

LMS 1P O-4-0T ASSEMBLY INSTRUCTIONS

These locos. were introduced in 1881 by Johnson for the Midland Rly. and 205 were built over the next few years. They lasted in their original condition until the early 1900's after which they all gradually had their chimneys and smokebox doors replaced with the Deeley type. A number were rebuilt with Belpaire fireboxes from about 1920 onwards, and our kit produces a model of the loco. in this condition. We also produce a separate kit for the Johnson boilered version (LK3). Many of both forms of this loco. had a very long life, several lasting well into B.R. days. After re-building with Belpaire fireboxes these locos. were painted in Deeley's simplified M.R. crimson lake livery, lined in black and yellow. The LMS kept some in crimson livery for a while, but all ended up painted black, some being lined red in earlier LMS days. In BR days some were painted lined black, and some were plain black.

Before commencing assembly of this model familiarise yourself with all the parts and study the diagram. We recommend solder for assembly (low melting point solder for the castings). Any flash on the castings should be removed, as should all etching tags. The etched lamp brackets are notched where bends are required. Check continually during assembly that everything is square and flat.

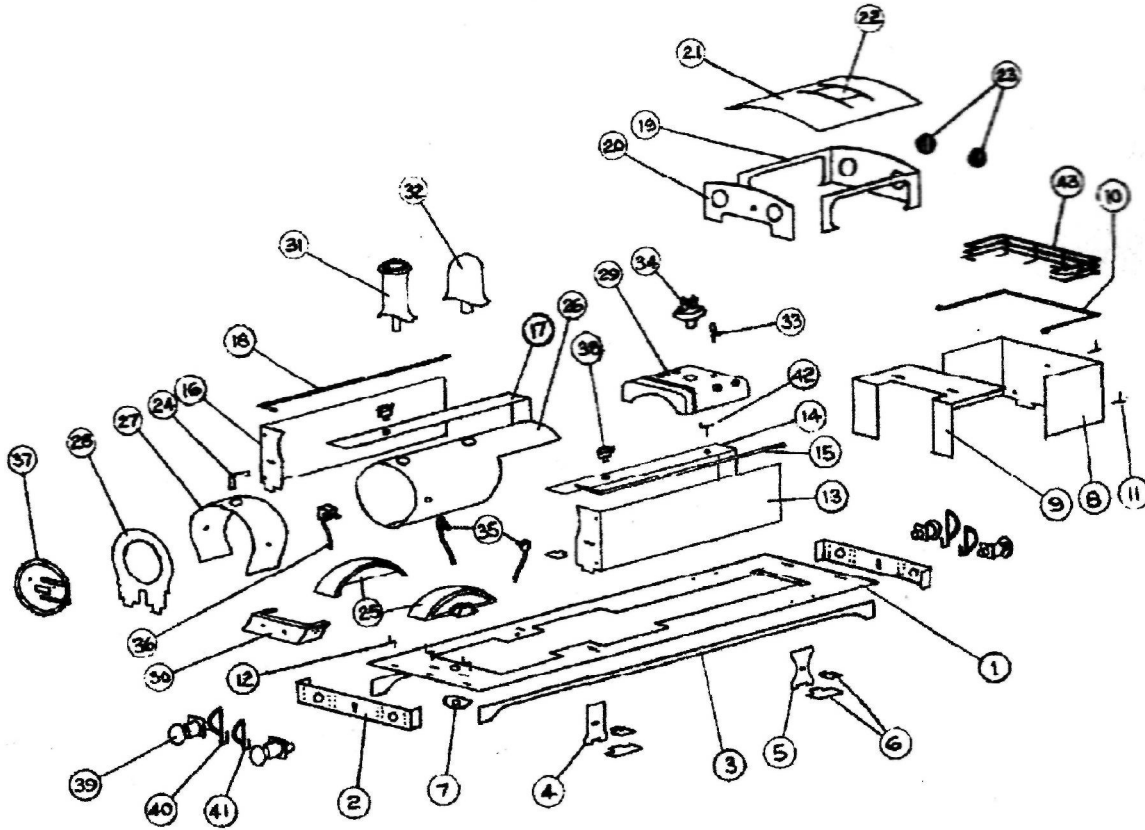
**CHASSIS ASSEMBLY** Take one of the frames (1) and fix in two of the axle bushes (2). Then fix one of the strengthening pieces (3) to the inside face of the frame. Next bend over the end of one of the motor packing pieces (4) so as to double the thickness of the top corner, then fix it in position on the strengthening piece. Repeat this with the other frame so that one is left-handed and the other right-handed. Take the large spacer (5), bend the ends at right angles, and fix it to one of the frames. Then fit the plain spacer (6) in position at the rear of the chassis, after which the other frame can be fitted to it, followed by the front spacer (7). Take the motor mounting (8) next, solder one of the etched washers over the small hole, and tap the hole 8BA. Then bend the end over slightly to match the frames and solder in place with the washer on the underside, using the motor, and axle, and the gear set, to ensure correct positioning and gear mesh. Similarly solder a washer over each of the two holes in the centre of the main spacer and tap these 8BA. The larger washer with the larger hole should now be fitted over the underside of the hole in the front spacer. Take the 20g brass wire (9), cut in half, and solder each half through the small holes in the frames with an equal amount protruding either side of the chassis. The front and rear guard irons (10) and (11) can now be fitted and bent to shape. Next fit the sandboxes (12) and brake lever brackets (13) into their respective holes in the frames, followed by the brake lever support (14), which should be fixed through the frame slots, bent over as shown and the surplus length removed. It will be found easier to paint the frames at this stage rather than when the chassis is complete. The driving wheels and axles, and the gear can now be fitted to the chassis. Then solder the coupling rod halves together, drill out the holes to fit the crankpins, and fix in place, making sure that the wheels revolve freely. Screw the collector tag (15) with the two fibre washers (16) to the hole in the centre of the large spacer, between the two driving axles, ensuring that the tag is insulated from the chassis. Some of the nickel silver wire can then be soldered to the tag and bent to form the pickup. Take the bogie casting (17) next, place the wheels in position, and fix the retaining plate (18) in place. Then solder one of the small washers over the small hole in the bogie link (19), tap the hole 8BA, and screw the link to the bogie. The bogie is attached to the chassis using one of the screws and the cast bush (20). Now form a spring (21) from some of the nickel silver wire as shown in the diagram, and fix it to the bogie link to bear on the underside of the motor mounting. Final adjustment of this cannot be made until the loco. is complete and weighted as required. The Romford worm should now be fitted to the motor and the motor screwed to the chassis. Then solder the piece of insulated wire from the motor to the collector tag. The brake gear can be assembled next, starting by fixing the brake blocks (22) to the hangers (23) making two left-handed and two right-handed. Solder the hangers to the 20g wire protruding from the frames, making sure that the brakes do not touch the wheel treads. Trim any excess wire off after fitting. Next thread a piece of nickel silver wire through the bottom holes in the hangers and fix in place, leaving some wire protruding either side to fix the pull rods (24) to. Then fit the pull rods in place, followed by the short brake lever (25) and the long lever (26) on the L.H. side. On the R.H. side fit the long lever vertically, trim to length required, and fit brake cylinder (27) to upper end of it. The chassis is now complete and should be fully tested.

**SUPERSTRUCTURE ASSEMBLY** Take the footplate (1), fold down the flap at the narrow end of the cutout, and press it down firmly against the underside of the footplate. Next fold the ends of the buffer beams (2) at right angles and press out the rivets using a scribe or pin. Lay the footplate on a flat surface and solder the buffer beams at each end. Then solder the valances (3) to the footplate followed by the front step plates (4) and cab step plates (5). These should be soldered behind the valances in the positions shown on the loco. drawing. Eight of the ten steps (6) can now be soldered to the step plates, leaving the shortest two steps for the tank fronts. Solder the washer (7) to the underside of the footplate lined up with the hole at the front end, and tap the hole 8BA. Bend the bunker (8) along the fold lines, and also the coal plate (9), then solder the coal plate inside the bunker. Now solder the beading (10) round the top edge of the bunker. Bend the rear lamp brackets (11) to shape and solder into the slots in the back of the bunker. Fix the assembled bunker to the footplate, locating the rear tags in the footplate slots. Now bend three of the front lamp brackets (12) to shape and solder in the slots in the front of the footplate. Bend the L.H. tank side (13) and L.H. tank top (14), and solder together. Solder the beading (15) to the top edge of the tank, solder a step into the slot in the front. Make a handrail from the wire provided, solder it into the holes, and fix the assembled tank to the footplate, with front tag in the footplate slot. Repeat this with the R.H. tank side (16), top (17) and beading (18). Fit the cab handrails. Take the cab sides/end next (19) bend along the fold lines, and solder to the cab front with the rectangular cutout (20). Locate the rear of the cab in the coal plate slots and solder the cab to the coal plate and tank tops. Then solder the cab roof (21) to the cab. Now curve the cab vent (22) to match the curve of the roof, place it on the roof with the ends over the four holes. Now solder in place from the underside of the roof through the holes. Soldering in this way avoids getting unwanted solder on the outside of the roof. To complete the cab solder the window guards (23) over the rear windows. Take the reversing lever (24), solder one end in the slot in the R.H. side of the footplate, and solder the other end to the inside edge of the tank front. Then solder the two splashers (25) over the leading wheel cutouts. Now take the boiler (26) and solder up the seam. **Using a scribe or pin, press out the rivets in the smokebox** (27) and solder the smokebox round the boiler, making sure the holes line up, and solder the smokebox front (28) in place at the same time. Solder the firebox (29) in place, then fit the assembled boiler to the boiler and then fit the boiler bands to the boiler. Parts (30) to (34) can now be fitted to the loco. If the clacks (35) are required, drill a No. 60 hole each side of the boiler, and fit the clacks in these. The positions of the boiler bands and clacks can be obtained from the loco. drawing provided. Next make the L.H. boiler handrail from the 26g handrail wire. The R.H. boiler handrail should be made from the thicker 22g wire, and fitted in conjunction with the ejector (36). Fit the handrail to the smokebox door (37) and fit this to the smokebox front. Then fit the tank fillers (38) and buffers (39). Wire vacuum pipes (40) and steam heating pipes (41) are provided, and the stems of these should be bent over so that they are of the correct length and the ends can be soldered behind the buffer beams. Fit the brake handle (42) in the hole in the L.H. tank top inside the cab. To form the bunker coal rails (43) lay them on a flat surface, solder the uprights to the rails, bend the rails and the uprights to shape, trim off the ends of the coal rails, and solder the assembly to the bunker. The assembled loco. can now be fully tested and cleaned up ready for painting.

Whilst every care is taken to ensure that this kit reaches you in good condition, should you have any cause for complaint please write to CRAFTSMAN MODELS.

We do not supply wheels, gears or motors for this kit as the choice available is wide and kit builders may have their own preferences.

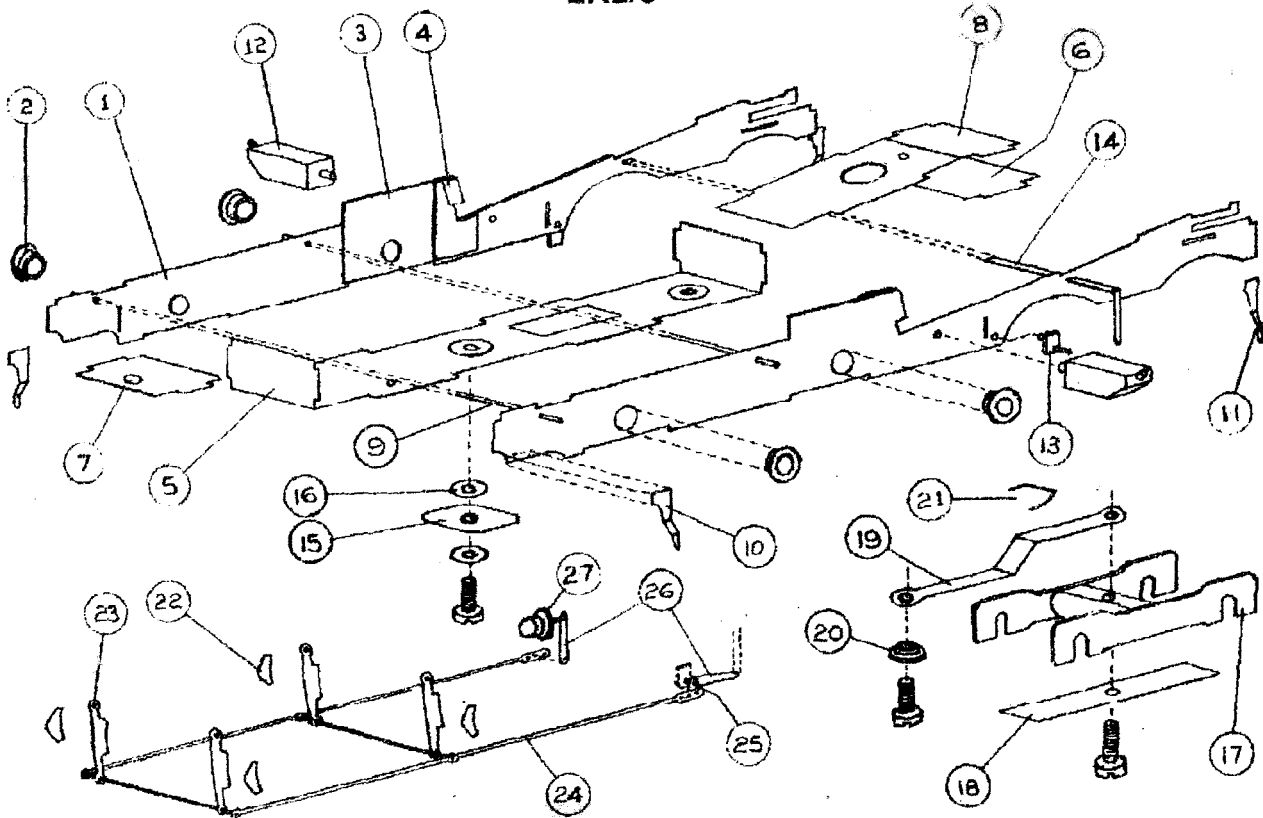
CRAFTSMAN MODELS, 149 Landor Road, Whitnash, Leamington Spa, CV31 2LF (Tel: 01926 428530)



**PARTS LIST**

- |                                |                              |
|--------------------------------|------------------------------|
| (1) Footplate                  | (24) Reversing lever         |
| (2) Buffer beams - 2           | (25) Splashers - 2           |
| (3) Valances - 2               | (26) Boiler                  |
| (4) Step plates, front - 2     | (27) Smokebox                |
| (5) Step plates, cab - 2       | (28) Smokebox front          |
| (6) Steps, asstd. lengths - 10 | (29) Firebox                 |
| (7) Washer                     | (30) Smokebox base           |
| (8) Bunker                     | (31) Chimney                 |
| (9) Coal Plate                 | (32) Dome                    |
| (10) Bunker beading            | (33) Whistle                 |
| (11) Rear lamp brackets - 4    | (34) Safety valves           |
| (12) Front lamp brackets - 4   | (35) Clacks - 2              |
| (13) Tank side, L.H.           | (36) Ejector                 |
| (14) Tank top, L.H.            | (37) Smokebox door           |
| (15) Tank beading, L.H.        | (38) Tank fillers - 2        |
| (16) Tank side, R.H.           | (39) Buffers - 4             |
| (17) Tank top, R.H.            | (40) Vacuum pipes - 2        |
| (18) Tank beading, R.H.        | (41) Steam heating pipes - 2 |
| (19) Cab sides and rear        | (42) Brake handle            |
| (20) Cab front                 | (43) Coal rails              |
| (21) Cab roof                  | Handrail wire                |
| (22) Cab roof vent             | Split pins - 4               |
| (23) Rear window guards - 2    | Boiler bands                 |
|                                | 22g nickel silver wire       |

## LK2/3



### MIDLAND/LMS 0-4-4T CHASSIS ASSEMBLY

#### PARTS LIST

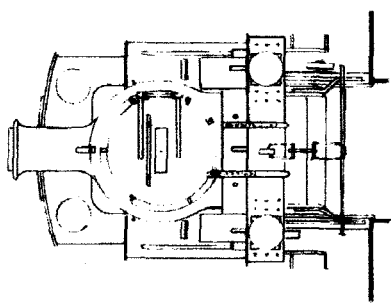
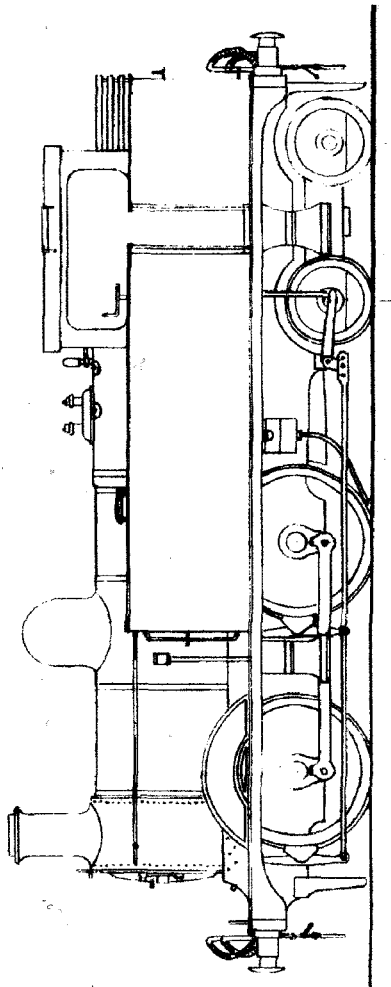
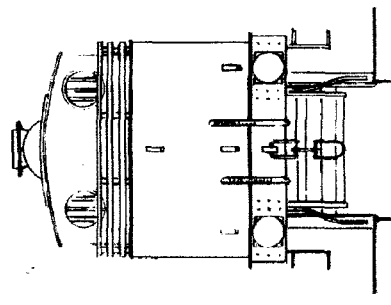
- |                                  |                              |
|----------------------------------|------------------------------|
| (1) Frames, 2 off                | (16) Fibre washers, 2 off    |
| (2) Axle bushes, 4 off           | (17) Bogie                   |
| (3) Strengthening pieces, 2 off  | (18) Retaining plate         |
| (4) Motor Packing pieces, 2 off  | (19) Bogie link              |
| (5) Main spacer                  | (20) Cast bush               |
| (6) Plain spacer                 | (21) Wire spring             |
| (7) Front spacer                 | (22) Brake blocks, 4 off     |
| (8) Motor mounting               | (23) Brake hangers, 4 off    |
| (9) 20g brass wire               | (24) Brake pull rods, 2 off  |
| (10) Front guard irons, 2 off    | (25) Short brake lever       |
| (11) Rear guard irons, 2 off     | (26) Long brake lever, 2 off |
| (12) Sandboxes, 2 off            | (27) Brake cylinder          |
| (13) Brake lever brackets, 2 off | screws, 5 off                |
| (14) Brake lever support         | Nickel silver wire           |
| (15) Collector tag               | Etched washers               |
|                                  | Insulated wire               |

#### Additional parts required to complete the model:-

2 pairs 21mm driving wheels, axles, and crankpins.  
 Romford gear set  
 MW 005 / X04 type motor  
 2 pairs 12mm bogie wheels  
 Couplings

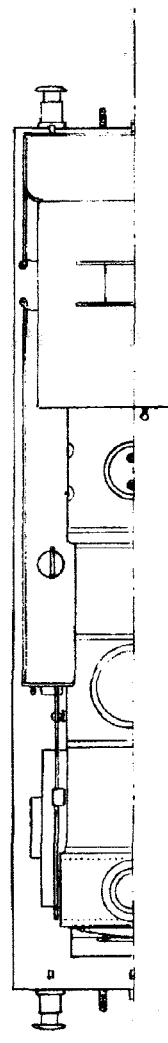
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8'0"      8'6"      5'6"

COUPLED WHEELS 5'3 1/2"  
 BOGIE WHEELS 3'0 1/2"



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**LMS IP 0-4-4T**

SCALE: 4mm To 1ft.