2 front screws ( item 6 ) to secure side frames to casting. This may prove a little difficult. It is best to dip screwdriver into grease or Vaseline to ensure the screw adheres to screwdriver this will enable location into screw holes by the side of the cylinder.

Fit buffer beam ( item 10 ) over coupling in drag-beam ( item 9 ) and fit to rear of side frames. Take buffer ( item 25 ) and feed screwed end into buffer stock ( item 24 ) locate into buffer beam and secure with nuts ( item 26 ). Fit coupling ring ( item 23 ) by prising open ( such as with key ring ) and feed into bottom section.

Fit rear fixing screws ( item 6 ) and secure side frames to drag-beam. Fit 2 screws and nuts to secure cab to each side frame.

Fit 'O' ring ( item 13 ) over pipe in boiler and locate bronze spring ( item 29 ) on top of 'O' ring.

Place grey fibre washer ( item 50 ) over dome bush thread ( item 30 ) and screw into boiler, with spanner or adjustable, do tighten BUT DO NOT OVERTIGHTEN.

Fit dome ( item 31 ) by pressing from side against spring.

Fit washer ( item 34 ) onto safety valve ( item 35 ) and secure, finger tight, again oiling washer to soften.

Locate burner tray under frames inside cab.

Finally fit grab rails to rear cab back.

Locate back ( item 43 ) into slots in back of cab and roof clip.

### **AS A FINAL CHECK**

1. Oil all moving parts piston rods, port faces, reverse lever, wheel bearings and bushes.
2. Make sure all screws and nuts are tight.
3. Revolve wheels with palms of hand to make sure everything is in order.

**WELL DONE !**

## **SMALL PLASTIC BAGS FOR SL1K LOCOMOTIVE KIT**

<b>Bag 1</b>	Item 24 & 25	4 x Buffers and 4 x Buffer stock.
<b>Bag 2</b>	Item 41, 46 & 23	8 x 5BA Full nuts, 4 x Grab rails & 2 x coupling links.
<b>Bag 3</b>	Item 38, 39 & 40	1 x Sight Glass, 1 x Sight Glass reflector and 1 x Sight Glass 'O' ring.
<b>Bag 4</b>	Item 27, 48 & 16	6 x 6BA x 3/16" Long black screws, 3 x Black posidrive screws and 1 x smoke box handle.
<b>Bag 5</b>	Item 4 & 5	2 x Trunnion bolts and 2 x Trunnion springs.
<b>Bag 6</b>	Item 17, 18, 20 & 22	1 x Steering pivot, 8 x black Coupling washers, 1 x reverse lever spring and 4 x circlips.
<b>Bag 7</b>	Item 13, 29, 34, 49 & 50	1 x Bronze spring, 1 x dome plug fibre washer, 2 x fibre washers, 1 x Aluminium washer and 4 small 'O' rings.
<b>Bag 8</b>	Item 6, 26 & 28	16 x 6BA x 3/16" Screws, 23 x 6BA Nuts plus 9 x 6BA x 5/16" long screws.

### **Main Bag**

1 Exhaust pipe	2 connecting links
1 Steam pipe	1 Roof spring
4 Gaskets	1 pipe & 'O' ring retaining plate
1 Whistle assembly	1 spacer
1 Whistle bracket	1 funnel
1 Whistle lever and spring	

### **Gauge '1' Bag**

1 Leading Wheel Assembly
1 Trailing Wheel Assembly
10 Gaskets
8 x 6BA x 1/2" long screw



