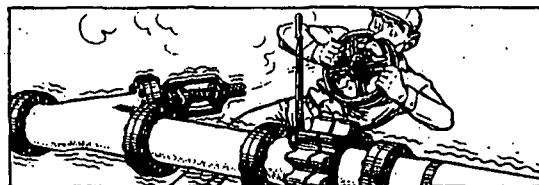


ARGUMENTS

Here's the place to unload your gripes to editors, manufacturers and fellow engineers



Valve Won't Work If Stem Breaks Off

REFERRING TO "Valve Flow Reversed?" (p 136, Jan Power) I think the better installation is one where pressure enters under the seat. The illustration is correct as you showed it.

Assume that pressure is above the seat and stem breaks in the bonnet thread, or between bonnet and wheel. If valve were closed it could not be opened (to lower water level in an emergency). On the other hand, if it were open it could not be closed, so boiler would have to operate temporarily with only one blowdown valve. It would be better to have the valve open rather than closed, because one valve would be usable and the boiler could run until repairs were made.

In addition, this valve is normally

closed, and with pressure the seat packing is not required to do any sealing.

To the best of my knowledge, there is no code requirement that pressure enter over or under the seat of a blowdown valve. For pressures above 100 psi, code requirement is two valves on each blowdown line.

Best operating practice is to open wheel on outer valve first, then blow down by opening the inner one. In closing, inner valve should be closed first, next the outer one. This puts most of the wear on inner valve, lets outer one do good job of sealing. If either stem breaks, boiler can still operate using the other blowdown valve.

F PRACK Yarnall-Waring Co
Philadelphia, Pa.

Consider the Sediment

I AGREE with the editors. Flow through valve (p 136, Jan Power) is right.

While there is no code requirement that pressure must be under the seat, avoiding a sediment trap is a good reason for preferring this arrangement.

Hazard of accidental blowdown through an open valve, cited by Ryan as an argument for pressure on top of the disk, is very real. I know of at least one boiler completely blown down because of a loose disk. But his proposal for eliminating that hazard only introduces a new one—possibility of a sediment trap.

ASME Boiler Code indicates correct solution. It says all stationary boilers carrying over 100 psi must have two blowoff valves. Possibility of both valves failing at once is negligible.

I think any good engineer will see that his boiler has two blowoff valves regardless of pressure.

E F FRANKS Maryland Casualty Co
Baltimore, Md.

Watch That Shock!

W RYAN'S ADVICE about reversing valve flow so pressure is against the bonnet (Jan Power) could be extremely dangerous. He reasons valve would close if stem broke. But sudden closing of valve during passage of high-velocity blowdown water would cause severe shock pressure.

Shock pressure is proportional to volume or weight plus pressure or velocity. Manufacturers' shock tests show that sudden stoppage of flow results in 10 to 100 times the initial pressure. Assuming the boiler pressure at 1500 psi, sudden valve closing would zoom pressure to somewhere between 15,000 and 150,000 psi.

Rupture or failure of valve, piping or joints would follow. An operator (if he lived) wouldn't be able to close valve next to boiler even if valve and piping between it and blowdown nozzle were still undamaged.

ART BELTON Montreal, P. Q.

Follow the Arrow

MODERN STRAIGHT-THROUGH valves are specifically designed so there is no need for pressure on top of the disk. Installation with pressure on the disk is correct, as shown in drawing (Jan "Argument Cases"). This way disk protects packing and valve is opened.

Many valves have a directional arrow embossed on the body to insure proper installation in the blowoff line.
J F CURTIS Detroit, Mich.

Why Is 3226 Psi Critical Pressure?

THE BOARD OF EXAMINERS of boiler inspectors asked me to give four reasons why steam can't form above 3226 psi.

I gave them these two reasons: (1) No latent heat. (2) At that pressure steam and water have same density so you can't tell where the water line is in the glass gage.

Does some reader have a full answer to satisfy the inspectors' question?

A J KUCHINSKY Arlington, Mass.

Diesel Cylinder Wear

I'VE JUST READ H P Youn's article "The Life of a Diesel Liner" (p 110, Aug Power), and I would like to add a few comments.

Several years ago I surveyed 100 cycle diesel engines of 14- and 16-cylinder sizes. Although I have always felt that wear should be less on a 4-cycle than on a 2-cycle engine, my results confirmed very well the wear of .001 in. per 1000 hr operation, disregarding the first few hundred hours. Also, I found that a wear of .005 in. per in. diameter before replacing or re-boring was pretty good rule to follow.

Wear on direct reversible marine engines was about twice that on stationary engines. I attributed this to the number of starts and stops, and to the fact that salt-laden vapor could be drawn into the cylinders.

Best records were made by engine in ice-plant service, operating continuously for months at a time. Here wear averaged around .0005 per 1000 hr.

I believe that wear is affected by temperature and quantity of cooling water. An outlet temperature of 135-140 F is about ideal, with a circulation of 1/2 gpm per hp.

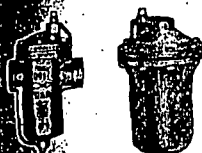
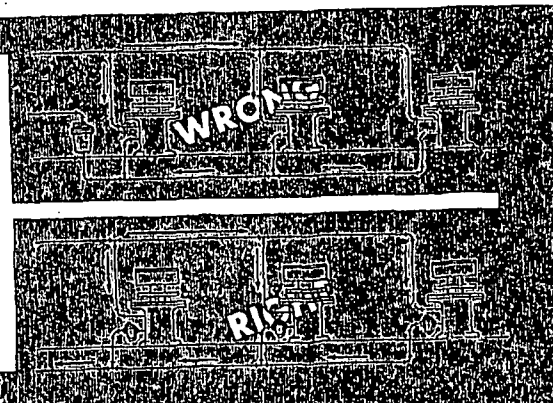
E C COLE Caracas, Venezuela

Good trade: How 50 Armstrong traps saved 14 tons of coal per month...

Changes from Group Trapping to Unit Trapping

The drawing labeled "wrong" shows a group of presses drained by a single trap. With this hook-up, condensate and air from one or more presses may fail to reach the trap, because even the slightest pressure difference between the presses will cause a back flow to a higher pressure unit to a lower pressure unit.

The drawing labeled "right" shows unit trapping, each press drained by a single trap.



Steam traps are available in side or bottom inlet-top outlet body to meet your piping requirements.



A variety of individually-trapped cloth-
M. Wile & Company, Buffalo.

AN EXAMPLE of the benefit to be gained from Armstrong Unit Trapping is found in installation at M. Wile & Company, Buffalo, N.Y., clothing manufacturers.

A single steam trap was being used to drain each group of 4 to 6 pressing machines. After changing over to the use of an individual Armstrong trap on each of the fifty presses in the plant, the company reports that, because of the resulting more efficient use of steam, coal consumption dropped by 14 tons a month. There was no reduction in work load. This fuel saving when held up against an investment of about \$500 in steam traps was rightly considered a good trade.

There are other advantages to Armstrong Unit Trapping. Almost invariably machine temperatures are higher, heat-up is faster and output is increased. The traps themselves are thoroughly reliable, seldom need attention. The design, materials and workmanship in the trap mechanisms for low and medium pressures are identical to those used in Armstrong traps for power plant service at 900 degrees F and 950 lbs. pressure, so they last for a long, long time.

Your local Armstrong Representative will be glad to discuss the savings possible in your plant through Armstrong Unit Trapping. Call him, or write:

ARMSTRONG MACHINE WORKS

812 Maple Street • Three Rivers, Michigan

You Always Get Greater Efficiency
When You Use Armstrong Unit Trapping



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