

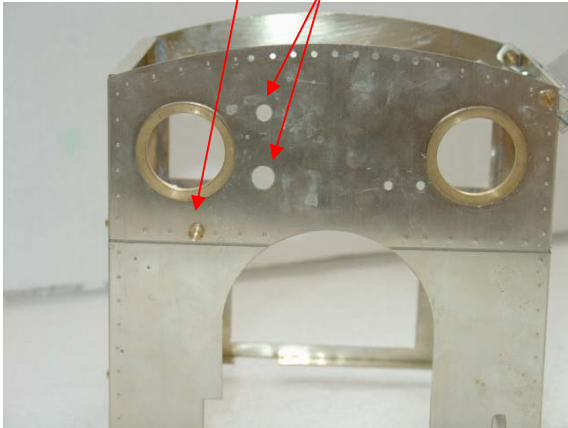
Fitting the “Bangham” Resonator Whistle to Robert tank engine

Before assembling the cab you need to drill out the resonator, whistle holes in the cab front and the resonator-fixing hole.

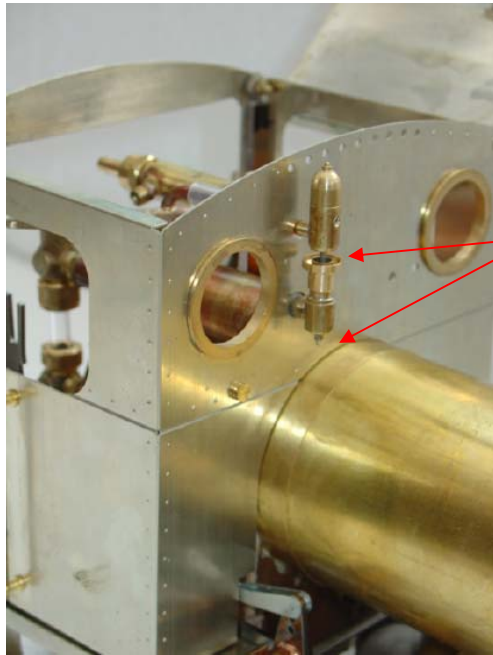
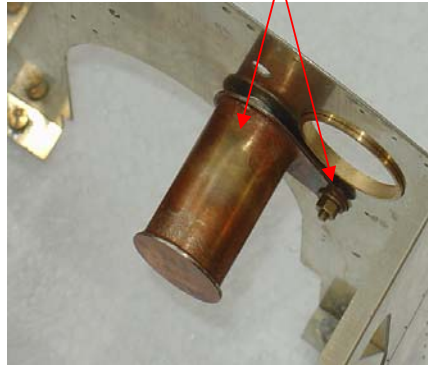
Refer to the attached photos for assembly aid

1. Looking on the inside of the cab front there are 3 half etched holes, these need to be drill right through the cab front.
2. The holes are approximately 5/32” for the top whistle hole the lower holes is 15/64”, and the resonator fixing hole is No43
3. Drill out all three holes and debur the cab front.
4. Fit the resonator to the cab front using the 8BA screw, washers and nut supplied. Make sure the hole on the front of the resonator lines up with the hole in the cab front. If the hole is a little out either open up the hole in the cab front a little with a larger drill or file out the hole so that it lines up.
5. The whistle is then fitted to the cab front inserting the whistle into the resonator. Make sure the top hole lines up with the tube coming out of the top half of the whistle. If it does not line up open out the hole a little until it lines up. **Note:** It is most important that the whistle is kept central on its centre spindle, if the holes don't line up do not force the whistle into the top and bottom holes in the cab front, but eased out for a slide fit.
6. If not already fitted the whistle valve needs to be fitted to the manifold on top of the boiler. Remove the plug from the left hand side of the manifold and screw in the whistle valve into the threaded hole left after removing the plug. You need to apply sealant to the threads before screwing into the manifold (Loctite 243) to make it steam tight. Apply sealant and screw into the manifold as far in as you can, but so that you end up with the whistle lever so it operates downwards and the steam supply pipe from the whistle valve is at the top. Allow the sealant to set for 24 hours before operating.
7. Fit the cab to the footplate over the boiler fitted to the frames, note you will need to loosen off the resonator fixings to allow it to be moved around out of the way to allow you to fit the cab over the boiler.
8. Locate the resonator back into its right position on the cab front and tighten up the fixing nut.
9. Slide the supplied silicon tube over the steam supply pipe from the top of the whistle valve.
10. Fit the whistle to the cab, locating the lower part of the whistle into the resonator, and then slide the free end of the silicon tube onto the top steam pipe of the whistle that protrudes through the cab front.
11. Adjust the whistle position on the cab front and ensure it is adjusted as per the supplied instruction for best sound.

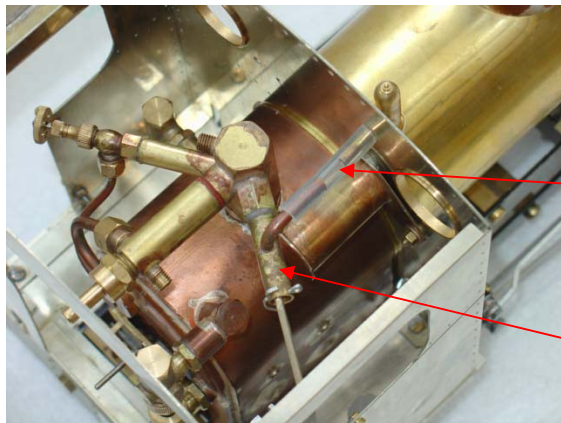
Holes for fixing whistle and resonator to cab front



Resonator fitted to inner cab front. Held to cab front by 8BA Screw washer and nut supplied



Whistle fitted to cab front. Ensure top and bottom holes are lined up with whistle and do not cause you to force the whistle into the holes in the cab front. If necessary ease out holes in cab front so the whistle lines up and is slide fit.



Silicon tube used to connect the whistle valve to the whistle

Whistle valve fitted to steam manifold.

Introduction

Resonators are typically a sealed container of a specific volume with two openings, one for the resonator tube and one for a drain.

The volume for our small engines can be from 0.25 in³ for a high pitch, to 0.80in³ for a low note.

These whistles should work at a pressure range of 30-60 PSI although some distortion may occur at high pressures.

Maintenance

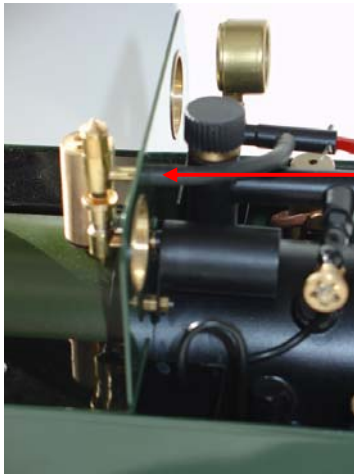
The whistle is Factory tuned on air and steam but some minor adjustments may be required on steam from time to time.

A common problem with the Bangham whistle due to its fine manufacturing tolerances is the whistle will suddenly change note or not work. This is usually caused by debris in the aperture ring gap; this is more common on new installations. If it doesn't clear itself out, it will be necessary to remove the whistle/resonator assembly, dismantle the whistle and clean out the critical ring gap surfaces with your fingers and reinstall.

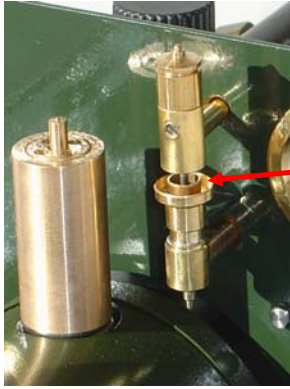
Dismantle the whistle assembly

Carefully remove the black silicon tube from the whistle, and then the whistle assembly will slide out of the resonator chamber.

Once you have removed the whistle from the locomotive, remove the slotted grub screw completely; remove the aperture housing assembly from the central rod. Pull apart the two aperture body parts and clean out, to re-assemble make sure the 8BA tapped holes are in line then re fit to the central rod and then the 8BA grub screw, leave a gap of .090" as a start point for tuning, this gap may need slight adjustment to get a better tone. Upper and lower gap limits are 0.083 to 0.093. A 3/32" drill bit is 0.093" and can be used to space the aperture as a starting point for tuning.

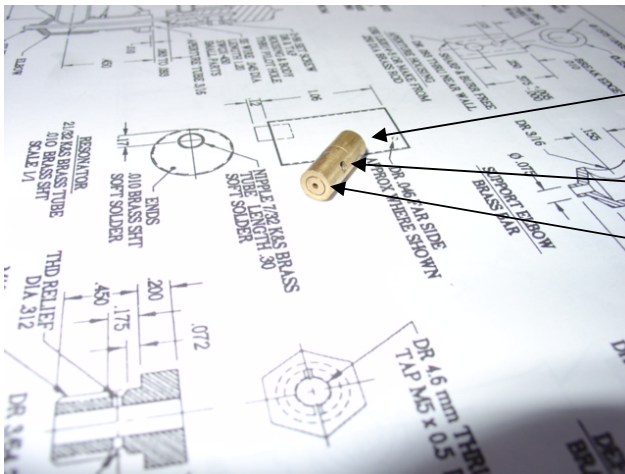


Remove black silicon tube from whistle and slide whistle out

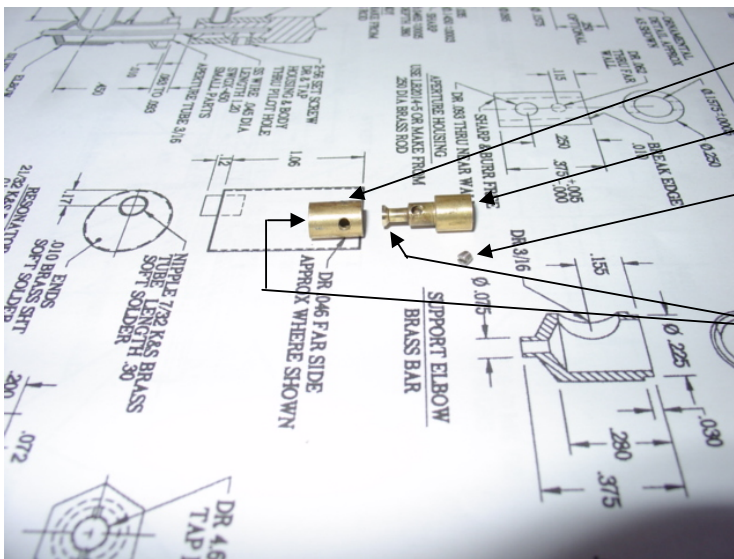


Aperture gap
most critical
for tuning
whistle (set
between
0.083-0.093"
3/32"

Refit the whistle to the model and re-connect the steam supply pipe.



Aperture Housing
Assembly
Grub screw hole
Aperture ring gap



Aperture Housing
Aperture Body
8BA Grub Screw
Faces to be wiped clean of
debris

Tuning

The whistle aperture Housing is fitted with an 8BA slotted Stainless Steel grub screw, By sliding the Aperture Housing up and down on its centre spindle the note of the whistle can be tuned. This is ideally done whilst in steam but not to practical if the whistle is located between the frames, so is best done using compressed air. When you are satisfied with the note then tighten the grub screw.