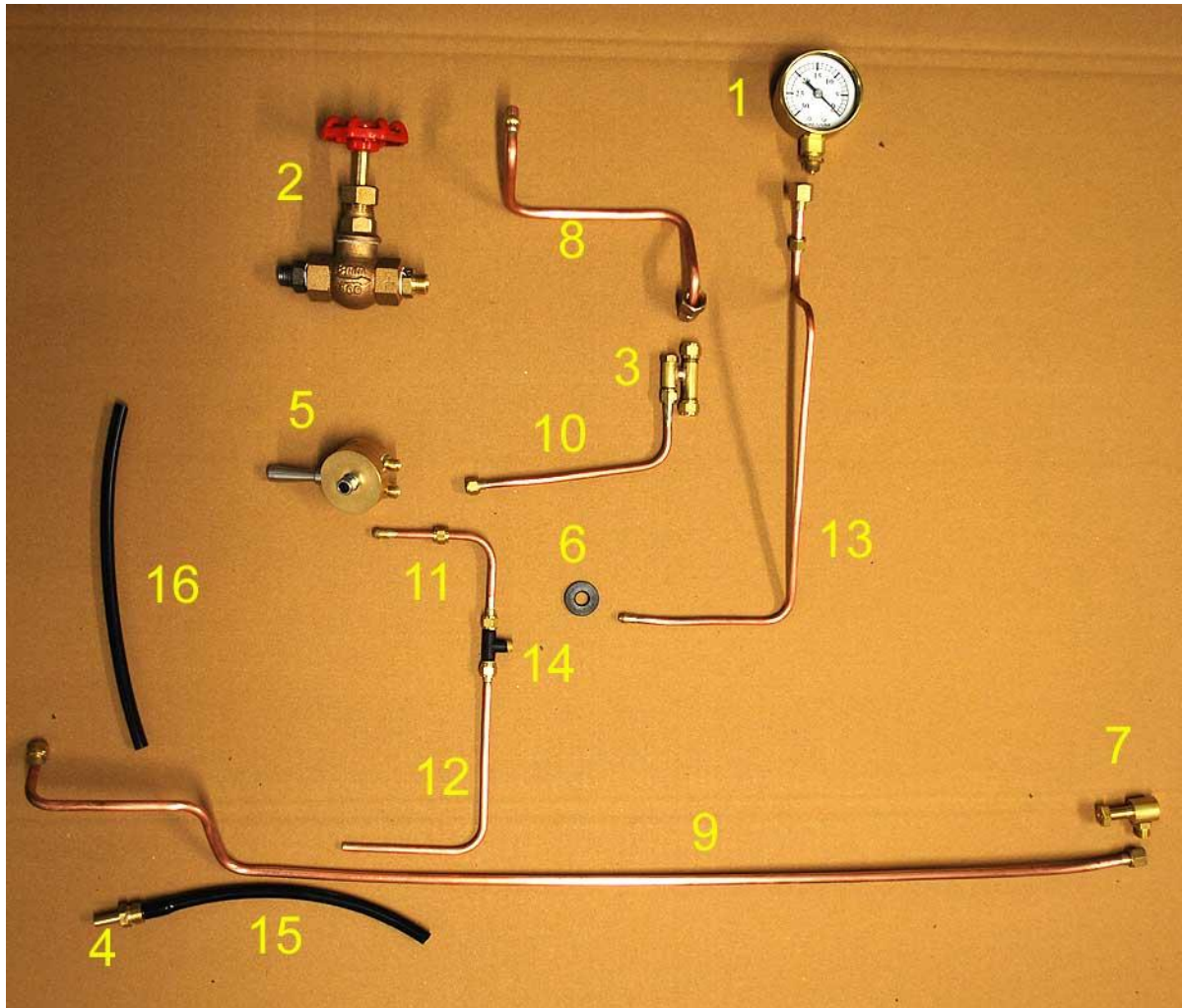


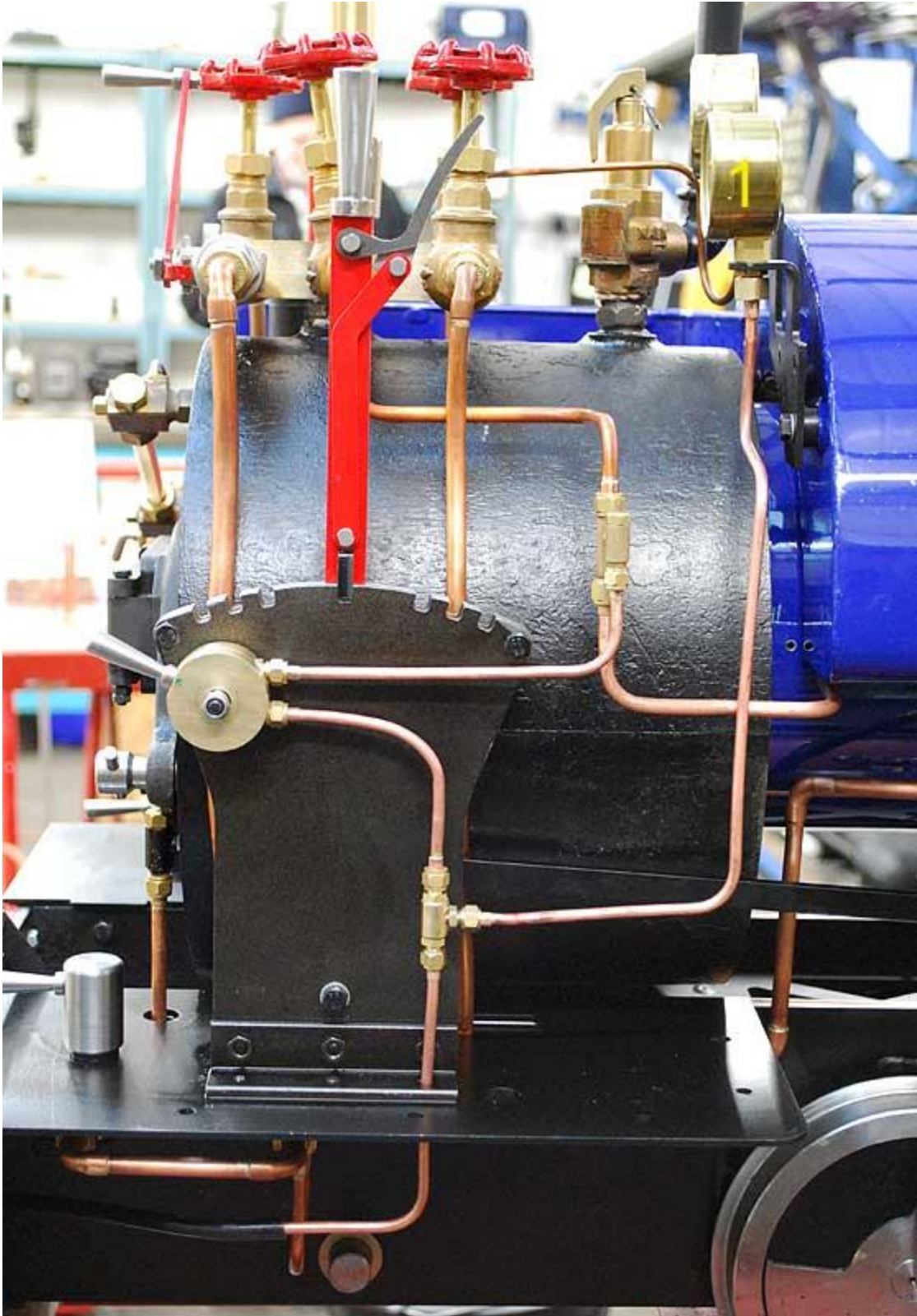
Stafford vacuum brake kit - installation

From engine number 1304

These instructions cover installation of vacuum brake equipment on locomotives from works number 1304.

| Item | Description | Qty |
|------|----------------------------------|-------|
| 1 | Vacuum gauge & locknut | 1 |
| 2 | Ejector steam valve & ferrule | 1 |
| 3 | Ejector | 1 |
| 4 | Rear buffer beam fitting | 1 |
| 5 | Driver's brake valve assembly | 1 |
| 6 | Spacer | 1 |
| 7 | Smokebox ejector exhaust fitting | 1 |
| | | |
| | Pipework | |
| 8 | Steam valve to ejector | 1 |
| 9 | Ejector exhaust | 1 |
| 10 | Ejector to brake valve | 1 |
| 11 | Brake valve to T-piece | 1 |
| 12 | T-piece to hose | 1 |
| 13 | T-piece to gauge | 1 |
| 14 | T-piece | 1 |
| 15 | Rubber pipe to rear coupling | 170mm |
| 16 | Rubber pipe for train connection | 200mm |





Installation:

Start by removing the saddle tank and right hand cab sheet to give access for fitting the brake kit:

1. Detach injector water feeds and balance pipe from bottom of saddle tank
2. Undo four M6 bolts (2 front, 2 rear) to release tank and place to one side – there are spacers at the rear of the tank which you need to catch as the bolts are withdrawn
3. Detach the reach rod from at its front end by removing the nyloc nut and pin (6 & 7mm spanner)
4. Remove the six M6 bolts holding down the reverser stand to the right hand footplate (10mm spanner)
5. Remove the reverser stand and place to one side
6. Remove five M6 bolts holding down right hand cab sheet from underneath, remove M6 bolt fastening cab sheet to rear of saddle tank. Undo pressure gauge pipe from the gauge and remove the cab sheet – support the pressure gauge while undoing its union nut to avoid twisting pipe
7. Remove blanking plug from fountain – centre position on right hand side, between regulator valve and injector valve
8. Remove top from steam valve (2) supplied – this has already been loosened before shipping
9. Using PTFE tape, fit valve body to fountain, then refit top and tighten (steel ferrule – supplied already fitted to valve – goes into fountain)
10. Fit the driver's brake valve to the reverser stand using the countersunk hole provided at the front edge – the black spacer (6) fits between the valve and stand to provide clearance for tightening the pipework union nuts
11. Refit the reverser stand to the footplate with five of the original six bolts – leave out the front bolt on the right hand side, the hole will be used for a vacuum pipe
12. Fit ejector steam pipe (8) to steam valve (2)
13. Fit ejector (3) to the other end of the steam pipe – ejector fits with steam union facing upwards, vacuum and exhaust unions down
14. Connect ejector to top union of driver's brake valve with pipe (10)
15. Fit T-piece (14) to brake valve using pipe (11), thread pipe (12) through hole in bottom of reverser stand, then connect to bottom of T-piece
16. Connect vacuum gauge pipe (13) to side branch of T-piece (14), don't fit gauge for now
17. Refit right hand cab sheet, passing reach rod through slot and reconnecting to the lifting arm with pin and M4 nyloc nut. Fix with five M6 bolts, do not tighten at this stage
18. Check that die nut moves equally up and down in the expansion link at full forward and back gear positions of the reverser – if not, loosen the reverser stand bolts and adjust, then re-tighten
19. Fit vacuum gauge (1) next to pressure gauge on bracket, fixing with brass nut. Connect to pipe from T-piece (14)
20. Screw rear buffer beam fitting (4) into buffer beam and tighten, connect to vacuum pipe with short (170mm) rubber hose (15)
21. Remove blanking plug from right hand side of smokebox and screw in ejector exhaust fitting (7)
22. Fit ejector exhaust pipe (9) from ejector (3) to smokebox fitting (7)
23. Re-fit saddle tank, remembering to replace spacers between cabsheets and rear of tank. Tighten all unions
24. Tighten the five M6 bolts securing cab sheet to footplate

Operation:

With the engine in steam, opening the ejector steam valve will produce a vacuum at the brake valve, With the brake lever in the up position, the train pipe is evacuated and brakes are held off. Pushing the lever to the down position will shut off the ejector from the train pipe and admit air, operating the brakes. The centre, lap position, will hold the brakes at the current level of application.