

Accucraft UK Piston Valve Timing

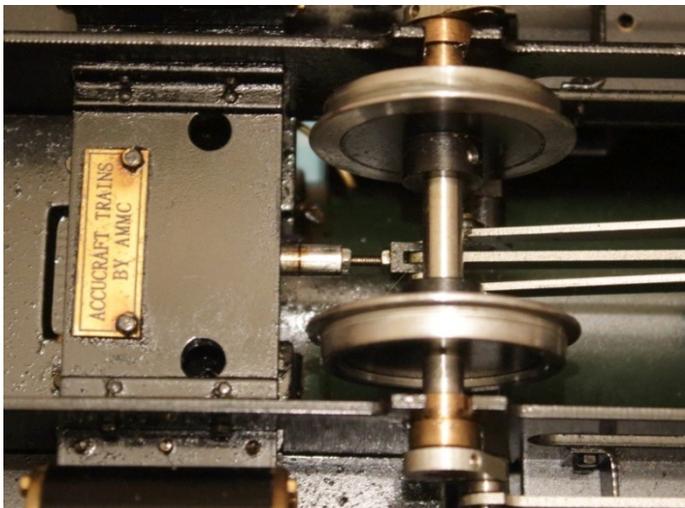
The generic range of Accucraft UK locos fitted with piston valves are scribed with a setting ring to allow their timing to be set correctly. The locking nuts on the piston valves can work loose which may then affect/alter the timing.



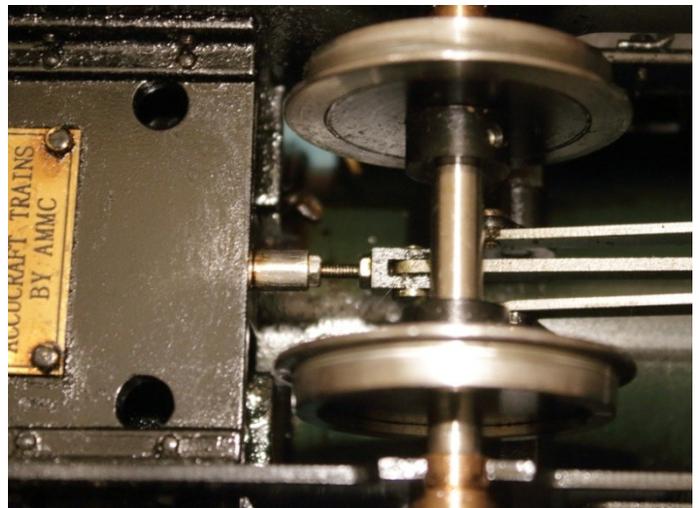
Piston valve used in Ragleth Mark 1 reverser

Reverser Valve

With the locomotive on its side locate the piston valve reverser below the smoke box. Put the locomotive into reverse gear. The setting ring should just disappear to be flush with the rear face of the valve block. If the setting ring is still showing or it goes in significantly more, then the valve position needs adjusting.

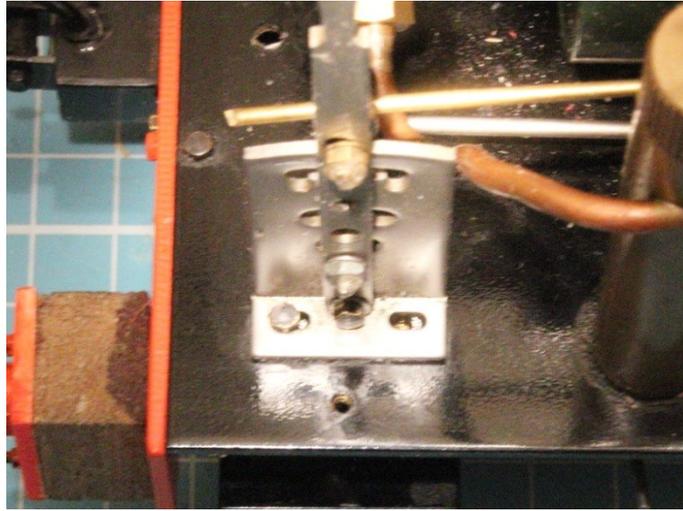


Loco in forward gear



Loco in reverse gear – not quite full gear to show setting ring

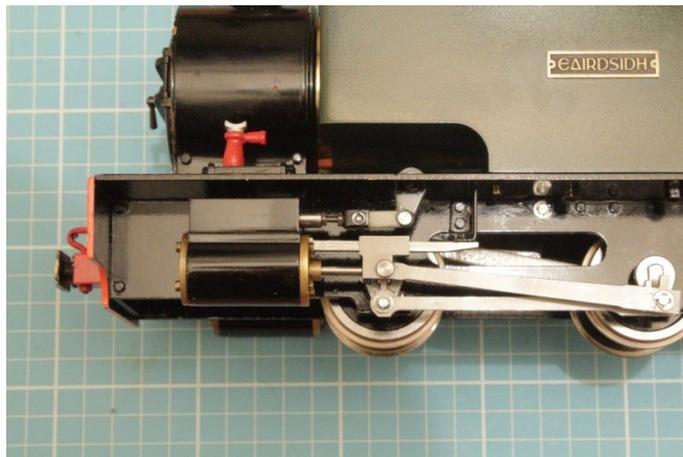
Two methods of adjusting the valve position. The reverser valve quadrant has elongated mounting holes allowing some adjustment by moving the quadrant's position, however this option may be further complicated on Radio Controlled locos.



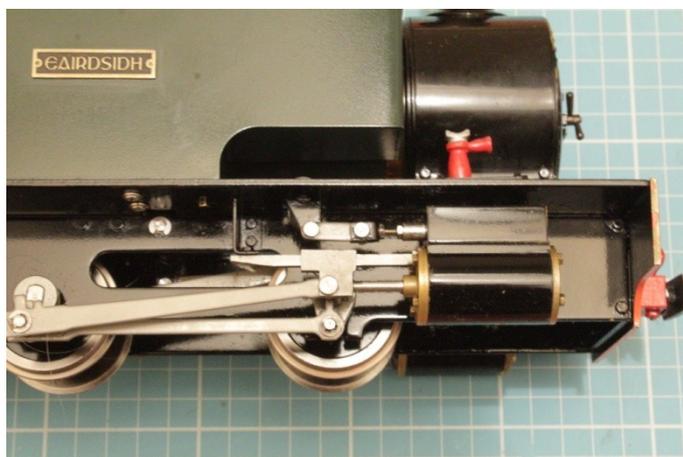
The other option is to loosen the lock nut next to the valve whilst holding the valve stem to the rear of the setting ring. Rotate the valve in the required direction to the correct position then tighten the lock nut.

Cylinder Piston Valve

Place the locomotive right side down. Rotate the driving wheels anti-clockwise (running forward). As the main axle cranks reach the 6 o'clock position the setting ring should just disappear to be flush with the rear face of the valve block. Adjust valve position as required using the lock nuts.



Turn locomotive over to sit left side down & repeat as above (turning the wheels clockwise for running forward).

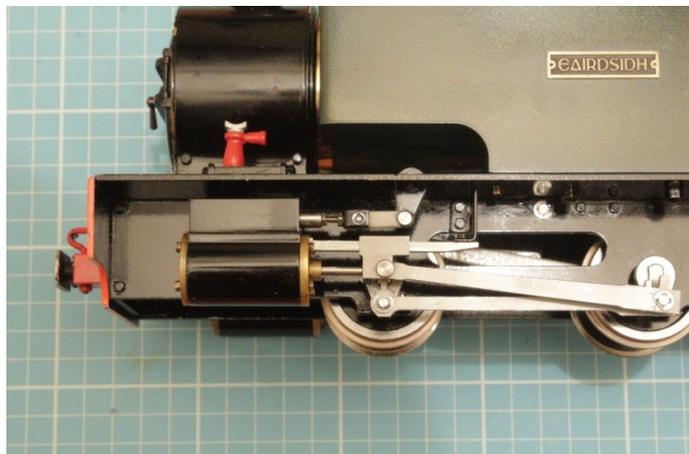


Usually adjusting one or more of the 3 piston valves as above will restore your locomotive's running performance.

Eccentric / Rocker Arm Assemblies

These locomotives are fitted with a combined eccentric assembly on the rear axle, and the movement of the eccentric straps is transferred via rocker arm assemblies through the chassis side frames to the cylinder piston valves. The movement of the rocker arms should be equal either side of the vertical position.

From above, we know the cylinder piston valve (and thus the rocker arm crank) will be at their most forward position with the axle crank at 6 o'clock, thus the cylinder piston valve (and rocker arm crank) will be at their most rearward position with the axle crank at 12 o'clock.

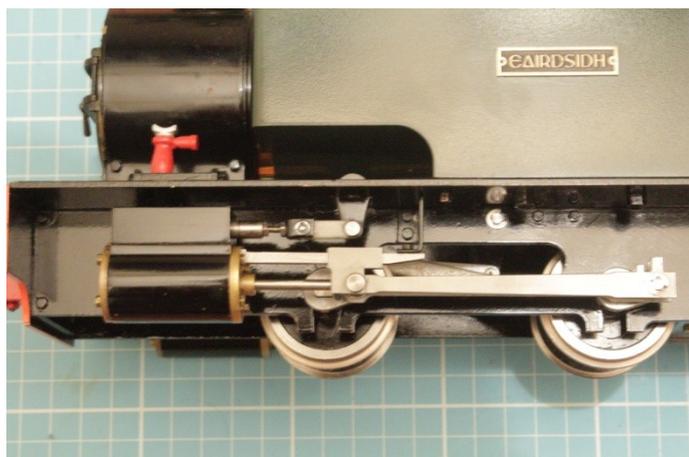


Axle crank 6 o'clock

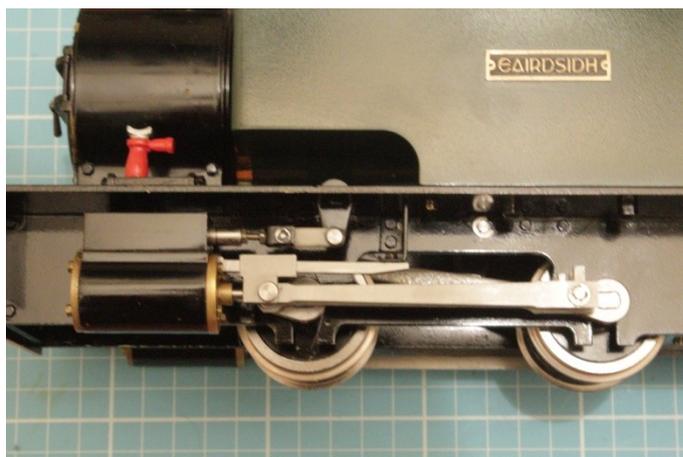


Axle crank 12 o'clock

This leaves the rocker arm crank in the vertical position when the axle crank is at the 3 o'clock & 9 o'clock positions.



Axle crank 3 o'clock



Axle crank 9 o'clock

If there is unequal movement of the rocker arm/cylinder piston valve there are two options.

I've had one loco where the rocker arm cranks either side of the chassis side frame on one side were not aligned vertically. Unlike the Ruby where the rocker arm shaft is keyed, this loco had a plain shaft so after re-aligning the cranks vertically the rough running was removed.

Otherwise you will need to rotate the combined eccentric which is secured with two socket cap grub screws. Rotating the grub screws forward on the axle will give better running in reverse gear, whilst rotating the grub screws rearwards on the axle will give better running in forward gear.

NOTE: These instructions are not applicable to the Accucraft Trains Ruby (kit manual available on accucraft.com)

My Thanks to Tag Gorton for the original text on setting the piston valves, and to Dave Mees, Abbeybach Engineering Services for the additional information on the Eccentric / Rocker Arm Assemblies.