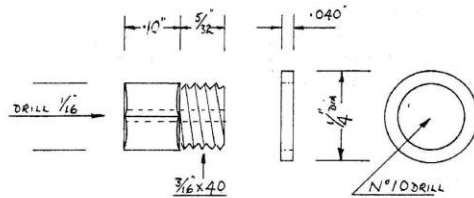


5" INCH GAUGE SIDE ROD & BIG END OIL CAPS



3/16 HEX BRASS

M. Shiel

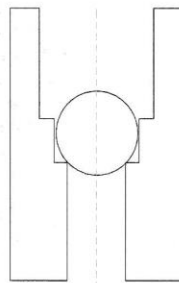
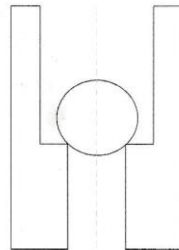
© Mick Shiel

POP SAFETY VALVES

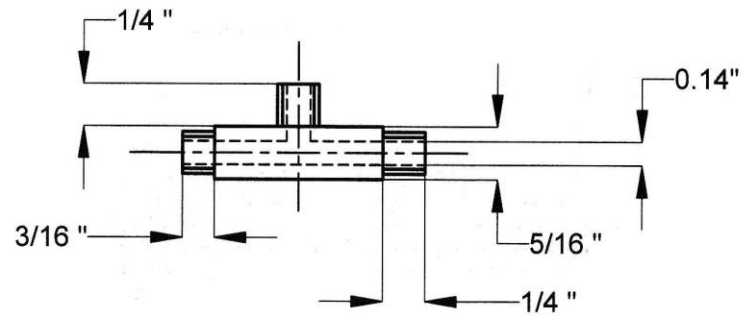
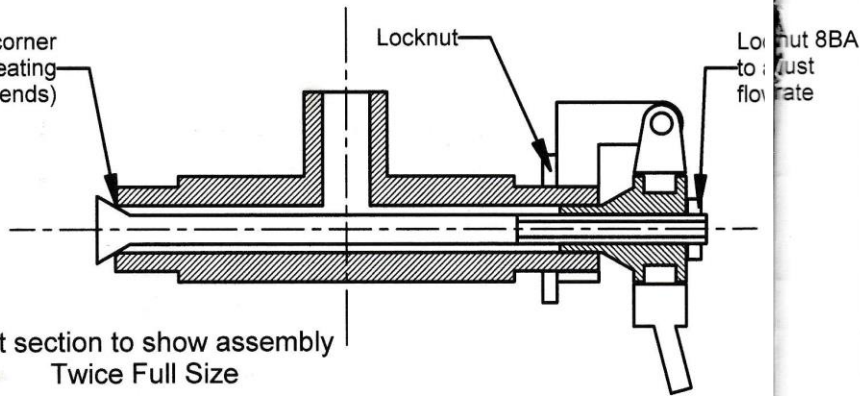
I am indebted to Les King for a design of pop safety valve that has proved successful in use. Safety valves are such an important item I have taken the liberty to extract the key operating principles and have sketched these out as I have found that many published designs are not exactly what is required and principles are more important than dimensions.

The upper sketch shows the typical arrangement of a relief valve with a ball on a seat. As the pressure rises the ball lifts and the steam exhausts round the ball into a larger annular space. This arrangement gives a 'soft' opening and closing valve ideal for situations where a violent action is not required but has the disadvantage that when the boiler is at the full working pressure the valve tends to continuously feather.

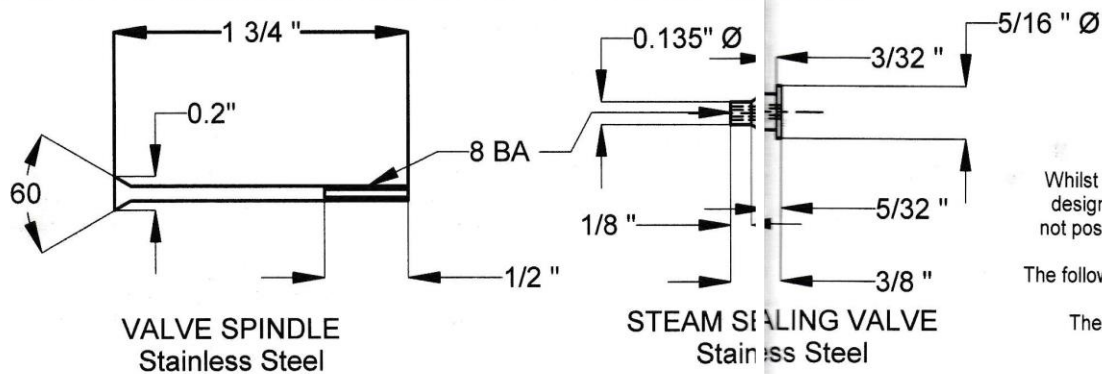
The lower sketch is of a typical pop action valve. When the valve starts to lift the steam cannot escape immediately and the valve presents a larger working area to the steam so once the valve lifts it tends to open more fully until the steam can escape round the ball past the close fitting section of the valve. Equally once the boiler pressure has dropped the valve snaps shut more cleanly than an ordinary relief valve. Other arrangements are used in full size such as the steam impinging on a second piston above the seat to give the larger area but the principle is the same. Pop valves usually repay experimentation to determine the height of the 'pop' ring and arriving at a compromise between a too violent pop action and not enough.



Sharp corner
for seating
(at both ends)



BODY
Brass
all threads 1/4" x 40



VALVE SPINDLE
Stainless Steel

STEAM SEALING VALVE
Stainless Steel

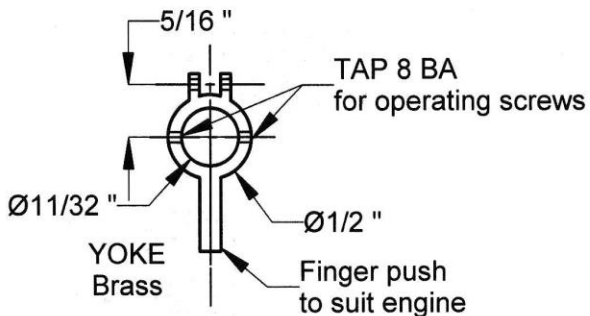
WHISTLE VALVE DESIGN

Whilst I was building my Hunslet I had a minor problem with the design of the whistle valve. With the design of the turret it was not possible to easily get a spring and a ball in for a conventional whistle valve.

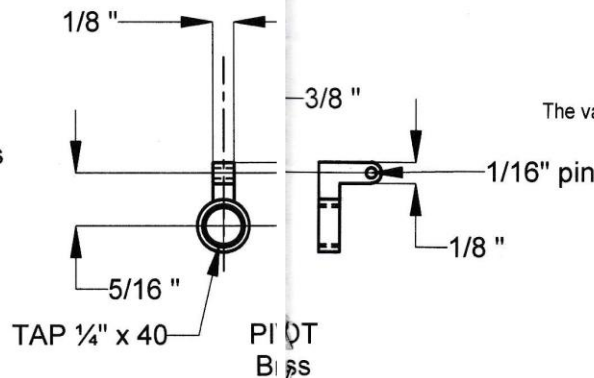
The following design was thought out and has been a great success, which other members may like to consider.

The valve has a number of features, which are as follows:

- Easy to make
 - No springs or balls are used
 - Self closing with a double beat action
 - No gland is used to stop steam leakage
 - No steam leaks to scald your fingers
 - Steam flow rate is adjustable to suit the whistle used
- The valve can be pulled shut should dirt on the seating cause trouble or the valve to stick open.
Geoff King. 15-10-2001



YOKE
Brass



PIVOT
Brass

TITLE	
Whistle Valve	
Geoff King	
SCALE	© Geoff King
Full size	
DRAWN BY: HRM/2001	SHEET: 1 of 1