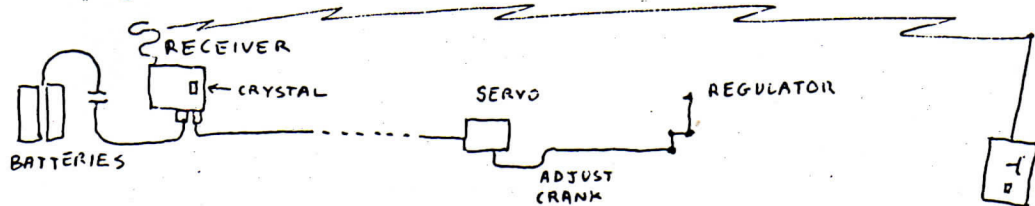


OPERATING INSTRUCTIONS
RADIO CONTROL KIT MAMOD LOCOMOTIVE

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Welcome to the world of radio control !

Although the technology is complicated, it is put into "modules" which plug together very simply - there is very little to understand before using the equipment.



Tender Truck

Locomotive

Transmitter

How it works

Power comes from four dry 1.5v batteries in the tender truck (replace these by sliding out the metal retaining clip) and six similar type batteries in the transmitter, or hand held controller (replace by sliding open the back panel). Always keep the battery switches OFF in tender truck and transmitter, except when actually running the engine. This greatly prolongs their life. Note that the transmitter has a power level meter fitted. When the servo "flutters" or develops a will of it's own, replace ALL the batteries at the same time. Do not mix fresh and partly used batteries.

Self-starting live steam

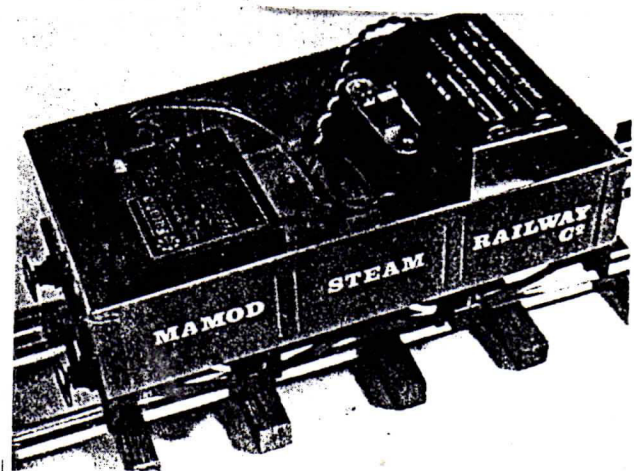
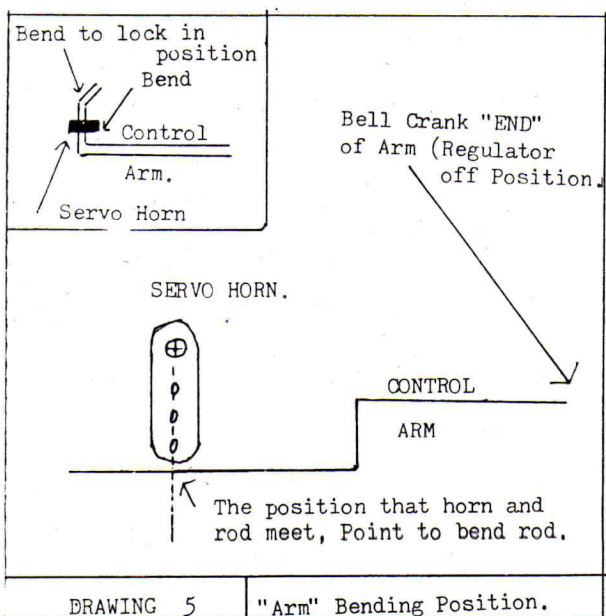
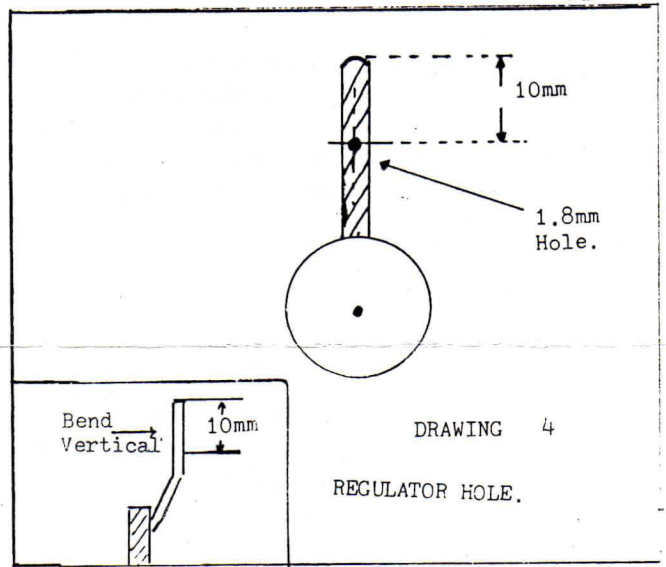
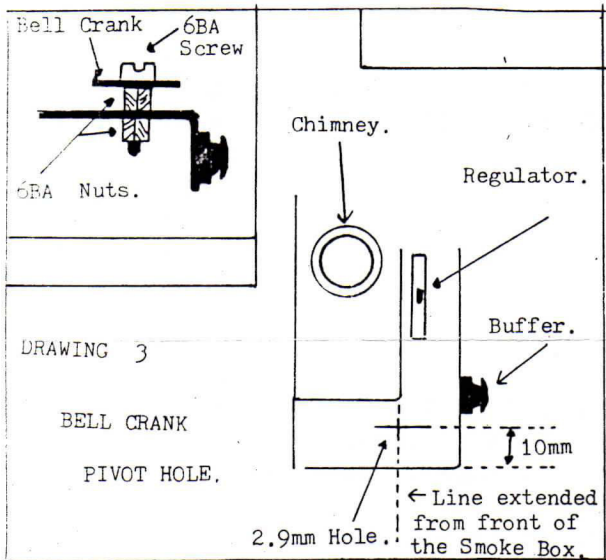
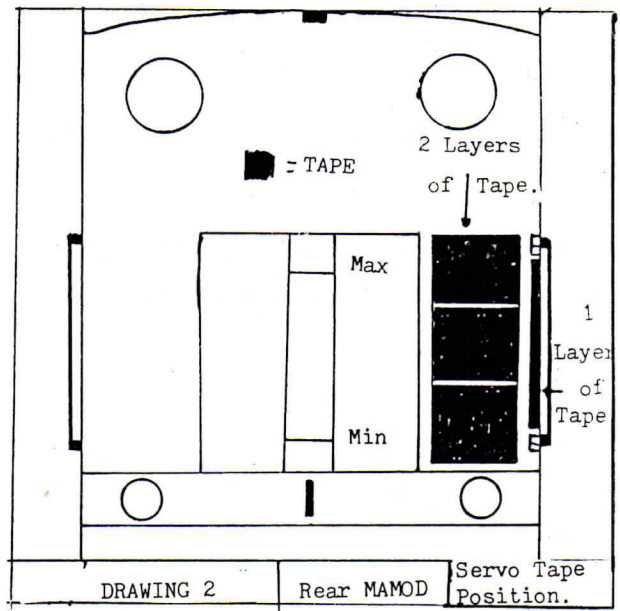
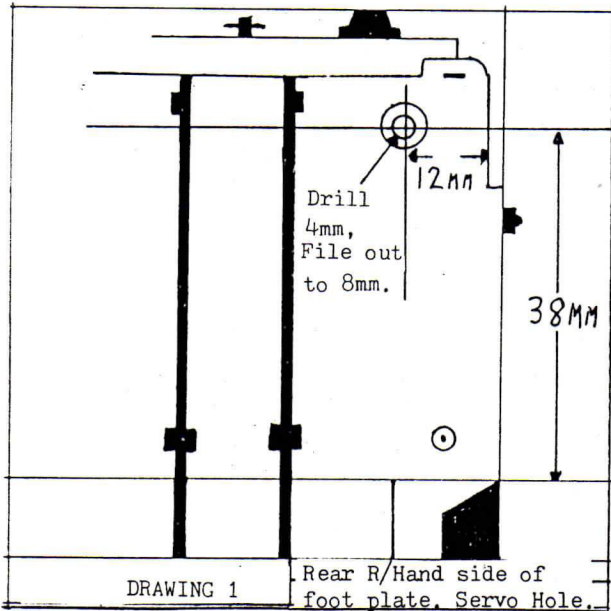
Raise steam in the normal manner, as detailed in the GAS BURNER operating instructions. Ensure the regulator is upright and the tender correctly coupled (damage may result if the connecting wires are strained). When safety valve lifts, switch on the tender truck and transmitter. We normally send out engines wired for "channel 2" (right hand control lever) which has the return spring disconnected.

Open the regulator fully, using the small "trim control" lever for maximum travel, and gently push the engine along to clear water which will have collected in the cylinders during steam raising. Your Mamod should then be SELF STARTING in both directions on level track with normal working pressure. It should run better the more it is used (new engines may need minor adjustment of the cranked servo wire after several hours running).

REMEMBER:

- * Always start with a full boiler.
- * Keep power switches off when not running.
- * Replace all batteries at one time.

You can make a cover, or lid, for the tender truck disguised as a load of coal, etc. Note! increased "Range" (distance transmitter can be taken away from receiver without losing control) can be obtained by winding the receiver aerial around the top of the cover lid, before covering with coal.



6 LAYOUT R/C COMPONENTS.

Fitting Instructions Mamod Locomotive

After having tested mamod on fuel tablets, or gas burner and satisfied with performance. It is time to fit our radio control kit. The following instructions should provide sufficient information to successfully fit kit, using a few basic tools as required.

Tools Required

Small hand drill
Files (round needles)
Drills Met:
1.8mm
2.9mm
4.0mm
Centre punch
Hammer
Ruler
6 BA spanner (long nosed pliers)

1. Servo mounting

Measure out the position for the hole for the servo shaft using measurements from drawing (1) which shows the underside of the right hand foot plate indicating hole position.

Using centre punch and hammer to mark the position (note support the foot plate with a piece of wood when punching the mark and drilling the hole). Place a 4mm drill in the hand drill and drill a hole through the foot plate using the mark to centre the drill.

Place the servo into position in the cab, and make sure that the hole is exactly correct, if not this can be corrected when the hole is enlarged to 8mm using a round file.

The servo can now be permanently fitted as follows:-

Using the servo tape supplied place segments onto the bottom of the servo, and to the side of the cab and several layers to the front of the cab as shown in drawing (2) (which shows the mamod viewed from the rear showing the approximate positions of the servo tape needed). Then carefully push the servo into position making sure that the servo has stuck to the tape and is sitting flat and square in position. The cab back will require the near side locking prong trimming back to about 2mm, to enable it to fit under the servo. Check fit but keep removed of this stage.

2. Reverse block actuator arm linkage

It is now time to fit the brass regulator bell crank. Measure and mark the position of the hole as set out in drawing (3) which shows the marking out reference position, taken from a plan view of the front of the mamod. After marking the position of the pivot screw, drill a 2.9mm hole.

The regulator arm will also require a hole drilling in it, the position of this hole is shown in drawing (4). After marking the position, drill a 1.8mm hole previously drilled and lock in position with the 2 BA hexagon nuts supplied (note the bell crank should pivot freely but should not wobble about). The short linkage should now be fitted using the 10 BA screws supplied. One side of the short linkage should already be fitted to the bell crank with a washer fitted either side the linkage. The linkage should be left loose so that it can freely pivot side to side and up and down. The other end of the linkage can now be attached to the regulator arm via the hole drilled out earlier and the 10 BA screws and nuts supplied and again placing the washers supplied either side the regulator arm and left loose

so as not to jam when the bell crank is moved.

The reverse block regulator arm should now move freely when the bell crank is moved (in the direction the servo will make the long arm move the bell crank). All that now remains to do is fit the long linkage, first plug the servo into CH2 of the receiver and plug the battery pack in and switch on, switch on the transmitter and move the left hand control stick either side the central position, the servo shaft should follow the movements of the stick.

The smaller trim control should also be in the central position. Cut 3 of the arms off the servo horn, and place on the spliced shaft of the servo. By removing and repositioning centre the servo horn so as the "horn" moves in equal distance either side the central position. If not already so set the regulator arm via the bell crank to the off position. Now fit the front "bent" end of the long arm into the hole in the bell crank (it maybe necessary to unscrew the bell crank pivot to fit control arm, if so replace as prior to remove).

The servo end of the long arm will have to be bent at right angles to the servo horn at the point that the arm and one of the servo horn holes line up, and then bent over to lock the rod in position (see drawing 5) (note before bending over to lock in position try arm in the hole further in or out of the servo horn to obtain the best "throw" which will move the regulator arm to the fully on position in either direction without over throwing and jamming the servo, when satisfied bend as directed above).

The alterations to the loco are now completed and all that remains to do is to fit radio control into the mamod truck as shown in photo (6).

NOTICE

This kit uses similar components to those fitted at our factory. Each part is finished as far as possible but must be adjusted as necessary for your particular locomotive, and is designed to be used with gas fired loco's.

Component List

Radio Control	1 futaba 2 channel transmitter (FP.T2MR)
Equipment	1 " " " receiver (FP.R10ZGS)
	1 " " " medium duty servo (FP.S128)
	8 individual strips servo tape
	2 cable retaining clips
	1 battery box retaining clip
Reverse Block	1 long brass rod servo actuator arm
Actuator Arm	1 brass regulator bell crank with 6BA screw + hexagon nuts
Linkage	1 short brass actuator arm 2 10BA screws + 2 hexagon nuts + 4 washers.

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