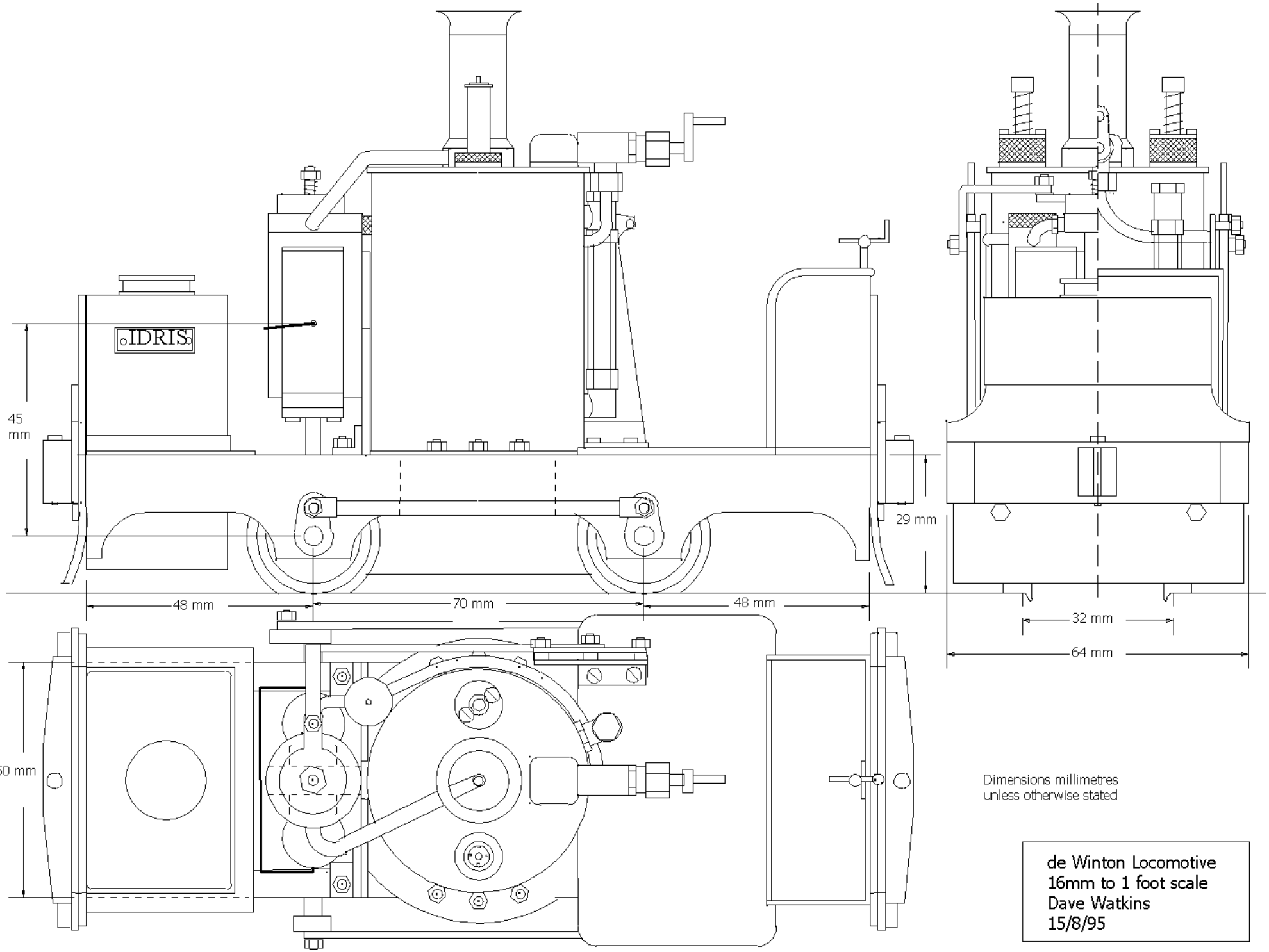
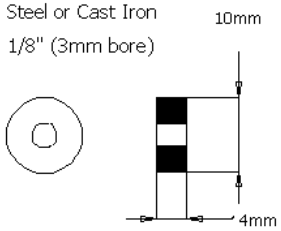


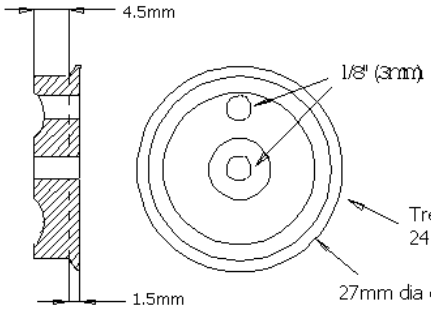
Dimensions millimetres
unless otherwise stated

de Winton Locomotive
16mm to 1 foot scale
Dave Watkins
15/8/95

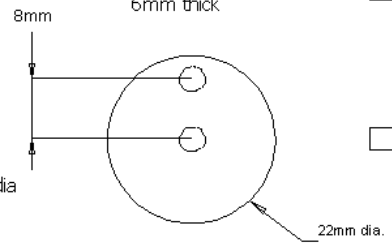
Spacer
Steel or Cast Iron
1/8" (3mm bore)



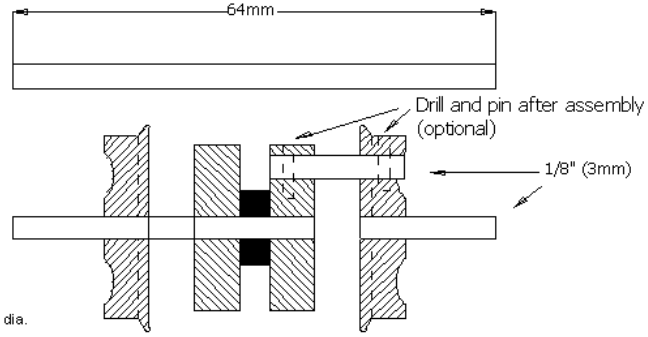
Wheels: Steel or Cast Iron
Crankpin hole in driving wheels only



Crankdiscs
Steel or Cast Iron
6mm thick

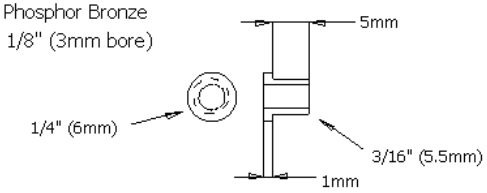


Carrying Axle Silver Steel 1/8" (3mm)

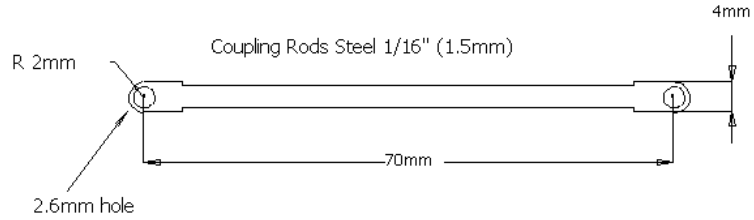


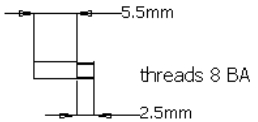
Crankaxle fabricate (Loctite 601)
cranks at 90 degrees

Main Bearings
Phosphor Bronze
1/8" (3mm bore)

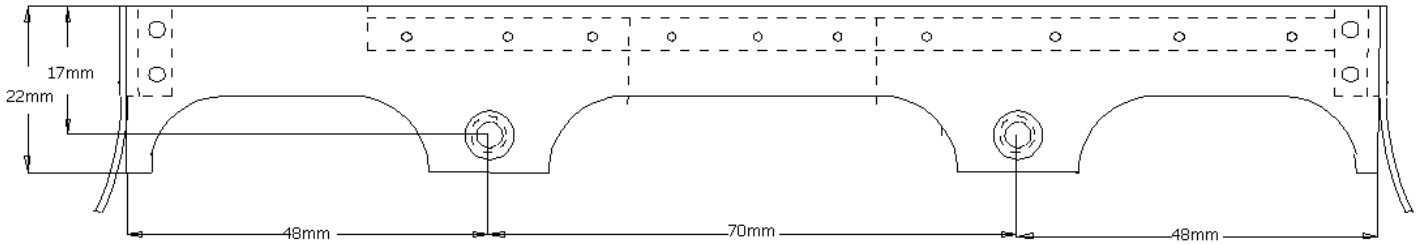


Coupling Rods Steel 1/16" (1.5mm)

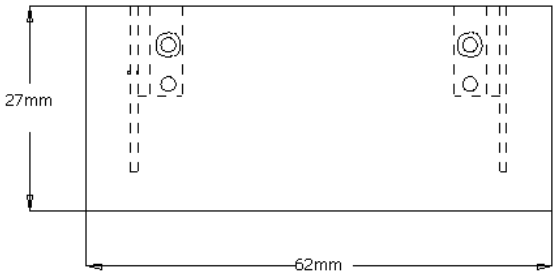




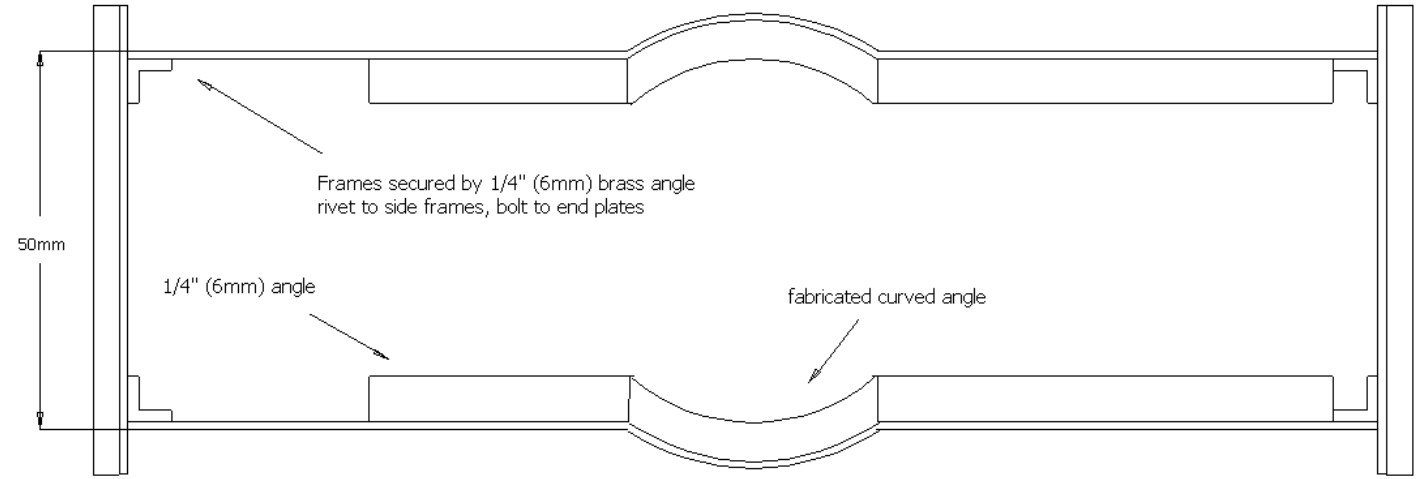
Crankpin - Steel 3/32" (2.5mm)



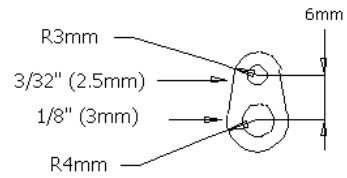
Frames 1/16" mildsteel



drill holes 1.8mm
countersink top holes

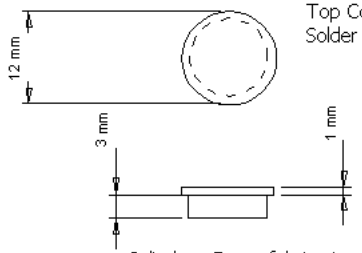


Flycrank - Steel, 1/8" (3mm)
fit crankpin with Loctite



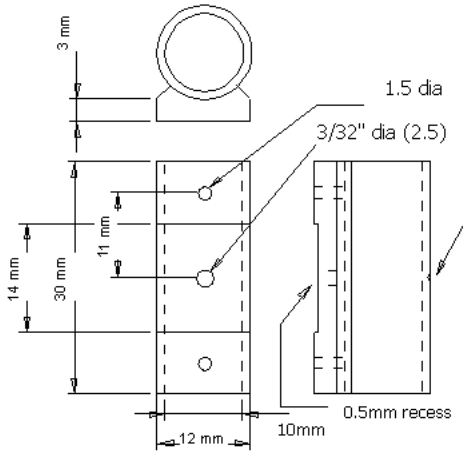
de Winton Frame and Wheels
Dave Watkins
9/8/97

Cylinders

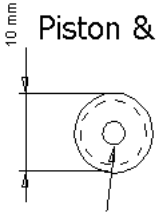


Top Cover - Brass
Solder or Cement to cylinder

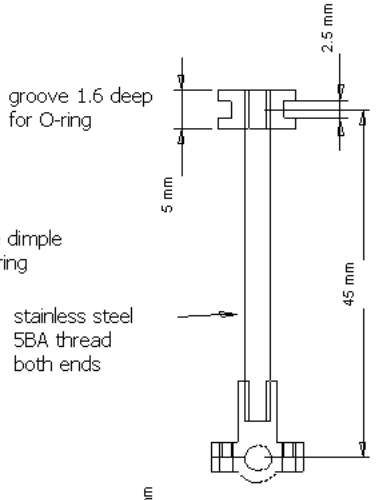
Cylinder - Brass fabrication
soft solder is adequate



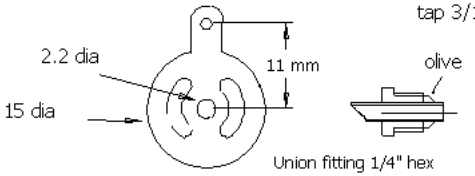
Piston & Rod



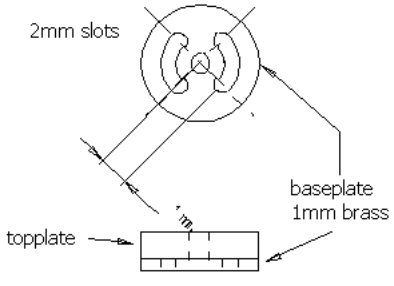
CROSS SECTION



Reversing Valve



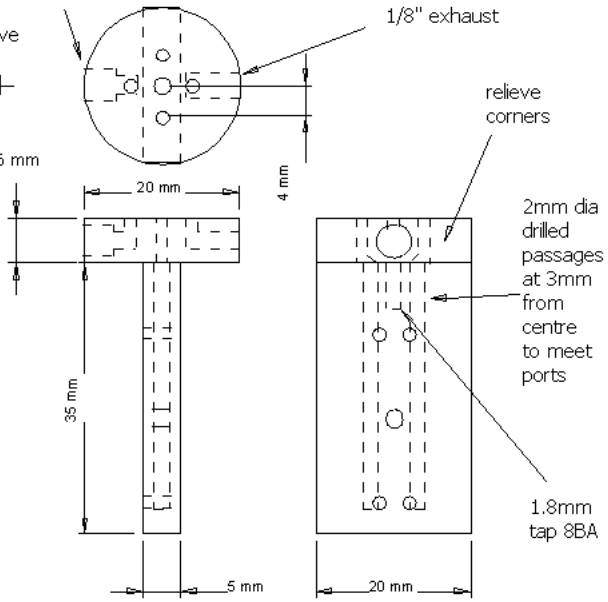
Lever and
Top plate



Valve spindle
8BA screw
valve spring from ballpoint pen

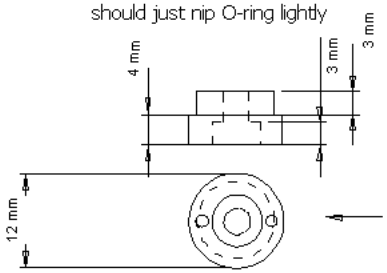
Port Block

brass, fabricate with soft solder
centre hole 2.2mm
ports 1.5mm

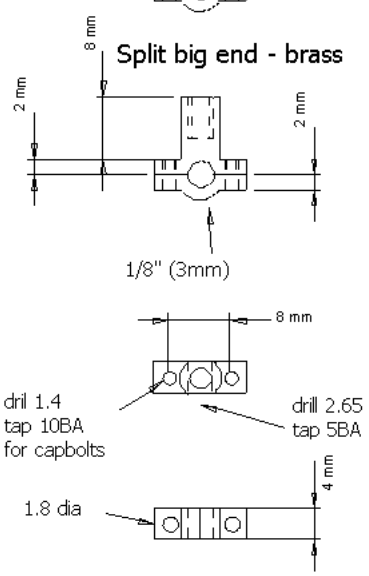


Bottom cover - brass

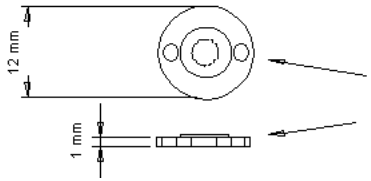
1/8" (3mm) bore to fit
piston rod, hole should be
reamed.
Counterbore 1/4" (6mm)
should just nip O-ring lightly



Split big end - brass



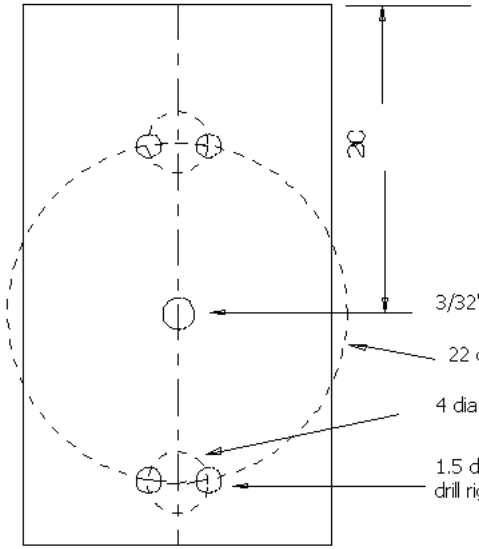
Retaining plate



Marking out Ports

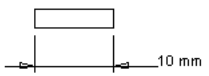
Locate ports from intersection
of circles as shown

TWICE FULL SIZE



Trunnion Pin

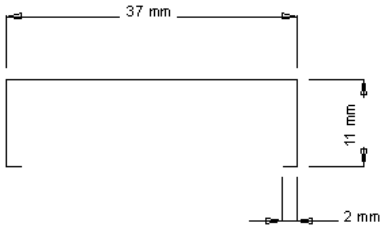
10mm of 3/32" (2mm)
Silversteel

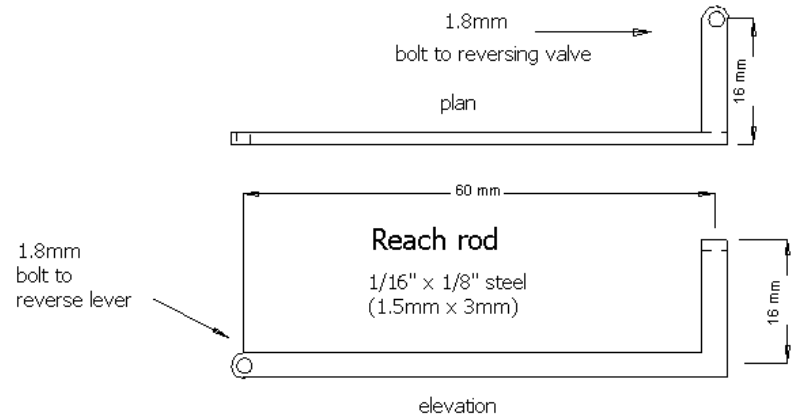


Cylinders for de Winton
Dave Watkins
9/8/97

Spring 20 SWG

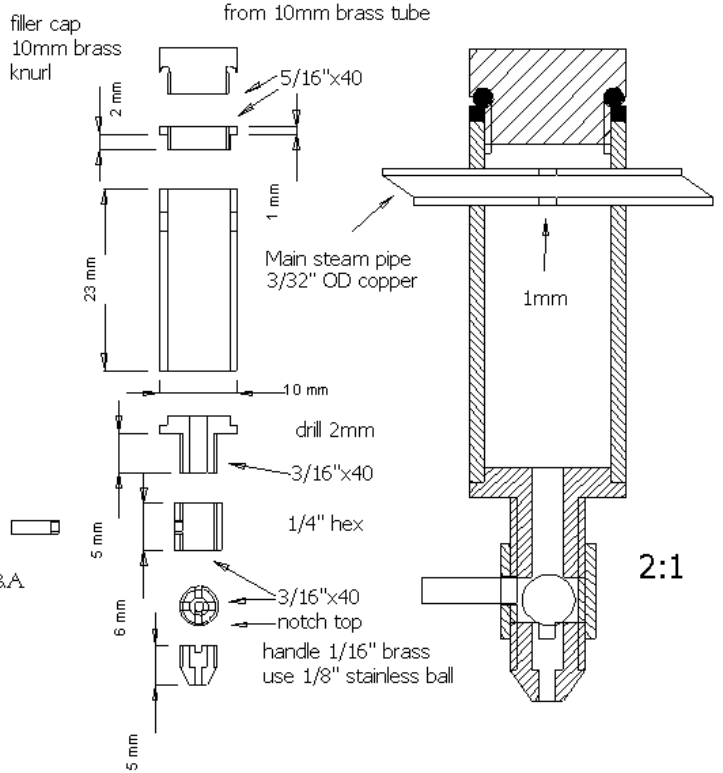
smooth end points





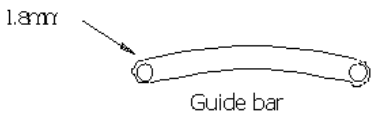
Lubricator

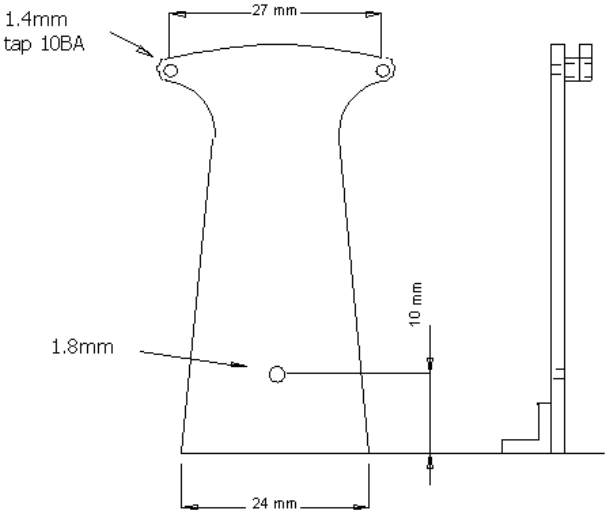
from 10mm brass tube



Reverser stand

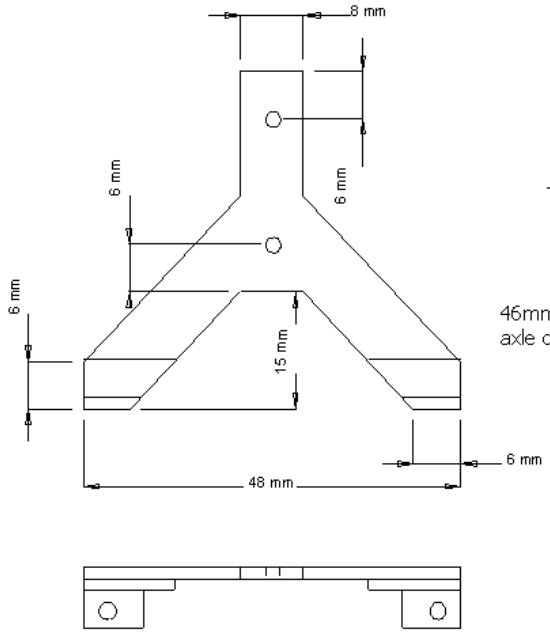
3/64" (1.5mm) brass
assemble with 10BA bolts
fix to footplate with 1/4" angle





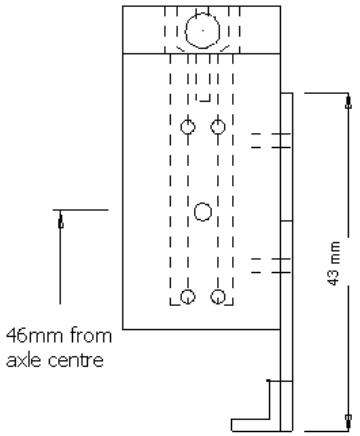
Cylinder Support Plate

1/16" (1.5mm) sheet brass
and 1/4" (6mm) angle
solder and rivet joints



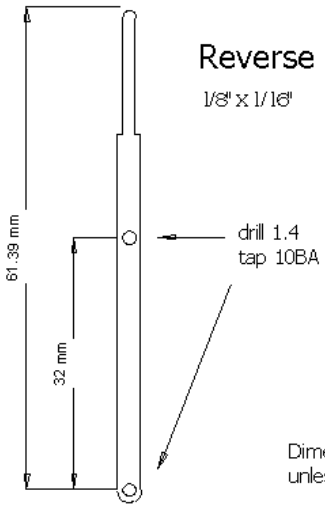
holes 1.8mm (10BA clearance)

bolt port block to
cylinder support



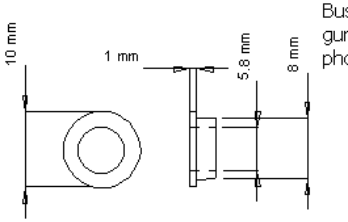
Reverse Lever

1/8" x 1/16"



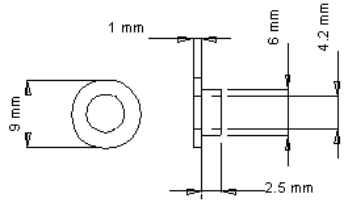
Dimensions millimetres
unless otherwise specified

Components for de Winton
9/8/97
Dave Watkins



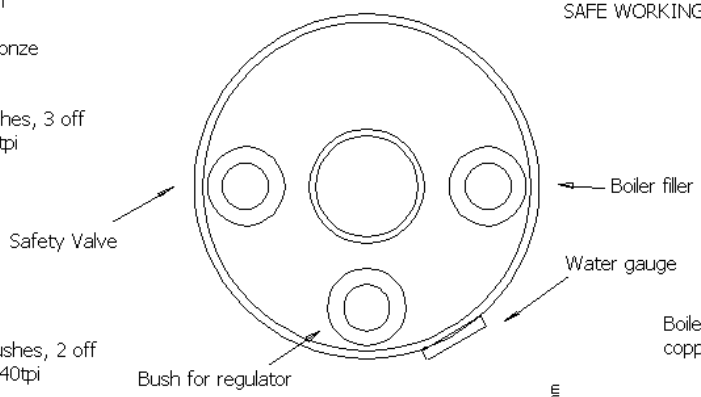
Bushes from gunmetal or phosphor bronze

Top bushes, 3 off 1/4"x40tpi

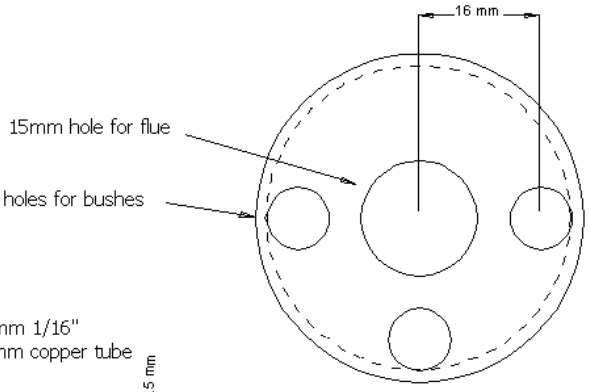


Side bushes, 2 off 3/16"x40tpi

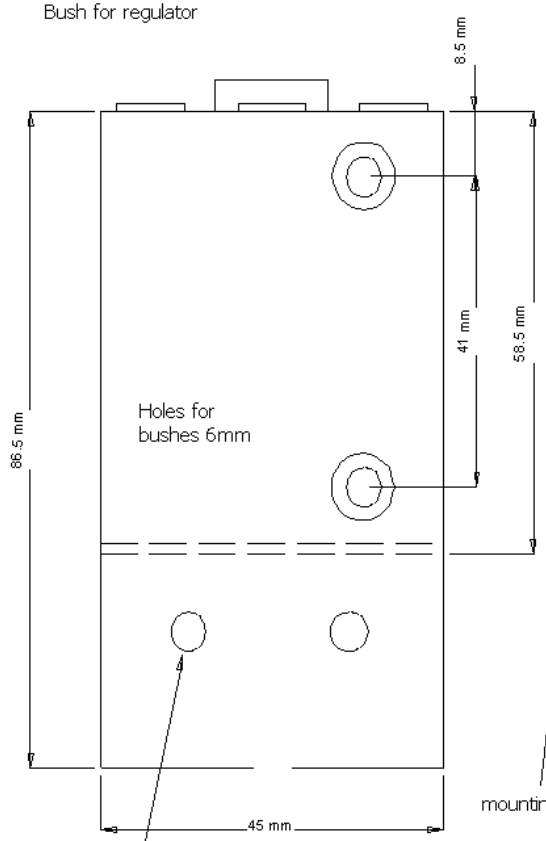
ALL JOINTS SILVER SOLDERED
PRESSURE TEST TO 80PSI
SAFE WORKING PRESSURE 40PSI

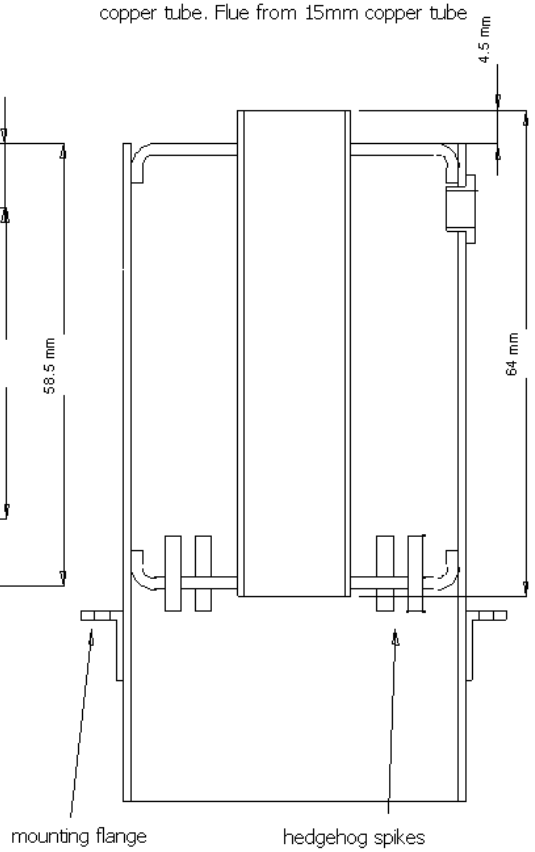


Boiler endplates from 1.5mm copper sheet

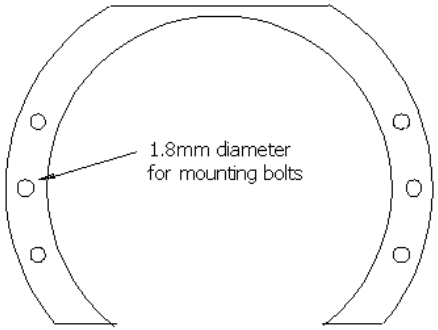


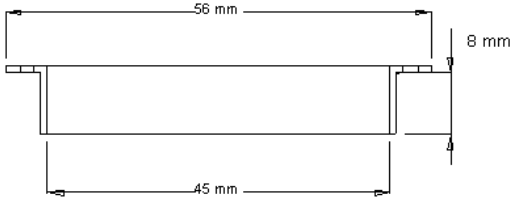
Boiler shell from 1mm, 1.5mm 1/16" copper tube. Flue from 15mm copper tube





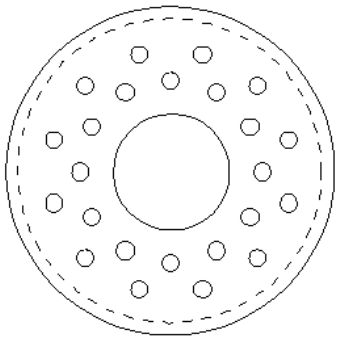
Both plates initially 50mm diameter before flanging over circular former 40mm diameter
Drill holes after flanging





Mounting flange, fabricate from 1mm brass sheet bolt or rivet to firebox

air holes 5mm dia, 6 off, none on crankshaft side

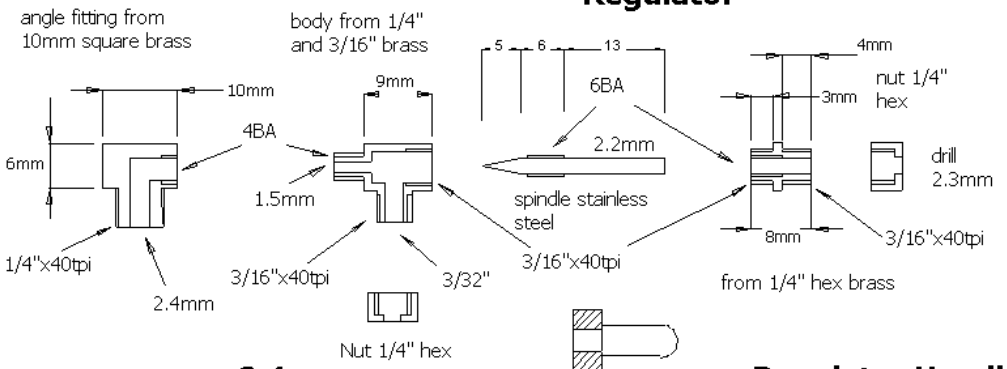


Bottom plate 43mm diameter after flanging. Should be a tight fit in the boiler shell

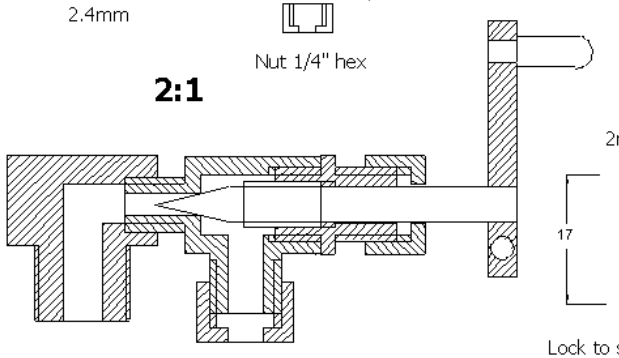
15mm centre hole for flue, 2mm holes for hedgehog spikes from copper wire.

Boiler for de Winton
Dave Watkins
9/8/97

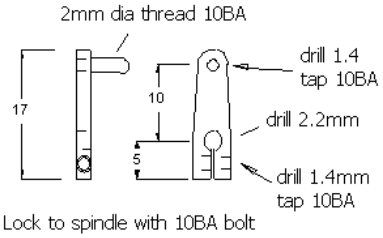
Regulator



2:1

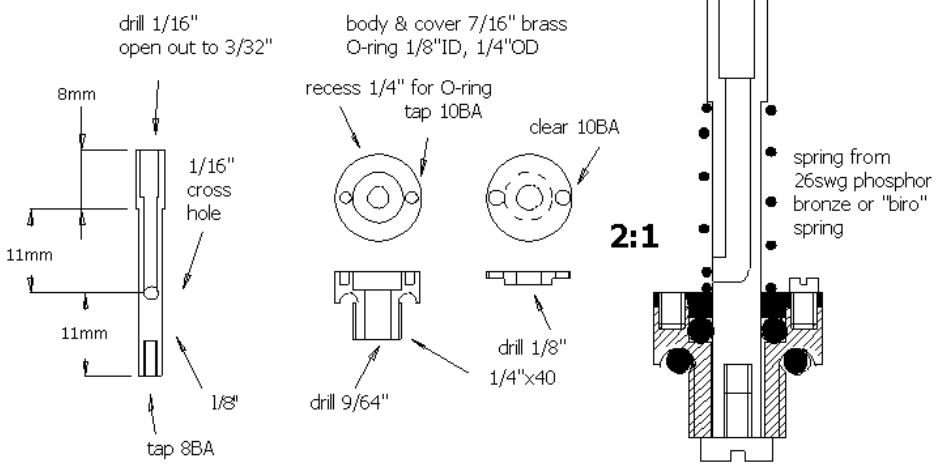


Regulator Handle



Lock to spindle with 10BA bolt

Boiler filler

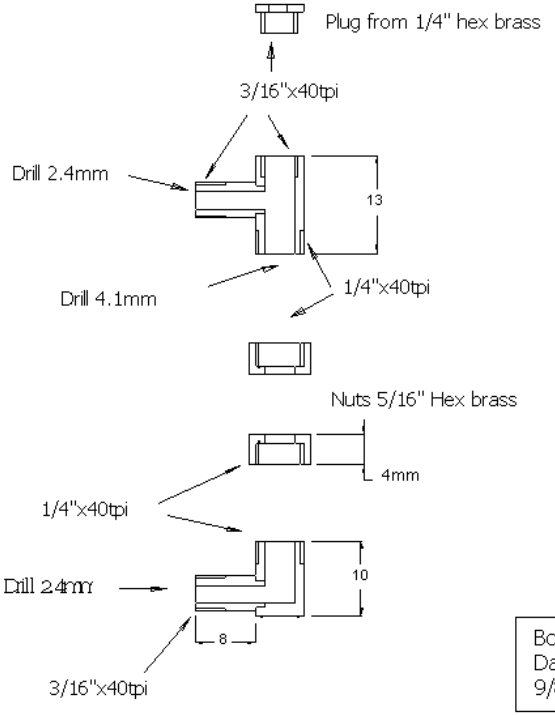


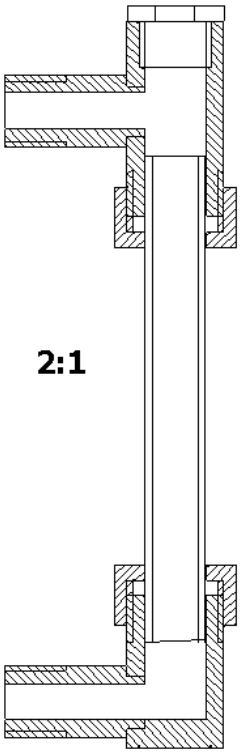
Water Gauge

Fabricate from 3/16" and 1/4" brass

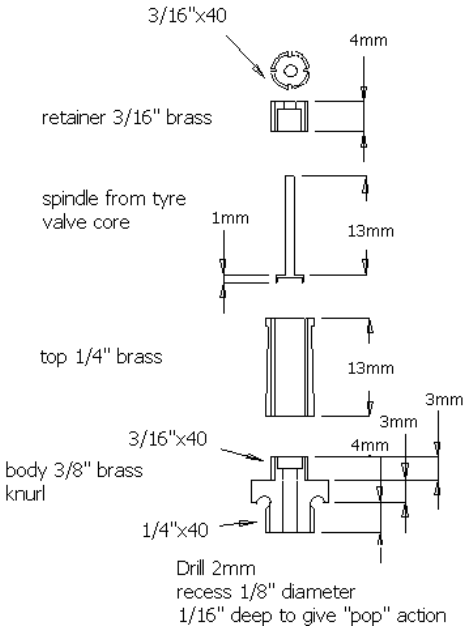
use 5/32" gauge glass

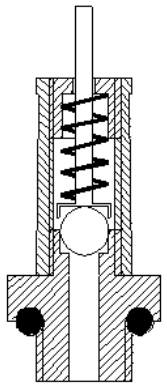
packing silicone rubber tube





Safety Valve





2:1

spring from car tyre valve
shorten to 9mm

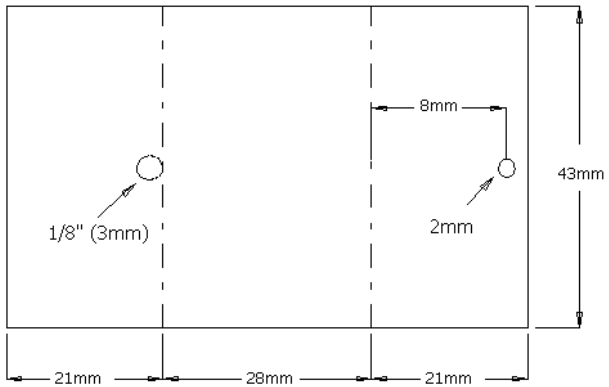
ball stainless steel 1/8"

O-ring seal

Boiler Fittings for de Winton
Dave Watkins
9/8/97

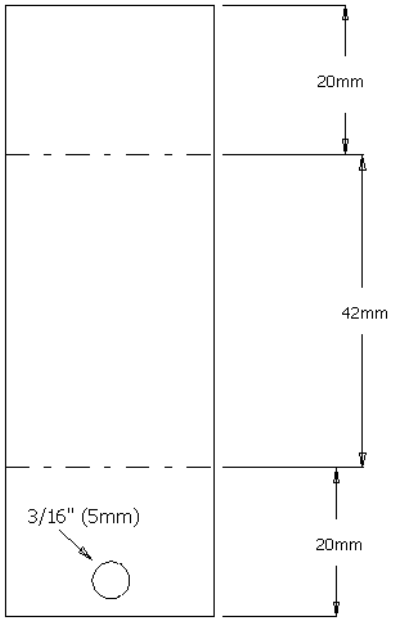
Methylated Spirit Tank

bottom of tank and sides from thin brass



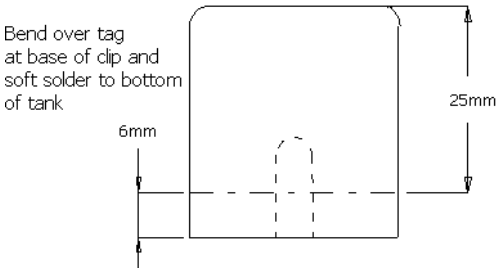
top of tank and ends from thin brass

Top and ends fit inside bottom and sides. Tank is best hard soldered

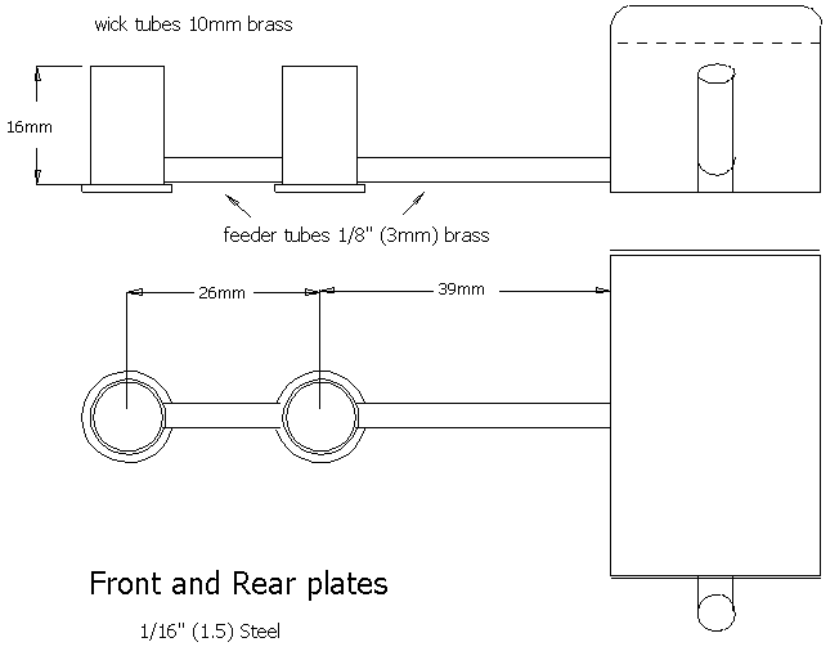


spring clip, thin brass, one either side

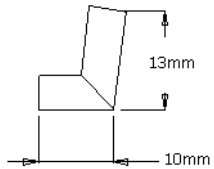
Bend over tag at base of clip and soft solder to bottom of tank



Complete burner assembly



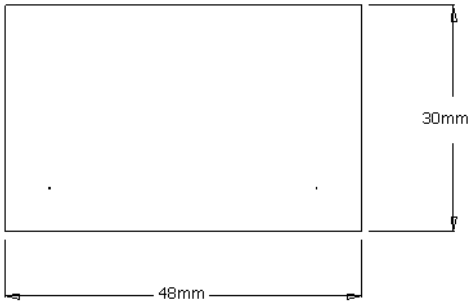
filler from 3/16" (5mm) brass tube



Front and Rear plates

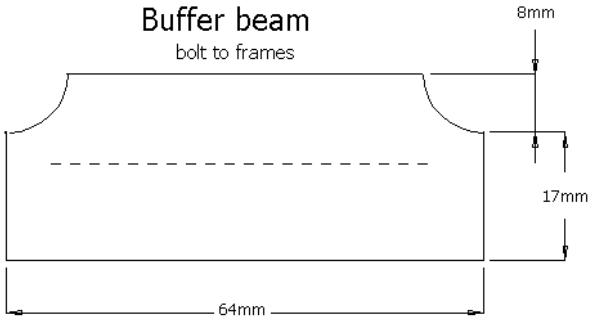
1/16" (1.5) Steel

rivet to Buffer beam

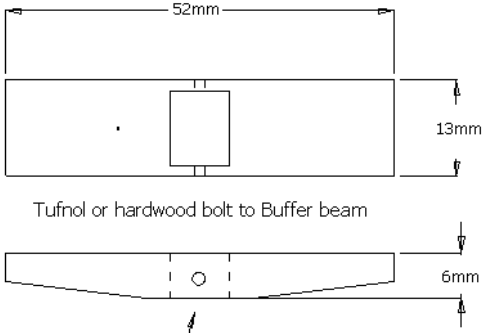


Buffer beam

bolt to frames



Buffer Coupling

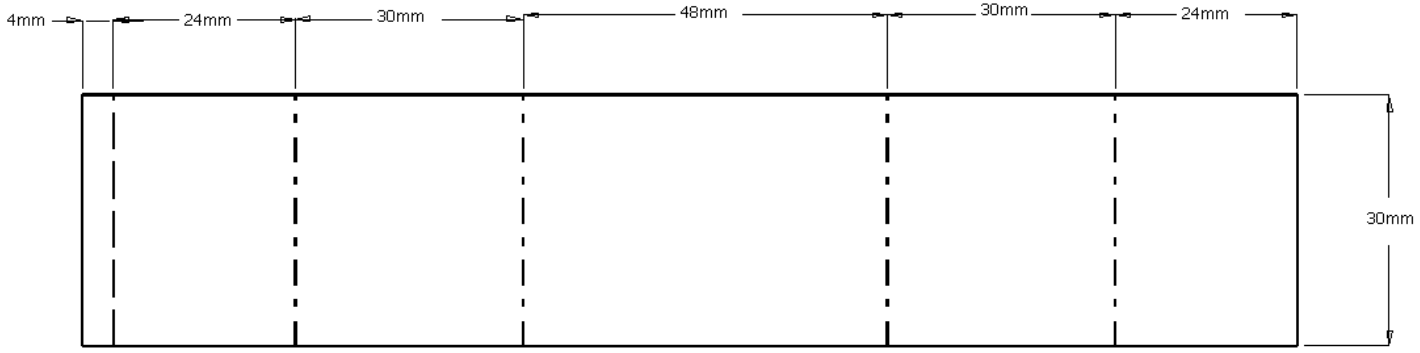


· suggested position of bolts/rivets

Burner and Buffer beams for de Winton
Dave Watkins
9/8/97

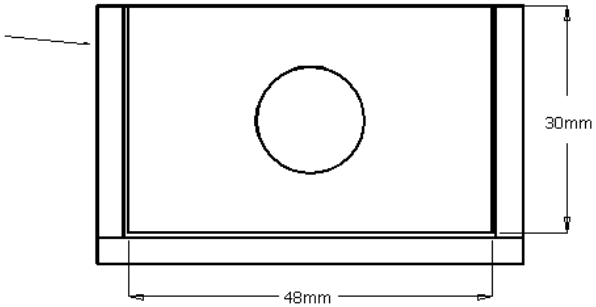
Water tank

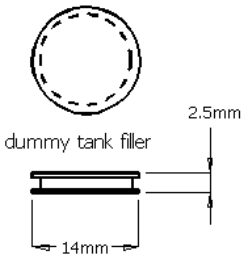
thin brass sheet



tank top from tin brass sheet

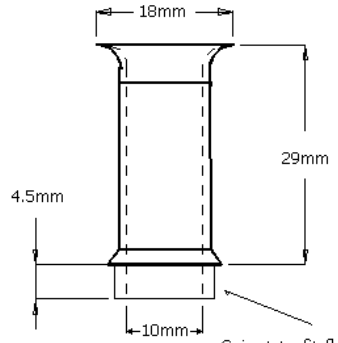
4mm brass angle
solder to bottom of tank sides
and bolt to angle edging frames





Chimney

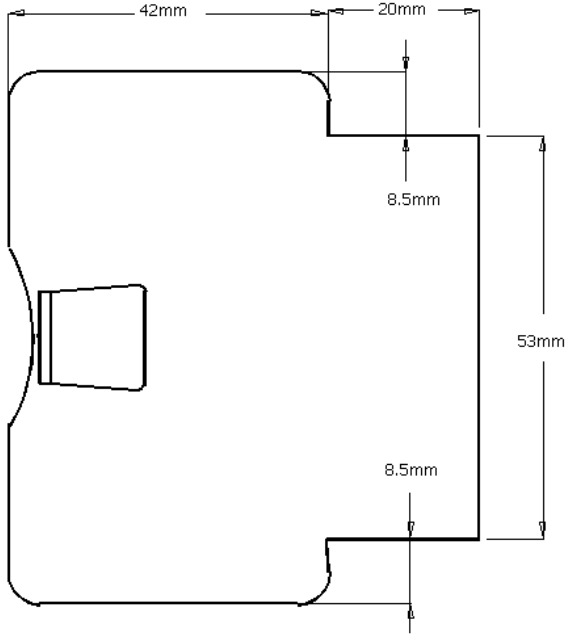
turn from rod, thickwall tube or fabricate



Spigot to fit flue (13mm)
Notch to fit over exhast pipe

Footplate

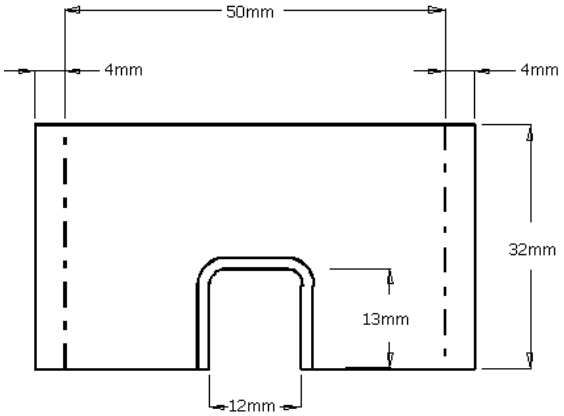
1/16" (1.5mm) steel



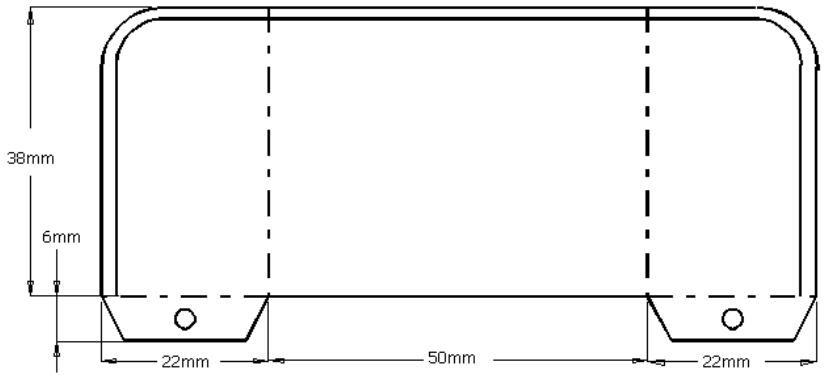
Coal bunker

thin brass

edge with half-round beading

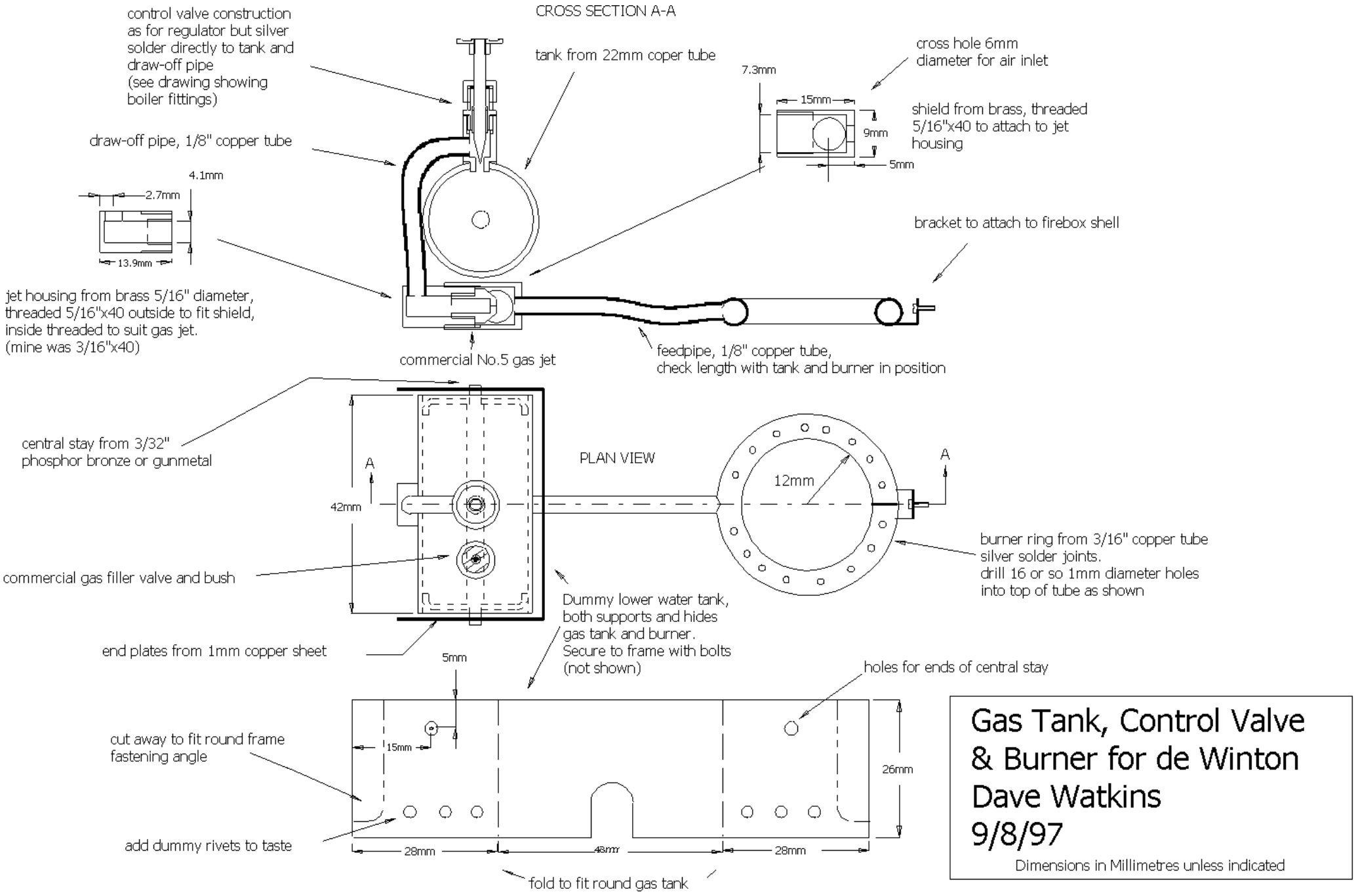


soft solder to rear of bunker



bolt though floor to angle edging frames

Platework for de Winton
Dave Watkins
9/8/97



Gas Tank, Control Valve & Burner for de Winton

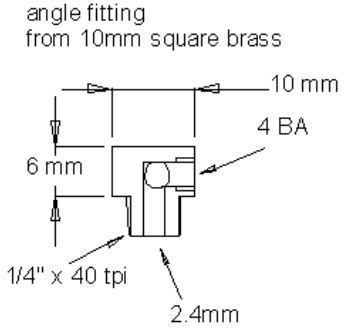
Dave Watkins

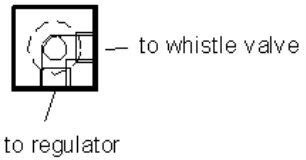
9/8/97

Dimensions in Millimetres unless indicated

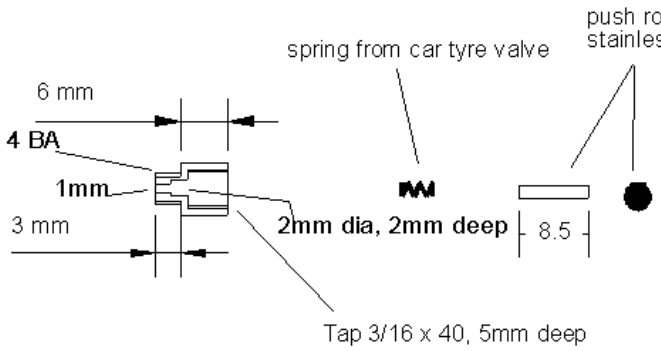
Modified angle fitting.

Whistle valve screws into right hand side.
Original is on boilier fittings sheet.

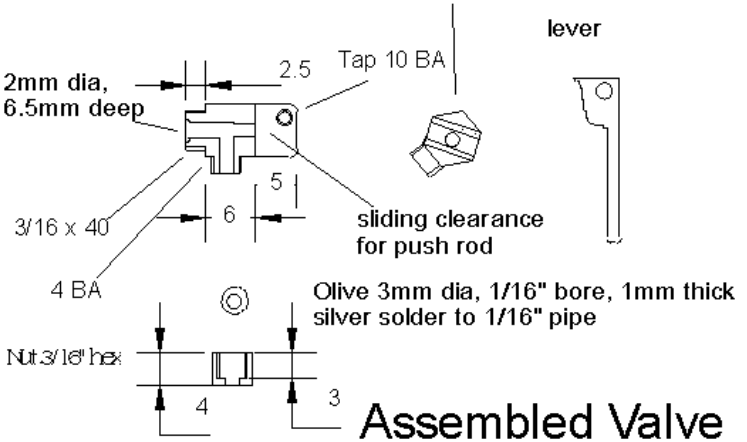




Whistle Valve

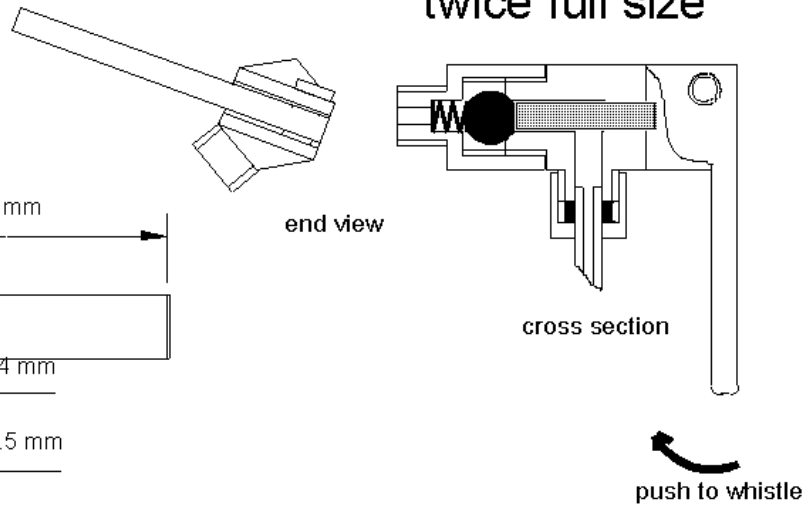


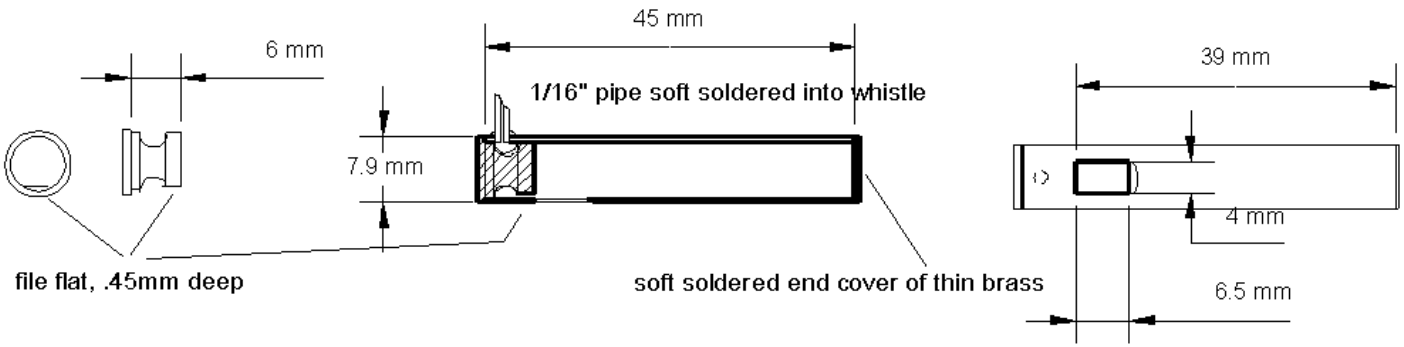
Note cross section shows
lever in line with steam outlet.
Valve will be easier to make
and operate if made as shown.



Fabricate from 1/14" hex brass.
Steam outlet from 4mm round brass, fix with
silver solder. Make gland nut from 3/16" hex brass,
Ball 1/8" stainless, push rod 1.5mm stainless
Lever 1.5mm steel or brass, pivot 10 BA screw

Assembled Valve twice full size





Gap plug
turn from brass, press fit in bore
secure with minimum of solder.

Whistle aperture should be an even fraction of whistle column length.
In this example 1/6th, so for aperture 6.5mm, column is 39mm.

Whistle from thin wall brass tube

Steam Whistle for Idris - fed by 1/16" copper pipe.
Pipe tucks in behind water gauge, with whistle located diagonally below cab floor.

Steam whistle for de Winton
Dave Watkins
29/10/99